BROOKSIDE ELEMENTARY SCHOOL
PEDESTRIAN BRIDGE MANUAL

PROJECT/CONTRACT NUMBER: 25-26-01

Removal of an existing wood and steel pedestrian bridge and installation of a new prefabricated steel and concrete pedestrian bridge and associated abutments including path of travel upgrades to access the bridge.

ROSS VALLEY SCHOOL DISTRICT

Issued February 3, 2026

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END OF DOCUMENT

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NOTICE TO BIDDERS

1. Notice is hereby given that the governing board ("Board") of the Ross Valley School District ("District") will receive sealed bids for the following project, Bid No. 25-26-01, Bid Package ("Project" or "Contract"):

   Brookside Elementary School - Pedestrian Bridge

2. The Project consists of:

   Removal of an existing wood and steel pedestrian bridge and installation of a new prefabricated steel and concrete pedestrian bridge and associated abutments including path of travel upgrades to access the bridge.

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

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

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

5. Contract Documents will be available on or after February 3, 2026 for review at the District Office, and may be downloaded from the District's website, www.rossvalleyschools.org, using the [***"Facilities Projects and Information"***] link. In addition, Contract Documents are available for bidders' review at the following builders' exchanges:

   Marin Builders Exchange

6. Sealed bids will be received until **2:00pm, May 6, 2026**, at the District Office, 100 Shaw Drive, San Anselmo, California 94960 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 Ross Valley 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 **March 4, 2026 at 10:00am**, **at Brookside School, located at 116 Butterfield Road, San Anselmo, California.** All participants are required to sign in front of the Administration Building at the school site. The site visit is expected to take approximately 60 minutes. Failure to attend or tardiness will render bid ineligible.

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

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

12. The 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.

13. The Contractor and all Subcontractors under the Contractor shall pay all workers on all Work performed pursuant to this Contract not less than the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work as determined by the Director of the Department of Industrial Relations, State of California, for the type of work performed and the locality in which the work is to be performed within the boundaries of the District, pursuant to section 1770 et seq. of the California Labor Code. Prevailing wage rates are also available from the District or on the Internet at: <http://www.dir.ca.gov>.

14. This Project is subject to labor compliance monitoring and enforcement by the Department of Industrial Relations pursuant to Labor Code section 1771.4 and subject to the requirements of Title 8 of the California Code of Regulations. The successful Bidder shall comply with all requirements of Division 2, Part 7, Chapter 1, Articles 1-5 of the Labor Code.

15. The District's Board has found and determined that the following item(s) shall be used on this Project based on the purpose(s) indicated. (Public Contract Code section 3400(c).) A particular material, product, thing, or service is designated by specific brand or trade name for the following purpose(s):

    (1) Not Used

    (2) Not Used

    (3) In order to obtain a necessary item that is only available from one source: _Continental pedestrian bridge system from Contech, to be supplied by District_____.

    (4) Not Used

16. 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

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

END OF DOCUMENT

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.

Ross Valley 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"):

   Broookside Elementary School-Pedestrian Bridge, Bid No. 25-26-01

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. Not Used

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 District Office 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.

    e. Not Used

    f. Not Used

    g. Not Used

    h. Not Used

11. Bidders must submit with their bids a cashier's check or a certified check payable to District, or a bid bond by an admitted surety insurer of not less than ten percent (10%) of amount of Base Bid, plus all additive alternates ("Bid Bond"). If Bidder chooses to provide a Bid Bond as security, Bidder must use the required form of corporate surety provided by District. The Surety on Bidder's Bid Bond must be an insurer admitted in the State of California and authorized to issue surety bonds in the State of California. Bids submitted without necessary bid security will be deemed nonresponsive and will not be considered.

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, 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. Not Used

19. Not Used

20. Not Used

21. Section 17076.11 of the Education Code requires school districts using funds allocated pursuant to the State of California School Facility Program for the construction and/or modernization of school building(s) to have a participation goal for disabled veteran business enterprises ("DVBE") of at least three percent (3%) per year of the overall dollar amount expended on projects that receive state funding or demonstrate its good faith effort to solicit DVBE participation in this Contract. In order to meet this requirement by demonstrating a good faith effort, Bidder must advertise for DVBE-certified subcontractors and suppliers before submitting its Bid. For any project that is at least partially state-funded, the lowest responsive responsible Bidder awarded the Contract must submit certification of compliance with the procedures for implementation of DVBE contracting goals with its signed Agreement. DVBE Certification form is attached. Do not submit this form with your Bid.

22. 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.

23. 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.

24. 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.

25. All questions about the meaning or intent of the Contract Documents are to be directed via email to the District to **facilies@rossvalleyschools.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 or posted on the District's website at **www.rossvalleyschools.org**. 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.

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

27. 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.

28. 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.

29. 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.

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

31. 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.

32. 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.

33. 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. District may require Contractor to submit up to 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 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. Not Used

i. Disabled Veteran Business Enterprise Participation Certification.

j. Drug-Free Workplace Certification.

k. Tobacco-Free Environment Certification.

l. Drug and Alcohol-Free Schools Certification.

m. Workplace Violence Prevention Plan Certification.

n. Hazardous Materials Certification.

o. Lead-Based Materials Certification.

p. Imported Materials Certification.

q. Criminal Background Investigation/Fingerprinting Certification.

r. Not Used

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

34. 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.

35. 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.

36. 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, religious creed, color, national origin, ancestry, physical disability, mental disability, reproductive health decisionmaking, medical condition, genetic information, marital status, sex, gender, gender identity, gender expression, age, sexual orientation, or veteran or military status. 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.

37. Prior to the award of Contract, District reserves the right to consider the responsibility of the Bidder. District may conduct investigations as District deems necessary to assist in the evaluation of any bid and to establish the responsibility, including, without limitation, qualifications and financial ability of Bidders, proposed subcontractors, suppliers, and other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to District's satisfaction within the prescribed time.

END OF DOCUMENT

DOCUMENT 00 31 19

EXISTING CONDITIONS

1. Summary

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

2. Reports and Information on Existing Conditions

a. Documents providing a general description of the Site and conditions of the Work may have been collected by the Ross Valley 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) Not Used
(5) Not Used

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 Ross Valley School District ("District"), and its consultants, contractors, and tenants.

b. Geotechnical reports may be inspected at the District offices or the Construction Manager's offices, if any, and copies may be obtained at cost of reproduction and handling upon Bidder's agreement to pay for such copies. These reports are **not** part of the Contract Documents.

c. The reports and drawings of physical conditions that may relate to the Project are the following:

_____

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 Ross Valley 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. 25-26-01_for the following project known as:

Brookside Elementary School - Pedestrian Bridge

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

_____ dollars $ _____

BASE BID

Bidder acknowledges and agrees that the Base Bid accounts for any and all Allowance(s), Total Cost for Unit Prices, and OCIP excluded costs.

Additive/Deductive Alternates:

Alternate #1

_____ dollars $ _____

Additive/Deductive

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

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

Additional Detail Regarding Calculation of Base Bid

1. **Unit Prices**. The Bidder's Base Bid includes the following unit prices, which the Bidder must provide and the District may, at its discretion, utilize in valuing additive and/or deductive change orders (Unit Prices shall include all labor, materials, services, profit, overhead, insurance, bonds, taxes, and all other incidental costs of Contractor, subcontractors, and suppliers):

SCHEDULE OF UNIT PRICES

Item No.	Description	Unit of Measure	Estimated Quantity	Unit Price	Total Cost = Unit Price x Estimated Quantity (Included in Base Bid)
				$_____	$_____
				$_____	$_____

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

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

Task/Work	Allowance Value
Unforeseen Conditions	$25,000
Total Allowance Value	$15,000

The Allowance Value for an Allowance Item includes the direct cost of labor, materials, equipment, transportation, taxes and insurance associated with the applicable Allowance Item. All other costs, including Contractor's overall project

management and general conditions costs, overhead and fee, are deemed to be included in the Base Bid.

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

3. Not Used

4. Not Used

5. 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.

6. 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.

7. 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.

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

9. 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.

10. 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

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

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

12. Bidder acknowledges that the license required for performance of the Work is an **A license.**

13. 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.

14. 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.

15. 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.

16. Not Used.

17. Not Used

18. 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.

19. 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.

20. 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.

21. 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.

[SIGNATURE ON FOLLOWING PAGE]

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

Dated this _____ day of _____ 20 ____

Name of Bidder: _____

Type of Organization: _____

Signature: _____

Print Name: _____

Title: _____

Address of Bidder: _____

Taxpayer Identification No. of Bidder: _____

Telephone Number: _____

Fax Number: _____

E-mail: _____ Web Page: _____

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

No.: _____ Class:_____ Expiration Date: _____

No.: _____ Class:_____ Expiration Date: _____

Public Works Contractor Registration No.: _____

END OF DOCUMENT

DOCUMENT 00 41 13

BID FORM AND PROPOSAL

To: Governing Board of the Ross Valley 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. 25-26-01 for the following project known as:

Brookside Elementary School - Pedestrian Bridge

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

_____ dollars $ _____

BASE BID

Bidder acknowledges and agrees that the Base Bid accounts for any and all Allowance(s), Total Cost for Unit Prices, and OCIP excluded costs.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

Additional Detail Regarding Calculation of Base Bid

1. **Unit Prices**. The Bidder's Base Bid includes the following unit prices, which the Bidder must provide and the District may, at its discretion, utilize in valuing additive and/or deductive change orders (Unit Prices shall include all labor, materials, services, profit, overhead, insurance, bonds, taxes, and all other incidental costs of Contractor, subcontractors, and suppliers):

SCHEDULE OF UNIT PRICES

Item No.	Description	Unit of Measure	Estimated Quantity	Unit Price	Total Cost = Unit Price x Estimated Quantity (Included in Base Bid)
				$_____	$_____
				$_____	$_____

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

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

Task/Work	**Allowance Value**
Unforeseen Conditions	$25,000
Total Allowance Value	$25,000

The Allowance Value for an Allowance Item includes the direct cost of labor, materials, equipment, transportation, taxes and insurance associated with the applicable Allowance Item. All other costs, including Contractor's overall project

management and general conditions costs, overhead and fee, are deemed to be included in the Base Bid.

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

3. Not Used

4. Not Used

5. 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.

6. 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.

7. 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.

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

9. 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.

10. 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

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

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

12. Bidder acknowledges that the license required for performance of the Work is an **A license.**

13. 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.

14. 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.

15. 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.

16. Not Used.

17. Not Used

18. 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.

19. 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.

20. 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.

21. 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.

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

Dated this _____ day of _____ 20 ____

Name of Bidder: _____

Type of Organization: _____

Signature: _____

Print Name: _____

Title: _____

Address of Bidder: _____

Taxpayer Identification No. of Bidder: _____

Telephone Number: _____

Fax Number: _____

E-mail: _____ Web Page: _____

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

No.: _____ Class:_____ Expiration Date: _____

No.: _____ Class:_____ Expiration Date: _____

Public Works Contractor Registration No.: _____

END OF DOCUMENT

DOCUMENT 00 43 36

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

PROJECT: Brookside Elementary School - Pedestrian Bridge, Bid No. 25-26-01

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: Brookside Elementary School - Pedestrian Bridge, Bid No. 25-26-01

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 Ross Valley 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 19.01

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

Form Not Used

END OF DOCUMENT

DOCUMENT 00 45 19.02

OFF-ROAD DIESEL-FUELED FLEET CERTIFICATION

Form Not Used

END OF DOCUMENT

DOCUMENT 00 45 26

WORKERS' COMPENSATION CERTIFICATION

PROJECT/CONTRACT NO.: Brookside Elementary School - Pedestrian Bridge, Bid No. 25-26-01 between the Ross Valley 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

PROJECT/CONTRACT NO.: Brookside Elementary School - Pedestrian Bridge, Bid. No. 25-26-01 between the Ross Valley 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

PROJECT/CONTRACT NO.: Brookside Elementary School - Pedestrian Bridge, Bid. No. 25-26-01 between the Ross Valley 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)	$
E.	DVBE Subcontractor or Supplier	
	1.	
	2.	
	3.	
	4.	
F.	Subtotal (A & B)	
G.	Non-DVBE	
H.	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
The District, if any			*
OSDS, provides assistance locating DVBEs at https://caleprocure.ca.gov/pages/PublicSearch/supplier-search.aspx	(916) 375-4940		*
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

PROJECT/CONTRACT NO.: Brookside Elementary School - Pedestrian Bridge, Bid Number: 25-26-01 between the Ross Valley 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

PROJECT/CONTRACT NO.: Brookside Elementary School - Pedestrian Bridge, Bid No. 25-26-01 between the Ross Valley 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

DRUG AND ALCOHOL-FREE SCHOOLS CERTIFICATION

PROJECT/CONTRACT NO.: Brookside Elementary School - Pedestrian Bridge, Bid. No. 25-26-01 between the Ross Valley School District ("District") and _____ _____ ("Contractor" or "Bidder") ("Contract" or "Project").

Pursuant to, without limitation, District Board policies, all District sites, including the Project site, are drug and alcohol-free schools. Possession, use, or dale of drugs and alcohol is prohibited at any time in district-owned or leased buildings, on district property, and in district vehicles unless otherwise permitted by law.

I acknowledge that I am aware of the District's policy regarding drug and alcohol-free schools, 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 possess, use or sell:

1. Any substance which may not lawfully be possessed, used, or sold in California.

2. Cannabis or cannabis products (Health and Safety Code, § 11362.3; 21 USC §§ 812, 844).

3. Alcohol beverages, unless approved by the Superintendent or designee for limited purposes specified in Business and Professions Code section 25608.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

DOCUMENT 00 45 46.06

WORKPLACE VIOLENCE PREVENTION PLAN CERTIFICATION

PROJECT/CONTRACT NO.:Brookside Elementary School - Pedestrian Bridge, Bid No. 25-26-01 between the Ross Valley School District ("District") and _____ _____ ("Contractor" or "Bidder") ("Contract" or "Project").

California Labor Code section 6401.9 requires covered employers to adopt a comprehensive workplace violence prevention plan, which shall be in writing and shall be available and easily accessible to the District's employees. To the extent that it may apply to Contractor's employees, the District's Workplace Violence Prevention Plan ("Prevention Plan") can be found here: https://bit.ly/4hUNq1L or is available at the District Office.

In light of Section 6401.9 of the California Labor Code, Contractor certifies that Contractor has ascertained that the personnel (including the entity's employees and Subcontractors) providing site services on the District's Project have (1) received comprehensive Prevention Plan training and (2) access to the Prevention Plan.

Contractor understands that the Project site will need to comply with the Prevention Plan requirements for its employees and Subcontractors. Personnel who have not received comprehensive Prevention Plan training and do not have access to the Prevention Plan or decline to state if they received such training and have access to the Prevention Plan will be treated as not receiving comprehensive Prevention Plan Training and not having access to the Prevention Plan.

Contractor agrees to compensate the District for any civil penalties and expenses (including attorney's fees) it accrues pursuant to the California Labor Code, including but not limited to, California Labor Code section 6401.9(g), for any California Labor Code violations stemming from Contractor's Project work.

I acknowledge that I am aware of the provisions of and hereby certify that I will adhere to the requirements of the California Labor Code section 6401.9.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

DOCUMENT 00 45 46.07

HAZARDOUS MATERIALS CERTIFICATION

PROJECT/CONTRACT NO.: Brookside Elementary School - Pedestrian Bridge, Bid. No. 25-26-01 between Ross Valley 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.

7. 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.

[SIGNATURE ON FOLLOWING PAGE]

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

DOCUMENT 00 45 46.08

LEAD-BASED MATERIALS CERTIFICATION

PROJECT/CONTRACT NO.: Brookside Elementary School - Pedestrian Bridge, Bid. No. 25-26-01 between the Ross Valley 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:

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

Removal or encapsulation of materials containing lead;

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

Installation of products containing lead;

Lead contamination/emergency cleanup;

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

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

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

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

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

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

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

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

4. Contractor's Liability

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

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

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

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

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

1. HAS RECEIVED NOTIFICATION OF POTENTIAL LEAD-BASED MATERIALS ON THE OWNER'S PROPERTY;

2. IS KNOWLEDGEABLE REGARDING AND WILL COMPLY WITH ALL APPLICABLE LAWS, RULES, AND REGULATIONS GOVERNING WORK WITH, AND DISPOSAL, OF LEAD.

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

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

DOCUMENT 00 45 46.09

IMPORTED MATERIALS CERTIFICATION

PROJECT/CONTRACT NO.: Brookside Elementary School - Pedestrian Bridge, Bid. No. 25-26-01 between the Ross Valley School District ("District") and _____ _____ ("Contractor" or "Bidder") ("Contract" or "Project").

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

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

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

Name of firm ("Firm"): _____

Mailing address: _____

Addresses of branch office used for this Project: _____

If subsidiary, name and address of parent company: _____

_____

[SIGNATURE ON FOLLOWING PAGE]

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 46.10

CRIMINAL BACKGROUND INVESTIGATION/ FINGERPRINTING CERTIFICATION

PROJECT/CONTRACT NO.: Brookside Elementary School - Pedestrian Bridge, Bid. No. 25-26-01 between the Ross Valley 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.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

[CONTINUED ON NEXT PAGE]

ATTACHMENT "A"

List of Employees/Subcontractors

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

Name/Company: _____

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

END OF DOCUMENT

DOCUMENT 00 45 46.11

ROOFING PROJECT CERTIFICATION

Form Not Used

END OF DOCUMENT

DOCUMENT 00 45 46.12

FEDERAL DEBARMENT CERTIFICATION

Form Not Used

END OF DOCUMENT

DOCUMENT 00 45 46.13

BYRD ANTI-LOBBYING CERTIFICATION

Form Not Used

END OF DOCUMENT

DOCUMENT 00 45 49

REGISTERED SUBCONTRACTORS LIST
(Labor Code Section 1771.1)

PROJECT: Brookside Elementary School - Pedestrian Bridge, Bid. No. 25-26-01

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: _____

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.

CONTRACTOR	CONTRACTOR
[CM]	[CM]

II. PROPOSED CONTRACT:

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

	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. JIREMENTS:

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

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. E 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

entify them.

_____

_____

_____

_____

_____

_____

ɨditional 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
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

_____

_____

_____

_____

_____

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:

_____

_____

_____

_____

_____

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: _____ 20__

To: _____ (Contractor)

_____
(Address)

From: Governing Board ("Board") of the Ross Valley School District ("District")

Re: Brookside Elementary School - Pedestrian Bridge, Project No. 25-26-01 ("Project").

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

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

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. District may require Contractor to submit up to 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. Not applicable

i. Disabled Veteran Business Enterprise Participation Certification.

j. Drug-Free Workplace Certification.

k. Tobacco-Free Environment Certification.

l. Workplace Violence Prevention Plan Certification.

m. Not applicable

n. Not applicable

o. Imported Materials Certification.

p. Not applicable

q. Not applicable

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.

ROSS VALLEY SCHOOL DISTRICT

BY: _____

NAME: _____

TITLE: _____

END OF DOCUMENT

DOCUMENT 00 52 13

AGREEMENT

THIS AGREEMENT IS MADE AND ENTERED INTO THIS _____ DAY OF _____ _____, 20___, by and between the Ross Valley 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:

Brookside Elementary School - Pedestrian Bridge, Bid. No. 25-26-01

("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 Three (53) consecutive calendar days ("Contract Time") from the date specified in the District's Notice to Proceed or, only in the event no Notice to Proceed is issued, from the date Contractor first furnishes work on the Project, unless terminated by the District earlier for cause or for convenience.

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

6. **Liquidated Damages**: Time is of the essence for all work under this Agreement. It is hereby understood and agreed that it is and will be difficult and/or impossible to ascertain and determine the actual damage that the District will sustain in the event of and by reason of Contractor's delay; therefore, Contractor agrees that it shall pay to the District the sum of one thousand dollars ($1,000) per day as liquidated damages for each and every day's delay beyond the time herein prescribed in completion of the Work.

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

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

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

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

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

9. **Insurance and Bonds**: Prior to issuance of the Notice to Proceed by the District, or, only in the event no Notice to Proceed is issued, prior to the date Contractor first furnishes work on the Project, 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 Contractor's license(s) issued by the State of California, Contractors' State License Board, in accordance with division 3, chapter 9, of the Business and Professions Code and in the classification called for in the Contract Documents.

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

15. **Payment of Prevailing Wages**: The Contractor and all Subcontractors shall pay all workers on all Work performed pursuant to this Contract not less than the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work as determined by the Director of the Department of Industrial Relations, State of California, for the type of work performed and the locality in

which the work is to be performed within the boundaries of the District, pursuant to sections 1770 et seq. of the California Labor Code.

16. **Labor Compliance Monitoring and Enforcement**: This Project is subject to labor compliance monitoring and enforcement by the Department of Industrial Relations pursuant to Labor Code section 1771.4 and Title 8 of the California Code of Regulations. Contractor specifically acknowledges and understands that it shall perform the Work of this Agreement while complying with all the applicable provisions of Division 2, Part 7, Chapter 1, of the Labor Code, including, without limitation, the requirement that the Contractor and all of its Subcontractors shall timely submit complete and accurate electronic certified payroll records as required by the Contract Documents, or the District may not issue payment.

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

_____ Dollars

($_____),

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

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

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

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

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

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

[CONTRACTOR NAME]	**ROSS VALLEY SCHOOL DISTRICT**
_____	_____
By: _____	By: _____
Title: _____	Title: _____

NOTE: If the Contractor executing this Contract is a corporation, the Contractor shall furnish to District satisfactory evidence of the authority of the officer signing on behalf of the corporation.

END OF DOCUMENT

DOCUMENT 00 55 00

NOTICE TO PROCEED

Dated: _____, 20___

TO: _____
("Contractor")

ADDRESS: _____

PROJECT:Brookside Elementary School - Pedestrian Bridge

PROJECT/CONTRACT NO.: _25-26-01_____ between the Ross Valley School District and Contractor ("Contract").

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

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

a. Contractor's preliminary schedule of construction.

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

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

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

e. Registered Subcontractors List: A complete subcontractors list for all tiers, including the name, Department of Industrial Relations registration number, and portion of work.

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

ROSS VALLEY 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 _____, 20___, by and between the Ross Valley School District ("District"), whose address is 100 Shaw Drive, San Anselmo, California 94960, and _____ ("Contractor"), whose address is _____ _____ , and _____ ("Escrow Agent"), a state or federally chartered bank in the state of California, whose address is _____ _____ _____.

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

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

   ☐ Deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by District pursuant to the Construction Contract No.___ entered into between District and Contractor for the _____ _____ Project, in the amount of _____ Dollars ($_____) dated, _____, 20_____, (the "Contract"); **or**

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

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

   Securities shall be held in the name of Ross Valley 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 Ross Valley 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:

Brookside Elementary School - Pedestrian Bridge, Bid. No. 25-26-01

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

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

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

_____

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

- Promptly perform all the work required to complete the Project; and

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

Or, at the District's sole discretion and election, the Surety shall obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by the District of the lowest responsible bidder, arrange for a contract between such bidder and the District and make available as Work progresses sufficient funds to pay the cost of completion less the "balance of the Contract Price," and to pay and perform all obligations of Principals under the Contract, including, without limitation, all obligations with respect to warranties, guarantees and the payment of liquidated damages. The term "balance of the Contract Price," as used in this paragraph, shall mean the total amount payable to Principal by the District under the Contract and any modifications thereto, less the amount previously paid by the District to the Principal, less any withholdings by the District allowed under the Contract. District shall not be required or

obligated to accept a tender of a completion contractor from the Surety for any or no reason.

The condition of the obligation is such that, if the above bound Principal, its heirs, executors, administrators, successors, or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions, and agreements in the Contract and any alteration thereof made as therein provided, on its part to be kept and performed at the time and in the intent and meaning, including all contractual guarantees and 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 _____, 20___.

Principal	Surety
By	By

Name of California Agent of Surety

Address of California Agent of Surety

Telephone No. of California Agent of Surety

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

END OF DOCUMENT

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 Ross Valley 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:

Brookside Elementary School - Pedestrian Bridge, Bid. No. 25-26-01

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

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

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

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

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

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

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

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

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

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

END OF DOCUMENT

DOCUMENT 00 63 40

ALLOWANCE EXPENDITURE DIRECTIVE FORM

Ross Valley School District
100 Shaw Drive
San Anselmo, CA 94960

ALLOWANCE EXPENDITURE DIRECTIVE NO.:

ALLOWANCE EXPENDITURE DIRECTIVE

Project: Brookside Elementary School - Pedestrian Bridge

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

Bid No.: Bid. No. 25-26-01

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

Owner Name, Address, Telephone:

_____
_____
_____

Contractor Name, Address, Telephone:

_____
_____
_____

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

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

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: ROSS VALLEY 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: _____

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

Ross Valley School District
100 Shaw Drive
San Anselmo, CA 94960

PCO NO.:

Project: Brookside Elementary School - Pedestrian Bridge
Bid No.: 25-26-01
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 and one-half percent (2.5%) 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 and one-half percent (2.5%) 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

Ross Valley School District
100 Shaw Drive
San Anselmo, CA 94960

CHANGE ORDER NO.:

CHANGE ORDER

Project: Brookside Elementary School - Pedestrian Bridge
Bid No.: 25-26-01

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 ROSS VALLEY 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 * * *

ROSS VALLEY 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 Ross Valley School District ("District") for the following project:

PROJECT: Brookside Elementary School - Pedestrian Bridge, Bid. No. 25-26-01

("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(s): The Allowance Item(s) identified in the Bid Form and Proposal and included in the Contract Price. Any unused portion of the Allowance will revert to the District documented by a deductive Change Order. Contractor hereby authorizes the District to execute a unilateral deductive Change Order at or near the end of the Project for all or any portion of the Allowance not allocated.

1.1.3 Allowance Expenditure Directive: Written authorization for expenditure of an Allowance, if any. Contractor shall not bill for or be due any portion of an Allowance unless the District has identified specific work, Contractor has submitted a price for that work or the District has proposed a price for that work, the District has accepted the cost for that work, and the District has executed an Allowance Expenditure Directive incorporating that work.

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

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

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

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

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

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

1.1.10 Claim: A Contractor Claim within the meaning of Public Contract Code sections 9204 and/or 20104 et seq.

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

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

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

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

- **1.1.14.1** Notice to Bidders
- **1.1.14.2** Instructions to Bidders
- **1.1.14.3** Bid Form and Proposal
- **1.1.14.4** Bid Bond
- **1.1.14.5** Designated Subcontractors List
- **1.1.14.6** Site Visit Certification (if a site visit was required)
- **1.1.14.7** Non-Collusion Declaration
- **1.1.14.8** Off-Road Diesel-Fueled Fleet Certification (if applicable)
- **1.1.14.9** Notice of Award
- **1.1.14.10** Notice to Proceed
- **1.1.14.11** Agreement
- **1.1.14.12** Escrow of Bid Documentation
- **1.1.14.13** Escrow Agreement for Security Deposits in Lieu of Retention (if applicable)
- **1.1.14.14** Performance Bond
- **1.1.14.15** Payment Bond (Contractor's Labor & Material Bond)
- **1.1.14.16** General Conditions

1.1.14.17 Special Conditions (if applicable)
1.1.14.18 Project Labor Agreement (if applicable)
1.1.14.19 Hazardous Materials Procedures and Requirements
1.1.14.20 Workers' Compensation Certification
1.1.14.21 Prevailing Wage Certification
1.1.14.22 Disabled Veteran Business Enterprise Participation Certification (if applicable)
1.1.14.23 Drug-Free Workplace Certification (if applicable)
1.1.14.24 Tobacco-Free Environment Certification (if applicable)
1.1.14.25 Workplace Violence Prevention Plan Certification
1.1.14.26 Drug and Alcohol-Free Schools Certification (if applicable)
1.1.14.27 Hazardous Materials Certification (if applicable)
1.1.14.28 Lead-Based Materials Certification (if applicable)
1.1.14.29 Imported Materials Certification (if applicable)
1.1.14.30 Criminal Background Investigation/Fingerprinting Certification
1.1.14.31 Roofing Project Certification (if applicable)
1.1.14.32 Registered Subcontractors List
1.1.14.33 Iran Contracting Act Certification (if applicable)
1.1.14.34 Federal Debarment Certification (if applicable)
1.1.14.35 Federal Byrd Anti-Lobbying Certification (if applicable)
1.1.14.36 Post Bid Interview (if used)
1.1.14.37 All Plans, Technical Specifications, and Drawings
1.1.14.38 Any and all addenda to any of the above documents
1.1.14.39 Any and all change orders or written modifications to the above documents if approved in writing by the District

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

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

1.1.17 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.

1.1.18 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.

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

1.1.20 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.

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

1.1.22Dispute: A separate demand by Contractor for a time extension, or payment of money or damages arising from Work done by or on behalf of the Contractor pursuant to the Contract and payment of which is not otherwise expressly provided for or Contractor is not otherwise entitled to; or an amount of payment disputed by the District.

1.1.23District: The public agency or the school district for which the Work is performed. The governing board of the District or its designees will act for the District in all matters pertaining to the Contract. The District may, at any time,

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

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

1.1.24Drawings (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.

1.1.25DSA: Division of the State Architect.

1.1.26Force 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.

1.1.27Job 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.

1.1.28Labor 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.

1.1.29Municipal 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.

1.1.30Plans: See **Drawings**.

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

1.1.32Product(s): New material, machinery, components, equipment, fixtures and systems forming the Work, including existing materials or components required and approved by the District for reuse.

1.1.33Product Data: Illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate a material, product, or system for some portion of the Work.

1.1.34Program Manager: The individual, partnership, corporation, joint venture, or any combination thereof, or its authorized representative, named as such by the District. If no Program Manager is designated for Project that is the subject of this Contract, then all references to Program Manager herein shall be read to refer to District.

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

1.1.36Project Inspector (or "Inspector"): The individual(s) retained by the District in accordance with title 24 of the California Code of Regulations to monitor and inspect the Project.

1.1.37Project Labor Agreement (or "PLA"): a prehire collective bargaining agreement in accordance with Public Contract Code section 2500 et seq. that establishes terms and conditions of employment for a specific construction project or projects and/or is an agreement described in Section 158(f) of Title 29 of the United States Code.

1.1.38Proposed Change Order (or "PCO"): a written request prepared by the Contractor requesting that the District and the Architect issue a Change Order based upon a proposed change to the Work.

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

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

1.1.41Record Drawings: Reproducible drawings (or Plans) prepared pursuant to the requirements of the Contract Documents that reflect all changes made during the performance of the Work, recording differences between the original design of the Work and the Work as constructed upon completion of the Project. See also **As-Builts**.

1.1.42Request for Information (or "RFI"): A written request prepared by the Contractor requesting that the Architect provide additional information necessary to clarify or amplify an item in the Contract Documents that the Contractor believes is not clearly shown or called for in the Drawings or Specifications or other portions of the Contract Documents, or to address problems that have arisen under field conditions.

1.1.43Request for Substitution for Specified Item: A request by Contractor to substitute an equal or superior material, product, thing, or service for a specific material, product, thing, or service that has been designated in the Contract Documents by a specific brand or trade name.

1.1.44Safety 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").

1.1.45Safety 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.

1.1.46Samples: 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.

1.1.47Shop 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.

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

1.1.49Specifications: 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.

1.1.50State: The State of California.

1.1.51Storm 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.

1.1.52Subcontractor: 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.

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

1.1.54Surety: 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.

1.1.55Work: 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.

1.2Laws Concerning the Contract; Venue

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

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

1.3No 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.

1.4No 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.

1.5Notice and Service Thereof

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

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

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

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

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

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

1.6 No Waiver

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

1.7 Substitutions for Specified Items

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

1.8 Materials and Work

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

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

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

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

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

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

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

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

1.8.7.2 If the Contractor fails to furnish to the District within ten (10) calendar days after demand by the District, satisfactory evidence that a lien or a claim based on a stop payment notice has been so released, discharged, or secured,

the District may discharge such indebtedness and deduct the amount required therefor, together with any and all losses, costs, damages, and attorney's fees and expense incurred or suffered by District from any sum payable to Contractor under the Contract.

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

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

1.8.10[RESERVED]

2. [RESERVED]

3. ARCHITECT

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

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

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

Contractor shall provide District and the Construction Manager with a copy of all written communication between Contractor and Architect at the same time as

that communication is made to Architect, including, without limitation, all RFIs, correspondence, submittals, claims, and proposed change orders.

4. CONSTRUCTION MANAGER

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

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

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

5. INSPECTOR, INSPECTIONS, AND TESTS

5.1 Project Inspector

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

5.1.2 No Work shall be carried on except with the knowledge and under the inspection of the Project Inspector(s). The Project Inspector(s) shall have free access to any or all parts of Work at any time. Contractor shall furnish Project Inspector(s) reasonable opportunities for obtaining such information as may be necessary to keep Project Inspector(s) fully informed respecting progress and manner of work and character of materials, including, but not limited to, submission of form DSA 156 (or the most current version applicable at the time the Work is performed) to the Project Inspector at least 48 hours in advance of the commencement and completion of construction of each and every aspect of the Work. Forms are available on the DSA's website at:

http://www.dgs.ca.gov/dsa/Forms.aspx. Inspection of Work shall not relieve Contractor from an obligation to fulfill this Contract. Project Inspector(s) and the DSA are authorized to suspend work whenever the Contractor and/or its Subcontractor(s) are not complying with the Contract Documents. Any work stoppage by the Project Inspector(s) and/or DSA shall be without liability to the District. Contractor shall instruct its Subcontractors and employees accordingly.

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

5.2 Tests and Inspections

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

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

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

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

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

5.3 Costs for After Hours and/or Off Site Inspections

If the Contractor performs Work outside the Inspector's regular working hours or requests the Inspector to perform inspections off Site, costs of any inspections required outside regular working hours or off Site shall be borne by the Contractor and may be

invoiced to the Contractor by the District or the District may deduct those expenses from the next Progress Payment.

6. CONTRACTOR

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

6.1 Status of Contractor

6.1.1 Contractor represents and warrants that Contractor is an independent contractor or business entity that is: (i) free from the control and direction of the District in connection with the performance of the Services, (ii) performing Services that are outside the usual course of the District's business, and (iii) customarily engaged in an independently established trade, occupation, or business of the same nature as that involved in the Services performed, District being interested only in the results obtained. Contractor understands and agrees that it and all of its employees and its Subcontractors shall not be considered officers, employees, agents, partner, or joint venture of the District, and are not entitled to benefits of any kind or nature normally provided employees of the District and/or to which District's employees are normally entitled, including, but not limited to, State Unemployment Compensation or Worker's Compensation. Contractor shall assume full responsibility for payment of all federal, state, and local taxes or contributions, including unemployment insurance, social security, and income taxes with respect to Consultant's employees. Contractor is and shall at all times be wholly responsible for the manner in which it, its agents, and its Subcontractors perform the services required of it by the Contract Documents. Nothing herein contained shall be construed as creating the relationship of employer and employee, or principal and agent, between the District, or any of the District's employees or agents, and Contractor or any of Contractor's Subcontractors, agents or employees. District shall be permitted to monitor the Contractor's activities to determine compliance with the terms of this Contract.

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

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

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 perform on-site inspections and implement and monitor any and all SWPPP requirements applicable to the Project, including required visual observations, sampling, analysis, reporting and record keeping, including of Total Maximum Daily Loads ("TMDL") of pollutants

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

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

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

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

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

6.14.21 In the event that the Contractor enters into any agreement with owners of any adjacent property to enter upon the adjacent property for the purpose of performing the Work, Contractor shall fully indemnify, defend, and hold harmless

each person, entity, firm, or agency that owns or has any interest in adjacent property. The form and content of the agreement of indemnification shall be approved by the District prior to the commencement of any Work on or about the adjacent property. The Contractor shall also indemnify the District as provided in the indemnification provision herein. These provisions shall be in addition to any other requirements of the owners of the adjacent property.

6.15 Working Evenings and Weekends

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

6.16 Cleaning Up

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

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

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

6.16.4 Should the Contractor fail to perform the required clean-up, or should the clean-up be deemed unsatisfactory by the District, the District may, at its sole

discretion, then perform the clean-up. All cost associated with the clean-up work (including all travel, payroll burden, and costs for supervision) will be deducted from the Contract Price.

6.17 No Relief from Obligations Based on Review by Other Persons

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

7. SUBCONTRACTORS

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

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

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

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

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

No Contractor whose Bid is accepted shall, without consent of the awarding authority and in full compliance with section 4100 et seq. of the Public

Contract Code, including, without limitation, sections 4107, 4107.5, and 4109 of the Public Contract Code, and section 1771.1 of the Labor Code, either:

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

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

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

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

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

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

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

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

8. OTHER CONTRACTS/CONTRACTORS

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

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

If any part of Contractor's Work depends for proper execution or results upon work of District or any other contractor, the Contractor shall inspect and, before proceeding with its Work, promptly report to the District in writing any defects in District's or any other contractor's work that render Contractor's Work unsuitable for proper execution and results. Contractor shall be held accountable for damages to

District for District's or any other contractor's work that Contractor failed to inspect or should have inspected. Contractor's failure to inspect and report shall constitute Contractor's acceptance of all District's or any other contractor's work as fit and proper for reception of Contractor's Work, except as to defects that may develop in District's or any other contractor's work after execution of Contractor's Work and not caused by execution of Contractor's Work.

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

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

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

9. DRAWINGS AND SPECIFICATIONS

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

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

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

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

Contract Documents are complementary, and what is called for by one shall be binding as if called for by all. As such, Drawings and Specifications are intended to be fully cooperative and to agree. However, if Contractor observes that Drawings and

Specifications are in conflict with the Contract Documents, Contractor shall promptly notify District and Architect in writing, and any necessary changes shall be made as provided in the Contract Documents.

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

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

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

Ownership of Drawings

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

10. CONTRACTOR'S SUBMITTALS AND SCHEDULES

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

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

10.1.1 Within **TEN (10)** calendar days after the date of the Notice to Proceed (unless otherwise specified in the Specifications), the Contractor shall prepare and

submit to the District for review, in a form supported by sufficient data to substantiate its accuracy as the District may require:

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

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

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

10.1.1.2.1 Divided into at least the following categories:

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

10.1.1.2.2 And also divided by each of the following areas:

10.1.1.2.2.1 Site work;

10.1.1.2.2.2 By each building;
10.1.1.2.2.3 By each floor.

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

10.1.1.2.3.1 Mobilization and layout combined to equal not more than 1%;
10.1.1.2.3.2 Submittals, samples and shop drawings combined to equal not more than 3%;
10.1.1.2.3.3 Bonds and insurance combined to equal not more than 2.5%.
10.1.1.2.3.4 Closeout documentation shall have a value in the preliminary schedule of not less than 3%.

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 Update 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 discovered 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 in a form at least as broad as Insurance Services (ISO) Form CG 00 01 that shall protect Contractor, its agents, representative, employees, or subcontractors, District, State, Construction Manager(s), Project Inspector(s), and Architect(s) from all claims for products and completed operations, property damage, bodily injury and personal injury, death, advertising injury, and medical payments arising from, or in connection with, the performance of the Work of the Project within the Contract Documents at the required limits, or Contractor shall procure and maintain these coverages separately. Contractor shall procure and maintain Automobile Liability Insurance in a form at least as broad as ISO Form CA 0001 covering Code 1 (any auto) 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 five thousand dollars ($5,000) for deductible or twenty-five thousand dollars ($25,000) for self-insured retention, respectively, 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 including, but not limited to, primary and non-contributory, additional insured, Self-Insured Retentions (SIRs), indemnity, and defense requirements. The Excess Liability Insurance Policy shall be provided on a true "following form" or broader coverage basis, with coverage at least as broad as provided on the underlying Commercial General Liability insurance. No insurance policies maintained by the Additional Insureds, whether primary or excess, and which also apply to a loss covered hereunder, shall be called upon to contribute to a loss until Contractor's primary and excess liability policies are exhausted.

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, its trustees, employees, and agents, the State, Construction Manager(s), Program Manager(s), and Architect(s) in amounts and including the provisions as set forth in the Supplementary Conditions (if any) and/or Special Conditions, and that complies with all requirements for Commercial General Liability and Automobile Liability and Employers' Liability Insurance.

13.1.3 Subcontractor(s): Contractor shall require its Subcontractor(s), if any, to procure and maintain Commercial General Liability Insurance, Automobile Liability Insurance, and Excess Liability Insurance (if Subcontractor elects to satisfy, in part the insurance required herein by procuring and maintaining an Excess Liability Insurance Policy) with minimum limits at least equal to the amount required of Contractor except where smaller minimum limits are permitted as set forth below. For Commercial General Liability coverage, subcontractors shall provide coverage with a form at least as broad as CG 20 38 04 13.

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.

13.1.4.3 The Workers' Compensation policy shall be endorsed with a waiver of subrogation in favor of District for all work performed by Contractor, its employees, agents and subcontractors.

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) insurance utilizing an "All Risk" (Special Perils) coverage form, with limits equal to the completed value of the Project and no coinsurance penalty provisions. The cost value basis 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 in a form at least as broad as ISO Form CG 2415 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, or Contractor shall procure and maintain these coverages separately. 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.

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 the services involve lead-based paint or asbestos identification/ remediation, Contractor's Pollution Liability policy shall not contain lead-based paint or asbestos exclusions. If the services involve mold identification/ remediation, Contractor's Pollution Liability policy shall not contain a mold exclusion, and the definition of Pollution shall include microbial matter, including mold.

13.1.6.4 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 <u>Proof of Insurance and Other Requirements: Endorsements and Certificates</u>

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), Program Manager(s), Inspector(s) and Architect(s) are named additional insureds under all policies except Workers' Compensation Insurance and Employers' Liability Insurance. General liability coverage can be provided in the form of an endorsement to the Contractor's insurance (at least as broad as ISO Form CG 20 10, CG 11 85 or **both** CG 20 10, CG 20 26, CG 20 33, or CG 20 38; **<u>and</u>** CG 20 37 forms if later revisions used).

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 coverage at least as broad as ISO CG 20 01 04 13 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), Program Manager(s), Inspector(s), and/or Architect(s). This requirement shall also apply to any Excess liability policies.

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. If coverage is cancelled or non-renewed, and not replaced with another claims-made policy from with a retroactive date prior to the effective date of this Agreement, or the start of Work date, the Contractor must purchase extended reporting period coverage for a minimum of five (5) years after completion of contract work. A copy of the claims reporting requirements must be submitted to the District for review.

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

13.1.7.6 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**.

13.1.7.7 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.

13.1.7.8 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 per accident for bodily injury or disease
Builder's Risk (Course of Construction)		Full replacement value for scope of Work
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 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 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 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 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 a conflict-of-interest bars joint representation of Contractor and Indemnitees, District shall have the right to select its own counsel, subject to Contractor's reasonable right of rejection. 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. Even if the Contractor assumes the defense of the District with acceptable counsel, the District, at its sole option, may participate in the defense, at its own expense, with counsel of its own choice without relieving the Contractor of any of its

obligations hereunder. 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 adverse weather delays, strikes, acts of God as defined in Public Contract Code section 7105, acts of enemy, epidemics, and quarantine restrictions. Contractor shall, within five (5) calendar days of beginning of any delay, including a Force Majeure event, notify District in writing of causes of delay including documentation and facts explaining the delay and the direct correlation between the cause and effect ("Notice of Delay"). District shall review the facts and extent of any delay and shall grant extension(s) of time for completing Work when, in its judgment, the findings of fact justify an extension. Extension(s) of time shall apply only to that portion of Work affected by delay and shall not apply to other portions of Work not so affected. An extension of time may only be granted if Contractor has timely submitted the Construction Schedule as required herein.

16.2.2 Contractor's Notice of Delay and request for a time extension pursuant to subparagraph 16.2 is a condition precedent to Contractor's submittal of and/or entitlement to a claim pursuant to Article 25 of these Construction Provisions. Contractor shall notify the District pursuant to the Claims Process 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 and main sequence of schedule activities to enable District to evaluate the impact of changed Work to the scheduled critical path. (This information must be provided for any portion of any delay of seven (7) days or more.) The Contractor shall be responsible for all costs associated with the preparation of Time Impact Analyses.

16.2.4 A recovery schedule must be submitted within twenty (20) calendar days of written notification to the District of causes of delay 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. The revisions shall not be incorporated into any schedule update until the revisions have been reviewed by District. At District's discretion, the Contractor can be required to provide Subcontractor certifications for revisions affecting said Subcontractors.

16.2.5 Contractor must comply with requirements in subsection 16.2 for a Notice of Delay and supporting justification notwithstanding if Contractor contends the specific delay period is unknown and continuing. When submitting a Notice of Delay and supporting justification, Contractor must provide an estimated delay duration to critical path activities at the time the Notice of Delay and supporting justification is required to be submitted. Failure of the Contractor to perform in accordance with the current schedule update shall not be excused by submittal of a Notice of Delay. If Contractor contends the delaying event(s) are continuing, Contractor must update monthly the estimated delay period with supporting justification.

16.2.6 Contractor's failure to timely submit a written Notice of Delay and/or provide the justification required in subparagraph 16.2 shall constitute Contractor's waiver of any right to later submit a Proposed Change Order or pursue a Claim on the

circumstances giving rise to the request, or to later pursue any additional money or time extensions in any manner related to that issue, regardless of the merits because the Contractor will not have satisfied a condition precedent or exhausted administrative remedies required to show entitlement to a Contract Time adjustment. Contractor acknowledges that these written notices and justification requirements are critically important to District's Work, Project management, and evaluating potential options and alternatives to implement mitigation efforts to reduce or eliminate additional Project costs and delays.

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 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.

16.3.4 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:

16.3.4.1 Actually incurred performing the Work;

16.3.4.2 Not compensated by the Markup allowed; and

16.3.4.3 Directly result from the extended Contract Time.

16.3.5 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). No time will be granted under this Contract for cumulative effect of changes.

16.4 Force Majeure

"Force Majeure" means any event or circumstance unknown at the time of contracting that is beyond the parties' control and makes performance of the contract impractical or impossible. The Party seeking to have its performance obligation(s) excused must demonstrate that there was such an insuperable interference occurring without the party's intervention as could not have been prevented by the exercise of prudence, diligence, and care, by providing prompt notice to the other Party, including full particulars of such event, of its inability to perform its obligations due to such event, following commencement of the claiming Party's inability to so perform its obligations. To the extent satisfying these conditions, Force Majeure events include the following: acts of God, war, civil unrest, epidemic, fire, smoke, volcanic eruption, earthquake, strike, unusually severe weather, flood, or shortage of transportation facilities, lock out, or commandeering of materials, product, plant, or facilities by the government. Force Majeure shall not be based on a Party's financial inability to perform under this Agreement unless there exists extreme and unreasonable difficulty, expense, injury, or loss involved. Costs imposed by the government on sales or importation of goods or materials including, without limitation, tariffs or taxes, are not Force Majeure. A Force Majeure event does not include an act of negligence or intentional wrongdoing by a Party. Any Party claiming a Force Majeure event shall use reasonable diligence to remove the condition that prevents performance and shall not be entitled to suspend performance of its obligations in any greater scope or for any longer duration than is required by the Force Majeure event. Each Party shall use its best efforts to mitigate the effects of such Force Majeure event, remedy its inability to perform, and resume full performance of its obligations hereunder. No obligation that arose before the Force Majeure event that could and should have been fully performed before such Force Majeure event is excused as a result of such Force Majeure event.

16.5 Float or Slack in the Schedule

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

17. CHANGES IN THE WORK

17.1 No Changes Without Authorization

17.1.1 There shall be no change whatsoever in the Drawings, Specifications, or in the Work without an executed Change Order or a written Construction Change

Directive authorized by the District as herein provided. District shall not be liable for the cost of any extra work or any substitutions, changes, additions, omissions, or deviations from the Drawings and Specifications unless the District's governing board has authorized the same and the cost thereof has been approved in writing by Change Order or Construction Change Directive in advance of the changed Work being performed. No extension of time for performance of the Work shall be allowed hereunder unless claim for such extension is made at the time changes in the Work are ordered, and such time duly adjusted and approved in writing in the Change Order or Construction Change Directive. Contractor shall be responsible for any costs incurred by the District for professional services and DSA fees and/or delay to the Project Schedule, if any, for DSA to review any request for changes to the DSA approved plans and specifications for the convenience of the Contractor and/or to accommodate the Contractor's means and methods. The provisions of the Contract Documents shall apply to all such changes, additions, and omissions with the same effect as if originally embodied in the Drawings and Specifications.

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

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

17.1.4 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 Payments and Claims Process 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 Price Request

17.3.1 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.

17.3.2 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.

17.4 Change Orders

17.4.1 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:

17.4.1.1 A description of a change in the Work;

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

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

17.5 Proposed Change Order

17.5.1 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.

17.5.2 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.

17.5.3 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.

17.5.4 Allowances

If there is an Allowance, then Contractor shall not bill for or be due any portion of an Allowance unless the District has identified specific work, Contractor has submitted a price for that work or the District has proposed a price for that work, the District has accepted the cost for that work, and the District has executed an Allowance Expenditure Directive incorporating that work. If Allowance was included in Contract Price before mark-up ("above the line"), Allowance Expenditure Directives shall be based on Contractor's costs, without overhead and profit, for products, delivery, installation, labor, insurance, payroll, taxes, bonding and equipment rental will be included in Allowance Expenditure Directive authorizing expenditure of funds from the Allowance. No overhead and profit shall be added to the Allowance Expenditure Directive unless Allowance was included in the Contract Price after mark-up ("below the line"). Allowance will only be treated as "below the line" if shown in the Bid Documents and the Bid Documents are escrowed.

Any unused portion of the Allowance, and related mark-up if Allowance was included above the line, will revert to the District documented by a deductive Change Order. Contractor authorizes the District to execute a unilateral deductive Change Order at or near the end of the Project for all or any portion of the Allowance not allocated.

17.5.5 Unknown and/or Unforeseen Conditions

Separate from what is provided in the Allowance, if Contractor requests an increase in Contract Price and/or Contract Time that is based at least partially on Contractor's assertion that Contractor has encountered unknown and/or unforeseen condition(s) on the Project, then Contractor shall base the PCO on provable information that, beyond a reasonable doubt and to the District's satisfaction, demonstrates that the unknown and/or unforeseen condition(s) were actually unknown and/or unforeseen and that the condition(s) were reasonably unknown and/or unforeseen. If not, the District shall deny the PCO as unsubstantiated, and the Contractor shall complete the

Project without any increase in Contract Price and/or Contract Time based on that PCO.

17.5.6 Time to Submit Proposed Change Order

Contractor shall submit its PCO, using Document 00 63 57 (Proposed Change Order Form), within five (5) working days of the date Contractor discovers, or reasonably should have discovered, the circumstances giving rise to the PCO, unless additional time to submit a PCO is granted in writing by the District. Time is of the essence in Contractor's submission of PCOs so that the District can promptly investigate the basis for the PCO. Accordingly, if Contractor fails to submit its PCO within this timeframe, Contractor waives, releases, and discharges any right to assert or claim any entitlement to an adjustment of the Contract Price and/or Time based on circumstances giving rise to the PCO.

17.5.7 Proposed Change Order Certification

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

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

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17.6 Format for Proposed Change Order

17.6.1 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 and one-half percent (2.5%) of Item (j)		
(l)	**TOTAL**		
(m)	**Time** (zero unless indicated; "TBD" not permitted)	**_____ Calendar Days**	

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	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 and one-half percent (2.5%) of Item (g)		
(i)	**TOTAL**		
(j)	**Time** (zero unless indicated; "TBD" not permitted)	**____ Calendar Days**	

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

17.6.3Labor. 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 established by the bid advertisement date or when the Contract was awarded, whichever is applicable, 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.

17.6.4Materials. 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.

17.6.5Equipment. 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.

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

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

17.7 Change Order Certification

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

17.7.1.1 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.

17.7.1.2 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.

17.7.2 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.

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

17.8 Determination of Change Order Cost

17.8.1 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:

17.8.1.1 District acceptance of a PCO;

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

17.8.1.3 By agreement between District and Contractor.

17.8.2 Mark-up for overhead and profit and bonds and insurance shall be based on the net increase or decrease to the Contract Price; Contractor shall not split Change Orders to artificially increase markup and/or decrease credit.

17.9 Deductive Change Orders

District reserves the right to unilaterally reduce the scope of Work or perform work with other forces or its own forces. 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 ten percent (10%) profit and overhead to be deducted with the amount of its deducted work. Any deviation from this provision shall not be allowed.

17.10 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.

17.11 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.

17.12 Construction Change Directives

17.12.1 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 Payments and Claims Process provisions herein.

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

17.13 Force Account Directives

17.13.1 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.

17.13.2 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.

17.13.3 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.

17.13.4 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.

17.13.5 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.

17.13.6 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.

17.13.7 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.

17.14 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, without limitation, Article 25 Claims Process provisions. 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

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

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

sole discretion, shall deduct from and/or invoice Contractor for all the professional services arising herein.

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 by District, 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 to the District corrected sepias and data storage device acceptable to District with AutoCAD file.

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 Spare Parts and Maintenance Manuals:

20.2.2.4.1 Contractor shall provide products, spare parts, maintenance, and extra materials in quantities specified in the Specifications and in Manufacturer's recommendations.

20.2.2.4.2 Contractor shall prepare all operation and maintenance manuals and date as indicated in the Specifications.

20.2.2.5 Instruction of District Personnel:

20.2.2.5.1 Before final inspection, at agreed upon times, Contractor shall instruct District's designated personnel in operation, adjustment, and maintenance of products, equipment, and systems.

20.2.2.5.2 For equipment requiring seasonal operation, Contractor shall perform instructions for other seasons within six months or by the change of season.

20.2.2.5.3 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.

20.2.2.5.4 Contractor shall prepare and insert additional data in Operation and Maintenance Manual when the need for such data becomes apparent during instruction.

20.2.2.5.5 Contractor shall review contents of manual with personnel in detail to explain all aspects of operation and maintenance.

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

20.2.2.7 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 Replace filters of operating equipment.

20.3.3.1.6 Painting and special finishes complete.

20.3.3.1.7 Doors complete with hardware, cleaned of protective film, relieved of sticking or binding, and in working order.

20.3.3.1.8 Tops and bottoms of doors sealed.

20.3.3.1.9 Floors waxed and polished as specified.

20.3.3.1.10 Carpeted and soft surfaces vacuumed.

20.3.3.1.11 Broken glass replaced and interior and exterior glass and all surfaces exposed to view cleaned.

20.3.3.1.12 Equipment and fixtures cleaned to a sanitary condition.

20.3.3.1.13 Grounds cleared of Contractor's equipment, raked clean of debris, and remove waste and surplus materials, rubbish, and construction facilities from the Site and surrounding areas.

20.3.3.1.14 Site cleaned, paved areas swept, and clean landscaped surfaces raked.

20.3.3.1.15 Roofs, gutters, down spouts, and drainage systems cleaned of debris.

20.3.3.1.16 Work cleaned, free of stains, scratches, and other foreign matter, and damaged and broken material replaced.

20.3.3.1.17 Temporary labels, tape, stains, and foreign substances removed, transparent and glossy surfaces polished,

20.3.3.1.18 Finished and decorative work shall have marks, dirt, and superfluous labels removed.

20.3.3.1.19 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 Process 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.

24.2.2.5 In the alternative, 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 and/or the Contractor's right to perform the work 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.

24.2.3 In the event of a termination for cause, 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.

24.2.4 In the event a termination for cause is later determined to have been made wrongfully or without cause, then the termination shall be treated as a termination for convenience, effective as of the same date as the purported termination for cause, and the Contractor shall have no greater rights than it would have had following a termination for convenience. Any Contractor claim arising out of a termination for cause shall be made in accord with Article 12 herein. No other loss, cost, damage, expense or liability may be claimed, requested or recovered by the Contractor.

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 If Contractor objects to the termination for convenience, including disagreement on the actual cost due Contractor, the District retains the right to all the options available to the District under 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 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.

24.4.4 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 Disputes

25.1.1 Should Contractor otherwise seek extra time or compensation for any reason whatsoever, 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 a Dispute 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

The Parties may mutually agree in writing to waive the claims procedure under Public Contract Code section 9204 and proceed directly to the commencement of a civil

action or binding arbitration. Absent prior mutual waiver, Contractor shall comply with the following steps:

25.5.1STEP 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 forty-five (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 forty-five (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 sixty (60) days after the District issues its written statement. Amounts not paid in a timely manner as required by this section shall bear interest at seven percent (7%) per annum.

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.

25.5.2STEP 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 thirty (30) days for settlement of the dispute. Within ten (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 sixty (60) days after the District issues its written statement. Amounts not paid in a timely manner as required by this section shall bear interest at seven percent (7%) per annum.

25.5.3STEP 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 ten (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.

25.5.4STEP 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 forty-five (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 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 Article 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 or available online at http://www.dir.ca.gov/. 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 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 thirty (30) days while Work is being performed and within thirty (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/they is employed, and shall be employed only at the work of the craft or trade to which he/she/they 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/they 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

THIS DOCUMENT MUST BE ADAPTED FOR EACH PROJECT – Delete any provision that is not applicable or if no change from the provision in the General Conditions.

*** THIS LIST OF SPECIAL CONDITION PROVISIONS IS FOR REFERENCE ONLY. REMOVE THIS PAGE BEFORE USING THIS DOCUMENT. ***

1. Preparation of Solicitation for Subsequent Contracts
2. Project Not Subject to DSA Oversight
3. Mitigation Measures
4. Occupied Sites
5. Badge Policy for Contractors
6. Substitution for Specified Items
7. Weather Days
8. Owner-Controlled or Wrap-Up Insurance Program
9. Insurance Policy Limits
10. Permits, Certificates, Licenses, Fees, Approval
11. Project Labor Agreement/Payroll Records
12. As-Builts and Record Drawings
13. Disabled Veteran Business Enterprises
14. Construction Manager
15. Program Manager
16. Federal Funds - Wages
17. Federal Funds – Debarment
18. Federal Funds – Byrd Anti-Lobbying
19. Federal Funds – Procurement of recovered materials
20. Federal Funds - Domestic preferences for procurements

21. Preliminary Schedule of Values

DOCUMENT 00 73 13

SPECIAL CONDITIONS

1. Preparation of Solicitation of Subsequent Contracts

Insert Section 6.1.9 in the General Conditions:

6.1.9 Contractor's duties and services under this Contract shall not include preparing or assisting the District with any portion of the District's preparation of a request for proposals, request for qualifications, or any other solicitation regarding a subsequent or additional contract with the District. The District shall at all times retain responsibility for public contracting, including with respect to any subsequent phase of this Project. Contractor's participation in the planning, discussions, or drawing of project plans or specifications shall be limited to conceptual, preliminary, or initial plans or specifications. Contractor shall cooperate with the District to ensure that all bidders for a subsequent contract on any subsequent phase of this Project have access to the same information, including all conceptual, preliminary, or initial plans or specifications prepared by Contractor pursuant to this Contract.

2. Not Used

3. 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*.) CEQA information will be provided as an amendment to this project.

4. Not Used

5. Not Used

6. Substitutions for Specified Items

Replace Section 1.7 in the General Conditions with the following provisions:

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

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

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

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

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

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

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

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

1.7.3.2 Available maintenance, repair or replacement services;

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

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

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

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

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

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

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

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

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

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

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

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

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

7. Not Used

8. Not Used

9. Insurance Policy Limits

All of Contractor's insurance shall be with insurance companies with an A.M. Best rating of no less than 2. The limits of insurance shall not be less than:

Commercial General Liability	Product Liability and Completed Operations, Fire Damage Liability – Split Limit	**[E.G. CHOOSE ONE OF THREE OPTIONS:** Option 1 - Low Risk Option: $1,000,000 per occurrence; $2,000,000 aggregate
		Option 2 - Intermediate Risk Option:

		$2,000,000 per occurrence; $4,000,000 aggregate
		Option 3 - High Risk Option: $5,000,000 per occurrence; $10,000,000 aggregate**]**
Automobile Liability – Any Auto	Combined Single Limit	**[E.G. CHOOSE ONE OF TWO OPTIONS:** Option 1 - Personal vehicles: $500,000 Commercial vehicles: $1,000,000
		Option 2 - Personal vehicles: $100,000 per person/ $300,000 per accident**]**
Workers' Compensation		Statutory limits pursuant to State law
Employer's Liability		**[E.G. $0]**
Builder's Risk (Course of Construction)		**[E.G. $0]**
Pollution Liability		**[E.G. $0]**

10. Permits, Certificates, Licenses, Fees, Approvals

8.1 Payment for Permits, Certificates, Licenses, Fees, and Approvals. As required in the General Conditions, the Contractor shall secure and pay for all permits, licenses, approvals, and certificates necessary for the prosecution of the Work with the exception of the following:

Not Applicable

With respect to the above-listed items, Contractor shall be responsible for securing such items; however, District will be responsible for payment of these charges or fees. Contractor shall notify the District of the amount due with respect to such items and to whom the amount is payable. Contractor shall provide the District with an invoice and receipt with respect to such charges or fees.

8.2 General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities

General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities does not apply to this Project.

11. Not Used

12. As-Builts and Record Drawings

9.1 When called for by Division 1, Contractor shall submit As-Built Drawings pursuant to the Contract Documents consisting of one set of computer-aided design and drafting ("CADD") files , plus one set of As-Built Drawings in hard copy.

9.2 Contractor shall submit Record Drawings pursuant to the Contract Documents consisting of one set of computer-aided design and drafting ("CADD") files, plus one set of Record Drawings in hard copy].

13. Disabled Veteran Business Enterprises

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

14. [Reserved]

15. [Reserved]

16. [Reserved]

17. [Reserved]

18. [Reserved]

19. [Reserved]

20. [Reserved]

21. [Reserved]Preliminary Schedule of Values

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

Replace Section 10.1.1.2.3 in the General Conditions with the following provisions:

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

10.1.1.2.3.1 Mobilization and layout combined to equal not more than **[2]**%;

10.1.1.2.3.2 Submittals, samples and shop drawings combined to equal not more than **[4]**%;

10.1.1.2.3.3 Bonds and insurance combined to equal not more than **[2.75]**%.

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

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 all the applicable laws bearing on the conduct of the Work as drawn and specified. If Contractor observes or

reasonably should have observed that Plans and Specifications and other Contract Documents are at variance therewith, it shall be responsible for promptly notifying District in writing of such fact. If Contractor performs any Work contrary to applicable laws, it shall bear all costs arising therefrom.

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

8. Indemnification

To the fullest extent permitted by law, the indemnities and limitations of liability expressed throughout the Contract Documents apply with equal force and effect to any claims or liabilities imposed or existing by virtue of the removal, abatement, and disposal of hazardous waste. This includes, but is not limited to, liabilities connected to the selection and use of a waste disposal facility, a waste transporter, personal injury, property damage, loss of use of property, damage to the environment or natural resources, or “disposal” and “release” of materials associated with the Work (as defined in 42 U.S.C. § 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

DOCUMENT 01 11 00

SUMMARY OF WORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

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

A. General Conditions, including, without limitation, Site Access Conditions and Requirements;

B. Special Conditions.

1.02 SUMMARY OF WORK COVERED BY CONTRACT DOCUMENTS

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

Removal of an existing wood and steel pedestrian bridge and installation of a new prefabricated steel and concrete pedestrian bridge and associated abutments including path of travel upgrades to access the bridge.

1.03 CONTRACTS

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

1.04 WORK BY OTHERS

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

(1) Asbestos removal/abatement as necessary.

(2) Lead paint removal/abatement as necessary.

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

(1) Not applicable

1.05 CODES, REGULATIONS, AND STANDARDS

A. The codes, regulations, and standards adopted by the state and federal agencies having jurisdiction shall govern minimum requirements for this Project. Where codes, regulations, and standards conflict with the Contract Documents, these conflicts shall be brought to the immediate attention of the District and the Architect.

B. Codes, regulations, and standards shall be as published effective as of date of bid opening, unless otherwise specified or indicated.

1.06 PROJECT RECORD DOCUMENTS

A. Contractor shall maintain on Site one set of the following record documents; Contractor shall record actual revisions to the Work:

(1) Contract Drawings.

(2) Specifications.

(3) Addenda.

(4) Change Orders and other modifications to the Contract.

(5) Reviewed shop drawings, product data, and samples.

(6) Field test records.

(7) Inspection certificates.

(8) Manufacturer's certificates.

B. Contractor shall store Record Documents separate from documents used for construction. Provide files, racks, and secure storage for Record Documents and samples.

C. Contractor shall record information concurrent with construction progress.

D. Specifications: Contractor shall legibly mark and record at each product section of the Specifications the description of the actual product(s) installed, including the following:

(1) Manufacturer's name and product model and number.

(2) Product substitutions or alternates utilized.

(3) Changes made by Addenda and Change Orders and written directives.

1.07 EXAMINATION OF EXISTING CONDITIONS

A. Contractor shall be held to have examined the Project Site and acquainted itself with the conditions of the Site and of the streets or roads approaching the Site.

B. Prior to commencement of Work, Contractor shall survey the Site and existing buildings and improvements to observe existing damage and defects such as cracks, sags, broken, missing or damaged glazing, other building elements and Site improvements, and other damage.

C. Should Contractor observe cracks, sags, and other damage to and defects of the Site and adjacent buildings, paving, and other items not indicated in the Contract Documents, Contractor shall immediately report same to the District and the Architect.

1.08 CONTRACTOR'S USE OF PREMISES

A. If unoccupied and only with District's prior written approval, Contractor may use the building(s) at the Project Site without limitation for its operations, storage, and office facilities for the performance of the Work. If the District chooses to beneficially occupy any building(s), Contractor must obtain the District's written approval for Contractor's use of spaces and types of operations to be performed within the building(s) while so occupied. Contractor's access to the building(s) shall be limited to the areas indicated.

B. If the space at the Project Site is not sufficient for Contractor's operations, storage, office facilities and/or parking, Contractor shall arrange and pay for any additional facilities needed by Contractor.

C. Contractor shall not interfere with use of or access to occupied portions of the building(s) or adjacent property.

D. Contractor shall maintain corridors, stairs, halls, and other exit-ways of building clear and free of debris and obstructions at all times.

E. No one other than those directly involved in the demolition and construction, or specifically designated by the District or the Architect shall be permitted in the areas of work during demolition and construction activities.

F. The Contractor shall install the construction fence and maintain that it will be locked when not in use. Keys to this fencing will be provided to the District.

1.09 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

A. The Drawings show above-grade and below-grade structures, utility lines, and other installations that are known or believed to exist in the area of the Work. Contractor shall locate these existing installations before proceeding with excavation and other operations that could damage same; maintain them in service, where appropriate; and repair damage to them caused by the performance of the Work. Should damage occur to these existing installations, the costs of repair shall be at the Contractor's expense and made to the District's satisfaction.

B. Contractor shall be alert to the possibility of the existence of additional structures and utilities. If Contractor encounters additional structures and utilities, Contractor will immediately report to the District for disposition of same as indicated in the General Conditions.

1.10 UTILITY SHUTDOWNS AND INTERRUPTIONS

A. Contractor shall give the District a minimum of three (3) days written notice in advance of any need to shut off existing utility services or to effect equipment interruptions. The District will set exact time and duration for shutdown, and will assist Contractor with shutdown. Work required to re-establish utility services shall be performed by the Contractor.

B. Contractor shall obtain District's written approval as indicated in the General Conditions in advance of deliveries of material or equipment or other activities that may conflict with District's use of the building(s) or adjacent facilities.

1.11 STRUCTURAL INTEGRITY

A. Contractor shall be responsible for and supervise each operation and work that could affect structural integrity of various building elements, both permanent and temporary.

B. Contractor shall include structural connections and fastenings as indicated or required for complete performance of the Work.

PART 2 – PRODUCTS Not Used.

PART 3 – EXECUTION Not Used.

END OF DOCUMENT

DOCUMENT 01 21 00

ALLOWANCE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Non-specified work.

1.2 RELATED SECTIONS

A. Document 01 10 00 (Summary of Work)

B. Document 01 29 00 (Payments and Completion)

C. Document 01 32 19 (Submittal Procedures)

1.3 ALLOWANCES

A. Included in the Contract, a stipulated sum/price of **$25,000.00** as an allowance for Unforeseen Conditions within the limits set forth in the Contract Documents. This Allowance shall not be utilized without written approval by the District.

B. Contractor's costs, without overhead and profit, for products, delivery, installation, labor, insurance, payroll, taxes, bonding and equipment rental will be included in Allowance Expenditure Directive authorizing expenditure of funds from this Allowance. No overhead and profit shall be added to the Allowance Expenditure Directive.

C. Funds will be drawn from Allowance only with District approval evidenced by an Allowance Expenditure Directive.

D. At Contract closeout, Contractor agrees that unused funds remaining in Allowance will be credited to District by Change Order.

E. Whenever costs are more than the Allowance, the amount covered by the Allowance will be approved at cost (i.e., only the amount within the Allowance will be approved for payment). Contractor must follow the Change Order procedure to adjust the Contract Price for amounts in excess of the Allowance.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF DOCUMENT

DOCUMENT 01 22 00

ALTERNATES AND UNIT PRICING

PART 1 – ALTERNATES

1.01 RELATED DOCUMENTS AND PROVISIONS

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

A. General Conditions;

B. Special Conditions;

C. Bid Form and Proposal;

D. Instruction to Bidders.

1.02 DESCRIPTION

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

1.03 GENERAL

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

1.04 BASE BID

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

1.05 ALTERNATES

A. _____

B. _____

The above Alternate descriptions are general in nature and for reference purposes only. The Contract Documents, including, without limitation, the

Drawings and Specifications, must be referred to for the complete scope of Work.

PART 2 - UNIT PRICING

2.01 GENERAL

Contractor shall completely state all required figures based on Unit Prices listed below. Where scope of Work is decreased, all Work pertaining to the item, whether specifically stated or not, shall be omitted and where scope of Work is increased, all work pertaining to that item required to render same ready for use on the Project in accordance with intention of Drawings and Specifications shall be included in an agreed upon price amount.

2.02 UNIT PRICES

Furnish unit prices for each of the named items on a square foot, lineal foot, or per each basis, as applies. Unit prices shall include all labor, materials, services, profit, overhead, insurance, bonds, taxes, and all other incidental costs of Contractor, subcontractors, and supplier(s).

A. _____

B. _____

END OF DOCUMENT

DOCUMENT 01 25 13

PRODUCT OPTIONS AND SUBSTITUTIONS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

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

A. Instructions to Bidders;

B. General Conditions, including, without limitation, Substitutions For Specified Items; and

C. Special Conditions.

1.02 SUBSTITUTIONS OF MATERIALS AND EQUIPMENT

A. Catalog numbers and specific brands or trade names followed by the designation "or equal" are used in conjunction with material and equipment required by the Specifications to establish the standards of quality, utility, and appearance required. Substitutions which are equal in quality, utility, and appearance to those specified may be reviewed subject to the provisions of the General Conditions.

B. Wherever more than one manufacturer's product is specified, the first-named product is the basis for the design used in the work and the use of alternative-named manufacturers' products or substitutes may require modifications in that design. If such alternatives are proposed by Contractor and are approved by the District and/or the Architect, Contractor shall assume all costs required to make necessary revisions and modifications of the design resulting from the substitutions requested by the Contractor.

C. When materials and equipment are specified by first manufacturer's name and product number, second manufacturer's name and "or approved equal," supporting data for the second product, if proposed by Contractor, shall be submitted in accordance with the requirements for substitutions. The District's Board has found and determined that certain item(s) shall be used on this Project based on the purpose(s) indicated pursuant to Public Contract Code section 3400(c). These findings, as well as the products and brand or trade names, have been identified in the Notice to Bidders.

D. The Contractor will not be allowed to substitute specified items unless the request for substitution is submitted as follows:

(1) District must receive any notice of request for substitution of a specified item a minimum of ten (10) calendar days prior to bid opening.

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

E. If the District and/or Architect, in reviewing proposed substitute materials and equipment, require revisions or corrections to be made to previously accepted Shop Drawings and supplemental supporting data to be resubmitted, Contractor shall promptly do so. If any proposed substitution is judged by the District and/or Architect to be unacceptable, the specified material or equipment shall be provided.

F. Samples may be required. Tests required by the District and/or Architect for the determination of quality and utility shall be made at the expense of Contractor, with acceptance of the test procedure first given by the District.

G. In reviewing the supporting data submitted for substitutions, the District and/or Architect will use for purposes of comparison all the characteristics of the specified material or equipment as they appear in the manufacturer's published data even though all the characteristics may not have been particularly mentioned in the Contract Documents. If more than two (2) submissions of supporting data are required, the cost of reviewing the additional supporting data shall be borne by Contractor, and the District will deduct the costs from the Contract Price. The Contractor shall be responsible for any re-design costs occasioned by District's acceptance and/or approval of any substitute.

H. The Contractor shall, in the event that a substitute is less costly than that specified, credit the District with one hundred percent (100%) of the net difference between the substitute and the originally specified material. In this event, the Contractor agrees to execute a deductive Change Order to reflect that credit. In the event Contractor furnishes a material, process, or article more expensive than that specified, the difference in the cost of that material, process, or article so furnished shall be borne by Contractor.

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

PART 2 – PRODUCTS Not Used.

PART 3 – EXECUTION Not Used.

END OF DOCUMENT

DOCUMENT 01 26 00

CHANGES IN THE WORK

CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE PROVISIONS IN THE AGREEMENT, GENERAL CONDITIONS, AND SPECIAL CONDITIONS, IF USED, RELATED TO CHANGES AND/OR REQUESTS FOR CHANGES.

END OF DOCUMENT

DOCUMENT 01 29 00

APPLICATION FOR PAYMENT AND CONDITIONAL AND UNCONDITIONAL WAIVER AND RELEASE FORMS

CONTRACTOR SHALL COMPLY WITH ALL PROVISIONS IN THE GENERAL CONDITIONS RELATED TO APPLICATIONS FOR PAYMENT AND/OR PAYMENTS.

CONDITIONAL WAIVER AND RELEASE
ON PROGRESS PAYMENT
(CIVIL CODE SECTION 8132)

NOTICE: THIS DOCUMENT WAIVES THE CLAIMANT'S LIEN, STOP PAYMENT NOTICE, AND PAYMENT BOND RIGHTS EFFECTIVE ON RECEIPT OF PAYMENT. A PERSON SHOULD NOT RELY ON THIS DOCUMENT UNLESS SATISFIED THAT THE CLAIMANT HAS RECEIVED PAYMENT.

Name of Claimant: _____

Name of Customer: _____

Job Location: _____

Owner: _____

Through Date: _____

Conditional Waiver and Release

This document waives and releases lien, stop payment notice, and payment bond rights the claimant has for labor and service provided, and equipment and material delivered, to the customer on this job through the Through Date of this document. Rights based upon labor or service provided, or equipment or material delivered, pursuant to a written change order that has been fully executed by the parties prior to the date that this document is signed by the claimant, are waived and released by this document, unless listed as an Exception below. This document is effective only on the claimant's receipt of payment from the financial institution on which the following check is drawn:

Maker of Check: _____

Amount of Check: $_____

Check Payable to: _____

Exceptions

This document does not affect any of the following:

(1) Retentions.

(2) Extras for which the claimant has not received payment.

(3) The following progress payments for which the claimant has previously given a conditional waiver and release but has not received payment:

Date(s) of waiver and release: _____

Amount(s) of unpaid progress payment(s): $_____

(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: _____

DOCUMENT 01 31 19

PROJECT MEETINGS

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

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

A. General Conditions; and

B. Special Conditions.

1.02 PROGRESS MEETINGS:

A. Contractor shall schedule and hold regular weekly progress meetings after a minimum of one week's prior written notice of the meeting date and time to all Invitees as indicated below.

B. Location: Contractor's field office.

C. The Contractor shall notify and invite the following entities (“Invitees”):

(1) District Representative.

(2) Contractor.

(3) Contractor's Project Manager.

(4) Contractor's Superintendent.

(5) Subcontractors, as appropriate to the agenda of the meeting.

(6) Suppliers, as appropriate to the agenda of the meeting.

(7) Construction Manager, if any.

(8) Architect

(9) Engineer(s), if any and as appropriate to the agenda of the meeting.

(10) Others, as appropriate to the agenda of the meeting.

D. The District's and/or the Architect’s Consultants will attend at their discretion, in response to the agenda.

E. The District representative, the Construction Manager, and/or another District Agent shall take and distribute meeting notes to attendees and other

concerned parties. If exceptions are taken to anything in the meeting notes, those exceptions shall be stated in writing to the District within five (5) working days following District's distribution of the meeting notes.

1.03 PRE-INSTALLATION/PERFORMANCE MEETING:

A. Contractor shall schedule a meeting prior to the start of each of the following portions of the Work: cutting and patching of plaster and roofing, and other weather-exposed and moisture-resistant products. Contractor shall invite all Invitees to this meeting, and others whose work may affect or be affected by the quality of the cutting and patching work.

B. Contractor shall review in detail prior to this meeting, the manufacturer's requirements and specifications, applicable portions of the Contract Documents, Shop Drawings, and other submittals, and other related work. At this meeting, invitees shall review and resolve conflicts, incompatibilities, or inadequacies discovered or anticipated.

C. Contractor shall review in detail Project conditions, schedule, requirements for performance, application, installation, and quality of completed Work, and protection of adjacent Work and property.

D. Contractor shall review in detail means of protecting the completed Work during the remainder of the construction period.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF DOCUMENT

DOCUMENT 01 32 13

SCHEDULING OF WORK

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

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

A. General Conditions;

B. Special Conditions;

C. Summary of Work; and

D. Submittals.

1.02 SECTION INCLUDES

A. Scheduling of Work under this Contract shall be performed by Contractor in accordance with requirements of this Section.

(1) Development of schedule, cost and resource loading of the schedule, monthly payment requests, and project status reporting requirements of the Contract shall employ computerized Critical Path Method ("CPM") scheduling ("CPM Schedule").

(2) CPM Schedule shall be cost loaded based on Schedule of Values as approved by District.

(3) Submit schedules and reports as specified in the General Conditions.

B. Upon Award of Contract, Contractor shall immediately commence development of Initial and Original CPM Schedules to ensure compliance with CPM Schedule submittal requirements.

1.03 CONSTRUCTION SCHEDULE

A. Within ten (10) days of issuance of the Notice to Proceed and before request for first progress payment, the Contractor shall prepare and submit to the Project Manager a construction progress schedule conforming to the Milestone Schedule below.

B. The Construction Schedule shall be continuously updated, and an updated schedule shall be submitted with each application for progress payment. Each revised schedule shall indicate the work actually accomplished during the previous period and the schedule for completion of the remaining work.

C. Milestone Schedule:

ACTIVITY DESCRIPTION	REQUIRED COMPLETION
CONSTRUCTION STARTS	**June 15, 2026**
FINAL PROJECT COMPLETION	**August _____, 2026**

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 percent (25%) of the activities shall be critical or near critical. Near critical is defined as float in the range of one (1) to ten (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) working days of receipt of above noted revised submittals, District will either accept or reject monthly schedule update submittal.

(1) If accepted, percent (%) complete shown in monthly update will be basis for Application for Payment by the Contractor. The schedule update shall be submitted as part of the Contractor's Application for Payment.

(2) If rejected, update shall be corrected and resubmitted by Contractor before the Application for Payment is submitted.

E. Neither updating, changing or revising of any report, curve, schedule, or narrative submitted to District by Contractor under this Contract, nor District's review or acceptance of any such report, curve, schedule or narrative shall have the effect of amending or modifying in any way the Completion Date or milestone dates or of modifying or limiting in any way Contractor's obligations under this Contract.

1.10 SCHEDULE REVISIONS

A. Updating the Schedule to reflect actual progress shall not be considered revisions to the Schedule. Since scheduling is a dynamic process, revisions to activity durations and sequences are expected on a monthly basis.

B. To reflect revisions to the Schedule, the Contractor shall provide District with a written narrative with a full description and reasons for each Work activity revised. For revisions affecting the sequence of work, the Contractor shall provide a schedule diagram which compares the original sequence to the revised sequence of work. The Contractor shall provide the written narrative and schedule diagram for revisions two (2) working days in advance of the monthly schedule update meeting.

C. Schedule revisions shall not be incorporated into any schedule update until the revisions have been reviewed by District. District may request further information and justification for schedule revisions and Contractor shall,

within three (3) days, provide District with a complete written narrative response to District's request.

D. If the Contractor's revision is still not accepted by District, and the Contractor disagrees with District's position, the Contractor has seven (7) calendar days from receipt of District's letter rejecting the revision to provide a written narrative providing full justification and explanation for the revision. The Contractor's failure to respond in writing within seven (7) calendar days of District's written rejection of a schedule revision shall be contractually interpreted as acceptance of District's position, and the Contractor waives its rights to subsequently dispute or file a claim regarding District's position.

E. At District's discretion, the Contractor can be required to provide Subcontractor certifications of performance regarding proposed schedule revisions affecting said Subcontractors.

1.11 RECOVERY SCHEDULE

A. If the Schedule Update shows a completion date twenty-one (21) calendar days beyond the Contract Completion Date, or individual milestone completion dates, the Contractor shall submit to District the proposed revisions to recover the lost time within seven (7) calendar days. As part of this submittal, the Contractor shall provide a written narrative for each revision made to recapture the lost time. If the revisions include sequence changes, the Contractor shall provide a schedule diagram comparing the original sequence to the revised sequence of work.

B. The revisions shall not be incorporated into any schedule update until the revisions have been reviewed by District.

C. If the Contractor's revisions are not accepted by District, District and the Contractor shall follow the procedures in paragraph 1.09.C, 1.09.D and 1.09.E above.

D. At District's discretion, the Contractor can be required to provide Subcontractor certifications for revisions affecting said Subcontractors.

1.12 TIME IMPACT EVALUATION ("TIE") FOR CHANGE ORDERS, AND OTHER DELAYS

A. When Contractor is directed to proceed with changed Work, the Contractor shall prepare and submit within fourteen (14) calendar days from the Notice to Proceed a TIE which includes both a written narrative and a schedule diagram depicting how the changed Work affects other schedule activities. The schedule diagram shall show how the Contractor proposes to incorporate the changed Work in the schedule and how it impacts the current schedule-update critical path. The Contractor is also responsible for requesting time extensions based on the TIE's impact on the critical path. The diagram must be tied to the main sequence of schedule activities to enable District to evaluate the impact of changed Work to the scheduled critical path.

B. Contractor shall be required to comply with the requirements of Paragraph 1.09.A for all types of delays such as, but not limited to, Contractor/Subcontractor delays, adverse weather delays, strikes, procurement delays, fabrication delays, etc.

C. Contractor shall be responsible for all costs associated with the preparation of TIEs, and the process of incorporating them into the current schedule update. The Contractor shall provide District with four (4) copies of each TIE.

D. Once agreement has been reached on a TIE, the Contract Time will be adjusted accordingly. If agreement is not reached on a TIE, the Contract Time may be extended in an amount District allows, and the Contractor may submit a claim for additional time claimed by contractor.

1.13 TIME EXTENSIONS

A. The Contractor is responsible for requesting time extensions for time impacts that, in the opinion of the Contractor, impact the critical path of the current schedule update. Notice of time impacts shall be given in accord with the General Conditions.

B. Where an event for which District is responsible impacts the projected Completion Date, the Contractor shall provide a written mitigation plan, including a schedule diagram, which explains how (e.g., increase crew size, overtime, etc.) the impact can be mitigated. The Contractor shall also include a detailed cost breakdown of the labor, equipment, and material the Contractor would expend to mitigate District-caused time impact. The Contractor shall submit its mitigation plan to District within fourteen (14) calendar days from the date of discovery of the impact. The Contractor is responsible for the cost to prepare the mitigation plan.

C. Failure to request time, provide TIE, or provide the required mitigation plan will result in Contractor waiving its right to a time extension and cost to mitigate the delay.

D. No time will be granted under this Contract for cumulative effect of changes.

E. District will not be obligated to consider any time extension request unless the Contractor complies with the requirements of Contract Documents.

F. Failure of the Contractor to perform in accordance with the current schedule update shall not be excused by submittal of time extension requests.

G. If the Contractor does not submit a TIE within the required fourteen (14) calendar days for any issue, it is mutually agreed that the Contractor does not require a time extension for said issue.

1.14 SCHEDULE REPORTS

A. Submit four (4) copies of the following reports with the Initial CPM Schedule, the Original CPM Schedule, and each monthly update.

B. Required Reports:

(1) Two activity listing reports: one sorted by activity number and one by total Project Float. These reports shall also include each activity's early/late and actual start and finish dates, original and remaining duration, Project Float, responsibility code, and the logic relationship of activities.

(2) Cost report sorted by activity number including each activity's associated cost, percentage of Work accomplished, earned value- to date, previous payments, and amount earned for current update period.

(3) Schedule plots presenting time-scaled network diagram showing activities and their relationships with the controlling operations or critical path clearly highlighted.

(4) Cash flow report calculated by early start, late start, and indicating actual progress. Provide an exhibit depicting this information in graphic form.

(5) Planned versus actual resource (i.e., labor) histogram calculated by early start and late start.

C. Other Reports:

In addition to above reports, District may request, from month to month, any two of the following reports. Submit four (4) copies of all reports.

(1) Activities by early start.

(2) Activities by late start.

(3) Activities grouped by Subcontractors or selected trades.

(4) Activities with scheduled early start dates in a given time frame, such as fifteen (15) or thirty (30) day outlook.

D. Furnish District with report files on compact disks containing all schedule files for each report generated.

1.15 PROJECT STATUS REPORTING

A. In addition to submittal requirements for CPM scheduling identified in this Section, Contractor shall provide a monthly project status report (i.e., written

narrative report) to be submitted in conjunction with each CPM Schedule as specified herein. Status reporting shall be in form specified below.

B. Contractor shall prepare monthly written narrative reports of status of Project for submission to District. Written status reports shall include:

(1) Status of major Project components (percent (%) complete, amount of time ahead or behind schedule) and an explanation of how Project will be brought back on schedule if delays have occurred.

(2) Progress made on critical activities indicated on CPM Schedule.

(3) Explanations for any lack of work on critical path activities planned to be performed during last month.

(4) Explanations for any schedule changes, including changes to logic or to activity durations.

(5) List of critical activities scheduled to be performed next month.

(6) Status of major material and equipment procurement.

(7) Any delays encountered during reporting period.

(8) Contractor shall provide printed report indicating actual versus planned resource loading for each trade and each activity. This report shall be provided on weekly and monthly basis.

(a) Actual resource shall be accumulated in field by Contractor and shall be as noted on Contractor's daily reports. These reports will be basis for information provided in computer-generated monthly and weekly printed reports.

(b) Contractor shall explain all variances and mitigation measures.

(9) Contractor may include any other information pertinent to status of Project. Contractor shall include additional status information requested by District at no additional cost.

(10) Status reports, and the information contained therein, shall not be construed as claims, notice of claims, notice of delay, or requests for changes or compensation.

1.16 WEEKLY SCHEDULE REPORT

At the Weekly Progress Meeting, the Contractor shall provide and present a time-scaled three (3) week look-ahead schedule that is based and correlated by activity number to the current schedule (i.e., Initial, Original CPM, or Schedule Update).

1.17 DAILY CONSTRUCTION REPORTS

On a daily basis, Contractor shall submit a daily activity report to District for each workday, including weekends and holidays when worked. Contractor shall develop the daily construction reports on a computer-generated database capable of sorting daily Work, manpower, and man-hours by Contractor, Subcontractor, area, sub-area, and Change Order Work. Upon request of District, furnish computer disk of this data base. Obtain District's written approval of daily construction report data base format prior to implementation. Include in report:

A. Project name and Project number.

B. Contractor's name and address.

C. Weather, temperature, and any unusual site conditions.

D. Brief description and location of the day's scheduled activities and any special problems and accidents, including Work of Subcontractors. Descriptions shall be referenced to CPM scheduled activities.

E. Worker quantities for its own Work force and for Subcontractors of any tier.

F. Equipment, other than hand tools, utilized by Contractor and Subcontractors.

1.18 PERIODIC VERIFIED REPORTS

Contractor shall complete and verify construction reports on a form prescribed by the Division of the State Architect and file reports on the first day of February, May, August, and November during the preceding quarter year; at the completion of the Contract; at the completion of the Work; at the suspension of Work for a period of more than one (1) month; whenever the services of Contractor or any of Contractor's Subcontractors are terminated for any reason; and at any time a special verified report is required by the Division of the State Architect. Refer to section 4-336 and section 4-343 of Part 1, Title 24 of the California Code of Regulations.

PART 2 – PRODUCTS Not Used.

PART 3 - EXECUTION Not Used

END OF DOCUMENT

DOCUMENT 01 33 00

SUBMITTALS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

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

A. General Conditions, including, without limitation, Contractor's Submittals and Schedules, Drawings and Specifications;

B. Special Conditions.

1.02 SECTION INCLUDES:

A. Definitions:

(1) Shop Drawings and Product Data are as indicated in the General Conditions and include, but are not limited to, fabrication, erection, layout and setting drawings, formwork and falsework drawings, manufacturers' standard drawings, descriptive literature, catalogues, brochures, performance and test data, wiring and control diagrams. In addition, there are other drawings and descriptive data pertaining to materials, equipment, piping, duct and conduit systems, and methods of construction as may be required to show that the materials, equipment or systems and all positions conform to the requirement of the Contract Documents, including, without limitation, the Drawings.

(2) "Manufactured" applies to standard units usually mass-produced; "fabricated" means specifically assembled or made out of selected materials to meet design requirements. Shop Drawings shall establish the actual detail of manufactured or fabricated items, indicated proper relation to adjoining work and amplify design details of mechanical and electrical equipment in proper relation to physical spaces in the structure.

(3) Manufacturer's Instructions: Where any item of Work is required by the Contract Documents to be furnished, installed, or performed, at a minimum, in accordance with a specified product manufacturer's instructions, the Contractor shall procure and distribute copies of these to the District, the Architect, and all other concerned parties and shall furnish, install, or perform the work, at a minimum, in accordance with those instructions.

B. Samples, Shop Drawings, Product Data, and other items as specified, in accordance with the following requirements:

(1) Contractor shall submit all Shop Drawings, Product Data, and Samples to the District, the Architect, the Project Inspector, and the Construction Manager.

(2) Contractor shall comply with all time frames herein and in the General Conditions and, in any case, shall submit required information in sufficient time to permit proper consideration and action before ordering any materials or items represented by such Shop Drawings, Product Data, and/or Samples.

(3) Contractor shall allow sufficient time so that no delay occurs due to required lead time in ordering or delivery of any item to the Site. Contractor shall be responsible for any delay in progress of Work due to its failure to observe these requirements.

(4) Time for completion of Work shall not be extended on account of Contractor's failure to promptly submit Shop Drawings, Product Data, and/or Samples.

(5) Reference numbers on Shop Drawings shall have Architectural and/or Engineering Contract Drawings reference numbers for details, sections, and “cuts” shown on Shop Drawings. These reference numbers shall be in addition to any numbering system that Contractor chooses to use or has adopted as standard.

(6) When the magnitude or complexity of submittal material prevents a complete review within the stated time frame, Contractor shall make this submittal in increments to avoid extended delays.

(7) Contractor shall certify on submittals for review that submittals conform to Contract requirements. Also certify that Contractor-furnished equipment can be installed in allocated space. In event of any variance, Contractor shall specifically state in transmittal and on Shop Drawings, portions vary and require approval of a substitute. Submittals shall not be used as a means of requesting a substitution.

(8) Unless specified otherwise, sampling, preparation of samples, and tests shall be in accordance with the latest standard of the American Society for Testing and Materials.

(9) Upon demand by Architect or District, Contractor shall submit samples of materials and/or articles for tests or examinations and consideration before Contractor incorporates same in Work. Contractor shall be solely responsible for delays due to sample(s) not being submitted in time to allow for tests. Acceptance or rejection will be expressed in writing. Work shall be equal to approved samples in every respect.

Samples that are of value after testing will remain the property of Contractor.

C. Submittal Schedule:

(1) Contractor shall prepare its proposed submittal schedule that is coordinated with the proposed construction schedule and submit both to the District within ten (10) days after the date of the Notice to Proceed. Contractor's proposed schedules shall become the Project Construction Schedule and the Project Submittal Schedule after each is approved by the District.

(2) Contractor is responsible for all lost time should the initial submittal be rejected, marked "revise and resubmit", etc.

(3) All Submittals shall be forwarded to the District by the date indicated on the approved Submittal Schedule, unless an earlier date is necessary to maintain the Construction Schedule, in which case those Submittals shall be forwarded to the District so as not to delay the Construction Schedule.

(4) Contractor may be assessed $100 a day for each day it is late in submitting a shop drawing or sample. No extensions of time will be granted to Trade Contractor or any Subcontractor because of its failure to have shop drawings and samples submitted in accordance with the Schedule.

1.03 SHOP DRAWINGS:

A. Contractor shall submit one reproducible transparency and six (6) opaque reproductions. The District will review and return the reproducible copy and one (1) opaque reproduction to Contractor.

B. Before commencing installation of any Work, the Contractor shall submit and receive approval of all drawings, descriptive data, and material list(s) as required to accomplish Work.

C. Review of Shop Drawings is regarded as a service to assist Contractor and in all cases original Contract Documents shall take precedence as outlined under General Conditions.

D. No claim for extra time or payment shall be based on work shown on Shop Drawings unless the claim is (1) noted on Contractor's transmittal letter accompanying Shop Drawings and (2) Contractor has complied with all applicable provisions of the General Conditions, including, without limitation, provisions regarding changes and payment, and all required written approvals.

E. District shall not review Shop Drawings for quantities of materials or number of items supplied.

F. District's and/or Architect's review of Shop Drawing will be general. District and/or Architect review does not relieve Contractor of responsibility for dimensions, accuracy, proper fitting, construction of Work, furnishing of materials, or Work required by Contract Documents and not indicated on Shop Drawings. The District's and/or Architect's review of Shop Drawings is not to be construed as approving departures from Contract Documents.

G. Review of Shop Drawings and Schedules does not relieve Contractor from responsibility for any aspect of those Drawings or Schedules that is a violation of local, County, State, or Federal laws, rules, ordinances, or rules and regulations of commissions, boards, or other authorities or utilities having jurisdiction.

H. Before submitting Shop Drawings for review, Contractor shall check Shop Drawings of its subcontractors for accuracy, and confirm that all Work contiguous with and having bearing on other work shown on Shop Drawings is accurately drawn and in conformance with Contract Documents.

I. Submitted drawings and details must bear stamp of approval of Contractor:

(1) Stamp and signature shall clearly certify that Contractor has checked Shop Drawings for compliance with Drawings.

(2) If Contractor submits a Shop Drawing without an executed stamp of approval, or whenever it is evident (despite stamp) that Drawings have not been checked, the District and/or Architect will not consider them and will return them to the Contractor for revision and resubmission. In that event, it will be deemed that Contractor has not complied with this provision and Contractor shall bear risk of all delays to same extent as if it had not submitted any Shop Drawings or details.

J. Submission of Shop Drawings (in either original submission or when resubmitted with correction) constitutes evidence that Contractor has checked all information thereon and that it accepts and is willing to perform Work as shown.

K. Contractor shall pay for cost of any changes in construction due to improper checking and coordination. Contractor shall be responsible for all additional costs, including coordination. Contractor shall be responsible for costs incurred by itself, the District, the Architect, the Project Inspector, the Construction Manager, any other Subcontractor or contractor, etc., due to improperly checked and/or coordination of submittals.

L. Shop Drawings must clearly delineate the following information:

(1) Project name and address.

(2) Specification number and description.

(3) Architect's name and project number.

(4) Shop Drawing title, number, date, and scale.

(5) Names of Contractor, Subcontractor(s) and fabricator.

(6) Working and erection dimensions.

(7) Arrangements and sectional views.

(8) Necessary details, including complete information for making connections with other Work.

(9) Kinds of materials and finishes.

(10) Descriptive names of materials and equipment, classified item numbers, and locations at which materials or equipment are to be installed in the Work. Contractor shall use same reference identification(s) as shown on Contract Drawings.

M. Contractor shall prepare composite drawings and installation layouts when required to solve tight field conditions.

(1) Shop Drawings shall consist of dimensioned plans and elevations and must give complete information, particularly as to size and location of sleeves, inserts, attachments, openings, conduits, ducts, boxes, structural interferences, etc.

(2) Contractor shall coordinate these composite Shop Drawings and installation layouts in the field between itself and its Subcontractor(s) for proper relationship to the Work, the work of other trades, and the field conditions. The Contractor shall check and approve all submittal(s) before submitting them for final review.

1.04 PRODUCT DATA OR NON REPRODUCIBLE SUBMITTALS:

A. Contractor shall submit manufacturer's printed literature in original form. Any fading type of reproduction will not be accepted. Contract must submit a minimum of six (6) each, to the District. District shall return one (1) to the Contractor, who shall reproduce whatever additional copies it requires for distribution.

B. Contractor shall submit six (6) copies of a complete list of all major items of mechanical, plumbing, and electrical equipment and materials in accordance with the approved Submittal Schedule, except as required earlier to comply with the approved Construction Schedule. Other items specified are to be submitted prior to commencing Work. Contractor shall submit items of like kind at one time in a neat and orderly manner. Partial lists will not be acceptable.

C. Submittals shall include manufacturer's specifications, physical dimensions, and ratings of all equipment. Contractor shall furnish performance curves for all pumps and fans. Where printed literature describes items in addition to that item being submitted, submitted item shall be clearly marked on sheet and superfluous information shall be crossed out. If highlighting is used, Contractor shall mark all copies.

D. Equipment submittals shall be complete and include space requirements, weight, electrical and mechanical requirements, performance data, and supplemental information that may be requested.

E. Imported Materials Certification must be submitted at least ten (10) days before material is delivered.

1.05 SAMPLES:

A. Contractor shall submit for approval Samples as required and within the time frame in the Contract Documents. Materials such as concrete, mortar, etc., which require on-site testing will be obtained from Project Site.

B. Contractor shall submit four (4) samples except where greater or lesser number is specifically required by Contract Documents including, without limitation, the Specifications.

(1) Samples must be of sufficient size and quality to clearly illustrate functional characteristics, with integrally related parts and attachment devices.

(2) Samples must show full range of texture, color, and pattern.

C. Contractor shall make all Submittals, unless it has authorized Subcontractor(s) to submit and Contractor has notified the District in writing to this effect.

D. Samples to be shipped prepaid or hand-delivered to the District.

E. Contractor shall mark samples to show name of Project, name of Contractor submitting, Contract number and segment of Work where representative Sample will be used, all applicable Specifications Sections and documents, Contract Drawing Number and detail, and ASTM or FS reference, if applicable.

F. Contractor shall not deliver any material to Site prior to receipt of District's and/or Architect's completed written review and approval. Contractor shall furnish materials equal in every respect to approved Samples and execute Work in conformance therewith.

G. District's and/or Architect's review, acceptance, and/or approval of Sample(s) will not preclude rejections of any material upon discovery of defects in same prior to final acceptance of completed Work.

H. After a material has been approved, no change in brand or make will be permitted.

I. Contractor shall prepare its Submittal Schedule and submit Samples of materials requiring laboratory tests to specified laboratory for testing not less than ninety (90) days before such materials are required to be used in Work.

J. Samples which are rejected must be resubmitted promptly after notification of rejection and be marked "Resubmitted Sample" in addition to other information required.

K. Field Samples and Mock-Ups are to be removed by Contractor at District's direction:

(1) Size: As Specified.

(2) Furnish catalog numbers and similar data, as requested.

1.06 REVIEW AND RESUBMISSION REQUIREMENTS:

A. The District will arrange for review of Sample(s), Shop Drawing(s), Product Data, and other submittal(s) by appropriate reviewer and return to Contractor as provided below within twenty-one (21) days after receipt or within twenty-one (21) days after receipt of all related information necessary for such review, whichever is later.

B. One (1) copy of product or materials data will be returned to Contractor with the review status.

C. Samples to be incorporated into the Work will be returned to Contractor, together with a written notice designating the Sample with the appropriate review status and indicating errors discovered on review, if any. Other Samples will not be returned, but the same notice will be given with respect thereto, and that notice shall be considered a return of the Sample.

D. Contractor shall revise and resubmit any Sample(s), Shop Drawing(s), Product Data, and other submittal(s) as required by the reviewer. Such resubmittals will be reviewed and returned in the same manner as original Sample(s), Shop Drawing(s), Product Data, and other submittal(s), within fourteen (14) days after receipt thereof or within fourteen (14) days after receipt of all related information necessary for such review. Such resubmittal shall not delay the Work.

E. Contractor may proceed with any of the Work covered by Sample(s), Shop Drawing(s), Product Data, and other submittal(s) upon its return if designated as no exception taken, or revise as noted, provided the Contractor proceeds in accordance with the District and/or the Architect's notes and comments.

F. Contractor shall not begin any of the work covered by a Sample(s), Shop Drawing(s), Product Data, and other submittal(s), designated as revise and

resubmit or rejected, until a revision or correction thereof has been reviewed and returned to Contractor.

G. Sample(s), Shop Drawing(s), Product Data, and other submittal(s) designated as revise and resubmit or rejected and requiring resubmittal, shall be revised or corrected and resubmitted to the District no later than fourteen (14) days or a shorter period as required to comply with the approved Construction Schedule, after its return to Contractor.

H. Neither the review nor the lack of review of any Sample(s), Shop Drawing(s), Product Data, and other submittal(s) shall waive any of the requirements of the Contract Documents, or relieve Contractor of any obligation thereunder.

I. District's and/or Architect's review of Shop Drawings does not relieve the Contractor of responsibility for any errors that may exist. Contractor is responsible for the dimensions and design of adequate connections and details and for satisfactory construction of all the Work.

PART 2 – PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF DOCUMENT

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 in each work area, staging area, and parking area. Contractor may designate a smoking area outside of District property within the public right-of-way, provided that this area remains quiet and unobtrusive to adjacent neighbors. This smoking area is to be kept clean at all times.

(3) Contractor shall ensure that no alcohol, firearms, weapons, or controlled substances enter or are used at the Site. Contractor shall immediately remove from the Site and terminate the employment of any employee(s) found in violation of this provision.

B. Language: Profanity or other unacceptable and/or loud language will not be tolerated, "Cat calls" or other derogatory language toward students, staff, volunteers, parents or public will not be allowed.

C. Disturbing the Peace (Noise and Lighting):

(1) Contractor shall observe the noise ordinance of the Site at all times including, without limitation, all applicable local, city, and/or state laws, ordinances, and/or regulations regarding noise and allowable noise levels.

(2) The use of radios, etc., shall be controlled to keep all sound at a level that cannot be heard beyond the immediate area of use. District reserves the right to prohibit the use of radios at the Site, except for mobile phones or other handheld communication radios.

(3) If portable lights are used after dark, all light must be located so as not to direct light into neighboring property.

D. Traffic:

(1) Driving on the Premises shall be limited to periods when students and public are not present. If driving or deliveries must be made during the school hours, two (2) or more ground guides shall lead the vehicle across the area of travel. In no case shall driving take place across playgrounds or other pedestrian paths during recess, lunch, and/or class period changes. The speed limit on-the Premises shall be five (5) miles per hour (maximum) or less if conditions require.

(2) All paths of travel for deliveries, including without limitation, material, equipment, and supply deliveries, shall be reviewed and approved by District in advance. Any damage will be repaired to the pre-damaged condition by the Contractor.

(3) District shall designate a construction entry to the Site. If Contractor requests, District determines it is required, and to the extent possible, District shall designate a staging area so as not to interfere with the normal functioning of school facilities. Location of gates and fencing shall be approved in advance with District and at Contractor's expense.

(4) Parking areas shall be reviewed and approved by District in advance. No parking is to occur under the drip line of trees or in softscape areas that could otherwise be damaged.

E. All of the above shall be observed and complied with by the Contractor and all workers on the Site. Failure to follow these directives could result in individual(s) being suspended or removed from the work force at the discretion of the District. The same rules and regulations shall apply equally to delivery personnel, inspectors, consultants, and other visitors to the Site.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF DOCUMENT

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, Licenses and Registrations and Work to Comply with All Applicable Laws and Regulations;

B. Special Conditions; and

C. Quality Control.

1.02 DESCRIPTION:

This section covers the general requirements for regulatory requirements pertaining to the Work and is supplementary to all other regulatory requirements mentioned or referenced elsewhere in the Contract Documents.

1.03 REQUIREMENTS OF REGULATORY AGENCIES:

A. All statutes, ordinances, laws, rules, codes, regulations, standards, and the lawful orders of all public authorities having jurisdiction over the Work, are hereby incorporated into these Contract Documents as if repeated in full herein and are intended to be included in any reference to Code or Building Code, unless otherwise specified, including, without limitation, the references in the list below. Contractor shall make available at the Site copies of all the listed documents applicable to the Work as the District and/or Architect may request, including, without limitation, applicable portions of the California Code of Regulations ("CCR").

(1) California Building Standards Administrative Code, Part 1, Title 24, CCR.

(2) California Building Code (CBC), Part 2, Title 24, CCR; (International Building Code volumes 1-2 and California Amendments).

(3) California Electrical Code (CEC), Part 3, Title 24, CCR; (National Electrical Code and California Amendments).

(4) California Mechanical Code (CMC), Part 4, Title 24, CCR; (Uniform Mechanical Code and California Amendments).

(5) California Plumbing Code (CPC), Part 5, Title 24, CCR; (Uniform Plumbing Code and California Amendments).

(6) California Fire Code (CFC), Part 9, Title 24, CCR; (International Fire Code and California Amendments).

(7) California Green Building Standards Code (CALGreen), Part 11, Title 24, CCR.

(8) California Referenced Standards Code, Part 12, Title 24, CCR.

(9) State Fire Marshal Regulations, Public Safety, Title 19, CCR.

(10) Partial List of Applicable National Fire Protection Association (NFPA) Standards:

(a) NFPA 13 - Automatic Sprinkler System.

(b) NFPA 14 - Standpipes Systems.

(c) NFPA 17A - Wet Chemical System

(d) NFPA 24 - Private Fire Mains.

(e) (California Amended) NFPA 72 - National Fire Alarm Codes.

(f) NFPA 253 - Critical Radiant Flux of Floor Covering System.

(g) NFPA 2001 - Clean Agent Fire Extinguishing Systems.

(11) California Division of the State Architect interpretation of Regulations ("DSA IR"), including, without limitation:

(a) DSA IR A-6 — Construction Change Document Submittal and Approval Processes.

(b) DSA IR A-7 — Project Inspector Certification and Approval.

(c) DSA IR A-8 — Project Inspector and Assistant Inspector Duties and Performance.

(d) DSA IR A-12 — Assistant Inspector Approval.

(12) DSA Procedures ("DSA PR")

(a) DSA PR 13-01 – Construction Oversight Process

(b) DSA PR 13-02 – Project Certification Process

B. This Project shall be governed by applicable regulations, including, without limitation, the State of California's Administrative Regulations for the Division

of the State Architect-Structural Safety (DSA/SS), Chapter 4, Part 1, Title 24, CCR, and the most current version on the date the bids are opened and as it pertains to school construction including, without limitation:

(1) Test and testing laboratory per Section 4-335. District shall pay for the testing laboratory.

(2) Special inspections per Section 4-333(c).

(3) Deferred Approvals per section 4-317(g).

(4) Verified reports per Sections 4-336 & 4-343(c).

(5) Duties of the Architect & Engineers shall be per Sections 4-333(a) and 4-341.

(6) Duties of the Contractor shall be per Section 4-343.

(7) Duties of Project Inspector shall be per Section 4-334.

(8) Addenda and Construction Change Documents per Section 4-338.

Contractor shall keep and make available all applicable parts of the most current version of Title 24 referred to in the plans and specifications at the Site during construction.

C. Items of deferred approval shall be clearly marked on the first sheet of the Architect's and/or Engineer's approved Drawings. All items later submitted for approval shall be per Title 24 requirements to the DSA.

(1) Contractor shall submit the following to Architect for review and endorsement:

(a) Product information on proposed material/system supplier.

(b) Drawings, specifications, and calculations prepared, signed, and stamped by an architect or engineer licensed in the State of California for that portion of the Work.

(c) All other requirements as may be required by DSA.

(2) Cost of preparing and submitting documentation per DSA Deferred Approval requirements including required modifications to Drawings and Specifications, whether or not indicated in the Contract Documents, shall be borne by Contractor.

(3) Contractor shall not begin fabrication and installation of deferred approval items without first obtaining DSA approval of Drawings and Specifications.

(4) Schedule of Work Subject to DSA Deferred Approval: Window wall systems exceeding 10 feet in span.

PART 2 – PRODUCTS Not Used.

PART 3 – EXECUTION Not Used.

END OF DOCUMENT

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	The Aluminum Association
2.	AABC	Associated Air Balance Council
3.	AASHTO	American Association of State Highway and Transportation Officials
4.	ACI	American Concrete Institute
5.	AGA	American Gas Association
6.	AGC	Associated General Contractors of America
7.	AHC	Architectural Hardware Consultant
8.	AHRI	Air Conditioning, Heating, Refrigeration Institute
9.	AI	Asphalt Institute
10.	AIA	American Institute of Architects
11.	AISC	American Institute of Steel Construction
12.	AISI	American Iron and Steel Institute
13.	AMCA	Air Movement and Control Association
14.	ANSI	American National Standards Institute
15.	APA	APA – The Engineered Wood Association
16.	ASA	Acoustical Society of America
17.	ASCE	American Society of Civil Engineers
18.	ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers
19.	ASME	American Society of Mechanical Engineers
20.	ASTM	American Society of Testing and Materials International
21.	AWPA	American Wood Protection Association
22.	AWS	American Welding Society
23.	AWSC	American Welding Society Codes & Standards
24.	AWI	Architectural Woodwork Institute
25.	AWWA	American Water Works Association

26.	BIA	The Brick Industry Association
27.	BHMA	Builders Hardware Manufacturers Association
28.	CCR	California Code of Regulations
29.	CLFMI	Chain Link Fence Manufacturers Institute
30.	CRA	California Redwood Association
31.	CRSI	Concrete Reinforcing Steel Institute
32.	CS	Commercial Standards
33.	CSI	Construction Specifications Institute
34.	CTI	Cooling Technology Institute
35.	EMMA	Expanded Metal Lath Manufacturers Association
36.	FGIA	Fenestration and Glazing Industry Alliance
37.	FGMA	Flat Glass Manufacturers' Association
38.	FIA	Factory Insurance Association
39.	FM	Factory Mutual Global
40.	FS/FED SPEC	Federal Specification
41.	FTI	Facing Title Institute
42.	GA	Gypsum Association
43.	IAPMO	International Association of Plumbing and Mechanical Officials
44.	ICC	International Code Council
45.	IEEE	Institute of Electrical and Electronics Engineers
46.	IES	Illuminating Engineering Society
47.	MCAC	Mason Contractors Association of California
48.	MIMA	Mineral Wool Insulation Manufacturers Association
49.	MS/MIL SPEC	Military Specifications
50.	NAAMM	National Association of Architectural Metal Manufacturers
51.	NCMA	National Concrete Masonry Association
52.	NCSEA	National Council of Structural Engineers Associations
53.	NEC	National Electrical Code
54.	NEMA	National Electrical Manufacturers Association
55.	NIST	National Institute of Standards and Technology
56.	NSI	Natural Stone Institute
57.	NTMA	National Terrazzo and Mosaic Association, Inc.
58.	ORS	Office of Regulatory Services (California)
59.	OSHA	Occupational Safety and Health Act
60.	PCI	Precast/Prestressed Concrete Institute
61.	PCA	Portland Cement Association
62.	PCA	Painting Contractors Association
63.	PDI	Plumbing & Drainage Institute
64.	PEI	Porcelain Enamel Institute, Inc.
65.	PG&E	Pacific Gas & Electric Company
66.	PS	Product Standards
67.	SDI	Steel Door Institute; Steel Deck Institute
68.	SJI	Steel Joist Institute
69.	SSPC	Society for Protective Coatings
70.	TCNA	Tile Council of North America, Inc.
71.	TPI	Truss Plate Institute
72.	UBC	Uniform Building Code
73.	UL	Underwriters Laboratories Code

74.	UMC	Uniform Mechanical Code
75.	USDA	United States Department of Agriculture
76.	VI	Vermiculite Institute
77.	WCLIB	West Coast Lumber Inspection Bureau
78.	WDMA	Window and Door Manufacturers Association
79.	WEUSER	Western Electric Utilities Service Engineering Requirements
80.	WIC	Woodwork Institute of California

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF DOCUMENT

DOCUMENT 01 42 16

DEFINITIONS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

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

A. General Conditions including without limitation, Definitions;

B. Special Conditions.

1.02 QUALITY ASSURANCE

A. For products or workmanship specified by association, trade, or Federal Standards, Contractor shall comply with requirements of the standard, except when more rigid requirements are specified in the Contract Documents, or are required by applicable codes.

B. Contractor shall conform to current reference standard publication date in effect on the date of bid opening.

C. Contractor shall obtain copies of standards unless specifically required not to by the Contract Documents.

D. Contractor shall maintain a copy of all standards at jobsite during submittals, planning, and progress of the specific Work, until final completion, unless specifically required not to by the Contract Documents.

E. Should specified reference standards conflict with Contract Documents, Contractor shall request clarification from the District and/or the Architect before proceeding.

F. The contractual relationship of the parties to the Contract shall not be altered from the contractual relationship as indicated in the Contract Documents by mention or inference otherwise in any referenced document.

G. Governing Codes shall be as shown in the Contract Documents including, without limitation, the Specifications.

END OF DOCUMENT

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	The Aluminum Association 1400 Crystal Drive, Suite 430 Arlington, VA 22202 www.aluminum.org	703/358-2960
AABC	Associated Air Balance Council 1015 18th St. NW Suite 603 Washington, D.C. 20036 www.aabc.com	202/737-0202
AASHTO	American Association of State Highway and Transportation Officials 555 12th St. NW - Suite 1000 Washington, DC 20004 www.transportation.org	202/624-5800
AATCC	American Association of Textile Chemists and Colorists 1 Davis Drive Durham, NC 27713-2839 www.aatcc.org	919/549-8141
ACA	American Coatings Association 901 New York Ave., NW, Suite 300 West Washington, DC 20001 www.paint.org	202/462-6272

ACI	American Concrete Institute 38800 Country Club Dr. Farmington Hills, MI 48331-3439 www.concrete.org	248/848-3800
ACPA	American Concrete Pipe Association 5605 N. MacArthur Blvd., Suite 340 Irving, TX 75038 www.concrete-pipe.org	972/506-7216
ADC	Air Duct Council 1300 Summer Ave. Cleveland, OH 44115 www.flexibleduct.org	216/241-7333
AF&PA	American Forest and Paper Association 601 Thirteenth Street NW, Suite 1000 NWashington, DC 20005 www.afandpa.org	202/463-2700
AGA	American Gas Association 400 North Capitol Street, NW, Suite 450 Washington, DC 20001 www.aga.org	202/824-7000
AGC	Associate General Contractors of America 2300 Wilson Blvd., Suite 300 Arlington, VA 22201 www.agc.org	703/548-3118
AHA	American Hardboard Association 1210 West Northwest Highway Palatine, IL 60067 http://domensino.com/AHA/default.htm	847/934-8800
AI	Asphalt Institute 2696 Research Park Drive Lexington, KY 40511-8480 www.asphaltinstitute.org	866/540-9577
AIA	The American Institute of Architects 1735 New York Ave., NW Washington, DC 20006-5292 www.aia.org	800/242-3837
AISC	American Institute of Steel Construction 130 East Randolph Street, Suite 2000 Chicago, IL 60601 www.aisc.org	312.670.2400

AISI	American Iron and Steel Institute 25 Massachusetts Ave., NW, Suite 800 Washington, DC 20001 www.steel.org	202/452-7100
AITC	American Institute of Timber Construction 1010 South 336th Street, #210 Federal Way, WA 98003-7394 https://www.plib.org/aitc/	253/835-3344
ALI	Associated Laboratories, Inc. P.O. Box 152837 Dallas, TX 75315 www.assoc-labs.com	214/565-0593
ALSC	American Lumber Standards Committee, Inc. 7470 New Technology Way, Suite F Frederick, MD 21703 www.alsc.org	301/972-1700
AMCA	Air Movement and Control Association International, Inc. 30 W. University Drive Arlington Heights, IL 60004 www.amca.org	847/394-0150
AMPP (formerly SSPC)	Association for Materials Protection and Performance (merger of Society for Protective Coatings and National Association of Corrosion Engineers International) (formerly Steel Structures Painting Council) 800 Trumbull Drive Pittsburgh, PA 15205 www.sspc.org	412/281-2331 877/281-7772
ANLA	AmericanHort (merger of American Nursery & Landscape Association and OFA – The Association of Horticultural Professionals) 2130 Stella Court Columbus, OH 43215 www.americanhort.org	614/487-1117
ANSI	American National Standards Institute 1899 L Street, NW, 11th Floor Washington, DC 20036 www.ansi.org	202/293-8020

APA	APA-The Engineered Wood Association 7011 S. 19th Street Tacoma, WA 98466-5333 www.apawood.org	253/565-6600
APA	Architectural Precast Association 325 John Knox Rd, Suite L-103 Tallahassee, FL 32303 www.archprecast.org	850/205-5637
APCIA	American Property Casualty Insurance Association (merger of American Insurance Association (formerly the National Board of Fire Underwriters) with the Property Casualty Insurers Association of America) 555 12th St, NW, Suite 550 Washington DC 20004 www.apci.org	202/828-7100
AHRI	Air Conditioning and Refrigeration Institute (now Air-Conditioning, Heating, & Refrigeration Institute) 2311 Wilson Blvd, Suite 400 Arlington, VA 22201 www.ahrinet.org	703/524-8800
ARMA	Asphalt Roofing Manufacturers Association 2331 Rock Spring Road Forest Hill, MD 21050 www.asphaltroofing.org	443/640-1075
ASA	The Acoustical Society of America Suite 300 1305 Walt Whitman Road Melville, NY 11747-4300 https://acousticalsociety.org/	516/576-2360
ASCE	American Society of Civil Engineers 1801 Alexander Bell Drive Reston, VA 20191 www.asce.org	800/548-2723 703/295-6300
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers 180 Technology Parkway Peachtree Corners, GA 30092 www.ashrae.org	800/527-4723 404/636-8400

ASLA	American Society of Landscape Architects 636 Eye Street, NW Washington, DC 20001-3736 www.asla.org	202/898-2444
ASME	American Society of Mechanical Engineers Two Park Avenue New York, NY 10016-5990 www.asme.org	800/834-2763
ASPE	American Society of Plumbing Engineers 6400 Shafer Court, Suite 350 Rosemont, IL 60018 http://aspe.org	847/296-0002
ASQ	American Society for Quality P.O. Box 3005 Milwaukee, WI 53201-3005 or 600 North Plankinton Avenue Milwaukee, WI 53203 http://asq.org	800/248-1946 414/272-8575
ASSE	American Society of Sanitary Engineering 18927 Hickory Creek Dr., Suite 220 Mokena, IL 60448 www.asse-plumbing.org	708/995-3019
ASTM International	American Society of Testing and Materials International 100 Barr Harbor Drive PO Box C700 West Conshohocken, PA, 19428-2959 www.astm.org	610/832-9500
AWCI	Association of the Wall and Ceiling Industry 513 West Broad Street, Suite 210 Falls Church, VA 22046 www.awci.org	703/538-1600
AWPA	American Wood Protection Association (formerly American Wood Preservers Institute) 2430 U.S. Highway 27, Suite 330-223 Clermont, FL 34714 www.awpa.com	205/733-4077

AWS	American Welding Society 8669 NW 36 Street, Suite 130 Miami, FL 33166 www.aws.org	800/443-9353 305/443-9353
AWI	Architectural Woodwork Institute 46179 Westlake Drive, Suite 120 Potomac Falls, VA 20165-5874 www.awinet.org	571/323-3636
AWWA	American Water Works Association 6666 West Quincy Avenue Denver, CO 80235 www.awwa.org	800/926-7337 303/794-7711
BHMA	Builders Hardware Manufacturers Association 529 14th Street, NW, Suite 1280 Washington, DC 20045 www.buildershardware.com	212/297-2122
BIA	The Brick Industry Association 12007 Sunrise Valley Drive, Suite 430 Reston, VA 20191 www.gobrick.com	703/620-0010
CGA	Compressed Gas Association 8484 Westpark Drive, Suite 220 McLean, VA 22102 www.cganet.com	703/788-2700
CISCA	Ceilings & Interior Systems Construction Association 1010 Jorie Blvd, Suite 30 Oak Brook, IL 60523 www.cisca.org	630/584-1919
CISPI	Cast Iron Soil Pipe Institute 2401 Fieldcrest Dr. Mundelein, IL 60060 www.cispi.org	224/864-2910
CLFMI	Chain Link Fence Manufacturers Institute 10015 Old Columbia Road, Suite B-215 Columbia, MD 21046 chainlinkinfo.org	301/596-2583
CPA	Composite Panel Association 19465 Deerfield Avenue, Suite 306 Leesburg, VA 20176 www.compositepanel.org	703/724-1128

CPSC	Consumer Product Safety Commission 4330 East-West Highway Bethesda, MD 20814 www.cpsc.gov	800/638-2772 301/504-7923
CRI	Carpet and Rug Institute 100 S. Hamilton Street Dalton, GA 30722-2048 www.carpet-rug.org	706/278-3176
CRSI	Concrete Reinforcing Steel Institute 933 N. Plum Grove Road Schaumburg, IL 60173-4758 www.crsi.org	847/517-1200
CSI	The Construction Specifications Institute 123 North Pitt St, Suite 450 Alexandria, VA 22314 www.csiresources.org	800/689-2900
DHA	Decorative Hardwoods Association (formerly Hardwood Plywood & Veneer Association) 42777 Trade West Dr. Sterling, VA 20166 https://www.decorativehardwoods.org/	703/435-2900
DHI	Door and Hardware Institute (formerly National Builders Hardware Association) 2001 K Street NW, 3rd Floor North Washington, DC 20006 www.dhi.org	202/367-1134
DIPRA	Ductile Iron Pipe Research Association P.O. Box 190306 Birmingham, AL 35219 www.dipra.org	205/402-8700
DOC	U.S. Department of Commerce 1401 Constitution Ave., NW Washington, DC 20230 www.commerce.gov	202/482-2000
DOT	U.S. Department of Transportation 1200 New Jersey Avenue, SE Washington, DC 20590 www.dot.gov	855/368-4200 202/366-4000

EJMA	Expansion Joint Manufacturers Association, Inc. 25 North Broadway Tarrytown, NY 10591 www.ejma.org	914/332-0040
EPA	Environmental Protection Agency Ariel Rios Building 1200 Pennsylvania Avenue, N.W. Washington, DC 20460 www.epa.gov	202/272-0167
FCICA	Floor Covering Installation Contractors Association 800 Roosevelt Rd., Bldg. C, Suite 312 Glen Ellyn, IL 60137 www.fcica.com	630/672-3702
FGIA	Fenestration and Glazing Industry Alliance 1900 E Golf Rd, Suite 1250 Schaumburg, IL 60173 https://fgiaonline.org/	847/303-5664
FM Global	Factory Mutual Insurance Company Amy Daley Global Practice Leader – Education, Public Entities, Health Care FM Global 270 Central Avenue Johnston, RI 02919-4949 www.fmglobal.com	401/275-3000 401/275-3029
FS	General Services Administration (GSA) Index of Federal Specifications, Standards and Commercial Item Descriptions 470 East L'Enfant Plaza, SW, Suite 8100 Washington, DC 20407 www.gsa.gov	844/472-4111
GA	The Gypsum Association 962 Wayne Ave., Suite 620 Silver Spring, MD 20910 www.gypsum.org	301/277-8686
HMA	Hardwood Manufacturers Association One Williamsburg Place, Suite 108 Warrendale, PA 15086 http://hmamembers.org	412/244-0440

IAPMO	International Association of Plumbing and Mechanical Officials (formerly the Western Plumbing Officials Association) 4755 E. Philadelphia St. Ontario, CA 91761 www.iapmo.org	909/472-4100
ICC	International Code Council 500 New Jersey Avenue, NW, 6th Floor Washington, DC 20001 www.iccsafe.org	888/422-7233
IEEE	Institute of Electrical and Electronics Engineers 3 Park Avenue, 17th Floor New York, NY 10016-5997 www.ieee.org	212/419-7900
IES	Illuminating Engineering Society 120 Wall Street, Floor 17 New York, NY 10005-4001 www.ies.org	212/248-5000
ITRK	Intertek Testing Services 3933 US Route 11 Cortland, NY 13045 www.intertek.com	607/753-6711
MCAA	Mechanical Contractors Association of America 1385 Piccard Drive Rockville, MD 20850 www.mcaa.org	301/869-5800
MMPA (formerly WMMPA)	Moulding & Millwork Producers Association (formerly Wood Moulding & Millwork Producers Association) 507 First Street Woodland, CA 95695 www.wmmpa.com	530/661-9591

MSS	Manufacturers Standardization Society (MSS) of the Valve and Fittings Industry, Inc. 127 Park Street, NE Vienna, VA 22180-4602 http://mss-hq.org	703/281-6613
NAAMM	National Association of Architectural Metal Manufacturers 800 Roosevelt Rd. Bldg. C, Suite 312 Glen Ellyn, IL 60137 www.naamm.org	630/942-6591
NAIMA	North American Insulation Manufacturers Association 2013 Olde Regent Way, Suite 150, Box 120 Leland, NC 2845 https://insulationinstitute.org/	703/684-0084
NALP	National Association of Landscape Professionals (formerly Professional Landcare Network) 12500 Fair Lakes Circle, Suite 200 Fairfax, VA 22033 https://www.landscapeprofessionals.org/	703/736-9666
NAPA	National Asphalt Pavement Association 6406 Ivy Lane, Suite 350 Greenbelt, MD 20770-1441 www.asphaltpavement.org	888/468-6499 301/731-4748
NCSPA	National Corrugated Steel Pipe Association 14070 Proton Road, Suite 100 Dallas, TX 75244 www.ncspa.org	972/850-1907
NCMA	National Concrete Masonry Association 13750 Sunrise Valley Drive Herndon, VA 20171-4662 www.masonryandhardscapes.org	703/713-1900
NEBB	National Environmental Balancing Bureau 8575 Grovemont Circle Gaithersburg, MD 20877 www.nebb.org	301/977-3698
NECA	National Electrical Contractors Association 1201 Pennsylvania Ave. NW Washington, D.C., 20004 www.necanet.org	202/991-6300

NEMA	National Electrical Manufacturers Association 1300 North 17th Street N, Suite 900 Rosslyn, VA 22209 www.nema.org	703/841-3200
NEII	National Elevator Industry, Inc. 5537 SW Urish Road Topeka, KS 66610 https://nationalelevatorindustry.org/	703/589-9985
NFPA	National Fire Protection Association 1 Batterymarch Park Quincy, MA02169-7471 www.nfpa.org	800/344-3555 855/274-8525
NGA (formerly GANA)	National Glass Association (merged with Glass Association of North America) 344 Maple Ave West Unit 272 Vienna, VA 22180 www.glass.org	703/442-4890
NHLA	National Hardwood Lumber Association PO Box 34518 Memphis, TN 38184 www.nhla.com	901/377-1818
NIA	National Insulation Association 516 Herndon Pkwy., Ste. D Herndon, VA 20170 www.insulation.org	703/464-6422
NRCA	National Roofing Contractors Association 10255 W. Higgins Road, Suite 600 Rosemont, IL 60018-5607 www.nrca.net	847/299-9070
NSF	NSF International 789 N. Dixboro Road Ann Arbor, MI 48105 www.nsf.org	800/673-6275 734/769-8010
NSI	Natural Stone Institute (formerly Marble Institute of America) 380 E. Lorain St. Oberlin, OH 44074 https://www.naturalstoneinstitute.org/	440/250-9222

NTMA	National Terrazzo and Mosaic Association 209 N. Crockett Street, Suite 2 PO Box 2605 Fredericksburg, TX 78624 www.ntma.com	800/323-9736
OSHA	Occupational Safety and Health Administration U.S. Department of Labor Occupational Safety & Health Administration 200 Constitution Ave., NW Room Number N3626 Washington, DC 20210 www.osha.gov	800/321-OSHA (6742)
PCA	Portland Cement Association 200 Massachusetts Ave NW, Suite 200 Washington, DC 20001 www.cement.org	202/408-9494
PCA	Painting Contractors Association (formerly Painting and Decorating Contractors of America) 2316 Millpark Drive Maryland Heights, MO 63043 https://www.pcapainted.org/	800/332-7322
PCI	Precast/Prestressed Concrete Institute 8770 W. Bryn Mawr Ave., Suite 1150 Chicago, IL 60631 www.pci.org	312/786-0300
PDI	Plumbing & Drainage Institute 800 Turnpike Street, Suite 300 North Andover, MA 01845 http://pdionline.org	978/557-0720 800/589-8956
PEI	Porcelain Enamel Institute, Inc. 1875 Old Alabama Road Suite 1230 Roswell, GA 30076 www.porcelainenamel.com	770/676-9366

PG&E	Pacific Gas & Electric Company P.O. Box 997300 Sacramento, CA 95899-7300 www.pge.com	800/743-5000
PLIB	Pacific Lumber Inspection Bureau (formerly West Coast Lumber Inspection Bureau) 1010 South 336th Street, Suite 210 Federal Way, WA 98003-7394 https://www.plib.org/	253/835-3344
RFCI	Resilient Floor Covering Institute 115 Broad Street, Suite 201 La Grange, GA 30240 www.rfci.com	706/882-3833
SDI	Steel Deck Institute P.O. Box 70 Florence, South Carolina 29503 www.sdi.org	843/407-7411
SDI	Steel Door Institute 30200 Detroit Road Westlake, OH 44145 www.steeldoor.org	440/899-0010
SJI	Steel Joist Institute PO Box 30 Florence, SC 29503 http://steeljoist.org	843/407-4091
SMA	Stucco Manufacturers Association 5753 E Santa Ana Cyn Rd, #G-156 Anaheim, CA 92807 www.stuccomfgassoc.com	714/473-9579
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association 4201 Lafayette Center Drive Chantilly, VA 20151-1219 www.smacna.org	703/803-2980
SPI	Plastics Industry Association (formerly SPI: The Plastics Industry Trade Association, Inc.) 1425 K St. NW, Suite 500 Washington, DC 20005 www.plasticsindustry.org	202/974-5200

TCA	The Tile Council of North America 100 Clemson Research Blvd. Anderson, SC 29625 www.tcnatile.com	864/646-8453
TPI	Truss Plate Institute 2670 Crain Highway, Suite 203 Waldorf, MD 20601 www.tpinst.org	240/587-5582
TPI	Turfgrass Producers International 444 E. Roosevelt Road #346 Lombard, IL 60148 www.turfgrasssod.org	800/405-8873 847/649-5555
TCIA	Tree Care Industry Association (formerly the National Arborist Association) 670 N Commercial Street, Suite 201 Manchester, NH 03101 www.treecareindustryassociation.org	603/314-5380 800/733-2622
TVI	The Vermiculite Institute c/o The Schundler Company 10 Central Street Nahant, MA 01908 www.vermiculiteinstitute.org	732/287-2244
UL	UL Solutions (formerly Underwriters Laboratories Inc.) 333 Pfingsten Road Northbrook, IL 60062-2096 www.ul.com	847/272-8800 877/854-3577
UNI	Uni-Bell PVC Pipe Association 201 E. John Carpenter Freeway, Suite 750 Irving, TX 75062 www.uni-bell.org	972/243-3902
USDA	U.S. Department of Agriculture 1400 Independence Ave., S.W. Washington, DC 20250 www.usda.gov	202/720-2791
WA	Wallcoverings Association 35 E Wacker Dr., Suite 850 Chicago, IL 60601 www.wallcoverings.org	312/224-2574

WCMA	Window Covering Manufacturers Association 355 Lexington Avenue 15th Floor New York, NY 10017 www.wcmanet.com	212/297-2122
WDMA	Window & Door Manufacturers Association 2001 K Street NW, 3rd Floor North Washington, D.C. 20006 www.wdma.com	202/367-1157
WI	Woodwork Institute 1455 Response Road, Suite 110 Sacramento, CA 95815 www.woodworkinstitute.com	916/372-9943
WRI	Wire Reinforcement Institute 942 Main Street, Suite 300 Hartford, CT 06103 www.wirereinforcementinstitute.org	860/240-9545
WWCA	Western Wall & Ceiling Contractors Association 1910 N. Lime St. Orange, CA 92865 www.wwcca.org	714/221-5520 888/707-9255
WWPA	Western Wood Products Association (formerly Redwood Inspection Service) 2 Centerpointe Drive, Suite 360 Lake Oswego, OR 97035 www.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 Design Professional shall be used.

B. Contractor shall submit lists of products and other product information in accordance with the Contract Documents, including, without limitation, the provisions regarding the submittals.

1.03 MATERIAL AND EQUIPMENT COLORS

A. The District and/or Architect will provide a schedule of colors.

B. No individual color selections will be made until after approval of all pertinent materials and equipment and after receipt of appropriate samples in accordance with the Contract Documents, including, without limitation, the provisions regarding the submittals.

C. Contractor shall request priority in writing for any item requiring advance ordering to maintain the approved Construction Schedule.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Contractor shall deliver manufactured materials in original packages, containers, or bundles (with seals unbroken), bearing name or identification mark of manufacturer.

B. Contractor shall deliver fabrications in as large assemblies as practicable; where specified as shop-primed or shop-finished, package or crate as required to preserve such priming or finish intact and free from abrasion.

C. Contractor shall store materials in such a manner as necessary to properly protect them from damage. Materials or equipment damaged by handling, weather, dirt, or from any other cause will not be accepted.

D. Materials are not acceptable that have been warehoused for long periods of time, stored or transported in improper environment, improperly packaged, inadequately labeled, poorly protected, excessively shipped, deviated from normal distribution pattern, or reassembled.

E. Contractor shall store material so as to cause no obstructions of sidewalks, roadways, access to the Site or buildings, and underground services. Contractor shall protect material and equipment furnished under Contract.

F. Contractor may store materials on Site with prior written approval by the District, all material shall remain under Contractor's control and Contractor shall remain liable for any damage to the materials. Should the Project Site not have storage area available, the Contractor shall provide for off-site storage at a bonded warehouse and with appropriate insurance coverage at no cost to District.

G. When any room in Project is used as a shop or storeroom, the Contractor shall be responsible for any repairs, patching, or cleaning necessary due to that use. Location of storage space shall be subject to prior written approval by District.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers listed in various sections of Contract Documents are names of those manufacturers that are believed to be capable of supplying one or more of items specified therein.

B. The listing of a manufacturer does not imply that every product of that manufacturer is acceptable as meeting the requirements of the Contract Documents.

2.02 FACILITIES AND EQUIPMENT

Contractor shall provide, install, maintain, and operate a complete and adequate facility for handling, the execution, disposal, and distribution of material and equipment as required for proper and timely performance of Work connected with Contract.

2.03 MATERIAL REFERENCE STANDARDS

Where material is specified solely by reference to “standard specifications” and if requested by District, Contractor shall submit for review data on actual material proposed to be incorporated into Work of Contract listing name and address of

vendor, manufacturer, or producer, and trade or brand names of those materials, and data substantiating compliance with standard specifications.

PART 3 - EXECUTION

3.01 WORKMANSHIP

A. Where not more specifically described in any other Contract Documents, workmanship shall conform to methods and operations of best standards and accepted practices of trade or trades involved and shall include items of fabrication, construction, or installation regularly furnished or required for completion (including finish and for successful operation, as intended).

B. Work shall be executed by tradespersons skilled in their respective lines of Work. When completed, parts shall have been durably and substantially built and present a neat appearance.

3.02 COORDINATION

A. Contractor shall coordinate installation of Work so as to not interfere with installation of others. Adjustment or rework because of Contractor's failure to coordinate will be at no additional cost to District.

B. Contractor shall examine in-place work for readiness, completeness, fitness to be concealed or to receive other work, and in compliance with Contract Documents. Concealing or covering Work constitutes acceptance of additional cost which will result should in-place Work be found unsuitable for receiving other Work or otherwise deviating from the requirements of the Contract Documents.

3.03 COMPLETENESS

Contractor shall provide all portions of the Work, unless clearly stated otherwise, installed complete and operational with all elements, accessories, anchorages, utility connections, etc., in manner to assure well-balanced performance, in accordance with manufacturer's recommendations and by Contract Documents. For example, electric water coolers require water, electricity, and drain services; roof drains require drain system; sinks fit within countertop, etc. Terms such as "installed complete," "operable condition," "for use intended," "connected to all utilities," "terminate with proper cap," "adequately anchored," "patch and refinish," "to match similar," should be assumed to apply in all cases, except where completeness of functional or operable condition is specifically stated as not required.

3.04 APPROVED INSTALLER OR APPLICATOR

Installation by a manufacturer's approved installer or applicator is an understood part of Specifications and only approved installer or applicator is to provide on-site Work where specified manufacturer has on-going program of approving (i.e. certifying, bonding, re-warranting) installers or applicators. Newly established relationships between a manufacturer and an installer or applicator who does not

have other approved applicator work in progress or completed is not approved for this Project.

3.05 MANUFACTURER'S RECOMMENDATIONS

All installations shall be in accordance with manufacturer's published recommendations and specific written directions of manufacturer's representative. Should Contract Documents differ from recommendations of manufacturer or directions of his representative, Contractor shall analyze differences, make recommendations to the District and the Architect in writing, and shall not proceed until interpretation or clarification has been issued by the District and/or the Architect.

END OF DOCUMENT

DOCUMENT 01 45 00

QUALITY CONTROL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

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

A. General Conditions, including, without limitation, Inspector, Inspections and Tests, Uncovering of Work and Non-conforming of Work and Correction of Work;

B. Special Conditions.

1.02 RELATED CODES:

A. The Work is governed by requirements of Title 24, California Code of Regulations ("CCR"), and the Contractor shall keep a copy of these available at the job Site for ready reference during construction.

B. The Division of the State Architect ("DSA") shall be notified at or before the start of construction.

1.03 OBSERVATION AND SUPERVISION:

A. The District and Architect or their appointed representatives will review the Work and the Contractor shall provide facilities and access to the Work at all times as required to facilitate this review. Administration by the Architect and any consulting Structural Engineer will be in accordance with applicable regulations, including, without limitation, CCR, Part 1, Title 24, Section 4-341.

B. One or more Project Inspector(s) approved by DSA and employed by or in contract with the District, referred to hereinafter as the "Project Inspector", will observe the work in accordance with CCR, Part 1, Title 24, Sections 4-333(b) and 4-342:

(1) The Project Inspector and Special Inspector(s) shall have access to the Work wherever it is in preparation or progress for ascertaining that the Work is in accordance with the Contract Documents and all applicable code sections. The Contractor shall provide facilities and operation of equipment as needed, and access as required and shall provide assistance for sampling or measuring materials.

(2) The Project Inspector will notify the District and Architect and call the attention of the Contractor to any observed failure of Work or material to conform to Contract Documents.

(3) The Project Inspector shall observe and monitor all testing and inspection activities required.

The Contractor shall conform with all applicable laws as indicated in the Contract Documents, including, without limitation, to CCR, Part 1, Title 24, Section 4-343. The Contractor shall supervise and direct the Work and maintain a competent superintendent on the job who is authorized to act in all matters pertaining to the Work. The Contractor's superintendent shall also inspect all materials, as they arrive, for compliance with the Contract Documents. Contractor shall reject defective Work or materials immediately upon delivery or failure of the Work or material to comply with the Contract Documents. The Contractor shall submit verified reports as indicated in the Contract Documents, including, without limitation, the Specifications and as required by Part 1, Title 24, Section 4-336.

1.04 TESTING AGENCIES:

A. Testing agencies and tests shall be in conformance with the General Documents and the requirements of Part 1, Title 24, Section 4- 335.

B. Testing and inspection in connection with earthwork shall be under the direction of the District's consulting soils engineer, if any, referred to hereinafter as the "Soils Engineer."

C. Testing and inspection of construction materials and workmanship shall be performed by a qualified laboratory, referred to hereinafter as the "Testing Laboratory." The Testing Laboratory shall be under direction of an engineer registered in the State of California, shall conform to requirements of ASTM E329, and shall be employed by or in contract with the District.

1.05 TESTS AND INSPECTIONS:

A. The Contractor shall be responsible for notifying the District and Project Inspector of all required tests and inspections. Contractor shall notify the District and Project Inspector at least seventy-two hours (72) hours in advance of performing any Work requiring testing or inspection.

B. The Contractor shall provide access to Work to be tested and furnish incidental labor, equipment, and facilities to facilitate all inspections and tests.

C. The District will pay for first inspections and tests required by the “CCR”, and other inspections or tests that the District and/or the Architect may direct to have made, including the following principal items:

(1) Tests and observations for earthwork and paving.

(2) Tests for concrete mix designs, including tests of trial batches.

(3) Tests and inspections for structural steel work.

(4) Field tests for framing lumber moisture content.

(5) Additional tests directed by the District that establish that materials and installation comply with the Contract Documents.

(6) Tests and observations of welding and expansion anchors.

D. The District may at its discretion, pay and then back charge the Contractor for:

(1) Retests or reinspections, if required, and tests or inspections required due to Contractor error or lack of required identifications of material.

(2) Uncovering of work in accordance with Contract Documents.

(3) Testing done on weekends, holidays, and overtime will be chargeable to the Contractor for the overtime portion.

(4) Testing done off Site.

E. Testing and inspection reports and certifications:

(1) If initially received by Contractor, Contractor shall provide to each of the following a copy of the agency or laboratory report of each test or inspection or certification.

(a) The District;

(b) The Construction Manager, if any;

(c) The Architect;

(d) The Consulting Engineer, if any;

(e) Other engineers on the Project, as appropriate;

(f) The Project Inspector; and

(g) The Contractor.

(2) When the test or inspection is one required by the CCR, a copy of the report shall also be provided to the DSA.

PART 2 - PRODUCTS

2.01 TYPE OF TESTS AND INSPECTIONS

A. Testing and inspection shall be in accordance with DSA Form 103 (or current version)

B. Slump Test
ASTM C 143

C. Concrete Tests

Testing agency shall test concrete used in the work per the following paragraphs:

(1) Compressive Strength:

(a) Minimum number of tests required: One (1) set of three (3) cylinders for each 100 cubic yards (Sec. 2604(h) 01) of concrete or major fraction thereof, placed in one (1) day. See Title 24, Section 2605(g).

(b) Two cylinders of each set shall be tested at twenty-eight (28) days. One (1) cylinder shall be held in reserve and tested only when directed by the Architect or District.

(c) Concrete shall test the minimum ultimate compressive strength in twenty-eight 28 days, as specified on the structural drawings.

(d) In the event that the twenty-eight (28) day test falls below the minimum specified strength, the effective concrete in place shall be tested by taking cores in accordance with UBC Standard No. 26-13 and tested as required for cylinders.

(e) In the event that the test on core specimens falls below the minimum specified strength, the concrete will be deemed defective and shall be removed and replaced upon such direction of the Architect, and in a manner acceptable to the Division of the State Architect.

D. Reinforcing, Steel

E. Structural Steel Per Title 24 and as noted:

(1) Material: Steel per Table in Title 24, Section 2712.

(2) Qualification of Welders (UBC Std. 27-6).

(3) Shop fabrication (Section 2712(d). Structural steel only).

(4) Shop and field welding (Section 2712(e)).

PART 3 - EXECUTION Not Used.

END OF DOCUMENT

DOCUMENT 01 50 00

TEMPORARY FACILITIES AND CONTROLS

1. – GENERAL

1. RELATED DOCUMENTS AND PROVISIONS:

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

A. General Conditions;

B. Special Conditions;

C. Site Standards; and

D. Construction Waste Management and Disposal.

2. TEMPORARY UTILITIES:

A. Electric Power and Lighting:

1. Contractor will pay for power during the course of the Work. To the extent power is available in the building(s) or on the Site, Contractor may use the District's existing utilities by making prearranged payments to the District for the utilities used by Contractor and all Subcontractors. Contractor shall be responsible for providing temporary facilities required to deliver that power service from its existing location in the building(s) or on the Site to point of intended use.

2. Contractor shall verify characteristics of power available in building(s) or on the Site. Contractor shall take all actions required to make modifications where power of higher voltage or different phases of current are required. Contractor shall be fully responsible for providing that service and shall pay all costs required therefor.

3. Contractor shall furnish, wire for, install, and maintain temporary electrical lights wherever it is necessary to provide illumination for the proper performance and/or observation of the Work: a minimum of 20 foot-candles for rough work and 50 foot-candles for finish work.

4. Contractor shall be responsible for maintaining existing lighting levels in the project vicinity should temporary outages or service interruptions occur.

B. Heat and Ventilation:

1. Contractor shall provide temporary heat to maintain environmental conditions to facilitate progress of the Work, to meet specified minimum conditions for the installation and curing of materials, and to protect materials and finishes from damage due to improper temperature and humidity conditions. Portable heaters shall be standard units complete with controls.

2. Contractor shall provide forced ventilation and dehumidification, as required, of enclosed areas for proper installation and curing of materials, to disperse humidity, and to prevent hazardous accumulations of dust, fumes, vapors, and gases.

3. Contractor shall pay the costs of installation, maintenance, operation, and removal of temporary heat and ventilation, including costs for fuel consumed, required for the performance of the Work.

C. Water:

1. Contractor shall pay for water used during the course of the Work. Contractor shall coordinate and pay for installation or use of water meter in compliance with local water agency requirements. To the extent water is then available in the building(s) or on the Site, Contractor may use the District's existing utilities by making prearranged payments to the District for the utilities used by Contractor and all Subcontractors. Contractor shall be responsible for providing temporary facilities required to deliver such utility service from its existing location in the building(s), on the Site, or other location approved by the local water agency, to point of intended use.

2. Contractor shall use backflow preventers on water lines at point of connection to District's water supply. Backflow preventers shall comply with requirements of Uniform Plumbing Code.

3. Contractor shall make potable water available for human consumption.

D. Sanitary Facilities:

1. Contractor shall provide sanitary temporary facilities in no fewer numbers than required by law and such additional facilities as may be directed by the Inspector for the use of all workers. The facilities shall be maintained in a sanitary condition at all times and shall be left at the Site until removal is directed by the Inspector or Contractor completes all other work at the Site.

2. Use of toilet facilities in the Work under construction shall not be permitted except by consent of the Inspector and the District.

E. Telephone Service:

1. Contractor shall arrange with local telephone service company for telephone service as required for the performance of the Work. Contractor shall, at a minimum, provide in its field office one line for telephone and one line for fax machine.

2. Contractor shall pay the costs for telephone and fax lines installation, maintenance, service, and removal.

F. Fire Protection:

1. Contractor shall provide and maintain fire extinguishers and other equipment for fire protection. Such equipment shall be designated for use for fire protection only and shall comply with all requirements of the California Fire, State Fire Marshall and/or its designee.

2. Where on-site welding and burning of steel is unavoidable, Contractor shall provide protection for adjacent surfaces.

G. Trash Removal:

1. Contractor shall provide trash removal on a timely basis**.** Under no circumstance shall Contractor use District trash service.

H. Field Office:

1. If Contractor chooses to provide a field office, it shall be an acceptable construction trailer that is well-lit and ventilated. The construction trailer shall be equipped with shelves, desks, filing cabinet, chairs, and such other items of equipment needed. Trailer and equipment are the property of the Contractor and must be removed from the Site upon completion of the Work. Contractor may use the corridor adjacent to the construction area for an office area, if approved in writing by District.

2. Contractor shall provide any additional electric lighting and power required for the trailer. Contractor shall make adequate provisions for heating and cooling as required.

I. Not Used

3. CONSTRUCTION AIDS:

A. Plant and Equipment:

1. Contractor shall furnish, operate, and maintain a complete plant for fabricating, handling, conveying, installing, and erecting materials and equipment; and for conveyances for transporting workers. Include elevators, hoists, debris chutes, and other equipment, tools, and appliances necessary for performance of the Work.

2. Contractor shall maintain plant and equipment in safe and efficient operating condition. Damages due to defective plant and equipment, and uses made thereof, shall be repaired by Contractor at no expense to the District.

B. None of the District's tools and equipment shall be used by Contractor for the performance of the Work.

4. BARRIERS AND ENCLOSURES:

A. Contractor shall obtain the District's written permission for locations and types of temporary barriers and enclosures, including fire-rated materials proposed for use, prior to their installation.

B. Contractor shall provide and maintain temporary enclosures to prevent public entry and to protect persons using other buildings and portions of the Site and/or Premises, the public, and workers. Contractor shall also protect the Work and existing facilities from the elements, and adjacent construction and improvements, persons, and trees and plants from damage and injury from demolition and construction operations.

C. Contractor shall provide site access to existing facilities for persons using other buildings and portions of the Site, the public, and for deliveries and other services and activities.

D. Tree and Plant Protection:

1. Contractor shall preserve and protect existing trees and plants on the Premises that are not designated or required to be removed, and those adjacent to the Premises.

2. Contractor shall provide barriers to a minimum height of 4'-0" around drip line of each tree and plant, around each group of trees and plants, as applicable, in the proximity of demolition and construction operations, or as denoted on the Plans.

3. Contractor shall not park trucks, store materials, perform Work or cross over landscaped areas. Contractor shall not dispose of paint thinners, water from cleaning, plastering or concrete operations, or other deleterious materials in landscaped areas, storm drain systems, or sewers. Plant materials damaged as a result of the performance of the Work shall, at the option of the District and at Contractor's expense, either be replaced with new plant materials equal in size to those damaged or by payment of an amount representing the value of the damaged materials as determined by the District.

4. Contractor shall remove soil that has been contaminated during the performance of the Work by oil, solvents, and other materials which could be harmful to trees and plants, and replace with good soil, at Contractor's expense.

5. Excavation around Trees:

a. Excavation within drip lines of trees shall be done only where absolutely necessary and with written permission from the District.

b. Where trenching for utilities is required within drip lines, tunneling under and around roots shall be by hand digging and shall be approved by the District. Main lateral roots and taproots shall not be cut. All roots 2 inches in diameter and larger shall be tunneled under and heavily wrapped with wet burlap so as to prevent scarring or excessive drying. Smaller roots that interfere with installation of new work may be cut with prior approval by the District. Roots must first be cut with a Vermeer, or equivalent, root cutter prior to any trenching.

c. Where excavation for new construction is required within drip line of trees, hand excavation shall be employed to minimize damage to root system. Roots shall be relocated in backfill areas wherever possible. If encountered immediately adjacent to location of new construction, roots shall be cut approximately 6 inches back from new construction.

d. Approved excavations shall be carefully backfilled with the excavated materials approved for backfilling. Backfill shall conform to adjacent grades without dips, sunken areas, humps, or other surface irregularities. Do not use mechanical equipment to compact backfill. Tamp carefully using hand tools, refilling and tamping until Final Acceptance as necessary to offset settlement.

e. Exposed roots shall not be allowed to dry out before permanent backfill is placed. Temporary earth cover shall be provided, or roots shall be wrapped with four layers of wet, untreated burlap and temporarily supported and protected from damage until permanently relocated and covered with backfill.

f. Accidentally broken roots should be sawed cleanly 3 inches behind ragged end.

5. SECURITY:

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

6. TEMPORARY CONTROLS:

A. Noise Control:

1. Contractor acknowledges that adjacent facilities may remain in operation during all or a portion of the Work period, and it shall take all reasonable precautions to minimize noise as required by applicable laws and the Contract Documents.

2. Notice of proposed noisy operations, including without limitation, operation of pneumatic demolition tools, concrete saws, and other equipment, shall be submitted to the District a minimum of forty-eight (48) hours in advance of their performance.

B. Noise and Vibration:

1. Equipment and impact tools shall have intake and exhaust mufflers.

2. Contractor shall cooperate with District to minimize and/or cease the use of noisy and vibratory equipment if that equipment becomes objectionable by its longevity.

C. Dust and Dirt:

1. Contractor shall conduct demolition and construction operations to minimize the generation of dust and dirt, and prevent dust and dirt from interfering with the progress of the Work and from accumulating in the Work and adjacent areas including, without limitation, occupied facilities.

2. Contractor shall periodically water exterior demolition and construction areas to minimize the generation of dust and dirt.

3. Contractor shall ensure that all hauling equipment and trucks carrying loads of soil and debris shall have their loads sprayed with water or covered with tarpaulins, and as otherwise required by local and state ordinance.

4. Contractor shall prevent dust and dirt from accumulating on walks, roadways, parking areas, and planting, and from washing into sewer and storm drain lines.

D. Water:

1. Contractor shall not permit surface and subsurface water, and other liquids, to accumulate in or about the vicinity of the Premises. Should accumulation develop, Contractor shall control the water or other liquid, and suitably dispose of it by means of temporary pumps, piping, drainage lines, troughs, ditches, dams, or other methods.

E. Pollution:

1. No burning of refuse, debris, or other materials shall be permitted on or in the vicinity of the Premises.

2. Contractor shall comply with applicable regulatory requirements and anti-pollution ordinances during the conduct of the Work including, without limitation, demolition, construction, and disposal operations.

F. Lighting:

1. If portable lights are used after dark, all light must be located so as not to direct light into neighboring property.

7. JOB SIGN(S):

A. General:

1. Contractor shall provide and maintain a Project identification sign with the design, text, and colors designated by the District and/or the Design Professional; locate sign as approved by the District.

2. Signs other than the specified Project sign and or signs required by law, for safety, or for egress, shall not be permitted, unless otherwise approved in advance by the District.

B. Materials:

1. Structure and Framing: Structurally sound, new or used wood or metal; wood shall be nominal 3/4-inch exterior grade plywood.

2. Sign Surface: Minimum 3/4-inch exterior grade plywood.

3. Rough Hardware: Galvanized.

4. Paint: Exterior quality, of type and colors selected by the District and/or the Design Professional.

C. Fabrication:

1. Contractor shall fabricate to provide smooth, even surface for painting.

2. Size: 4'-0" x 8'-0", unless otherwise indicated.

3. Contractor shall paint exposed surfaces of supports, framing, and surface material with exterior grade paint: one coat of primer and one coat of finish paint.

4. Text and Graphics: As indicated.

8. PUBLICITY RELEASES:

A. Contractor shall not release any information, story, photograph, plan, or drawing relating information about the Project to anyone, including press and other public communications medium, including, without limitation, on website(s) without the written permission of the District.

2. – PRODUCTS Not used.

3. – EXECUTION Not used.

END OF DOCUMENT

DOCUMENT 01 50 13

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

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

A. General Conditions;

B. Special Conditions; and

C. Temporary Facilities and Controls.

1.02 SECTION INCLUDES:

A. Administrative and procedural requirements for the following:

(1) Salvaging non-hazardous construction waste.

(2) Recycling non-hazardous construction waste.

(3) Disposing of non-hazardous construction waste.

1.03 DEFINITIONS:

A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.

C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.04 PERFORMANCE REQUIREMENTS:

A. General: Develop waste management plan that results in end-of Project rates for salvage/recycling of sixty-five percent (65%) by weight (or by volume, but not a combination) of total waste generated by the Work.

1.05 SUBMITTALS:

A. Waste Management Plan: Submit waste management plan within 30 days of date established for commencement of the Work.

B. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit copies of report. Include the following information:

(1) Material category.

(2) Generation point of waste.

(3) Total quantity of waste in tons or cubic yards.

(4) Quantity of waste salvaged, both estimated and actual in tons or cubic yards.

(5) Quantity of waste recycled, both estimated and actual in tons or cubic yards.

(6) Total quantity of waste recovered (salvaged plus recycled) in tons or cubic yards.

(7) Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.

C. Waste Reduction Calculations: Before request for final payment, submit copies of calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.

D. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.

E. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.

F. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

G. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

H. Not Used

I. Qualification Data: For Waste Management Coordinator.

J. Not Used

K. Submittal procedures and quantities are specified in Document 01 33 00.

1.06 QUALITY ASSURANCE:

A. Waste Management Coordinator Qualifications: LEED Accredited Professional by U.S. Green Building Council.

B. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

C. Waste Management Conference: Conduct conference at Project site to comply with requirements. Review methods and procedures related to waste management including, but not limited to, the following:

(1) Review and discuss waste management plan including responsibilities of Waste Management Coordinator.

(2) Review requirements for documenting quantities of each type of waste and its disposition.

(3) Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.

(4) Review procedures for periodic waste collection and transportation to recycling and disposal facilities.

(5) Review waste management requirements for each trade.

1.07 WASTE MANAGEMENT PLAN:

A. General: Develop plan consisting of waste identification, waste reduction work plan, and cost/revenue analysis. Indicate quantities by weight or volume, but use same units of measurement throughout waste management plan.

B. Waste Identification: Indicate anticipated types and quantities of site-clearing and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.

C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.

(1) Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.

(2) Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.

(3) Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.

(4) Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.

(5) Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.

(6) Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION

3.01 PLAN IMPLEMENTATION:

A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

(1) Comply with Document 01 50 00 for operation, termination, and removal requirements.

B. **[**Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan. Coordinator shall be present at Project site full time for duration of Project.**]**

C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.

(1) Distribute waste management plan to everyone concerned within 3 days of submittal return.

(2) Distribute waste management plan to entities when they first begin work on site. Review plan procedures and locations established for salvage, recycling, and disposal.

D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

(1) Designate and label specific areas of Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.

(2) Comply with Document 01 50 00 for controlling dust and dirt, environmental protection, and noise control.

3.02 RECYCLING CONSTRUCTION WASTE:

A. General: Recycle paper and beverage containers used by on-site workers.

B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to the Contractor.

C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical.

(1) Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project Site. Include list of acceptable and unacceptable materials at each container and bin.

(a) Inspect containers and bins for contamination and remove contaminated materials if found.

(2) Stockpile processed materials on site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

(3) Stockpile materials away from construction area. Do not store within drip line of remaining trees.

(4) Store components off the ground and protect from the weather.

(5) Remove recyclable waste off District property and transport to recycling receiver or processor.

D. Packaging:

(1) Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.

(2) Polystyrene Packaging: Separate and bag material.

(3) Pallets: As much as possible, require deliveries using pallets to remove pallets from Project Site. For pallets that remain on Site, break down pallets into component wood pieces and comply with requirements for recycling wood.

(4) Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

E. Site-Clearing Wastes: Chip brush, branches, and trees on site.

F. Wood Materials:

(1) Clean Cut-Offs of Lumber: Grind or chip into small pieces.

(2) Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

G. Gypsum Board: Stack large clean pieces on wood pallets and store in a dry location.

(1) Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.

3.03 DISPOSAL OF WASTE:

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project Site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

(1) Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on site.

(2) Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials.

C. Disposal: Transport waste materials off District property and legally dispose of them.

END OF DOCUMENT

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, Enactments, Rulings, Laws, each authority having jurisdiction, and including, but not limited to, Regulatory Requirements specified herein.

B. California Building Standards Code ("CBSC").

C. California Code of Regulations, Title 25, Chapter 3, Sub Chapter 2, Article 3 ("CCR").

D. Coach Insignia: Trailer shall display California Commercial Coach Insignia; such insignia shall be deemed to show that the trailer is in accordance with the Construction and Fire Safety requirements of CCR.

PART 2 – PRODUCTS

2.01 FIELD OFFICE TRAILER

A. General: Provide entire Field Office Trailer of type, function, operation, capacity, size, complete with controls, safety devices, accessories, and the like, for proper and durable installation. Partitions, walls, ceiling, and other interior and exterior surfaces shall be appropriately finished, including, but not limited to, trim, painting, wall base, floor covering, suspended or similar ceiling, and the like; provide systems, components, units, nuts, bolts, screws, anchoring devices, fastening devices, washers, accessories, adhesives, sealants, and other items of type, grade, and class required for the particular use, not identified but required for a complete, weather-tight, appropriately operating, and finished installation.

B. Manufacturers: General Electric Capital Modular Space; The Space Place, Inc.; or equal.

C. Program: Provide a wheel-mounted trailer with stairs, landings, platforms, ramps, and the like, in good, proper, safe, clean, and properly finished condition; with proper heavy duty locks, and other proper and effective security at all doors, windows, and the like. Trailer shall be maintained in good, proper, safe, clean, and properly finished condition during the Contract.

(1) Nominal Trailer Size: Four hundred eighty (480) square feet, minimum.

(2) Stairs, Platform: Properly finished stairs, platforms, and ramps.

(3) Doors: Two (2), three (3) foot wide exterior doors with locksets; finished ramp, steps, and entry platform at each exterior door.

(4) Keys: Submit five (5) keys for each door, window, furniture unit, and the like. There shall be no other key copies or originals available; each key shall be identified for District; and shall be labeled, or tagged or both, as directed by District.

(5) Not Used

(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) Voicemail Messaging System or 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); 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

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. Installing Contactor: Contractor, who is installing the materials and equipment furnished by the Owner.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Receive, store and handle products in accordance with the manufacturer's instructions.

B. Protect equipment items as required to prevent damage during storage and construction.

PART 2 – PRODUCTS

2.01 GENERAL PRODUCT REQUIREMENTS

A. Installing Contractor's Responsibilities:

(1) Verify mounting and utility requirements for Owner-furnished materials and equipment items.

(2) Provide mounting and utility rough in for all items where required.

(a) Rough in locations, sizes, capacities, and similar type items shall be as indicated and required by product manufacturer.

B. Owner and Installing Contractor(s) Responsibilities:

(1) Owner-Furnished/Contractor Installed ("OFCI"): Furnished by the Owner; installed by the Installing Contractor.

(a) General: Owner and Installing Contractor(s) will coordinate deliveries of materials and equipment to coincide with the construction schedule.

(b) Owner will furnish specified materials and equipment delivered to the site. Owner/vendor's representative shall be present on Site at the time of delivery to comply with the contract requirements and Specifications Section 01 43 00, Materials and Equipment, Article 1.04.

(c) The Owner furnishing specified materials and equipment is responsible to provide manufacturer guarantees as required by the Contract to the Installing Contractor.

(d) The Installing Contractor shall:

1) Review, verify and accept the approved manufacturer's submittal/Shop Drawings for all materials and equipment required to be installed by the Installer Contractor and furnished by the Owner. Any discrepancies, including but not limited to possible space conflicts, should be brought to the attention of the Project Manager and/or Program Manager, if applicable.

2) Coordinate timely delivery. Installing Contractor shall receive materials and equipment at Site when delivered and give written receipt at time of delivery, noting visible defects or omissions; if such declaration is not given, the Installing Contractor shall assume responsibility for such defects and omissions.

3) Store materials and equipment until ready for installation and protect from loss and damage. Installing Contractor is responsible for providing adequate storage space.

4) Coordinate with other bid package contractors and field measurement to ensure complete installation.

5) Uncrate, assemble, and set in place.

6) Provide adequate supports.

7) Install materials and equipment in accordance with manufacturer's recommendations, instructions, and Shop Drawings, supply labor and material required, and make mechanical, plumbing, and electrical connections required to operate equipment.

8) Be certified by equipment manufacturer for installation of the specific equipment supplied by the Owner.

9) Provide anchorage and/or bracing as required for seismic restraint per Title 24, UBC Standard 27-11 and all other applicable codes.

10) Provide the contract-required warranty and guarantee for all work, materials and equipment, and installation upon its completion and acceptance by the District. Guarantee includes all costs associated with the removal, shipping to and from the Site, and re-installation of any equipment found to be defective.

C. Compatibility with Space and Service Requirements:

(1) Equipment items shall be compatible with space limitations indicated and as shown on the Contract Documents and specified in other sections of the Specifications.

(2) Modifications to equipment items required to conform to space limitations specified for rough in shall not cause additional cost to the District.

D. Manufacturer's printed descriptions, specifications, and instructions shall govern the Work unless specifically indicated or specified otherwise.

2.02 FURNISHED MATERIALS AND EQUIPMENT

A. All furnished materials and equipment are indicated or scheduled on the Contract Documents.

PART 3 – EXECUTION

3.01 INSTALLATION

A. Install equipment items in accordance with the manufacturer's instructions.

B. Set equipment items securely in place, rigidly or flexibly mounted in accordance with manufacturers' directions.

C. Make electrical and mechanical connections as indicated and required.

D. Touch-up and restore damaged or defaced finishes to the Owner's satisfaction.

3.02 CLEANING AND PROTECTION

A. Repair or replace items not acceptable to the Architect or Owner.

B. Upon completion of installation, clean equipment items in accordance with manufacturer's recommendations, and protect from damage until final acceptance of the Work by the Owner.

END OF DOCUMENT

SECTION 01 66 00

PRODUCT DELIVERY, STORAGE AND HANDLING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

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

A. General Conditions, including, without limitation, Site Access, Conditions and Requirements;

B. Special Conditions.

1.02 PRODUCTS

A. Products are as defined in the General Conditions.

B. Contractor shall not use and/or reuse materials and/or equipment removed from existing Premises, except as specifically permitted by the Contract Documents.

C. Contractor shall provide interchangeable components of the same manufacturer, for similar components.

1.03 TRANSPORTATION AND HANDLING

A. Contractor shall transport and handle Products in accordance with manufacturer's instructions.

B. Contractor shall promptly inspect shipments to confirm that Products comply with requirements, quantities are correct, and products are undamaged.

C. Contractor shall provide equipment and personnel to handle Products by methods to prevent soiling, disfigurement, or damage.

1.04 STORAGE AND PROTECTION

A. Contractor shall store and protect Products in accordance with manufacturer's instructions, with seals and labels intact and legible. Contractor shall store sensitive products in weather-tight, climate controlled enclosures.

B. For exterior storage of fabricated Products, Contractor shall place on sloped supports, above ground.

C. Contractor shall provide off-site storage and protection when Site does not permit on-site storage or protection.

D. Contractor shall cover products subject to deterioration with impervious sheet covering and provide ventilation to avoid condensation.

E. Contractor shall store loose granular materials on solid flat surfaces in a well-drained area and prevent mixing with foreign matter.

F. Contractor shall provide equipment and personnel to store Products by methods to prevent soiling, disfigurement, or damage.

G. Contractor shall arrange storage of Products to permit access for inspection and periodically inspect to assure Products are undamaged and are maintained under specified conditions.

PART 2 – PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF DOCUMENT

DOCUMENT 01 71 23

FIELD ENGINEERING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

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

A. General Conditions, including, without limitation, Site Investigation, and Soils Investigation Report;

B. Special Conditions;

C. Site-Visit Certification.

1.02 REQUIREMENTS INCLUDED:

A. Contractor shall provide and pay for field engineering services by a California-registered engineer, required for the project, including, without limitations:

(1) Survey work required in execution of the Project.

(2) Civil or other professional engineering services specified, or required to execute Contractor's construction methods.

1.03 QUALIFICATIONS OF SURVEYOR OR ENGINEERS:

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

1.04 SURVEY REFERENCE POINTS:

A. Existing basic horizontal and vertical control points for the Project are those designated on the Drawings.

B. Contractor shall locate and protect control points prior to starting Site Work and preserve all permanent reference points during construction. In addition Contractor shall:

(1) Make no changes or relocation without prior written notice to District and Architect.

(2) Report to District and Architect when any reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.

(3) Require surveyor to replace Project control points based on original survey control that may be lost or destroyed.

1.05 RECORDS:

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

1.06 SUBMITTALS:

A. Contractor shall submit name and address of Surveyor and Professional Engineer to District and Architect prior to its/their work on the Project.

B. On request of District and Architect, Contractor shall submit documentation to verify accuracy of field engineering work, at no additional cost to the District.

C. Contractor shall submit a certificate signed by registered engineer or surveyor certifying that elevations and locations of improvements are in conformance or nonconformance with Contract Documents.

PART 2 – PRODUCTS Not Used.

PART 3 - EXECUTION

3.01 COMPLIANCE WITH LAWS:

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

3.02 NONCONFORMING WORK:

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

END OF DOCUMENT

DOCUMENT 01 73 29

CUTTING AND PATCHING

PART 1 – GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS:

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

A. General Conditions, including, without limitation, Inspector, Inspections, and Tests, Integration of Work, Nonconforming Work, and Correction of Work, and Uncovering Work;

B. Special Conditions;

C. Hazardous Materials Procedures and Requirements;

D. Hazardous Materials Certification;

E. Lead-Based Paint Certification;

F. Imported Materials Certification.

1.02 CUTTING AND PATCHING:

A. Contractor shall be responsible for all cutting, fitting, and patching, including associated excavation and backfill, required to complete the Work or to:

(1) Make several parts fit together properly.

(2) Uncover portions of Work to provide for installation of ill-timed Work.

(3) Remove and replace defective Work.

(4) Remove and replace Work not conforming to requirements of Contract Documents.

(5) Remove Samples of installed Work as specified for testing.

(6) Provide routine penetrations of non-structural surfaces for installation of piping and electrical conduit.

(7) Attaching new materials to existing remodeling areas – including painting (or other finishes) to match existing conditions.

B. In addition to Contract requirements, upon written instructions from the District, Contractor shall uncover Work to provide for observations of covered Work in accordance with the Contract Documents; remove samples of

installed materials for testing as directed by District; and remove Work to provide for alteration of existing Work.

C. Contractor shall not cut or alter Work, or any part of it, in such a way that endangers or compromises the integrity of the Work, the Project, or work of others.

1.03 SUBMITTALS:

A. Prior to any cutting or alterations that may affect the structural safety of Project, or work of others, and well in advance of executing such cutting or alterations, Contractor shall submit written notice to District pursuant to the applicable notice provisions of the Contract Documents, requesting consent to proceed with the cutting or alteration, including the following:

(1) The work of the District or other trades.

(2) Structural value or integrity of any element of Project.

(3) Integrity or effectiveness of weather-exposed or weather-resistant elements or systems.

(4) Efficiency, operational life, maintenance or safety of operational elements.

(5) Visual qualities of sight-exposed elements.

B. Contractor's Request shall also include:

(1) Identification of Project.

(2) Description of affected Work.

(3) Necessity for cutting, alteration, or excavations.

(4) Effects of Work on District, other trades, or structural or weatherproof integrity of Project.

(5) Description of proposed Work:

(a) Scope of cutting, patching, alteration, or excavation.

(b) Trades that will execute Work.

(c) Products proposed to be used.

(d) Extent of refinishing to be done.

(6) Alternates to cutting and patching.

(7) Cost proposal, when applicable.

(8) The scheduled date the Contractor intends to perform the Work and the duration of time to complete the Work.

(9) Written permission of District or other District contractor(s) whose work will be affected.

1.04 QUALITY ASSURANCE:

A. Contractor shall ensure that cutting, fitting, and patching shall achieve security, strength, weather protection, appearance for aesthetic match, efficiency, operational life, maintenance, safety of operational elements, and the continuity of existing fire ratings.

B. Contractor shall ensure that cutting, fitting, and patching shall successfully duplicate undisturbed adjacent profiles, materials, textures, finishes, colors, and that materials shall match existing construction. Where there is dispute as to whether duplication is successful or has been achieved to a reasonable degree, the District's decision shall be final.

1.05 PAYMENT FOR COSTS:

A. Cost caused by ill-timed or defective Work or Work not conforming to Contract Documents, including costs for additional services of the District, its consultants, including but not limited to the Construction Manager, the Architect, the Project Inspector(s), Engineers, and Agents, will be paid by Contractor and/or deducted from the Contract by the District.

B. District shall only pay for cost of Work if it is part of the original Contract Price or if a change has been made to the contract in compliance with the provisions of the General Conditions. Cost of Work performed upon instructions from the District, other than defective or nonconforming Work, will be paid by District on approval of written Change Order. Contractor shall provide written cost proposals prior to proceeding with cutting and patching.

PART 2 - PRODUCTS

2.01 MATERIALS:

A. Contractor shall provide for replacement and restoration of Work removed. Contractor shall comply with the Contract Documents and with the Industry Standard(s), for the type of Work, and the Specification requirements for each specific product involved. If not specified, Contractor shall first recommend a product of a manufacturer or appropriate trade association for approval by the District.

B. Materials to be cut and patched include those damaged by the performance of the Work.

PART 3 – EXECUTION

3.01 INSPECTION:

A. Contractor shall inspect existing conditions of the Site and the Work, including elements subject to movement or damage during cutting and patching, excavating and backfilling. After uncovering Work, Contractor shall inspect conditions affecting installation of new products.

B. Contractor shall report unsatisfactory or questionable conditions in writing to District as indicated in the General Conditions and shall proceed with Work as indicated in the General Conditions by District.

3.02 PREPARATION:

A. Contractor shall provide shoring, bracing and supports as required to maintain structural integrity for all portions of the Project, including all requirements of the Project.

B. Contractor shall provide devices and methods to protect other portions of Project from damage.

C. Contractor shall, provide all necessary protection from weather and extremes of temperature and humidity for the Project, including without limitation, any work that may be exposed by cutting and patching Work. Contractor shall keep excavations free from water.

3.03 ERECTION, INSTALLATION AND APPLICATION:

A. With respect to performance, Contractor shall:

(1) Execute fitting and adjustment of products to provide finished installation to comply with and match specified tolerances and finishes.

(2) Execute cutting and demolition by methods that will prevent damage to other Work, and provide proper surfaces to receive installation of repairs and new Work.

(3) Execute cutting, demolition excavating, and backfilling by methods that will prevent damage to other Work and damage from settlement.

B. Contractor shall employ original installer or fabricator to perform cutting and patching for:

(1) Weather-exposed surfaces and moisture-resistant elements such as roofing, sheet metal, sealants, waterproofing, and other trades.

(2) Sight-exposed finished surfaces.

C. Contractor shall execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances, and finishes as shown or specified in the Contract Documents including, without limitation, the Drawings and Specifications.

D. Contractor shall fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces. Contractor shall conform to all Code requirements for penetrations or the Drawings and Specifications, whichever calls for a higher quality or more thorough requirement. Contractor shall maintain integrity of both rated and non-rated fire walls, ceilings, floors, etc.

E. Contractor shall restore Work which has been cut or removed. Contractor shall install new products to provide completed Work in accordance with requirements of the Contract Documents and as required to match surrounding areas and surfaces.

F. Contractor shall refinish all continuous surfaces to nearest intersection as necessary to match the existing finish to any new finish.

END OF DOCUMENT

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 and square or straight transition to adjacent finishes.

E. Contractor shall install products as specified in the Contract Documents, including without limitation, the Specifications.

3.04 TRANSITIONS:

A. Where new Work abuts or aligns with existing, Contractor shall perform a smooth and even transition. Patched Work must match existing adjacent work in texture and appearance.

B. When finished surfaces are cut so that a smooth transition with new Work is not possible, Contractor shall terminate existing surface along a straight line at a natural line of division and make a recommendation for resolution to the District and the Architect for review and approval.

3.05 ADJUSTMENTS:

A. Where removal of partitions or walls results in adjacent spaces becoming one, Contractor shall rework floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads.

B. Where a change of plane of 1/4 inch or more occurs, Contractor shall submit a recommendation for providing a smooth transition to the District and the Architect for review and approval.

C. Contractor shall trim and seal existing wood doors and shall trim and paint metal doors as necessary to clear new floor finish and refinish trim as required.

D. Contractor shall fit Work at penetrations of surfaces.

3.06 REPAIR OF DAMAGED SURFACES:

A. Contractor shall patch or replace portions of existing surfaces, which are damaged, lifted, discolored, or showing other imperfections, in the area where the Work is performed.

B. Contractor shall repair substrate prior to patching finish.

3.07 CULTIVATED AREAS AND OTHER SURFACE IMPROVEMENTS:

A. Cultivated or planted areas and other surface improvements which are damaged by actions of the Contractor shall be restored by Contractor to their original condition or better, where indicated.

B. Contractor shall protect and replace, if damaged, all existing guard posts, barricades, and fences.

C. Contractor shall give special attention to avoid damaging or killing trees, bushes and/or shrubs on the Premises and/or identified in the Contract Documents, including without limitation, the Drawings.

3.08 FINISHES:

A. Contractor shall finish surfaces as specified in the Contract Documents, including without limitations, the provisions of all Divisions of the Specifications.

B. Contractor shall finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, Contractor shall refinish entire surface to nearest intersections.

3.09 CLEANING:

A. Contractor shall continually clean the Site and the Premises as indicated in the Contract Documents, including without limitation, the provisions in the General Conditions and the Specifications regarding cleaning.

END OF DOCUMENT

DOCUMENT 01 77 00

CONTRACT CLOSEOUT AND FINAL CLEANING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS AND PROVISIONS

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

A. General Conditions, including, without limitation, Completion of Work;

B. Special Conditions;

C. Temporary Facilities and Controls.

1.02 CLOSEOUT PROCEDURES

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

1.03 FINAL CLEANING

A. Contractor shall execute final cleaning prior to final inspection.

B. Contractor shall clean interior and exterior glass and all surfaces exposed to view; remove temporary labels, tape, stains, and foreign substances, polish transparent and glossy surfaces, wax and polish new vinyl floor surfaces, vacuum carpeted and soft surfaces.

C. Contractor shall clean equipment and fixtures to a sanitary condition.

D. Contractor shall replace filters of operating equipment.

E. Contractor shall clean debris from roofs, gutters, down spouts, and drainage systems.

F. Contractor shall clean Site, sweep paved areas, and rake clean landscaped surfaces.

G. Contractor shall remove waste and surplus materials, rubbish, and construction facilities from the Site and surrounding areas.

1.04 ADJUSTING

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

1.05 RECORD DOCUMENTS AND SHOP DRAWINGS

A. Contractor shall legibly mark each item to record actual construction, including:

(1) Measured depths of foundation in relation to finish floor datum.

(2) Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permit surface improvements.

(3) Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.

(4) Field changes of dimension and detail.

(5) Details not on original Contract Drawings

(6) Changes made by modification(s).

(7) References to related Shop Drawings and modifications.

B. Contractor will provide one set of Record Drawings to District.

C. Contractor shall submit all required documents to District and/or Architect prior to or with its final Application for Payment.

1.06 INSTRUCTION OF DISTRICT PERSONNEL

A. Before final inspection, at agreed upon times, Contractor shall instruct District's designated personnel in operation, adjustment, and maintenance of products, equipment, and systems.

B. For equipment requiring seasonal operation, Contractor shall perform instructions for other seasons within six months or by the change of season.

C. Contractor shall use operation and maintenance manuals as basis for instruction. Contractor shall review contents of manual with personnel in detail to explain all aspects of operation and maintenance.

D. Contractor shall prepare and insert additional data in Operation and Maintenance Manual when the need for such data becomes apparent during instruction.

E. Contractor shall review contents of manual with personnel in detail to explain all aspects of operation and maintenance.

1.07 SPARE PARTS AND MAINTENANCE MATERIALS

A. Contractor shall provide products, spare parts, maintenance, and extra materials in quantities specified in the Specifications and in Manufacturer's recommendations.

B. Contractor shall provide District with all required Operation and Maintenance Data at one time. Partial or piecemeal submissions of Operation and Maintenance Data will not be accepted.

PART 2 – PRODUCTS Not Used.

PART 3 – EXECUTION Not Used.

END OF DOCUMENT

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: Contractor shall include any and all information as required to supplement product data. Contractor shall provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

F. Warranties and Bonds: Contractor shall bind in one copy of each.

1.05 MANUAL FOR MATERIALS AND FINISHES:

A. Building Products, Applied Materials, and Finishes: Contractor shall include product data, with catalog number, size, composition, and color and texture designations. Contractor shall provide information for re-ordering custom manufactured products.

B. Instructions for Care and Maintenance: Contractor shall include Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

C. Moisture Protection and Weather Exposed Products: Contractor shall include product data listing applicable reference standards, chemical composition, and details of installation. Contractor shall provide recommendations for inspections, maintenance, and repair.

D. Additional Requirements: Contractor shall include all additional requirements as specified in the Specifications.

E. Contractor shall provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.06 MANUAL FOR EQUIPMENT AND SYSTEMS:

A. Each Item of Equipment and Each System: Contractor shall include description of unit or system, and component parts and identify function, normal operating characteristics, and limiting conditions. Contractor shall include performance curves, with engineering data and tests, and complete nomenclature, and commercial number of replaceable parts.

B. Panelboard Circuit Directories: Contractor shall provide electrical service characteristics, controls, and communications.

C. Contractor shall include color coded wiring diagrams as installed.

D. Operating Procedures: Contractor shall include start-up, break-in, and routine normal operating instructions and sequences. Contractor shall include regulation, control, stopping, shut-down, and emergency instructions. Contractor shall include summer, winter, and any special operating instructions.

E. Maintenance Requirements: Contractor shall include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

F. Contractor shall provide servicing and lubrication schedule, and list of lubricants required.

G. Contractor shall include manufacturer's printed operation and maintenance instructions.

H. Contractor shall include sequence of operation by controls manufacturer.

I. Contractor shall provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

J. Contractor shall provide control diagrams by controls manufacturer as installed.

K. Contractor shall provide Contractor's coordination drawings, with color coded piping diagrams as installed.

L. Contractor shall provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

M. Contractor shall provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

N. Additional Requirements: Contractor shall include all additional requirements as specified in Specification(s).

O. Contractor shall provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.07 SUBMITTAL:

A. Contractor shall submit to the District for review two (2) copies of preliminary draft or proposed formats and outlines of the contents of the Manual within thirty (30) days of Contractor's start of Work.

B. For equipment, or component parts of equipment put into service during construction and to be operated by District, Contractor shall submit draft content for that portion of the Manual within ten (10) days after acceptance of that equipment or component.

C. Contractor shall submit two (2) copies of a complete Manual in final form prior to final Application for Payment. Copy will be returned with Architect/Engineer comments. Contractor must revise the content of the Manual as required by District prior to District's approval of Contractor's final Application for Payment.

D. Contractor must submit two (2) copies of revised Manual in final form within ten (10) days after final inspection.

PART 2 – PRODUCTS Not Used.

PART 3 – EXECUTION Not Used.

END OF DOCUMENT

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 blank until the date of completion is determined.

B. Contractor shall verify that documents are in proper form, contain full information, and are notarized, when required.

C. Contractor shall co-execute submittals when required.

D. Contractor shall retain warranties until time specified for submittal.

1.04 TIME OF SUBMITTALS:

A. For equipment or component parts of equipment put into service during construction with District's permission, Contractor shall submit a draft warranty for that equipment or component within ten (10) days after acceptance of that equipment or component.

B. Contractor shall submit for District approval all warranties and related documents within ten (10) days after date of completion. Contractor must revise the warranties as required by the District prior to District's approval of Contractor's final Application for Payment.

C. For items of work delayed beyond date of completion, Contractor shall provide an updated submittal within ten (10) days after acceptance, listing the date of acceptance as start of warranty period.

PART 2 - PRODUCTS Not Used.

PART 3 – EXECUTION Not Used.

END OF DOCUMENT

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, full size original Contract Drawings (mylars).

B. Contractor shall maintain at each Project Site one set of marked-up plans and shall transfer all changes and information to those marked-up plans, as often as required in the Contract Documents, but in no case less than once each month. Contractor shall submit to the Project Inspector one set of reproducible vellums of the Project Record Drawings ("As-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 to match panel schedule.

(3) Locations of significant Work concealed inside each building whose general locations are changed from those shown on the Contract Drawings.

(4) Locations of all items, not necessarily concealed, which vary from the Contract Documents.

(5) Installed location of all cathodic protection anodes.

(6) Deviations from the sizes, locations, and other features of installations shown in the Contract Documents.

(7) Locations of underground work, points of connection with existing utilities, changes in direction, valves, manholes, catch basins, capped stubouts, invert elevations, etc.

(8) Sufficient information to locate Work concealed in each building with reasonable ease and accuracy.

In some instances, this information may be recorded by dimension. In other instances, it may be recorded in relation to the spaces in the building near which it was installed.

B. Contractor shall provide additional drawings as necessary for clarification.

C. Contractor shall provide reproducible record drawings, made from final Shop Drawings marked "No Exceptions Taken" or "Approved as Noted."

D. After review and approval of the marked-up specifications by the Project Inspector, Contractor shall provide electronic copies of the drawings (in PDF format) with one file with all of the sheets and one set of individual sheet files at the conclusion of the Project.

PART 3 - RECORD SPECIFICATIONS

3.01 GENERAL:

A. Contractor shall mark each section legibly to record manufacturer, trade name, catalog number, and supplier of each Product and item of equipment actually installed.

B. After review and approval of the marked-up specifications by the Project Inspector, Contractor shall provide one electronic copy of the specifications (in PDF format) at the conclusion of the Project.

PART 4 - MAINTENANCE OF RECORD DOCUMENTS

4.01 GENERAL

A. Contractor shall store Record Documents apart from documents used for construction as follows:

(1) Provide files and racks for storage of Record Documents.

(2) Maintain Record Documents in a clean, dry, legible condition and in good order.

B. Contractor shall not use Record Documents for construction purposes.

PART 5 – PRODUCTS Not Used.

END OF DOCUMENT

AXIA ARCHITECTS

PO BOX 1000
SANTA ROSA, CA 95402

540 MENDOCINO AVE
SANTA ROSA, CA 95401

August 21, 2025

Division of the State Architect
Oakland Regional Office
Emmanuel Buenaventura, Access Compliance Supervisor
1515 Clay Street, Suite 1201
Oakland, CA 94612

Re: Request for Unreasonable Hardship for Projects Under the Valuation Threshold per CBC 11B-202.4 Exception 8 for: DSA #01-222571 Brookside Elementary School – Pedestrian Bridge

Dear Mr. Buenaventura,

The proposed project is estimated to be under the valuation threshold as set forth by DSA in the Valuation Threshold for Alterations, Structural Repairs or Additions to Existing Buildings in accordance with the 2022 California Building Code Chapter 2 definition of VALUATION THRESHOLD. The 2025 valuation threshold is **$203,611.00** and the estimated cost of construction of this project per the original DSA 1 submission is $150,000.

Per CBC 11B-202.4, exception 8, when the estimated adjusted construction cost is below the valuation threshold, compliance with Section 11B-202.4 shall be limited to 20% of the adjusted construction cost. For a project that has an estimated adjusted construction cost, with the required path of travel components removed per CBC 11B-202.4, exception 8, of $24,500, the cost of the required path of travel upgrades shall be limited to $4,900. See scope outline and estimated costs below of elements that are part of the proposed scope of work that are applicable toward this limited 20% compliance threshold.

Scope of Work	Square Footage or Quantity	Estimated Cost (Includes Labor)
Demolition of (E) AC Paving	3,500 SF	$17,500
Demolition of (E) Wooden Bridge	1	$10,000
Installation of Pedestrian Bridge	1	$50,000
Concrete Paving – Parking, Ramp, & Walk	1,500 SF	$40,000
Ramp Handrails	1	$5,000
Parking Space Striping & Accessories	1	$3,000
Total Cost		$125,500

The total cost of the elements above as estimated exceeds 20% of the adjusted construction cost. As a result of this, the remaining elements that would normally be required to be upgraded into full compliance of CBC 11B-202.4 are exempt from compliance per exception 8. There are no identified non-compliant elements as part of this project.

Please contact me at dweigl@axiaarchitects.com or (806) 239-5678, with any questions or clarifications.

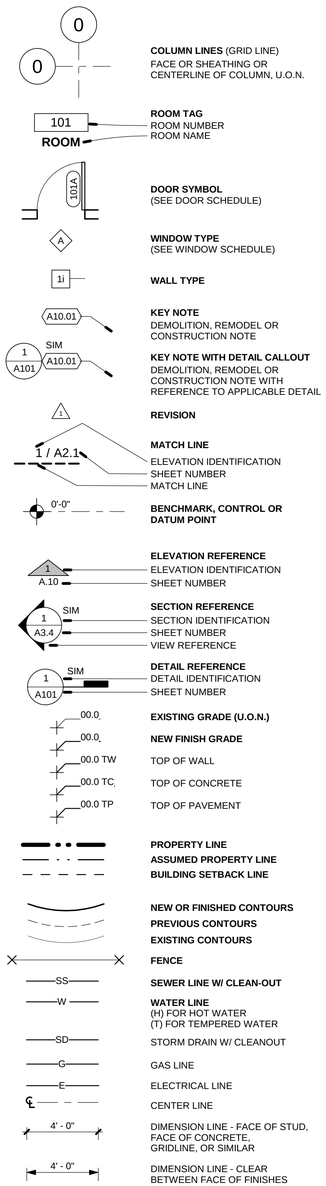
Sincerely,

Drew Weigl, AIA, LEED AP BD+C
Associate Principal
AXIA Architects

ABBREVIATIONS

&	AND	MAX	MAXIMUM
@	AT	MB	MACHINE BOLT
ACC	ACCESSIBLE	MC	MEDICINE CABINET
ACOU	ACOUSTICAL	MDO	MEDIUM DENSITY OVERLAY
AD	AREA DRAIN	MECH	MECHANICAL
ADJ	ADJUSTABLE	MEMB	MEMBRANE
AFF	ABOVE FINISH FLOOR	MFR	MANUFACTURER
AGG	AGGREGATE	MH	MANHOLE
AL	ALUMINUM	MI	MALLEABLE IRON
AP	ASPHALTIC PAVEMENT	MIN	MINIMUM
APPROX	APPROXIMATE	MIR	MIRROR
ARCH	ARCHITECTURAL	MISC	MISCELLANEOUS
ASPH	ASPHALT	MP	MULTI-PURPOSE
		MO	MASONRY OPENING
BB	BULLETIN BOARD	MRGB	MOISTURE-RESISTANT
BD	BOARD		GYPSUM BOARD
BITUM	BITUMINOUS	MS	MACHINE SCREW
BLDG	BUILDING	MTD	MOUNTED
BLK	BLOCK	MTL	METAL
BLKG	BLOCKING	MUL	MULLION
BM	BEAM		
BOT	BOTTOM	(N)	NEW
BS	BOTH SIDES	N	NORTH
		NIC	NOT IN CONTRACT
CAB	CABINET	NO. or #	NUMBER
CB	CATCH BASIN	NOM	NOMINAL
CEM	CEMENT	NTS	NOT TO SCALE
CER	CERAMIC		
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED	OA	OVERALL
		OBS	OBSCURE
CFOI	CONTRACTOR FURNISHED, OWNER INSTALLED	OC	ON CENTER
		OD	OUTSIDE DIMENSION
CH	COAT HOOK	OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
CI	CAST IRON		
CLF	CHAIN LINK FENCE	OFOI	OWNER FURNISHED, OWNER INSTALLED
CLG	CEILING		
CLKG	CAULKING	OFD	OVERFLOW DRAIN
CLO	CLOSET	OFF	OFFICE
CLR	CLEAR	OPNG	OPENING
CMU	CONCRETE MASONRY UNIT	OPP	OPPOSITE
CNTR	COUNTER		
CO	CLEAN OUT	PB	PLANE BREAK
COL	COLUMN	PC	PIECE or PORTLAND CEMENT
CONC	CONCRETE	PDP	POWER DRIVEN PIN
CONN	CONNECTION	PL	PLATE
CONSTR	CONSTRUCTION	PLAM	PLASTIC LAMINATE
CONT	CONTINUOUS	PLAS	PLASTER
CORR	CORRIDOR	PLYWD	PLYWOOD
CTSK	COUNTERSUNK	PMF	PRESSED METAL FRAME
CTR	CENTER	PNL	PANEL
CVG	CLEAR VERTICAL GRAIN	PP	POWER POLE
		PR	PAIR
DBL	DOUBLE	PRCST	PRE-CAST
DEPT	DEPARTMENT	PT	POINT or PRESSURE TREATED
DET	DETAIL	PTD	PAPER TOWEL DISPENSER
DF	DOUGLAS FIR or DRINKING FOUNTAIN	PTD/R	COMBINATION PAPER TOWEL DISPENSER/RECEPTACLE
DI	DROP INLET	PTN	PARTITION
DIA	DIAMETER	PTR	PAPER TOWEL RECEPTACLE
DIM	DIMENSION		
DISP	DISPENSER	QT	QUARRY TILE
DN	DOWN		
DO	DITTO	R or RAD	RADIUS
DR	DOOR	RD	ROOF DRAIN
DS	DOWNSPOUT	REC	RECESSED
SDP	DRY STANDPIPE	RECEPT	RECEPTACLE
DWG	DRAWING	REF	REFERENCE
DWR	DRAWER	REFR	REFRIGERATOR
DW	DISHWASHER	REINF	REINFORCED
		REQ'D	REQUIRED
E	EAST	RESIL	RESILIENT
(E)	EXISTING	REV	REVERSE
EA	EACH	RGTR	REGISTER
EIFS	EXTERIOR INSULATION & FINISH SYSTEM	RH	ROUND HEAD
		RM	ROOM
EJ	EXPANSION JOINT	RO	ROUGH OPENING
ELEC	ELECTRICAL	RWD	REDWOOD
ELEV	ELEVATION	RWL	RAIN WATER LEADER
EMER	EMERGENCY		
ENCL	ENCLOSURE	SAD	SEE ARCHITECTURAL DRAWINGS
EOP	EDGE OF PAVEMENT		
EP	ELECTRIC PANEL BOARD	S	SOUTH
EQ	EQUAL	SC	SOLID CORE
EQUIP	EQUIPMENT	SCD	SEAT COVER DISPENSER
EWC	ELECTRIC WATER COOLER	SCD	SEE CIVIL DRAWINGS
EXP	EXPANSION	SCHED	SCHEDULE
EXPO	EXPOSED	SD	SOAP DISPENSER
EXT	EXTERIOR	SECT	SECTION
		SED	SEE ELECTRICAL DRAWINGS
FA	FIRE ALARM	SH	SHELF
FB	FLAT BAR	SHR	SHOWER
FD	FLOOR DRAIN	SHT	SHEET
FDN	FOUNDATION	SHTG	SHEATHING
FE	FIRE EXTINGUISHER	SIM	SIMILAR
FEC	FIRE EXTINGUISHER CABINET	SLD	SEE LANDSCAPE DRAWINGS
FFE	FINISH FLOOR ELEVATION	SMD	SEE MECHANICAL DRAWINGS
FG	FINISH GRADE	SMS	SHEET METAL SCREWS
FH	FLAT HEAD	SND	SANITARY NAPKIN DISPENSER
FHC	FIRE HOSE CABINET	SNR	SANITARY NAPKIN RECEPTACLE
FIN	FINISH	SNTD	SANITARY NAPKIN & TAMPON DISPENSER
FLR	FLOOR		
FLUOR	FLUORESCENT	SPD	SEE PLUMBING DRAWINGS
FO	FRAME OPENING	SPEC	SPECIFICATIONS
FOB	FACE OF BLOCK	SQ	SQUARE
FOC	FACE OF CONCRETE or CURB	SSD	SEE STRUCTURAL DRAWINGS
FOF	FACE OF FINISH	SST	STAINLESS STEEL
FOS	FACE OF STUDS	SSK	SERVICE SINK
FT	FOOT or FEET	STA	STATION
FTG	FOOTING	STD	STANDARD
FURR	FURRING	STL	STEEL
FUT	FUTURE	STOR	STORAGE
FV	FIELD VERIFY	STRL	STRUCTURAL
		SUSP	SUSPENDED
GA	GAUGE	SYM	SYMMETRICAL
GALV	GALVANIZED		
GB	GRAB BAR	T & G	TONGUE AND GROOVE
GI	GALVANIZED IRON	TB	TOWEL BAR
GL	GLASS	TC	TOP OF CURB or CONCRETE
GLB	GLUE LAM BEAM	TEL	TELEPHONE
GND	GROUND	TER	TERRAZZO
GR	GRADE	THK	THICK
GSM	GALVANIZED SHEET METAL	TP	TOP OF PAVEMENT
		TPD	TOILET PAPER DISPENSER
GYP	GYPSUM	TPD/R	TOILET PAPER DISPENSER/RECEPTACLE
HB	HOSE BIB	TR	TRASH RECEPTACLE
HC	HOLLOW CORE	TS	TOP SOIL
HE	HIGH EFFICIENCY	TV	TELEVISION
HD	HAND DRYER	TW	TOP OF WALL
HDR	HEADER	TYP	TYPICAL
HDWD	HARDWOOD		
HM	HOLLOW METAL	UON	UNLESS OTHERWISE NOTED
HORIZ	HORIZONTAL	UNO	UNLESS NOTED OTHERWISE
HR	HOUR	UR	URINAL
HRC	HOSE REEL CABINET		
HT	HEIGHT	VCT	VINYL COMPOSITE TILE
		VERT	VERTICAL
ID	INSIDE DIMENSION	VEST	VESTIBULE
IG	INVERT GRADE	VG	VERTICAL GRAIN
INCAN	INCANDESCENT	VTW	VINYL TACKWALL
INSUL	INSULATION		
INT	INTERIOR	W	WEST
		W/	WITH
JAN	JANITOR	WC	WATER CLOSET
JP	JOINT POLE	WD	WOOD
JST	JOIST	WDW	WINDOW
JT	JOINT	WG	WIRE GLASS
		w/o	WITHOUT
KIT	KITCHEN	WP	WATER PROOF
		WR	WATER RESISTANT
LAB	LABORATORY	WRP	WATER REPELLANT
LAM	LAMINATE	WRR	WALL RETURN REGISTER
LAV	LAVATORY	WS	WOOD SCREW
LB or #	POUNDS		
LKR	LOCKER		
LT	LIGHT		
LVR	LOUVER		

SYMBOLS



COLUMN LINES (GRID LINE)
FACE OR SHEATHING OR CENTERLINE OF COLUMN, U.O.N.

ROOM TAG
ROOM NUMBER
ROOM NAME

DOOR SYMBOL
(SEE DOOR SCHEDULE)

WINDOW TYPE
(SEE WINDOW SCHEDULE)

WALL TYPE

KEY NOTE
DEMOLITION, REMODEL OR CONSTRUCTION NOTE

KEY NOTE WITH DETAIL CALLOUT
DEMOLITION, REMODEL OR CONSTRUCTION NOTE WITH REFERENCE TO APPLICABLE DETAIL

REVISION

MATCH LINE
ELEVATION IDENTIFICATION
SHEET NUMBER
MATCH LINE

BENCHMARK, CONTROL OR DATUM POINT

ELEVATION REFERENCE
ELEVATION IDENTIFICATION
SHEET NUMBER

SECTION REFERENCE
SECTION IDENTIFICATION
SHEET NUMBER
VIEW REFERENCE

DETAIL REFERENCE
DETAIL IDENTIFICATION
SHEET NUMBER

EXISTING GRADE (U.O.N.)

NEW FINISH GRADE

TOP OF WALL

TOP OF CONCRETE

TOP OF PAVEMENT

PROPERTY LINE

ASSUMED PROPERTY LINE

BUILDING SETBACK LINE

NEW OR FINISHED CONTOURS

PREVIOUS CONTOURS

EXISTING CONTOURS

FENCE

SEWER LINE W/ CLEAN-OUT

WATER LINE
(H) FOR HOT WATER
(T) FOR TEMPERED WATER

STORM DRAIN W/ CLEANOUT

GAS LINE

ELECTRICAL LINE

CENTER LINE

DIMENSION LINE - FACE OF STUD, FACE OF CONCRETE, GRIDLINE, OR SIMILAR

DIMENSION LINE - CLEAR BETWEEN FACE OF FINISHES

PROJECT GENERAL NOTES

1. A COPY OF PARTS 1 TO 5, TITLE 24 SHALL BE KEPT ON THE JOB AT ALL TIMES.
2. NOTIFY DSA AT THE START OF CONSTRUCTION AND 48 HOURS MINIMUM PRIOR TO THE PLACEMENT OF CONCRETE.
3. SUPERVISION OF CONSTRUCTION BY DSA SHALL BE IN ACCORDANCE WITH TITLE 24 SECTION 4-336.
4. A "DSA CERTIFIED" PROJECT INSPECTOR EMPLOYED BY THE DISTRICT (OWNER) AND APPROVED BY THE DSA SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-342, PART 1, TITLE 24, CCR. A MINIMUM CLASS 1 INSPECTOR IS REQUIRED.
5. TESTS AND INSPECTIONS: CONFORM TO THE REQUIREMENTS OF TITLE 24 SECTION 4-335, AND APPROVED DSA-103 - T & I SHEET.
6. VERIFIED REPORTS (DSA-6): CONTRACTOR, ENGINEERS, ARCHITECT, AND INSPECTOR OF RECORD SHALL SUBMIT IN ACCORDANCE WITH TITLE 24 SECTIONS 4-336 AND 4-343.
7. CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDUM OR A CONSTRICTION CHANGE DOCUMENT (CCD) APPROVED BY THE DIVISION OF THE STATE ARCHITECT, AS REQUIRED BY SECTION 4-338, PART 1, TITLE 24, CCR.
8. CONSTRUCTION TYPES AND OCCUPANCIES: SEE CODE REVIEW PLAN.
9. NOTES, SYMBOLS, LINE WORK AND GRAPHIC CONVENTIONS INTENDED TO APPLY TYPICALLY AT ALL LOCATIONS OF SIMILAR GRAPHIC REPRESENTATION. ANNOTATION MAY BE LIMITED TO REDUCE REDUNDANCY OR PROMOTE CLARITY. NO LIMITATION OF APPLICATION IS INTENDED EXCEPT AS SPECIFICALLY NOTED.
10. ALL WORK SHOWN IS NEW AND IN THIS CONTRACT UNLESS SPECIFICALLY NOTED OTHERWISE.
11. DRAWINGS ARE PREPARED FROM INFORMATION MADE AVAILABLE BY THE OWNER AND ARE NOT A GUARANTEE OF EXISTING OR CONCEALED CONDITIONS.
12. DIMENSIONS INDICATED ARE FACE OF STUD, FACE OF CONCRETE, CENTERLINE OF COLUMN OR OTHER GRID POINT, CENTERLINE OF DOOR OR OTHER SCHEDULED OPENING, UNO.
13. DIMENSIONS SHOWN SHALL HAVE PREFERENCE OVER SCALE. DO NOT SCALE DRAWINGS.
14. VERIFY ALL DIMENSIONS AND CONDITIONS INDICATED. NOTIFY ARCHITECT OF DISCREPANCIES.
15. FLOOR ELEVATIONS INDICATED ARE TOP OF CONCRETE SLAB OR STRUCTURAL DECK, UNO
16. FIELD VERIFY GRADE ELEVATIONS.
17. GRADE FOR UNIFORM SLOPE BETWEEN SPOT ELEVATIONS. GRADE TO DRAIN AWAY FROM BUILDINGS, PREVENT PONDING.
18. PROCURE AND PAY FOR ALL LICENSES, ETC. REQUIRED TO CARRY ON AND COMPLETE THE WORK, WITH THE EXCEPTION OF DSA.
19. VISIT SITE PRIOR TO BID, REVIEW EXISTING CONDITIONS FOR CONDITIONS WHICH MAY CONFLICT OR INTERFERE WITH WORK. NO ALLOWANCES MADE FOR FAILURE TO BECOME FAMILIAR WITH SITE CONDITIONS BEFORE BIDDING.
20. LOCATE / VERIFY CONCEALED (E) UTILITIES IN CONSTRUCTION AREAS WITH PIPE LOCATOR. CONFIRM LOCATIONS OF ALL (E) PIPES/CONDUITS INDICATED ON DRAWINGS. NOTIFY ARCHITECT IMMEDIATELY OF UNIDENTIFIED UTILITIES OR INCORRECT LOCATIONS. EXISTING UTILITY LOCATIONS ARE APPROXIMATE.
21. PROVIDE, COORDINATE AND VERIFY THE SIZE AND LOCATION OF EACH OF THE FOLLOWING: ACCESS DOORS FOR CONCEALED ELEMENTS REQUIRING ACCESS, OPENINGS, FURRING, ANCHORS, INSERTS AND BLOCKING SUPPORTING ACCESSORIES, MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT.
22. COORDINATE AND VERIFY ROUGH-IN DIMENSIONS, FOR EQUIPMENT PROVIDED IN THIS CONTRACT AND EQUIPMENT FURNISHED OR PROVIDED BY OTHERS.
23. COORDINATE AND VERIFY ALL ELECTRICAL, MECHANICAL, TELEPHONE, FIRE ALARM AND SECURITY REQUIREMENTS BEFORE CONSTRUCTION.
24. COORDINATE AND VERIFY LOCATIONS OF LIGHT FIXTURES, MECHANICAL REGISTERS AND SMOKE DETECTORS BEFORE CONSTRUCTION.
25. CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE SAFETY. COMPLY WITH APPLICABLE SAFETY REGULATIONS FOR WORKER AND PUBLIC PROTECTION DURING CONSTRUCTION.
26. PROVIDE FIRE BLOCKING COMPLYING WITH CBC SECTION 708.2.1.IN ALL CONCEALED SPACES.
27. THE ARCHITECT AND STRUCTURAL ENGINEER SHALL PERFORM THEIR DUTIES IN ACCORDANCE WITH SEC. 4-333(a) AND 4-341, PART 1 TITLE 24
28. THE CONTRACTOR SHALL PERFORM HIS DUTIES IN ACCORDANCE WITH SECTION 4-343, PART 1, TITLE 24.
29. DSA IS NOT SUBJECT TO ARBITRATION
30. ALL CONSTRUCTION AND DEMOLITION SHALL BE IN ACCORDANCE WITH CHAPTER 33 OF THE CBC AND CFC, AND THE WRITTEN SITE SAFETY PLAN.
31. THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS IS THAT THE WORK OF THE ALTERATION, REHABILITATION OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH TITLE 24, CCR. SHOULD ANY EXISTING CONDITIONS SUCH AS DETERIORATION OR NON-COMPLYING CONSTRICTION BE DISCOVERED WHICH IS NOT COVERED BY THE CONTRACT DOCUMENTS WHEREIN THE FINISHED WORK WILL NOT COMPLY WITH TITLE 24, CCR, A CONSTRUCTION CHANGE DOCUMENT (CCD), OR A SEPARATE SET OF PLANS AND SPECIFICATIONS, DETAILING AND SPECIFYING THE REQUIRED WORK SHALL BE SUBMITTED TO AND APPROVED BY DSA BEFORE PROCEEDING WITH THE WORK. (SECTION 4-317(C), PART 1, TITLE 24, CCR).
32. A DSA ACCEPTED TESTING LABORATORY DIRECTLY EMPLOYED BY THE DISTRICT (OWNER) SHALL CONDUCT ALL THE REQUIRED TESTS AND INSPECTIONS FOR THE PROJECT.
33. SUBSTITUTIONS AFFECTING ITEMS REGULATED BY THE DIVISION OF THE STATE ARCHITECT (DSA) REQUIRE DSA APPROVAL AS AN ADDENDUM OR A CONSTRUCTION CHANGE DOCUMENT (CCD). DSA APPROVAL SHALL BE OBTAINED PRIOR TO FABRICATION AND/OR INSTALLATION PER SECTION R-338, PART 1, TITLE 24, CCR.

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

(APPLICATION NO.: 01-122571 FILE NO.: 21-48)

THE DRAWINGS OR SHEETS LISTED ON THE COVER / SHEET INDEX, OTHER THAN GENERAL AND ARCHITECTURAL, 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 SPECIFICATIONS 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: [X] ALL DRAWINGS OR SHEETS LISTED ON THE COVER OR INDEX SHEET

[ ] THIS DRAWING OR PAGE

[X] IS / ARE IN GENERAL CONFORMANCE WITH THE PROJECT DESIGN,

AND

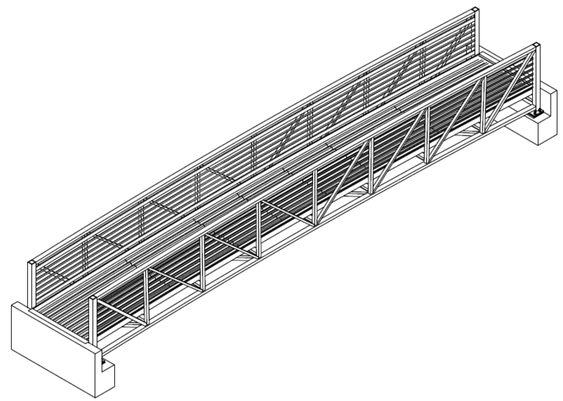
[X] HAS / HAVE BEEN COORDINATED WITH THE PROJECT PLANS AND SPECIFICATIONS.

08.21.2025

SIGNATURE **DATE**
ARCHITECT OR ENGINEER DESIGNATED TO BE IN GENERAL RESPONSIBLE CHARGE

Douglas M. Hilberman C 29543 10.31.2025

PRINT NAME **LICENSE NUMBER** **EXP. DATE**



ROSS VALLEY SCHOOL DISTRICT

BROOKSIDE ELEMENTARY SCHOOL - PEDSTRIAN BRIDGE

DSA SUBMISSION SET - 08.21.2025

DSA APP # 01-122571

APPLICABLE CODES

ALL WORK TO CONFORM TO THE FOLLOWING REQUIREMENTS:

2022 CALIFORNIA BUILDING STANDARDS CODE
2025 CALIFORNIA ADMINISTRATIVE CODE (CAC), C.C.R., TITLE 24, PART 1
2022 CALIFORNIA BUILDING CODE (CBC) C.C.R., TITLE 24, PART 2, VOLUMES 1 & 2 (BASED ON 2021 INTERNATIONAL BUILDING CODE)
2022 CALIFORNIA ELECTRICAL CODE (CEC), C.C.R., TITLE 24, PART 3 (BASED ON 2020 NATIONAL ELECTRICAL CODE)
2022 CALIFORNIA ENERGY CODE (CENC), C.C.R., TITLE 24, PART 6
2022 CALIFORNIA FIRE CODE (CFC), C.C.R., TITLE 24, PART 9 (BASED ON 2021 INTERNATIONAL FIRE CODE)
2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CALGREEN), C.C.R., TITLE 24, PART 11
2022 CALIFORNIA REFERENCED STANDARDS CODE, C.C.R., TITLE 24, PART 12

PROJECT SCOPE

THE PROJECT INCLUDES THE REPLACEMENT OF AN EXISTING WOODEN PEDESTRIAN BRIDGE WITH A MODERN STEEL AND CONCRETE PREFABRICATED PEDESTRIAN BRIDGE.

THE PROJECT ALSO GENERALLY INCLUDES THE REQUIRED PATH OF TRAVEL UPGRADES ASSOCIATED WITH THE BRIDGE REPLACEMENT AND NECESSARY ELECTRICAL WORK FOR FEEDERS THAT ARE MOUNTED TO THE EXISTING BRIDGE.

WILDLAND-URBAN INTERFACE

THIS PROJECT IS NOT IN A FIRE HAZARD SEVERITY ZONE.

FLOOD ZONE INFORMATION

THIS PROJECT IS LOCATED ON FIRM PANEL 06041C0452E

FLOOD ZONE AT CAMPUS & PARKING LOTS IS "X", MINIMAL HAZARD

FLOOD ZONE AT BRIDGE IS 'AE' , WITH BASE FLOOD ELEVATION OF 93 FEET

DEFERRED APPROVAL

THE FOLLOWING SHALL BE DEFERRED SUBMITTAL(S) PREPARED BY THE CONTRACTOR:

THERE ARE NO DEFFERED SUBMITTALS

FIRE ALARM SYSTEM NOTES

1. SCOPE OF WORK DOES NOT INCLUDE ANY MODIFICATIONS OR ADJUSTMENTS TO THE EXISTING FIRE ALARM SYSTEM ON THIS CAMPUS.
2. CONTRACTOR TO PROTECT FIRE ALARM SYSTEM AND ALL EQUIPMENT IN PLACE FROM DAMAGE OR DISTRPTION BY ADJACENT CONSTRUCTION ACTIVITIES.

CAL GREEN

1. ALL WORK TO COMPLY WITH CALGREEN SECTION 5.408.1, CONSTRUCTION WASTE MANAGEMENT. RECYCLE AND/OR SALVAGE FOR REUSE A MINIMUM OF 50 PERCENT OF THE NON HAZARDOUS CONSTRUCTION AND DEMOLITION WASTE IN ACCORDANCE WITH SECTION 5.408.1.1, 5.408.1.2 OR 5.408.1.3; OR MEET A LOCAL CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT ORDINANCE, WHICHEVER IS MORE STRINGENT.
   5.408.1.1 - CONSTRUCTION WASTE MANAGEMENT PLAN
   5.408.1.2 - WASTE MANAGEMENT COMPANY
   5.408.1.3 - WASTE STREAM REDUCTION ALTERNATIVE
2. CONSTRUCTION WASTE DOCUMENTATION SHALL BE PROVIDED TO THE ENFORCING AGENCY WHICH DEMONSTRATES COMPLIANCE WITH SECTIONS 5.408.1.1 THROUGH 5.408.1.3 PER SECTION 5.408.1.4.
3. FINISH MATERIALS SHALL COMPLY WITH CALGREEN SECTIONS 5.504.4.1 THROUGH 5.504.4.6 AND TABLES 5.504.4.1 THROUGH 5.504.4.5.
   5.504.4.1 - ADHESIVES, SEALANTS AND CAULKS
   5.504.4.3 - PAINTS & COATINGS

PROJECT DIRECTORY

OWNER
ROSS VALLEY SCHOOL DISTRICT
CONTACT: CHRIS CARSON, CBO 415.451.4075
100 SHAW DRIVE
SAN ANSELMO, CA 94960

ARCHITECT
AXIA ARCHITECTS
CONTACT: DREW WEIGL, AIA 707.542.4652
540 MENDOCINO AVE
SANTA ROSA, CA 95401

STRUCTURAL ENGINEER
ZFA STRUCTURAL ENGINEERS
CONTACT: KEVIN ZUCCO, SE 707.526.0992
250 D STREET, STE 200
SANTA ROSA, CA 95404

CIVIL ENGINEER
O'MAHONY & MEYER
CONTACT: PIETER COLENBRANDER, PE 415.492.0420
4340 REDWOOD HWY #245
SAN RAFAEL, CA 94903

ELECTRICAL ENGINEER
BRELJE & RACE CONSULTING ENGINEERS
CONTACT: TYSON ROBERTSON, PE 707.576.1322
475 AVIATION BLVD, STE 210
SANTA ROSA, CA 95403

BRIDGE ENGINEER & MANUFACTURER
CONTECH ENGINEERED SOLUTIONS LLC
CONTACT: JASON LEACH, PE 916.747.7585
8301 STATE HWY 29 N
ALEXANDRIA, MN 56308

SHEET INDEX

SHEET COUNT: 21 SHEETS

GENERAL
G1 TITLE SHEET
G2 SITE PLAN - CODE SUMMARY & EVA

CIVIL
C1 ABBREVIATIONS, LEGEND & NOTES
C2 DEMOLITION PLAN
C3 GRADING PLAN
C4 PAVEMENT STRUCTURAL SECTION PLAN
C5 EROSION CONTROL & LAYOUT PLAN
C6 DETAILS

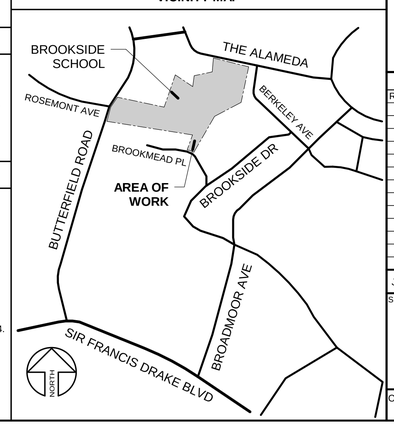
ARCHITECTURAL
A1.1 OVERALL SITE PLAN
A1.4 SITE DETAILS

STRUCTURAL
S1.0 GENERAL NOTES
S1.1 TYPICAL DETAILS
S2.1 FOUNDATION PLAN

BRIDGE
1 OF 7 PSA-E2 BRIDGE COVER PAGE
2 OF 7 GENERAL NOTES
3 OF 7 ANCHOR BOLT PLAN
4 OF 7 BRIDGE ELEVATION & SECTION
5 OF 7 BRIDGE PLAN & BEARING ELEVATIONS
6 OF 7 DETAILS
7 OF 7 DETAILS

ELECTRICAL
E1.1 SITE PLAN - ELECTRICAL

VICINITY MAP



ARCHITECT:
AXIA ARCHITECTS
540 Mendocino Ave, Santa Rosa, CA 95401
707 542 4652
axiaarchitects.com

CONSULTANT:

ROSS VALLEY SCHOOL DISTRICT
BROOKSIDE ELEMENTARY SCHOOL - PEDSTRIAN BRIDGE
116 BUTTERFIELD ROAD, SAN ANSELMO, CALIFORNIA 94960

SEAL:
LICENSED ARCHITECT
DOUGLAS M. HILBERMAN
No. C 29543
REN. 10-31-25
STATE OF CALIFORNIA

SHEET LOG

REV #	DATE:	ISSUED FOR:

JOB NUMBER: 1192

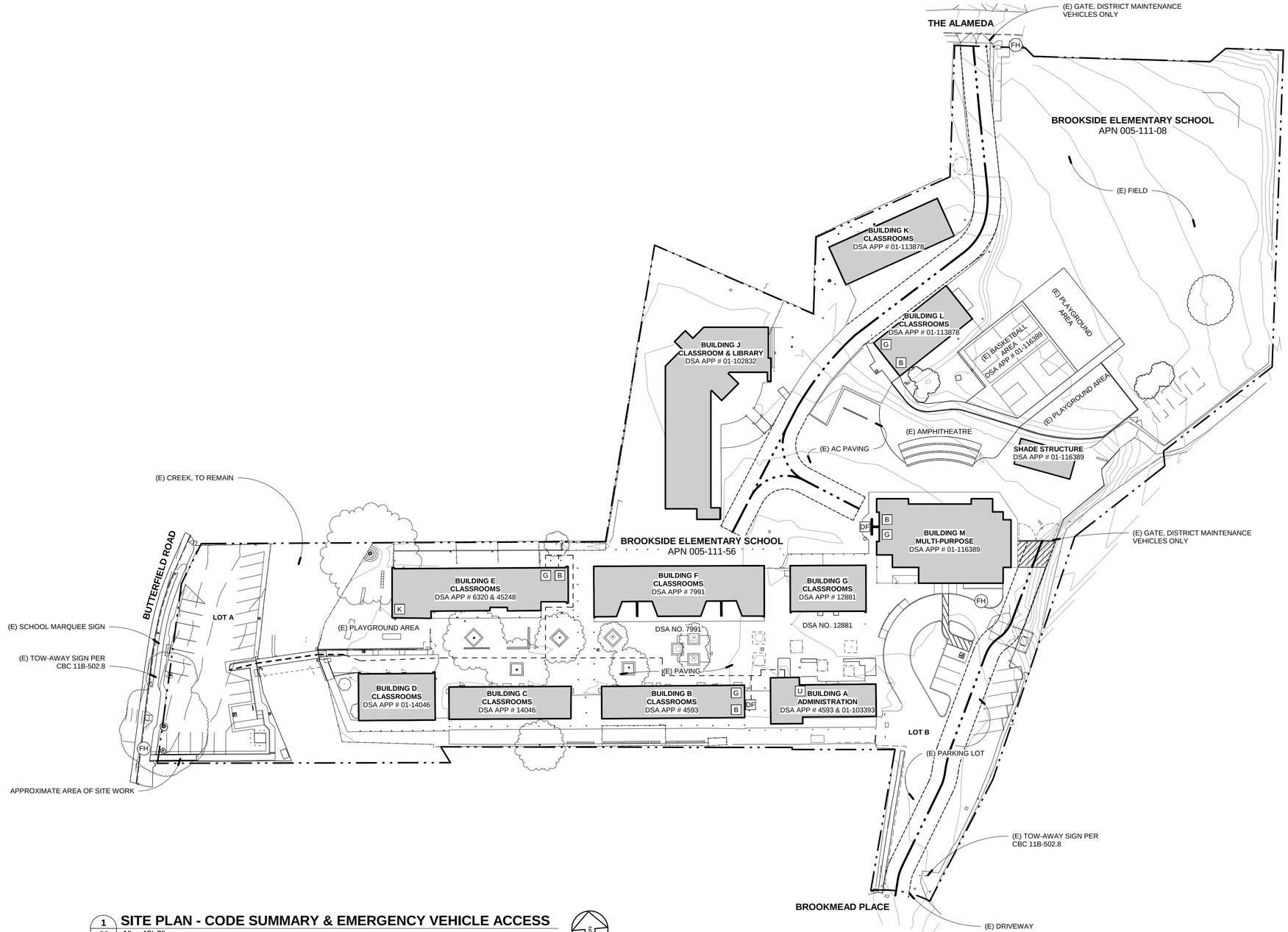
SHEET: **G1**

TITLE SHEET

ORIGINAL DATE: 08.21.2025

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8/21/2025 8:16:20 PM C:\Users\DWeigl\Documents_REVIT Files\1192_Brookside ES Bridge_C_DWeigl.rvt



1 G2 **SITE PLAN - CODE SUMMARY & EMERGENCY VEHICLE ACCESS**
1" = 40'-0"

PATH OF TRAVEL IMPROVEMENTS

THE PROPOSED PROJECT IS ESTIMATED TO BE UNDER THE VALUATION THRESHOLD AS SET FORTH BY DSA IN THE VALUATION THRESHOLD FOR ALTERATIONS, STRUCTURAL REPAIRS OR ADDITIONS TO EXISTING BUILDINGS IN ACCORDANCE WITH THE 2022 CALIFORNIA BUILDING CODE CHAPTER 2 DEFINITION OF VALUATION THRESHOLD.

PER CBC 11B-202.4 EXCEPTION 8, WHEN THE ADJUSTED CONSTRUCTION COST IS LESS THAN OR EQUAL TO THE VALUATION THRESHOLD, THE COST OF PATH OF TRAVEL COMPLIANCE SHALL BE LIMITED TO 20% OF THE ADJUSTED CONSTRUCTION COST TO THE GREATEST EXTENT POSSIBLE. AN UNREASONABLE HARDSHIP REQUEST UNDER THE VALUATION THRESHOLD IS ACCEPTED FOR THIS PROJECT. REFER TO UNREASONABLE HARDSHIP REQUEST LETTER IN DSA FILE AND INFORMATION AND DETAILS CONTAINED IN THIS PLAN SET FOR MORE INFORMATION.

THE FOLLOWING PATH OF TRAVEL ITEMS HAVE BEEN FOUND TO BE IN COMPLIANCE WITH THE CURRENT EDITION OF THE CBC AND ARE NOT BEING UPGRADED AS PART OF THIS PROJECT.
- ACCESSIBLE ROUTE FROM THE ALTERED AREA TO THE MAIN OFFICE
- ACCESSIBLE STAFF & STUDENT RESTROOMS & SIGNAGE
- ACCESSIBLE DRINKING FOUNTAINS

THE FOLLOWING ITEMS ARE BEING UPGRADED AS PART OF THE SCOPE OF WORK:
- STAFF/VISITOR SITE ARRIVAL POINT FROM PUBLIC RIGHT OF WAY AND ACCESSIBLE PARKING AT PARKING LOT A ADJACENT TO THE BRIDGE REPLACEMENT

DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE STATEMENT

THE POT IDENTIFIED IN THESE CONSTRUCTION DOCUMENTS MEETS THE REQUIREMENTS OF THE CURRENT APPLICABLE CALIFORNIA BUILDING CODE (CBC) ACCESSIBILITY PROVISIONS FOR PATH OF TRAVEL REQUIREMENTS FOR ALTERATIONS, ADDITIONS AND STRUCTURAL REPAIRS. AS PART OF THE DESIGN OF THIS PROJECT, THE POT WAS EXAMINED AND ANY ELEMENTS, COMPONENTS OR PORTIONS OF THE POT THAT WERE DETERMINED TO BE NON-COMPLIANT 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 NON-COMPLIANT ELEMENTS, COMPONENTS OR PORTIONS OF THE POT THAT WILL NOT BE CORRECTED BY THIS PROJECT BASED ON VALUATION THRESHOLD LIMITATIONS OR A FINDING OF UNREASONABLE HARDSHIP ARE 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 THIS PROJECT BY MEANS OF A CONSTRUCTION CHANGE DOCUMENT.

ACCESSIBLE ROUTE TECHNICAL REQUIREMENTS

ACCESSIBLE PATH OF TRAVEL 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 PATH OF TRAVEL 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 PATH OF TRAVEL.

PARKING ANALYSIS

TOTAL REQUIRED PARKING SPACES FOR PARCEL
NO CHANGES TO USE OF PARCEL.

EXISTING PARKING

	QTY	SIZE
SCHOOL PARKING LOT - LOT A - STAFF & VISITORS		
REGULAR SPACES:	23	9' X 18'
VAN ACCESSIBLE:	1	12' X 18' W/ 5' WIDE ACCESS AISLE
TOTAL (E) SPACES	24	

UNCHANGED AS PART OF THIS WORK

	QTY	SIZE
(E) SCHOOL PARKING LOT - LOT B - STAFF & VISITORS		
REGULAR SPACES:	24	9' X 18'
VAN ACCESSIBLE:	1	9' X 18' W/ 8' WIDE ACCESS AISLE
TOTAL (E) SPACES	25	

ACCESSIBLE PARKING PER CBC TABLE 11B-208.2;
1-25 SPACES; 1 REQ'D ADA SPACE

CODE SUMMARY - SITE LEGEND

- ASSUMED PROPERTY LINE
- APPROXIMATE PROPERTY LINE - ALL PARCELS
- (E) ACCESSIBLE PATH OF TRAVEL, NO WORK
- ACCESSIBLE PATH OF TRAVEL
- W (E) WOMENS' ACCESSIBLE STAFF RESTROOM
- M (E) MENS' ACCESSIBLE STAFF RESTROOM
- U (E) UNISEX STAFF RESTROOM
- B (E) BOYS' ACCESSIBLE STUDENT RESTROOM
- G (E) GIRLS' ACCESSIBLE STUDENT RESTROOM
- K (E) UNISEX KINDERGARTEN STUDENT RESTROOM
- DF (E) ACCESSIBLE DRINKING FOUNTAIN
- AS (E) ACCESSIBLE SIGNAGE
- PT (E) ACCESSIBLE PATH OF TRAVEL SIGNAGE

EMERGENCY VEHICLE ACCESS - SITE LEGEND

- (E) EMERGENCY VEHICLE ACCESS LANE, 20'-0" WIDE CLEAR DRIVABLE SURFACE; 13'-6" UNOBSTRUCTED OVERHEAD CLEARANCE, DSA APP # 01-116389
- FIRE HOSE RUN FROM FIRE ACCESS ROAD TO FARTHEST POINT ON BUILDING - NOT TO EXCEED 150'-0"
  - HOSE RUN END
  - HOSE RUN START
- FH (E) FIRE HYDRANT

ARCHITECT:
AXIA ARCHITECTS
540 Mendocino Ave, Santa Rosa, CA 95401
707 542 4652
axiaarchitects.com

CONSULTANT:

ROSS VALLEY SCHOOL DISTRICT

BROOKSIDE ELEMENTARY SCHOOL - PEDESTRIAN BRIDGE

116 BUTTERFIELD ROAD, SAN ANSELMO, CALIFORNIA 94960

SEAL:

LICENSED ARCHITECT
DOUGLAS M. HILLEBRANDT
No. C-29543
REN. 10-31-25
STATE OF CALIFORNIA

SHEET LOG

REV #	DATE:	ISSUED FOR:

JOB NUMBER: 1192

SHEET:

G2

SITE PLAN - CODE SUMMARY & EVA

ORIGINAL DATE: 08.21.2025

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ABBREVIATIONS

AB	AGGREGATE BASE	MG	MILLION GALLONS
ABAN	ABANDONED	MH	MANHOLE
ABS	ACRYLONITRILE–BUTADIENE–STYRENE	MIN	MINIMUM
AC	ASPHALT CONCRETE	MISC	MISCELLANEOUS
ACP	ASBESTOS CEMENT PIPE	MJ	MECHANICAL JOINT
AD	ALGEBRAIC DIFFERENCE	MON	MONUMENT
ADA	AMERICANS WITH DISABILITIES ACT	MSL	MEAN SEA LEVEL
ADPT	ADAPTER	N	NORTH
AGG	AGGREGATE	NG	NATURAL GROUND
ALUM	ALUMINUM	NO.	NUMBER
ANG	ANGLE	NA	NOT APPLICABLE
AP	ANGLE POINT	NIC	NOT IN CONTRACT
APN	ASSESSORS PARCEL NUMBER	NPT	NATIONAL PIPE THREAD
APPROX	APPROXIMATE	OC	ON CENTER
ARV	AIR RELEASE VALVE	OD	OUTSIDE DIAMETER
AVE	AVENUE	OH	OVERHEAD
AVG	AVERAGE	OZ	OUNCE
BC	BEGIN HORIZONTAL CURVE	PA	PLANTER AREA
BFP	BACKFLOW PREVENTER	PB	PULL BOX
BLDG	BUILDING	PC	POINT OF CURVATURE
BLVD	BOULEVARD	PCC	POINT OF COMPOUND CURVATURE
BM	BENCHMARK	PCC	PORTLAND CEMENT CONCRETE
BO	BLOWOFF	PD	PLANTER DRAIN
BOC	BACK OF CURB	PE	PLAIN END
BV	BUTTERFLY VALVE	PEC	PHOTOELECTRIC CELL
BVC	BEGIN VERTICAL CURVE	PED	PEDESTRIAN
BSW	BACK OF SIDEWALK	PG	PAD GRADE
BT	BOTTOM OF TAPER	PI	POINT OF INTERSECTION
B&R	BRELJE & RACE	PIV	POST INDICATOR VALVE
C	CONDUIT	PL	PROPERTY LINE
CAV	COMBINATION AIR AND VACUUM RELEASE VALVE	PN	PAVING NOTCH
		POC	POINT OF CONNECTION
CB	CATCH BASIN	POC	POINT ON CURVE
CBC	CALIFORNIA BUILDING CODE	POCC	POINT OF COMPOUND CURVE
CDF	CONTROLLED DENSITY FILL	POVC	POINT ON VERTICAL CURVE
CHK	CHECK	POS	PRIVATE OPEN SPACE
CIP	CAST IRON PIPE	POT	POINT ON TANGENT
CIPP	CAST–IN–PLACE PIPE	PP	POWER POLE
℄	CENTERLINE	PRC	POINT OF REVERSE CURVATURE
CL	CENTERLINE	PRV	PRESSURE REDUCING VALVE
CL	CLASS	PSD	PERFORATED SUBDRAIN
CLR	CLEAR	PSI	POUND PER SQUARE INCH
CMP	CORRUGATED METAL PIPE	PSV	PRESSURE SUSTAINING VALVE
CMPA	CORRUGATED METAL PIPE ARCH	PT	POINT
CMU	CONCRETE MASONRY UNIT	PT	POINT OF TANGENCY
CO	CLEANOUT	PUE	PUBLIC UTILITY EASEMENT
COAX	COAXIAL CABLE	PVC	POLYVINYL CHLORIDE
CONC	CONCRETE	PVI	POINT OF VERTICAL INTERSECTION
COND	CONDUIT	PVMT	PAVEMENT
CONST	CONSTRUCTION	PWE	PUBLIC WATER EASEMENT
CONT	CONTINUOUS	R	RADIUS
COTG	CLEANOUT TO GRADE	RAW	RAW WATER
CP	CONTROL POINT	RC	RELATIVE COMPACTION
CPLG	COUPLING	RCB	REINFORCED CONCRETE BOX
CR	CURB RETURN	RCP	REINFORCED CONCRETE PIPE
CSP	CORRUGATED STEEL PIPE	RD	ROAD
CT	COURT	RD	ROOF DRAIN
CTB	CEMENT TREATED BASE	RED	REDUCER
CTR	CENTER	REF	REFERENCE
CY	CUBIC YARD	ROW	RIGHT OF WAY
C/C	CENTER TO CENTER	RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
C&G	CURB AND GUTTER		
DBL	DOUBLE	RPM	RAISED PAVEMENT MARKER
DCDC	DOUBLE CHECK DETECTOR CHECK	RSC	REMOTE SUPERVISORY CONTROL
DCV	DETECTOR CHECK VALVE	RT	RIGHT
DDC	DOUBLE DETECTOR CHECK	RT	RING TIGHT
DET	DETECTOR	RW	RECYCLED WATER
DH	DETECTOR HANDHOLE	RWL	RAIN WATER LEADER
DI	DROP INLET	R/W	RIGHT OF WAY
DIA	DIAMETER	S	SOUTH
DIP	DUCTILE IRON PIPE	S	SLOPE
DLC	DETECTOR LOOP CONDUIT	S.A.D.	SEE ARCHITECTURAL DRAWINGS
DR	DRIVE	SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
DS	DOWNSPOUT		
DS	DOWNSTREAM	SCH	SCHEDULE
DWG	DRAWING	SD	STORM DRAIN
DWR	DASHED WHITE PAVEMENT MARKER	SDCB	STORM DRAIN CATCH BASIN
DWY	DRIVEWAY	SDCO	STORM DRAIN CLEANOUT
DY	DOUBLE YELLOW	SDDI	STORM DRAIN DROP INLET
DYR	DASHED YELLOW RAISED PAVEMENT MARKER	SDE	STORM DRAIN EASEMENT
		SDMH	STORM DRAIN MANHOLE
E	EAST	SE	SEWER EASEMENT
EA	EACH	S.E.D.	SEE ELECTRICAL DRAWINGS
EC	END HORIZONTAL CURVE	SF	SQUARE FEET
ECC	ECCENTRIC	SG	SUBGRADE
EFFL	EFFLUENT (SEWER)	SIG	SIGNAL
EG	EXISTING GROUND	SL	STREET LIGHT
EL	ELEVATION	S.L.D.	SEE LANDSCAPE DRAWINGS
ELEC	ELECTRICAL	SOF	SLIP ON FLANGE
ELL	ELBOW	SO	SIDE OPENING (SD)
EP	EDGE OF PAVEMENT	S.P.D.	SEE PLUMBING DRAWINGS
EQ	EQUAL	SPEC	SPECIFICATION
ESMT	EASEMENT	SQ	SQUARE
EVC	END VERTICAL CURVE	SS	STAINLESS STEEL
EW	EACH WAY	SS	SANITARY SEWER
EX	EXISTING	SSCO	SANITARY SEWER CLEANOUT
F	FIRE	S.S.D.	SEE STRUCTURAL DRAWINGS
FA	FIRE ALARM	SSMH	SANITARY SEWER MANHOLE
FC	FACE OF CURB	ST	STREET
FCA	FLANGED COUPLING ADAPTER	STA	STATION
FDC	FIRE DEPARTMENT CONNECTION	STD	STANDARD
FES	FLARED END SECTION	STL	STEEL
FF	FINISHED FLOOR	SVC	SERVICE
FG	FINISHED GRADE	SWE	SIDEWALK EASEMENT
FH	FIRE HYDRANT	SY	SQUARE YARDS
℄	FLOWLINE	SW	SIDEWALK
FL	FLOWLINE	SWL	SOLID WHITE LINE
FLG	FLANGE	T	TANGENT
FLSO	FLOWLINE OF SIDE OPENING	TAN	TANGENT
FLEX	FLEXIBLE	TB	TOP OF BOX
FM	FORCE MAIN (PRESSURE)	TBM	TEMPORARY BENCHMARK
FRP	FIBERGLASS REINFORCED PLASTIC	TC	TOP OF CONCRETE
FT	FEET	TC	TOP OF CURB
FTG	FOOTING	TCE	TEMPORARY CONSTRUCTION EASEMENT
GAL	GALLON		
GALV	GALVANIZED	TD	TOP OF DIKE
GB	GRADE BREAK	TEL	TELEPHONE
GPM	GALLONS PER MINUTE	TEMP	TEMPORARY
GRD	GROUND	TF	TOP OF FOUNDATION
GSP	GALVANIZED STEEL PIPE	TG	TOP OF GRATE
GV	GAS VALVE	THD	THREADED
GV	GATE VALVE	TP	TOP OF PIPE
HB	HOSE BIBB	TS	TOP OF SLAB
HB	HEADER BOARD	TS	TRAFFIC SIGNAL
HDG	HOT DIPPED GALVANIZED	TT	TOP OF TAPER
HDPE	HIGH DENSITY POLYETHYLENE	TW	TOP OF WALL
HORIZ	HORIZONTAL	TWLTL	TWO WAY LEFT TURN LANE
HP	HIGH POINT	TYP	TYPICAL
HPG	HIGH PRESSURE GAS	UC	UTILITY CHASE
HPS	HIGH PRESSURE SODIUM	UFFG	UNDER FLOOR FINISHED GRADE
HT	HEIGHT	UG	UNDERGROUND
HWY	HIGHWAY	UNO	UNLESS NOTED OTHERWISE
IC	INTERCONNECT	V	VOLT
ICV	IRRIGATION CONTROL VALVE	VC	VERTICAL CURVE
ID	INSIDE DIAMETER	VCP	VITRIFIED CLAY PIPE
INV	INVERT	VERT	VERTICAL
IP	IRON PIPE	VG	VALLEY GUTTER
IPS	IRON PIPE SIZE	VLT	VAULT
IRR	IRRIGATION	W	WEST
ISA	INTERNATIONAL SYMBOL OF ACCESSIBILITY	W	WATER
		WBD	WALL BACK DRAIN
JB	JUNCTION BOX	WM	WATER METER
JP	JOINT POLE	WNF	WELD NECK FLANGE
JT	JOINT TRENCH	WS	WATER SERVICE
KV	KILOVOLT	WSS	WATER SAMPLING STATION
L	ARC LENGTH	WT	WEIGHT
L	LENGTH	WTR	WATER
LAT	LATERAL	WV	WATER VALVE
LF	LINEAL FEET	WWF	WELDED WIRE FABRIC
LG	LIP OF GARAGE	YD	YARD
LG	LIP OF GUTTER	°	DEGREES
LL	LANE LINE	'	MINUTES
LMA	LUMINAIRE MAST ARM	"	SECONDS
LN	LANE	Δ	DELTA
LP	LOW POINT	&	AND
LT	LEFT	@	AT
LUM	LUMINAIRE	#	NUMBER
MAX	MAXIMUM	#	POUNDS
MB	MAILBOX	%	PERCENT
MBGR	METAL BEAM GUARD RAIL		
MFR	MANUFACTURE		

LEGEND

LINES

APPROXIMATE BOUNDARY

APPROXIMATE PARCEL

APPROXIMATE CENTER

APPROXIMATE EASEMENT

UTILITY LINES	EXISTING	PROPOSED
STORM DRAIN	24"SD	24"SD
WATER	8"W	8"W
SEWER	12"SS	12"SS
GAS	3"G	
ELECTRICAL	E	12KV E
TELEPHONE	T	
TELEVISION	TV	
JOINT TRENCH	JT	

TOPOGRAPHY

DROP INLET

DROP INLET WITH SIDE OPENINGS

WATER METER (WM)

WATER VALVE

BLOWOFF

FIRE HYDRANT

THRUST BLOCK

GAS METER (GM)

STORM DRAIN MANHOLE (D)

STORM DRAIN CATCH BASIN (D)

SEWER MANHOLE (S)

SEWER CLEANOUT

JOINT POLE

LIGHT STANDARD

GUY/ANCHOR

CURB & GUTTER

AC DIKE

FENCE (X)

CHAIN LINK FENCE

DITCH/SWALE

MONUMENT

TREE PROTECTION (TP)

TREE TO BE SAVED

TREE TO BE REMOVED

GENERAL NOTES

1. ANY DISCREPANCY DISCOVERED BY CONTRACTOR IN THESE PLANS OR ANY FIELD CONDITIONS DISCOVERED BY CONTRACTOR THAT MAY DELAY OR OBSTRUCT THE PROPER COMPLETION OF THE WORK PER THESE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IMMEDIATELY UPON DISCOVERY. SAID NOTIFICATION SHALL BE IN WRITING.
2. ALL MATERIAL WORKMANSHIP AND CONSTRUCTION SHALL CONFORM TO THE STATE OF CALIFORNIA STANDARD SPECIFICATIONS AND STANDARD PLANS DATED JULY 2006 EXCEPT AS NOTED ON PLANS AND THE STANDARD SPECIFICATIONS OF CITY OF SAN RAFAEL.
3. CONTRACTOR SHALL OBTAIN ALL AGENCIES' REQUIRED PERMITS AND PAY ALL FEES PRIOR TO COMMENCEMENT OF ANY WORK.
4. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, GENERAL 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; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO HOLD HARMLESS, INDEMNIFY AND DEFEND THE OWNER, THE ARCHITECT AND HIS CONSULTANTS, AND THE DISTRICT, AND EACH OF THEIR OFFICERS, EMPLOYEES AND AGENTS.
5. ANY EXCESS MATERIALS SHALL BE CONSIDERED THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF AWAY FROM THE JOB SITE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.
6. DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING NOISE, ODORS, DUST AND DEBRIS TO MINIMIZE IMPACTS ON SURROUNDING ROADWAYS AND PROPERTIES.
7. CONTRACTOR SHALL BE RESPONSIBLE THAT ALL CONSTRUCTION EQUIPMENT IS EQUIPPED WITH MANUFACTURER APPROVED MUFFLERS/BAFFLES.

GENERAL UNDERGROUND NOTES

1. NO GUARANTEE IS INTENDED THAT UNDERGROUND OBSTRUCTIONS, NOT SHOWN ON THESE PLANS, MAY BE ENCOUNTERED. THOSE SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE AND THE CONTRACTOR IS CAUTIONED THAT THE OWNER, THE ENGINEERS AND THE ARCHITECT ASSUME NO RESPONSIBILITY FOR ANY OBSTRUCTIONS EITHER SHOWN OR NOT SHOWN ON THESE PLANS. THE CONTRACTOR SHALL COOPERATE WITH ALL UTILITY COMPANIES WORKING WITHIN THE LIMITS OF THIS PROJECT.
2. CONTRACTOR SHALL NOT BEGIN EXCAVATION UNTIL ALL EXISTING UTILITIES HAVE BEEN MARKED IN THE FIELD BY THE APPLICABLE ENTITY RESPONSIBLE FOR THAT PARTICULAR UTILITY. THE CONTRACTOR SHALL NOTIFY EACH APPLICABLE ENTITY AT LEAST 48 HOURS BEFORE STARTING WORK.
3. UNDERGROUND SERVICE ALERT: CALL TOLL FREE (800) 642–2444 AT LEAST 48 HOURS PRIOR TO EXCAVATION.
4. CONTRACTOR SHALL UNCOVER EXISTING BURIED UTILITIES AT PROPOSED POINTS OF CONNECTION AND CROSSINGS WITH EXISTING UTILITIES AND NOTIFY ENGINEER OF FINDINGS VIA THE RFI PROCESS PRIOR TO THE CONSTRUCTION OF ANY UTILITIES. BURIED UTILITIES INCLUDE BUT ARE NOT LIMITED TO WATER MAINS AND LATERALS, SEWER LINES, STORM DRAINS, GAS MAINS AND LATERALS, ELECTRICAL DISTRIBUTION LINES AND TELEPHONE LINES. ALL UTILITIES CONFLICTING WITH THE PROPOSED CONSTRUCTION SHALL BE REMOVED, ABANDONED IN PLACE BY FILLING WITH CONCRETE SLURRY OR BE RELOCATED PRIOR TO THE START OF CONSTRUCTION.
5. THE CONTRACTOR SHALL VERIFY EXISTING INVERTS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. THE PROJECT AND/OR DESIGN ENGINEER MAY ADJUST THE GRADE OF NEW UTILITY CONSTRUCTION ACCORDINGLY.
6. DISTANCES AND INVERTS ARE TO AND AT THE CENTER OF THE MANHOLES, CLEANOUTS, DROP INLETS, CATCH BASINS, AND YARD DRAINS OR AS MARKED ON THE DRAWINGS.
7. ALL UNDERGROUND IMPROVEMENTS SHALL BE INSTALLED AND APPROVED PRIOR TO PAVING.

GRADING NOTES

1. ALL GRADING SHALL CONFORM TO THE REQUIREMENTS OF THE GEOTECHNICAL REPORT RECOMMENDATIONS ENTITLED "BROOKSIDE ELEMENTARY SCHOOL BRIDGE" PREPARED BY RGH GEOTECHNICAL CONSULTANTS DATED DECEMBER 11, 2024.
2. SEE SPECIFICATION SECTIONS 31 1000 AND 31 2000 FOR SPECIFIC REQUIREMENTS.

EXISTING CONDITIONS

1. INFORMATION REGARDING EXISTING SUBSURFACE IMPROVEMENTS AND UTILITIES SHOWN ON THESE PLANS WAS TAKEN FROM RECORD DATA KNOWN TO THE DESIGN ENGINEER AND IS NOT MEANT TO BE A FULL CATALOG OF EXISTING CONDITIONS. THE TYPES, LOCATIONS, SIZES AND/OR DEPTHS EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS TOPOGRAPHIC SURVEY ARE APPROXIMATE AND WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY. ONLY ACTUAL EXCAVATION WILL REVEAL THE TYPES, EXTENT, SIZES, LOCATIONS AND DEPTHS OF SUCH UNDERGROUND UTILITIES. A REASONABLE EFFORT HAS BEEN MADE TO LOCATE AND DELINEATE ALL KNOWN UNDERGROUND UTILITIES. HOWEVER, THE ENGINEER CAN ASSUME NO RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF ITS DELINEATION OF SUCH UNDERGROUND UTILITIES WHICH MAY BE ENCOUNTERED, BUT WHICH ARE NOT SHOWN ON THIS SURVEY. CONTRACTOR SHALL SHALL CONDUCT FIELD INVESTIGATIONS AS REQUIRED TO VERIFY THE LOCATION AND ELEVATION OF EXISTING SUBSURFACE IMPROVEMENTS AND UTILITIES (WETHER SHOWN ON THESE PLANS OR NOT) PRIOR TO THE COMMENCEMENT OF WORK. CONTRACTOR SHALL NOTIFY THE CIVIL DESIGN ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS IN THE FIELD AND INFORMATION SHOWN ON THESE PLANS.
2. ELEVATIONS AND LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO START OF CONSTRUCTION AFFECTING SAID LINES.

EROSION AND SEDIMENT CONTROL NOTES

1. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE USED TO ENSURE THAT WATER ENTERING THE STORM DRAIN SYSTEM BELOW THE CONSTRUCTION SITE IS EQUIVALENT QUALITY AND CHARACTER AS THE WATER ABOVE THE SITE.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTANT MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES AT ALL TIMES TO THE SATISFACTION OF THE ENGINEER. EROSION AND SEDIMENT CONTROL MEASURES AND THEIR INSTALLATION SHALL BE ACCOMPLISHED USING BEST MANAGEMENT PRACTICES.
3. IF THE STORM DRAIN SYSTEM IS NOT IN PLACE BY OCTOBER 15, ADDITIONAL MEASURES SHALL BE TAKEN WHICH MEET THE SATISFACTION OF THE ENGINEER. SILT AND/OR CATCH BASINS MUST BE CLEANED OUT ON A REGULAR BASIS AFTER STORMS TO MAINTAIN DESIGN CAPACITY.
4. STORM WATER RUNOFF FROM THE CONSTRUCTION SITE SHALL BE DIRECTED TOWARD AN INLET WITH A SEDIMENT OR FILTRATION INTERCEPTOR PRIOR TO ENTERING THE STORM DRAIN SYSTEM.
5. THE CONTRACTOR WILL BE RESPONSIBLE FOR CLEANING WATER THAT HAS BECOME POLLUTED DUE TO NOT TAKING NECESSARY EROSION AND SEDIMENT CONTROL ACTIONS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANUP OF MUD AND DEBRIS CARRIED ONTO SURROUNDING STREETS AND ROADS AS A RESULT OF CONSTRUCTION ACTIVITY ON THE SITE TO THE SATISFACTION OF THE CITY OF LARKSPUR.
7. ANY DENUDED OR DISTURBED SOILS SHALL BE PROTECTED USING BEST MANAGEMENT PRACTICES.
8. BETWEEN OCTOBER 15 AND APRIL 15, ALL PAVED AREAS WILL BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS. THE SITE IS TO BE MAINTAINED BY THE DEVELOPER, CONTRACTOR OR OWNER SO THAT A MINIMUM OF SEDIMENT–LADEN RUNOFF LEAVES THE SITE.
9. THE CONTRACTOR IS TO INFORM ALL CONSTRUCTION SITE WORKERS ABOUT THE MAJOR PROVISIONS OF THE EROSION AND SEDIMENT CONTROL PLAN AND SEEK THEIR COOPERATION IN AVOIDING THE DISTURBANCE OF THESE CONTROL MEASURES.
10. DURING THE RAINY SEASON (TYPICALLY OCTOBER 15 TO APRIL 15) ALL SEDIMENT BARRIERS ARE TO BE INSPECTED AND REPAIRED AT THE END OF EACH WORKING DAY AND, IN ADDITION, AFTER EACH STORM. CONTRACTOR SHALL INSPECT EROSION AND SEDIMENT CONTROL MEASURES AND INLETS AFTER EACH SIGNIFICANT RAINFALL AND DAILY DURING PROLONGED STORM EVENTS. REMOVE SEDIMENTS WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE BARRIER AND REPLACE FILTER DEVICES AS NECESSARY TO ENSURE PROPER FUNCTION.
11. UNSTABILIZED AREAS WILL BE REPAIRED AS SOON AS POSSIBLE AFTER BEING DAMAGED.
12. ALL GRADED OR DISTURBED AREAS SHALL BE STABILIZED IMMEDIATELY AFTER GRADING IS COMPLETE.
13. ENTRANCE TO THE PROJECT SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT INTO PUBLIC RIGHT–OF–WAY. WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE OF PUBLIC RIGHTS–OF–WAY. WHEN WASHING IS REQUIRED IT SHALL BE DONE IN AN AREA STABILIZED WITH CRUSHED ROCK THAT DRAINS INTO A SEDIMENT TRAP.
14. ALL SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY SHALL BE REMOVED IMMEDIATELY USING BEST MANAGEMENT PRACTICES.
15. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR PURPOSE SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
16. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REPAIRED OR REPLACED WHEN THEY ARE NO LONGER FUNCTIONING PER BEST MANAGEMENT PRACTICES.
17. THE CONTRACTOR SHALL HAVE EROSION AND SEDIMENT CONTROL MEASURES ON SITE ADEQUATE TO PROTECT THE ENTIRE SITE PRIOR TO THE OCTOBER 15 DATE SUCH THAT IT IS IMMEDIATELY AVAILABLE IN PREPARATION OF THE UPCOMING WINTER SEASON OR IN THE EVENT OF AN EARLY RAIN.
18. AFTER CONSTRUCTION IS COMPLETE ALL STORM DRAIN SYSTEMS ASSOCIATED WITH THIS PROJECT SHALL BE INSPECTED AND CLEARED OF ACCUMULATED SEDIMENTS AND DEBRIS.

ARCHITECT:
AXIA ARCHITECTS
250 D Street, Suite 210, Santa Rosa, CA 95404
axiaarchitects.com
707 542 4652

CONSULTANT:
Brelje & Race CONSULTING ENGINEERS
475 Aviation Boulevard, Suite 120
Santa Rosa, CA 95403
v: 707-576-1322
f: 707-576-0469
www.brce.com

PRELIMINARY NOT FOR CONSTRUCTION
DATE: 08–13–25
No. C 60683 Exp. 12–31–26 CIVIL STATE OF CALIFORNIA

ROSS VALLEY SCHOOL DISTRICT

BROOKSIDE ELEMENTARY SCHOOL - PEDESTRIAN BRIDGE

116 BUTTERFIELD ROAD, SAN ANSELMO, CALIFORNIA 94960

SEAL:

SHEET LOG

REV #	DATE:	ISSUED FOR:

JOB NUMBER: 1192/3612.10

SHEET:

C1

ABBREVIATIONS, LEGEND & NOTES

ORIGINAL DATE: AUGUST 2025

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NOTE

INSTALL PORTABLE CHAIN LINK FENCE PANELS AS TEMPORARY TREE PROTECTION FENCING AT LOCATIONS SHOWN ON PLANS.

TEMPORARY TREE PROTECTION FENCE

NOT TO SCALE

DEMOLITION NOTES

A SAWCUT EXISTING IMPROVEMENTS.

B EXISTING HARDSCAPE TO REMAIN. PROTECT IN PLACE.

C EXISTING ELECTRICAL EQUIPMENT TO REMAIN. PROTECT IN PLACE.

D REMOVE EXISTING BRIDGE AND ELECTRICAL PIPING. REFER TO STRUCTURAL AND ELECTRICAL DRAWINGS FOR DEMOLITION REQUIREMENTS.

LEGEND

REMOVE ALL EXISTING SURFACE IMPROVEMENTS, INCLUDING, BUT NOT LIMITED TO, ASPHALT AND CONCRETE, CURBS, BASE MATERIAL, HEADERBOARD, ETC WITHIN THE LIMITS OF THE HATCHING IDENTIFIED HEREON AND PROPERLY DISPOSE OF OFFSITE, UNLESS OTHERWISE NOTED. AT THE CONTRACTORS OPTION, NON-CONTAMINATED BASE MATERIAL MAY BE REUSED.

TREE TO BE SAVED.

TP INSTALL TREE PROTECTION FENCING PER DETAIL SHEET THIS SHEET.

REFER TO ARCHITECTURAL, ELECTRICAL AND STRUCTURAL DRAWINGS FOR ADDITIONAL DEMOLITION REQUIREMENTS.

ARCHITECT:
AXIA ARCHITECTS
250 D Street, Suite 210, Santa Rosa, CA 95404
707 542 4652
axiaarchitects.com

CONSULTANT:
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CONSULTING ENGINEERS
475 Aviation Boulevard, Suite 120
Santa Rosa, CA 95403
v: 707-576-1322
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C2

DEMOLITION PLAN

ORIGINAL DATE: AUGUST 2025

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08-20-25 kfitzgrld \3612\dwg\3612 10\3612.10 PLAN.dwg TAB: C2 DEMOLITION PLAN

SHEET NOTES

(ONLY NOTES RELEVANT TO THIS SHEET ARE SHOWN)

1. MATCH EXISTING IMPROVEMENTS.
2. INSTALL CONCRETE THICKENED EDGE PER DETAIL, SHEET C6.
3. INSTALL ACCESSIBLE PARKING STALL, INCLUDING PEDESTRIAN CURB RAMP, SIGNAGE AND PAVEMENT MARKINGS, PER DETAIL SHEET C6.
4. INSTALL EMBEDDED DETECTABLE WARNING SURFACE PER DETAIL, SHEET C6.
5. INSTALL REDWOOD HEADERBOARD PER DETAIL, SHEET C6.
6. INSTALL CONCRETE SITE WALL PER DETAIL, SHEET C6.
7. INSTALL CONCRETE BRIDGE ABUTMENT. REFER TO STRUCTURAL DRAWINGS FOR DETAILS.
8. INSTALL RAMP, INCLUDING HANDRAILING. REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS.
9. INSTALL BRIDGE. REFER TO BRIDGE DRAWINGS FOR DETAILS.
10. ADJUST ELECTRICAL VAULT AS REQUIRED, INCLUDING REPLACEMENT, MOVING AND/OR RAISING TO GRADE. REFER TO ELECTRICAL DRAWINGS FOR DETAILS.
11. INSTALL CONCRETE WHEEL STOP PER DETAIL, SHEET C6.
12. INSTALL 3"x15" ¼" THICK STEEL UNDER SIDEWALK DRAIN. FL=TC–0.5'.



ARCHITECT:
AXIA ARCHITECTS
250 D Street, Suite 210, Santa Rosa, CA 95404
707 542 4652
axiaarchitects.com

CONSULTANT:
Brelje & Race
CONSULTING ENGINEERS
475 Aviation Boulevard, Suite 120
Santa Rosa, CA 95403
v: 707-576-1322
f: 707-576-0469
www.brce.com

PRELIMINARY
NOT FOR CONSTRUCTION
DATE: 08-13-25

REGISTERED PROFESSIONAL ENGINEER
No. C 60683
Exp. 12-31-26
CIVIL
STATE OF CALIFORNIA

ROSS VALLEY SCHOOL DISTRICT

BROOKSIDE ELEMENTARY SCHOOL - PEDESTRIAN BRIDGE

116 BUTTERFIELD ROAD, SAN ANSELMO, CALIFORNIA 94960

SEAL:

SHEET LOG

REV #	DATE:	ISSUED FOR:

JOB NUMBER: 1192/3612.10

SHEET:

C3

GRADING PLAN

ORIGINAL DATE: AUGUST 2025

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08-20-25 kfitzgrld \3612\dwg\3612 10\3612.10 PLAN.dwg TAB: C3 GRADING PLAN

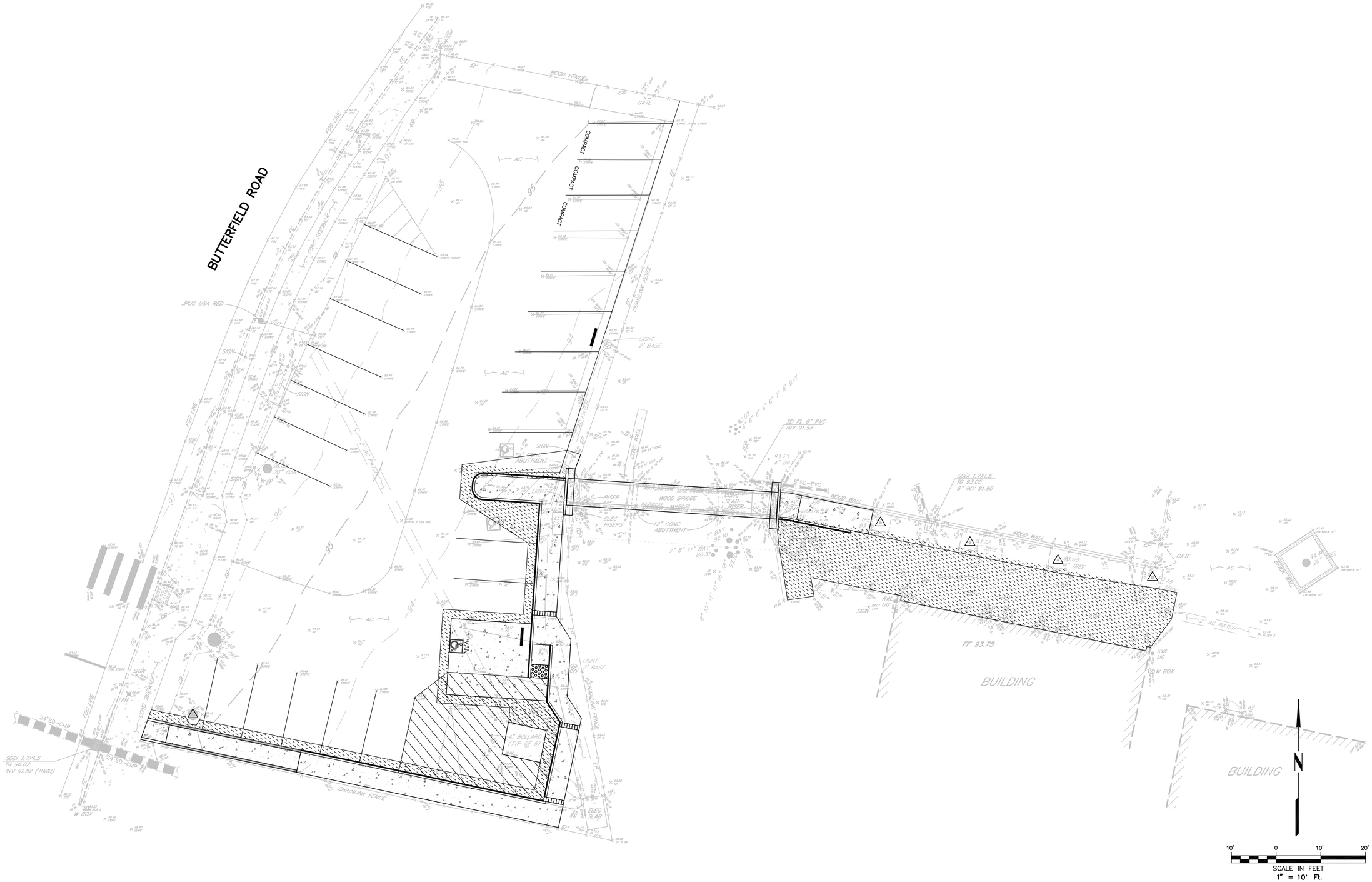
PAVEMENT STRUCTURAL SECTION

LOCATION	AC*	CL2 AB**	PCC***
ASPHALT CONCRETE	0.25'	0.50'	–
CONCRETE (PEDESTRIAN) PER DETAIL SHEET C6	–	0.33'	0.42'

* TYPE A 1/2 MAX MEDIUM ASPHALT

** COMPACTED TO 95% RELATIVE COMPACTION

*** 5 SACKS PER CY



ARCHITECT:
AXIA ARCHITECTS
250 D Street, Suite 210, Santa Rosa, CA 95404
707 542 4652
axiaarchitects.com

CONSULTANT:
Brelje & Race
CONSULTING ENGINEERS
475 Aviation Boulevard, Suite 120
Santa Rosa, CA 95403
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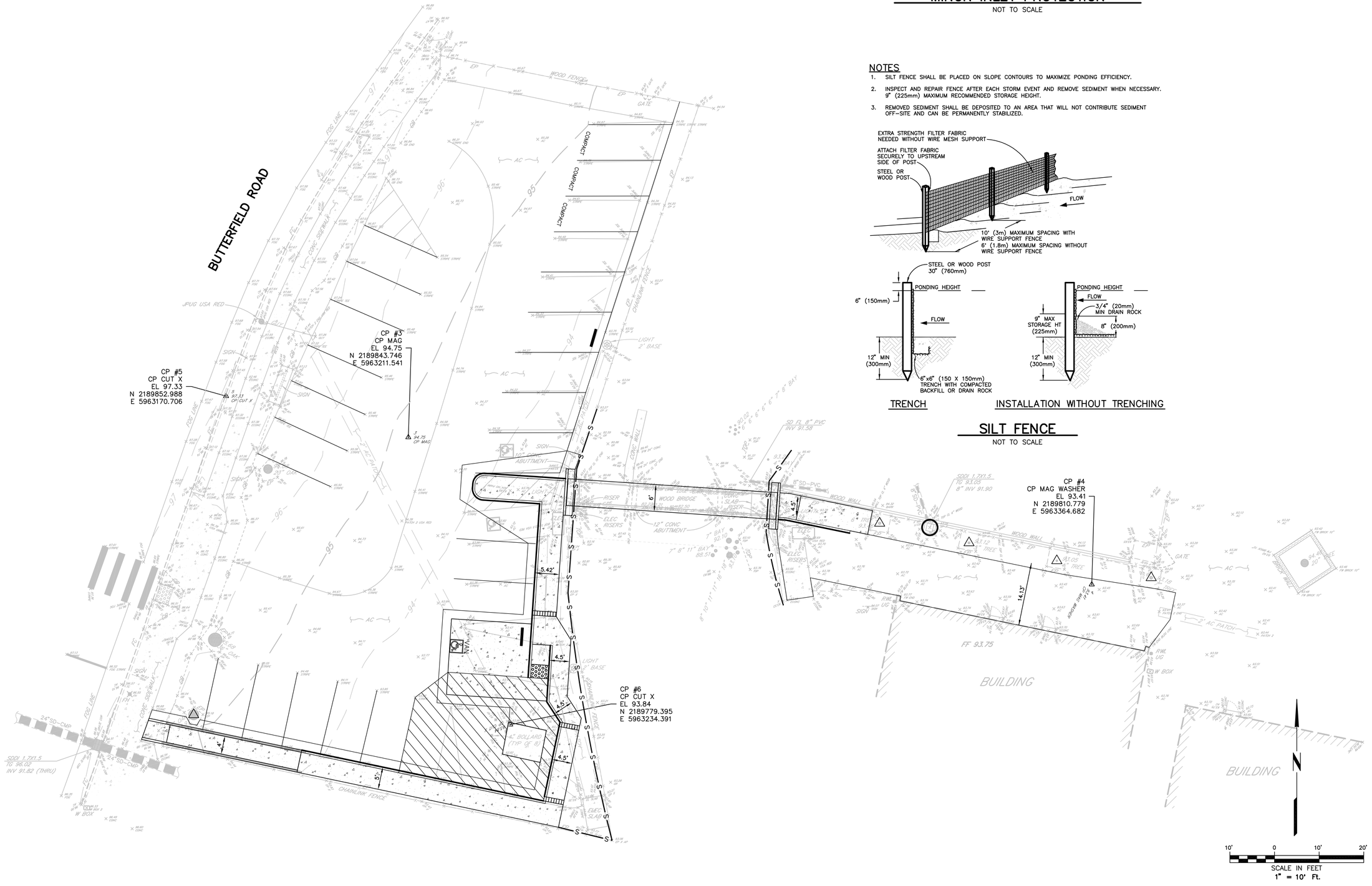
C4

PAVEMENT STRUCTURAL SECTION PLAN

ORIGINAL DATE: AUGUST 2025

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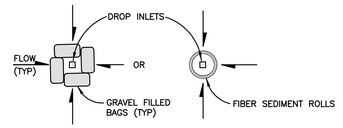
08-20-25 kfitzgrld \3612\dwg\3612 10\3612.10 PLAN.dwg TAB: C4 PAVEMENT STRUCTURAL SECTION PLAN



LEGEND

S — SILT FENCE, PER DETAIL THIS SHEET

MINOR INLET PROTECTION, PER DETAIL THIS SHEET



MINOR INLET PROTECTION

NOT TO SCALE

NOTES

1. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
2. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. 9" (225mm) MAXIMUM RECOMMENDED STORAGE HEIGHT.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

TRENCH — INSTALLATION WITHOUT TRENCHING

SILT FENCE

NOT TO SCALE

ARCHITECT:
AXIA ARCHITECTS
250 D Street, Suite 210, Santa Rosa, CA 95404
707 542 4652
axiaarchitects.com

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CONSULTING ENGINEERS
475 Aviation Boulevard, Suite 120
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REV #	DATE:	ISSUED FOR:

JOB NUMBER: 1192/3612.10

SHEET:

C5

EROSION CONTROL & LAYOUT PLAN

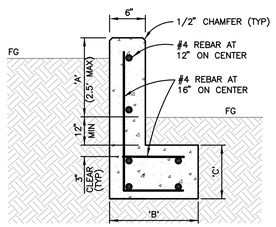
ORIGINAL DATE: AUGUST 2025

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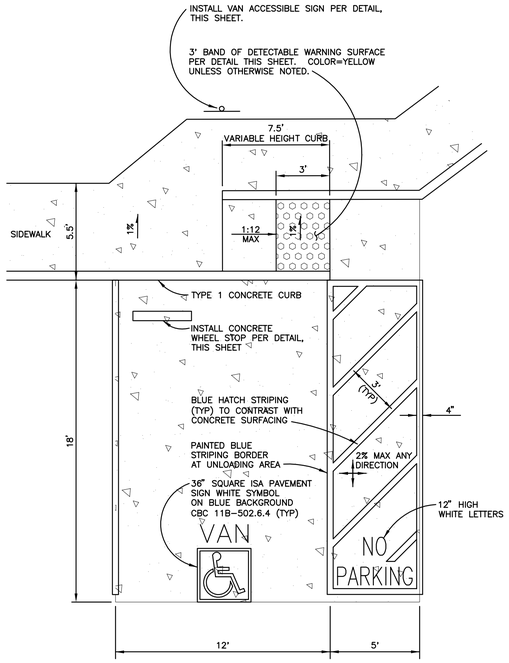
TAB: C5 EROSION CONTROL & LAYOUT PLAN
09-20-25 kiffzeghi \3612\dwg\3612 10\3612.10 PLAN.dwg

WALL SCHEDULE

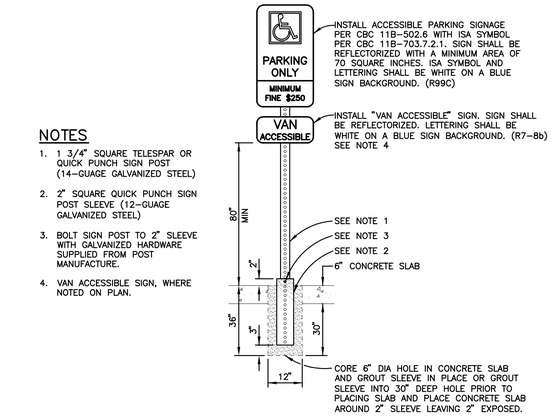
HEIGHT 'A'	'B'	'C'
1.5' – 2.5'	18"	12"
<1.5'	12"	9"



SITE WALL
NOT TO SCALE

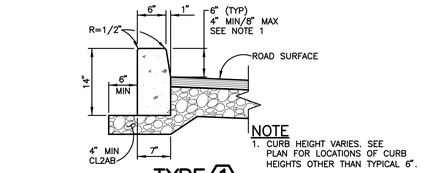


ACCESSIBLE PARKING STALLS
SCALE: 1/4" = 1'



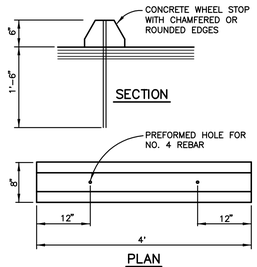
NOTES
1. 1 3/4" SQUARE TELESPAR OR QUICK PUNCH SIGN POST (14-GUAGE GALVANIZED STEEL)
2. 2" SQUARE QUICK PUNCH SIGN POST SLEEVE (12-GUAGE GALVANIZED STEEL)
3. BOLT SIGN POST TO 2" SLEEVE WITH GALVANIZED HARDWARE SUPPLIED FROM POST MANUFACTURE.
4. VAN ACCESSIBLE SIGN, WHERE NOTED ON PLAN.

ACCESSIBLE PARKING SIGN
NOT TO SCALE

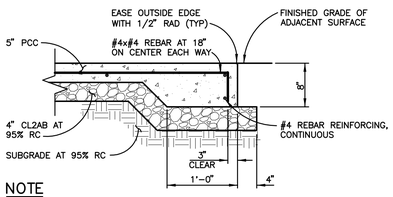


NOTE
1. CURB HEIGHT VARIES. SEE PLAN FOR LOCATIONS OF CURB HEIGHTS OTHER THAN TYPICAL 6".

TYPE (1) STANDARD VERTICAL CURB
NOT TO SCALE

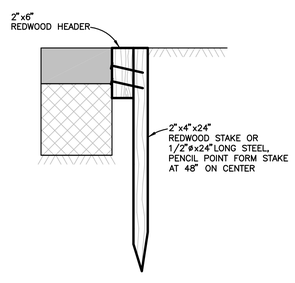


WHEEL STOP
NOT TO SCALE

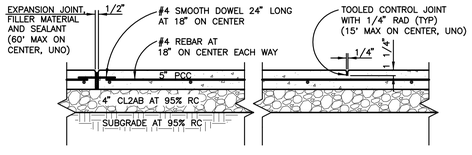


NOTE
1. THICKENED EDGE OCCURS WHERE CONCRETE ABUTS LANDSCAPE/PLANTING AREAS.

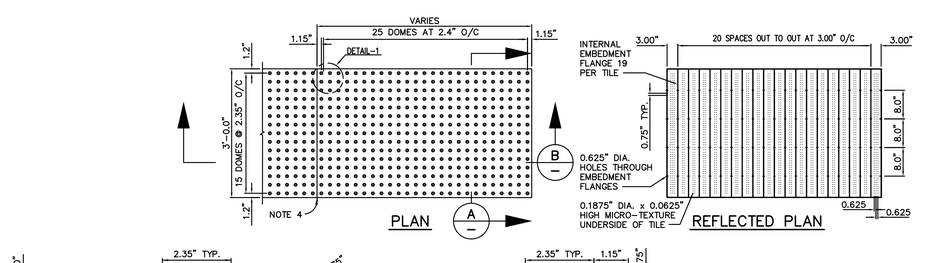
CONCRETE THICKENED EDGE
NOT TO SCALE

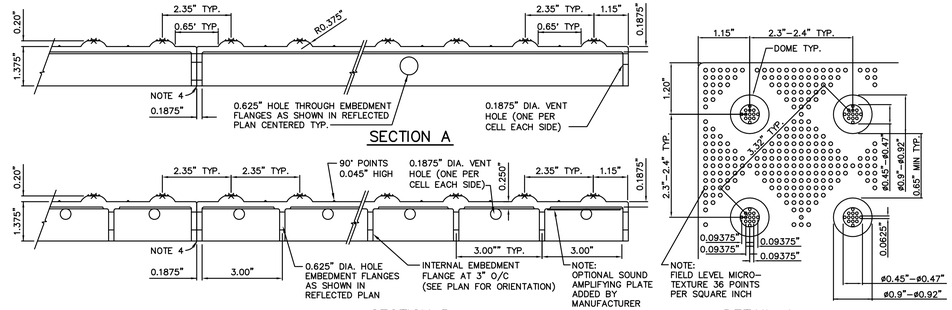


REDWOOD HEADER
NOT TO SCALE



PCC WALK SECTION AND JOINT (PEDESTRIAN)
NOT TO SCALE





NOTES
1. DETAIL FOR 36"x60" SHOWN. DETAIL FOR OTHER SIZE TILES SIMILAR.
2. TILE COLOR TO BE YELLOW.
3. TILES TO BE PLACED FULL WIDTH OF RAMP, EXCLUDING FLARES, AND A MINIMUM LENGTH OF 3FT IN THE DIRECTION OF TRAVEL.
4. WHEN PLACING SEPARATE TILES TOGETHER, ADJACENT TILES SHALL MAINTAIN TRUNCATED DOMES CENTER-TO-CENTER AND BASE-TO-BASE SPACING BETWEEN THE SQUARE GRIDS, AS WELL AS LINEAL ALIGNMENT.

EMBEDDED DETECTABLE WARNING SURFACE
NOT TO SCALE

ARCHITECT:
AXIA ARCHITECTS
250 D Street, Suite 210, Santa Rosa, CA 95404
707 542 4652
axiaarchitects.com

CONSULTANT:
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CONSULTING ENGINEERS
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SHEET: **C6**

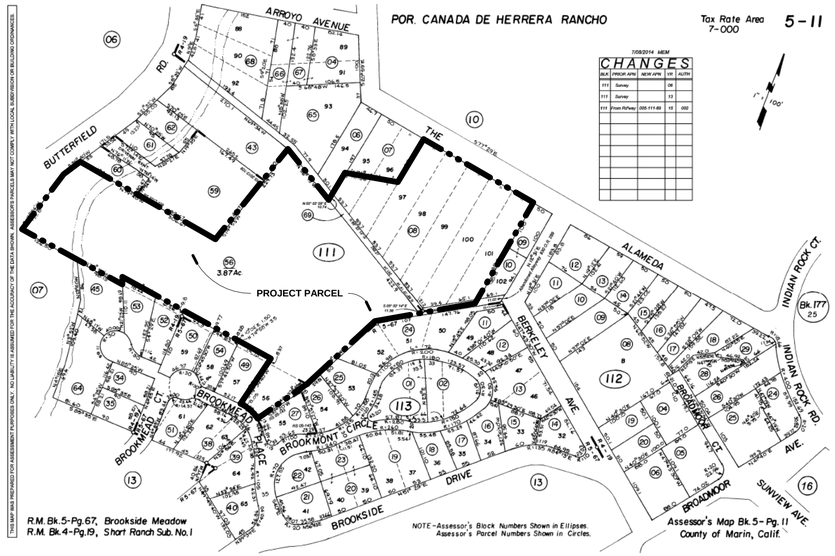
DETAILS

ORIGINAL DATE: AUGUST 2025

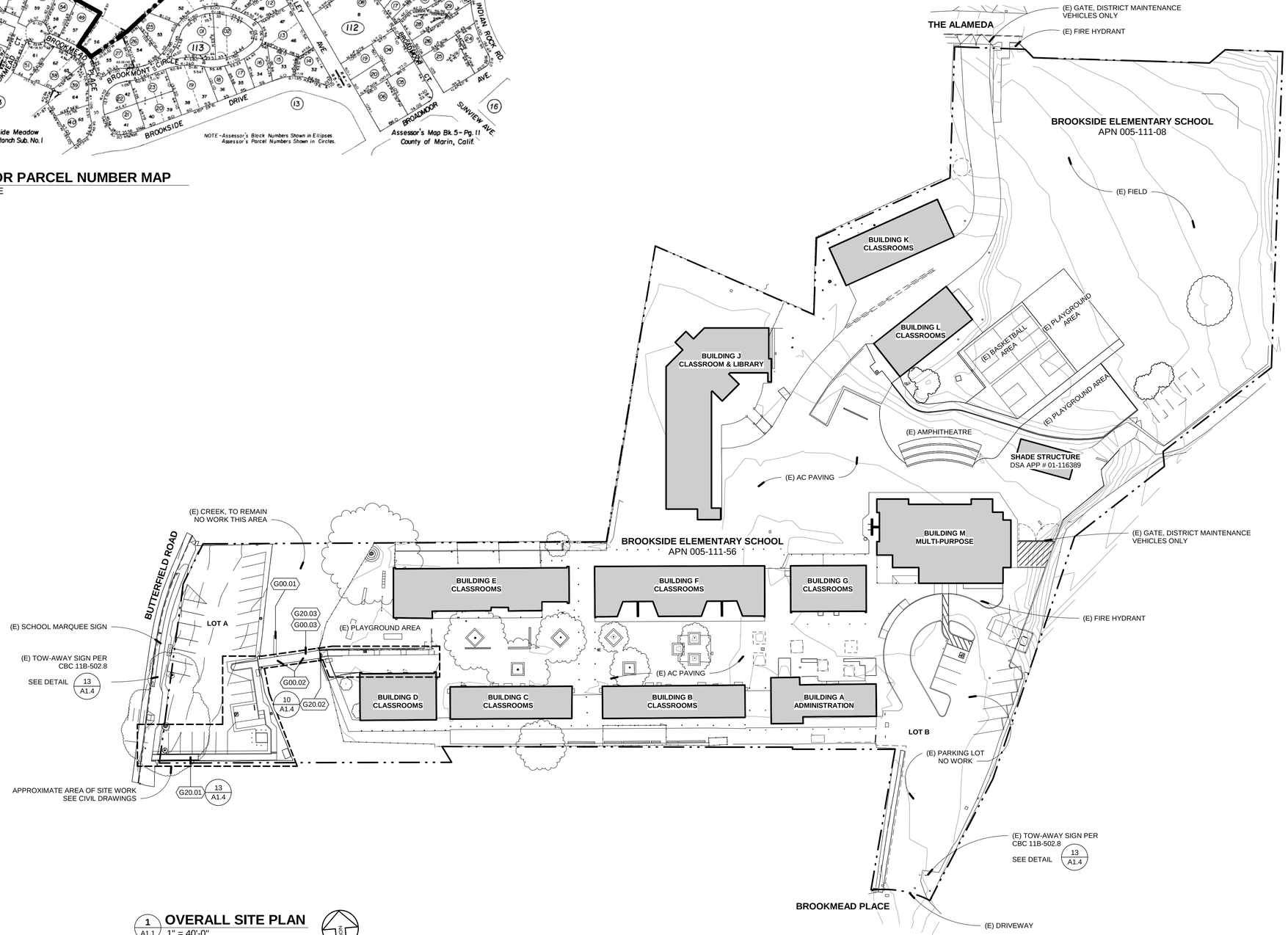
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TAB: 6 DETAILS

08-20-25 Pathnet: \3612\dwg\3612 10\3612.10 DETAIL.dwg



2 A1.1 **ASSESSOR PARCEL NUMBER MAP**
NOT TO SCALE



1 A1.1 **OVERALL SITE PLAN**
1" = 40'-0"

SITE PLAN GENERAL NOTES

1. REFER TO CODE REVIEW SITE PLAN FOR REQUIREMENTS FOR ACCESSIBLE PATH OF TRAVEL NOT OTHERWISE INDICATED ON SITE PLAN.
2. ALL WORK SHOWN IS NEW UNLESS SPECIFICALLY NOTED OTHERWISE.
3. NOTES AND SYMBOLS ARE TO APPLY AT ALL AREAS OF SIMILAR
4. GRAPHIC REPRESENTATION. SUCH INDICATIONS MAY BE LIMITED TO PROMOTE CLARITY OR AVOID REDUNDANCY. NO LIMITATION OF APPLICATION SHALL BE CONSTRUED WITHOUT SPECIFIC NOTATION.
5. DRAWINGS ARE PREPARED FROM INFORMATION MADE AVAILABLE BY THE OWNER AND ARE NOT A GUARANTEE OF EXISTING OR CONCEALED WORK.
6. TOPOGRAPHIC AND REFERENCE LOCATIONS ARE BASED ON SITE SURVEYS DATED "MARCH 7, 2025" AND "JULY 7, 2016" PREPARED BY: BRELJE & RACE 475 AVIATION BLVD, STE 120 SANTA ROSA, CA 95403.
7. REFER TO CIVIL ENGINEERING DRAWINGS FOR HORIZONTAL AND VERTICAL CONTROL INFORMATION.
8. NEATLY CUT AND REMOVE SURFACES AND FINISHES AS REQUIRED OR TO A NATURAL POINT OF DIVISION TO ENABLE INSTALLATION OF UTILITIES OR OTHER CONCEALED WORK, WHETHER SPECIFICALLY SHOWN OR INFERRED FOR SUPPORT OR RENOVATION. REFER TO CIVIL STRUCTURAL, MECHANICAL, PLUMBING, ELECTRICAL, AND LANDSCAPE DRAWINGS FOR CONCEALED WORK NOT SHOWN ON ARCHITECTURAL DRAWINGS.
9. REPAIR AND REPLACE ALL EXISTING SURFACES AND FINISHES TO MATCH EXISTING UNDISTURBED WORK.
10. TREE PROTECTION: PROTECT EXISTING TREES AND VEGETATION TO REMAIN BY FENCING TO THE DRIP LINE AND AS OTHERWISE REQUIRED BY THE OWNER'S ARBORIST. DO NOT TRIM OR MODIFY EXISTING TREES WITHOUT WRITTEN APPROVAL OF THE OWNER. IF EXISTING TREES CONFLICT WITH PROPOSED WORK, REQUEST INSTRUCTIONS IN WRITING.
11. DAMAGE TO TREES OR VEGETATION INDICATED TO REMAIN: REPAIR OR REPLACE AS DIRECTED BY OWNER OR ARBORIST.
12. IF DISCREPANCIES OCCUR BETWEEN THESE NOTES, MATERIAL REFERENCED HEREIN OR MANUFACTURER'S RECOMMENDATIONS, THEN THE MOST PROTECTIVE SHALL APPLY.
13. SOLID WASTE, SUCH AS TRASH, DISCARDED BUILDING MATERIALS AND DEBRIS, SHALL BE PLACED IN DESIGNATED COLLECTION AREAS OR CONTAINERS. THE CONSTRUCTION SITE SHALL BE CLEARED OF SOLID WASTE DAILY, OR NECESSARY AND REGULAR REMOVAL AND PROPER DISPOSAL SHALL BE ARRANGED.

SITE PLAN GRADING & EROSION CONTROL NOTES

1. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
2. PERFORM GRADING IN ACCORDANCE WITH THE LATEST EDITION OF APPENDIX CHAPTER 33 OF THE CALIFORNIA BUILDING CODE, APPLICABLE MARIN COUNTY REGULATIONS.
3. THE APPROVED PLANS SHALL CONFORM WITH THE EROSION PREVENTION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES CONTAINED IN THE LATEST EDITIONS OF THE FOLLOWING PUBLICATIONS OR AN EQUIVALENT BEST MANAGEMENT PRACTICE:
   A. EROSION AND SEDIMENT CONTROL FIELD MANUAL BY THE SAN FRANCISCO BAY REGIONAL WATER QUALITY CONTROL BOARD.
   B. MANUAL OF STANDARDS FOR EROSION & SEDIMENT CONTROL MEASURES BY THE ASSOCIATION OF BAY AREA GOVERNMENTS.
   C. STORMWATER BEST MANAGEMENT PRACTICE HANDBOOK BY THE CALIFORNIA STORMWATER QUALITY ASSOCIATION.
4. IF DISCREPANCIES OCCUR BETWEEN THESE NOTES, MATERIAL REFERENCED HEREIN OR MANUFACTURER'S RECOMMENDATIONS, THEN THE MOST PROTECTIVE SHALL APPLY.
5. SOLID WASTE, SUCH AS TRASH, DISCARDED BUILDING MATERIALS AND DEBRIS, SHALL BE PLACED IN DESIGNATED COLLECTION AREAS OR CONTAINERS. THE CONSTRUCTION SITE SHALL BE CLEARED OF SOLID WASTE DAILY, OR NECESSARY AND REGULAR REMOVAL AND PROPER DISPOSAL SHALL BE ARRANGED.

KEYNOTES

G00.01	(E) CONCRETE RETAINING WALL IN CREEK BED, TO REMAIN
G00.02	(E) CONCRETE BRIDGE PIER IN CREEK BED, TO REMAIN
G00.03	(E) WOOD PEDESTRIAN BRIDGE, TO BE DEMOLISHED, REMOVE ALL WOOD AND STEEL COMPONENTS, DEMOLISH CONCRETE ABUTMENTS, SCD, SSD
G20.01	RAMP, SEE CIVIL DRAWINGS, SEE DETAIL FOR HANDRAILS
G20.02	PEDESTRIAN GATE, SEE DETAIL
G20.03	PREFABRICATED PEDESTRIAN BRIDGE, SSD, SCD

SITE LEGEND

REFER TO SITE PLAN - CODE SUMMARY FOR ADDITIONAL INFO

APPROXIMATE PROPERTY LINE - ALL PARCELS

(E) BUILDINGS - NO WORK THIS AREA

ARCHITECT:
AXIA ARCHITECTS
540 Mendocino Ave, Santa Rosa, CA 95401
707 542 4652
axiaarchitects.com

CONSULTANT:

ROSS VALLEY SCHOOL DISTRICT

BROOKSIDE ELEMENTARY SCHOOL - PEDESTRIAN BRIDGE

116 BUTTERFIELD ROAD, SAN ANSELMO, CALIFORNIA 94960

SEAL:

LICENSED ARCHITECT
DOUGLAS M. HILLEMAN
No. C-29543
REN. 10-31-25
STATE OF CALIFORNIA

SHEET LOG

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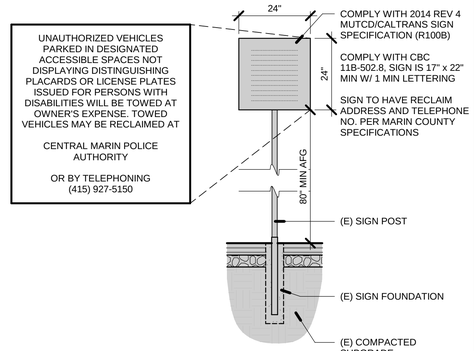
SHEET: **A1.1**

OVERALL SITE PLAN

ORIGINAL DATE: 08.21.2025

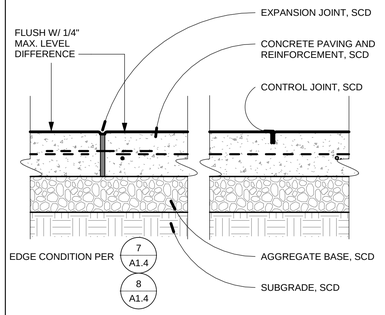
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8/21/2025 8:16:24 PM C:\Users\DWeigl\Documents_REVIT Files\1192_Brookside ES Bridge_C_DWeigl.rvt



UNAUTHORIZED VEHICLES SIGN

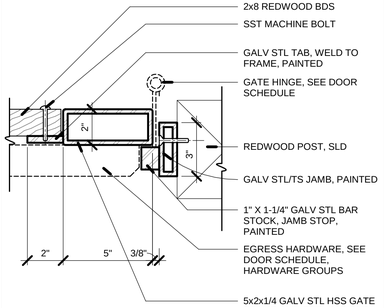
13 A1.4 (E) UNAUTHORIZED VEHICLE SIGN
1/2" = 1'-0"



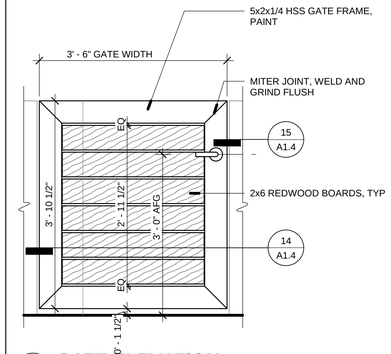
5 A1.4 SITE CONCRETE WALKWAY
1 1/2" = 1'-0"

1. GENERAL EXTENTS OF EXISTING CONSTRUCTION TO REMAIN ARE GRAPHICALLY SHOWN WITH A GREY OVERLAY TO ASSIST THE CONTRACTOR. CONTRACTOR SHOULD REVIEW ALL WRITTEN NOTES FOR ELEMENTS THAT ARE NEW AND EXISTING AND SHOULD COORDINATE WITH ALL TRADES FOR THE EXTENT OF THE NEW WORK.
2. CONTRACTOR SHOULD REVIEW ALL WRITTEN NOTES FOR ELEMENTS THAT ARE TO BE REMOVED AND SHOULD COORDINATE WITH ALL TRADES WHERE DEMOLITION IS NEEDED OR TO BE COORDINATED WITH NEW WORK.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ALL EXISTING CONDITIONS.

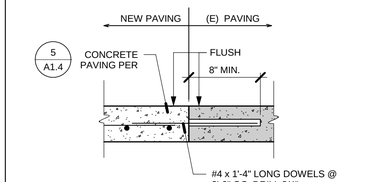
DETAIL NOTES
NOT TO SCALE



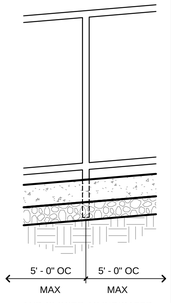
14 A1.4 GATE JAMB/HINGE
3" = 1'-0"

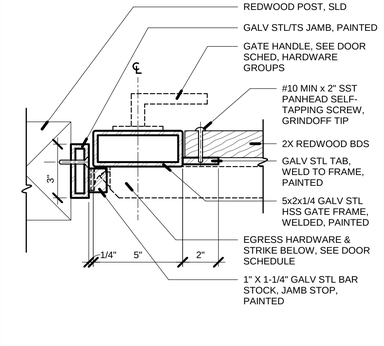


10 A1.4 GATE ELEVATION
3/4" = 1'-0"

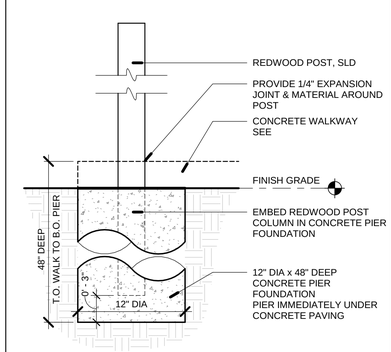


6 A1.4 (E) TO NEW CONCRETE PAVING JOINT
1 1/2" = 1'-0"

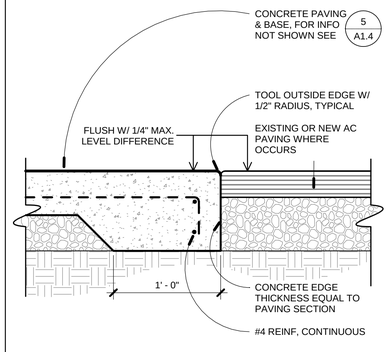




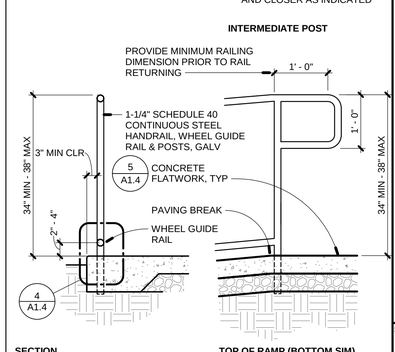
15 A1.4 GATE JAMB/LOCK
3" = 1'-0"



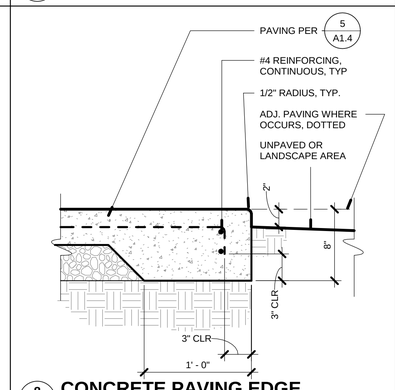
11 A1.4 GATE FOUNDATION DETAIL
1 1/2" = 1'-0"



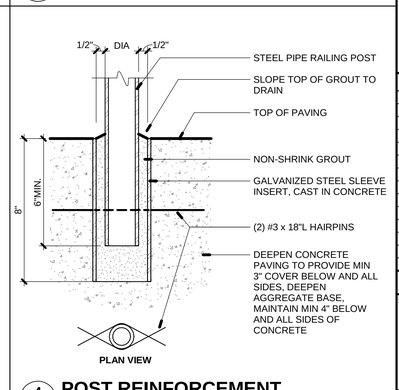
7 A1.4 CONCRETE TO ASPHALT EDGE
1 1/2" = 1'-0"



3 A1.4 SITE RAMP HANDRAIL WITH CURB
3/4" = 1'-0"



8 A1.4 CONCRETE PAVING EDGE
1 1/2" = 1'-0"



PLAN VIEW

4 A1.4 POST REINFORCEMENT
3" = 1'-0"

AXIA ARCHITECTS
540 Mendocino Ave, Santa Rosa, CA 95401
707 542 4652
axiaarchitects.com

ARCHITECT:

CONSULTANT:

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REV #	DATE:	ISSUED FOR:

JOB NUMBER: 1192

SHEET: **A1.4**

SITE DETAILS

ORIGINAL DATE: 08.21.2025

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ABBREVIATIONS

AB	ANCHOR BOLT	FTG	FOOTING	PNL	PANEL
ABV	ABOVE	GA	GAGE or GAUGE	PSF	POUNDS PER SQUARE FOOT
AC	AIR CONDITIONING	GALV	GALVANIZED	PSI	POUNDS PER SQUARE INCH
ADJ	ADJACENT	GB	GRADE BEAM	PSL	PARALLEL STRAND LUMBER
ADDL	ADDITIONAL	GL	GRIDLINE	PTDF	PRESSURE TREATED DOUGLAS FIR
ALT	ALTERNATE	GLB	GLUE LAMINATED BEAM		
ALUM	ALUMINUM	GR	GRADE	PT	POINT
ARCH	ARCHITECT	HD	HOLDOWN	R	RADIUS
AYC	ALASKAN YELLOW CEDAR	HDG	HOT-DIP GALVANIZED	RBS	REDUCED BEAM SECTION
@	AT	HDR	HEADER	RFTR	RAFTER
BF	BRACED FRAME	HGR	HANGER	REF	REFERENCE
BLDG	BUILDING	HK	HOOK	REINF	REINFORCING
BLK/BLKG	BLOCK/BLOCKING	HORIZ	HORIZONTAL	REQD	REQUIRED
BLW	BELOW	HSB	HIGH STRENGTH BOLT	RET	RETAINING
BM	BEAM	HSG	HIGH STRENGTH GROUT	REV	REVISION
BN	BOUNDARY NAIL	HSH	HORIZONTAL SLOTTED HOLE	RF	ROOF
BOT	BOTTOM			RWD	REDWOOD
BRG	BEARING	HSS	HOLLOW STRUCTURAL SECTION	S	AMERICAN STANDARD BEAM
BTWN	BETWEEN			SAD	SEE ARCHITECTURAL DRAWINGS
BU	BUILT-UP	HT	HEIGHT		
BYND	BEYOND	ID	INSIDE DIAMETER	SB	SOLID BLOCK
C	AMERICAN STANDARD CHANNEL	IJ	I SHAPED WOOD BUILT UP TRUSS	SC	SLIP CRITICAL
				SCD	SEE CIVIL DRAWINGS
CA	CALIFORNIA	INT	INTERIOR	SCHED	SCHEDULE
CANT	CANTILEVER	JST	JOIST	SED	SEE ELECTRICAL DRAWINGS
CB	CARRIAGE BOLT	JT	JOINT	SEOR	STRUCTURAL ENGINEER OF RECORD
CFS	COLD FORMED STEEL	KP	KING POST		
CIP	CAST IN PLACE	L	STEEL ANGLE	SFRS	SEISMIC FORCE RESISTING SYSTEM
CGL	CERTIFIED GLUED LUMBER	Lb or #	POUND(s)		
CJ	CONTROL JOINT	LGMF	LIGHT GAGE METAL FRAMING	SHTG	SHEATHING
℄	CENTERLINE			SIM	SIMILAR
CJP	COMPLETE JOINT PENETRATION	LGMFC	LIGHT GAGE METAL FRAMING CONTRACTOR	SKYLT	SKYLIGHT
				SLD	SEE LANDSCAPE DRAWINGS
CLG	CEILING	LL	LIVE LOAD	SMS	SHEET METAL SCREW
CLR	CLEAR	LLH	LONG LEG HORIZONTAL	SMD	SEE MECHANICAL DRAWINGS
COL	COLUMN	LLV	LONG LEG VERTICAL	SOG	SLAB ON GROUND
CONC	CONCRETE	LOC	LOCATION	SPCG	SPACING
CONN	CONNECTION	LS	LAG SCREW	SPD	SEE PLUMBING DRAWINGS
CONT	CONTINUOUS	LSL	LAMINATED STRAND LUMBER	SPEC	SPECIFICATION
COORD	COORDINATE/ COORDINATION	LVL	LAMINATED VENEER LUMBER	SQ	SQUARE
		LWC	LIGHTWEIGHT CONCRETE	SS	SELECT STRUCTURAL or STAINLESS STEEL
CMU	CONCRETE MASONRY UNIT	MAX	MAXIMUM		
CSK	COUNTERSINK	MB	MACHINE BOLT	STGR	STAGGERED
CW	CUT WASHER	MBM	METAL BUILDING MANUFACTURER	STD	STANDARD
DBA	DEFORMED BAR ANCHOR			STIFF	STIFFENER
DBL	DOUBLE	MC	MISCELLANEOUS CHANNEL	STL	STEEL
DCW	DEMAND CRITICAL WELD	MECH	MECHANICAL	STRUCT	STRUCTURAL
DF	DOUGLAS FIR	MEZZ	MEZZANINE	SW	SHEAR WALL
DIA or ⌀	DIAMETER	MF	MOMENT FRAME	SYM	SYMMETRICAL
DIAG	DIAGONAL	MFR	MANUFACTURER	T&B	TOP AND BOTTOM
DIM	DIMENSION	MIN	MINIMUM	T&G	TONGUE AND GROOVE
DIST	DISTANCE	MISC	MISCELLANEOUS	THK	THICK
DJ	DOWEL JOINT	MW	MALLEABLE IRON WASHER	THRD	THREADED
DL	DEAD LOAD	MTL	METAL	THRU	THROUGH
DN	DOWN	MU	MECH UNIT	TL	TOTAL LOAD
DO	DITTO	(N)	NEW	TN	TOE NAIL
DWG	DRAWING	N/A	NOT APPLICABLE	TOC	TOP OF CONCRETE
DWL	DOWEL	NO or #	NUMBER	TOF	TOP OF FRAMING
EA	EACH	NS	NEAR SIDE	TOM	TOP OF MASONRY
EE	EACH END	NSG	NON-SHRINK GROUT	TOP	TOP OF PLYWOOD
EF	EACH FACE	NTS	NOT TO SCALE	TOS	TOP OF STEEL
ELEC	ELECTRICAL	NWC	NORMAL-WEIGHT CONCRETE	TOT	TOTAL
ELEV	ELEVATOR/ELEVATION	O/	OVER	TU	TILT UP
EMBED	EMBEDMENT	oc	ON CENTER	TYP	TYPICAL
EQ	EQUAL	OD	OUTSIDE DIAMETER	UNO	UNLESS NOTED OTHERWISE
EQUIP	EQUIPMENT	OH	OPPOSITE HAND	VERT	VERTICAL
ES	EACH SIDE	OPNG	OPENING	VIF	VERIFY IN FIELD
EW	EACH WAY	OPP	OPPOSITE	VSH	VERTICAL SLOTTED HOLE
(E)	EXISTING	OVS	OVERSIZED	W	WIDE FLANGE STEEL BEAM
EXP	EXPANSION	OW	OTHERWISE	W/	WITH
EXT	EXTERIOR	OWT	OPEN WEB TRUSS	W/O	WITHOUT
FDN	FOUNDATION	℄	PLATE or PROPERTY LINE	WD	WOOD
FIN	FINISH	PA	POST ABOVE	WHS	WELDED HEADED STUD
FG	FINISH GRADE	PAF	POWER ACTUATED FASTENERS	WLD	WELDED
FLR	FLOOR			WP	WORK POINT/WATERPROOF
FN	FACE NAIL	PEN	PANEL EDGE NAIL	WS	WOOD SCREW
FOC	FACE OF CONCRETE	PERP	PERPENDICULAR	WT	WEIGHT
FOM	FACE OF MASONRY	PES	PANEL EDGE SCREWS	WTS	WELDED THREADED STUD
FOS	FACE OF STUD	PJP	PARTIAL JOINT PENETRATION	WWR	WELDED WIRE REINFORCEMENT
FRMG	FRAMING	PLF	POUNDS PER LINEAR FOOT		
FS	FAR SIDE				

D 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 FOUNDATIONS
F'$_c$ = 4,500 PSI RETAINING WALL

REINFORCING STEEL:
ASTM A615 GRADE 60 OR A706 GRADE 60 (F_y = 60,000 PSI)

FASTENERS:
MACHINE BOLTS - ASTM A307 GRADE A
ANCHOR RODS - ASTM F1554 GR 36 UNO
ARC-WELDING ELECTRODES - E70

E EXISTING CONSTRUCTION NOTES

1. IN PREPARING THE PROJECT PLANS, THE SOURCE OF INFORMATION WAS BASED ON THE EXISTING BUILDING PLANS PREPARED BY BAMBERGER & REID, DATED 7/8/1947. 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, MASONRY 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.

F DRILLED PIER NOTES

1. VERIFY LOCATION, POSITION AND INCLUSION OF ALL DRILLED PIER LOCATIONS, AND ANY EMBEDDED OR CONCEALED ITEMS. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER SO CLARIFICATION CAN BE MADE PRIOR TO COMMENCING WORK.
2. REMOVE LOOSE DIRT, MUD, STANDING WATER, AND FOREIGN MATTER FROM ALL PIER EXCAVATIONS.
3. PLACEMENT, ONCE STARTED, SHALL BE CARRIED ON AS A CONTINUOUS OPERATION UNTIL SECTION OF APPROVED SIZE AND SHAPE IS COMPLETED.
4. ALL STEEL REINFORCEMENT SHALL BE PLACED, TIED AND SECURED WITHIN THE PIER EXCAVATION BEFORE CONCRETE IS PLACED.
5. ALL PIER EXCAVATIONS SHALL BE REVIEWED BY BOTH THE GEOTECHNICAL ENGINEER OF RECORD (GEOR) AND SEOR BEFORE CONCRETE IS PLACED.
6. UPON COMPLETION OF PIER DRILLING, CONCRETE IS TO BE PLACED WITHIN A REASONABLE TIMEFRAME, DETERMINED BY THE GEOR. IF EXCAVATION IS TO BE LEFT UNFILLED FOR MORE THAN 24 HOURS, CONTRACTOR SHALL PROVIDE SHAFT CASING TO PROTECT THE INTEGRITY OF THE HOLE. SHAFT CASING SHALL BE REMOVED GRADUALLY AS CONCRETE IS POURED.
7. CONTRACTOR TO MAINTAIN CLEAN PIER SHAFT AND SHALL REMOVE DEBRIS BUILDUP FROM BOTTOM OF PIER SHAFT.

A DESIGN CRITERIA

DESIGN CRITERIA: 2022 CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 2 (CBC)
FLOOR LIVE LOAD: 100 PSF
RISK CATEGORY: III
WIND DATA: ULTIMATE WIND SPEED (3 SEC GUST) IN MPH: 99
WIND EXPOSURE: C
EARTHQUAKE DATA: SEISMIC IMPORTANCE FACTOR, I_e: 1.25
MAPPED SPECTRAL RESPONSE ACCELERATIONS: S_s = 1.5; S_1 = 0.6
SITE CLASS: D
SPECTRAL RESPONSE COEFFICIENTS: S_{DS} = 1.095; S_{D1} = 0.978
SEISMIC DESIGN CATEGORY: D

SCOPE: NEW STEEL-FRAMED PREFABRICATED PEDESTRIAN BRIDGE

B GENERAL NOTES

1. REFER TO SHEETS S1.1 AND S2.1 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 ELECTRICAL AND SITE UTILITY SYSTEMS WITH THE STRUCTURAL SYSTEM IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. USE DETAILS ON SHEETS S1.1 AND S2.1. AT CONDITIONS WHERE THESE DETAILS DO NOT APPEAR TO APPLY, NOTIFY THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION. AT CONDITIONS WHERE FIELD MODIFICATIONS OF ELECTRICAL OR SITE UTILITIES AFFECT STRUCTURAL SYSTEMS, NOTIFY STRUCTURAL ENGINEER PRIOR TO INSTALLATION.
7. SHORING, SCAFFOLDING, 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 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. BACKFILL & DRAINAGE ARE PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. DO NOT BACKFILL UNTIL CONCRETE HAS REACHED SPECIFIED STRENGTH AND 14 DAYS MINIMUM.
9. SPECIAL INSPECTIONS ARE REQUIRED PER THE TESTING AND INSPECTION FORM.
10. NOTIFY ZFA FOR GENERAL ON SITE REVIEW OF:
    - MINIMUM FOOTING SIZE AND REINFORCING STEEL.

    NOTIFY ZFA FOR REVIEW PRIOR TO COVERING ABOVE LISTED WORK. PROVIDE 2 WORKING DAYS MINIMUM SCHEDULING NOTICE PRIOR TO REVIEW DATE. ZFA SHALL BE NOTIFIED PRIOR TO COMMENCEMENT OF CONSTRUCTION IF THE AUTHORITY HAVING JURISDICTION OR OWNER REQUIRES A FINAL GENERAL CONFORMANCE LETTER. ALL STRUCTURAL CONSTRUCTION DEVIATIONS OBSERVED DURING SITE VISITS SHALL BE RESOLVED AND COPIES OF ALL SPECIAL INSPECTIONS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A CONFORMANCE LETTER.

C FOUNDATION NOTES

1. ALLOWABLE (ASD) FOUNDATION DESIGN PRESSURES ARE:

   SHALLOW FOOTINGS:
   DEAD LOAD + LIVE LOAD = 3,000 PSF
   DEAD LOAD + LIVE LOAD + LATERAL = 4,000 PSF
2. ALL SOILS WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE REQUIREMENTS OF THE GEOTECHNICAL REPORT NOTED BELOW, AND CHAPTER 18A 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:

   RGH CONSULTANTS
   REPORT NO. 2892.011.PW.1
   DATED: 12/11/2014
3. WHERE BOTTOM OF ADJACENT FOOTINGS ARE DIFFERENT PROVIDE STEPPED FOOTING PER 4/S1.1.
4. FORMWORK STAKES ARE NOT PERMITTED WITHIN CONCRETE PLACEMENTS. IF REQUIRED, PROVIDE STEEL STAKES SLEEVED WITH PLASTIC PIPE OR SOLID PLASTIC STAKES; WOOD STAKES NOT PERMITTED. FLUSH CUT SLEEVE OR STAKE AND FILL SLEEVES IMMEDIATELY WITH GROUT. WHERE STAKES PENETRATE VAPOR RETARDER, TAPE OR SEAL PER MANUFACTURER'S RECOMMENDATIONS.
5. TOP OF FOOTING ELEVATIONS TO BE DETERMINED BY THE CONTRACTOR BASED ON INFORMATION FROM THE CIVIL DRAWINGS, GEOTECHNICAL REPORT, LANDSCAPE, ETC.

SHEET INDEX

S0.1	GENERAL NOTES
S1.1	TYPICAL DETAILS
S2.1	FOUNDATION PLAN

ARCHITECT:
AXIA ARCHITECTS
540 Mendocino Ave. Santa Rosa, CA 95401
707 542 4652
axiaarchitects.com

CONSULTANT:
ZFA STRUCTURAL ENGINEERS
250 d street | suite 200
santa rosa ca 95404
zfa job no. 2456
zfa.com
707.526.0992

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ROSS VALLEY SCHOOL DISTRICT
BROOKSIDE ELEMENTARY SCHOOL - PEDESTRIAN BRIDGE
116 BUTTERFIELD ROAD, SAN ANSELMO, CA 94960

SEAL:
REGISTERED PROFESSIONAL ENGINEER
KEVIN G. ZUCCO
STRUCTURAL
No. 4861
STATE OF CALIFORNIA

SHEET LOG

REV #	DATE:	ISSUED FOR:

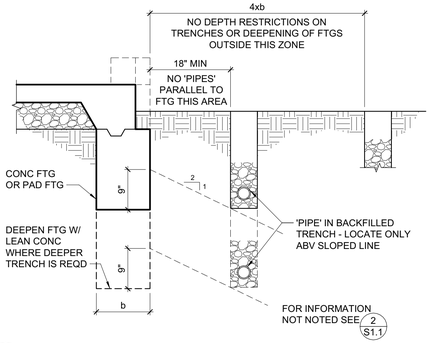
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SHEET
S0.1
GENERAL NOTES

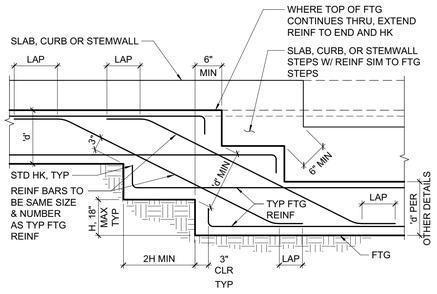
DRAWN BY: 08/22/25
ENGINEER: KBS/NBB
PROJECT MGR: NB

SUBMITTAL SET

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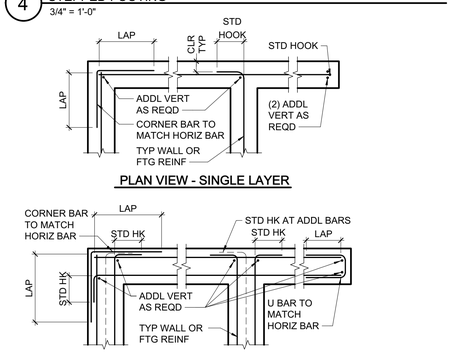


3 TRENCHING ADJACENT TO FOOTING
3/4" = 1'-0"



NOTE:
REMOVE ALL EARTH LOOSENED DURING EXCAVATION AND FILL W/ CONCRETE.

4 STEPPED FOOTING
3/4" = 1'-0"



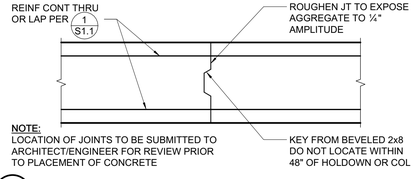
NOTE:
FOOTING REINFORCING AT CORNER AND INTERSECTION TO BE SIMILAR

5 TYPICAL CORNER, INTERSECTION AND END REINFORCING
3/4" = 1'-0"

MARK	MINIMUM SLAB FILL THICKNESS ABV DECK	MINIMUM SLAB FILL REINFORCING	REMARKS
1	4" CONCRETE MIN (6" TOT THICKNESS MIN)	#4 @ 6"oc EW AT MID HEIGHT	BRIDGE DECK

NOTES:
1. DECK & DECK ATTACHMENTS ARE PER CONTECH DRAWINGS.
2. NO CONTROL JOINTS IN CONCRETE OVER METAL DECK ALLOWED.
3. HORIZONTAL CONDUIT, PIPING, RADIANT HEATING TUBING, ETC NOT PERMITTED WITHIN CONCRETE TOPPING.

6 DECKING SCHEDULE
3/4" = 1'-0"



NOTE:
LOCATION OF JOINTS TO BE SUBMITTED TO ARCHITECT/ENGINEER FOR REVIEW PRIOR TO PLACEMENT OF CONCRETE

7 FOOTING CONSTRUCTION JOINT
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"

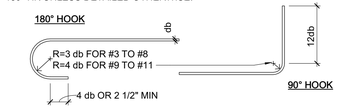
CONC COVER FOR REINF STL ..... 'CLR'

CAST AGAINST EARTH OR GR ..... 3"

EXPOSED TO EARTH (FORMED) OR WEATHER
- #5 & SMALLER ..... 1½"
- #6 & LARGER ..... 2"

NOT EXPOSED TO EARTH OR WEATHER
- #11 & SMALLER AT SLABS & WALLS ..... ¾"
- ALL OTHER CONDITIONS ..... 1½"

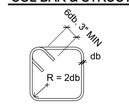
ALL REINF SHALL EXTEND AS FAR AS POSSIBLE. WHERE BAR SPLICES ARE REQUIRED, BARS SHALL BE LAPPED PER SCHEDULE ABOVE UNLESS DETAILED OTHERWISE. WHERE REINF TERMINATES AT END OF MEMBER, REINF SHALL END IN A STD 90° OR 180° HK UNLESS DETAILED OTHERWISE.



STANDARD HOOKS & BENDS

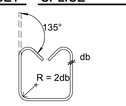


COL BAR & STRUCT OFFSET

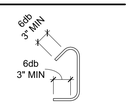


135° STIRRUP
TIES #3, #4, #5

SPLICE

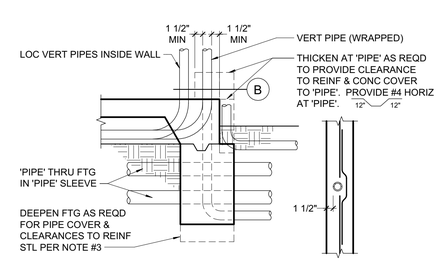


STIRRUP
#3, #4, #5



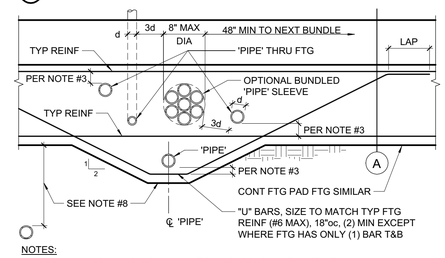
CROSSTIE
#3, #4, #5

1 TYPICAL REINFORCING DETAILS
3/4" = 1'-0"



B PLAN VIEW

A



NOTES:
1. 'PIPE' = ANY PENETRATION THRU OR EMBEDDED IN FOUNDATION.
2. ALL PIPES THROUGH FOOTINGS TO BE WRAPPED OR SLEEVED AS FOLLOWS:
   a. SLEEVES: PROVIDE 1" MIN CLEAR ALL AROUND O.D. PIPE TO I.D. SLEEVE, UNO. SEAL SLEEVE ENDS W/ MASTIC OR PLASTIC BITUMINOUS CEMENT.
   b. WRAPPED VERTICAL PIPES: PROVIDE ⅛" NOMINAL SHEET FOAM W/ (3) WRAPS MINIMUM, UNO.
   c. WRAPPED HORIZONTAL PIPES: PROVIDE ⅛" NOMINAL SHEET FOAM W/ (8) WRAPS MINIMUM, UNO.
   d. UNDERGROUND FIRE LINES 4" AND LARGER:
      1. SLEEVES: PROVIDE 2" MIN CLEAR ALL AROUND O.D. PIPE TO I.D. SLEEVE. SEAL ENDS PER ABOVE.
      2. WRAPPED: PROVIDE ⅛" NOMINAL SHEET FOAM W/ (16) WRAPS MINIMUM.
3. WRAPPED AND SLEEVED PIPES SHALL HAVE 1½" MIN CLEAR TO REINF STEEL. MINIMUM CONCRETE COVER AT PIPES TO BE 3".
4. CLEARANCE BETWEEN 'PIPES' TO BE 3d MIN TYP W/ A MAXIMUM OF (8) PIPES PER 48". GROUPS OF PIPES MAY BE BUNDLED AS SHOWN.
5. NO 'PIPE' TO RUN PARALLEL IN FOOTINGS, STEM OR CURB.
6. PVC CONDUIT ('PIPE') EMBEDDED IN CURB/STEM MAY BE WIRE TIED TO HORIZONTAL REINF.
7. NO HORIZONTAL PIPES ALLOWED THROUGH FOOTING WITHIN 2'-0" EACH SIDE OF STEEL COLUMNS.
   PROVIDE 18" MIN OF COMPACTED FILL ABOVE PIPES UP TO 12"ø, FOR LARGER PIPES
8. INCREASE COMPACTED FILL DEPTH 1'-0" FOR EACH 6" INCREASE IN PIPE DIAMETER. OTHERWISE DEEPEN FOOTING AS SHOWN.

2 PIPES THRU FOOTING
3/4" = 1'-0"

ARCHITECT:
AXIA ARCHITECTS
540 Mendocino Ave, Santa Rosa, CA 95401
707 542 4652
axiaarchitects.com

CONSULTANT:
ZFA STRUCTURAL ENGINEERS
250 d street | suite 200
santa rosa ca 95404
zfa job no. 2459
zfa.com
707.526.0992
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ROSS VALLEY SCHOOL DISTRICT
BROOKSIDE ELEMENTARY SCHOOL - PEDESTRIAN BRIDGE
116 BUTTERFIELD ROAD, SAN ANSELMO, CA 94960

SEAL:
KEVIN G. ZUCCO — REGISTERED PROFESSIONAL ENGINEER — STRUCTURAL No. 4861 — STATE OF CALIFORNIA

SHEET LOG

REV #	DATE:	ISSUED FOR:

JOB NUMBER: 24549

SHEET
S1.1
TYPICAL DETAILS

DRAWN BY: 08/22/25
ENGINEER: KBS/NBB
PROJECT MGR: NB

SUBMITTAL SET

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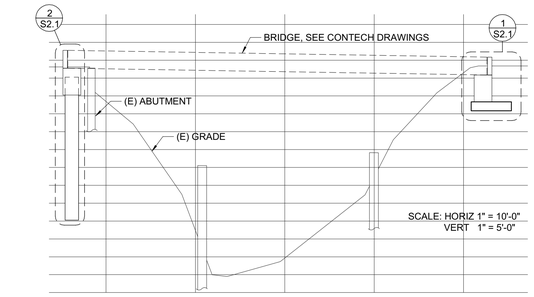
PLAN NOTES:

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. ELECTRICAL CONDUIT AND GROUND STRAP SHALL NOT BE LAID WITHIN FOUNDATIONS. NO VERTICAL OR HORIZONTAL PIPES OR CONDUITS SHALL BE LOCATED THROUGH 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.

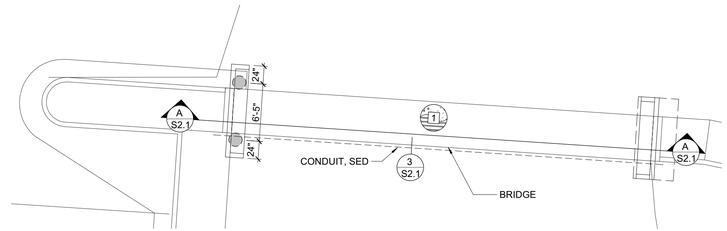
   PIPES THROUGH FOOTINGS SHALL BE PER 2/S1.1.

   PIPES PARALLEL TO FOOTINGS SHALL BE PER 3/S1.1.

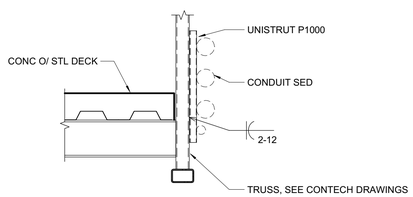
PLAN LEGEND		
SYMBOL	REFERENCE DETAIL	DESCRIPTION
		INDICATES CONCRETE WALL.
		INDICATES FOUNDATION.
		INDICATES PIER.
1	6/S1.1	INDICATES METAL DECK WITH CONCRETE FILL AND DIRECTION OF DECK SPAN.



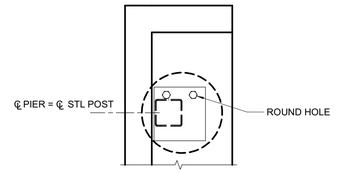
A BRIDGE LONGITUDINAL SECTION

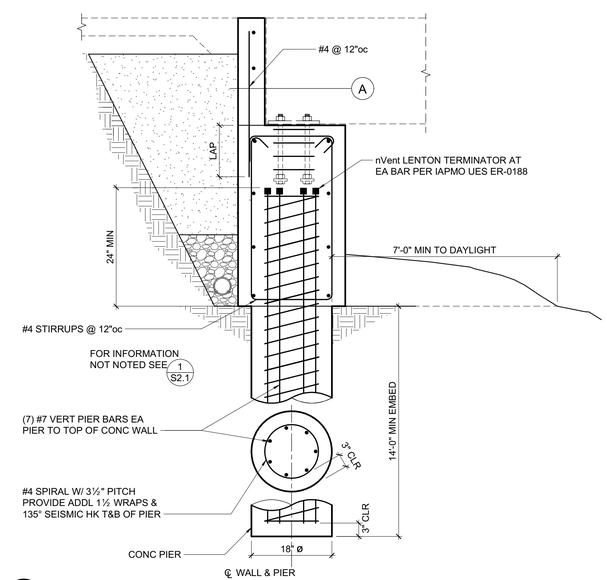


SITE PLAN
1/8" = 1'-0"

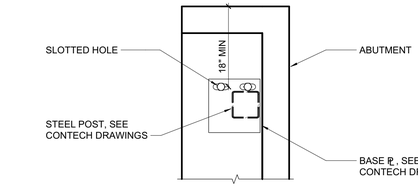


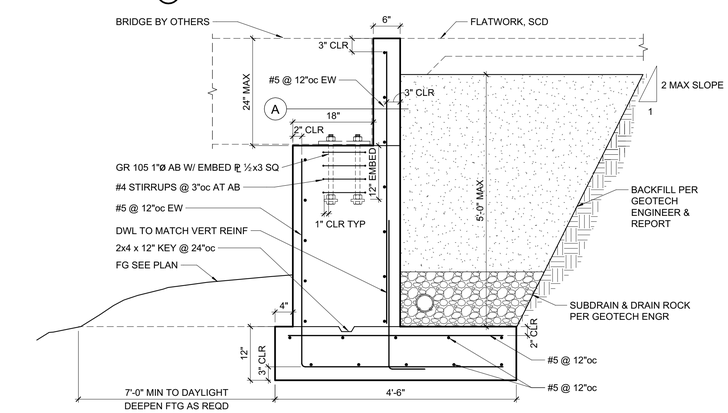
3 CONDUIT ANCHORAGE
3/4" = 1'-0"





2 RETAINING WALL ROUND HOLE
3/4" = 1'-0"





1 RETAINING WALL SLOTTED HOLE
3/4" = 1'-0"

ARCHITECT:
AXIA ARCHITECTS
540 Mendocino Ave, Santa Rosa, CA 95401
707 542 4652
axiaarchitects.com

CONSULTANT:
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250 d street | suite 200
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zfa job no. 2459
zfa.com
707.526.0992

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ROSS VALLEY SCHOOL DISTRICT

BROOKSIDE ELEMENTARY SCHOOL - PEDESTRIAN BRIDGE

116 BUTTERFIELD ROAD, SAN ANSELMO, CA 94960

SEAL:

REGISTERED PROFESSIONAL ENGINEER
KEVIN G. ZUCCO
STRUCTURAL
No. 4861
STATE OF CALIFORNIA

SHEET LOG

REV #	DATE:	ISSUED FOR:

SUBMITTAL SET

JOB NUMBER: 24549

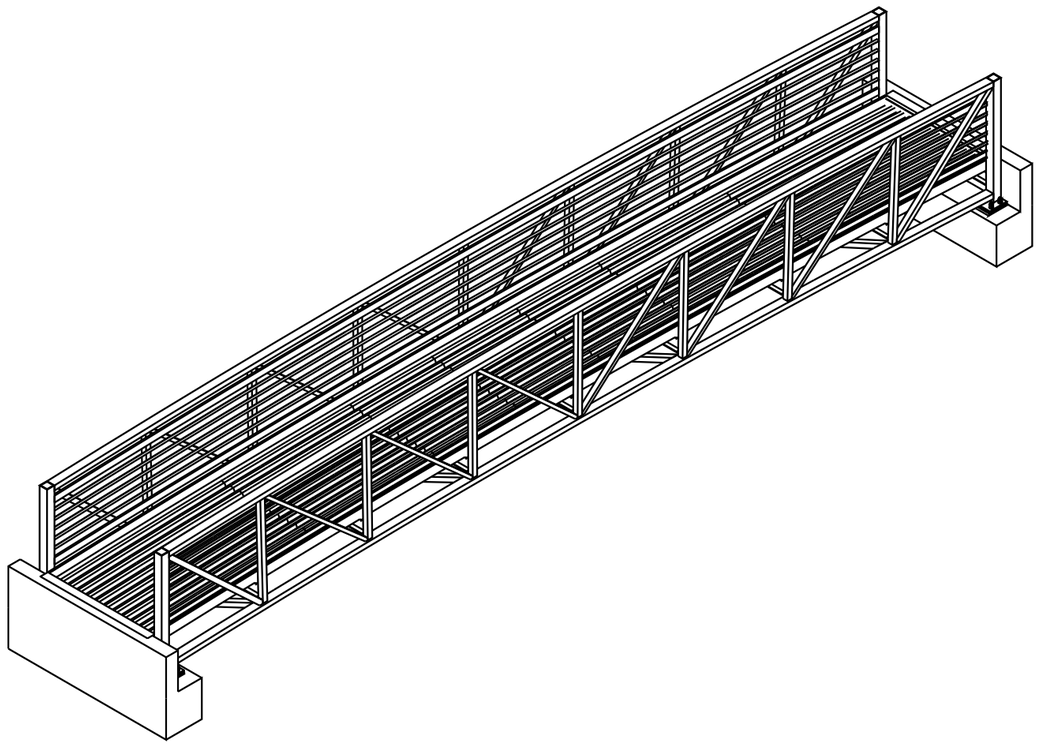
SHEET **S2.1**

FOUNDATION PLAN

DRAWN BY: 08/22/25
ENGINEER: KBS/NBB
PROJECT MGR: NB

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47'-0" X 6'-0"
(PSA-E2) BROOKSIDE ELEMENTARY
SAN ANSELMO, CA



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ENGINEERED SOLUTIONS LLC
A QUIKRETE® COMPANY
8301 State Highway 29 North, Alexandria, MN 56308
800-328-2047 320-345-9126

CONTINENTAL BRIDGE

CONTECH
PROPOSAL
DRAWING

47'-0" X 6'-0"
(PSA-E2) BROOKSIDE ELEMENTARY
PEDESTRIAN TRUSS - CONNECTOR
SAN ANSELMO, CA

PROJECT No.:	SEQ. No.:	DATE:
855412	010	8/5/2025
DESIGNED: ATT		DRAWN: KRL
CHECKED: ATT		APPROVED: MJH
SHEET NO.: 1	OF 7	

REGISTERED PROFESSIONAL ENGINEER
KEVIN G. ZUCCO
STRUCTURAL
No. 4861
STATE OF CALIFORNIA

AISC CERTIFIED FABRICATOR

GENERAL NOTES

1. DESIGN IS IN ACCORDANCE WITH 2022 CALIFORNIA BUILDING CODE, WITH A-CHAPTER AMENDMENTS.
2. MATERIALS (UNLESS NOTED OTHERWISE):
   a. STRUCTURAL STEEL:
      i. HSS SECTIONS: ASTM A847 WEATHERING STEEL
      ii. SHAPES & PLATES: ASTM A588 WEATHERING STEEL
      iii. ROLL FORM: A606 WEATHERING STEEL
   b. FORM DECK: GALVANIZED (G90 MIN.) GAUGE INDICATED IN SCHEDULE OF MEMBERS IS THE MINIMUM REQUIRED.
3. BRIDGE DESIGN IS BASED ON LOAD COMBINATIONS IN ACCORDANCE WITH AASHTO OF THE FOLLOWING LOADS
   a. BRIDGE DEAD LOAD.
   b. UNIFORM PEDESTRIAN LIVE LOAD OF 100 PSF.
   c. VEHICLE LIVE LOAD: 4000 LB TRUCK.
   d. WIND LOADING IN ACCORDANCE WITH THE FOLLOWING PARAMETERS:
      i. DESIGN WIND SPEED: 99 MPH
      ii. SERVICE WIND SPEED: 76 MPH
      iii. EXPOSURE CATEGORY: C
   e. SEISMIC LOADING IN ACCORDANCE WITH THE FOLLOWING PARAMETERS:
      i. SITE CLASS = D
      ii. R=1.0
      iii. RISK CATEGORY= III
      iv. S_s = 1.5
      v. S_{DS} = 1.095
4. BRIDGE TO BE BUILT TO THE REQUIREMENTS OF AWS D1.1.
5. ALL SHOP WELDING SHALL USE THE GAS METAL ARC WELDING OR FLUX CORED ARC WELDING PROCESS.
6. FINISH: ALL EXPOSED SURFACES OF WEATHERING STEEL TO BE CLEANED IN ACCORDANCE WITH STEEL STRUCTURES PAINTING COUNCIL SURFACE PREPARATION SPECIFICATIONS NO. 7, SSPC-SP7 BRUSH-OFF BLAST CLEANING. EXPOSED SURFACES OF STEEL SHALL BE DEFINED AS THOSE SURFACES SEEN FROM THE DECK OR FROM THE OUTSIDE OF THE STRUCTURE. FLOOR BEAMS, BRACE DIAGONALS AND INSIDE OF SIDE DAM WILL NOT BE BLAST CLEANED.
7. MAINTENANCE NOTE: CONTECH ENGINEERED SOLUTIONS RECOMMENDS NOT APPLYING DEICING OR DUST PROHIBITIVE CHEMICALS OR SALTS TO ANY PART OF THE BRIDGE STRUCTURE. IF DEICING OR DUST PROHIBITIVE CHEMICALS OR SALTS ARE APPLIED TO ANY PART OF THE BRIDGE STRUCTURE, CONTECH ENGINEERED SOLUTIONS WILL NOT BE RESPONSIBLE FOR ANY RESULTANT ACCELERATED CORROSION.
8. SHOP SPLICES:
   a. ALL TOP AND BOTTOM CHORD SHOP SPLICES TO BE COMPLETE PENETRATION TYPE WELDS.
   b. ALL HORIZONTAL RAIL COMPONENT SPLICES TO BE LOCATED AT THE CENTERLINE OF VERTICALS, EACH END WELDED TO THE VERTICAL AND SEAL WELDED TOGETHER. SEAL WELDS TO BE GROUND SMOOTH AND VISUAL INSPECTION ONLY REQUIRED.

DECK NOTES

1. FORM DECK SHALL SPAN A MINIMUM OF 2 SPANS AND SHALL BE TIGHT FITTING WITH A GAP NO LARGER THAN 1/4" IN ANY DIRECTION. FORM DECK WILL BE SHOP ATTACHED TO FLOOR BEAMS WITH 1" x 3/16" POWER ACTUATED FASTENERS. GALVANIZED G90 FORM DECK SHALL BE CANAM STEEL DECK UF2X-20 GAGE, ICC-ES EVALUATION REPORT ESR-5538.

1-800-328-2047
CONTECH
www.ContechES.com
MAXIMUM LOAD LIMIT
4,000 LB VEH. LOAD
100 PSF LIVE LOAD
JOB # 855412-10
DATE BUILT
CONTINENTAL BRIDGE
CONNECTOR

REGISTERED PROFESSIONAL ENGINEER
KEVIN G. ZUCCO
STRUCTURAL
No. 4861
STATE OF CALIFORNIA

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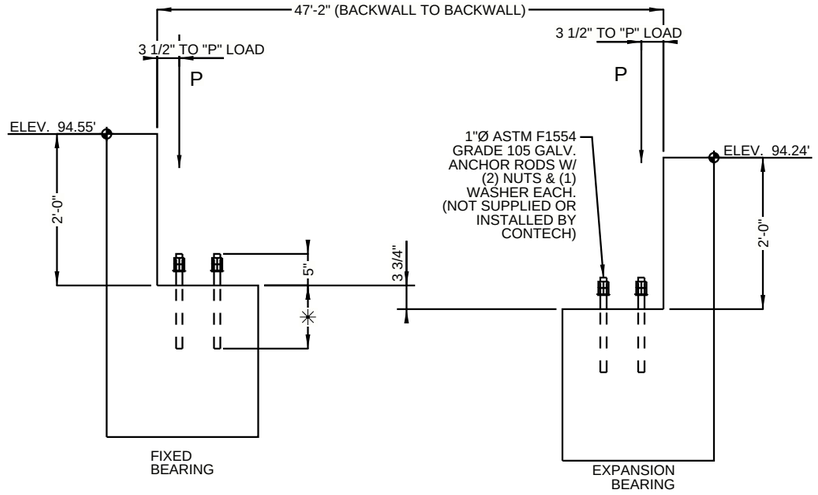
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8301 State Highway 29 North, Alexandria, MN 56308
800-328-2047 320-345-9126

CONTINENTAL BRIDGE
CONTECH PROPOSAL DRAWING

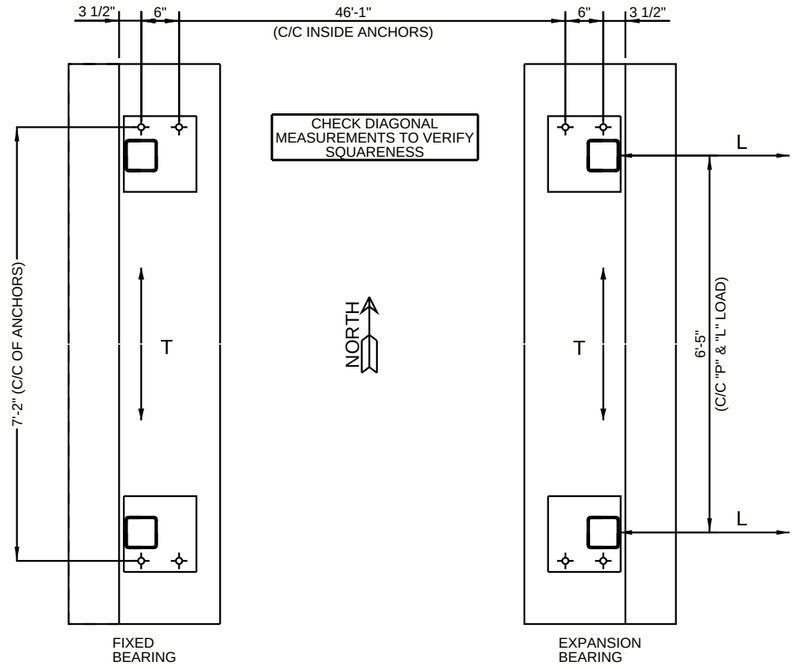
47'-0" X 6'-0"
(PSA-E2) BROOKSIDE ELEMENTARY
PEDESTRIAN TRUSS - CONNECTOR
SAN ANSELMO, CA

PROJECT No.:	SEQ. No.:	DATE:
855412	010	8/5/2025
DESIGNED: ATT	DRAWN: KRL	
CHECKED: ATT	APPROVED: MJH	
SHEET NO.: 2 OF 7		

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ANCHOR BOLT ELEVATION



ANCHOR BOLT PLAN

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800-328-2047 320-345-9126

CONTINENTAL BRIDGE

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DRAWING

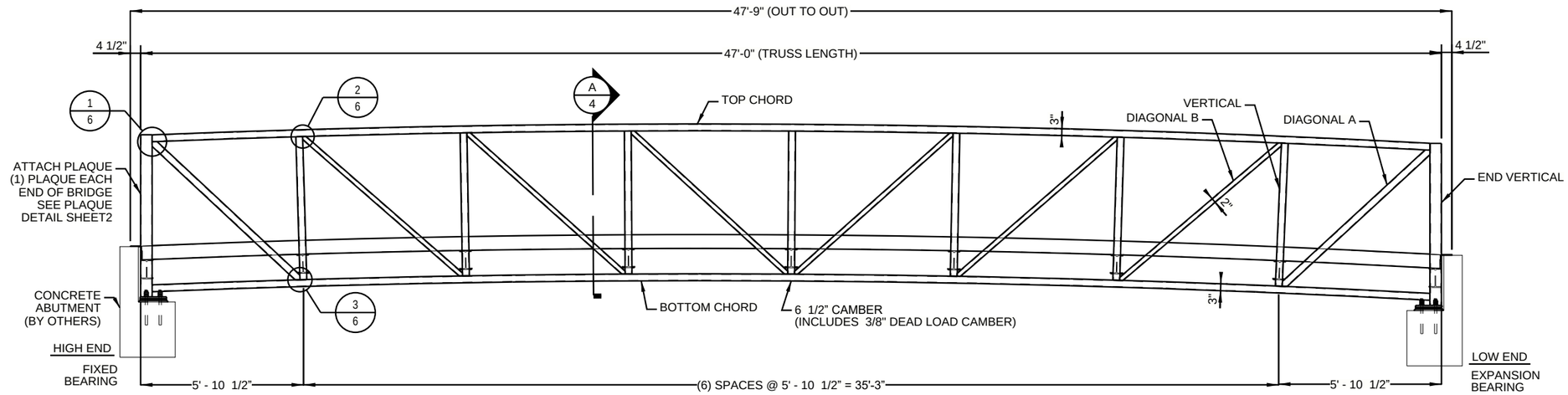
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(PSA-E2) BROOKSIDE ELEMENTARY PEDESTRIAN TRUSS - CONNECTOR
SAN ANSELMO, CA

REGISTERED PROFESSIONAL ENGINEER
KEVIN G. ZUCCO
STRUCTURAL
No. 4861
STATE OF CALIFORNIA

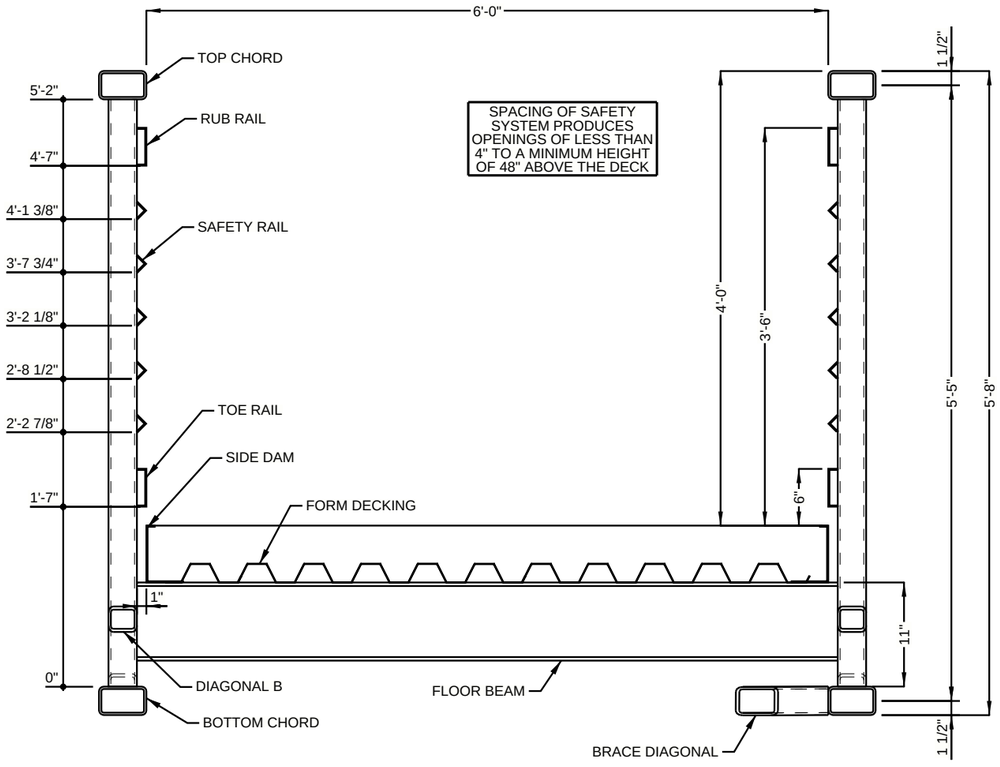
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BRIDGE ELEVATION



A/4 BRIDGE SECTION

PRIMARY MEMBERS	
BOTTOM CHORD	HSS5X3X1/4
TOP CHORD	HSS5X3X1/4
DIAGONAL A	HSS3X3X1/4
DIAGONAL B	HSS3X2X1/4
BRACE DIAGONAL	HSS3X3X1/4
END VERTICAL	HSS5X5X1/4
VERTICAL	HSS3X3X1/4
END FLOOR BEAM	W8X21
FLOOR BEAM	W8X21

SECONDARY MEMBERS	
COVER ANGLE	L5X3X1/4
END DAM	FLT1/4"X4"
FORM DECKING	CANAM UF2X 20 GA
RUB RAIL	C4X1X10GA
SAFETY RAIL	L1 1/4X1 1/4X1/8
SIDE DAM	C6X4X1X10GA
TOE RAIL	C4X1X10GA

REGISTERED PROFESSIONAL ENGINEER
KEVIN G. ZUCCO
STRUCTURAL
No. 4861
STATE OF CALIFORNIA

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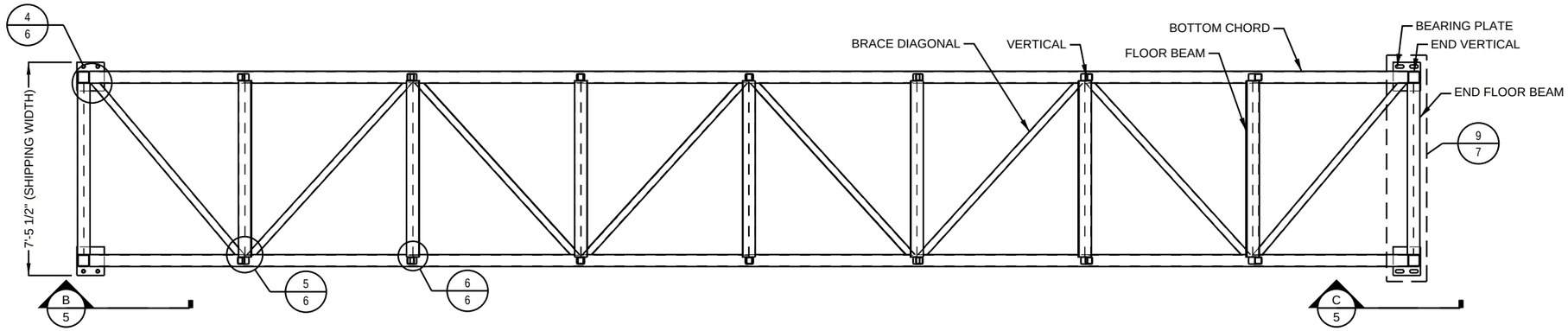
CONTINENTAL BRIDGE

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DRAWING

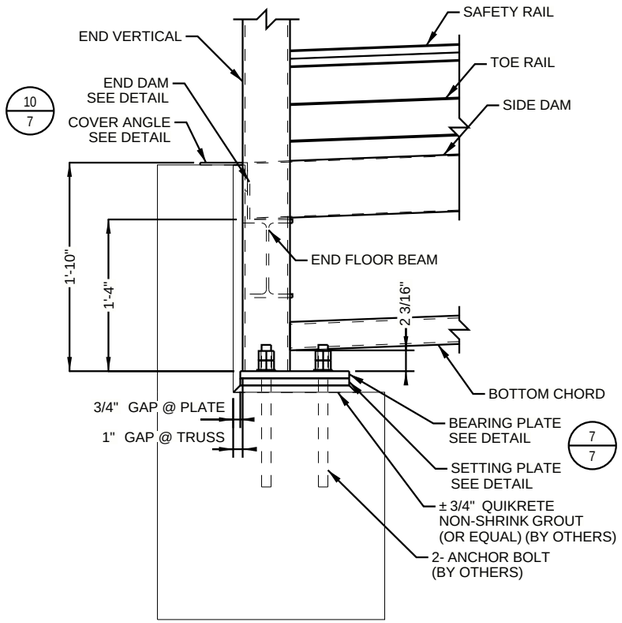
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(PSA-E2) BROOKSIDE ELEMENTARY PEDESTRIAN TRUSS - CONNECTOR
SAN ANSELMO, CA

PROJECT No.:	SEQ. No.:	DATE:
855412	010	8/5/2025
DESIGNED: ATT	DRAWN: KRL	
CHECKED: ATT	APPROVED: MJH	
SHEET NO.: 4 OF 7		

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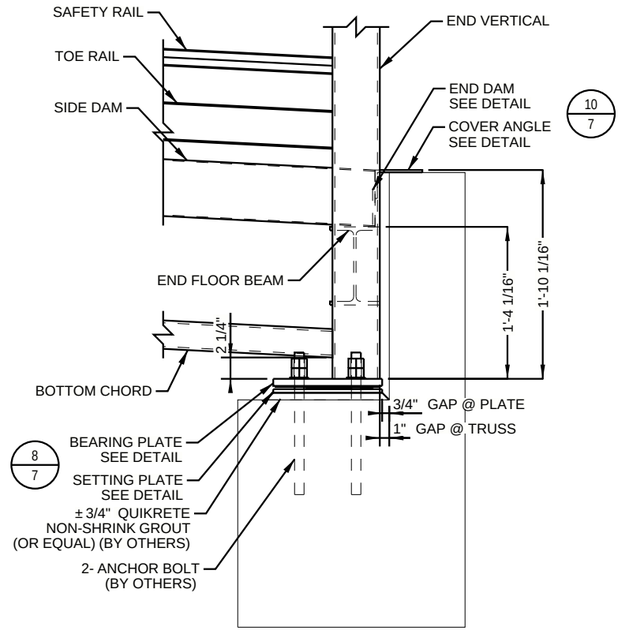


BRIDGE PLAN



B 5 BEARING ELEVATION
HIGH FIXED END

ANCHOR NOTE:
BOTTOM NUT FINGER TIGHT,
TOP NUT TIGHT AT EXPANSION
END ONLY. BOTH NUTS TIGHT
AT FIXED END ONLY.



C 5 BEARING ELEVATION
LOW EXPANSION END

LIFTING WEIGHTS			
ITEM	QTY	UNIT WEIGHT (LBS)	TOTAL WEIGHT (LBS)
BRIDGE SECTION #1	1	8,950	8,950
LOOSE ITEMS			100
		* TOTAL BRIDGE WEIGHT:	9,050

* FULL STRUCTURE WEIGHT DOES NOT INCLUDE WEIGHT OF CONCRETE

REGISTERED PROFESSIONAL ENGINEER
KEVIN G. ZUCCO
STRUCTURAL
No. 4861
STATE OF CALIFORNIA

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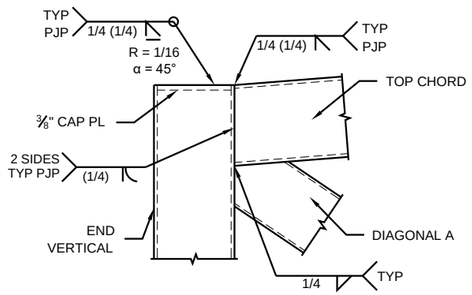
CONTINENTAL BRIDGE

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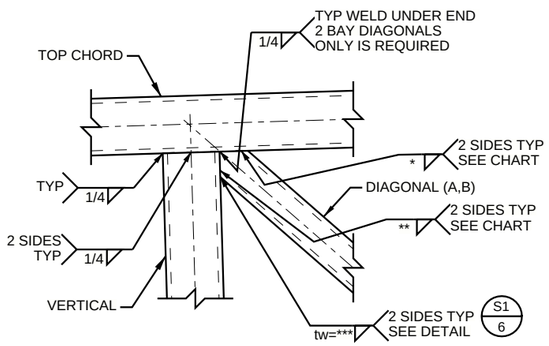
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SHEET NO.: 5	OF 7	

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1/4 WELD DETAIL
NOT TO SCALE

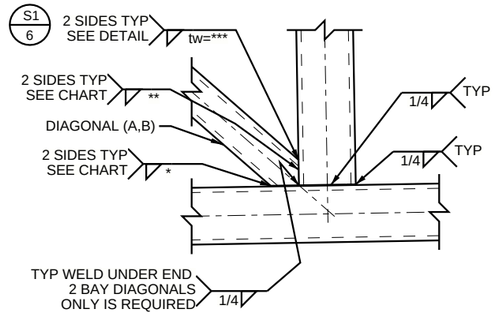


2/4 WELD DETAIL

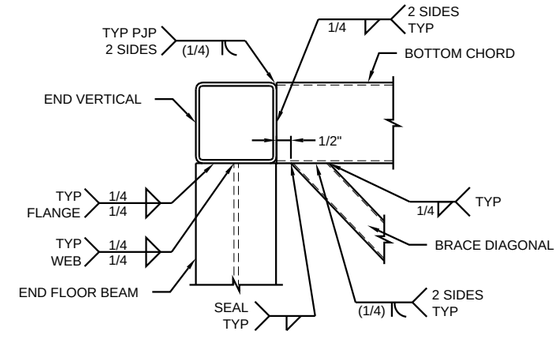
*WELD SIZE CHART:
DIAGONAL A = 1/4
DIAGONAL B = 1/4

**WELD SIZE CHART:
DIAGONAL A = (1/4)
DIAGONAL B = (1/4)

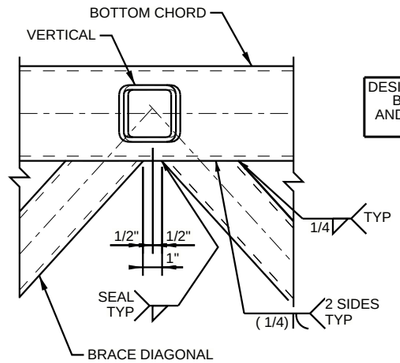
***WELD SIZE CHART:
DIAGONAL A = (3/16)
DIAGONAL B = (3/16)



3/4 WELD DETAIL

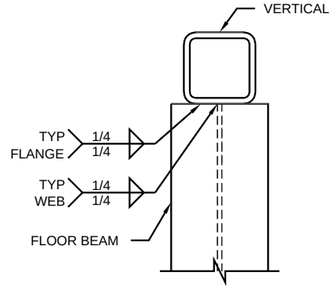


4/5 DETAIL
NOT TO SCALE



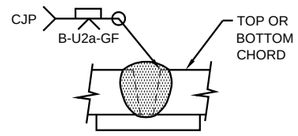
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DESIGN NOTE: INTERNAL ECCENTRICITIES BETWEEN DIAGONALS AND VERTICALS AND AT BRACE DIAGONAL CONNECTIONS HAS BEEN CONSIDERED IN DESIGN.

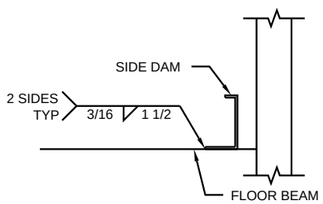


6/5 DETAIL
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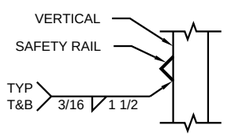
SHOP NOTE:
IF CHORD SPLICE IS REQUIRED, NOTIFY ENGINEER OF PREFERRED LOCATION.



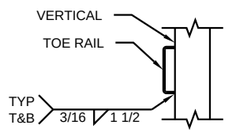
CHORD SHOP SPLICE
TYPICAL



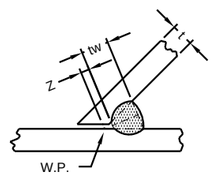
TYP WELD DETAIL



TYP SAFETY RAIL WELD DETAIL

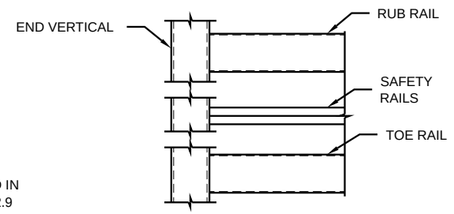


TYP TOE RAIL WELD DETAIL



"Z" LOSS DIMENSION TO BE DETERMINED IN ACCORDANCE WITH AWS D1.1 - TABLE 2.9

S1/6 WELD DETAIL



END TERMINATION CONDITION

REGISTERED PROFESSIONAL ENGINEER
KEVIN G. ZUCCO
STRUCTURAL
No. 4861
STATE OF CALIFORNIA

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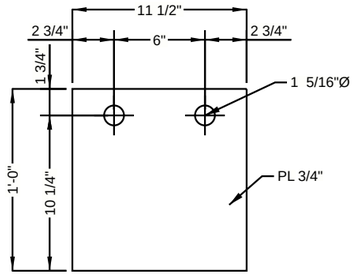
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CONTINENTAL BRIDGE
CONTECH
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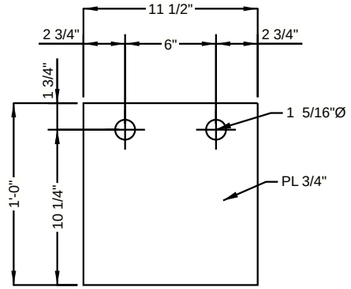
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(PSA-E2) BROOKSIDE ELEMENTARY
PEDESTRIAN TRUSS - CONNECTOR
SAN ANSELMO, CA

PROJECT No.:	SEQ. No.:	DATE:
855412	010	8/5/2025
DESIGNED: ATT		DRAWN: KRL
CHECKED: ATT		APPROVED: MJH
SHEET NO.: 6 OF 7		

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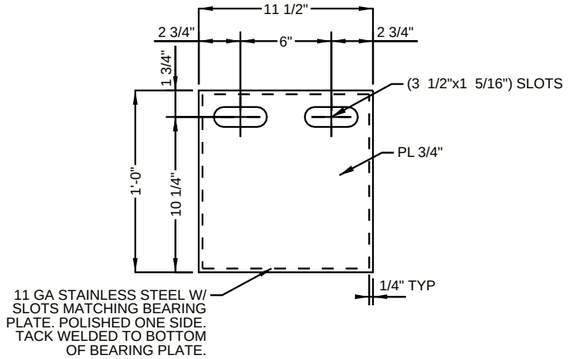


BEARING PLATE
(2) AS SHOWN

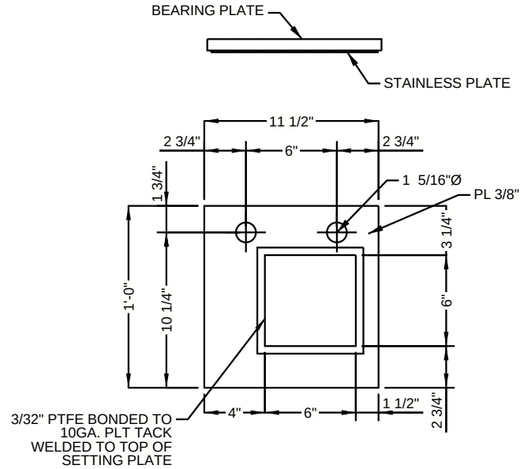


SETTING PLATE
(1) AS SHOWN (1) OPPOSITE

7/5 FIXED BEARING DETAILS

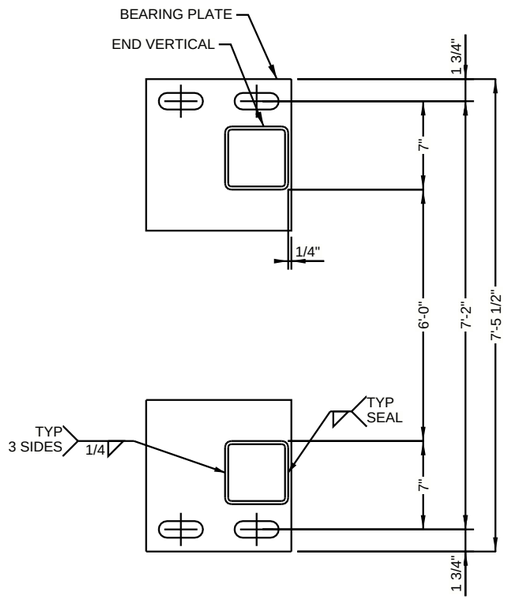


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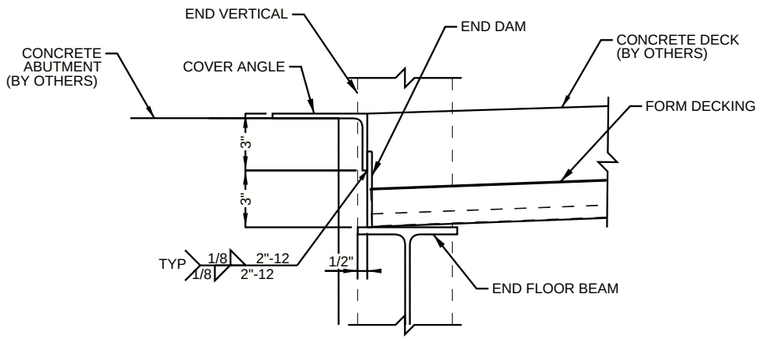


SETTING PLATE
(1) AS SHOWN (1) OPPOSITE

8/5 EXPANSION BEARING DETAILS



9/5 WELD DETAIL



10/5 COVER DETAIL

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CONTINENTAL BRIDGE

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DRAWING

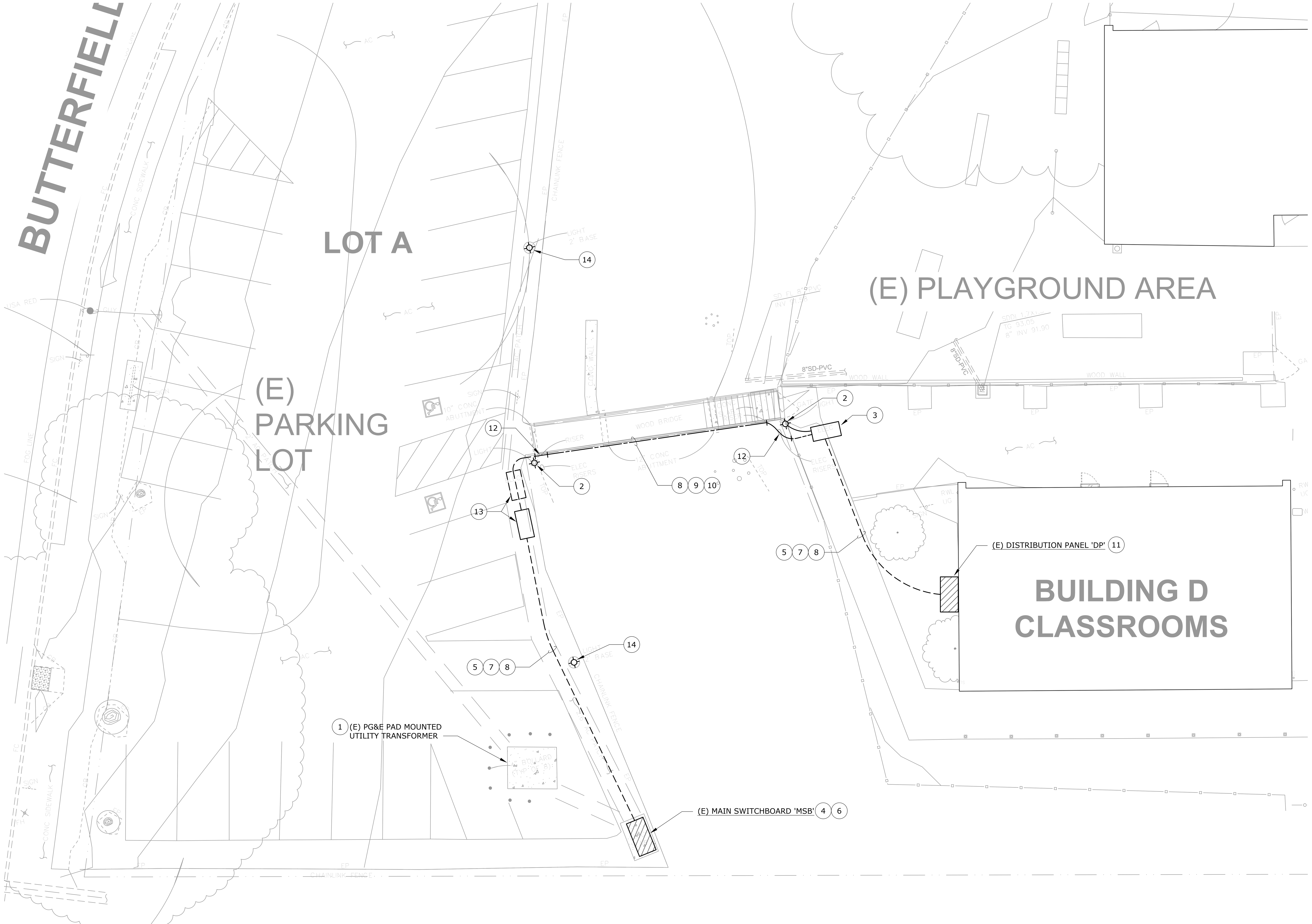
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(PSA-E2) BROOKSIDE ELEMENTARY
PEDESTRIAN TRUSS - CONNECTOR
SAN ANSELMO, CA

PROJECT No.:	SEQ. No.:	DATE:
855412	010	8/5/2025
DESIGNED: ATT		DRAWN: KRL
CHECKED: ATT		APPROVED: MJH
SHEET NO.: 7	OF 7	

REGISTERED PROFESSIONAL ENGINEER
KEVIN G. ZUCCO
STRUCTURAL
No. 4861
STATE OF CALIFORNIA

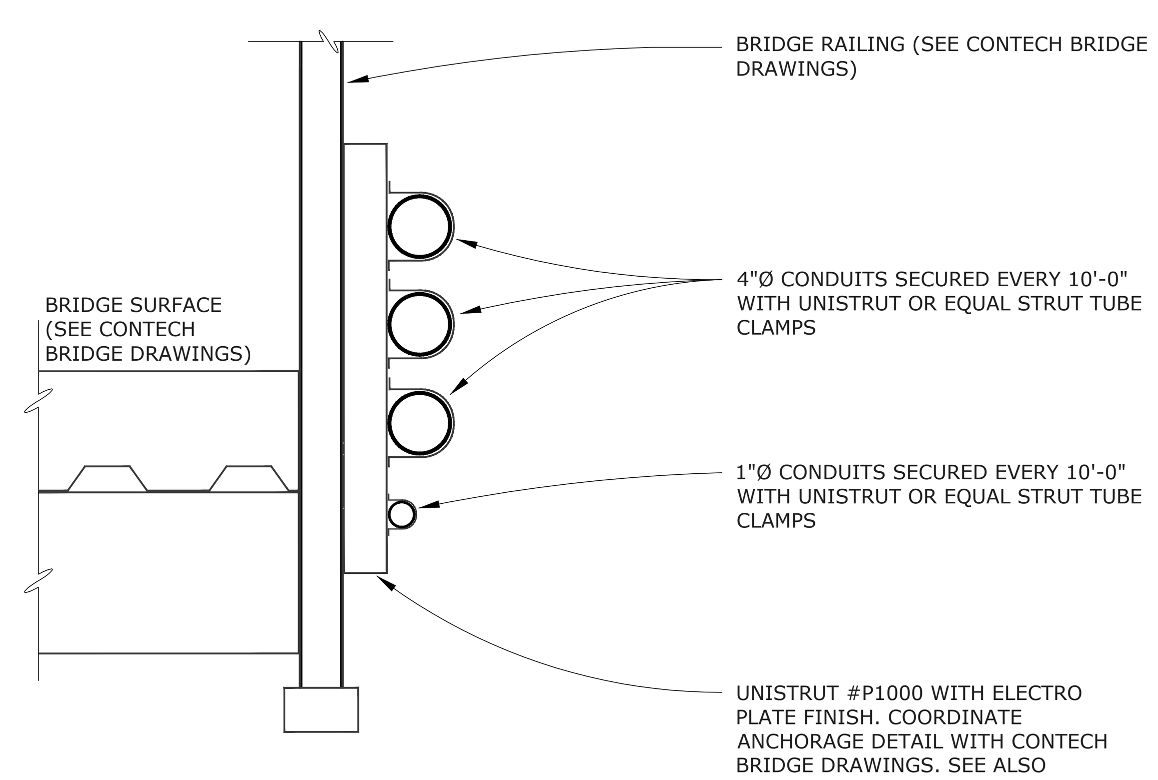
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SITE PLAN - ELECTRICAL

SCALE: 1" = 10'-0" (1/E1.1)



BRIDGE CONDUIT MOUNTING

SCALE: NONE (2/E1.1)
FILE: L:\DETAILS\POWER\CONDUIT\PCOND037A

NUMBERED SHEET NOTES

1. (E) EQUIPMENT TO REMAIN. PROTECT IN PLACE.
2. DISCONNECT AND REMOVE (E) SITE LIGHTING POLE AND FIXTURE, INCLUDING CONCRETE POLE BASE AND ELECTRICAL CONNECTION. PROVIDE AND INSTALL (N) LED, 8'H SITE LIGHT AND POLE TO MATCH EXISTING. RECONNECT COMPLETE TO (E) CONTROLLED EXTERIOR LIGHTING CIRCUIT.
3. (E) FLUSH IN-GROUND PULLBOX LOCATION TO REMAIN. PROVIDE AND INSTALL (N) CONCRETE 3-PIECE LID WITH LABEL "POWER", WITH ADDITIONAL COLLAR EXTENSION TO RAISE PULLBOX LID TO BE FLUSH WITH (N) GRADE. SEE CIVIL PLANS.
4. (E) NEMA 3R OUTDOOR FREE-STANDING 1200A, 120/208V, 3PH, 4W ELECTRIC SERVICE SWITCHBOARD TO REMAIN. DISCONNECT AND REMOVE (E) MAIN 1200A FEEDER TERMINATIONS AND CABLING, WHICH ARE NOT CODE COMPLIANT FOR A 1200A FEEDER. REMOVE COMPLETE, BETWEEN 'MSB' AND 'DP. (E) FEEDER IS:

   (3) PARALLEL SETS OF (4)#500kcmil + (1)#1/0G IN (3) 4" CONDUITS.
5. (E) IN GROUND PVC CONDUITS TO BE CLEARED AND RE-USED ON BOTH SIDES OF THE CREEK. (N) CONDUITS TO BE PROVIDED AND INSTALLED ACROSS BRIDGE, BETWEEN (E) PULLBOXES.
6. COORDINATE SALVAGE / RECYCLING OF (E) FEEDERS. RECYCLE FOR VALUE AND PROVIDE SCHOOL DISTRICT WITH THE DOLLAR VALUE OF RECYCLING CREDIT.
7. PROVIDE AND INSTALL (N) 1200A FEEDER IN EXISTING (3) 4" UNDERGROUND AND NEW RGS BRIDGE MOUNTED RACEWAYS. (N) FEEDER TO BE:

   (3) PARALLEL SETS OF (4)#600kcmil + (1)#3/0G IN (3) 4" CONDUITS.
8. INSTALL IN (N) AND (E) CONDUITS AS NOTED ON PLANS. TERMINATE AND TEST UPON COMPLETION.
9. PROVIDE AND INSTALL (3) NEW 4" RGS CONDUITS ACROSS BRIDGE, TO REPLACE EXISTING. SEE 2/E1.1 FOR MOUNTING ON SIDE OF DOWNSTREAM SIDE OF BRIDGE. UTILIZE FOR (N) FEEDER, PER NOTE 7.
10. PROVIDE AND INSTALL (1) NEW 1" RGS CONDUIT ACROSS BRIDGE, TO REPLACE EXISTING (FOR SITE LIGHTING). SEE 2/E1.1 FOR MOUNTING ON SIDE OF DOWNSTREAM SIDE OF BRIDGE. UTILIZE FOR (N) CONDUCTORS FOR SITE LIGHTING AT NORTH SIDE OF SITE AND RECONNECT COMPLETE AT SOUTH PULLBOX FOR ORIGINAL CONTROL.
11. (E) NEMA 3R OUTDOOR FREE-STANDING 1200A DISTRIBUTION PANEL TO REMAIN.
12. PROVIDE (3) 4" + (1) 1" SECTIONS OF SEAL-TIGHT FLEXIBLE CONDUITS FOR TRANSITION OF RIGID CONDUITS TO UNDERGROUND ON CREEK BANK, WITH (N) MATCHING SCHEDULE 40 PVC UNDERGROUND TO PULL BOX, SIMILAR TO (E) CONDITION (FOR SEISMIC FLEXIBILITY BETWEEN BRIDGE AND EARTH).
13. REMOVE (E) FLUSH IN-GROUND PULLBOX (SHOWN DASHED). PROVIDE AND INSTALL (N) FLUSH IN-GROUND PULLBOX TO MATCH EXISTING (SHOWN SOLID), OVER (E) UNDERGROUND RACEWAYS, AS SHOWN, WITH (N) LID LABELED "POWER".
14. (E) SITE LIGHT AND POLE TO REMAIN. PROTECT IN PLACE, INCLUDING (E) CONTROLLED POWER CONNECTION.

NORTH

ARCHITECT:
AXIA ARCHITECTS
540 Mendocino Ave, Santa Rosa, CA 95401
707 542 4652
axiaarchitects.com

CONSULTANT:
O'MAHONY & MYER
ELECTRICAL ENGINEERING and LIGHTING DESIGN
4340 REDWOOD HWY, SUITE 245
SAN RAFAEL, CALIFORNIA 94903
(415) 492-0420/FAX (415) 479-9662
www.ommconsulting.com

ROSS VALLEY SCHOOL DISTRICT

PEDESTRIAN BRIDGE BROOKSIDE ELEMENTARY SCHOOL - SAN ANSELMO, CALIFORNIA 116 BUTTERFIELD ROAD, SAN ANSELMO, CALIFORNIA 94960, SAN

SEAL:
REGISTERED PROFESSIONAL ENGINEER
PIERRE J. COLENBRANDER
No.E14738
Exp. 6/27
ELECTRICAL
STATE OF CALIFORNIA
8/14/25

SHEET LOG		
REV #	DATE:	ISSUED FOR:

JOB NUMBER: 1192

SHEET:
E1.1
SITE PLAN - ELECTRICAL

ORIGINAL DATE: 08.14.2025

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PROJECT MANUAL

FOR

Ross Valley School District
Brookside Elementary School - Pedestrian Bridge
116 Butterfield Drive
San Anselmo, California 94960

DSA SUBMISSION SET
01-122571

August 21ST, 2025

AXIA ARCHITECTS

540 MENDOCINO AVE, SANTA ROSA, CA 95401
707-542-4652 axiaarchitects.com

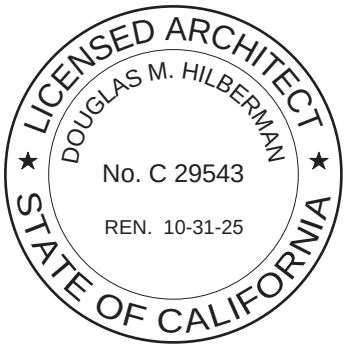
SECTION 00-0107
SEALS PAGE

PROJECT MANUAL
FOR
BROOKSIDE ELEMENTARY SCHOOL - PEDESTRIAN BRIDGE
SAN ANSELMO, CALIFORNIA

DSA SUBMISSION SET
01-122571

AUGUST 21ST, 2025

OWNER
ROSS VALLEY SCHOOL DISTRICT
100 SHAW DRIVE
SAN ANSELMO , CALIFORNIA 94960



ARCHITECT:
AXIA Architects
540 Mendocino Ave
Santa Rosa, CA 95401

BY:_____
Douglas Hilberman, AIA
License No: C 29543

STRUCTURAL ENGINEER:
ZFA Structural Engineers
250 D Street, Suite 200
Santa Rosa, CA 95404

BY:_____
Kevin G. Zucco, SE
License No: 4861

CIVIL ENGINEER:
Brelje & Race Consulting Engineers
475 Aviation Blvd, Suite 210
Santa Rosa, CA 9403

BY:_____
Brent Lee Beazor, PE
License No: C 60683

ELECTRICAL ENGINEER:
O'Mahony & Myer Electrical Engineering
4340 Redwood HWY, Suite 245
San Rafael, CA 94903

BY:_____
Pieter Colenbrander, PE
License No: E14738

END OF SECTION

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00-0107 – SEALS
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NOT USED

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NOT USED

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NOT USED

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NOT USED

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SECTION 01-1100
SUMMARY OF WORK

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Work covered by Contract Documents.

B. Work under separate contracts.

C. Owner furnished, contractor installed items.

D. Execution, correlation and intent.

E. Acceptance of site.

F. Related documents.

G. Contractor's use of premises.

H. Owner's use of site.

I. Access.

J. Existing conditions.

K. Liquidated damages and contract completion.

1.02 WORK COVERED BY CONTRACT DOCUMENTS

A. Project name is: Brookside Elementary School - Pedestrian Bridge , as shown on the Contract Documents prepared by AXIA Architects and briefly described as:

1. Removal of an existing wood and steel pedestrain bridge and installation of a new prefabricated steel and concrete pedestrain bridge and associated abutments including path of travel upgrades to acccess the bridge.

B. The Work shall be constructed under single fixed-price Contract.

C. The Work of the Contract includes but is not necessarily limited to:

1. Construction phasing and barricading of work areas as required to separate construction areas from occupied spaces and as needed to accommodate the Owner’s schedule and use of the site.
2. All other work as shown in the Contract Documents.
3. The Work includes all labor, materials and equipment necessary for the Contractor to fulfill all of its obligations pursuant to the Contract Documents, including but not limited to:
    a. Home office overhead,
    b. Off-Site supervision,
    c. Project Administration including preparation, research and distribution of project correspondence and submittals,
    d. Schedule preparation and maintenance,
    e. Guarantys and warrantys,
    f. On-Site supervision,
    g. Temporary protection,
    h. Temporary utilities and facilities, including mobilization and demobilization,
    i. Material handling and storage,
    j. Safety equipment,
    k. Travel time to and from the Site to the Contractor’s home office.

1.03 WORK UNDER SEPARATE CONTRACTS

A. The Owner reserves the right to issue other contracts for work on the site which may be constructed concurrently with these Contracts.

1.04 OWNER-FURNISHED CONTRACTOR-INSTALLED PRODUCTS

A. Owner-Furnished/Contractor-Installed (OFCI) Products: Owner will furnish, for installation by Contractor, products which are identified on the Drawings and in the Specifications as "OFCI (Owner Furnished/Contractor-Installed)", "installed by General Contractor," or similar terminology. See Drawings and Schedule for identification of such products.

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B. Relationship to Work Under the Contract: Work under the Contract shall include all provisions necessary to fully incorporate such products into the Work, including, as necessary, fasteners, backing, supports, piping, conduit, conductors and other such provisions from point of service to point of connection, and field finishing, as shown on Drawings and specified herein.

1.05 EXECUTION, CORRELATION AND INTENT

A. Correlation and Intent
   1. Documents Complementary and Inclusive:
      a. The Contract Documents are complementary and are intended to include all items required for the proper execution and completion of the Work.
      b. Any item of work mentioned in the Specifications and not shown on the Drawings, or shown on the Drawings and not mentioned in the Specifications, shall be provided by Contractor as if shown or mentioned in both.
   2. Coverage of the Drawings and Specifications:
      a. The Drawings and Specifications generally describe the work to be performed by Contractor. Generally, the Specifications describe work which cannot be readily indicated on the Drawings and indicate types, qualities, and methods of installation of the various materials and equipment required for the Work.
      b. It is not intended to mention every item of Work in the Specifications, which can be adequately shown on the Drawings, or to show on the Drawings all items of Work described or required by the Specifications even if they are of such nature that they could have been shown.
      c. All materials or labor for Work, which is shown on either by the Drawings or the Specifications (or is reasonably inferable therefrom as being necessary to complete the Work), shall be provided by the Contractor whether or not the Work is expressly covered in either the Drawings and/or the Specifications.
      d. It is intended that the Work be of sound, quality construction, and the Contractor shall be responsible for the inclusion of adequate amounts to cover installation of all items indicated, described, or implied in the portion of the Work to be performed by them.
   3. Conflicts. In the event there is a discrepancy between the various Contract Documents, the Owner/Contractor Agreement shall control. Without limiting Contractor's obligation to identify conflicts for resolution by the Architect identified elsewhere in this Article it is intended that the more stringent, higher quality, and greater quantity of Work shall apply.
   4. Conformance With Laws:
      a. Each and every provision of law required by law to be inserted in this Contract shall be deemed to be inserted herein, and the Contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon application of either party the Contract shall be amended in writing to make such insertion or correction.
      b. Before commencing any portion of the Work, Contractor shall check and review the Contract Documents for such portion for conformance and compliance with all laws, ordinances, codes, rules and regulations of all governmental authorities and public utilities affecting the construction and operation of the physical plant of the Project, all quasi-governmental and other regulations affecting the construction and operation of the physical plant of the Project, and other special requirements, if any, designated in the Contract Documents.
      c. In the event Contractor observes any violation of any law, ordinance, code, rule or regulation, or inconsistency with any such restrictions or special requirements of the Contract Documents, Contractor shall immediately notify Architect in writing of same and shall cause to be corrected any such violation or inconsistency in the manner provided hereunder.
   5. Ambiguity:
      a. Before commencing any portion of the Work, Contractor shall carefully examine all Drawings and Specifications and other information given to Contractor as to materials and methods of construction and other Project requirements.
      b. Contractor shall immediately notify Owner and Architect of any perceived or alleged error, inconsistency, ambiguity, or lack of detail or explanation in the Drawings and Specifications in the manner provided herein.

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c. If the Contractor or its Subcontractors, material or equipment suppliers, or any of their officers, agents, and employees performs, permits, or causes the performance of any Work under the Contract Documents, which it knows or should have known to be in error, inconsistent, or ambiguous, or not sufficiently detailed or explained, Contractor shall bear any and all costs arising therefrom including, without limitation, the cost of correction thereof without increase or adjustment to the Contract Price or the time for performance.
d. If Contractor performs, permits, or causes the performance of any Work under the Contract Documents prepared by or on behalf of Contractor which is in error, inconsistent or ambiguous, or not sufficiently detailed or explained, Contractor shall bear any and all resulting costs, including, without limitation, the cost of correction, without increase to or adjustment in the Contract Price or the time for performance.
e. In no case shall any Subcontractor proceed with the Work if uncertain without the Contractor's written direction and/or approval.

B. Addenda and Deferred Approvals
1. Addenda. Addenda shall govern over all other Contract Documents. Subsequent addenda issued shall govern over prior addenda only to the extent specified.
2. Deferred Approvals. The requirements approved by the Authority Having Jurisdiction on any item submitted as a deferred approval in accordance with Title 24, California Code of Regulations, shall take precedence over any previously issued addenda, drawing or specification.

C. Specification Interpretation and Application:
1. Titles. The Specifications are separated into titled sections for convenience only and not to dictate or determine the trade or craft involved.
2. As Shown, Etc. Where "as shown," "as indicated," "as detailed," or words of similar import are used, reference is made to the Drawings accompanying the Specifications unless otherwise stated. Where "as directed," "as required," "as permitted," "as authorized," "as accepted," "as selected," or words of similar import are used, the direction, requirement, permission, authorization, approval, acceptance, or selection by Architect is intended unless otherwise stated.
3. Provide. "Provide" means "provided complete in place," that is, furnished, installed, tested, and ready for operation and use.
4. General Conditions. The General Conditions and supplementary general conditions are a part of each and every section of the Specifications.
5. Abbreviations.
a. In the interest of brevity, the Specifications are generally written in an abbreviated form in the imperative tense and may not include complete sentences.
b. Omission of words or phrases such as "Contractor shall," "shall be," etc., are intentional. Nevertheless, the requirements of the Specifications are mandatory and directed to the Contractor.
c. Omitted words or phrases shall be supplied by inference in the same manner as they are when a "note" occurs on the Drawings.
6. Plural. Words in the singular shall include the plural whenever applicable or the context so indicates.
7. Metric. The Documents may indicate metric units of measurement as a supplement to U.S. customary units. When indicated thus: 1 inch (25 mm), the U. S. customary unit is specific, and the metric unit is nonspecific. When not shown with parentheses, the unit is specific. The metric units correspond to the "International System of Units" (SI) and generally follow ASTM E 380, "Standard for Metric Practice."
8. Standard Specifications. Any reference to standard specifications of any society, institute, association, or governmental authority is a reference to the organization's standard specifications, which are in effect at the date of the Contractor's proposal.
a. If applicable specifications are revised prior to completion of any part of the Work, the Contractor may, if acceptable to Architect, perform such Work in accordance with the revised specifications.
b. The standard specifications, except as modified in the Specifications for the Project, shall have full force and effect as though printed in the Specifications. Architect will furnish, upon request, information as to how copies of the standard specifications referred to may be obtained.
c. Procurement of reference standards and standard specifications is the sole responsiblity of the Contractor.
d. Division 2 sections specifically reference 1992 Caltrans Standards to maintain consistency in dimensioning.

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9. Absence of Modifiers. In the interest of brevity, the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another shall not affect the interpretation of either statement.

D. Rules of Document Interpretation
   1. In the event of conflict or ambiguity within the drawings, the following rules shall apply:
      a. General Notes, when identified as such, shall be incorporated into other portions of Drawings.
      b. Schedules, when identified as such, are complementary with other notes and other portions of Drawings including those identified as General Notes.
      c. Larger scale drawings shall take precedence over smaller scale drawings.
      d. General or Typical Details and Symbols apply at all locations where specifically noted; at all locations conforming to the title of the Detail; at all locations of similar or identical graphic indication; at all locations where similar conditions are not fully or specifically shown or identified and complement similar details of specific conditions.
      e. Details and Notes apply at all locations of similar or identical graphic indications and at all locations where similar conditions are not fully or specifically shown or identified.
      f. Limitation of Indication does not affect Extent of Application: Indications of notes, details, and symbols may be limited to promote clarity. No limitation of application is intended nor shall be construed unless specifically noted.
      g. Figured, derived, or numerical dimensions shall govern. At no time shall the Contractor base construction on scaled drawings.
   2. Specifications shall govern as to materials, workmanship, and installation procedures.
   3. In the case of disagreement or conflict between or within standards, specifications, and drawings, the more stringent, higher quality, and greater quantity of Work shall apply.

1.06 ACCEPTANCE OF SITE

A. Contractor shall accept the site in the condition in which it exists at the time he is given Notice to Proceed.

1.07 RELATED DOCUMENTS

A. The Drawings, general provisions of the Contact, including General and Supplementary Conditions and other Division 01 specifications apply to the Work of all specifications sections as if specifically reproduced therein.

B. Specification Section Numbering: The Contract Documents may indicate section numbering utilizing both MasterFormat 1995 numbering and MasterFormat 2004 numbering.

1.08 CONTRACTOR'S USE OF PREMISES

A. Confine operations on the site to areas indicated in the Contract Documents. Portions of the site beyond areas on which work is indicated are not to be disturbed. Conform to site rules and regulations affecting the Work while engaged in project construction.

B. Contractor shall limit his use of the premises for work and storage to allow for work by other contractors.

C. Maintain existing driveways and entrances serving the premises clear and available to the Owner and his employees at all times. Do not use these areas for parking or storage of materials.

D. Do not unreasonably encumber the site with materials or equipment. Confine stockpiling of materials and location of storage sheds to area approved by the Architect. If additional storage is necessary, Contractor shall obtain and pay for such storage off site without additional expense to the Owner.

E. Do not overload structures with weight that will endanger them.

F. Assume full responsibility for protection and safekeeping of materials and tools stored at the site. Lock vehicles such as passenger cars and trucks and other mechanized or motorized construction equipment, when parked and unattended to prevent unauthorized use. Do not leave such vehicles or equipment unattended with the motor running or the ignition key in place.

G. Move stored products, temporary facilities, controls or fencing, under Contractor's control, which interfere with operations of the Owner or separate contractors, on or off the site, without cost to the Owner.

H. Minimize disturbance caused by the work. Cooperate with Owner and governing authorities, observe all local ordinances for timing of work.

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I. Perform site access activities, including arrival and departure of workers, deliveries, storing, handling and removal of materials, equipment, and debris to minimize dust, mud or accumulated debris, or undue interference with the convenience, sanitation or routine of Owner's activities.

J. Time and coordinate cutovers and connection of new utilities to existing systems and other similar activities to avoid interference with or interruption of Owner's activities.

K. Protect improvements on adjoining properties as well as those on the Owner's property.

L. Restore all improvements damaged by this work to their original condition as acceptable to the owner of the improvement

M. Contractor is responsible for safety and support of structures. Cease operations and notify Architect immediately if safety of structure appears to be endangered. Take precautions to properly support structure. Do not resume operations until safety is restored. Contractor shall assume liability for such movement, settlement, damage or injury.

N. Provide, erect and maintain barricades and guard rails as required by governing regulatory agencies to protect occupants of building and workers. Refer to other pertinent sections of Division 01.
   1. It is the Contractor's responsibility to provide safety and security measures to protect the safety and wellbeing of members of the public who may come into contact with the project site.

O. Protect existing finished work remaining in place from damage due to construction activities. Repair and replace finished work damaged by activities of this contract to the satisfaction of Owner and Architect at no extra cost to the Owner.

1.09 OWNER'S USE OF THE SITE

A. Owner will remain in continuous occupancy of the site. Summer School, community use of athletic fields, after-hours Daycare and other site programs will be concurrent with this Contract. Owner reserves the right to limit hours of construction access and deliveries to avoid traffic conflicts during peak periods.

B. Certain on and off-site work will be performed by others. A portion of this work, including the completion of preceding contracts, may be constructed concurrently with this Contract. The Owner may have various additional contracts for summer work and other projects from time-to-time on the site concurrent with this Contract.

C. Owner's Use of Concurrent or Related Contracts: The Owner may occupy certain portions of the work of other contracts listed above prior to the completion of the work of this Contract. Make all allowances and include all sums necessary in the Bid Proposal to accommodate the Owner's occupancy of these neighboring areas.

1.10 ACCESS

A. Maintain free and safe access to the site and within the site to individual buildings as required by local fire marshal regulations, for fire-fighting equipment, ambulance and police vehicles. Maintain passage to and from adjacent buildings. Do not interfere with Owner's use of the site.
   1. Perform work and provision of temporary facilities and phasing of activities to minimize interference with adjacent facilities or new work areas. Minimize interference with activities of other contractors, the Owner's personnel or the public. Protect persons and property from harm. Maintain required accessways, and other accessways not required but so designated by the Owner or the Contract Documents, free with unrestricted passage.
   2. No utility service, such as water, gas, sewers, electricity, communication or fire protection system serving the project, or any part of it, shall be interrupted without prior written approval of the Owner.

B. Project Site is congested, with limited area available for access, storage and parking. Stage materials, schedule deliveries, arrange storage and provide off-site parking as required to limit effects of construction on the Owner's continuing use of the Site.

C. Project site is located in a residential neighborhood. Perform Work only during regular business hours. Make provisions for the safety of residents and the general public adjacent to the site while working in proximity to the these areas or while working off-site, and in vehicle entrance and exit to the site, including materials delivery and arrival of workmen.

D. Areas designated by the Owner shall remain off-limits to construction personnel and equipment during construction. Relocate at own expense all vehicles, fencing, stored materials and temporary facilties as directed by the Owner.

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E. This Contractor is responsible to coordinate his Work with the work of other Prime Contractors active on the site.

F. The DISTRICT has considered the totality of the circumstances concerning the Project and has determined that the CONTRACTOR and CONTRACTOR's employees are subject to the fingerprinting requirements of Education Code Section 45125.2.
   1. In accordance with Education Code Section 45125.2 the CONTRACTOR shall, at CONTRACTOR's own expense,
      a. Install a physical barrier to limit contact with students by CONTRACTOR and/or CONTRACTOR's employees.
      b. Provide for the continuous supervision and monitoring of the CONTRACTOR and/or CONTRACTOR's employees by an employee of the CONTRACTOR who has received fingerprint clearance from the California Department of Justice.
   2. Contractor shall provide to the District within 15 days of Notice of Award, Vendor Certification of compliance with Education Code Section 45125.2, on a form acceptable to the Owner.
   3. Contractor shall be restricted at all times to the areas of the site on which work of this Contract is indicated. Portions of the site beyond areas on which work of this Contract is indicated are not to be disturbed or entered by Contractor without written permission and escort of the Owner or the Construction Manager.

G. Limit site access and delivery activities during periods of student drop-off and pick-up as directed by the Owner.

H. Contractor acknowledges that access to the project following occupancy by the Owner shall be subject to the requirements of Education Code Section 45125.2 as set forth in the General Conditions of the Contract and further acknowledges that all sums necessary to implement such compliance are included in the Bid Proposal.

1.11 EXISTING CONDITIONS

A. Intent of the Drawings is to show existing conditions with information developed from field surveys and Owner's records, and to generally show the extent and type of work required to prepare the existing areas for new work. The information shown on the Drawings is not a guarantee of existing conditions.

1.12 LIQUIDATED DAMAGES AND CONTRACT COMPLETION

A. Liquidated Damages will be assessed beginning on the Date contractually required for Completion and shall continue to accrue until each of the listed conditions are fulfilled.

B. Date of Completion and Beneficial Occupancy is defined as the Date of Completion of all punch list items, including, but not limited to the following:
   1. Confirmation of mechanical and electrical systems testing and balancing, control sequences and operations.
   2. Completion of final cleaning, paint touch-up and adjusting.
   3. Adjustment and Contractor's certification of the finish hardware operation.
   4. Removal of Contractor's temporary facilities and materials.
   5. Owner's acceptance of the Work.

C. Owner's occupancy prior to completion of any or all of the above items, or other such missing or incomplete work as may occur, shall not be construed as acceptance of the Work or as Completion when defined for the purposes of assessing Liquidated Damages.

PART 2 PRODUCTS

2.01 NOT USED.

PART 3 EXECUTION

3.01 NOT USED.

END OF SECTION

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SECTION 01-2500
SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Procedural requirements for proposed substitutions.

1.02 DEFINITIONS

A. The following are not considered substitutions;
   1. Revisions to Contract Documents requested by the Owner Or Architect.
   2. Specified options of products, materials, and equipment included in Contract Documents.

B. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.
   1. Substitutions for Cause: Proposed due to changed Project circumstances beyond Contractor's control.
      a. Unavailability.
      b. Regulatory changes.
   2. Substitutions for Convenience: Proposed due to possibility of offering substantial advantage to the Project.
      a. Substitution requests offering advantages solely to the Contractor will not be considered.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
   2. Agrees to provide the same warranty for the substitution as for the specified product.
   3. Agrees to provide same or equivalent maintenance service and source of replacement parts, as applicable.
   4. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
   5. Waives claims for additional costs or time extension that may subsequently become apparent.
   6. Agrees to reimburse Owner and Architect for review or redesign services associated with re-approval by authorities.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.
   1. Note explicitly any non-compliant characteristics.

C. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
   1. Forms included in the Project Manual are adequate for this purpose, and must be used.

D. Limit each request to a single proposed substitution item.
   1. Submit an electronic document, combining the request form with supporting data into single document.

3.02 SUBSTITUTION SUBMITTAL PROCEDURES

A. Submit electronic copy of Substitution Request Form included in this Project Manual for consideration. Forms provided by proposer or other agencies or organizations are not acceptable. Limit each request to one proposed substitution.

B. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence, including:
   1. Statement of cause for substitution request.
   2. Identify product by specification section and article number.
   3. manufacturer's name, address, and phone number.
   4. List of fabricators, suppliers, and installers as appropriate.

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5. List of similar Projects where proposed products have been used, date of installation and names of Architect and Owner.
6. Confirmation of regulatory approvals
7. Product data, including drawings and product samples.
8. Product Size, weight, configuration of connections, ports or vents.
9. Fabrication and installation procedures.
10. Comparison of the qualities of the proposed substitution with that specified.
11. Cost data comparing the proposed substitution with the product specified.
12. Any required license fees or royalties.
13. Availability of maintenance service and source of replacement materials.
14. Coordination information, including a list of changes or modifications needed to other items of work that will be required to accommodate Proposed substitution.
15. Statement on the Substitution's effect on the Construction Schedule.
16. Written certification by the proposer that the Substitution is equal or better in every respect to that required by the contract Documents and that substitution will perform adequately in the application intended.
17. Written certification that the proposer will pay for all permits, fees, and costs required to implement the substitution, and including waiver of all claims for additional costs or time extension which may subsequently become apparent, and reimbursement of Owner and Architect for review or redesign services associated with re-approval by authorities.

3.03 LIMITATIONS ON SUBSTITUTIONS SUBMITTED PRIOR TO THE RECEIPT OF BIDS

A. The Bid shall be based upon the standards of quality established by those items of equipment and/or materials which are indicated in the Contract Documents, including those products designated in the Notice Inviting Bids as "District Standards".

B. Architect will consider requests for substitutions of specified equipment and/or materials only when requests are received by Architect within fourtenn (14) days prior to the date established for the receipt of bids, in conformance with Public Contract Code Section 3400. Do not request substitutions for products designated in the Notice Inviting Bids as "District Standards".

C. Architect will consider a substitution request only if request is made in strict conformance with provisions of this Section. Request shall be fully responsive to all product requirements of the specified product, including those requirements noted in this section in the article titled PRODUCTS.

D. Burden of proof of merit of requested substitution is the responsibility of the proposer requesting the substitution.

E. It is the sole responsibility of the proposer requesting the substitution to establish proper content of submittal for requests for substitutions. Incomplete submittals will be rejected.

F. When substitution is not accepted, provide specified product.

G. Substitute products shall not be included within the bid without written acceptance by Addendum.

H. No material changes permitted after the bid opening date. All alternate manufacturers and/or materials shall be submitted and approved in writing by the Architect prior to bid due date, except as otherwise provided in this section. Failure to comply with this requirement is grounds for disqualification of substitution.

3.04 LIMITATIONS ON SUBSTITUTIONS SUBMITTED AFTER THE AWARD OF THE CONTRACT

A. The Contract is based upon the standards of quality established by those items of equipment and/or materials which are indicated in the Contract Documents, including those products designated in the Notice Inviting Bids as "District Standards".

B. Architect will consider substitution requests received after the established date of the receipt of bids or contract award only when one or more of the following conditions are met and documented:
   1. Specified item fails to comply with regulatory requirement.
   2. Specified item is no longer manufactured.
   3. Specified item, through no fault of the Contractor, unavailable in the time frame required to meet project schedule.
   4. Specified item, through subsequent information disclosure, will not perform properly or fit in designated space.

5. Manufacturer declares specified product to be unsuitable for use intended or refuses to warrant installation of product,
6. Substitution would be, in the sole judgment of the Architect, a substantial benefit to the Owner in terms of cost, time, energy conservation, or other consideration of merit.

C. Notwithstanding other provisions of this section and the above, the Architect may consider a request for substitution after the date of the receipt of bids or contract award, if in the sole discretion of the Architect, there appears to be just cause for such a request. The acceptance of such a late request does not waive any other specified requirement.

D. Architect will consider a request for substitution after the date of the receipt of bids or contract award only if request is made in strict conformance with provisions of this section. Request shall be fully responsive to all product requirements of the specified product, including those requirements noted in this section in the article titled PRODUCTS.

E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
1. Review of shop drawings does not constitute acceptance of substitutions indicated or implied on shop drawings.
2. Substitutions will not be considered when requested or submitted directly by subcontractor or supplier.

F. Contractor's failure or inability to pursue the work promptly or coordinate activities properly shall not establish a cause for consideration of Substitutions.

G. Burden of proof of merit of requested substitution is the responsibility of the Contractor.

H. It is the sole responsibility of the Contractor to establish proper content of submittal for requests for substitutions. Incomplete submittals will be rejected.

I. When substitution is not accepted, provide specified product.

J. Substitute products shall not be provided without written acceptance by Change Order.

3.05 GENERAL SUBSTITUTION LIMITATIONS

A. Instructions to Bidders and General Conditions of the Contract specify time restrictions for submitting requests for substitutions during the bidding period. Comply with requirements related documents and procedures specified in this section.

B. Do not request substitutions after expiration of specified periods.

C. All Performance Requirements listed in Articles titled QUALITY ASSURANCE, DESIGN CRITERIA, PERFORMANCE REQUIREMENTS and WARRANTY must be met and provided with the Request For Substitution.

D. All Salient Physical Attributes must be met and documented with the Request For Substitution.

E. Document each request on Architect's Request For Substitution (RFS) form with complete data substantiating compliance of proposed substitution with Contract Documents. All requests for substitution must be submitted on the specified form which may be obtained from the Architect. Requests received without the Request Form will be rejected.

F. A request for substitution constitutes a representation that the submitter:
1. Waives all claims for additional costs or time extension which may subsequently become apparent.

G. Regulatory Requirements: Proposer requesting the substitution shall be responsible for obtaining all regulatory approvals required for proposed substitutions.
1. All regulatory approval shall be obtained for proposed substitutions prior to submittal of substitution request to Architect.
2. All costs incurred by the Owner in obtaining regulatory approvals for proposed substitutions, including the costs of the Architect and any authority having jurisdiction over the project shall be reimbursed to the Owner. Costs of these services shall be reimbursed regardless of final acceptance or rejection of substitution.

H. Substitution Submittal Procedure:

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1. Submit one original signature copy of only the Request For Substitution Form included in this Project Manual for consideration. Forms provided by proposer or other agencies or organizations are not acceptable. Limit each request to one proposed substitution.
2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence, including:
    a. Statement of cause for substitution request.
    b. Identify product by specification section and article number.
    c. manufacturer's name, address, and phone number.
    d. List of fabricators, suppliers, and installers as appropriate.
    e. List of similar Projects where proposed products have been used, date of installation and names of Architect and Owner.
    f. Confirmation of regulatory approvals
    g. Product data, including drawings and product samples.
    h. Product Size, weight, configuration of connections, ports or vents.
    i. Fabrication and installation procedures.
    j. Comparison of the qualities of the proposed substitution with that specified.
    k. Cost data comparing the proposed substitution with the product specified.
    l. Any required license fees or royalties.
    m. Availability of maintenance service and source of replacement materials.
    n. Coordination information, including a list of changes or modifications needed to other items of work that will be required to accommodate Proposed substitution.
    o. Statement on the Substitution’s effect on the Construction Schedule.
    p. Written certification by the proposer that the Substitution is equal or better in every respect to that required by the contract Documents and that substitution will perform adequately in the application intended.
    q. Written certification that the proposer will pay for all permits, fees, and costs required to implement the substitution, and including waiver of all claims for additional costs or time extension which may subsequently become apparent, and reimbursement of Owner and Architect for review or redesign services associated with re-approval by authorities.

3.06 SUBSTITUTION PROCEDURES DURING PROCUREMENT

A. Submittal Time Restrictions:
    1. Instructions to Bidders specifies time restrictions and the documents required for submitting substitution requests during the bidding period.

B. Submittal Form (before award of contract):
    1. Submit substitution requests by completing the form attached to this section. See this form for additional information and instructions. Use only this form; other forms of submission are unacceptable.

3.07 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

A. Submittal Form (after award of contract):
    1. Submit substitution requests by completing the form attached to this section. See this section for additional information and instructions. Use only this form; other forms of submission are unacceptable.

B. Architect will consider requests for substitutions only within 15 days after date of Agreement.

C. Submit request for Substitution for Cause within 14 days of discovery of need for substitution, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.

D. Submit request for Substitution for Convenience within 14 days of discovery of its potential advantage to the project, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.
    1. In addition to meeting general documentation requirements, document how the requested substitution benefits the Owner through cost savings, time savings, greater energy conservation, or in other specific ways.
    2. Document means of coordinating of substitution item with other portions of the work, including work by affected subcontractors.
    3. Bear the costs engendered by proposed substitution of:

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a. Owner's compensation to the Architect for any required redesign, time spent processing and evaluating the request.

E. Substitutions will not be considered under one or more of the following circumstances:
1. When they are indicated or implied on shop drawing or product data submittals, without having received prior approval.
2. Without a separate written request.

3.08 RESOLUTION

A. Architect may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.
1. The Architect will accept or reject proposed subtitutions within fourteen (14) days of the receipt of the request. If addition documentation is requested, the Architect will render a decision after receipt of that additional documentation.

B. If a decision on a substitution cannot be made within the time allocated, the product specified shall be used.

C. No extension of bid period or contract time will be made for substitution review.

D. Final acceptance of a substitution submitted prior to the date established for the receipt of bids will be in the form of an Addendum.

E. Final acceptance of a substitution submitted after the award of the contract will be in the form of a Change Order.

F. Architect/Engineer shall be the judge of the acceptability of the proposed substitution. Architect’s decision on substitution requests is final and does not require documentation or justification.

G. Architect will notify Contractor in writing of decision to accept or reject request.
1. Architect's decision following review of proposed substitution will be noted on the submitted form.

H. Rejection Of Substitution Request: Any of the following reasons shall be cause for rejection, all as determined by the Architect;
1. Vagueness or incompleteness of Substitution submittal,
2. Insufficient data, failure to meet specified requirements, (including warranty).
3. Qualification of the requirements of the Substitution Form, including modification of any of the requirements.

I. Substitute products shall not be ordered or installed without written acceptance.

J. Owner shall receive full benefit of any cost reduction as a result of any request for substitution.

K. Provide submittals for accepted substitutions in accordance with specified requirements of the respective section and provisions of Section 01-3300 - Submittal Procedures.
1. An accepted substitution is not acceptable as a submittal. Provide separate submittals for each review.

3.09 ACCEPTANCE

A. Accepted substitutions change the work of the Project. They will be documented and incorporated into work of the project by Change Order, Construction Change Directive, Architectural Supplementary Instructions, or similar instruments provided for in the Conditions of the Contract.

3.10 CLOSEOUT ACTIVITIES

A. See Section 01-7800 - Closeout Submittals, for closeout submittals.

B. Include completed Substitution Request Forms as part of the Project record. Include both approved and rejected Requests.

3.11 ATTACHMENTS

A. Substitution Request Form referenced in this Section is bound following this Section.

END OF SECTION

SUBSTITUTION REQUEST FORM NO. _____

To: **AXIA Architects, 540 Mendocino Ave, Santa Rosa CA 95401**

Project: _____

We hereby submit for your consideration the following product instead of the specified item for the above project:

Section Paragraph Specified Item

_____

Proposed substitution:_____

Attach complete technical data, including laboratory tests, if applicable. Demonstrate compliance with all specified characteristics of specified item(s). Include complete description of all changes to Contract Documents required to implement proposed substitution. Fill in all blanks below and sign:

A. Does the substitution affect dimensions shown on the drawings?

_____

B. What affect does substitution have on other trades?

_____

C. Differences between proposed substitution and specified item?

_____

D. Manufacturer's guarantees of the proposed substitution and specified items are:

_____ Same _____ Different (explain on attachment)

The undersigned states that the function, appearance and quality are equivalent or superior to the specified item. The undersigned waives all claims for additional costs or time resulting from this substitution. The undersigned will pay for all changes to the building design, including engineering and detailing costs caused by the requested substitution.

Submitted by:_____ Date: _____

Signature

Firm Address/City/Zip Telephone

Remarks:_____

For use by Architect: ____ Accepted ____ Accepted as noted
____ Not accepted ____ Received too late

By _____ Date_____

SECTION 01-2600
CONTRACT MODIFICATION PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Modification Submittals and Procedures.

B. Documentation of changes in Contract Sum and/or Contract Time.

C. Change procedures.

D. Execution of Change Orders.

E. Correlation of Contractor submittals.

1.02 RELATED SECTIONS

A. Document - Agreement: Monetary values of established Unit Prices.

B. Document - General Conditions: Governing requirements for changes in the Work, in Contract Sum and Contract Time and percentage allowances for Contractor's overhead and profit.

C. Section 01-2500 - Substitution Procedures: Substitution Procedures and Substitution Request Form.

D. Section 01-2900 - Payment Procedures: Payment Applications and Schedule of Values.

E. Section 01-3216 - Construction Progress Schedule: Documentation of Contract Time adjustments.

F. Section 01-6000 - Product Requirements: Product options.

1.03 MODIFICATION SUBMITTALS

A. Submit name of the individual in Contractor's firm authorized to receive change documents, and be responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.

B. The following submittals shall be made on forms prepared by the Architect:
   1. Request For Information Forms.
   2. Architect's Supplemental Instructions Forms.
   3. Request For Proposal Forms.
   4. Construction Change Directive Forms.
   5. DSA-140: Application for Submittal of Post-Approval Document.
   6. Change Order Request Forms.
   7. Change Order Forms.

1.04 DOCUMENTATION OF CHANGE IN CONTRACT SUM AND CONTRACT TIME

A. Maintain detailed records of work done. Provide full information required for evaluation of proposed changes, and to substantiate costs of changes in the Work.

B. Document each quotation for a change in cost or time with sufficient data to allow evaluation of the quotation.

C. Provide additional data to support computations:
   1. Quantities of products, labor, and equipment.
   2. Taxes, insurance, and bonds.
   3. Overhead and profit.
   4. Justification for any change in Contract Time.
   5. Credit for deletions from Contract, similarly documented.

1.05 REQUEST FOR INFORMATION ("RFI")

A. An RFI is a written request prepared by the Contractor asking the Architect to provide additional information necessary to clarify an item which the Contractor feels is not clearly shown or called for in the drawings or specifications, or to address questions which have arisen under field conditions.

B. An RFI cannot modify the Contract Cost, Contract Time, or the Contract Documents.

C. Submit RFI’s to Architect on the form included in the project manual. Submittals not conforming to this requirement will be returned.

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D. Each RFI shall reference all the applicable Contract Documents including specification section, detail, page numbers, drawing numbers, and sheet numbers, etc. Contractor shall make suggestions and/or interpretations of the issue raised by the RFI.

E. The Architect will respond to a RFI within fourteen (14) calendar days after receiving such request. If the Architect cannot respond to the RFI within fourteen (14) calendar days, the Architect shall notify the Contractor, with a copy to the Inspector and the Owner, of the estimated amount of time that will be required to respond.

F. The Contractor may be invoiced by the Owner for any costs incurred for professional services, which shall be deducted from the next progress payment, for each RFI requesting an interpretation or decision of a matter where the information sought is equally available to the party making such request.

1.06 ARCHITECT'S SUPPLEMENTAL INSTRUCTIONS ("ASI")

A. An ASI is a written supplemental instruction issued and signed by the Architect for minor changes to the Work, without change in Contract Sum or Contract Time.

B. An ASI cannot modify the Contract Cost, Contract Time, or the Contract Documents.

C. Architect Authority;
   1. The Architect has authority to order minor changes in the Work not involving any adjustment in the Contract Sum, an extension of the Contract Time, or a change which is inconsistent with the intent of the Contract Documents.
   2. The Contractor shall carry out such written orders promptly.

1.07 REQUEST FOR PROPOSAL ("RFP")

A. An RFP is a written request prepared by the Architect asking the Contractor to submit to the Owner and the Architect an estimate of the effect of a proposed change on the Contract Price and the Contract Time.

B. An RFP is a request for pricing only and is a not directive to proceed with the proposed change or to modify the Contract Cost, Contract Time, or the Contract Documents.

C. An RFP shall contain sufficient information, including any necessary drawings and specifications, to enable Contractor to provide the cost breakdowns.

D. Overtime or Premium time work is not authorized for any proposal unless specifically stated otherwise in the proposal description.

E. Owner or Architect may initiate changes by submitting a proposal request to Contractor. Request will include:
   1. Detailed description of the change, products and location of the change in the project.
   2. Supplementary or revised drawings and specifications.
   3. The projected time span for making the change and a specific statement as to whether overtime work is, or is not, authorized.
   4. A specific period of time during which the requested price will be considered valid.
   5. Such request is for information only and is not an instruction to execute the changes nor to stop work in progress.

F. The Contractor shall not be entitled to Additional Compensation for preparing a response to an RFP, whether ultimately accepted or not.

1.08 CONSTRUCTION CHANGE DIRECTIVE ("CCD")

A. Definition: A CCD is a written order prepared by the Architect and signed by the Owner and the Architect, directing a change in the Work and stating a proposed basis for adjustment, if any, in the Contract Sum or Contract Time, or both.

B. The Owner may by issuing a CCD, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, with the Contract Sum and Contract Time being adjusted accordingly.

C. A CCD shall be used in the absence of agreement on the terms of a CO.

D. Pricing for CCD’s shall be established in accordance with methods specified in General Conditions.

1.09 DSA 140: APPLICATION FOR SUBMITTAL OF POST-APPROVAL DOCUMENT

A. PURPOSE: Form DSA 140: Application for Submittal of Post-Approval Document is an application for submittal of the following post-approval documents to DSA for review and approval:

1. Deferred Submittals
2. Addenda
3. Revisions (NOTE: Revisions are significant changes to the DSA-approved construction documents or redesign of previously approved items.)
4. Construction Change Documents (CCDs)

1.10 CHANGE ORDER REQUEST ("COR")

A. Definition: A COR is a written request prepared by the Contractor asking the Owner and the Architect to incorporate a proposed change called for in an RFP or a claim into a Change Order.

B. Change Format: Include all breakdowns as required in I. Format for Change Order Request. Incomplete or improperly prepared COR's will be returned for additional documentation or correction.
   1. All proposed change orders requests shall be submitted on forms included in this project manual. Change Order Requests submitted on the Contractor's forms, altered, modified, or incomplete forms will be deemed waived.

C. Terms of Change Order Request: Provide to the Owner, via the Architect, within ten (10) days or such lesser period of time as specifically directed by the terms of a given Request For Proposal, the following:
   1. Full estimate of the cost of the proposed Change upon the Contract Price and the actual cost of construction, include a complete itemized cost breakdown of all labor and material showing the following required to implement the change: actual quantities and unit prices of materials, labor hours, wage rates and all other costs and burdens as may apply.
   2. The effect upon the Contract Time of such Change.
   3. No reservation of rights for future cost or time adjustments will be permitted for COR's. Each COR shall include full and complete compensation for the described change. Submittal of a COR for any proposed change constitutes Contractor's express waiver of claim for added costs or time for that change. Refer to further waiver requirements specified below in the 1.10 CHANGE ORDERS.
   4. All changes in costs and time shall be valid for a minimum of thirty (30) days, and longer as specifically directed by the terms of a given Request For Proposal.

D. Contractor's Certification: All proposed change order requests, including those originated by the Contractor or those filed as claims, must include the following certification by the Contractor:
   1. "The undersigned Contractor approves the foregoing as to the changes in work, if any, and as to the contract price specified for each item and as to the extension of time allowed, if any, for completion of the project as stated herein, and agrees to furnish all labor, materials, and service and to perform all work necessary to complete any additional work specified for the consideration stated herein. Submission of claims which have no basis in fact or which Contractor knows are false are made at the sole risk of the Contractor and may be a violation of the False Claims Act, as set forth in Government Code Sections 12650 et seq. It is understood that the changes to the Contract Documents set forth herein shall only be effective upon approval by the governing board of the District.
   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, both direct and indirect, resulting from additional time required on the project or resulting from delay to the project. Any costs, expenses, damages, or time extensions not included herein are deemed waived."

E. Changes in Contract Time: Each COR shall include all additional time required to complete the Project. Provide with each COR full documentation of all schedule changes necessary to implement the proposed change, in accordance with the documentation requirements specified in Section 01-3216 - Construction Progress Schedule .
   1. Additional time requested shall not be the number of days to make the proposed change, but shall be based only upon the impact to the Project Schedule as defined in the General Conditions and related Division 01 of the Specifications.
   2. Failure to fully document a request for additional time for work in a given Change Request Request constitutes Contractor's express waiver of additional time for that change and no time extension will be made for that change.

F. Methods of Contract Cost Change Determination: The amount of increase or decrease in the Contract Price described in a COR, if any, shall be determined in one or more of the following ways as applicable to a specific situation:

1. Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
2. Unit prices stated in the Contractor's original bid, the Contract Documents, or subsequently agreed upon between the Owner and the Contractor;
3. Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
4. By cost of material and labor and percentage of overhead and profit.

G. Determination of Costs by Material and labor and Percentage of overheard and profit: If the value is determined by this method the following requirements shall apply:
   1. Daily Reports by Contractor.
      a. General: At the close of each working day, the Contractor shall submit a daily report to the Inspector, on forms approved by the Owner, together with applicable delivery tickets, listing all labor, materials, and equipment involved for that day, the location of the Work, and for other services and expenditures when authorized concerning extra work items. An attempt shall be made to reconcile the report daily, and it shall be signed by the Inspector and the Contractor. In the event of disagreement, pertinent notes shall be entered by each party to explain points which cannot be resolved immediately. Each party shall retain a signed copy of the report. Reports by subcontractors or others shall be submitted through the Contractor.
      b. Labor: Show names of workers, classifications, and hours worked.
      c. Materials: Describe and list quantities of materials used.
      d. Equipment: Show type of equipment, size, identification number, and hours of operation, including, if applicable, loading and transportation.
      e. Other Services and Expenditures: Describe in such detail as the Owner may require.

H. Basis for Establishing Costs for Change Orders:
   1. Labor will be the actual cost for wages prevailing locally for each craft or type of workers at the time the extra work is done, plus employer payments of payroll taxes and insurance, health and welfare, pension, vacation, apprenticeship funds, and other direct costs resulting from Federal, State, or local laws, as well as assessments or benefits required by lawful collective bargaining agreements.
   2. Labor Unit Productivity for a given task or trade shall not be calculated at a lesser productivity than that published by industry references as follows:
      a. Mechanical Trades: SMACNA productivity rates increased by 30 percent (30 percent greater productivity for a given task than specified by the reference).
      b. Electrical and Division 16 Trades: NECA productivity rates increased by 30 percent (30 percent greater productivity for a given task than specified by the reference).
      c. All Other Trades: Lee Saylor Estimating Guide productivity using the “Open Shop Rate” for both labor and materials.
   3. Only costs for direct labor related to the Changed or Added Work shall be included. Supervision, Project Manager, Project Engineer, Assistant Superintendent, research and preparation of Change Order Requests and other similar classifications shall be included in the calculation for overhead and not listed separately as line items.
   4. The use of a labor classification, which would increase the extra work cost, will not be permitted unless the Contractor establishes the necessity for such additional costs.
   5. Labor costs for equipment operators and helpers shall be reported only when such costs are not included in the invoice for equipment rental.
   6. Materials shall be at invoice or lowest current price at which such materials are locally available and delivered to the Site in the quantities involved, plus sales tax, freight, and delivery.
   7. The Owner reserves the right to approve materials and sources of supply or to supply materials to the Contractor if necessary for the progress of the Work. No markup shall be applied to any material provided by the Owner.
   8. Tool and Equipment Rental. No payment will be made for the use of tools which have a replacement value of $100 or less.
   9. Regardless of ownership, the rates to be used in determining equipment rental costs shall not exceed listed rates prevailing locally at equipment rental agencies or distributors at the time the work is performed.
   10. The rental rates paid shall include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, and all incidentals.

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11. Necessary loading and transportation costs for equipment used on the extra work shall be included. If equipment is used intermittently and, when not in use, could be returned to its rental source at less expense to the Owner than holding it at the work Site, it shall be returned unless the Contractor elects to keep it at the work Site at no expense to the Owner.
12. Other Items. The Owner may authorize other items which may be required on the extra work. Such items include labor, services, material, and equipment which are different in their nature from those required by the Work, and which are of a type not ordinarily available from the Contractor or any of the Subcontractors. Invoices covering all such items in detail shall be submitted with the request for payment.
13. Invoices. Vendors' invoices for material, equipment rental, and other expenditures shall be submitted with the COR. If the request for payment is not substantiated by invoices or other documentation, the Owner may establish the cost of the item involved at the lowest price which was current at the time of the Daily Report.
14. Overhead. Overhead, including direct and indirect costs shall be included in the line item amount shown in the Article FORMAT FOR PROPOSED COST CHANGE, shall be submitted with the COR and shall include all of the following:
    a. Home office overhead,
    b. Off-Site supervision,
    c. Change Order and Change Order Request preparation/negotiation/research,
    d. Schedule delays,
    e. Project interference and disruption,
    f. Additional guaranty and warranty durations,
    g. On-Site supervision, additional temporary protection,
    h. Additional temporary utilities,
    i. Additional material handling costs,
    j. Additional safety equipment costs.
15. Exclusions: No item included in the paragraph titled "Overhead" above, shall be submitted or included as part of another line item, or as a separate line item. Costs presented for any such item so listed shall be deemed waived.

I. Format for Change Order Request: The format shall be prepared by the Contractor to communicate proposed additions and deductions to the Contract. This format is indicated on the Change Order Request Form provided as an attachment to this Section.

J. The value of such extra work or changes, as determined by any of the aforementioned methods, expressly includes any and all of the Contractor's costs and expenses, both direct and indirect, resulting from additional time required on the project or resulting from delay to the project. Any costs or expenses not included in the COR are deemed waived.

K. Changes may be made by Owner by an appropriate written Change Order, or, at the Owner's option, such changes shall be implemented immediately upon the Contractor's receipt of an appropriate written directive.

L. Architect's Review: Architect will review each Change Order Request and make a written recommendation to the Owner to accept or reject the proposed pricing.

M. Notice required for Contractor-Initiated Change Order Requests: To make a claim for an increase in the Contract Price, or any extension in the Contract Time for completion, Contractor shall give the Owner and the Architect written notice thereof within ten (10) days after the occurrence of the event giving rise to the claim, together with detailed estimates of the impact on the Contract Price and/or the Contract Time.
    1. This notice shall be given by the Contractor before proceeding to execute the Work.
    2. No claim shall be considered unless made in accordance with this Article; however, the mere presentation of such claim shall not establish the validity of the cause giving rise to such claim, or of the extension of the Contract Time, and/or the increase in the Contract Price.
    3. Contractor shall proceed to execute the Work even though the adjustment has been rejected or not agreed upon.
    4. Failure to provide the required notice within the stated time constitutes an express waiver of claim.
    5. Any change in the Contract Price or extension of the Contract Time resulting from such claim shall be authorized by a Change Order.

1.11 CHANGE ORDERS ("CO")

A. No Changes Without Authorization;

1. There shall be no change whatsoever in the drawings, specifications, or in the Work without an executed Change Order or an order by the Architect for a minor change in the Work as herein provided.
2. Owner 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 same shall have been authorized by and the cost thereof approved in writing by Change Order.
3. No extension of time for performance of the Work shall be allowed hereunder unless claim for such extension is made at the time changes in the Work are ordered, and such time duly adjusted in writing in the Change Order.
4. 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.
5. Notwithstanding anything to the contrary in this Article, all Change Orders shall be prepared and issued by the Architect and shall become effective when executed by the Owner, the Architect, the Contractor, and approved by DSA/ORS.

B. Owner will designate in writing the person who is authorized to execute change orders.

C. Contractor may initiate changes by submitting a written notice to Architect containing:
1. Description of the proposed changes.
2. Statement of the reason for making the changes.
3. Statement of the effect on the contract sum and the contract time.
4. Statement of the effect on the work of separate contractors.
5. Documentation supporting any change in contract sum or contract time as appropriate.

D. A Change Order is a written instrument prepared by the Architect and signed by the Owner, the Contractor, the Architect, and the DSA, stating their agreement upon all of the following:
1. a change in the Work;
2. the amount of the adjustment in the Contract Sum, if any; and
3. the extent of the adjustment in the Contract Time, if any.

E. The following paragraphs shall be a part of each Change Order:
1. The compensation (time and cost) set forth in this Change Order comprises the total compensation due the Contractor, all Subcontractors and all Suppliers, at all tiers, for the work or change defined in the Change Order, including all impact on unchanged work. By signing this Change Order the Contractor acknowledges and agrees, on behalf of themselves, all Subcontractors and all Suppliers, at all tiers, that the stipulated compensation includes payment for all work contained in the Change Order, plus all payment for the interruption of schedules, extended and unabsorbed overhead costs, delay, disruption, and all impact, ripple impact or cumulative impact on all other work under this Contract. The signing of the Change Order indicates that the Change Order constitutes full mutual accord and satisfaction for the changed work, and that the time and cost under the Change Order constitutes the total equitable adjustment owed the Contractor, all Subcontractors and all Suppliers, at all tiers, as a result of the change. The Contractor, on behalf of themselves, all Subcontractors and all Suppliers, at all tiers, agrees to waive all rights, without exception or reservation of any kind whatsover to file any further claim related to this Change Order. No further claim or request for equitable adjustment of any kind whatsover shall arise out of or as a result of this change or the impact of this change on the remainder of the work under this Contract.
2. By execution of this Change Order the Contractor specifically waives, relinquishes, and releases any and all rights under Section 1542 of the California Civil Code which reads as follows: "A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS WHICH THE CREDITOR DOES NOT KNOW OR SUSPECT TO EXIST IN HIS FAVOR AT THE TIME OF EXECUTING THE RELEASE, WHICH IF KNOWN BY HIM MUST HAVE MATERIALLY AFFECTED HIS SETTLEMENT WITH THE DEBTOR."

1.12 EXECUTION OF CHANGE ORDERS

A. Execution of Change Orders: Architect/Engineer will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

B. Transmittal and Distribution:
1. Architect will prepare and execute the Change Order and forward to Contractor.
2. Contractor shall execute the Change Order and forward to Architect. Architect will forward Change Order to Owner.
3. Owner will execute the Change Order and forward to the Architect.

4. Architect will forward the Change Order to DSA for review and approval.
5. Following DSA approval, Architect will distribute copies to the recipients as indicated.

1.13 CORRELATION OF CONTRACTOR SUBMITTALS

A. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum/Price.

B. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.

C. Promptly enter changes in Project Record Documents.

PART 2 PRODUCTS

2.01 NOT USED

PART 3 EXECUTION

3.01 PROJECT FORMS

A. Project Forms referenced in this section are bound following this Section.

END OF SECTION

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[Contractors Logo]

REQUEST FOR INFORMATION

RFI #: 000

RFI Topic: Sample Title

Project:	**Owner:**	**Contractor:**	**Via:**	Email
Project Name	District Name	Company Name	Architect:	Yes
Site Name	Contact Name	Contact Name	Owner	Yes
Project Address	Address	Address	Contractor	Yes
City, CA 90000	City, CA 95000	City, CA 95000	Consultant	No
	email@gmail.com	email@gmail.com	Inspector	No

DSA/Permit No:	**Arch Job #:**	**Cont Job #:**	**Date Issued:**
01-00000	1000		Jan 1, 2020

Drawing Ref:

Specification Ref:

Contractor's Question:

Contractor's Proposed Solution:

Contractors Signature: _____ **Date:** _____

Conditions: Perform Work in accordance with the following supplemental instructions which are issued in accordance with the Contract Documents, without change in Contract Sum or Contract Time. Proceeding with the Work in accordance with these instructions indicates your acknowledgement of these instructions that there will be no change in the Contract Sum or Contract Time.

Architects Response:

Attachments:

Architects Signature: _____ **Date:** _____

AXIA ARCHITECTS

PO BOX 1000
SANTA ROSA, CA 95402

540 MENDOCINO AVE
SANTA ROSA, CA 95401

ARCHITECTS SUPPLEMENTAL INSTRUCTION

ASI #: 000

ASI Topic: Sample Title

Project:	**Owner:**	**Contractor:**	**Via:**	Email
Project Name	District Name	Company Name	Architect:	Yes
Site Name	Contact Name	Contact Name	Owner	Yes
Project Address	Address	Address	Contractor	Yes
City, CA 90000	City, CA 95000	City, CA 95000	Consultant	No
	email@gmail.com	email@gmail.com	Inspector	No

DSA/Permit No:	**Arch Job #:**	**Cont Job #:**	**Date Issued:**
01-00000	1000		Jan 1, 2020

Conditions: Perform Work in accordance with the following supplemental instructions which are issued in accordance with the Contract Documents, without change in Contract Sum or Contract Time. Proceeding with the Work in accordance with these instructions indicates your acknowledgement of these instructions that there will be no change in the Contract Sum or Contract Time.

Architects Instructions:

Refer to the attached (sheet/pages) for supplemental information to the Contract Documents regarding _____.

Attachments:

(List of pertinent attachments, ASK-01, ESK-01, …)

Architects Signature: _____ **Date:** _____

AXIA ARCHITECTS

PO BOX 1000
SANTA ROSA, CA 95402

540 MENDOCINO AVE
SANTA ROSA, CA 95401

REQUEST FOR PROPOSAL

RFP #: 000

RFP Topic: Sample Title

Project:	**Owner:**	**Contractor:**	**Via:**	Email
Project Name	District Name	Company Name	Architect:	Yes
Site Name	Contact Name	Contact Name	Owner	Yes
Project Address	Address	Address	Contractor	Yes
City, CA 90000	City, CA 95000	City, CA 95000	Consultant	No
	email@gmail.com	email@gmail.com	Inspector	No

DSA/Permit No:	**Arch Job #:**	**Cont Job #:**	**Date Issued:**
01-00000	1000		Jan 1, 2020

THIS IS NOT A CHANGE ORDER NOR A DIRECTION TO PROCEED WITH THE WORK DESCRIBED.
Submit an itemized proposal for changes in the Contract Sum or Contract Time for proposed modifications described below within ten (10) days of date written above or notify the Architect in writing of the date proposal will be submitted, (not to exceed 30 days).

Overtime or Premium time work is not authorized for this proposal unless specifically stated otherwise below.

Conditions and Disclaimer: All proposals subject to the following: The compensation (time and cost) set forth in response to this proposal comprises the total compensation due the Contractor, all Subcontractors and all Suppliers, at all tiers, for the work or change defined in the Proposal, including all impact on unchanged work. By submitting this proposal the Contractor acknowledges and agrees, on behalf of themselves, all Subcontractors and all Suppliers, at all tiers, that the stipulated compensation includes payment for all work contained in the proposal, plus all payment for the interruption of schedules, extended and unabsorbed overhead costs, delay, disruption, and all impact, ripple impact or cumulative impact on all other work under this Contract. The submittal of the proposal indicates that the proposal constitutes full mutual accord and satisfaction for the changed work, and that the time and cost under the proposal constitutes the total equitable adjustment owed the Contractor, all Subcontractors and all Suppliers, at all tiers, as a result of the proposal. The Contractor, on behalf of themselves, all Subcontractors and all Suppliers, at all tiers, agrees to waive all rights, without exception or reservation of any kind whatsoever to file any further claim related to this proposal. No further claim or request for equitable adjustment of any kind whatsoever shall arise out of or as a result of this change or the impact of this change on the remainder of the work under this Contract.

Architects Request:

Refer to the attached (sheet/pages) for supplemental information to the Contract Documents and provide cost regarding _____.

Attachments:

(List of pertinent attachments, ASK-01, ESK-01, …)

Architects Signature: _____ **Date:** _____

AXIA ARCHITECTS

PO BOX 1000
SANTA ROSA, CA 95402

540 MENDOCINO AVE
SANTA ROSA, CA 95401

CONSTRUCTION CHANGE DIRECTIVE

CCD #: 000

CCD Topic: Sample Title

Project:	**Owner:**	**Contractor:**	**Via:**	Email
Project Name	District Name	Company Name	Architect:	Yes
Site Name	Contact Name	Contact Name	Owner	Yes
Project Address	Address	Address	Contractor	Yes
City, CA 90000	City, CA 95000	City, CA 95000	Consultant	No
	email@gmail.com	email@gmail.com	Inspector	No

DSA/Permit No:	**Arch Job #:**	**Cont Job #:**	**Date Issued:**
01-00000	1000		Jan 1, 2020

INSTRUCTIONS: Contractor shall promptly proceed with the change in the Work described below and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time within ten (10) days of date written above.

Overtime or Premium time work is not authorized for this proposal unless specifically stated otherwise below.

Conditions and Disclaimer: If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs shall be limited to the following:

1) Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;

2) Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;

3) Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;

4) Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and

5) Additional costs of supervision and field office personnel directly attributable to the change.

The compensation (time and cost) set forth in response to this directive comprises the total compensation due the Contractor, all Subcontractors and all Suppliers, at all tiers, for the work or change defined in the directive, including all impact on unchanged work. By submitting this directive the Contractor acknowledges and agrees, on behalf of themselves, all Subcontractors and all Suppliers, at all tiers, that the stipulated compensation includes payment for all work contained in the directive, plus all payment for the interruption of schedules, extended and unabsorbed overhead costs, delay, disruption, and all impact, ripple impact or cumulative impact on all other work under this Contract. The submittal of the directive indicates that the directive constitutes full mutual accord and satisfaction for the changed work, and that the time and cost under the directive constitutes the total equitable adjustment owed the Contractor, all Subcontractors and all Suppliers, at all tiers, as a result of the directive. The Contractor, on behalf of themselves, all Subcontractors and all Suppliers, at all tiers, agrees to waive all rights, without exception or reservation of any kind whatsoever to file any further claim related to this directive. No further claim or request for equitable adjustment of any kind whatsoever shall arise out of or as a result of this change or the impact of this change on the remainder of the work under this Contract.

Architects Directive:

Refer to the attached (sheet/pages) for supplemental information to the Contract Documents regarding _____.

Proposed Adjustments:

1) The proposed basis of adjustment to the Contract Sum or Guaranteed Maximum Price:

- □ Lump Sum [increase/ decrease] of $ _____
- □ Unit Price of $_____ per _____
- □ As follows: Per AIA A101 Owner/Contractor Agreement

2) The Contract Time is proposed to [be adjusted/ remain unchanged]. The proposed adjustment, if any, is an [increase/ decrease] of _____ days.

Attachments:

(List of pertinent attachments, ASK-01, ESK-01, …)

Architects Signature: _____ **Date:** _____

Contractors Signature: _____ **Date:** _____

Owners Signature: _____ **Date:** _____

[Contractors Logo]

CHANGE ORDER REQUEST

COR #:
COR TOPIC:

Project:	**Owner:**	**Contractor:**	**Via**	Email
Project Name	District Name	District Name	Architect	Yes
Site Name	Contact Name	Contact Name	Owner	Yes
Project Address	Address	Address	Contractor	Yes
City, CA 90000	City, CA 90000	City, CA 90000	Consultant	No
	email@gmail.com	email@gmail.com	Inspector	No

DSA/Permit No.	**Arch Job #:**	**Cont Job #:**	**Date Issued:**
01-000000	1000		January 1, 2020

Alteration or revision of this Document, it's terms, or the Certification below is deemed a waiver of any costs, expenses, damages, or time extensions requested.

DESCRIPTION:
[Write a detailed description of the COR]

MODIFICATION TO CONTRACT SUM: $ -

MODIFICATION TO CONTRAACT TIME: 0 DAYS

CONTRACTORS CERTIFICATION AND WAIVER OF CLAIMS:
The undersigned Contractor approves the foregoing as to the changes in work, if any, and as to the contract price specified for each item and as to the extension of time allowed, if any, for completion of the project as stated herein, and agrees to furnish all labor, materials, and service and to perform all work necessary to complete any additional work specified for the consideration stated herein. Submission of claims which have no basis in fact or which Contractor knows are false are made at the sole risk of the Contractor and may be a violation of the False Claims Act, as set forth in Government Code Sections 12650 et seq. It is understood that the changes to the Contract Documents set forth herein shall only be effective upon approval 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, both direct and indirect, resulting from additional time required on the project or resulting from delay to the project. All costs, expenses, damages, or time extensions not included in this Request are deemed waived by the Contractor.

Contractor's Signature: _____ **Date:** _____

ARCHITECTS ACTION:

- ☐ Review and Comment Only, Forward to Owner
- ☐ REJECT - Not in Proper Form
- ☐ REJECT - Received Too Late
- ☐ REJECT - Inadequate Back-Up

CHANGE ORDER REQUEST

WORKSHEET

COR #: 0

COR TOPIC: 0

Line	TITLE:	ADDED	CREDIT
		ALL LINES SHALL BE FILLED IN (zero values acceptable).	
	GENERAL CONTRACTOR'S WORK		
1	Material (attach itemized quantity and unit cost excluding sales tax)	$ -	$ -
2	Labor (attach itemized hours and rates)	$ -	$ -
3	Equipment (attach invoices)	$ -	$ -
4	**Subtotal**	**$ -**	**$ -**
5	General Contractor's Overhead and Profit, not to exceed fifteen percent (15%) of line 4.	$ -	$ -
6	**Subtotal**	**$ -**	**$ -**
7	Liability and Property Damage Insurance, Worker's Compensation Insurance, Social Security, and Unemployment Taxes, not to exceed twenty-five percent (25%) of line 2.	$ -	$ -
8	**Subtotal** General Contractor Work (sum of lines 4, 6, & 7.)	**$ -**	**$ -**
	SUBCONTRACT WORK (Provide separate breakdown for each subcontract)*		
9	Material (attach itemized quantity and unit cost excluding sales tax)	$ -	$ -
10	Labor (attach itemized hours and rates)	$ -	$ -
11	Equipment (attach invoices)	$ -	$ -
12	**Subtotal**	**$ -**	**$ -**
13	Subcontractor's overhead and profit on work performed by Sub-contractor, not to exceed fifteen percent (15%) of line 12.	$ -	$ -
14	**Subtotal**	**$ -**	**$ -**
15	General Contractor's Overhead and Profit on subcontract work, not to exceed ten percent (10%) of line 14.	$ -	$ -
16	Liability and Property Damage Insurance, Worker's Compensation Insurance, Social Security, and Unemployment Taxes, not to exceed twenty-five percent (25%) of line 10.	$ -	$ -
17	**Total** of Subcontract Work (sum of lines 14, 15 and 16)	**$ -**	**$ -**
18	**Subtotal** General Contractor and Subcontractor Work (sum of lines 8 and 17.)	$ -	$ -
19	Applicable Taxes (itemized by levy and by contract)	$ -	$ -
20	**Subtotal** (sum of lines 18 and 19)	**$ -**	**$ -**
21	Bond not to exceed two percent (2%) of line 20.	$ -	$ -
22	**TOTAL** (sum of lines 20 and 21.)	**$ -**	**$ -**

* Attach additional copies of this page as required to summarize additional subcontracts.

AXIA ARCHITECTS

PO BOX 1000
SANTA ROSA, CA 95402

540 MENDOCINO AVE
SANTA ROSA, CA 95401

CHANGE ORDER

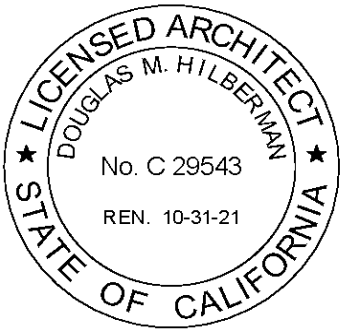
CO #:

Project:	**Owner:**	**Contractor:**	**Via**	Email
Project Name	District Name	District Name	Architect	Yes
Site Name	Contact Name	Contact Name	Owner	Yes
Project Address	Address	Address	Contractor	Yes
City, CA 90000	City, CA 90000	City, CA 90000	Consultant	No
	email@gmail.com	email@gmail.com	Inspector	No

DSA/Permit No.	**Arch Job #:**	**Cont Job #:**	**Date Issued:**
01-000000	1000		January 1, 2020

You are directed to make the following changes in this contract: (Refer to Attached Summary, next page)

Architects Seal:



The original Contract Sum was	$ 10,000,000.00
Net change by previous Change Orders	$ -
The Contract Sum prior to this Change Order	$ 10,000,000.00
The Contract Sum will be UNCHANGED by this Change Order in the amount of	$ -
The new Contract Sum including this Change	**$ 10,000,000.00**
The Contract Time will be UNCHANGED by this Change Order in the amount of	0 Days
The Date of Completion as of the date of this Change Order:	**January 1, 2020**

Not valid until signed by both the Owner and the Architect.

Signature of the contractor indicates his approval herewith, including any adjustment in the Contract Sum or Contract Time. The compensation (time and cost) set forth in this Change Order comprises the total compensation due the Contractor, all Subcontractors and all Suppliers, at all tiers, for the work or change defined in the Change Order, including all impact on unchanged work. By signing this Change Order the Contractor acknowledges and agrees, on behalf of themselves, all Subcontractors and all Suppliers, at all tiers, that the stipulated compensation includes payment for all work contained in the Change Order, plus all payment for the interruption of schedules, extended and unabsorbed overhead costs, delay, disruption, and all impact, ripple impact or cumulative impact on all other work under this Contract. The signing of the Change Order indicates that the Change Order constitutes full mutual accord and satisfaction for the changed work, and that the time and cost under the Change Order constitutes the total equitable adjustment owed the Contractor, all Subcontractors and all Suppliers, at all tiers, as a result of the change. The Contractor, on behalf of themselves, all Subcontractors and all Suppliers, at all tiers, agrees to waive all rights, without exception or reservation of any kind whatsoever to file any further claim related to this Change Order. No further claim or request for equitable adjustment of any kind whatsoever shall arise out of or as a result of this change or the impact of this change on the remainder of the work under this Contract.

By execution of this Change Order the Contractor specifically waives, relinquishes, and releases any and all rights under Section 1542 of the California Civil Code which reads as follows:
A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS WHICH THE CREDITOR DOES NOT KNOW OR SUSPECT TO EXIST IN HIS FAVOR AT THE TIME OF EXECUTING THE RELEASE, WHICH IF KNOWN BY HIM MUST HAVE MATERIALLY EFFECTED HIS SETTLEMENT WITH THE DEBTOR.

AXIA ARCHITECTS

PO BOX 1000
SANTA ROSA, CA 95402

540 MENDOCINO AVE
SANTA ROSA, CA 95401

						Calendar Days Added to Contract			
No.	Reference:	Description:	C.O.R. #	Request by:	Amount	Doc	M1	M2	M3
1.					$ -				
2.					$ -				
3.					$ -				
4.					$ -				
5.					$ -				
				TOTAL:	$ -	0	0	0	0

Architects Signature: _____ **Date:** _____

Owners Signature: _____ **Date:** _____

Contractors Signature: _____ **Date:** _____

SECTION 01-2900
PAYMENT PROCEDURES

PART 1 GENERAL

1.01 DESCRIPTION

A. Payment Procedures:
   1. Submittals.
   2. Schedule of Values.
   3. Applications for Payment.
   4. Conditions of Payment.
   5. Final Payment.
   6. Contractor Submittals.

B. Related Documents
   1. Document - Contract (Agreement Between Owner and Contractor).
   2. Document - General Conditions: Progress Payments, Retainages and Final Payment., Applicability of Labor Compliance Program.
   3. District Labor Compliance Program, as applicable to the project.
   4. Section 01-1100 - Summary of Work.
   5. Section 01-2600 - Contract Modification Procedures.
   6. Section 01-3000 - Administrative Requirements.
   7. Section 01-3100 - Project Management and Coordination.
   8. Section 01-3216 - Construction Progress Schedule.
   9. Section 01-3300 - Submittal Procedures.
   10. Section 01-7700 - Closeout Procedures.

1.02 SUBMITTALS

A. On forms approved by the Owner, the Contractor shall furnish the following:
   1. Within ten (10) days of the award of the Contract, a detailed breakdown of the Contract Price (Schedule of Values) for each Project or Site;
   2. Within ten (10) days of the award of the Contract, a schedule of estimated monthly payment requests (cash flow) due the Contractor showing the values and construction time of the various portions of the Work to be performed by it and by its Subcontractors or material and equipment suppliers containing such supporting evidence as to its correctness as the Owner may require;
   3. Within ten (10) days, the name, address, telephone number, fax number, license number, and classification of all of its Subcontractors and of all other parties furnishing labor, material, or equipment for its Contract, along with the amount of each such subcontract or the price of such labor, material, and equipment needed for its entire portion of the Work.
   4. Five (5) days prior to the submission of a pay request, an itemized breakdown of work done for the purpose of requesting partial payments;
   5. Five (5) days prior to the submission of a pay request, the minutes of Coordination Meetings per as specified in related section.
   6. Five (5) days prior to the submission of a pay request, updated Construction Progress Schedule as specified in related section..
   7. For Projects subject to Labor Compliance Programs: Weekly Submittal of certified payroll records to the District, maintained on a weekly basis, as required LAB 1776 (California Labor Code Section 1776), and penalties for failure to do so under Section G; The requirement includes and applies to all subcontractors performing work on district projects even if their portion of the work is less than one half of one percent of the total amount of the contract.

B. Owner Approval Required:
   1. The Owner shall review all submissions received pursuant to this Section in a timely manner. All submissions must be approved by the Owner before becoming the basis of any payment.

C. Submit itemized applications typed on AIA G702 - Application and Certificate for Payment and AIA G703 - Continuation Sheet.

D. Provide itemized data on continuation sheet:

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1. Format, schedules, line items and values: Those of the Schedule of Values accepted by Architect.

E. Obtain signature of Owner's Inspector on Form AIA G703 with each application prior to submittal to Architect.

1.03 SCHEDULE OF VALUES

A. The Schedule of Values shall be used only as the basis for the Contractor's Progress Payments.

B. Upon request of the Architect, support the values with data which will substantiate their correctness.

C. Correlate line items in the Schedule of Values with other required administrative schedules and forms, including:
1. Contractor's construction schedule.
2. Application for Payment form.
3. List of subcontractors
4. List of products.
5. Liest of principal suppliers and fabricators.
6. Schedule of submittals.

D. Form of Schedule: Submit schedule on Form AIA G703. Identify schedule with;
1. Project Name: Brookside Elementary School - Pedestrian Bridge and Location.
2. Name of Owner: Ross Valley School District.
3. Architect: AXIA Architects and Architect's Project Number: Design Professional's Project Number .
4. Name and address of Contractor.
5. Contract designation.
6. AHJ Permit Number: 01-122571.
7. Date of submission.

E. Schedule shall list the installed value of the component parts of the Work in sufficient detail to serve as a basis for computing values for progress payments during construction. Modify detail as requested by Architect.

F. Follow the table of contents of this Project Manual as the form for listing component items.
1. Identify each line item with the number and title of the respective section of the specifications.
2. Include separate line items for each section of Division 01.

G. For each major line item which has installed value of more than $10,000.00, list sub-values of major products or operations under the item.

H. For the various portions of the Work:
1. Itemize separate line item cost for each of following general cost items (if provided):
   a. Performance and payment bonds.
   b. Field supervision and layout.
   c. Temporary facilities and controls.
   d. Mobilization.
2. Each item shall include a directly proportional amount of the Contractor's overhead and profit.
3. For items on which progress payments will be requested for stored materials, break down the value into:
   a. The cost of the materials, delivered and unloaded, with taxes paid.
   b. The total installed value.

I. The sum of all values listed in the schedule shall equal the total Contract Sum.

1.04 APPLICATIONS FOR PAYMENT

A. Procedure: On or before the twenty-fifth (25th) day of each calendar month during the progress of the portion of the Work for which payment is being requested, the Contractor shall submit to the Architect an itemized Application for Payment for operations completed in accordance with the Schedule of Values. Such application shall be notarized if the project is subject to a Labor Compliance Program, or if directed by the Owner for projects not subject to as Labor Compliance Program, and supported by all of the following, or such portion thereof as Architect requires:
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;
2. The amount being requested with 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;

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3. The balance that will be due to each of such entities after said payment is made;
4. A certification that the Record Drawings and Annotated Specifications are current;
5. The additions to and subtractions from the Contract Price and Time;
6. A summary of the retentions (each Application shall provide for retention, as set forth above, of the amount due until completion of the Work of the Contractor and Final Acceptance thereof by Owner);
7. Material invoices, evidence of equipment purchases, rentals, and other support and details of cost as the Owner may require from time to time;
8. The percentage of completion of the Contractor's Work by line item; and
9. A statement showing all payments made by the Contractor for labor and materials on account of the Work covered in the preceding Application for Payment.

B. Application Form - AIA G702:
   1. Fill in required information, including that for Change Orders executed prior to date of submittal of application.
   2. Fill in summary of dollar values to agree with respective totals indicated on continuation sheets.
   3. Execute certification with signature of a responsible officer of Contract firm.

C. Continuation Sheets - AIA G703:
   1. Fill in total list of all scheduled component items of Work, with item number and scheduled dollar value for each item.
   2. Fill in dollar value in each column for each scheduled line item when work has been performed or products stored.
   3. List each Change Order executed prior to date of submission, at the end of the continuation sheets.
      a. List by Change Order Number, and description, as for an original component item of work.

D. 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 Owner. Therefore, payment by the Owner for stored material shall be made only in unusual circumstances where the Architect specifically recommends, and Owner specifically approves, the payment in writing.
   1. Payments made on account of materials and equipment not incorporated in the Work shall be conditioned upon submission by the Contractor, Subcontractor, or vendor of:
      a. Bills of sale and such other documents satisfactory to the Architect and the Owner to establish the Owner's title to such materials or equipment free of all liens and encumbrances, and otherwise protect the Owner's interest, and:
      b. Including, without limitation, provision of applicable insurance and transportation to the Site.
   2. All stored items shall be inventoried, specified by identification numbers (if applicable), released to the Owner by sureties of the Contractor and the Subcontractor and delivered and suitably stored at the Site or at some other location agreed upon in writing by the Owner, if stored off-Site, stored only in a bonded warehouse.

E. Warranty of Title: The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances in favor of the Contractor, Subcontractors, material and equipment suppliers, or other persons or entities making a claim by reason of having provided labor, materials, and equipment relating to the Work.

F. Progress Payments:
   1. Payments to Contractor
      a. Within thirty (30) days after approval of the Request for Payment, Contractor shall be paid a sum equal to ninety percent (90%) of the value of the Work performed up to the last day of the previous month, less the aggregate of previous payments. The value of the Work completed shall be an estimate only, no inaccuracy or error in said estimate shall operate to release the Contractor, or any bondsman, from damages arising from such Work or from enforcing each and every provision of this Contract, and the Owner shall have the right subsequently to correct any error made in any estimate for payment.

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b. 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 Owner concerning the Work, or any portion thereof, remains uncomplied with. At any time after fifty percent (50%) of the Work has been completed, if the Owner, by action of its governing body, finds that satisfactory progress is being made, the Owner may make any of the remaining payments in full for actual work completed or may withhold any amount up to ten percent (10%) thereof as the Owner may find appropriate based on the Contractor's progress.

2. Payments to Subcontractors: No later than ten (10) days after receipt, 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, reflecting percentages actually retained from payments to the Contractor on account of such Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.
3. Percentage of Completion or Payment Information: The Owner will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor, and action taken thereon by the Owner, on account of portions of the Work done by such Subcontractor.
4. No Obligation of Owner for Subcontractor Payment: The Owner 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.
5. Payment to Suppliers: Payment to material or equipment suppliers shall be treated in a like manner to that provided in this Article for Subcontractors.
6. Payment Not Constituting Approval or Acceptance: An approved Request for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of work not in accordance with the Contract Documents.
7. Joint Checks: Owner shall have the right, if necessary for the protection of the Owner, 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 Owner and a Subcontractor of any tier, any obligation from the Owner to such Subcontractor, or rights in such Subcontractor against the Owner.

G. Labor Compliance: A determination regarding whether this project is subject to a labor compliance program, as described in subdivision (b) of Section 1771.5 of the Labor Code is included in the Instructions to Bidders. Further information is contained in the General Conditions. The Owner is responsible for enforcement of the terms and conditions of it's Labor Compliance Program.

1.05 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS

A. Each and every Application for Payment shall be accompanied with the complete substantiating data specified in this Section in the article titled CONDITIONS OF PAYMENT.

B. When the Owner or the Architect requires substantiating data, Contractor shall submit suitable information, with a cover letter identifying:
   1. Project.
   2. Application number and date.
   3. Detailed list of enclosures.
   4. For stored products:
      a. Item number and identification as shown on application.
      b. Description of specific material.

1.06 COMPLETION AND FINAL PAYMENT

A. Final Inspection:
   1. Contractor shall immediately upon receipt of the Punch List, initiate work on all items therein related to Contractor's Work and diligently complete the same. Upon receipt of Contractor's written notice that all of the Punch List items have been fully completed and the Work is ready for final inspection and acceptance, Architect shall inspect the Work and shall submit to Contractor and Owner a final inspection report noting the work, if any, required in order to complete the Work in accordance with the Contract Documents. Absent unusual circumstances, this report shall consist of the Punch List items not yet satisfactorily completed.

2. Upon completion of the Work contained in the final inspection report, the Contractor shall so notify the Owner, who shall again inspect such Work. If the Owner finds the Work contained in such final inspection report acceptable under the Contract Documents and, therefore, the Work fully completed, it shall so notify Contractor, who shall then submit to the Architect its final Application for Payment.
3. Upon receipt and approval of such final Application for Payment, the Architect shall issue a final Certificate of Payment stating that to the best of its knowledge, information, and belief, and on the basis of its observations, inspections, and all other data accumulated or received by the Architect in connection with the Work, such Work has been completed in accordance with the Contract Documents. The Owner shall thereupon inspect such Work and either accept the Work as complete or notify the Architect and the Contractor in writing of reasons why the Work is not complete. Upon acceptance of the Work of the Contractor as fully complete (which, absent unusual circumstances, will occur when the Punch List items have been satisfactorily completed), the Owner shall record a Notice of Completion with the County Recorder, and the Contractor shall, upon receipt of payment from Owner, pay the amounts due Subcontractors.

B. Retainage: The retainage, less any amounts disputed by the Owner or which the Owner has the right to withhold, shall be paid after approval of the Owner of the Architect's Certificate of Payment referred to in paragraph "fFinal Inspection" of this Article, described above, after the satisfaction of the conditions set forth in paragraph "Procedures for Application for Final Payment" of this Article, described below, and after thirty-five (35) days after the acceptance of the Work and recording of the Notice of Completion by Owner. No interest shall be paid on any retainage, 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.

C. Procedures for Application for Final Payment: The Application for Final Payment shall be accompanied by the same details as set forth in Article titled APPLICATIONS FOR PAYMENT, and in addition, all of the following conditions must be fulfilled:
1. A full and final waiver of all liens in connection with the Work shall be submitted by Contractor, including a release of lien in recordable form, together with (to the extent permitted by law) a copy of the full and final waiver of all liens, including a release of lien in recordable form, in connection with the Work obtained by Contractor from each person to receive a payment thereunder, which waivers of lien shall be in a form as approved by Owner.
2. The Contractor shall have made, or caused to have been made, all corrections to the Work which 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 Owner required under the Contract.
3. 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.
4. The Contractor shall deliver to the Owner reproducible final Record Drawings and Annotated Specifications showing the Contractor's Work "as built," with the Contractor's certification of the accuracy of the Record Drawings and Annotated Specifications, all guarantees, and operation and maintenance instructions for equipment and apparatus.
5. Architect shall have issued a Final Certificate of Payment.
6. The Contractor shall have delivered to the Owner all manuals and materials required by the Contract Documents.
7. The Contractor shall have removed, or caused to be removed, all waste materials and rubbish from and about the Site, as well as all tools, construction equipment, machinery, surplus material, scaffolding equipment, and any other similar materials of the Contractor or any subcontractor, shall have cleaned, or caused to be cleaned, all glass surfaces, and shall have left the Work broom-clean, except as otherwise provided in the Contract Documents.

D. Fill in Application form as specified for progress payments and use Continuation Sheet for presenting the final statement of accounting.

E. Fill out and submit with application for final payment:
1. AIA G706 - Contractor's Affidavit of Payment of Debts and Claims.
2. AIA G706A - Contractor's Affidavit of Release of Liens.
3. AIA G707 - Consent of Surety Company to Final Payment.
4. Release Form 3 Conditional Waiver and Release Upon Final Payment.

F. Fill out and submit to Owner prior to receipt of final payment: Release Form 4 Unconditional Waiver and Release Upon Final Payment

1.07 SUBMITTAL PROCEDURE

A. Submit Applications for Payment to Architect at the times stipulated in the Agreement, and not more frequently than once per month, if not otherwise specified.

B. Submit electronic copies of each Application. See Section 01-3210 - Electronic Correspondence for instructions on eleectronic correspondence. Provide harcopies for signature when requested by the Owner.

C. Each Application shall include all of the items listed in the Article titled CONDITIONS OF PAYMENT.

1.08 CONDITIONS OF PAYMENT

A. Contractor submittal of the following items attached to the Application for Payment Transmittal following this Section with original signature of the Contractor's Project Superintendent, (notarized when the Project is subject to a Labor Compliance Plans) with each and every Application for Payment is a condition precedent to receipt of payment.
   1. Certification of Review of Payment Application by original signature on the Application for Payment Transmittal of Contractor's Superintendent, which shall also be notarized when the project is subject to a Labor Compliance Program. This document shall be counter-signed signifying review and approval by Owner's Inspector of Record.
   2. Application for Payment with schedule of values for the period during which Work was performed. (AIA G702 & AIA G703).
   3. Complete Certified Payroll demonstrating all man-hours expended in each applicable billing period, per scheduled work item or trade for each subcontract or trade. Architect is not required to review or comment on this information.
   4. Completed Daily Reports for the applicable billing period. Contractors shall maintain daily records of their activities, subcontractors present, number of workers representing each subcontractor, number of workers employed by the Contractor, and any other information deemed pertinent by the Contractor. Architect is not required to review or comment on this information.
   5. Completed Construction Progress Schedule Update for the applicable billing period, with all attachments required by the related section.
   6. Provide Certification by original notarized signature of Contractor's Project Superintendent on the Application for Payment Transmittal that the project is on schedule and that the Contractor has experienced no delays or schedule disruptions.
      a. In the event that a Contractor has experienced delay or disruption in the period for which payment is applied, Contractor must so indicate in writing with original signature on Contractor's company letterhead attached to this certification stating the nature of the delay or disruption, the event that precipitated said delay, and the method of recovering the lost time and maintaining the schedule recommended by the Contractor. Failure to so timely indicate delay or disruption shall be construed as a waiver of claim for damages for same.
   7. Certification by original notarized signature of Contractor's Project Superintendent on the Application for Payment Transmittal that Contractor has updated all As-Built Drawings in the Project Superintendent's office.
   8. Completed Conditional Waiver and Release Upon Progress Payment Forms for the Contractor and any and all Subcontractors, second and third tier subcontractors and material suppliers or service providers.
   9. Completed Unconditional Waiver and Release Upon Progress Payment Forms for previous billing period, if any. Contractor to provide one Unconditional Waiver and Release Upon Progress Payment for every corresponding Conditional Waiver and Release submitted with previous Application for Payment.

B. When Architect finds Application and all required submittal attachments properly completed and correct, he will transmit Certificate for Payment to Owner, with copy to Contractor. Incomplete or improper submittals will be returned to the Contractor without action.

1.09 REVIEW OF PROGRESS PAYMENT

A. Owner Approval: The Architect will, within seven (7) days after receipt of the Contractor's Application for Payment, either certify such payment or notify the Contractor in writing of the Architect's reasons for withholding certification in whole or in part as provided above.

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B. Architect's Review: The review of the Contractor's Application for Payment by the Architect is based on 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 Architect's knowledge, information, and belief, the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents, to results of subsequent tests and inspections, to minor deviations from the Contract Documents correctable prior to completion, and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the review by the Architect will not be a representation that the Architect has:
   1. Made exhaustive or continuous on-Site inspections to check the quality or quantity of the Work;
   2. Reviewed construction means, methods, techniques, sequences, or procedures;
   3. Reviewed copies of requisitions received from Subcontractors, material and equipment suppliers, and other data requested by the Owner to substantiate the Contractor's right to payment; or
   4. Made on examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.
   5. Reviewed or examined for accuracy or completeness any documentation submitted to comply with the Owner’s Labor Compliance Program.

1.10 DECISIONS TO WITHHOLD PAYMENT

A. Reasons to Withhold Payment: The Owner may decide to withhold payment in whole, or in part, to the extent reasonably necessary to protect the Owner if, in the Owner's opinion, the representations to the Owner required by the Article titled REVIEW OF PROGRESS PAYMENT cannot be made. The Owner may withhold payment, in whole, or in part, to such extent as may be necessary to protect the Owner from loss because of:
   1. Defective Work not remedied;
   2. Stop Notices filed, unless the Contractor at its sole expense provides a bond or other security satisfactory to the Owner in the amount of at least one hundred fifty percent (150%) of the claim, in a form satisfactory to the Owner, which protects the Owner against such claims;
   3. Liquidated damages assessed against the Contractor;
   4. Reasonable doubt that the Work can be completed for the unpaid balance of any Contract Price or by the completion date;
   5. Damage to the Owner, another contractor, or subcontractor;
   6. Unsatisfactory prosecution of the Work by the Contractor;
   7. Failure to store and properly secure materials;
   8. Failure of the Contractor to submit on a timely basis, proper and sufficient documentation required by the Contract Documents, including, without limitation, monthly progress schedules, shop drawings, submittal schedules, schedule of values, product data and samples, proposed product lists, executed change orders, and verified reports, certifications, certified payrolls , any submittals required by the Labor Compliance Program but not enumerated in this or other sections of these specifications, as applicable, and other submittals specified as conditions precedent to receipt of payment in the Article titled CONDITIONS OF PAYMENT;
   9. Failure of the Contractor to maintain record (as-built) drawings;
   10. Erroneous estimates by the Contractor of the value of the Work performed, or other false statements in an Application for Payment;
   11. Unauthorized deviations from the Contract Documents; or
   12. Failure of the Contractor to prosecute the Work in a timely manner in compliance with established progress schedules and completion dates.
   13. Failure of the Contractor to conform to the requirements of the Labor Compliance Plan as applicable.

B. Written Reasons for Withholding Provided: Upon request of the Contractor whose payment is deferred, the Contractor shall be given a written copy of Owner's reasons for withholding payment.

C. Payment After Cure: When the grounds for declining approval are removed, 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.

D. Labor Compliance Penalties: In addition to the remedy of withholding payment, the Owner may assess penalties as described in the Labor Compliance Program or as otherwise required by law for failure of the Contractor to conform to the requirements of the Labor Compliance Plan.

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1.11 SUBSTITUTION OF SECURITIES

A. In accordance with § 22300 of the Public Contract Code, the Owner will permit the substitution of securities for any monies withheld by the Owner to ensure performance under the Contract. At the request and expense of the Contractor, securities equivalent to the amount withheld shall be deposited with the Owner, or with a state or federally chartered bank as the escrow agent, who shall then pay such monies to the Contractor. Upon satisfactory completion of the Contract, the securities shall be returned to the Contractor.

B. Securities eligible for investment under this section shall include those listed in Government Code § 16430, bank or savings and loan certificates of deposit, interest-bearing, demand-deposit accounts, standby letters of credit, or any other security mutually agreed to by the Contractor and the Owner.

C. The Contractor shall be the beneficial owner of any securities substituted for monies withheld and shall receive any interest thereon.

D. The escrow agreement used for the purposes of this Section shall be substantially similar to the form set forth in Public Contract Code § 22300.

PART 2 PRODUCTS

2.01 NOT USED.

PART 3 EXECUTION

3.01 PROJECT FORMS

A. Project Forms referenced in this section are bound following this Section.

END OF SECTION

AIA® Document G702® – 1992

Application and Certificate for Payment

TO OWNER:

PROJECT:

APPLICATION NO:

PERIOD TO:

CONTRACT FOR:

CONTRACT DATE:

PROJECT NOS: / /

Distribution to:

OWNER ☐

ARCHITECT ☐

CONTRACTOR ☐

FIELD ☐

OTHER ☐

FROM CONTRACTOR:

VIA ARCHITECT:

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract.
AIA Document G703®, Continuation Sheet, is attached.

1. ORIGINAL CONTRACT SUM ..... $ _____

2. NET CHANGE BY CHANGE ORDERS ..... $ _____

3. CONTRACT SUM TO DATE *(Line 1 ± 2)* ..... $ _____

4. TOTAL COMPLETED & STORED TO DATE *(Column G on G703)* ..... $ _____

5. RETAINAGE:

a. _____% of Completed Work
(Columns D + E on G703) $ _____

b. _____% of Stored Material
(Column F on G703) $ _____

Total Retainage *(Lines 5a + 5b, or Total in Column I of G703)*..... $ _____

6. TOTAL EARNED LESS RETAINAGE ..... $ _____
(Line 4 minus Line 5 Total)

7. LESS PREVIOUS CERTIFICATES FOR PAYMENT ..... $ _____
(Line 6 from prior Certificate)

8. CURRENT PAYMENT DUE ..... $ _____

9. BALANCE TO FINISH, INCLUDING RETAINAGE
(Line 3 minus Line 6) $ _____

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner	$	$
Total approved this month	$	$
TOTAL	$	$
NET CHANGES by Change Order	$	

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: _____ Date: _____

State of:

County of:

Subscribed and sworn to before me this day of

Notary Public:

My commission expires:

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED ..... $ _____

(Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

ARCHITECT:

By: _____ Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

Sample

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AIA® Document G703® – 1992

Continuation Sheet

AIA Document G702®, Application and Certificate for Payment, or G732™, Application and Certificate for Payment, Construction Manager as Adviser Edition, containing Contractor's signed certification is attached. Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO:
APPLICATION DATE:
PERIOD TO:
ARCHITECT'S PROJECT NO:

A	B	C	D	E	F	G		H	I
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED		MATERIALS PRESENTLY STORED *(Not in D or E)*	TOTAL COMPLETED AND STORED TO DATE *(D+E+F)*	% *(G ÷ C)*	BALANCE TO FINISH *(C – G)*	RETAINAGE *(If variable rate)*
			FROM PREVIOUS APPLICATION *(D + E)*	THIS PERIOD					
	GRAND TOTAL								

Sample

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RELEASE FORM 1

CONDITIONAL WAIVER AND RELEASE UPON PROGRESS PAYMENT

(Civil Code Sec. 3262 (d) (1))

Upon receipt by the undersigned of a check from:

_____

(Maker of Check)

in the sum of $_____ payable to:_____

(Amount of Check) *(Payee or Payees of Check)*

and when the check has been properly endorsed and has been paid by the bank upon which it is drawn, this document shall become effective to release any mechanics' lien, stop notice, or bond right the undersigned has on the job of:_____

(Owner)

located at

_____

(Job Description)

to the following extent. This release covers a progress payment for labor, services, equipment or material furnished to:

_____

(Your Customer)

through:_____only and does not cover any retentions retained

(Date)

before or after the release date; extras furnished before the release date for which payment has not been received; extras or items furnished after the release date. Rights based upon work performed or items furnished under a written change order which has been fully executed by the parties prior to the release date are covered by this release unless specifically reserved by the claimant in this release. This release of any mechanics' lien, stop notice, or bond right shall not otherwise affect the contract rights, including rights between parties to the contract based upon a rescission, abandonment, or breach of the contract, or the right of the undersigned to recover compensation for furnished labor, services, equipment, or material covered by this release if that furnished labor, services, equipment, or material was not compensated by the progress payment. Before any recipient of this document relies on it, said party should verify evidence of payment to the undersigned.

DATED: _____ _____

(Company Name)

PHONE: _____ By:_____

(Signature)

_____ _____

(Contractor's License Number) (Title)

_____

(Street or P.O. Box)

_____

(City, State, Zip)

This form of release complies with the requirements of Civil Code Section 3262 (d) (1). It is to be used by a party who applies for a progress payment when the progress payment check has not yet cleared the bank. This release only becomes effective when the check. properly endorsed, has cleared the bank.

RELEASE FORM 2

UNCONDITIONAL WAIVER AND RELEASE UPON PROGRESS PAYMENT

(Civil Code Sec. 3262 (d) (2))

The undersigned has been paid and has received a progress payment in the sum of $_____ for labor, services, equipment, or material furnished to:

_____(*Your Customer*)

on the job of_____(*Owner*)

located at _____(*Job Description*)

and does hereby release any mechanics' lien, stop notice or bond right that the undersigned has on the above referenced job to the following extent. This release covers a progress payment for labor, services, equipment or materials furnished to:

_____(*Your Customer*)

through: _____*(Date)* only and does not cover any retentions retained before or after the release date: extras furnished before the release date for which payment has not been received; extras or items furnished after the release date. Rights based upon. work performed or items furnished under a written change order which has been fully executed by the parties prior to the release date are covered by this release unless specifically reserved by the claimant in this release. This release of any mechanics' lien, stop notice, or bond right shall not otherwise affect the contract rights, including rights between parties to the contract based upon a rescission, abandonment, or breach of the contract,, or the right of the undersigned to recover compensation for furnished labor, services, equipment, or material covered by this release if that furnished labor, services, equipment, or material was not compensated by the progress payment.

DATED: _____ _____

(Company Name)

PHONE: _____ By:_____

(Signature)

_____ _____

(Contractor's License Number) (Title)

_____

(Street or P.O. Box)

_____

(City, State, Zip)

NOTICE: THIS DOCUMENT WAIVES 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 RELEASE FORM.

NOTE: This form of release complies with the requirements of Civil Code Section 3262 (d) (2). It is to be used to release claims to the extent that a Progress Payment has actually been received by the releasing party.

RELEASE FORM.3

CONDITIONAL WAIVER AND RELEASE UPON FINAL PAYMENT

(Civil Code Sec. 3262 (d) (3))

Upon receipt by the undersigned of a check from

_____

in the sum of $ _____

Payable to

_____

and when the check has been properly endorsed and has been paid by the bank upon which it is drawn, this document shall become effective to release any mechanic's lien, stop notice, or bond right the undersigned has on the job of

_____(Owner)

Located at _____(Job description)

This release covers the final payment to the undersigned for all labor, services, equipment or materials furnished on the job, except for disputed claims for additional work in the amount of

$_____.

Before any recipient of this document relies on it, the party should verify evidence of payment to the undersigned.

Dated:_____

By: _____(Company Name)

_____(Title)

This form of release complies with the requirements of Civil Code Section 3262 (d) (3).. It is not effective until the check that constitutes final payment has been properly endorsed and has cleared the bank.

RELEASE FORM 4

UNCONDITIONAL WAIVER AND RELEASE UPON FINAL PAYMENT

(Civil Code Sec. 3262 (d) (4))

The undersigned has been paid in full for all labor, services, equipment or materials

furnished to_____(Your Customer)

on the job of _____(Owner)

located at _____(Job Description)

and does hereby waive and release any right to a mechanic's lien, stop notice or any right against a labor and material bond on the job, except for disputed claims for extra work in the amount of :

$ _____

Dated: _____

_____(Company Name)

By: _____(Title)

NOTICE: THIS DOCUMENT WAIVES RIGHTS UNCONDITIONALLY AND STATES THAT YOU HAVE BEEN PAID FOR GIVING UP THOSE RIGHTS. THIS DOCUMENT IS ENFORCEABLE AGAINST YOU IFYOU SIGN IT, EVEN IF YOU HAVE NOT BEEN PAID. IF YOU HAVE NOT BEEN PAID, USE CONDITIONAL RELEASE FORM.

NOTE: This form of release complies with the requirements of Civil Code Section 3262 (d) (4).

DRAFT

AIA® Document G706™ – 1994

Contractor's Affidavit of Payment of Debts and Claims

PROJECT: *(Name and address)* Test	ARCHITECT'S PROJECT NUMBER:	OWNER: ☐ ARCHITECT: ☐
	CONTRACT FOR: General Construction	CONTRACTOR: ☐
TO OWNER: *(Name and address)*	CONTRACT DATED:	SURETY: ☐ OTHER: ☐

STATE OF:
COUNTY OF:

The undersigned hereby certifies that, except as listed below, payment has been made in full and all obligations have otherwise been satisfied for all materials and equipment furnished, for all work, labor, and services performed, and for all known indebtedness and claims against the Contractor for damages arising in any manner in connection with the performance of the Contract referenced above for which the Owner or Owner's property might in any way be held responsible or encumbered.

EXCEPTIONS:

SUPPORTING DOCUMENTS ATTACHED HERETO:

1. Consent of Surety to Final Payment. Whenever Surety is involved, Consent of Surety is required. AIA Document G707, Consent of Surety, may be used for this purpose

Indicate Attachment ☐ Yes ☒ No

The following supporting documents should be attached hereto if required by the Owner:

1. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment.

2. Separate Releases or Waivers of Liens from Subcontractors and material and equipment suppliers, to the extent required by the Owner, accompanied by a list thereof.

3. Contractor's Affidavit of Release of Liens (AIA Document G706A).

CONTRACTOR: *(Name and address)*

BY: _____
(Signature of authorized representative)

_____
(Printed name and title)

Subscribed and sworn to before me on this date:

Notary Public:
My Commission Expires:

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DRAFT

AIA® Document G706A™ – 1994

Contractor's Affidavit of Release of Liens

PROJECT: *(Name and address)* Test	ARCHITECT'S **PROJECT NUMBER:**	OWNER: ☐ ARCHITECT: ☐
	CONTRACT FOR: General Construction	CONTRACTOR: ☐
TO OWNER: *(Name and address)*	CONTRACT DATED:	SURETY: ☐ OTHER: ☐

STATE OF:
COUNTY OF:

The undersigned hereby certifies that to the best of the undersigned's knowledge, information and belief, except as listed below, the Releases or Waivers of Lien attached hereto include the Contractor, all Subcontractors, all suppliers of materials and equipment, and all performers of Work, labor or services who have or may have liens or encumbrances or the right to assert liens or encumbrances against any property of the Owner arising in any manner out of the performance of the Contract referenced above.

EXCEPTIONS:

SUPPORTING DOCUMENTS ATTACHED HERETO:

1. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment.

2. Separate Releases or Waivers of Liens from Subcontractors and material and equipment suppliers, to the extent required by the Owner, accompanied by a list thereof.

CONTRACTOR: *(Name and address)*

BY:

(Signature of authorized representative)

(Printed name and title)

Subscribed and sworn to before me on this date:

Notary Public:
My Commission Expires:

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DRAFT

AIA® Document G707™ – 1994

Consent Of Surety to Final Payment

PROJECT: *(Name and address)* Test	ARCHITECT'S PROJECT NUMBER:	OWNER: ☐
	CONTRACT FOR: General Construction	ARCHITECT: ☐
TO OWNER: *(Name and address)*	CONTRACT DATED:	CONTRACTOR: ☐
		SURETY: ☐
		OTHER: ☐

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the
(Insert name and address of Surety)

, SURETY,

on bond of
(Insert name and address of Contractor)

, CONTRACTOR,

hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety of any of its obligations to
(Insert name and address of Owner)

, OWNER,

as set forth in said Surety's bond.

IN WITNESS WHEREOF, the Surety has hereunto set its hand on this date:
(Insert in writing the month followed by the numeric date and year.)

(Surety)

(Signature of authorized representative)

Attest:
(Seal):

(Printed name and title)

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SECTION 01-3000
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General administrative requirements.

B. Web-based project software service.

C. Progress photographs.

D. Submittal procedures.

1.02 RELATED REQUIREMENTS

A. Section 01-3100 - Project Management and Coordination: Meetings.

B. Section 01-3216 - Construction Progress Schedule: Form, content, and administration of schedules.

C. Section 01-3300 - Submittal Procedures: Submittal Procedures.

1.03 GENERAL ADMINISTRATIVE REQUIREMENTS

A. Comply with requirements of Section 01-7000 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.

B. Comply with requirements of Section 01-2600 - Contract Modification Procedures for modification submittals and procedures, change procedures, execution of change orders, and correlation of contractor submittals.

C. Make the following types of submittals to Architect:
   1. Requests for Information (RFI). As denoted in 01-2600 - Contract Modification Procedures.
   2. Requests for substitution. As denoted in 01-2500 - Substitution Procedures.
   3. Shop drawings, product data, and samples.
   4. Test and inspection reports.
   5. Design data.
   6. Manufacturer's instructions and field reports.
   7. Applications for payment and change order requests.
   8. Progress schedules.
   9. Coordination drawings.
   10. Correction Punch List and Final Correction Punch List for Substantial Completion.
   11. Closeout submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 WEB-BASED PROJECT SOFTWARE SERVICE

A. Refer to General Conditions of the project should a web-based project software system be a requirement of the contract.

B. A web-based project software service may also be used at the Contractor's choice, but must meet the requirements as outlined below.

C. Web-Based Project Software Service: Provide, administer, and use web-based project software to host and manage project communication and documentation.
   1. Include, at minimum, the following features:
      a. Project directory, including Owner, Contractor, subcontractors, Architect, Architect's consultants, and other entities involved in the project. Include names of contact persons and contact information for each entity.
      b. Access control for each entity and for each workflow process to determine each entity's digital rights to create, modify, view, and print documents.
      c. Workflow planning, allowing customization of workflow for each project entity.
      d. Creation, logging, tracking, and notification for project communications.
      e. Tracking of project communication statuses in real time, including timestamped response log.

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f. Procedures for viewing PDFs or similar file formats, allowing markups by each entity. Provide security features to lock markups against changes once submitted.
g. Processing and tracking of payment applications.
h. Processing and tracking of contract modifications.
i. Creation and distribution of meeting minutes.
j. Document management for drawings, specifications, and coordination drawings, including revision control.
k. Management of construction progress photographs.
l. Mobile device compatibility.
m. Creation of data analytics reports.
n. Creation and export of editable logs for software functions. Provide Owner, Architect, and Architect's consultants with rights and ability to download logs when requested.

2. Provide user licenses for use by Owner, Architect, Architect's consultants, and other entities involved in the project.
3. Comply with the software service's current published licensing agreements.
4. Training: Provide one-hour, web-based training session for users of software service. Further training is the responsibility of the user.
   a. Representatives of Owner are scheduled and included in this training.
5. Project Closeout: Architect determines when to terminate the software service for the project. Contractor is responsible for providing archive copies of the files for submission as part of the closeout documentation for review by the Architect and submission to the Owner.

3.02 PRECONTRACT MEETING - SEE SECTION 01-3100

3.03 PRECONSTRUCTION MEETING - SEE SECTION 01-3100

3.04 SITE MOBILIZATION MEETING - SEE SECTION 01-3100

3.05 PROGRESS MEETINGS - SEE SECTION 01-3100

3.06 CONSTRUCTION PROGRESS SCHEDULE - SEE SECTION 01-3216

3.07 PROGRESS PHOTOGRAPHS

A. Submit new photographs at least once a month, within 3 days after being taken.

B. Photography Type: Digital; electronic files.

C. Provide photographs of site and construction throughout progress of work produced by an experienced photographer, acceptable to Architect.

D. In addition to periodic, recurring views, take photographs of each of the following events:
   1. Completion of site clearing.
   2. Excavations in progress.
   3. Foundations in progress and upon completion.
   4. Structural framing in progress and upon completion.
   5. Enclosure of building, upon completion.
   6. Final completion, minimum of ten (10) photos.

E. Views:
   1. Provide non-aerial photographs from four cardinal views at each specified time, until date of Substantial Completion.
   2. Consult with Architect for instructions on views required.
   3. Provide factual presentation.
   4. Provide correct exposure and focus, high resolution and sharpness, maximum depth of field, and minimum distortion.

F. Digital Photographs: 24 bit color, minimum resolution of 1024 by 768, in JPG format; provide files unaltered by photo editing software.
   1. Delivery Medium: via email or in web-based project management software.
   2. File Naming: Include project identification, date and time of view, and view identification.
   3. PDF File: Assemble all photos into printable pages in PDF format, with 2 to 3 photos per page, each photo labeled with file name; one PDF file per submittal.

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3.08 SUBMITTAL PROCEDURES - SEE SECTION 01-3300

END OF SECTION

SECTION 01-3100
PROJECT MANAGEMENT AND COORDINATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Coordination and project conditions.

B. Related work.

C. Discrepancies.

D. Examination.

E. Pre Contract meeting.

F. Preconstruction meeting.

G. Site mobilization meeting.

H. Progress meetings.

I. Preinstallation meetings.

J. Project coordination meetings.

1.02 COORDINATION AND PROJECT CONDITIONS

A. Coordinate scheduling, submittals, and Work of the various portions of the Contract Documents to assure efficient and orderly sequence of installation of interdependent construction elements.

B. Coordinate hours and days of Work with local ordinances and requirements.

C. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

1. Coordinate space requirements, supports, and installation of mechanical and electrical Work which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
2. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

D. Coordinate completion and clean up of Work of separate sections in preparation for Substantial Completion.

1. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.
2. Contractor shall coordinate Work with work to be performed by the Owner's separate contractors as specified in related documents.

1.03 RELATED WORK

A. Referencing specification sections in "Related Work" articles is for convenience only and shall not be construed as to limit the coordination of the Contract Documents to referenced sections.

B. Documents affecting the work of any section include, but are not limited to, General Conditions, Supplementary Conditions, and Sections in Divison 1 of these Specifications.

C. Work in any section may relate to other work in these documents. The Contractor is responsible to coordinate all work.

1.04 DISCREPANCIES

A. In the event of discrepancy in the Contract Documents or if uncovered conditions are not as anticipated, immediately notify the Architect and secure needed direction.

B. Do not proceed in areas of discrepancy until such discrepancies have been fully resolved.

C. Before starting work, verify governing dimensions at the premises, and examine adjoining work on which this work is dependent. No "Extra" or additional compensation will be allowed on account of differences between actual measurements and dimensions shown. Submit differences discovered during the work to Architect for interpretation before proceeding with the associated work.

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D. Any time extension or any increase or decrease of cost resulting from such changes will be adjusted in the manner provided in the General Conditions.

1.05 EXAMINATION

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequentWork.
   1. Beginning new Work means acceptance of existing conditions.
   2. Examine and verify specific conditions described in individual specification sections.

B. Verify that utility services are available, of the correct characteristics, and in the correct location.

1.06 PRECONTRACT MEETING

A. Architect will schedule a meeting with District and apparent low bidder prior to award of Contract.

B. Attendance Required: Owner, Architect, and Contractor.

C. Agenda: Execution of the Notice of Award, Review of documents required for Preconstruction Meeting.

1.07 PRECONSTRUCTION MEETING

A. Architect will schedule a meeting after Notice of Award.

B. Attendance Required: Owner, Architect and Contractor.

C. Agenda:
   1. Designation of personnel representing the parties in Contract, and the Architect/Engineer.
   2. Execution of Owner-Contractor Agreement.
   3. Submission of executed bonds and insurance certificates.
   4. Distribution of Contract Documents.
   5. Submission of schedule of values.
   6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
   7. Scheduling.

D. Architect will record minutes and distribute copies within five days after meeting to participants, with two copies to Owner, Contractor, participants, and those affected by decisions made.

1.08 SITE MOBILIZATION MEETING

A. Architect will schedule a meeting at the Project site prior to Contractor occupancy.

B. Attendance Required: Owner, Architect, Special Consultants, Contractor, Contractor's Superintendent and major Subcontractors.

C. Agenda:
   1. Use of premises by Owner and Contractor.
   2. Owner's requirements and partial occupancy.
   3. Construction facilities and controls provided by Owner.
   4. Temporary utilities provided by Owner.
   5. Security and housekeeping procedures.
   6. Schedules.
   7. Application for payment procedures.
   8. Procedures for testing.
   9. Procedures for maintaining record documents.
   10. Requirements for start-up of equipment.
   11. Inspection and acceptance of equipment put into service during construction period.

D. Architect will record minutes and distribute copies within five days after meeting to participants, with two copies to participants, and those affected by decisions made.

1.09 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the Work at bi-weekly intervals. Provide and discuss “two-week look ahead” schedule reports at these progress meetings. Coordinate progress payments and revised schedule, to monthly meeting attended by an officer of the construction company.

B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.

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C. Attendance Required: Job Superintendent, major Subcontractors and suppliers, Owner, Inspector of Record and Architect as appropriate to agenda topics for each meeting.

D. Architect will record minutes and distribute copies within five days after meeting to participants, with two copies to Owner, Contractor, participants, and those affected by decisions made.

1.10 PREINSTALLATION MEETINGS

A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.

B. Require attendance of parties directly affecting, or affected by, work of the specific section.

C. Notify Architect four days in advance of meeting date.

D. Prepare agenda and preside at meeting:
   1. Review conditions of installation, preparation and installation procedures.
   2. Review coordination with related work.

E. Architect will record minutes and distribute copies within five days after meeting to participants, with copies to Owner, Contractor and participants.

1.11 PROJECT COORDINATION MEETINGS

A. Contractor will schedule project coordination meetings to be held weekly to coordinate on-going construction issues.

B. Attendance Required: Contractor, job superintendent, Subcontractors, as required.

C. Contractor will prepare agenda and preside at meeting.

D. Contractor will record minutes and distribute copies within five days after meeting to participants, Architect and those affected by decisions made.

E. Copies of the minutes to Architect are required as part of submission of Application for Payment.

PART 2 PRODUCTS

2.01 NOT USED.

PART 3 EXECUTION

3.01 NOT USED.

END OF SECTION

SECTION 01-3210
ELECTRONIC CORRESPONDENCE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Administrative procedures for Project Electronic Correspondence.

1.02 RELATED SECTIONS

A. Pertinent sections specifying Project Management and Coordination, Submittals and Modification Procedures, Payments.

B. Document - Contract (Agreement Between Owner and Contractor).

C. Document - General Conditions: Progress Payments, Retainages and Final Payment., Applicability of Labor Compliance Program.

D. Section 01-1100 - Summary of Work.

E. Section 01-2500 - Substitution Procedures.

F. Section 01-2600 - Contract Modification Procedures.

G. Section 01-2900 - Payment Procedures.

H. Section 01-3000 - Administrative Requirements.

I. Section 01-3100 - Project Management and Coordination.

J. Section 01-3216 - Construction Progress Schedule.

K. Section 01-3300 - Submittal Procedures.

L. Section 01-6000 - Product Requirements.

M. Section 01-7700 - Closeout Procedures .

N. Technical sections of other divisions.

1.03 PERFORMANCE REQUIREMENTS

A. Project Correspondence shall be conducted by electronic means, except for documents requiring original signatures, or physical samples required for color or texture selection.

B. Provide project correspondence in specified formats.

C. Cost Responsibility: Each party shall be responsible for scanning and printing costs for creating electronic or hard copy correspondence that they may require.
   1. Architect or Owner will not provide printing or scanning.
   2. Include all costs for email, scanning and printing in the Contract Sum.

1.04 SUBMITTALS

A. See Section 01-3300 - Submittal Procedures for submittal procedures.

B. See individual sections for submittals required.

PART 2 PRODUCTS

2.01 FILE FORMATS AND VERSIONS

A. Formats - General: All electronic communications will be conducted in one of the following formats. Non-conforming formats will be rejected.
   1. Word Processing: "*.docx" format, Microsoft Word as part of Office 365..
   2. Spreadsheet: "*.xlsx" format, Microsoft Excel as part of Office 365.
   3. PDF (Portable Document Format): Adobe Acrobat, Current Edition.
   4. Drawings: AutoCAD "*.dwg", 2019 Version, when required an Electronic File Transfer Form shall be executed.
   5. Schedule: See Section 01-3216 - Construction Progress Schedule.

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2.02 SOFTWARE AND VERSIONS

A. Software - General: The following products are known to produce documents in the required formats. Other software is acceptable subject to capacity to produce required formats.

B. Word Processing: Any version capable of saving in specified format.
   1. Microsoft Word, www.microsoft.com.
   2. Open Office, www.openoffice.org. Open Office is free of charge, no cost to download.

C. Spreadsheet:
   1. Microsoft Excel, www.microsoft.com.
   2. Open Office, www.openoffice.org. Open Office is free of charge, no cost to download.

D. PDF: Any version capable of saving in specified format.

E. Drawings: AutoCAD, version 2019. No known equal.

F. Schedule: See Section 01-3216 - Construction Progress Schedule.

G. Internet Browser:
   1. Google Chrome.
   2. Mozilla Firefox.
   3. Apple Safari.

2.03 DESIGNATED PERSONNEL

A. All Parties shall designate a primary and a secondary contact for project correspondence. Exception; Project Inspector.

B. All correspondence shall copy the secondary contact.

2.04 CORRESPONDENCE ROUTING

A. Contractor shall correspond directly with the Architect.
   1. Owner and Project Inspector may be copied.
   2. Do not correspond directly with Owner, Inspector, or Architect's consultants.
   3. Architect may grant the Contractor or subcontractor(s) authority to correspond directly with Architect or Architect's consultants should the need arise and shall be on a limited basis.

B. Architect shall correspond directly with the Contractor.
   1. Owner and Project Inspector will be copied.
   2. Architect will not exchange Project Correspondence with subcontractors or parties other than the Contractor. Contractor may grant Architect authority to correspond with subcontractor(s) if the need arises.
   3. Architect's consultants will not correspond directly with Contractor, subcontractors or parties other than the Contractor. Contractor may grant Architect's consultants authority to correspond with subcontractor(s) if the need arises.

PART 3 EXECUTION

3.01 CONTRACTOR ELECTRONIC CORRESPONDENCE PROCEDURES

A. All correspondence in this Article shall be electronic format. A single copy is sufficient.

B. Correspondence not listed in this Article shall be in conventional format. Provide in quantities noted in related sections.

C. General Correspondence (Letters, memos, punchlists, etc. other than described below): Submit via e-mail.
   1. Submit in unsecured PDF format on Contractor's letterhead.

D. Change Order Requests (COR): Submit via e-mail.
   1. Contractor shall submit CORs in unsecured PDF format as outlined in Section 01-2600. Cost back-up information (receipts, invoices, payroll, etc.) shall be included as unsecured PDF as part of the submission.
   2. Architect will respond on the COR form and create a secure PDF for distribution.

E. Request For Information (RFI): Submit via e-mail.
   1. Contractor shall submit RFIs in unsecured PDF format as outlined in Section 01-2600.
   2. Architect will respond on the RFI form and create a secure PDF for distribution.

F. Substitution Request Form (SRF): Submit via e-mail. Exception: physical samples if requested by Architect.

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1. Contractor shall submit SRFs in unsecured PDF format as outlined in Section 01-2500. Product back-up information demonstrating compliance with specified attributes shall be included as unsecured PDFs.
2. Architect will respond on the SRF form, with additional documents as required and create a secure PDF for distribution.

G. Submittals: Submit via e-mail. When too large to transmit via e-mail, provide e-mail with submittal cover sheet and provide link to download documents from a cloud based file sharing or transfer service. Exception: Physical samples, as denoted in the appropriate section and requested by the Architect, structural calculations, shop drawings or other items required to have original stamps and signatures of Contractor's delegated design engineers. Submit these signature items by conventional means.
   1. Contractor shall submit Submittals in unsecured PDF as outlined in Sections 01-3300 and 01-6000 and each individual applicable specification section. Product back-up information and shop drawings demonstrating compliance with specified attributes shall be in unsecured PDF.
   2. Architect will respond on their Submittal Review form, with additional documents as required and create a secure PDF for distribution.

H. Schedule of Values: Submit via e-mail.
   1. Contractor shall submit in unsecured PDF format as outlined in Section 01-2900.
   2. Architect will respond on their Submittal Review form, with additional documents as required and create a secure PDF for distribution.

I. Construction Progress Schedule: Submit via e-mail.
   1. Contractor shall submit in unsecured PDF format and native file format of scheduling software as outlined in Section 01-3216.
   2. Architect will respond on his letterhead, as required, with additional documents as required and create a secure PDF for distribution.

3.02 ARCHITECT'S ELECTRONIC CORRESPONDENCE PROCEDURES

A. All correspondence in this Article shall be electronic format.

B. Correspondence not listed in this Article shall be in conventional format.

C. General Correspondence (Letters, memos, punchlists, etc. other than described below): Distributed via e-mail.
   1. Architect will distribute in unsecured PDF format on Architect's letterhead.

D. Meeting Agendas & Minutes and Field Reports: Distributed via e-mail.
   1. Architect will distribute secure PDF's.

E. Architect's Supplemental Instructions: Distributed via e-mail.
   1. Architect will distribute secure PDF's.

F. Requests For Proposal: Distributed via e-mail.
   1. Architect will distribute secure PDF's.

G. Change Orders: Initial copies for review will be distributed via e-mail.
   1. Architect will distribute unsecure PDF's.
   2. The actual Change Order document will be prepared by the Architect as a hard copy and distributed by conventional means for physical original signatures.

H. Review of Applications for Progress Payment & Final Payment: Distributed via e-mail.
   1. See Section 01-2900 for additional infromation, procedures, and requirements.

END OF SECTION

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SECTION 01-3216
CONSTRUCTION PROGRESS SCHEDULE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Prepare cost loaded Construction schedule using the critical path method (CPM) demonstrating fulfillment of all contract requirements.

B. Submittals and Distribution.

C. Review.

D. Delay Contingency (Rain days).

1.02 RELATED SECTIONS

A. Document – Contract: Contract Duration and provisions for liquidated damages.

B. Section 01-2900 - Payment Procedures: Schedule of values.

C. Section 01-3210 - Electronic Correspondence: Requirements and procedures for electronic correspondence.

D. Section 01-3300 - Submittal Procedures: Schedule of Submittals.

1.03 DEFINITIONS

A. Critical Path Method (CPM): A method of planning and scheduling a construction project where activities are arranged based on activity relationships and network calculations to determine when activities can be performed and the critical path of the Project.

B. Critical Path: The longest continuous chain of activities through the network schedule that establishes the minimum overall project duration.

C. Network Diagram: A graphic diagram of a network schedule, showing the activities and activity relationships.

D. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
   1. Critical activities are activities on the critical path.
   2. Predecessor activity is an activity that must be completed before a given activity can be started.
   3. Event: An event is the starting or ending point of an activity.
   4. Milestone: A key or critical point in time for reference or measurement.
   5. Float is the measure of leeway in activity performance. Float time shall accrue to the Owner and to the Owner's benefit.
      a. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the following activity.
      b. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned project completion date.

1.04 SUBMITTALS

A. Submit the following in accordance with Section 01-3300 - Submittal Procedures:
   1. Schedule of Submittals.
   2. Preliminary Schedule.
   3. Periodic Schedule Update with each Application for Payment.

B. Submit initial schedules within fifteen (15) calendar days after date of Owner-Contractor Agreement. After review, resubmit required revised data within five days.

C. Submit revised Progress Schedules with each Application for Payment. Submittal of revised Progress Schedule is a condition precedent to receipt of Payment.

D. Submit the number of opaque reproductions which Contractor requires, plus three copies which will be retained by Architect. In addition, submit each schedule submittal, including initial submittal, in the Scheduling software’s complete and original software file format on Compact Disc – Read Only (CD-ROM). Provide one such disk with each schedule submittal. Architect will retain CD-ROM electronic versions.

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E. Submit “two-week look ahead” report in bar-chart format indicating activities scheduled to occur in the up-coming two week period. Provide and discuss these submittals at the progress meetings specified in Section 01039 and additionally as requested by the Architect, Owner or Inspector.

1.05 QUALITY ASSURANCE

A. Scheduler: Contractor's personnel or Specialist Consultant to the Contractor specializing in CPM scheduling with three years minimum experience in scheduling construction work of a complexity comparable to this Project, and having use of computer facilities capable of delivering a detailed graphic printout within forty-eight (48) hours of request.

B. Designate, in writing, an authorized representative who will be responsible for the preparation of the CPM schedule and progress of the project. The Contractor's representative shall have direct project control and complete authority to act on behalf of the Contractor in fulfilling the Construction Schedule requirements.

C. Within 5 calendar days from Award of Contract, submit demonstration of competence in use of CPM scheduling, including evidence of the use of CPM scheduling as specified above. In the event of failure to satisfy Architect of competence, the Contractor shall be required to employ a qualified CPM consultant to be approved by the Architect.
   1. The cost of revision to the CPM schedule, not resulting from authorized contract changes, shall be the responsibility of the Contractor.

1.06 SCHEDULE OF INSPECTIONS AND TESTS

A. To assist the Owner in the process of obtaining qualified and responsive quotations for testing and inspection services for the Project, submit with Contractor’s baseline schedule, based on the requirements of the Contract Documents, local regulatory codes and the Contractor’s expertise in its field, a schedule of required inspections and tests which includes the following information as a minimum:
   1. Name of Special Inspection or Test;
   2. Quantity or frequency of Special Inspections or Tests;
   3. Projected Dates upon which Special Inspections and Tests are required.

B. Provide schedule of required inspections and tests at the same time required for submission of Contractor’s Baseline Schedule as specified in the pertinent section(s) of Division 01.

1.07 CONSTRUCTION SCHEDULE

A. Prepare the Construction Schedule using the network analysis diagram system known as the critical path method (CPM). Follow procedures outlined in AGC (CPSM).
   1. Proceed with preparation of the network diagram immediately following notification of Contract Award.
   2. Follow the steps necessary to complete development of the network diagram in sufficient time to submit the CPM Schedule so it can be accepted for use no later than 30 days after commencement of the Work.
   3. Conduct educational workshops to train and inform key project personnel, including subcontractors' personnel, in proper methods of providing data and using CPM schedule.
   4. Establish procedures for monitoring and updating the CPM Schedule and for reporting progress. Use "one working day" as the unit of time.

B. CPM Schedule Preparation: Prepare a list of all activities involved in the Project. Include a list of activities required to complete the Work. Provide the best data available for generation of the network diagram and the CPM Schedule.
   1. Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities.
   2. Indicate estimated times for the following activities to be performed:
      a. Preparation and processing of submittals.
      b. Purchase of materials.
      c. Delivery.
      d. Fabrication.
      e. Installation.
   3. Include in the network diagram, separate activities showing:
      a. Preparation and submittal of shop drawings.
      b. Architect's review of shop drawings, including review and selection of colors.
      c. Procurement and delivery of materials and equipment.

   d. Installation and testing of major equipment.
   e. Required delivery for all Owner supplied, Contractor installed items.
4. Include a legend showing:
   a. Each location or area code number and the place or location it references.
   b. Each responsibility or trade code number and the trade or entity it references.
5. Indicate each building or separate area as a separately scheduled element of the Work.
6. Using the preliminary network diagram, prepare a skeleton network to identify probable critical paths.
7. Where the work of several trades is combined into one activity, the Contractor shall furnish, for each such combined activity, the cost breakdown of each trade on sheets separate from the network diagram. The sum of the costs for each trade shall equal the total dollar value of each such combined activity.
8. Include specified construction delay contingency duration as the final activity preceding project completion.
9. Indicate overtime, weekend and premium-time work, if required to complete project within specified duration.

C. Submit the following supporting data with the submittal of the original CPM construction schedule. Any changes to this information shall be submitted with successive updates and revisions.
1. The proposed number of working days per week.
2. The holidays to be observed during the duration of the contract (by day, month, and year).
3. The planned number of shifts per day.
4. The number of hours per shift.
5. The planned usage of major construction equipment on the site, on a monthly basis.
6. The average weekly manpower usage for each trade to be employed on the project.

D. Processing: Enter prepared data on the processing system. Process data to produce output data or a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM Schedule within the limitations of Contract Time.

E. Format: Display the full network on a single sheet of stable transparency, or other reproducible media, of sufficient width to show data clearly for the entire construction period.
1. Mark the critical path. Locate the critical path near the center of the network; locate paths with the most float near the edges.
2. Sub networks on separate sheets are permissible for activities clearly off the critical path.

F. Initial Issue: Prepare the initial issue of the CPM Schedule network diagram from a listing of straight "early start-total float" sort. Identify critical activities. Prepare tabulated reports to show the following:
1. The Contractor or subcontractor and Work or activity.
2. Description of the activity.
3. Principal events of that activity.
4. Immediate preceding and succeeding activities.
5. Early, late and actual start dates.
6. Early, late and actual finish dates.
7. Activity duration in working days.
8. Total float and free float time. Float time shall accrue to the Owner and to the Owner's benefit.
9. Average size of work force.
10. Monetary value of activity (coordinated with the Schedule of Values).

G. Value Summaries: Prepare 2 cumulative value listings, sorted by finish dates.
1. In first listing, tabulate the following:
2. Activity number.
3. Early finish date.
4. Dollar value.
5. Cumulative dollar value.
6. In second listing, tabulate the following:
7. Activity number.
8. Late finish date.
9. Dollar value.
10. Cumulative value.

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11. In subsequent issues of both listings, substitute actual finish dates for activities completed as of listing date.

H. Prepare listing for ease of comparison with payment requests: coordinate timing with progress meetings.
1. In both value summary listings, tabulate "actual percent complete" and "cumulative value completed" with total at bottom.
2. Submit value summary printouts following each regularly scheduled progress meeting.
3. Provide monthly project cash flow analysis upon District's request at no additional cost.
4. Sequence the work to enable completion of scopes of work identified in intermediate milestones so that separate contracts can be mobilized prior to completion of this contract. Refer to Article titled MILESTONE SCHEDULE in Part 3 of this Section.

1.08 REVISIONS TO SCHEDULES

A. Graphically indicate progress of each activity to date of submittal, and projected completion date of each activity as referenced to the baseline date for that activity as shown in the initial schedule.

B. Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.

C. Insert Delay Contingency activities into the critical path at the point where they occur, incorporating the mutally agreed duration per the Article on DELAY CONTINGENCY. Shorten the initial Delay Contingency activity by this mutually agreed duration.

D. Provide narrative report to define problem areas, anticipated delays, and impact on Schedule. Report corrective action taken, or proposed, and its effect including the effect of changes on schedules of separate contractors.

E. Revision to the CPM schedule may require reallocation of costs. Revised activity cost data shall be submitted with revised CPM schedules as necessary.

F. After each monthly update or revision, the Contractor shall submit, to the Architect, one complete set of reproducible transparencies of the last accepted CPM schedule, each marked up in red, showing all revisions and changes in accordance with the monthly review meeting.

G. Within five (5) working days after receipt of notice from the Architect, the Contractor shall submit a revised CPM schedule for any of the following reasons:
1. When delay in completion of any activity, or group of activities, indicates an overrun of the contract time or milestone requirement by 20 working days or ten percent (10%) of the remaining duration, whichever is less.
2. Delays in submittals or deliveries or work stoppage are encountered which make replanning or rescheduling of the work necessary.
3. The schedule does not represent the actual prosecution and progress of the project as being performed in the field.

1.09 SUBMITTALS

A. Submit initial schedules within fifteen (15) calendar days after date of Owner-Contractor Agreement. After review, resubmit required revised data within five (5) days.

B. Submit revised Progress Schedules with each Application for Payment. Submittal of revised Progress Schedule is a condition precedent to receipt of Payment.

C. Submit electronic copies of the Schedule per the requirements in Section 01-3210 - Electronic Correspondence. Contractor to submit each schedule submittal, including initial submittal, in the Scheduling software’s complete and original software file format on USB Thumb Drive. Architect will retain electronic versions.

D. Submit “two-week look ahead” report in bar-chart format indicating activities scheduled to occur in the up-coming two week period. Provide and discuss these submittals at the progress meetings specified in Section and additionally as requested by the Architect, Owner or Inspector.

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1.10 PROGRESS REPORTING, UPDATING AND REVISIONS:

A. On a date mutually agreed upon by the Architect and the Contractor, a job site progress meeting will be held each month at which time the CPM schedule will be reviewed and updated. Attendees of this meeting shall include the Architect, the General Contractor and subcontractors, if requested by the Architect. The Contractor shall have his copy of the Payment Request form and all other data required by the Contract Documents accurately filled in and completed prior to this meeting. Job Progress and the CPM schedule will be reviewed to verify:
   1. Payment due to the Contractor, based on percentage complete of items in the submitted Payment Request form.
   2. Logic, time and cost data for change order work that is to be incorporated into the CPM schedule or Payment Request form.
   3. Status of as-built record drawings and as-built record specifications.
   4. The Contractor shall submit a narrative report as a part of his monthly progress review and update.

1.11 REVIEW

A. Architect's review is limited to verification of compliance with the Contract start and end dates and inclusion of Contract Time adjustments.

B. To the extent that the CPM schedule or any revised CPM schedule shows anything not jointly agreed upon, it shall be deemed to have not been accepted by the Architect. Failure to include any element of work required for the performance of this contract shall not excuse the Contractor from completing all work required within any applicable completion date of each phase notwithstanding the Architect's acceptance of the CPM schedule.

C. Acceptance of any revised CPM schedule and all supporting data is contingent upon compliance with all other paragraphs of this section and any other previous agreements or requirements with or by the Architect.

1.12 DELAY CONTINGENCY

A. Each Contractor submitting a bid proposal shall make allowance in its proposal and Project Schedule for ten (10) work days for delay to the critical path due to inclement weather or delay due to circumstances beyond the Contractor’s control.

B. All costs and expenses for the project for the full duration of this delay contingency shall be included in the bid price. No claim for additional costs may be made for project expenses incurred during the specified delay contingency.

C. Extension of time for delay due to inclement weather or circumstances beyond the Contractor’s control will be allowed only in the event that the total number of critical path work days delayed exceeds the number of days allowed in paragraph A of this Article. No time extension will be allowed for delays that do not affect the critical path as set forth in the master schedule.

D. No time extension will be allowed for inclement weather occurring on any Saturday, Sunday, National or other holiday, including holidays recognized by specific unions, crafts or trades. Exception: If any day defined above is scheduled as a work day under the provisions of the Article CONTRACTOR’S RESPONSIBILITY FOR COMPLETION and approved by the Architect and Owner, or as otherwise approved by the Owner.

E. A rain day is defined as any day that receives .130” or greater rainfall as reported by a local weather service acceptable to the Architect and is cause for work to be stopped. For the purposes of this project, Rain Days must meet this definition and be mutually approved and agreed upon on the day that a rain day occurs by the Contractor and the Architect. Contractor will post and maintain, in a conspicuous location, a calendar of so-approved rain days at the Contractor’s jobsite office.

1.13 CONTRACTOR'S RESPONSIBILITY FOR COMPLETION:

A. The Contractor agrees that whenever it becomes apparent from the monthly progress review meeting or the schedule that contract completion dates will not be met, he shall take some or all of the following action at no additional cost to the Owner:
   1. Increase construction manpower in such quantities and crafts as will bring the progress of the work into conformance with all other requirements of this section.
   2. Increase the number of working hours per shift, shifts per working day, workdays per week, the amount of construction equipment or any combination of the foregoing, to bring the scheduling and progress of the work into conformance with all requirements of the Contract Documents.

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3. Reschedule the work under this contract in conformance with all other contract requirements to demonstrate completion of the contract work within the contract time.
    a. Compensate owner for costs incurred to the Owner for rescheduling or additional testing, inspection, or architectural services made necessary by the Contractor's actions.

1.14 ADJUSTMENT OF THE CONTRACT TIME:

A. The Contract Time will be adjusted only for causes specified in the Contract Documents.

B. Contractor's Request for Adjustment: Submit each request in writing in the form of a Change Order Request in accordance with procedures specified in Section 01-2600 - Contract Modification Procedures. Include all of the following:
    1. Network Analysis or Bar Chart schedule data and supporting evidence.
    2. Justification for the delay in narrative form.
    3. Network Analysis (CPM) Schedule Requirements:
        a. A sub network showing all CPM logic revisions, duration changes and cost changes for the work in question and its relationship to other activities on the CPM schedule.
        b. Request only number of days justified by network analysis, not the number of days required for an individual change or event.
    4. Promptly provide additional supporting information as the Architect may determine to be necessary.
    5. Requests not conforming to these requirements are deemed to be waived.

C. The Contract Time will be not be adjusted for any reason, including weather, until the latest accepted Progress Schedule clearly displays that the Contractor has completely used all the float time available for the Work. Delays in activities which are not on the critical path in the CPM schedule according to the latest accepted schedule, will not be the basis for an adjustment to the Contract Time.

D. The Architect's determination of an adjustment of the Contract Time shall be based upon the latest schedule accepted at the time of the proposed change (or alleged delay) and all other relevant information.

E. The Architect shall review each request and advise the Contractor of his decision in writing within a reasonable time after receipt of a request and supporting evidence.

F. Submit an updated Progress Schedule whenever the actual field progress of the work does not conform to the accepted schedule in force at the time of theproposed change (or alleged delay). If the Architect determines such an update appropriately reflects the progress of the Work, include the update in the next monthly update release of the Progress Schedule.

1.15 DISTRIBUTION

A. Distribute copies of reviewed schedules to Project site file, Subcontractors, suppliers, and other concerned parties.
    1. Schedule may be distributed according to requirements in Section 01-3210 - Electronic Correspondence.

B. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

C. Architect will distribute copies to the Owner and the Inspector of Record (IOR).

1.16 SCHEDULING SYSTEMS

A. Prepare schedules using professional quality scheduling software systems designed for this purpose, capable of producing results specified.

B. Acceptable products:
    1. Alternative products may be considered by Owner. Submit to Architect and Owner for review and approval.

1.17 NOT USED

END OF SECTION

SECTION 01-3300
SUBMITTAL PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Submittals required by the Contract Documents. Revise and re-submit as necessary to establish compliance with Contract Documents.
   1. Provide a satisfactory submittal by the second submittal. If repeated resubmittals are required, the Owner may backcharge the Contractor costs of review and processing unanticipated submittals.

B. Forward initial submittals to Architect for review within 35 days of Notice to Proceed.

C. Minimum Architect's Review Duration per Submittal: Refer to requirements in Document - General Conditions.

1.02 WORK NOT INCLUDED

A. Submittals which are not required will not be reviewed by the Architect.

B. The Contractor may require subcontractors to provide drawings, setting diagrams or similar information as part of the coordination of the Work. The Architect will not review this data.

C. Safety Data Sheets (SDS) - Limitation of Review: Certain Submittals require provision of these documents by the Contractor. These documents contain information necessary for operation of the facility. The Architect's review of these submittals is limited to noting inclusion of the document for the Owner's use. No further review or comment on SDS documents by Architect shall be performed or inferred.

1.03 RELATED WORK

A. Document - Contract: Liquidated damages for late submittals.

B. Section 01-3216 - Construction Progress Schedule: List of submittals, dates for submission and dates that reviewed submittals will be required shall be designated in the Construction Schedule.

C. See Section 01-3210 - Electronic Correspondence: additional requirements for electronic transmittal.

1.04 QUALITY ASSURANCE

A. Submit to the Architect for review, product literature, samples and shop drawings as specified or required to fully describe every item proposed for incorporation in the work. Only approved items may be used.

B. Prior to submittal, review and coordinate all aspects of each item. Verify that each item and it's submittals conform to Contract Document requirements. Contractor assumes full responsibility for coordinating and verifying information, quantities and dimensions shown in submittals.

C. Submittals shall include:
   1. Date and revision dates.
   2. Project title and number.
   3. The names of:
      a. Architect/Engineer.
      b. Contractor.
      c. Subcontractor.
      d. Supplier.
      e. Manufacturer.
      f. Separate detailer when pertinent.
   4. Identification of product or material.
   5. Relation to adjacent structure or materials.
   6. Field dimensions, clearly identified as such.
   7. Specification section number.
   8. Applicable standards, such as ASTM number or Federal Specification.
   9. A blank space, 8 inches x 3 inches, for the Contractor and Architect stamps.
   10. Identification of deviations from Contract Documents.
   11. Contractor's stamp, initialed or signed, certifying to review of submittal, verification of field measurements and compliance with Contract Documents.
   12. Signature of and calculations by an engineer, licensed in California, where required by specifications.

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D. Indicate review and approval of each submittal prior to transmittal to Architect by affixing Contractor's stamp, initialed or signed, certifying :
   1. Review of submittal
   2. Verification of compliance with requirements of the Contract Documents.
   3. Verification of compatibility with other submittals, shop drawings, substitutions, and work of other trades.
   4. Coordination with existing job conditions and field construction criteria.
   5. Field verification of dimensions.

E. Architect will review Contractor's stamp language. Revise language in accordance with Architect's comments and provide new stamp if required by Architect.

F. Architect will return unreviewed any submittal not stamped by the Contractor in accordance with the above.

G. Direct Architect's attention to all deviations from the Contract Documents . Deviations not so noted shall be considered unreviewed.

H. Direct Architect's attention to any changes made in submittals other than those specifically requested by Architect. Changes not so noted shall be considered unreviewed.

I. Work shall not be fabricated, nor material shipped to project site prior to the distribution of approved submittals from the Architect.

1.05 SUBMITTALS

A. Make electronic submittals as outlined in Section 01-3210 of shop drawings, product data, samples, substitution requests, meeting minutes and other items required by the Contract Documents in accordance with the provisions of this Section

B. Submittals shall include all technical and performance data necessary for the Architect to properly evaluate the submittal. Provide physical samples if requested by Architect, whether expressly specified or not.

C. Incomplete submittals will be return to the Contractor without review. Contractor shall be responsible for delays incurred by incomplete, multiple reviews or rejected submittals.

D. Provide only one make or brand of any product proposed.

E. If electronic submittals are not utilized, Contractor is to submit number of copies required to be returned, plus three (3) copies which will be retained by the Architect, or as specified below. Copies in excess of five (5) will not be returned.
   1. Submit three (3) additional copies of submittals indicated to receive Deferred Approval review.

F. Review Contract Documents and submit initial list of submittals to Architect with Preliminary Construction Schedule as required in Section 01-3216. Establish priority of initial submittals jointly with Architect, based on specified minimum review durations and expected lead times for fabrication and procurement.

G. Stagger submittals for items or products with shorter lead times, reduced coordination needs with other work, or which will be needed later in the construction schedule. Prioritize and coordinate submittals only according to jointly-agreed initial list. Items requiring longer lead times shall be submitted first.

H. Do not provide submittals out-of-sequence. Submittals forwarded earlier than indicated on the jointly agreed schedule may be retained by the Architect for later processing. Required submittals which are not shown on the jointly-agreed schedule, or forwarded at times varying from the agreed achedule will be processed at the Architect’s option. Minimum review period may be extended by the Architect for early or out-of-sequence submittals.

PART 2 PRODUCTS

2.01 SHOP DRAWINGS

A. Shop drawings are to be drawn at large scale, fully detailed and with all materials and stock or purchased components fully identified. Shop drawings are to be submitted when specified and to illustrate every custom fabricated item or assembly.

B. When electronic submittals are not utilized, follow the requirements outlined below for hardcopy shop drawings.
   1. Drawings in excess of 11 inches x 17 inches shall be submitted as specified below.
   2. Drawings larger than 24 inches x 36 inches will be rejected and returned for re-formatting in smaller size. Architect will not review shop drawings larger than 24 inches by 36 inches. Select drawing scales accordingly.

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3. Types of prints required:
   a. Submit shop drawings in the form of three (3) reproducible original of each sheet.
4. Review comments will be made on the original which will be retained by Architect. Architect will make copies for distribution to the Owner and Inspector of Record as they require, and for the Contractor in the numbers indicated by the Contractor, up to three. Initial submittal originals will not be returned.

C. Contractor shall accept reviewed submittals in electronic format as outlined in Section 01-3210. Or if hardcopies have been submitted, shall accept reviewed submittals in the conditions delivered by the Architect. Architect reserves right to manage submittal review and stamping in any manner deemed expedient by the Architect and acceptable to the Owner and Authority Having Jursidiction. These conditions of distribution may include, but not be limited to:
   1. Stamping/signature of the cover page only, not each drawing, document or item submitted.
   2. Summarizing complex comments in the form of memo or summary notation, without copying or enumeration of each and every occurence of a comment. Such copying and enumeration shall be performed by the Contractor.
   3. Conditional or limited degree of approval/acceptance such as "Color/Texture Only" and similar reservations.
   4. Contractor shall ensure that all reviewed Submittals are distributed intact with all comments, memos and attachments in place as received from the Architect. Owner nor Architect will not be responsible for errors due to failure to coordinate or record Architect or Engineer comments.

D. Identify each drawing with project name, the Owner's name and account number, the Architect's name and job number, the Contractor's name and the specification section number and drawing detail reference number relating to the work shown.

2.02 PRODUCT DATA

A. Submit detailed technical literature fully describing every product or item proposed for use including manufacturers and items specified. Include manufacturer's detailed specifications, drawings, photographs, performance criteria, installation instructions, test data, samples of colors and finishes and other information required to fully describe the item.
   1. Modify standard product data to delete information which is not pertinent.
   2. Provide additional information which is specifically applicable.

B. Mark all submittals indicating items, options, and finishes proposed, and referencing project specification section and paragraph covering the work in question. Indicate as follows:
   1. Performance characteristics and capacities.
   2. Dimensions and/or clearances required.
   3. Wiring, piping and control diagrams.

2.03 SAMPLES

A. Provide samples identical to the precise article proposed, illustrating functional characteristics with all related parts and attachments. Indicate full range of color, textures and patterns.

B. Identify samples as described Article titled IDENTIFICATION OF SUBMITTALS below. Tag or label samples or transmit in bags or containers with tags and labels. Identify by specification section, submittal numbers and contract.

C. Submit number of samples as indicated above. Where samples of large complete items such as light fixtures, hardware, etc. are required, one sample will suffice.

D. Samples become the property of the Owner and may not be returned following review, at the Owner's option.

2.04 COLORS AND PATTERNS

A. Submit color and pattern selections for all products offering a choice of these attributes unless a specific color or pattern is referenced in the Contract Documents.

B. Submit within 35 days of Notice of Award a list of all required color selections organized by product, including manufacturer and model. Include samples of manufacturer's complete color range for all products.

C. Architect will not select colors or patterns until samples of all items requiring selections have been submitted. Architect will not make partial color selections.

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D. Failure to submit all color selections as specified above, thus requiring additional unanticipated time for the Architect to make selections will not be basis for extension of Contract Time.

E. Architect will make color selections within 30 working days following complete submittal of samples. This period will commence with the receipt of the latest incremental submittal, as applicable.

F. Architect will issue Color Schedule.

PART 3 EXECUTION

3.01 IDENTIFICATION OF SUBMITTALS

A. Number submittals consecutively. Refer to submittal by this number in subsequent correspondence and submittals.
   1. Transmit resubmittals under new cover. Use submittal number of original submittal with decimal numeric suffix. Increment suffix by one digit for each subsequent resubmittal of identical items (23.1, 47.2, etc.). Cite original submittal number for reference (i.e. 109).
   2. Do not transmit new submittals with decimal suffix.

B. Transmittal letter for each submittal shall show all information required for identification and checking.

C. Include submittal number on first page and elsewhere as required for identification.

D. Maintain log of submittals and status. Furnish copies to the Architect and Inspector upon request.

3.02 GROUPING OF SUBMITTALS

A. Transmit submittals in groups containing all associated items to ensure availability of information during review. Refer to more specific requirements in the technical divisions.

B. Do not submit partial submittals.

C. Incomplete or partial submittals may be returned for enhancement. No extension of time will be allowed for delays related to incomplete submittals.

3.03 SCHEDULING OF SUBMITTALS

A. Transmit submittals sufficiently in advance of installation for required review, revisions, resubmittals and delivery. Include time required for transmittal by regular mail between the parties involved. No extension of time will be allowed for delays related to late submittals.

3.04 ARCHITECT'S REVIEW OF SUBMITTALS

A. Submittals will be reviewed and stamped by the Architect "No exceptions taken," "Submit Specified Item" or "Make Corrections Noted" to indicate full or conditional approval or "Revise and Resubmit" or "Rejected" to indicate conditional or complete disapproval. Terms are defined as follows:
   1. No Exceptions Taken: Accepted subject to its compatibility with future submittals and additional partial submittals for portions of the work not covered in this submittal. Does not constitute approval or deletion of specified or required items not shown in the partial submittal.
   2. Submit Specified Item: Submit to the Architect the items indicated for review.
   3. Make Corrections Noted: Same as 1., except that minor corrections as noted shall be made by the Contractor. No resubmittal required.
   4. Revise and Resubmit: Rejected because of major inconsistencies or errors which shall be resolved or corrected by the Contractor prior to subsequent review by the Architect.
   5. Rejected: Submitted material does not conform to plans and specifications in major respect. For example, wrong size, model, capacity or material. Resubmit.
   6. Receipt Acknowledged. Received, recorded and distributed without further action.

B. Submittals reviewed by the Architect which have been stamped shall be deemed to have the following language affixed and made a part thereof, regardless of the initial or subsequent readability of the actual stamp.
   1. Corrections or comments made on submittals during this review do not relieve the contractor from compliance with the requirements of the drawings and specifications. This check is for review of general conformance with the design concept of the project and general compliance with information given in the Contract Documents. The contractor is responsible for confirming and correlating all quantities and dimensions, selection of fabrication processes and techniques of construction, coordinating the work of the trades; and performing the work in a safe and satisfactory manner.

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C. Architect’s review of submittals shall be undertaken with reasonable promptness, while allowing sufficient time in the Architect’s professional judgement to permit adequate review.

D. Architect's review of submittals has, as a primary objective, to assist in the completion of the project on time and in conformance with the Contract requirements by permitting review of material and fabricated items prior to ordering. Architect's review of submittals is based only on the data presented and extends only to conformance with general design intent and information contained in the Contract Documents.

E. Architect's approval of submittals does not constitute final acceptance or unqualified approval of items or work proposed or put in place, nor does it constitute acceptance of responsibility for the accuracy, coordination or completeness of submittals. Architect's approval of submittals does not relieve the Contractor from the responsibility for errors, omissions, or compliance with all the requirements of the Contract Documents.

F. Reimbursement of the Architect's costs for review:
   1. Architect will record all time and expenses incurred to review submittals requiring more than two reviews.
   2. Contractor shall reimburse the Architect promptly upon receipt of the Architect's billing and that of the Architect's consultants at standard billing rates for all time and expenses incurred in unanticipated reviews.
   3. Upon failure of Contractor to reimburse Architect for such review, with the authorization of the Owner, amounts due the Architect will be deducted from amounts due the Contractor.

G. Architect's review of submittals does not change the Contract in any manner.

3.05 RESUBMITTAL

A. Make all corrections or revisions required by reviewer's comments at Contractor’s expense and resubmit as initially specified above. No additional costs will be authorized for corrections or revisions.

B. Product data and shop drawings:
   1. Revise initial drawings or data and resubmit as initially specified.
   2. Indicate changes which have been made other than those requested by reviewer.

C. Submit new samples as initially specified.

3.06 DISTRIBUTION

END OF SECTION

SECTION 01-4000
QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Submittals.

B. References and standards.

C. Testing and inspection agencies and services.

D. Control of installation.

E. Tolerances.

F. Manufacturers' field services.

G. Defect Assessment.

1.02 RELATED REQUIREMENTS

A. Section 01-4523 - Testing and Inspection Services.

1.03 SUBMITTALS

A. See Section 01-3000 - Administrative Requirements, for submittal procedures.

B. Test Reports: After each test/inspection, promptly submit one copies of report to Architect and to Contractor.
   1. Include:
      a. Date issued.
      b. Project title and number.
      c. Name of inspector.
      d. Date and time of sampling or inspection.
      e. Identification of product and specifications section.
      f. Location in the Project.
      g. Type of test/inspection.
      h. Date of test/inspection.
      i. Results of test/inspection.
      j. Compliance with Contract Documents.
      k. When requested by Architect, provide interpretation of results.
   2. Test report submittals are for Architect's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.

C. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.
   1. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
   2. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect.

D. Manufacturer's Field Reports: Submit reports for Architect's benefit as contract administrator or for Owner.
   1. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents.

1.04 REFERENCES AND STANDARDS

A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Comply with reference standard of date of issue current on of Authority Having Jurisdiction approval, except where a specific date is established by applicable code.

C. Obtain copies of standards where required by product specification sections.

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D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.

E. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.

F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect shall be altered from Contract Documents by mention or inference otherwise in any reference document.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.

B. Comply with manufacturers' instructions, including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.

D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Have work performed by persons qualified to produce required and specified quality.

F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

3.03 TESTING AND INSPECTION

A. Testing Agency Duties:
   1. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
   2. Perform specified sampling and testing of products in accordance with specified standards.
   3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
   4. Promptly notify Architect and Contractor of observed irregularities or non-compliance of Work or products.
   5. Perform additional tests and inspections required by Architect.
   6. Submit reports of all tests/inspections specified.

B. Limits on Testing/Inspection Agency Authority:
   1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
   2. Agency may not approve or accept any portion of the Work.
   3. Agency may not assume any duties of Contractor.
   4. Agency has no authority to stop the Work.

C. Contractor Responsibilities:
   1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
   2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
   3. Provide incidental labor and facilities:
      a. To provide access to Work to be tested/inspected.
      b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
      c. To facilitate tests/inspections.
      d. To provide storage and curing of test samples.

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4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.

D. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by Architect.

E. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

3.04 MANUFACTURERS' FIELD SERVICES

A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust, and balance equipment as applicable, and to initiate instructions when necessary.

B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.05 DEFECT ASSESSMENT

A. Replace Work or portions of the Work not complying with specified requirements.

END OF SECTION

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SECTION 01-4200
REFERENCES

PART 1 GENERAL

1.01 SUMMARY

A. General: This section specifies procedural and administrative requirements for compliance with governing regulations and the codes and standards imposed upon the work. These requirements include the obtaining of permits, licenses, inspections, releases and similar documentation, as well as payments, statements and similar requirements associated with regulations, codes, and standards.
   1. "Regulations" is defined to include laws, statutes, ordinances and lawful orders issued by governing authorities, as well as those rules, conventions and agreements within the construction industry which effectively control the performance of the work regardless of whether they are lawfully imposed by governing authority or not.

B. Governing Regulations: Refer to General and Supplementary Conditions for requirements related to compliance with governing regulations.

1.02 RELATED DOCUMENTS

A. This section applies to all Contract Documents, Drawings, General and Supplementary Conditions and other Division 01 Specification sections and all technical specifications.

B. All Drawings and General and Supplementary Conditions and other Division 01 Specification sections, and every section of the specifications which lists or refers to a referenced standard.

1.03 REFERENCES

A. CSI/CSC MF - Masterformat; 2016.

1.04 DEFINITIONS

A. General Explanation: A substantial amount of specification language constitutes definitions for terms found in other contract documents, including the drawings. (Drawings shall be recognized as diagrammatic in nature and not completely descriptive of the requirements indicated thereon.) Certain terms used in contract documents may be defined in this article. Definitions and explanations of this section are not necessarily either complete or exclusive, but are general for the work to the extent they are not stated more explicitly in another element of contract documents.

B. General Requirements: The provisions or requirements of Division 01 sections apply to entire work of Contract and, where so indicated, to other elements which are included in project.

C. Indicated: A cross-reference to graphic representations, notes or schedules on drawings, to other paragraphs or schedules in the specifications, and to similar means of recording requirements in contract documents. Where terms such as "shown," "noted," "scheduled," and "specified" are used in lieu of "indicated," it is for purpose of helping reader locate cross-reference, and no limitation of location is intended except as specifically noted by direct reference.

D. Directed, Requested, Etc.: Where not otherwise explained, terms such as "directed," "requested," "authorized," "selected," "approved," "required," "accepted," and "permitted" mean "directed by Architect/Engineer," "requested by "Architect/Engineer," and similar phrases. Such implied meaning shall not be interpreted to extend the Architect's/Engineer's responsibility into the Contractor's area of construction supervision or other duty of the Contractor enumerated in the Contract.

E. Approve: Where used in conjunction with Architect's/Engineer's response to submittals, requests, applications, inquiries, reports and claims by Contractor, the meaning of term "approved" will be held to limitations of Architect's/Engineer's responsibilities and duties as specified in General and Supplementary Conditions. In no case will "approval" by Architect/Engineer be interpreted as a release of Contractor from responsibilities to fulfill requirements of contract documents.

F. Project Site: The term "project site" is defined as the space available to Contractor for performance of the work. The extent of project site is shown on the drawings, and may or may not be identical with the description of land upon which the project is to be built.

G. Furnish: Except as otherwise defined in greater detail, term "furnish" is used to mean supply and deliver to project site, ready for unloading, unpacking, assembly, installation, etc., as applicable in each instance.

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H. Install: Except as otherwise defined in greater detail, term "install" is used to describe operations at project site including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning and similar operations, as applicable in each instance.

I. Provide: Except as otherwise defined in greater detail, term "provide" means furnish and install, complete and ready for intended use, as applicable in each instance.

J. Installer: The entity (person or firm) engaged by Contractor, or its subcontractor or subcontractor for performance of a particular unit of work at the project site, including installation, erection, application and similar required operations. Such entities (installers) shall be expert in operations they are engaged to perform.

K. Testing Agency (or Laboratory): An independent entity engaged to perform specific inspections or tests of the work, either at project site or elsewhere; and to report and (if required) interpret results of those inspections or tests.

L. Products: Materials, systems and equipment.

M. Approved Equal, Or Equal: As approved and accepted by the Architect.

N. Shall: The term "shall" is mandatory.

O. As Required, As Necessary, etc.: Words of similar import mean "as required by the Contract Documents" or "essential to the completion of the Work" in the context of application.

P. Concealed: Embedded in masonry or other construction, installed within furred spaces, within double partitions or above suspended ceilings, in trenches, in crawl spaces, or in enclosures.

Q. Exposed: Not installed underground or "concealed" as defined above, including work and surfaces open in whole or in part to the exterior or weather.

R. Visible: Not "concealed", as defined above.

S. Work: Both labor and materials, and as defined below.

T. The Contract Documents:

1. The Contract Documents consist of the Contract, any addenda thereto, the completed Bid Form, the completed Bond and Insurance forms, the Notice Inviting Bids, the Instructions to Bidders, the General Conditions, the Supplementary General Conditions, the Labor Compliance Program, if any, the Technical Specifications, the Drawings and the Bidder's Questionnaire. All modification(s) amending or extending the work shall be as binding as if originally included in the Contract Documents. A Modification is a written amendment to the Contract signed by both parties, a Change Order, a Construction Change Directive, or a written order for a minor change in the Work issued by the Architect. The Contract Documents are complementary, and each obligation of the Contractor, Subcontractors, material or equipment suppliers in any one shall be binding as if specified in all.
2. The Contract:
    a. The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a written Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind between the Architect and Contractor, between the Owner and any Subcontractor or Sub-subcontractor, or between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.
3. The Work:
    a. The Work shall include the initial obligation of any Contractor or Subcontractor, who performs any portion of the Work, to visit the Site of the proposed Work, a continuing obligation after the commencement of the Work to fully acquaint and familiarize itself with the conditions as they exist and the character of the operations to be carried on under the Contract Documents, and make such investigation as it may see fit so that it shall fully understand the facilities, physical conditions, and restrictions attending the Work under the Contract Documents. Each such Contractor or Subcontractor shall also thoroughly examine and become familiar with the Drawings, Specifications, and associated bid documents. The "Site" refers to the grounds of the Project as defined in the Contract Documents and such adjacent lands as may be directly affected by the performance of the Work.
4. The Project:

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a. The Project is the total construction of the Work performed in accordance with the Contract Documents in whole or in part and which may include construction by the Owner or by separate Contractors.

5. The Drawings:
   a. The Drawings are graphic and pictorial portions of the Contract Documents prepared for the Project and approved changes thereto, wherever located and whenever issued, showing the design, location, and scope of the Work, generally including plans, elevations, sections, details, schedules, and diagrams as drawn or approved by the Architect, in the full original size as initially issued, without reduction or enlargement, scanning, translation, or conversion to electronic or other data format.
6. The Specifications:
   a. The Specifications are that portion of the Contact Documents consisting of the written requirements for material, equipment, construction systems, instructions, quality assurance standards, workmanship, and performance of related services, as prepared or approved by the Architect, in the full original size as initially issued, without reduction or enlargement, scanning, translation, or conversion to electronic or other data format.
7. The Project Manual
   a. The Project Manual is the volume usually assembled for the Work which may include, without limitation, the bidding requirements, sample forms, Conditions of the Contract, and Specifications.

1.05 QUALITY ASSURANCE

A. For products or workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Conform to reference standard of date of issue current on date of AHJ Approval, except where a specific date is established by applicable code.

C. Obtain copies of standards when required by the Contract Documents.
   1. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.

D. Should specified reference standards conflict with Contract Documents, request clarification from the Architect before proceeding.

E. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of the Architect shall be altered by the Contract Documents by mention or inference otherwise in any reference document.

1.06 FORMAT AND SPECIFICATION EXPLANATIONS

A. Format Explanation: The format of principal portions of these specifications is described in the following paragraphs. Although some portions of these specifications may not be in complete compliance with these formats, no particular significance will be attached to such compliance or non-compliance.
   1. Division: A standard category of construction specifications, as defined by CSI/CSC MF "Master List of Numbers and Titles for the Construction Industry".
      a. The Division number or title does not limit meaning or content of a section, nor is fully descriptive of the requirements specified therein, nor is an integral part of the text.
      b. Division groupings consist of individual sections grouped together with other sections of similar or related work as delineated in MasterFormat and as determined at the Architect's option utilizing CSI/CSC MF as a guideline.
      c. Divisions do not correspond to, nor shall be construed to influence trade jurisdictions or assignment of a particular scope to a particular trade or subcontractor. The Contractor is obligated to construct all work as specified.
   2. Section: A portion of the specifications covering one or more segments of the total project, included in the Project Manual to meet project requirements. Each Section is a portion of a Division. Individual sections are grouped together with other sections of similar or related work groupings known as "divisions."
      a. Each section is identified by a 6 digit number and descriptive title (name).
      b. The section number or title does not limit meaning or content of a section, nor is fully descriptive of the requirements specified therein, nor is an integral part of the text.

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c. The section numbers and titles are determined at the Architect's option, utilizing CSI/CSC MF as a guideline.
d. Sections do not correspond to, nor shall be construed to influence trade jurisdictions or assignment of a particular scope to a particular trade or subcontractor. The Contractor is obligated to construct all work as specified.

B. Division Numbering:
1. Divisions are numbered according to CSI/CSC MF CSI MasterFormat "Master List of Numbers and Titles for the Construction Industry".
2. Division numbering may be used to facilitate cross-references in the contract documents. Consult listing of Divisions at the beginning of the Project Manual to determine numbers and names of Project Manual Divisions in Contract Documents.

C. Section and Document Numbering:
1. Contract documents are generally numbered according to CSI/CSC MF "Master List of Numbers and Titles for the Construction Industry". Numbers and titles are selected at the Architect's option and may vary from strict CSI format.
2. Section numbering may be used to facilitate cross-references in the Contract Documents at the Architect's option. Sections are placed in Project Manual in numeric sequence; however, numbering sequence is not complete, and listing of sections at beginning of Project Manual must be consulted to determine numbers and names of specification sections in contract documents. The Contractor shall perform all work and coordinate the work of the various trades.

D. Section Format: Each section of specifications has been subdivided into 3 "parts" (PART 1 - GENERAL, PART 2 - PRODUCTS and PART 3 - EXECUTION) to promote uniformity and convenience, in general accordance withCSI/CSC MF.
1. Some sections may not require the use of all three parts and such omission is an intentional act of the Architect intended to reduce redundancy and promote clarity.
2. Subdivision of a section into PARTS does not limit the meaning of, and are not an integral part of text specifying requirements.

E. Subordination of Text: Portions of specification text are subordinated to other portions in the following manner (lowest level to highest):
1. Indented (from left margin) paragraphs and lines of text are subordinate to preceding text which is not indented, or which is indented by a lesser amount.
2. Paragraphs and lines of text are subordinate to sub-article titles, which are printed in upper/lower-case lettering.
3. Sub-articles are the subordinate to article titles, which are printed in uppercase lettering.
4. Subordination (if any) of certain sections (or portions of sections) to other sections is described within those sections.

F. Related Sections: Specification sections may list other sections of other divisions which may include work referenced in that section or otherwise related. This information is not part of the Specification Section, does not expand or limit the scope of the Section, or of the Contract Work and is provided at the Architect's sole option for the convenience of readers of the Contract Documents. No limitation of scope shall be inferred by the listing, or failure to list, any given section as related to any other given section and does not affect the Contractor's duty to coordinate and provide all work specified.

G. Underscoring, where used, is strictly to assist the reader of specification text in scanning text for key words (for quick recall). No emphasis on or relative importance of text is intended where underscoring is used.

H. Imperative language is used generally in specifications. Except as otherwise indicated, requirements expressed imperatively are to be performed by Contractor. At the option of the Architect and for clarity of reading at certain locations, contrasting subjective language may be used to describe responsibilities which must be fulfilled indirectly by Contractor, or when so noted, by others.

I. Page Numbering: Pages are numbered independently for each section and are recorded in the listing of sections (Index or Table of Contents) in Project Manual. The section number is shown together with the page number at the bottom of each page to facilitate the location of text in the Project Manual.

J. Project Identification: Project name (either complete or abbreviated) is recorded at top of each page of specifications to minimize possible misuse of specifications, or confusion with other project specifications.

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K. Specification Content: Because of methods by which the project specification has been produced, certain general characteristics of content, and conventions in use of language are explained as follows:
   1. Specifying Methods: The techniques or methods of specifying to record requirements varies throughout text, and may include "prescriptive," "open generic-descriptive," "compliance with standards," "performance," "proprietary," or a combination of these. The method used for specifying one unit of work has no bearing on requirements for another unit of work.
   2. Overlapping and Conflicting Requirements: Where compliance with two or more industry standards or sets of requirements is specified, and overlapping of those different standards or requirements establishes different or conflicting minimums or levels of quality, the most stringent requirement is intended and will be enforced, unless specifically detailed language written into the contract documents clearly indicates that a less stringent requirement is to be fulfilled. Refer apparently-equal-but-different requirements, and uncertainties as to which level of quality is more stringent, to Architect for a decision before proceeding.
   3. Contractor's Options: Except for overlapping or conflicting requirements, where more than one set of requirements are specified, for a particular unit of work, option is intended to be Contractor's regardless of whether or not it is specifically indicated as such.

L. Minimum Quality/Quantity: In every instance, quality level or quantity shown or specified is intended to be the minimum for the work to be performed or provided. Except as otherwise specifically indicated, actual work may either comply exactly with that minimum (within specified tolerances), or may exceed that minimum within reasonable limits. In complying with these requirements, indicated numeric values are either minimums or maximums as noted or as appropriate for context of the requirements. Refer instances of uncertainty to Architect/ Engineer for decision before proceeding.

M. Specialists, Assignments: In certain instances, specification text requires (or implies) that specific work is to be assigned to specialists or expert entities, who must be engaged for the performance of that work. Such assignments shall be recognized as special requirements over which the Contractor has no choice or option. These requirements should not be interpreted so as to conflict with the enforcement of building codes and similar regulations governing the work; they are also not intended to interfere with local union jurisdiction settlements and similar conventions. Such assignments are intended to establish which party or entity involved in a specific unit of work is recognized as "expert" for indicated construction processes or operations. Nevertheless, the final responsibility for fulfillment of entire set of contract requirements remains with the Contractor.

N. Trades: Except as otherwise indicated, the use of titles such as "carpentry" in specification text, implies neither that the work must be performed by an accredited or unionized tradesperson of corresponding generic name (such as "carpenter"), nor that specified requirements apply exclusively to work by tradespersons of that corresponding generic name.

O. Abbreviations: The language of specifications and other contract documents is of the abbreviated type in certain instances, and implies words and meanings which will be appropriately interpreted. Actual word abbreviations of a self-explanatory nature have been included in the texts. Specific abbreviations have been established, principally for lengthy technical terminology and primarily in conjunction with coordination of specification requirements with notations on drawings and in schedules. These are frequently defined in section at first instance of use. Trade association names and titles of general standards are frequently abbreviated.
   1. Singular words will be interpreted as plural and plural words will be interpreted as singular where applicable and where full context of the contract documents so indicates.

1.07 DRAWING SYMBOLS

A. General: Except as otherwise indicated, graphic symbols used on drawings are those symbols recognized in the construction industry for purposes indicated. Where not otherwise noted, symbols are defined by "Architectural Graphic Standards," published by John Wiley & Sons, Inc., Current Edition.

B. Mechanical/Electrical Drawings: Graphic symbols used on mechanical and electrical drawings are generally aligned with symbols recommended by ASHRAE. Where appropriate, these symbols are supplemented by more specific symbols as recommended by other recognized technical associations including ASME, ASPE, IEEE and similar organizations. Refer instances of uncertainty to the Architect/Engineer for clarification before proceeding.

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1.08 INDUSTRY STANDARDS

A. General Applicability of Standards: Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, applicable standards of the construction industry have the same force and effect (and are made a part of contract documents by reference) as if copied directly into the contract documents, or as if published copies were bound herewith. Refer to other contract documents for resolution of overlapping and conflicting requirements which result from the application of several different industry standards to the same unit of work. Refer to individual unit of work sections for indications of which specialized codes and standard the Contractor must keep at the project site, available for reference.
   1. Referenced standards (referenced directly in contract documents or by governing regulations) have precedence over non-referenced standards which are recognized in industry for applicability to work.
   2. Non-referenced standards are hereby defined to have no particular applicability to the work, except as general requirements of whether the work complies with standards recognized in the construction industry.

B. Publication Dates: Except as otherwise indicated, where compliance with an industry standard is required, comply with standard in effect as of current on date of AHJ Approvalof contract documents.
   1. Updated Standards: At the request of the Architect/Engineer, Contractor or governing authority, submit a change order proposal where an applicable industry code or standard has been revised and reissued after the date of the contract documents and before the performance of the work affected. The Architect/Engineer will decide whether to issue the change order to proceed with the updated standard.

C. Copies of Standards: The contract documents require that each entity performing work be experienced in that part of the work being performed. Each entity is also required to be familiar with recognized industry standards applicable to that part of the work. Copies of applicable standards are not bound with the contract documents.
   1. Where copies of standards are needed for proper performance of the work, the Contractor is required to obtain such copies directly from the publication source.
   2. Although certain copies of standards needed for enforcement of the requirements may be required submittals, the Architect/Engineer reserves the right to require the Contractor to submit additional copies of these standards as necessary for enforcement of the requirements.

1.09 GOVERNING REGULATIONS/AUTHORITIES

A. General: The procedure followed by Architect/Engineer has been to contact governing authorities where necessary to obtain information needed for the purpose of preparing contract documents; recognizing that such information may or may not be of significance in relation to Contractor's responsibilities for performing the work. Contact governing authorities directly for necessary information and decisions having a bearing on performance of the work.

B. Trade Union Jurisdiction: It is a procedural requirement that the Contractor maintain, and require prime subcontractors to maintain, complete current information on jurisdictional matters, regulations actions, and pending actions, as applicable to the work.
   1. Discuss new developments at appropriate project meetings at the earliest feasible dates.
   2. Record information of relevance along with the action agreed upon.
   3. The manner in which contract documents have been organized and subdivided is not intended to be an indication of jurisdictional or trade union agreements.
   4. Assign and subcontract the work, and employ tradesmen and laborers, in a manner which will not unduly risk jurisdictional disputes of a kind which could result in conflicts, delays, claims and losses in the performance of the work.

1.10 SUBMITTALS

A. Permits, Licenses and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgements, and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing upon performance of the work.

PART 2 PRODUCTS

2.01 NOT USED

PART 3 EXECUTION

3.01 NOT USED

END OF SECTION

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SECTION 01-4523
TESTING AND INSPECTION SERVICES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Selection and payment of Testing and Inspection Agency
B. Testing and Inspection Agency submittals.
C. Testing and Inspection Agency responsibilities.
D. Testing and Inspection Agency reports.
E. Limits on Testing and Inspection authority.
F. Contractor’s Responsibilities.
G. Architect’s Responsibilities.

1.02 RELATED SECTIONS

A. Drawings and Contract Documents, including General and Supplemental Conditions.
B. Section 01-3216 - Construction Progress Schedule.
C. Section 01-3300 - Submittal Procedures: Manufacturer's Certificates.
D. Section 01-4000 - Quality Requirements.
E. Section 01-7700 - Closeout Procedures: Project Record Documents.
F. Pertinent Sections of other Divisions requiring tests and inspections.

1.03 REFERENCES

A. ASTM C802 - Standard Practice for Conducting an Interlaboratory Test Program to Determine the Precision of Test Methods for Construction; 2014
B. ASTM C1021 - Standard Practice for Laboratories Engaged in Testing of Building Sealants; 2008 (Reapproved 2023).
C. ASTM C1077 - Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation; 2025a.
D. ASTM C1093 - Standard Practice for Accreditation of Testing Agencies for Masonry; 2023.
E. ASTM D543 - Standard Practices for Evaluating the Resistance of Plastics to Chemical Reagents; 2021.
F. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction; 2023.
G. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection; 2025a.
H. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing; 2021.
I. ASTM E699 - Standard Specification for Agencies Involved in Testing, Quality Assurance, and Evaluating of Manufactured Building Components; 2016.
J. CBSC (CAC) - California Administrative Code, California Code of Regulations, Title 24, Part 1; Most Recent Edition Adopted by the California Building Standards Commission.
K. CBSC (CBC) - California Building Code, California Code of Regulations, Title 24, Part 2, Volumes 1 & 2; Most Recent Edition Adopted by the California Building Standards Commission.

1.04 SUBMITTALS

A. Testing Agency Qualifications:
    1. Prior to start of Work, submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
    2. Prior to start of work, Testing Agency and Labatory are to submit required documentation from the Division of the State Architect indicating their approval through the DSA Labratory Evaluation and Acceptance Program.

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3. Submit copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.

B. Test Reports: After each test/inspection promptly submit electronic copies per Section 01-3210 to Architect, Inspector of Record, and Contractor, and additional receipients as noted.
   1. Include:
      a. Date issued.
      b. Project title and number.
      c. Name of inspector.
      d. Date and time of sampling or inspection.
      e. Identification of product and specifications section.
      f. Location in the Project.
      g. Type of test/inspection.
      h. Date of test/inspection.
      i. Results of test/inspection.
      j. Conformance with Contract Documents.
      k. When requested by Architect, provide interpretation of results.
   2. Test reports are submitted for Architect's knowledge as contract administrator or for the Owner, for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

C. Manufacturer's Field Reports: Submit reports for Architect's benefit as contract administrator or for Owner.
   1. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

1.05 SELECTION AND PAYMENT

A. Owner shall select Testing Agency as outlined in the General Conditions.
   1. For projects under the authority of the Division of the State Architect (DSA), selected Testing Agency must be approved through DSA's Labratory Evaluation and Acceptance Program.
   2. Testing Agency shall conform to the following standards and requirements as appilcable to the scope of the testing: ASTM C802, ASTM C1021, ASTM C1077, ASTM C1093, ASTM D3740, ASTM D543, ASTM E543, ASTM E699, and any additional requirements set forth in the CBSC (CAC), CBSC (CBC), and any other applicable regulation for the work they will be engaged in.

B. Owner will employ and pay for initial testing indicated under specific specification sections and specifically noted to be paid by the Owner.
   1. Contractor shall pay for testing when:
      a. Additional tests and inspections by Owner's testing agency where initial tests and inspections reveal failure to meet Contract requirements.
      b. Excessive inspection time by Owner's testing agency is required by Contractor's failure to provide sufficient workman or to properly pursue the progress of work.
      c. Test(s) deemed necessary by the Owner/Architect to evaluate any substitution proposed by the Contractor.
      d. Testing and inspection for the Contractor's convenience.
      e. Testing and inspection overtime necessitated by the Contractor's schedule.

C. Employment of inspection firm in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

D. Employment of any testing laboratory by Contractor shall be subject to Owner approval; laboratory shall be under direct supervision of a registered Engineer and shall conform to ASTM E329 . Laboratory of concrete producer shall not be acceptable for concrete mix designs.

E. Owner reserves the right to test any material or work of Project at any time, whether or not tests are indicated in Contract Documents.

1.06 QUALITY ASSURANCE

A. Conform to requirements of the referenced standards.

B. Laboratory: Authorized to operate in State in which Project is located.

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C. Laboratory Staff: Maintain a full time registered Engineer on staff to review services.

D. Testing Equipment: Calibrated at reasonable intervals with devices of an accuracy traceable to either National Bureau of Standards or accepted values of natural physical constants.

1.07 TESTING AGENCY RESPONSIBILITIES

A. Perform inspections, tests, and other services as specified by various specification sections.

B. Test samples of mixes submitted by Contractor.

C. Provide qualified personnel at site. Cooperate with Architect/Engineer and Contractor in performance of services.

D. Perform specified sampling and testing of Products in accordance with specified standards.

E. Ascertain compliance of materials and mixes with requirements of Contract Documents.

F. Promptly notify Architect/Engineer, Inspector of Record, and Contractor of observed irregularities or non-conformance of Work or Products.

G. Perform additional tests required by Architect/Engineer.

H. Attend preconstruction meetings and progress meetings.

1.08 AGENCY AND INSPECTION REPORTS

A. After each test, observation or inspection, promptly submit electronic copies of report as outlined in Section 01-3210 to Architect, Engineer, Owner, Contractor, Inspector of Record and the Division of the State Architect, and as otherwise directed.

B. Include:
1. Date issued.
2. Project title and number.
3. Name of inspector.
4. Date and time of sampling or inspection.
5. Identification of product and specifications section.
6. Location in the Project.
7. Type of inspection or test.
8. Date of test.
9. Results of tests.
10. Conformance with Contract Documents.

C. When requested by Architect/Engineer, provide interpretation of test or inspection results.

1.09 LIMITS ON TESTING AND INSPECTION AUTHORITY

A. Agency or laboratory may not release, revoke, alter, or enlarge on requirements of Contract Documents.

B. Agency or laboratory may not approve or accept any portion of the Work.

C. Agency or laboratory may not assume any duties of Contractor.

D. Agency or laboratory has no authority to stop the Work.

1.10 CONTRACTOR RESPONSIBILITIES

A. Provide information regarding activities requiring special inspection and tests to District'sinspection and testing laboratory upon request.

B. Deliver to agency or laboratory at designated location, adequate samples of materials proposed to be used which require testing, along with proposed mix designs.

C. Cooperate with laboratory personnel, and provide access to the Work.

D. Provide incidental labor and facilities:
1. To provide access to Work to be tested.
2. To obtain and handle samples at the site or at source of Products to be tested.
3. To facilitate tests.
4. To provide storage and curing of test samples.

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E. Notify agency or laboratory and Architect/Engineer and Inspector of Record forty-eight (48) hours prior to expected time for operations requiring testing services. Become familiar with time constraints of tests required. Schedule work to allow time for performance of required tests.

F. Employ services of an independent qualified testing laboratory and pay for additional samples and tests required by Contractor beyond specified requirements.

1.11 INSPECTOR OF RECORD RESPONSIBILITIES

A. Inspector of Record (IOR) is responsible for coordinating testing and inspections in conjuction with the scheduled work of the Contractor.

1.12 ARCHITECT RESPONSIBILITIES

A. Architect is not responsible for notification of the Testing Agency or scheduling it's work.

B. Architect will not be responsible for the actions of the Testing Agency.

1.13 RE-TESTING

A. When initial tests indicate non-compliance with the Contract Documents, subsequent re-testing shall be performed by the same testing laboratory and the costs thereof shall be paid by the Owner and deducted from the Contract Sums owed to the Contractor.

PART 2 PRODUCTS

2.01 NOT USED.

PART 3 EXECUTION

3.01 SCHEDULE OF INSPECTIONS

A. Division of the State Architect Form DSA 103 Schedule of Tests and Inspections, Current Edition is attached following this section.

B. Pertinent Sections of other Divisions: Other tests or inspections required; standards for testing.

END OF SECTION

SECTION 01-5000
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary telecommunications services.

B. Temporary sanitary facilities.

C. Temporary Controls: Barriers, enclosures, and fencing.

D. Security requirements.

E. Waste removal facilities and services.

F. Project identification sign.

1.02 REFERENCE STANDARDS

A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2024.

B. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2023.

1.03 TEMPORARY UTILITIES

A. Provide and pay for all electrical power, lighting, water, heating and cooling, and ventilation required for construction purposes.

B. Existing facilities may not be used.

C. Use trigger-operated nozzles for water hoses, to avoid waste of water.

1.04 TELECOMMUNICATIONS SERVICES

A. Provide, maintain, and pay for telecommunications services to field office at time of project mobilization.

B. Telecommunications services shall include:
   1. Windows-based personal computer dedicated to project telecommunications, with necessary software and laser printer.
   2. Internet Connections: Minimum of one; DSL modem or faster.
   3. Email: Account/address reserved for project use.

1.05 TEMPORARY SANITARY FACILITIES

A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.

B. Maintain daily in clean and sanitary condition.

1.06 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.

C. Provide protection for plants designated to remain. Replace damaged plants.

D. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.07 FENCING

A. Construction: Commercial grade chain link fence.

B. Provide 6 foot high fence around construction site; equip with vehicular and pedestrian gates with locks.

1.08 EXTERIOR ENCLOSURES

A. Provide temporary insulated weather tight closure of exterior openings to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

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1.09 INTERIOR ENCLOSURES

A. Provide temporary partitions and ceilings as indicated to separate work areas from Owner-occupied areas, to prevent penetration of dust and moisture into Owner-occupied areas, and to prevent damage to existing materials and equipment.

B. Construction: Framing and reinforced polyethylene sheet materials with closed joints and sealed edges at intersections with existing surfaces:
   1. STC rating of 35 in accordance with ASTM E90.
   2. Maximum flame spread rating of 75 in accordance with ASTM E84.

C. Paint surfaces exposed to view from Owner-occupied areas.

1.10 SECURITY

A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.

B. Coordinate with Owner's security program.

1.11 VEHICULAR ACCESS AND PARKING

A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.

B. Coordinate access and haul routes with governing authorities and Owner.

C. Provide and maintain access to fire hydrants, free of obstructions.

D. Provide means of removing mud from vehicle wheels before entering streets.

E. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.

F. Do not allow vehicle parking on existing pavement.

1.12 WASTE REMOVAL

A. See Section 01-7419 - Construction Waste Management and Disposal, for additional requirements.

B. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.

C. Provide containers with lids. Remove trash from site periodically.

D. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

E. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.13 PROJECT IDENTIFICATION

A. Provide project identification sign of design and construction indicated on drawings.

B. Erect on site at location indicated.

C. No other signs are allowed without Owner permission except those required by law.

1.14 FIELD OFFICES

A. Office: Weathertight, with lighting, electrical outlets, heating, cooling equipment, and equipped with sturdy furniture, drawing rack, and drawing display table.

1.15 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities, materials, prior to Date of Substantial Completion inspection.

B. Remove underground installations to a minimum depth of 2 feet. Grade site as indicated.

C. Clean and repair damage caused by installation or use of temporary work.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

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SECTION 01-6000
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General product requirements.

B. Re-use of existing products.

C. Transportation, handling, storage and protection.

D. Product option requirements.

E. Substitution limitations.

F. Procedures for Owner-supplied products.

G. Maintenance materials, including extra materials, spare parts, tools, and software.

1.02 RELATED REQUIREMENTS

A. Document – Notice Inviting Bids: Products designated by Owner as "DISTRICT STANDARDS", as applicable.

B. Document – General Conditions of the Contract: Product options and substitution procedures.

C. Section 01-1000 - Summary: Lists of products to be removed from existing building.

D. Section 01-1100 - Summary of Work: Identification of Owner-supplied products.

E. Section 01-2500 - Substitution Procedures: Substitutions made during procurement and/or construction phases.

F. Section 01-3300 - Submittal Procedures: Submittal procedures and requirements.

G. Section 01-4000 - Quality Requirements: Product quality monitoring.

H. Section 01-6116 - Volatile Organic Compound (VOC) Content Restrictions: Requirements for VOC-restricted product categories.

I. Section 01-7419 - Construction Waste Management and Disposal: Waste disposal requirements potentially affecting product selection, packaging and substitutions.

1.03 REFERENCE STANDARDS

A. PCC 3400 - California Public Contract Code; Current Edition.

1.04 SUBMITTALS - SEE SECTION 01-3300

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by Contract Documents.

B. Unforeseen historic items encountered remain the property of the Owner; notify Owner promptly upon discovery; protect, remove, handle, and store as directed by Owner.

C. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.

D. Specific Products to be Reused: The reuse of certain materials and equipment already existing on the project site is encouraged.
   1. See drawings for list of items required to be salvaged for reuse and relocation.

2.02 NEW PRODUCTS

A. Provide new products unless specifically required or permitted by Contract Documents.

B. See Section 01-4000 - Quality Requirements, for additional source quality control requirements.

C. Use of products having any of the following characteristics is not permitted:
   1. Containing lead, cadmium, or asbestos.

D. Where other criteria are met, Contractor shall give preference to products that:

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1. If used on interior, have lower emissions, as defined in Section 01-6116.
2. If wet-applied, have lower VOC content, as defined in Section 01-6116.

E. Provide interchangeable components by the same manufacture for components being replaced.

F. Products or equipment referenced with a manufacturer's name and/or model number shall be provided with all standard materials, components, compliance requirements and features normally furnished for that model or product. These items and requirements are inherent in the specification whether or not individually itemized.

G. Salient Physical Attributes: Physical and other characteristics of products which may not be individually noted in the specifications are essential parts of the product specification. Products shall possess all attributes set forth in the manufacturer's catalog description for the specified item, except for such modifications thereto as may be indicated in the Contract Documents.Such attributes include:
1. Size: Dimensions, Form Factor (relative proportions of height, width, depth). Ability to fit in space provided, without change to other assemblies or systems.
2. Capacity: Ability to fulfill specified requirements.
3. Weight: Ability to be supported and braced by structure as shown.
4. Physical arrangement of connections or ports: Intakes, exhausts, utility connections and other such items; their dimensions, form factors and relative proportions. Connect to other systems, ductwork, utilities, controls without changes to other systems.
5. Required Clearances: Vertical, horizontal, to other equipment or construction, other similar attributes.

H. Proprietary Names, Catalog Numbers and Identification: These attributes may be included for convenience in identifying products. Unless modified by Specifications or notation on Drawings, manufacturer's complete product catalog description for indicated product name or number shall constitute requirements for each product as if fully included in the product specification. Products shall incorporate all features set forth in the manufacturer's catalog description for the standard item, except for such modifications thereto as may be indicated in the Contract Documents.

I. Proprietary names, catalog numbers, and specific requirements as may be set forth, are given to establish standard of design and quality for materials, construction and workmanship. Use of this information to identify products is not intended to preclude use of alternate products by other manufacturers, except as specified in that given section.

J. Manufacturer's Requirements: All deviations from design requirements shown or specified, resulting either from Contractor's or supplier's change of model, or manufacturer's recommendation, or from submitted alternates or accepted substitutions, shall be clearly indicated on the Contractor's submittals. Contractor shall provide all such manufacturer or supplier supplemental requirements at no additional cost.

K. Owner's Standard Product Requirements:
1. Pursuant to the requirements of California PCC 3400, the Owner may designate certain products as "District Standards" in order that a field test or experiment may be made to determine the product's suitability for future use, or in order to match other products in use on a particular public improvement, either completed or in the course of construction.
2. A list of these designated products as may be applicable to the project is contained in the Notice Inviting Bids as required by PCC 3400. Products so listed shall be provided as specified and are not subject to substitution. All bids shall be deemed to include only these listed items as specified without additional cost.
3. In the event of a conflict between the Notice Inviting Bids and the technical specifications for a product's provision for substitutions, the Notice Inviting Bids shall govern.

2.03 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.

B. Products Specified by Naming a Single Manufacturer with a Provision for Substitutions: Submit a request for substitution in accordance with specified procedures for products meeting specifications from any manufacturer not named. For such specifications, the Architect is aware of only one manufacturer providing products meeting the specification, pursuant to PCC 3400.

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C. Products specified as Basis of Design: Products specified by Naming a Single Manufacturer and a list of alternate manufacturers: Submit a request for substitution in accordance with specified procedures for products meeting specifications from any named manufacturer other than the listed manufacturer. For such specifications, listing of additional alternate manufacturers is not a representation that any of the alternate manufacturers will offer products that will be acceptable alternates for the specified items.

D. Products Specified by Naming Multiple Manufacturers with a Provision for Substitutions: Submit a request for substitution in accordance with specified procedures for products meeting specifications from any manufacturer not named.

E. Products Designated as "District Standards", Specified by Naming A Single Manufacturer or Multiple Manufacturers as listed in the Notice Inviting Bids: Use only a product of one of the manufacturers named and meeting specifications. No options or substitutions allowed.

2.04 MAINTENANCE MATERIALS

A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.

B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 EXECUTION

3.01 SUBSTITUTION LIMITATIONS

A. See Section 01-2500 - Substitution Procedures.

3.02 OWNER-SUPPLIED PRODUCTS

A. See Section 01-1100 - Summary of Work for identification of Owner-supplied products.

3.03 TRANSPORTATION AND HANDLING

A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.

B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.

C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.

D. Transport and handle products in accordance with manufacturer's instructions.

E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.

F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.

H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.04 STORAGE AND PROTECTION

A. Provide protection of stored materials and products against theft, casualty, or deterioration.

B. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. See Section 01-7419.

C. Store and protect products in accordance with manufacturers' instructions.

D. Store with seals and labels intact and legible.

E. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.

F. For exterior storage of fabricated products, place on sloped supports above ground.
   1. Execute a formal supplemental agreement between Owner and Contractor allowing off-site storage, for each occurrence.

G. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.

H. Comply with manufacturer's warranty conditions, if any.

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I. Do not store products directly on the ground.

J. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

K. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

L. Prevent contact with material that may cause corrosion, discoloration, or staining.

M. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

N. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

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SECTION 01-6116
VOLATILE ORGANIC COMPOUND (VOC) CONTENT RESTRICTIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Requirements for Indoor-Emissions-Restricted products.
   1. All products of each category must comply with applicable regulations in CALGreen.

B. Requirements for VOC-Content-Restricted products.
   1. All products of each category that are installed in the project must comply; applicable laws and ordinances do not allow for partial compliance.
   2. All products of each category must comply with applicable regulations in CALGreen.
   3. Listing of a product in these specifications shall not be construed as a solicitation or requirement to use any product or combination of products in violation of the requirements of South Coast Air Quality Management District SCAQMD 1168.
      a. If a listed product does not meet the requirements of this rule, request approval for use of an alternate product by the same or another manufacturer meeting the requirements of this rule.
      b. Do not use products which do not meet the requirements of this rule.

C. Requirement for installer certification that they did not use any non-compliant products.

1.02 RELATED REQUIREMENTS

A. Section 01-3000 - Administrative Requirements: Submittal procedures.

1.03 DEFINITIONS

A. Indoor-Emissions-Restricted Products: All products in the following product categories, whether specified or not:
   1. Interior paints and coatings applied on site.
   2. Interior adhesives and sealants applied on site, including flooring adhesives.
   3. Flooring.
   4. Composite wood.
   5. Products making up wall and ceiling assemblies.
   6. Thermal and acoustical insulation.
   7. Free-standing furniture.
   8. Other products when specifically stated in the specifications.

B. VOC-Content-Restricted Products: All products in the following product categories, whether specified or not:
   1. Exterior and interior paints and coatings applied on site.
   2. Exterior and interior adhesives and sealants applied on site, including flooring adhesives.
   3. Wet-applied roofing and waterproofing.
   4. Other products when specifically stated in the specifications.

C. Interior of Building: Anywhere inside the exterior weather barrier.

D. Adhesives: All gunnable, trowelable, liquid-applied, and aerosol adhesives, whether specified or not; including flooring adhesives, resilient base adhesives, and pipe jointing adhesives.

E. Sealants: All gunnable, trowelable, and liquid-applied joint sealants and sealant primers, whether specified or not; including firestopping sealants and duct joint sealers.

F. Inherently Non-Emitting Materials: Products composed wholly of minerals or metals, unless they include organic-based surface coatings, binders, or sealants; and specifically the following:
   1. Concrete.
   2. Clay brick.
   3. Metals that are plated, anodized, or powder-coated.
   4. Glass.
   5. Ceramics.
   6. Solid wood flooring that is unfinished and untreated.

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1.04 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; Current Edition.

B. ASTM D3960 - Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings; 2025.

C. BIFMA e3 - Furniture Sustainability Standard; 2024.

D. CA-CHPS Criteria - Collaborative for High Performance Schools - California - For New Construction & Major Renovations/Additions of Classroom and Non-Classroom Buildings; Current Edition.

E. CAL (CDPH SM) - Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers Version 1.2; 2017.

F. CAL (VOC) - Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers; 2017.

G. CALGreen - California Green Building Standards Code, "CALGreen" - Part 11, Title 24, California Code of Regulations; Most Recent Edition Adopted by the California Building Standards Commission.

H. CARB (ATCM) - Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products; Current Edition.

I. CARB (SCM) - Suggested Control Measure for Architectural Coatings; California Air Resources Board; 2020.

J. CHPS (HPPD) - High Performance Products Database; Current Edition.

K. CRI (GL) - Green Label Testing Program - Certified Products; Current Edition.

L. CRI (GLP) - Green Label Plus Testing Program - Certified Products; Current Edition.

M. GreenSeal GS-36 - Standard for Adhesives for Commercial Use; 2025.

N. NSF/ANSI 140 - Sustainability Assessment for Carpet; 2024.

O. SCAQMD 1113 - Architectural Coatings; 1977, with Amendment (2016).

P. SCAQMD 1168 - Adhesive and Sealant Applications; 1989, with Amendment (2022).

Q. SCS (CPD) - SCS Certified Products; Current Edition.

R. UL (GGG) - GREENGUARD Gold Certified Products; Current Edition.

1.05 SUBMITTALS

A. See Section 01-3000 - Administrative Requirements for submittal procedures.

B. Product Data: For each VOC-restricted product used in the project, submit evidence of compliance.

C. Sustainable Design Reporting: Submit evidence of compliance.
   1. Indentify evidence in submittals with the words "CALGreen VOC Compliance Report".

D. Installer Certifications Regarding Prohibited Content: Require each installer of any type of product (not just the products for which VOC restrictions are specified) to certify that either 1) no adhesives, joint sealants, paints, coatings, or composite wood or agrifiber products have been used in the installation of installer's products, or 2) that such products used comply with these requirements.

1.06 QUALITY ASSURANCE

A. Indoor Emissions Standard and Test Method: CAL (CDPH SM), using Standard Private Office exposure scenario and the allowable concentrations specified in the method, and range of total VOC's after 14 days.
   1. Wet-Applied Products: State amount applied in mass per surface area.
   2. Paints and Coatings: Test tinted products, not just tinting bases.
   3. Evidence of Compliance: Acceptable types of evidence are the following;
      a. Current UL (GGG) certification.
      b. Current SCS (CPD) Floorscore certification.
      c. Current SCS (CPD) Indoor Advantage Gold certification.
      d. Current listing in CHPS (HPPD) as a low-emitting product.
      e. Current CRI (GLP) certification.

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f. Test report showing compliance and stating exposure scenario used.
4. Product data submittal showing VOC content is NOT acceptable evidence.
5. Manufacturer's certification without test report by independent agency is NOT acceptable evidence.

B. VOC Content Test Method: 40 CFR 59, Subpart D (EPA Method 24), or ASTM D3960, unless otherwise indicated.
1. Evidence of Compliance: Acceptable types of evidence are:
a. Report of laboratory testing performed in accordance with requirements.
b. Published product data showing compliance with requirements.
c. Certification by manufacturer that product complies with requirements.

C. Composite Wood Emissions Standard: CARB (ATCM) for ultra-low emitting formaldehyde (ULEF) resins.
1. Evidence of Compliance: Acceptable types of evidence are:
a. Current SCS "No Added Formaldehyde (NAF)" certification; www.scscertified.com.
b. Report of laboratory testing performed in accordance with requirements.
c. Published product data showing compliance with requirements.

D. Furnishings Emissions Standard and Test Method: BIFMA e3 Sections 7.6.1 and 7.6.2, tested in accordance with BIFMA M7.1.
1. Evidence of Compliance:
a. Test report showing compliance and stating exposure scenario used.

E. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

PART 2 PRODUCTS

2.01 MATERIALS

A. All Products: Comply with the most stringent of federal, State, and local requirements, or these specifications.
1. These products may be specified in multiple sections throughout these specifications.

B. Indoor-Emissions-Restricted Products: Comply with Indoor Emissions Standard and Test Method, except for:
1. Composite Wood, Wood Fiber, and Wood Chip Products: Comply with Composite Wood Emissions Standard and applicable portions of CARB (ATCM) or contain no added formaldehyde resins.
2. Furnishings: Comply with Furnishings Emissions Standard and Test Method and applicable portions of CARB (ATCM).
3. Inherently Non-Emitting Materials.

C. VOC-Content-Restricted Products: VOC content not greater than required by the following:
1. Adhesives, Including Flooring Adhesives: SCAQMD 1168 Rule and requirements in CALGreen Division 5.5 - ENVIRONMENTAL QUALITY.
2. Aerosol Adhesives: GreenSeal GS-36 and requirements in CALGreen Division 5.5 - ENVIRONMENTAL QUALITY.
3. Joint Sealants: SCAQMD 1168 Rule and requirements in CALGreenDivision 5.5 - ENVIRONMENTAL QUALITY.
4. Paints and Coatings: Each color; most stringent of the following including any additional requirements in CALGreen Division 5.5 - ENVIRONMENTAL QUALITY:
a. 40 CFR 59, Subpart D.
b. SCAQMD 1113 Rule.
c. CARB (SCM).
5. Carpet and Carpet Cushion: Requirements in CALGreen Division 5.5 - ENVIRONMETAL QUALITY and meet testing and product requirements of one of the following:
a. Carpet & Rug Institutute CRI (GL), "Green Label Plus".
b. NSF/ANSI 140 at the "Gold Level".
c. California Department of Publich Health Standard Practice for Testing of VOCsCAL (VOC).
d. Scientific Certifications Systems Sustainability Assessment SCS (CPD).
6. Resilient Flooring: SCS (CPD) RFCI FloorScore Program and requirements in CALGreenDivision 5.5 - ENVIRONMENTAL QUALITY.
a. CA-CHPS Criteria and CHPS (HPPD).

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7. Wet-Applied Roofing and Waterproofing: Comply with requirements for paints and coatings.

PART 3 EXECUTION

3.01 FIELD QUALITY CONTROL

A. Owner reserves the right to reject non-compliant products, whether installed or not, and require their removal and replacement with compliant products at no extra cost to Owner.

B. Additional costs to restore indoor air quality due to installation of non-compliant products will be borne by Contractor.

END OF SECTION

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SECTION 01-6116.01
ACCESSORY MATERIAL VOC CONTENT CERTIFICATION FORM

FORM

1.01 IDENTIFICATION:

A. Project Name: _____

B. Project No.: _____

C. Architect: _____

1.02 USE OF THIS FORM:

A. Because installers are allowed and directed to choose accessory materials suitable for the applicable installation, there is a possibility that such accessory materials might contain VOC content in excess of that permitted, especially where such materials have not been explicitly specified.

B. Contractor is required to obtain and submit this form from each installer of work on this project.

C. For each product category listed, circle the correct words in brackets: either [HAS] or [HAS NOT].

D. If any of these accessory materials has been used, attach to this form product data and MSDS sheet for each such product.

1.03 VOC CONTENT RESTRICTIONS ARE SPECIFIED IN SECTION 01-6116.

2.01 PRODUCT CERTIFICATION

A. I certify that the installation work of my firm on this project:
   1. [HAS] [HAS NOT] required the use of any ADHESIVES.
   2. [HAS] [HAS NOT] required the use of any JOINT SEALANTS.
   3. [HAS] [HAS NOT] required the use of any PAINTS OR COATINGS.
   4. [HAS] [HAS NOT] required the use of any COMPOSITE WOOD or AGRIFIBER PRODUCTS.

B. Product data and MSDS sheets are attached.

3.01 CERTIFIED BY: (INSTALLER/MANUFACTURER/SUPPLIER FIRM)

A. Firm Name: _____

B. Print Name: _____

C. Signature: _____

D. Title: _____ (officer of company)

E. Date: _____

END OF SECTION

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SECTION 01-7000
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Examination, preparation, and general installation procedures.

B. Pre-installation meetings.

C. Cutting and patching.

D. Surveying for laying out the work.

E. Cleaning and protection.

F. Starting of systems and equipment.

G. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.

H. General requirements for maintenance service.

1.02 RELATED REQUIREMENTS

A. Section 07-8400 - Firestopping.

1.03 SUBMITTALS

A. See Section 01-3000 - Administrative Requirements, for submittal procedures.

B. Survey work: Submit name, address, and telephone number of Surveyor before starting survey work.
   1. On request, submit documentation verifying accuracy of survey work.
   2. Submit a copy of site drawing signed by the Land Surveyor, that the elevations and locations of the work are in compliance with Contract Documents.
   3. Submit surveys and survey logs for the project record.

C. Demolition Plan: Submit demolition plan as specified by OSHA and local authorities.
   1. Indicate extent of demolition, removal sequence, bracing and shoring, and location and construction of barricades and fences. Include design drawings and calculations for bracing and shoring.
   2. Identify demolition firm and submit qualifications.
   3. Include a summary of safety procedures.

D. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
   1. Structural integrity of any element of Project.
   2. Integrity of weather exposed or moisture resistant element.
   3. Efficiency, maintenance, or safety of any operational element.
   4. Visual qualities of sight exposed elements.
   5. Work of Owner or separate Contractor.
   6. Include in request:
      a. Identification of Project.
      b. Location and description of affected work.
      c. Necessity for cutting or alteration.
      d. Description of proposed work and products to be used.
      e. Effect on work of Owner or separate Contractor.
      f. Written permission of affected separate Contractor.
      g. Date and time work will be executed.

E. Project Record Documents: Accurately record actual locations of capped and active utilities.

1.04 QUALIFICATIONS

A. For demolition work, employ a firm specializing in the type of work required.
   1. Minimum of 5 years of documented experience.

B. For surveying work, employ a land surveyor registered in Californiaand acceptable to Architect. Submit evidence of surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate. Employ only individual(s) trained and experienced in collecting and recording accurate data relevant to ongoing construction activities,

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C. For design of temporary shoring and bracing, employ a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.

1.05 PROJECT CONDITIONS

A. Use of explosives is not permitted.

B. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.

C. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.

D. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

E. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
   1. Provide dust-proof enclosures to prevent entry of dust generated outdoors.
   2. Provide dust-proof barriers between construction areas and areas continuing to be occupied by Owner.

F. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
   1. Minimize amount of bare soil exposed at one time.
   2. Provide temporary measures such as berms, dikes, and drains, to prevent water flow.
   3. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
   4. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.

G. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
   1. Outdoors: Limit conduct of especially noisy exterior work to the hours of 8 am to 5 pm.

H. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.

I. Rodent Control: Provide methods, means, and facilities to prevent rodents from accessing or invading premises.

J. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

1.06 COORDINATION

A. See Section 01-1100 - Summary of Work for occupancy-related requirements.

B. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.

C. Notify affected utility companies and comply with their requirements.

D. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

E. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

F. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

G. Coordinate completion and clean-up of work of separate sections.

H. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

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PART 2 PRODUCTS

2.01 PATCHING MATERIALS

A. New Materials: As specified in product sections; match existing products and work for patching and extending work.

B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.

C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01-6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.

B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.

E. Verify that utility services are available, of the correct characteristics, and in the correct locations.

F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Seal cracks or openings of substrate prior to applying next material or substance.

C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 PREINSTALLATION MEETINGS

A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.

B. Require attendance of parties directly affecting, or affected by, work of the specific section.

C. Notify Architect seven days in advance of meeting date, unless otherwise noted in the individual section.

D. Prepare agenda and preside at meeting:
   1. Review conditions of examination, preparation and installation procedures.
   2. Review coordination with related work.

E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.04 LAYING OUT THE WORK

A. Verify locations of survey control points prior to starting work.

B. Promptly notify Architect of any discrepancies discovered.

C. Contractor shall locate and protect survey control and reference points.

D. Protect survey control points prior to starting site work; preserve permanent reference points during construction.

E. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.

F. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.

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G. Utilize recognized engineering survey practices.

H. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
   1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations; and _____.
   2. Grid or axis for structures.
   3. Building foundation, column locations, ground floor elevations, and _____.

I. Periodically verify layouts by same means.

J. Maintain a complete and accurate log of control and survey work as it progresses.

3.05 GENERAL INSTALLATION REQUIREMENTS

A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.

B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.

C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.

D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.

E. Make neat transitions between different surfaces, maintaining texture and appearance.

F. Grind or bush split-faced masonry or textured materials to achieve hairline fit to adjacent trim, flashings, inserts, escutcheons or other penetrating elements.

3.06 CUTTING AND PATCHING

A. Whenever possible, execute the work by methods that avoid cutting or patching.

B. Perform whatever cutting and patching is necessary to:
   1. Complete the work.
   2. Fit products together to integrate with other work.
   3. Provide openings for penetration of mechanical, electrical, and other services.
   4. Match work that has been cut to adjacent work.
   5. Repair areas adjacent to cuts to required condition.
   6. Repair new work damaged by subsequent work.
   7. Remove samples of installed work for testing when requested.
   8. Remove and replace defective and non-complying work.

C. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.

D. Execute cutting and patching including excavation and fill to complete the work, to uncover work in order to install improperly sequenced work, to remove and replace defective or non-conforming work, to remove samples of installed work for testing when requested, to provide openings in the work for penetration of mechanical and electrical work, to execute patching to complement adjacent work, and to fit products together to integrate with other work.

E. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.

F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

G. Restore work with new products in accordance with requirements of Contract Documents.

H. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07-8400, to full thickness of the penetrated element.

J. Patching:
   1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
   2. Match color, texture, and appearance.
   3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

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3.07 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.08 PROTECTION OF INSTALLED WORK

A. Protect installed work from damage by construction operations.

B. Provide special protection where specified in individual specification sections.

C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

G. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.09 SYSTEM STARTUP

A. Coordinate with requirements of Section 01-9113 - General Commissioning Requirements.

B. Coordinate schedule for start-up of various equipment and systems.

C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.

D. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.

E. Verify that wiring and support components for equipment are complete and tested.

F. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.

G. Submit a written report that equipment or system has been properly installed and is functioning correctly.

3.10 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.11 FINAL CLEANING

A. Use cleaning materials that are nonhazardous.

B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.

D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

E. Clean filters of operating equipment.

F. Clean debris from roofs, gutters, downspouts, scuppers, overflow drains, area drains, drainage systems, and _____.

G. Clean site; sweep paved areas, rake clean landscaped surfaces.

H. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

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3.12 CLOSEOUT PROCEDURES

A. Make submittals that are required by governing or other authorities.
   1. Provide copies to Architect and Owner.

B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.

C. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.

D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.

E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.

F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.

G. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.

H. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

3.13 MAINTENANCE

A. Provide service and maintenance of components indicated in specification sections.

B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than two years from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.

C. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.

D. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.

E. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

END OF SECTION

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SECTION 01-7419
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

1.01 WASTE MANAGEMENT REQUIREMENTS

A. Owner requires that this project generate the least amount of trash and waste possible.

B. Project must comply with mandatory measures located in CALGreenSection 5.408 Construction Waste Reduction, Disposal, and Recyling.

C. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.

D. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.

E. Owner may decide to pay for additional recycling, salvage, and/or reuse based on Landfill Alternatives Proposal specified below.

F. Required Recycling, Salvage, and Reuse: The following may not be disposed of in landfills or by incineration:
1. Aluminum and plastic beverage containers.
2. Corrugated cardboard.
3. Wood pallets.
4. Land clearing debris, including brush, branches, logs, and stumps; see Section 31-1000 - Site Clearing for use options.
5. Concrete: May be crushed and used as riprap, aggregate, sub-base material, or fill.
6. Asphalt paving: May be recycled into paving for project.
7. Metals, including packaging banding, metal studs, sheet metal, structural steel, piping, reinforcing bars, door frames, and other items made of steel, iron, galvanized steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.
8. Glass.
9. Gypsum drywall and plaster.
10. Plastic buckets.
11. Carpet, carpet cushion, carpet tile, and carpet remnants, both new and removed: DuPont (http://flooring.dupont.com) and Interface (www.interfaceinc.com) conduct reclamation programs.
12. Paint.
13. Plastic sheeting.
14. Rigid foam insulation.
15. Vinyl siding.
16. Windows, doors, and door hardware.
17. Plumbing fixtures.
18. Mechanical and electrical equipment.
19. Fluorescent lamps (light bulbs).
20. Acoustical ceiling tile and panels.

G. The following recycling incentive programs are mandatory for this project; Contractor is responsible for implementation:
1. _____: Rebates and credits must be applied for by Owner and will accrue to Owner.

H. Develop and follow a Waste Management Plan designed to implement these requirements.

I. The following sources may be useful in developing the Waste Management Plan:
1. State Recycling Department, at https://calrecycle.ca.gov/lgcentral/library/canddmodel/instruction/newstructures/.

J. Methods of trash/waste disposal that are not acceptable are:
1. Burning on the project site.
2. Burying on the project site.
3. Dumping or burying on other property, public or private.
4. Other illegal dumping or burying.
5. Incineration, either on- or off-site.

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K. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

1.02 RELATED REQUIREMENTS

A. Section 01-2500 - Substitution Procedures.

B. Section 01-3000 - Administrative Requirements: Additional requirements for project meetings, reports, submittal procedures, and project documentation.

C. Section 01-5000 - Temporary Facilities and Controls: Additional requirements related to trash/waste collection and removal facilities and services.

D. Section 01-6000 - Product Requirements: Waste prevention requirements related to product substitutions.

E. Section 01-6000 - Product Requirements: Waste prevention requirements related to delivery, storage, and handling.

F. Section 01-7000 - Execution and Closeout Requirements: Trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

G. Section 31-1000 - Site Clearing: Handling and disposal of land clearing debris.

1.03 DEFINITIONS

A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.

B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.

C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.

D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity, or reactivity.

E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.

F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.

G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.

H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.

I. Return: To give back reusable items or unused products to vendors for credit.

J. Reuse: To reuse a construction waste material in some manner on the project site.

K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.

L. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.

M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.

N. Toxic: Poisonous to humans either immediately or after a long period of exposure.

O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.

P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

1.04 SUBMITTALS

A. See Section 01-3000 - Administrative Requirements for submittal procedures.

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B. Landfill Alternatives Proposal: Within 10 calendar days after receipt of Notice of Award of Bid, or prior to any trash or waste removal, whichever occurs sooner, submit a projection of trash/waste that will require disposal and alternatives to landfilling, with net costs.
   1. Submit to Architect for Owner's review and approval.
   2. Include an analysis of trash/waste to be generated and landfill options as specified for Waste Management Plan described below.
   3. Describe as many alternatives to landfilling as possible:
      a. List each material proposed to be salvaged, reused, or recycled.
      b. List the proposed local market for each material.
      c. State the estimated net cost resulting from each alternative, after subtracting revenue from sale of recycled or salvaged materials and landfill tipping fees saved due to diversion of materials from the landfill.
   4. Provide alternatives to landfilling for at least the following materials:
      a. Bricks.
      b. Concrete masonry units.

C. Once Owner has determined which of the landfill alternatives addressed in the Proposal above are acceptable, prepare and submit Waste Management Plan; submit within 10 calendar days after notification by Architect.

D. Waste Management Plan: Include the following information:
   1. Analysis of the trash and waste projected to be generated during the entire project construction cycle, including types and quantities.
   2. Landfill Options: The name, address, and telephone number of the landfill(s) where trash/waste will be disposed of, the applicable landfill tipping fee(s), and the projected cost of disposing of all project trash/waste in the landfill(s).
   3. Landfill Alternatives: List all waste materials that will be diverted from landfills by reuse, salvage, or recycling.
      a. List each material proposed to be salvaged, reused, or recycled.
   4. Meetings: Describe regular meetings to be held to address waste prevention, reduction, recycling, salvage, reuse, and disposal.
   5. Materials Handling Procedures: Describe the means by which materials to be diverted from landfills will be protected from contamination and prepared for acceptance by designated facilities; include separation procedures for recyclables, storage, and packaging.
   6. Transportation: Identify the destination and means of transportation of materials to be recycled; i.e. whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler.
   7. Recycling Incentives: Describe procedures required to obtain credits, rebates, or similar incentives.

E. Waste Disposal Reports: Submit at specified intervals, with details of quantities of trash and waste, means of disposal or reuse, and costs; show both totals to date and since last report.
   1. Submit updated Report with each Application for Progress Payment; failure to submit Report will delay payment.
   2. Submit Report on a form acceptable to Owner.
   3. Landfill Disposal: Include the following information:
      a. Identification of material.
      b. Amount, in tons or cubic yards, of trash/waste material from the project disposed of in landfills.
      c. State the identity of landfills, total amount of tipping fees paid to landfill, and total disposal cost.
      d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
   4. Recycled and Salvaged Materials: Include the following information for each:
      a. Identification of material, including those retrieved by installer for use on other projects.
      b. Amount, in tons or cubic yards, date removed from the project site, and receiving party.
      c. Transportation cost, amount paid or received for the material, and the net total cost or savings of salvage or recycling each material.
      d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
      e. Certification by receiving party that materials will not be disposed of in landfills or by incineration.
   5. Material Reused on Project: Include the following information for each:

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a. Identification of material and how it was used in the project.
b. Amount, in tons or cubic yards.
c. Include weight tickets as evidence of quantity.

6. Other Disposal Methods: Include information similar to that described above, as appropriate to disposal method.

F. Recycling Incentive Programs:
1. Where revenue accrues to Contractor, submit copies of documentation required to qualify for incentive.
2. Where revenue accrues to Owner, submit any additional documentation required by Owner in addition to information provided in periodic Waste Disposal Report.

PART 2 PRODUCTS

2.01 PRODUCT SUBSTITUTIONS

A. See Section 01-6000 and Section 01-2500.

B. For each proposed product substitution, submit the following information in addition to requirements specified in Section 01-6000:
1. Relative amount of waste produced, compared to specified product.
2. Proposed disposal method for waste product.
3. Markets for recycled waste product.

PART 3 EXECUTION

3.01 WASTE MANAGEMENT PROCEDURES

A. See Section 01-3000 for additional requirements for project meetings, reports, submittal procedures, and project documentation.

B. See Section 01-5000 for additional requirements related to trash/waste collection and removal facilities and services.

C. See Section 01-6000 for waste prevention requirements related to delivery, storage, and handling.

D. See Section 01-7000 for trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

3.02 WASTE MANAGEMENT PLAN IMPLEMENTATION

A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.

B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor, Owner, and Architect.

C. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.

D. Meetings: Discuss trash/waste management goals and issues at project meetings.
1. Prebid meeting.
2. Preconstruction meeting.
3. Regular job-site meetings.

E. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.
1. As a minimum, provide:
a. Separate area for storage of materials to be reused on-site, such as wood cut-offs for blocking.
b. Separate dumpsters for each category of recyclable.
c. Recycling bins at worker lunch area.
2. Provide containers as required.
3. Provide temporary enclosures around piles of separated materials to be recycled or salvaged.
4. Provide materials for barriers and enclosures that are nonhazardous, recyclable, or reusable to the maximum extent possible; reuse project construction waste materials if possible.
5. Locate enclosures out of the way of construction traffic.
6. Provide adequate space for pick-up and delivery and convenience to subcontractors.

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7. If an enclosed area is not provided, clearly lay out and label a specific area on-site.
8. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.

F. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.

G. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.

H. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.

I. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

END OF SECTION

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SECTION 01-7700
CLOSEOUT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Closeout procedures and submittals.

B. Final cleaning.

C. Maintenance service.

1.02 RELATED SECTIONS

A. Section 01-2900 - Payment Procedures.

B. Section 01-5000 - Temporary Facilities and Controls.

C. Section 01-7800 - Closeout Submittals.

1.03 SUBMITTALS

A. Submit the following under provisions of Section 01-3300 - Submittal Procedures.
   1. Submittals required by governing or other authorities.
   2. Evidence of payment and release of liens under the provisions of Section 01-2900 - Payment Procedures.
   3. Certificates of insurance for products and completed operations.

B. Submit final Application for Payment as outlined in Section 01-2900 identifying total adjusted Contract Sum, previous payments, and sum remaining due. Adjustments include:
   1. Approved Change Orders.
   2. Deductions for reinspection.
   3. Deductions for deficient work uncorrected.
   4. Other adjustments.
   5. Approved payments.
   6. Contract Sum as adjusted.
   7. Amount remaining due.

C. See Section 01-7800 - Closeout Submittals .

1.04 CLOSEOUT PROCEDURES

A. Submit written certification that The Work, or a designated portion thereof, is substantially complete in accordance with Contract Documents and ready for Architect/Engineer's review.

B. Submit a comprehensive list of work (Punchlist) which is incomplete or in need of correction, and an estimate of the time required to complete the listed work.

C. Within a reasonable time after receipt of this certification and Punchlist, the Architect will perform initial review. Incremental review will not be performed.

D. If the Architect determines that the Work is not substantially complete:
   1. The Architect will promptly notify the Contractor and Owner in writing, setting forth reasons for the determination.
   2. The Contractor shall correct or complete deficiencies in the Work and send a second written certification as above.
   3. The Architect will perform a subsequent review as above.

E. Coordinate corrective work as specified in Section 01-3100 - Project Management and Coordination.

F. Upon the Architect’s determination that the Work is substantially complete, the Architect will:
   1. Prepare the Certificate of Substantial Completion upon AIA G704 with the Contractor’s list of items to be completed or corrected, as verified and amended by the Architect.
   2. Submit the completed Certificate of Substantial Completion to the Contractor and the Owner for written acceptance of their respective duties set forth therein.

1.05 FINAL CLEANING

A. Execute final cleaning prior to Architect’s initial review. Architect will not review work for punchlist before final cleaning is complete.

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B. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

C. Clean debris from roofs, gutters, downspouts, and drainage systems.

D. Clean site; sweep paved areas, rake clean landscaped surfaces.

E. Remove waste, surplus materials and rubbish from the site.

1.06 FINAL INSPECTION

A. Submit written certification that:
   1. Contract Documents have been reviewed;
   2. Work has been inspected;
   3. Work, or a designated portion thereof, is complete in accordance with Contract Documents;
   4. Systems and equipment have been tested in the presence of the Owner;
   5. Work is ready for Architect review.

B. Within a reasonable time after receipt of this certification, the Architect will perform a review to verify the status of the Work.

C. If the Architect determines that the Work is not substantially complete, defective or otherwise in need of correction:
   1. The Architect will promptly notify the Contractor and Owner in writing, setting forth reasons for the determination and listing the deficient work.
   2. The Contractor shall immediately correct or complete deficiencies in the Work and send a second written certification that the Work is complete.
   3. The Architect will perform a subsequent review as above.
   4. Additional review time by the Architect due to incomplete corrections may be “backcharged” to the Contractor by the Owner.

D. When the Architect determines that the Work is complete in accordance with the Contract Documents, the Architect will request the Contractor to make final Application for Payment and Closeout Submittals.

1.07 FINAL SUBMITTALS

A. Submit the following under provisions of Section 01-3300 - Submittal Procedures .
   1. Submittals required by governing or other authorities.
   2. Evidence of payment and release of liens under the provisions of Section 01-2900 - Payment Procedures.
   3. Submittals, reports, certificate, or other documents as required by 01-9113 - General Commissioning Requirements.
   4. Certificates of insurance for products and completed operations.

B. Submit final Application for Payment as outlined in Section 01-2900 identifying total adjusted Contract Sum, previous payments, and sum remaining due. Adjustments include:
   1. Approved Change Orders.
   2. Deductions for reinspection.
   3. Deductions for deficient work uncorrected.
   4. Other adjustments.
   5. Approved payments.
   6. Contract Sum as adjusted.
   7. Amount remaining due.

1.08 MAINTENANCE SERVICE

A. Furnish service and maintenance of components indicated in specification sections during the warranty period.

B. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.

C. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.

D. Maintenance service shall not be assigned or transferred to any agent or Subcontractor without prior written consent of the Owner.

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PART 2 PRODUCTS

2.01 NOT USED.

PART 3 EXECUTION

3.01 NOT USED.

END OF SECTION

SECTION 01-7800
CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Project record documents.

B. Operation and maintenance data.

C. Warranties and bonds.

D. Spare parts and maintenance products procedures.

1.02 RELATED REQUIREMENTS

A. Document - General Conditions; Performance bond and labor and material payment bonds, warranty, and correction of work.

B. Section 01-3000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.

C. Individual Product Sections: Specific requirements for operation and maintenance data.

D. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.

B. Operation and Maintenance Data:
   1. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
   2. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
   3. Submit two sets of revised final documents in final form within 10 days after final inspection.

C. Warranties and Bonds:
   1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
   2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
   3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:
   1. Drawings.
   2. Specifications.
   3. Addenda.
   4. Change Orders and other modifications to the Contract.
   5. Reviewed shop drawings, product data, and samples.
   6. Manufacturer's instruction for assembly, installation, and adjusting.

B. Ensure entries are complete and accurate, enabling future reference by Owner.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress.

E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
   1. Manufacturer's name and product model and number.
   2. Product substitutions or alternates utilized.

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3. Changes made by Addenda and modifications.

F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
   1. Measured depths of foundations in relation to finish main floor datum.
   2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent 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. All pre-bid addenda modifications and new drawings shall be posted into the Record Drawing Set. Clearly indicate superseded documents to avoid confusion.
   7. Contract Modifications: Request for information response, Architect directives, corrective details, Change Orders and other modifications. Include changed information, type of change, date and person responsible for directing change.
   8. Locations and description of existing features uncovered or discovered during construction including in-ground or in-wall utilities, and including records of utility locator surveys.

G. Submit reproducible documents to Architect prior to final Application for Payment.

H. Receipt and acceptance of Record Documents by the Owner is a condition precedent for filing Notice of Completion.

3.02 OPERATION AND MAINTENANCE DATA

A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.

B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.

C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.

D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

A. For Each Product, Applied Material, and Finish:
   1. Product data, with catalog number, size, composition, and color and texture designations.
   2. Information for re-ordering custom manufactured products.

B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.

C. Moisture protection and weather-exposed products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.

D. Additional information as specified in individual product specification sections.

E. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

A. For Each Item of Equipment and Each System:
   1. Description of unit or system, and component parts.
   2. Identify function, normal operating characteristics, and limiting conditions.
   3. Include performance curves, with engineering data and tests.
   4. Complete nomenclature and model number of replaceable parts.

B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

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C. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; by label machine.

D. Include color coded wiring diagrams as installed.

E. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.

F. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

G. Provide servicing and lubrication schedule, and list of lubricants required.

H. Include manufacturer's printed operation and maintenance instructions.

I. Include sequence of operation by controls manufacturer.

J. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

K. Provide control diagrams by controls manufacturer as installed.

L. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.

M. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

N. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

O. Include test and balancing reports.

P. Additional Requirements: As specified in individual product specification sections.

3.05 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.

B. Where systems involve more than one specification section, provide separate tabbed divider for each system.

C. Binders: Commercial quality, 8-1/2 by 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.

D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.

E. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants, Contractor and subcontractors, with names of responsible parties.

F. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.

G. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.

H. Text: Manufacturer's printed data, or typewritten data on 20 pound paper.

I. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

J. Arrangement of Contents: Organize each volume in parts as follows:
   1. Project Directory.
   2. Table of Contents, of all volumes, and of this volume.
   3. Operation and Maintenance Data: Arranged by system, then by product category.
      a. Source data.
      b. Operation and maintenance data.
      c. Field quality control data.

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d. Photocopies of warranties and bonds.
e. Copies of Receipts of spare parts, maintenance products, and keys, attested by the Owner.

3.06 WARRANTIES AND BONDS

A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.

B. Verify that documents are in proper form, contain full information, and are notarized.

C. Co-execute submittals when required.

D. Retain warranties and bonds until time specified for submittal.

E. Include photocopies of each in operation and maintenance manuals, indexed separately on Table of Contents.

3.07 SPARE PARTS AND MAINTENANCE PRODUCTS PROCEDURES

A. Submit spare parts, maintenance products, keys, and supplemental materials specified in pertinent related sections to the Owner.

B. Submit original RReceipts for delivery of these items, including location of storage, attested by the Owner by signature.

END OF SECTION

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SECTION 01-8100
GREEN BUILDING DESIGN REQUIREMENTS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Section includes general requirements and procedures for compliance with California Code of Regulations, Title 24, Part 11 California Green Building Standards Code, CALGreen.
   1. CHAPTER 5 - NONRESIDENTIAL MANDATORY MEASURES

1.03 RELATED REQUIREMENTS

A. Section 01-6116 - Volatile Organic Compound (VOC) Content Restrictions.

B. Section 01-7419 - Construction Waste Management and Disposal.

C. Division 01 sections specifying “Operation & Maintenance Data”, “Demonstration and Training” and "Commissioning Requirements".

D. Division 22 sections regarding indoor water use.

E. Division 23 sections regarding indoor air quality.

F. Pertinent sections specifying erosion control.

G. Pertinent sections specifying landscape irrigation, comply with local ordinances or MWELO, whichever is more stringent.

1.04 REFERENCE STANDARDS

A. CALGreen - California Green Building Standards Code, "CALGreen" - Part 11, Title 24, California Code of Regulations; Most Recent Edition Adopted by the California Building Standards Commission.

B. MWELO - California Department of Water Resources Model Water Efficient Landscape Ordinance; Current Edition.

1.05 DEFINITIONS

A. CALGreen Definitions: Certain terms are defined by Chapter 5 of the code. Words and terms used in this section shall have the meanings shown there.

1.06 ADMINISTRATIVE REQUIREMENTS

A. Respond to questions and requests from Architect and the Owner regarding
CALGreen requirments or elements that are the responsibility of the Contractor, that depend on product selection or product qualities, or that depend on Contractor's procedures. Document responses as informational submittals.

1.07 INFORMATIONAL SUBMITTALS

A. General: Provide CALGreen submittals in unsecured PDF format as outlined in Section 01-3210, as required by Code and in applicable Specification Sections.

B. CALGreen submittals are in addition to other required submittals. If submitted item is identical to that submitted to comply with other requirements,
denote on that submittal what specific requirements of CALGreen are being met.

C. Acceptable verification submittals are specified in the related sections.

PART 2 PRODUCTS

2.01 REQUIREMENTS - GENERAL

A. Provide products and procedures necessary to confirm CALGreen compliance required in this Section. Although other Sections may specify some CALGreen requirements, the Contractor shall determine additional materials, techniques, means, methods and procedures necessary to comply with requirements.

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2.02 STORM WATER POLLUTION PREVENTION PLAN

A. CALGreen Division 5.1 - Site Development: Stormwater Polution Prevention: Comply with requirements of this code section, local ordinances, General Conditions, Special Provisions, and related sections specifying erosion control.

2.03 INDOOR WATER USE

A. CALGreen Division 5.3 - Water Efficiency and Conservation: Comply with requirements of this code section, local ordinances and related sections specifying irrigation systems.

2.04 OUTDOOR WATER USE

A. CALGreen Division 5.3 - Water Efficiency and Conservation: Irrigation Controllers: Comply with requirements of this code section, local ordinances or MWELO, whichever is more strigent, and related sections specifying irrigation systems.

2.05 CONSTRUCTION WASTE REDUCTION

A. CALGreen Division 5.4 - Material Conservation and Resource Efficiency: Construction Waste Reduction, Disposal and Recycling: Comply with requirements of this code section, local ordinances and Section 01-7419.

2.06 BUILDING MAINTENANCE AND OPERATION

A. CALGreen Division 5.4 - Material Conservation and Resource Efficiency: Commissioning: Recycling: Provide readily accessible areas that serve the entire building and are identified for the depositing, storage, and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic wastes and metals, or meet a lawfully enacted local recycling ordinance if more restrictive..

B. CALGreen Division 5.4 - Material Conservation and Resource Efficiency: Commissioning or Testing and Adjusting: Participate in Commissioning or Testing and Adjusting and provide functional performance testing, based on total square footage of the building, and as required by these code sections and as specified in pertinent sections of Division 01.

C. CALGreen Division 5.4 - Material Conservation and Resource Efficiency: Documentation and Training: Provide Operations Training as required by these code sections and as specified in Division 01 sections specifying Demonstration, Training and Closeout Submittals as specified in pertinent sections of Division 01.

2.07 POLLUTANT CONTROL

A. CALGreen Division 5.5 - Environmental Quality: Pollutant Control, Temporary Ventilation, and Duct Coverings: Comply with requirements of this code section, local ordinances and pertinent sections specifying indoor air quality procedures.
   1. During storage, rough installation and until final start-up of HVAC equipment, securely cover all ducts and air distribution component openings with plastic, tape, sheet metal or other methods acceptable to enforcing agency to reduce dust or debris collected in the system.

B. CALGreen Division 5.5 - Environtmeal Quality: Indoor Moisture Control and Indoor Air Quality: Comply with requirements of this code section, local ordinances and pertinent sections specifying indoor air quality procedures. Provide the following precautions as a minimum if not specified elsewhere.

C. CALGreen Division 5.5 - Environmetnal Quality: Finish Material Pollutant Control: All Finish materials shall comply with requirements of this code section, local ordinances and Section 01-6116.

PART 3 EXECUTION

3.01 GENERAL

A. Comply with Section 01-7419 - Construction Waste Management and Disposal.

B. Comply with execution requirements of related sections, including Division 01 and applicable local codes and ordinances.

END OF SECTION

SECTION 02-4100
DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Selective demolition of built site elements.

1.02 RELATED REQUIREMENTS

A. Section 01-1000 - Summary: Limitations on Contractor's use of site and premises.

B. Section 01-1000 - Summary: Description of items to be salvaged or removed for re-use by Contractor.

C. Section 01-5000 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.

D. Section 01-6000 - Product Requirements: Handling and storage of items removed for salvage and relocation.

E. Section 01-7000 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.

F. Section 01-7419 - Construction Waste Management and Disposal: Limitations on disposal of removed materials; requirements for recycling.

G. Section 31-2200 - Grading: Rough and fine grading.

1.03 DEFINITIONS

A. Demolish: Dismantle, raze, destroy, or wreck any building or structure or any part thereof.

B. Remove: Detach or dismantle items from existing construction and dispose of them off site, unless items are indicated to be salvaged or reinstalled.

C. Remove and Salvage: Detach or dismantle items from existing construction in a manner to prevent damage. Clean, package, label and deliver salvaged items to Owner in ready-for-reuse condition.

D. Remove and Reinstall: Detach or dismantle items from existing construction in a manner to prevent damage. Clean and prepare for reuse and reinstall where indicated.

E. Existing to Remain: Designation for existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

1.04 SUBMITTALS

A. See Section 01-3000 - Administrative Requirements for submittal procedures.

B. Site Plan: Indicate:
   1. Vegetation to be protected.
   2. Areas for temporary construction and field offices.

C. Demolition Plan: Submit demolition plan as required by OSHA and local AHJs.
   1. Indicate extent of demolition, removal sequencing, bracing and shoring, and location and construction of barricades and fences.

D. Demolition firm qualifications.

E. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

PART 3 EXECUTION

2.01 DEMOLITION

A. Demolish existing pedestrian bridge and steel support structure. Existing concrete footings to remain in place. This s to limit excavation in the creek bed & waterway.

B. Demolish existing pedestrian bridge concrete abutments.

C. Remove paving and curbs required to accomplish new work.

D. Remove other items indicated, for salvage, relocation, and recycling.

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E. Fill excavations, open pits, and holes in ground areas generated as result of removals, using specified fill; compact fill as specified in Section 31-2000.

2.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with requirements in Section 01-7000.

B. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
   1. Obtain required permits.
   2. Use of explosives is not permitted.
   3. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
   4. Provide, erect, and maintain temporary barriers and security devices.
   5. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
   6. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
   7. Do not close or obstruct roadways or sidewalks without permits from authority having jurisdiction.
   8. Conduct operations to minimize obstruction of public and private entrances and exits. Do not obstruct required exits at any time. Protect persons using entrances and exits from removal operations.
   9. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon, or limit access to their property.

C. Do not begin removal until receipt of notification to proceed from Owner.

D. Protect existing structures and other elements to remain in place and not removed.
   1. Provide bracing and shoring.
   2. Prevent movement or settlement of adjacent structures.
   3. Stop work immediately if adjacent structures appear to be in danger.

E. Minimize production of dust due to demolition operations. Do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.

F. Hazardous Materials:
   1. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCBs, and mercury.

G. Partial Removal of Paving and Curbs: Neatly saw cut at right angle to surface.

2.03 EXISTING UTILITIES

A. Coordinate work with utility companies. Notify utilities before starting work, comply with their requirements, and obtain required permits.

B. Protect existing utilities to remain from damage.

C. Do not disrupt public utilities without permit from authority having jurisdiction.

D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.

E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.

F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.

G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

2.04 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

B. Remove materials not to be reused on site; comply with requirements of Section 01-7419 - Waste Management.

C. Leave site in clean condition, ready for subsequent work.

D. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

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SECTION 03-1000
CONCRETE FORMING AND ACCESSORIES

PART 1 GENERAL

1.01 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.

1.02 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”.

1.03 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.

1.04 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.

1.05 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

2.01 MATERIALS

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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.

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.

PART 3 – EXECUTION

3.01 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.

3.02 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.

3.03 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.

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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.

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.

3.04 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.

3.05 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. 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.

3.06 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.

3.07 FOOTINGS

A. Verify elevations and provide final excavation required for footings prior to placing of concrete.

3.08 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.

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3.09 FORMWORK TOLERANCES

A. Construct formwork to maintain tolerances required by ACI SPEC-301.

3.10 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.

3.11 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 ensure 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. Retaining Walls: 21 days minimum.
2. Footings: 7 days minimum. If backfilled immediately, side forms may be removed 24 hours after concrete is placed.

D. Durations listed above are minimums and are subject to extension at the sole judgment of the Architect/Engineer.

E. 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.

F. Store removed forms to prevent damage to form materials or to fresh concrete. Discard damaged forms.

3.12 CLEANING

A. Remove excess material and debris associated with this work from the job site.

END OF SECTION

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SECTION 03-2000
CONCRETE REINFORCING

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes:

1. Reinforcing steel work for all concrete 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, 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 other Divisions specifying work to be embedded in concrete or work penetrating concrete work.

1.02 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 A615 “Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement”.

F. ASTM A706 “Standard Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement”.

G. American Welding Society (AWS) D1.4 – “Structural Welding Code – Steel Reinforcing Bars”.

H. Concrete Reinforcing Steel Institute (CRSI) “Manual of Standard Practice”.

1.03 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.

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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.

1.04 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.

1.05 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

2.01 MATERIALS

A. Reinforcing Steel: Deformed billet steel bars, ASTM A706 Grade 60 or ASTM A615 Grade 60.

1. All reinforcement to be unfinished.

B. Tie Wire: No. 16 AWG or heavier, black annealed.

C. Concrete Blocks: On-grade conditions only, as required to support reinforcing bars in position.

D. 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.

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E. 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.

2.02 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.

2.03 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

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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

3.01 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.

3.02 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.

3.03 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.

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C. Coverage of bars (including stirrups and columns ties) shall be as follows, unless otherwise shown:

1. Concrete cast against earth or grade: 3 inches.
2. Concrete exposed to weather or formed and exposed to earth:
   a. #5 & smaller: 1-1/2 inches.
   b. #6 & larger: 2 inches.
3. Concrete not exposed to earth or weather:
   a. #5 & smaller: 1 inch.
   b. #6 & larger: 1-1/2 inches.

3.04 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. 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.

D. 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. Request Architect/Engineer review prior to placement for all splices not shown on the drawings.

E. Reinforcement Couplers: Install at all locations indicated. Install couplers in accordance with manufacturer’s recommendations.

3.05 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.

3.06 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.

3.07 CLEANING

A. Remove excess material and debris associated with this work from the job site.

END OF SECTION

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SECTION 03-3000
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 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. 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.

1.02 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 SPEC-301 “Specifications for Concrete Construction”.

D. ACI PRC-302.1 “Guide for Concrete Floor and Slab Construction”.

E. ACI PRC-304 “Guide for Measuring, Mixing, Transporting, and Placing Concrete”.

F. ACI PRC-305.1 “Specification for Hot Weather Concreting”.

G. ACI PRC-306.1 “Standard Specification for Cold Weather Concreting”.

H. ACI SPEC-308.1 “Specification for Curing Concrete”.

I. ACI CODE-318 “Building Code Requirements for Structural Concrete and Commentary”.

1.03 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.

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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. Project Record Documents: Accurately record actual locations of embedded utilities and components that will be concealed from view upon completion of concrete work.

1.04 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.

1.05 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.

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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.

1.06 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.

1.07 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. Accepted mock-up panel is considered basis of quality for the finished work. Keep mock-up exposed to view for duration of concrete work.

C. Mock-up may remain as part of the Work.

1.08 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.

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Update information as work progresses.

PART 2 PRODUCTS

2.01 FORMWORK

A. Comply with requirements of Section 03 1000.

2.02 REINFORCEMENT

A. Comply with requirements of Section 03 2000.

2.03 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. 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.
3. 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.
4. Recycled concrete products: Returned plastic concrete may not be used in a mix. Recycled Concrete Aggregate (RCA) is not permitted. Reclaimed coarse aggregate is permitted and shall comply with ASTM C33. Reclaimed fine aggregate is not permitted.

D. Water: ASTM C1602. Potable, clean, from domestic source. Where non-potable water is intended to be used, provide additional testing data demonstrating compliance with ASTM C1602. Non-potable water shall not be used without the approval of the Architect/Engineer.

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.

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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. 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.

2.04 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. Evaporation Reducer: "MasterKure ER 50” by Master Builders Solutions.

F. 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.

2.05 JOINT DEVICES AND MATERIALS

A. 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.

B. Joint Filler: ASTM D944, Compressible asphalt mastic with felt facers, 1/4 inch thick and 4 inches deep.

C. Slab Joint Sealant: Compatible with floor finishes specified in related sections.

2.06 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.

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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.
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.

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D. 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) Lean Concrete (use only where specified)	---	---	---	3.0
STRUCTURAL				
2) Foundation (including continuous footings, pad footings, grade beams, stem walls)	1" x #4	W/CM = .53	3,000	5.0
3) Cast Slab Above Grade on Metal Deck	3/4" x #4	W/CM = .53	3,000	5.0
4) Retaining Walls	1" x #4	W/CM = .46	4,000	6.0
5) Drilled Pier	3/4” x #4	W/CM = .53	3,000	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.

2.07 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.

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2.08 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

3.01 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.

3.02 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.

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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. At cold joints, remove laitance from previously placed concrete surface.
5. 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.
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.

3.03 PIPES AND CONDUITS IN CONCRETE

A. 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.

B. 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.

C. Do not embed pipes/conduits in concrete slabs on metal deck.

D. Provide the following at pipes/conduits detailed to be embedded in a concrete wall:
1. Place as near as possible to center of member with reinforcing as specified on each side.

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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.”

3.04 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. Progress Cleaning: Remove all concrete spilled on forms or reinforcing steel in portions of structure not immediately concreted. Remove completely before concrete sets.
3. 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.

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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.

3.05 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.

3.06 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.

3.07 CONCRETE FINISHES

A. Concrete On Top of Steel Deck Finishing:

1. All exposed concrete flatwork surfaces shall be non-slip. See Architectural drawings.

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.

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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.

3.08 TOLERANCES

A. 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.

3.09 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.

3.10 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 14 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. Concrete on Metal Decking: Moisture-Retaining Sheet method as specified above.

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.

3.11 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.

3.12 GROUTING AND DRY PACK

A. Bolts or inserts dry packed or grouted in place shall cure for minimum 7 days before tensioning.

3.13 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.

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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.

3.14 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, Elevated Slabs and on Slabs on Metal Deck: 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.

3.15 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.

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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. Defective work affecting the strength of the structure or the appearance: Complete removal and replacement of defective concrete, as directed by the Architect/Engineer.

3.16 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.

3.17 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 03-3710
DRILLED CONCRETE PIERS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes: Provide all labor, materials, equipment, and services to complete all drilled concrete pier work noted on drawings. The work shall include, but not be limited to the following:

1. Machine drilled shaft.
2. Placing concrete and reinforcing.

B. Related Sections:

1. Pertinent Sections of Division 00 specifying Information Available to Bidders: Subsurface Investigation Report.
2. Pertinent Sections of Division 01 specifying Quality Control and Testing Laboratory services.
3. Pertinent Sections of Division 03 specifying concrete construction.

1.02 REFERENCES

A. American Concrete Institute (ACI) 336.1 “Specification for the Construction of Drilled Piers”.

1.03 SUBMITTALS

A. 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.

B. Contractor shall maintain records of time, depth of pier, water level if encountered, temperature and date of concrete placement including mix design, and location in the structure. Retain records until completion of the contract. Make records available for review by testing agency and architect/engineer.

1.04 QUALITY ASSURANCE

A. Installer: Company specializing in performing the work of this section with minimum three years documented experience.

B. Contractor shall bear the entire cost of remediation, removal, and/or replacement of drilled piers determined defective or non-conforming, including Architect/Engineer fees for redesign.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Comply with pertinent requirements of Division 03.

1.06 SCHEDULING AND SEQUENCING

A. Organize the work and employ shop and field crew(s) of sufficient size to minimize inspections by the testing agency and geotechnical engineer.

B. Provide schedule and sequence information in writing upon request. Update information as work progresses.

PART 2 PRODUCTS

2.01 CONCRETE MATERIALS AND MIX

A. Comply with requirements of Section 03 30 00.

2.02 REINFORCEMENT

A. Comply with requirements of Section 03 20 00.

2.03 EQUIPMENT

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A. Appropriate to dewater excavated shaft. Where water is encountered, notify GEOR and SEOR of proposed mitigation techniques.

PART 3 EXECUTION

3.01 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.

C. Verify site conditions.

D. Verify site conditions will support equipment for performing pier drilling operations and testing.

E. Verify location, position and inclusion of all drilled pier locations and any embedded or concealed items. Any discrepancies are to be brought to the attention of the architect/engineer so clarification can be made prior to commencing work.

3.02 PREPARATION

A. Use placement method which will not cause damage to nearby structures.

B. Notify adjacent and affected landowners and building occupants with 7 days notice before proceeding with the work.

3.03 INSTALLATION

A. Drill concentric and vertical pier shafts to diameters and depths indicated.

B. Clean shaft and bottom of loose material including dirt, mud, standing water and foreign matter from all pier excavations.

C. All pier excavations shall be reviewed by both the GEOR and SEOR before reinforcement and concrete is placed.

D. Place reinforcing steel in accordance with Section 03 20 00. All steel reinforcement shall be placed, tied and secured within the pier excavation before concrete is placed. Contractor to place centralizers every other vertical bar around the perimeter of the cage @ 10’-0” oc.

E. Place concrete in accordance with Section 03 30 00 with equipment designed for vertical placement of concrete.

F. Where groundwater is encountered, concrete shall be placed by the tremie method by placing the concrete through a pipe to the interior of the concrete being poured, thus preventing contact with the surrounding water.

G. Upon completion of pier drilling, concrete is to be placed within a reasonable timeframe, determined by the GEOR. If excavation is to be left unfilled for more than 24 hours, contractor shall provide shaft casing to protect the integrity of the hole. Shaft casing shall be removed gradually as concrete is poured.

H. Concrete Deposition:

1. Deposit concrete to maintain an approximately horizontal plastic surface until the completion of the unit placement.
2. Deposit as neatly as practicable in final position. Minimize rehandling or flow.
3. Do not drop concrete freely where reinforcing bars, embeds, or obstruction occur that may cause segregation. Provide spouts, elephant trunks, or other means to prevent segregation during placement.

I. Once placement has started, it shall be carried on as a continuous operation until section of approved size and shape is completed.

J. Extend reinforcement. Provide dowels for connection of grade beams as indicated in drawings.

3.04 TOLERANCES

1. Maximum variation from vertical: 1 in 48.

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2. Top elevation: Maximum 4 inches from elevation indicated.

3.05 FIELD QUALITY CONTROL

A. Field inspection will be performed under provisions of pertinent sections of Division 01 specifying quality control and testing laboratory services.

B. Accurately record the following:

1. Sizes, lengths, and locations of piers
2. Sequence of placement
3. Final Base and top elevations
4. Deviation from indicated locations

END OF SECTION

SECTION 05-5213
PIPE AND TUBE RAILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Handrails for ramps.

1.02 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.

B. AISC 201 - AISC Certification Program for Structural Steel Fabricators, Standard for Steel Building Structures; 2006.

C. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2024.

D. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2024.

E. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2023.

F. ASTM A780/A780M - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings; 2020.

G. ASTM E935 - Standard Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings; 2021.

H. ASTM E985 - Standard Specification for Permanent Metal Railing Systems and Rails for Buildings; 2024.

I. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination; 2020.

J. AWS B2.1/B2.1M - Specification for Welding Procedure and Performance Qualification; 2021, with Errata (2023).

K. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2025.

L. AWS D1.6/D1.6M - Structural Welding Code - Stainless Steel; 2017, with Amendment (2021).

M. CBSC (CBC) - California Building Code, California Code of Regulations, Title 24, Part 2, Volumes 1 & 2; Most Recent Edition Adopted by the California Building Standards Commission.

N. AWS C3.4M/C3.4 - Specification for Torch Brazing; 2016.

O. AWS C3.5M/C3.5 - Specification for Induction Brazing; 2016, with Amendment (2017).

P. AWS C3.9M/C3.9 - Specification for Resistance Brazing; 2020.

Q. IAS AC172 - Accreditation Criteria for Fabricator Inspection Programs for Structural Steel AC172; 2019.

R. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic); 2019.

1.03 SUBMITTALS

A. See Section 01-3000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Indicate profiles, sizes, connection attachments, anchorage, size and type of fasteners, and accessories.
   1. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.

C. Welders' Qualification Statement: Welders' certificates in accordance with AWS B2.1/B2.1M and dated within the previous 12 months.

D. Fabricator's Qualification Statement.

1.04 QUALITY ASSURANCE

A. Welder Qualifications: Welding processes and welding operators qualified within previous 12 months.

B. Fabricator Qualifications:
   1. A qualified steel fabricator that is certified by the American Institute for Steel Construction (AISC) under AISC 201.

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2. A qualified steel fabricator that is accredited by the International Accreditation Service (IAS) Fabricator Inspection Program for Structural Steel in accordance with IAS AC172.
3. A company specializing in manufacturing products specified in this section, with not less than ten years of documented experience.

PART 2 PRODUCTS

2.01 RAILINGS - GENERAL REQUIREMENTS

A. Design, fabricate, and test railing assemblies in accordance with the most stringent requirements of applicable local code.

B. Comply with ASTM E985.

C. Distributed Loads: Design railing assembly, wall rails, and attachments to resist distributed force of 50 pounds per linear foot applied to the top of the assembly and in any direction, without damage or permanent set. Test in accordance with ASTM E935

D. Concentrated Loads: Design railing assembly, wall rails, and attachments to resist a concentrated force of 200 pounds applied at any point on the top of the assembly and in any direction, without damage or permanent set. Test in accordance with ASTM E935

E. Allow for expansion and contraction of members and building movement without damage to connections or members.

F. Dimensions: See drawings for configurations and heights.

G. Provide anchors and other components as required to attach to structure, made of same materials as railing components unless otherwise indicated; where exposed fasteners are unavoidable provide flush countersunk fasteners.

H. Provide mechanical and welding fittings where indicated to join lengths, seal open ends, and conceal exposed mounting bolts and nuts, including but not limited to elbows, T-shapes, splice connectors, flanges, escutcheons, and wall brackets.

I. Welded and Brazed Joints: Make visible joints butt tight, flush, and hairline; use methods that avoid discoloration and damage of finish; grind smooth, polish, and restore to required finish.
   1. Ease exposed edges to a small uniform radius.
   2. Welded Joints:
      a. Carbon Steel: Perform welding in accordance with AWS D1.1/D1.1M.
      b. Stainless Steel: Perform welding in accordance with AWS D1.6/D1.6M.
   3. Brass/Bronze Brazed Joints:
      a. Perform torch brazing in accordance with AWS C3.4M/C3.4.
      b. Perform induction brazing in accordance with AWS C3.5M/C 3.5.
      c. Perform resistance brazing in accordance with AWS C3.9M/C3.9.

2.02 STEEL RAILING SYSTEM

A. Steel Tube: ASTM A500/A500M Grade B cold-formed structural tubing.

B. Steel Pipe: ASTM A53/A53M Grade B Schedule 40, galvanized finish.

C. Welding Fittings: Factory- or shop-welded from matching pipe or tube; seams continuously welded; joints and seams ground smooth.

D. Exposed Fasteners: No exposed bolts or screws.

E. Galvanizing: In accordance with requirements of ASTM A123/A123M.
   1. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20 Type I - Inorganic.

2.03 FABRICATION

A. Accurately form components to suit specific project conditions and for proper connection to building structure.

B. Fit and shop assemble components in largest practical sizes for delivery to site.

C. Fabricate components with joints tightly fitted and secured. Provide spigots and sleeves to accommodate site assembly and installation.

D. Welded Joints:

1. Exterior Components: Continuously seal joined pieces by intermittent welds and plastic filler. Drill condensate drainage holes at bottom of members at locations that will not encourage water intrusion.
2. Interior Components: Continuously seal joined pieces by intermittent welds and plastic filler.
3. 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.

E. Weld connections that cannot be shop welded due to size limitations.
1. Weld in accordance with AWS D1.1/D1.1M.
2. Match shop welding and bolting.
3. Clean welds, bolted connections, and abraded areas.
4. Touch up shop primer and factory-applied finishes.
5. Repair galvanizing with galvanizing repair paint per ASTM A780/A780M.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

A. Supply items required to be cast into concrete with setting templates, for installation as work of other sections.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install components plumb and level, accurately fitted, free from distortion or defects, with tight joints.

C. Install railings in compliance with CBSC (CBC) and ADA Standards for accessible design at applicable locations.

D. Anchor railings securely to structure.

3.04 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per floor level, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch.

C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION

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SECTION 26 0500
BASIC ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Work included in this Section: All materials, labor, equipment, services, and incidentals necessary to provide and install the Electrical Work as shown on the drawings and as specified hereinafter, including, but not limited to the following:

1. New Feeder and branch circuits for bridge crossing, including conduits and all mounting to bridge.
2. New flush in-ground pullbox, pullbox covers, and grade extension.
3. New site lighting poles and LED fixtures.
4. All required incidental work, such as trenching, electrical testing, and temporary power.
5. Any other electrical work as might reasonably be implied as required, even though not specifically mentioned herein or shown on the the drawings.
6. It is the intent of the drawings and specifications that systems be complete and, except as otherwise noted, be ready for operation.

1.2 RELATED WORK

A. Division 1 - General Requirements

1.3 INCORPORATED DOCUMENTS

A. Requirements of the General Conditions, Supplementary Conditions, and Division 1 Sections apply to all work in this Section, unless modified herein.

B. Published specifications, standard tests or recommended methods of trade, industry or government organizations apply to work of this Section where cited by abbreviations noted below, unless modified herein.

1. 2022 California Code of Regulations.
2. 2022 California Building Standards Administrative Code, Part 1, Title 24, C.C.R.
3. 2022 California Building Code (CBC), Part 2, Title 24, C.C.R. (Based on 2021 International Building Code with 2022 California Amendments).
4. 2022 California Electrical Code (CEC), Part 3, Title 24, C.C.R. (Based on 2017 National Electrical Code with 2022 California Amendments).
5. California Energy Code, Part 6, Title 24, C.C.R.
6. 2022 California Fire Code (CFC), Part 9, Title 24, C.C.R. (Based on 2021 International Fire Code with 2022 California Amendments).
7. 2022 California Green Building Standards (CALGreen) Code, Part 11.
8. American Society of Civil Engineers 7-16 (ASCE/SEI), Minimum Design Loads for Buildings and Other Structures.
9. Underwriters' Laboratories, Inc. (UL).

C. All State and Municipal Codes and Ordinances.

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1.4 CONDITIONS AT SITE:

A. Visit to site is required of all bidders prior to submission of bid. All will be held to have familiarized themselves with all discernible conditions and no extra payment will be allowed for work required because of these conditions, whether specifically mentioned or not.

B. Lines of other services that are damaged as a result of this work shall promptly be repaired at no expense to the Owner to the complete satisfaction of the Owner.

1.5 QUALITY ASSURANCE

A. Conformance:

1. All work shall conform to the applicable requirements of Article 1.3 above.

2. The Contractor shall notify the Architect, prior to submission of bid, about any part of the design, which fails to comply with abovementioned requirements.

3. If after contract is awarded, minor changes and additions are required by aforementioned authorities, even though such work is not shown on the drawings or covered in the specifications, they shall be included at Contractor's expense.

B. Coordination:

1. The Contractor shall become familiar with the conditions at the job site, and with the drawings and specifications and plan the installation of the electrical work to conform with the existing conditions and that shown and specified so as to provide the best possible assembly of the combined work of all trades.

2. The Contractor shall work out in advance all "tight" conditions, involving all trades and if found necessary, supplementary drawings shall be prepared by this Contractor, for the Architect's approval, before work proceeds in these areas. No additional costs will be considered for work, which must be relocated due to conflicts with the work of other trades.

1.6 SUBMITTALS

A. Product Data:

1. Comply with the provisions of Section 01 33 00 - Submittals.

2. Within 15 days after award of the Contract, submit:

a. Complete electrical and lighting systems material list of all items proposed to be furnished and installed under this Division. Provide manufacturers data sheets for all devices, raceways, fixtures, equipment, and related products to be used for the Division 26 work.

b. Manufacturers' specifications and other data required demonstrating compliance with the specified requirements.

c. Manufacturers' recommended installation procedures which, when approved by the Architect, shall become the basis for inspecting and accepting or rejecting actual installation procedures used on the work.

3. Shop Drawings: Furnish shop drawings and/or equipment cuts for the following:

a. Light fixtures.

b. Pullboxes and covers.

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c. Raceways and mounting hardware.

d. Conductors.

4. Test Reports:

a. Megger Tests: As specified under TESTING.

5. Record Documents: "As-builts": As specified under Paragraph 3.2 of this Section.

1.7 DELIVERY, STORAGE AND HANDLING

A. Protection: Use all means necessary to protect the materials of this Section before, during, and after installation and to protect the work and materials of all trades.

B. Delivery and Storage: Deliver all materials to the job site in their original containers with all labels intact and legible at time of use. Store in strict accordance with approved manufacturers' recommendations.

C. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

D. This Contractor shall personally, or through an authorized representative, check all materials upon receipt at jobsite for conformance with approved shop drawings and/or plans and specifications.

1.8 SCHEDULING/SEQUENCING

A. Place orders for all equipment in time to prevent any delay in construction schedule or completion of project. If any materials or equipment are not ordered in time, additional charges made by equipment manufacturers to complete their equipment in time to meet the construction schedule, together with any special handling charges, shall be borne by this Contractor.

1.9 REQUIREMENTS

A. The contract drawings indicate the extent and general arrangements of the conduit wiring systems, etc. If any departures from the contract drawings are deemed necessary by the Contractor, details of such departures and the reasons therefore shall be submitted as soon as practicable, and within thirty-five (35) days after award of the electrical contract.

B. Unless material list and data is received as a complete and all-inclusive submittal within the stipulated time all items shall be provided as specified, with no deviations permitted.

C. Any and all additional costs incurred by the substitution of electrical material or equipment, or installation thereof, whether architectural, structural, plumbing, mechanical or electrical, shall be borne by the Contractor under this Section.

D. Burden of proof of equality of any substitution for a specified product is the responsibility of this Contractor.

E. Where required by Architect to ascertain equality of substitute product, Contractor may be requested to provide the specified item and the submitted substitution for comparison, at no additional cost to the Owner.

1.10 DESCRIPTION OF DEMOLITION AND REPLACEMENT WORK

A. This project includes the demolition and replacement, modification, or enhancement of existing facilities. As such, the project scope for this contractor shall include all associated electrical and lighting system upgrades and demolition/removal work at the existing bridge and site. The

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intent is that all systems will be complete and functional at the completion of this contract and that all old systems, equipment, feeders, circuits, wiring, and related devices (no longer used) be completely and neatly removed. Where discrepancies between the drawings and existing conditions are noted, the Architect or Owner shall be notified immediately for resolution.

B. As with every renovation project, the electrical work will include (and require) exploration and other field work on a daily basis to complete the new designed equipment and connections within the constraints of the existing site conditions.

C. The contractor shall include as part of the base bid, sufficient labor hours to provide such exploration and field work throughout the duration of the project. Change orders for miscellaneous coordination of existing conditions will not be approved unless specific and latent conditions are uncovered that warrant such additional compensation or require additional work not shown on the drawings or included in the specifications, or implied by the designed conditions.

1.11 GUARANTEE

A. This Contractor shall guarantee that all work executed under this Section will be free from defects of materials and workmanship for a period of one (1) year or as per the General Conditions of this project, whichever is longer. Dates shall be from the date of final acceptance of the building. The contractor shall further guarantee that he will, at his own expense, repair and replace all such defective work, and all other work damaged thereby, which becomes defective during the term of the guarantee. Such repair or replacement shall be guaranteed for one (1) year from the date of repair or replacement.

1.12 PERMITS AND INSPECTIONS

A. This Contractor shall arrange for and obtain all required permits and inspections.

B. Do not allow or cause any of the work to be covered or enclosed until it has been tested and/or inspected.

PART 2 - PRODUCTS

2.1 GENERAL

A. Refer to applicable Division 26 Sections for complete products specifications.

2.2 MATERIALS

A. Materials of the same type or classification, used for the same purpose, shall be the product of the same manufacturer.

2.3 ACCEPTABLE MANUFACTURERS

A. Materials shall be of make mentioned elsewhere in this specification. All materials shall be the best of their several kinds, perfectly new and approved by the Underwriters' Laboratories.

B. Where material, equipment, apparatus or other products are specified by manufacturer, brand name, type or catalog number, such designation is to establish standards of desired quality, style and utility and shall be the basis of the bid. Materials so specified shall be furnished under the contract unless changed by written approval of the Architect. Where two or more designations are listed, choice shall be optional with this Contractor, but this Contractor must submit his choice for final approval.

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2.4 POSTED OPERATING INSTRUCTIONS

A. Furnish approved operating instructions for systems and equipment where indicated in the technical sections for use by operation and maintenance personnel. The operating instructions shall include wiring diagrams, control diagrams, and control sequence for each principal system and equipment. Print or engrave operating instructions and frame under glass or in approved laminated plastic. Post instructions as directed. Attach or post operating instructions adjacent to each principal system and equipment including startup, proper adjustment, operating, lubrication, shutdown, safety precautions, procedure in the event of equipment failure, and other items of instruction as recommended by the manufacturer of each system or equipment. Provide weather-resistant materials or weatherproof enclosures for operating instruction exposed to the weather. Operating instruction shall not fade when exposed to sunlight and shall be secured to prevent easy removal or peeling.

2.5 CATALOGED PRODUCTS/SERVICE AVAILABILITY

A. Materials and equipment shall be current products by manufacturers regularly engaged in the production of such products. Products shall have been in satisfactory commercial or industrial use for 2 years prior to bid opening. The 2-year period shall include applications of equipment and materials under similar circumstances and of similar size. The 2-year period shall be satisfactorily completed by a product for sale on the commercial market through advertisements, manufacturers' catalogs, or brochures. Products having less than a 2-year field service record will be acceptable if a certified record of satisfactory field operation for not less than 6,000 hours, exclusive of the manufacturers' factory or laboratory tests, is furnished. The equipment items shall be supported by service organizations which are reasonable convenient to the equipment installation in order to render satisfactory service to the equipment on a regular and emergency basis during the warranty period of the contract.

PART 3 - EXECUTION

3.1 INSPECTION

A. Examine the areas and conditions under which the work of this Section will be installed. Correct conditions detrimental to the proper and timely completion of the Work. Do not proceed until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Drawings:

1. The general arrangement and location of wiring and equipment is shown on the electrical drawings and shall be installed in accordance therewith, except for minor changes required by conflict with the work of other trades.

2. All dimensions are to be taken from the Architectural Drawings, verified at site by this Contractor.

3. Maintain "as-built" records at all times, showing the exact location of concealed conduits and feeders installed under this contract, and actual numbering of each circuit. Upon completion of work and before acceptance can be considered, this Contractor must forward to the Architect, updated CAD plans, corrected to show the electrical work as actually installed.

B. Measurements: Before ordering any material or closing in any work, verify all measurements on the job. Any differences found between dimensions on the drawings and actual measurements shall be brought to the Architect's attention for consideration before proceeding.

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3.3 FIELD QUALITY CONTROL

A. All workmanship shall be first class and carried out in a manner satisfactory to and approved by the Architect.

B. This Contractor shall personally, or through an authorized and competent representative, constantly supervise the work and so far as possible keep the same foreman and workmen on the job throughout.

3.4 TEMPORARY LIGHTING AND POWER

A. Provide and install temporary lighting and power systems for the duration of construction, of adequate size to accommodate the required lighting and power loads. Coordinate with other trades to insure adequate sizing.

B. Provide distribution equipment as required to support all construction activities.

3.5 ADJUSTING AND CLEANING

A. All electrical equipment, including existing equipment not "finish painted" under other sections, shall be touched up where finished surface is marred or damaged.

B. All equipment, lighting fixtures, etc., shall be left in clean condition, with all shipping and otherwise unnecessary labels removed there from.

3.6 SCHEDULES

A. Coordination: Coordinate installation of electrical items with the schedule for other work to prevent unnecessary delays in the total Work.

3.7 WARNING SIGN MOUNTING

A. Provide the number of signs required to be readable from each accessible side, but space the signs a maximum of 30 feet apart.

3.8 PAINTING OF EQUIPMENT

A. Factory Applied: Electrical equipment shall have factory-applied painting systems which shall, as a minimum, meet the requirements of NEMA ICS 6 corrosion-resistance test, except equipment specified to meet requirements of ANSI C37.20 shall have a finish as specified in ANSI C37.20.

B. Field Applied: Paint electrical equipment as required to match finish or meet safety criteria. Painting shall be as specified in the respective equipment section.

3.9 TESTS

A. Testing and inspection: See Section 26 08 00 - Testing.

END OF SECTION

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SECTION 26 0800
TESTING

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Work Included in This Section: All materials, labor, equipment, services, and incidentals necessary to perform the testing and inspection of the electrical work, including but not limited to the general systems noted below:

1. Grounding system.
2. Lighting system.
3. Distribution system.
4. Any other electrical work as might reasonably be implied as required, even though not specifically mentioned herein or shown on the drawings.
5. All work shall comply with Sections 26 05 00 and 26 27 00.
6. In addition to the general system tests and inspections indicated above, the Contractor shall perform the following inspections and tests. The Contractor shall provide all material, equipment, labor, and technical supervision to perform such tests and inspections:
    a. System Grounding.
    b. Feeders.
7. The purpose of these tests is to assure that all tested electrical equipment is operational and within industry and manufacturer's tolerances and is installed in accordance with design specifications.

1.2 APPLICABLE CODES, STANDARDS, AND REFERENCES

A. All inspections and tests shall be in accordance with the International Electrical Testing Association - Acceptance Testing Specifications ATS-2021 (referred to herein as NETA ATS-2021).

1.3 QUALIFICATIONS

A. Qualifications of the Testing Firm shall be as listed in NETA ATS-2021.

PART 2 - PRODUCTS

2.1 THIS ARTICLE DOES NOT APPLY TO TESTING.

PART 3 - EXECUTION

3.1 GENERAL

A. Final test and inspection to be conducted in presence of the Authority having Jurisdiction (AHJ) or Inspector of Record (IOR). Test shall be conducted at the expense of, and managed by, the Contractor, at a mutually agreed time. Submit written test report of all tests, with test result values and overall outcome.

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B. All portions of the electrical installation shall be inspected and tested to ensure safety to building occupants, operating personnel, conformity to code authorities and Contract Documents, and for proper system operation.

3.2 INSPECTIONS AND TESTS

A. Tests: Field tests shall be performed and reports submitted, as per Section 26 05 00, Part 1.

1. Final Inspection Certificates: Prior to final payment approval, deliver to the Owner, with a copy to the Architect, signed certificates of final inspection by the appropriate local authority having jurisdiction.
2. Grounding System:
    a. All ground connections shall be checked and the entire system shall be checked for continuity.
    b. Ground tests shall meet or exceed the requirements of the National Electric Code.
3. Lighting System:
    a. The lighting system shall be checked for proper controls and operation.
4. Power Distribution System:
    a. Test main panel and distribution panel for grounds and shorts with mains disconnected from feeders, branch circuits connected and circuit breakers closed, all fixtures in place and permanently connected and grounding jumper to neutral lifted and with all wall switches closed.
    b. Check verification of color coding, tagging, numbering, and splice make-up.
    c. Verify that all conductors associated with each circuit are in same conduit.
    d. Perform megger tests of all new distribution system feeders prior to energizing. All Cables failing megger tests or with evidence of damage shall be removed and replaced in their entirety (no splices), at no cost to the Owner. Damaged cables may not be field repaired without specific approval of the Architect.
5. Lighting Control System: Verify that all equipment, components, and devices function as specified.

END OF SECTION

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SECTION 26 2700
BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Work included in this Section: All materials, labor, equipment, services, and incidentals necessary to install the electrical work as shown on the drawings and as specified hereinafter, including but not limited to the work listed below:

1. Raceways, feeders, and branch circuit wiring.

B. Any other electrical work as might reasonably be implied as required, even though not specifically mentioned herein or shown on the drawings.

C. All work shall comply with Section 26 05 00.

1.2 SUBMITTALS

A. Comply with the provisions of Section 26 05 00.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Refer to Section 26 05 00, Basic Electrical Requirements, Part 2 - Products.

B. List of Equipment Manufacturers:

C. Conduit and Conduit Fittings

1. Allied Tube and Conduit, Wester Tube and Conduit, LTV Steel Tubular, National Electric Products, AFC, Republic Steel Corporation, Rome Cable Corporation, United States Steel Corporation, Killark Electric Manufacting Company, Raco, VAW Aluminum Company, Bridgeport, Steel City, Thomas & Betts, Carlon, O.Z. Gedney, Appleton, Regal.

D. Wire and Cable (600V)

1. American Wire Company, General Wire and Cable Corporation, Okonite Company, Rome Cable Corporation, Cerrowire, American Insulated Wire, AFC Cable Systems, Essex, Simplex Wire and Cable Company, Southwire.

E. Solderless Lugs and Grounding Connections

1. Burndy Engineering Company Inc, O.Z. Gedney Company Inc, Penn Union Electric Corporation, Thomas and Betts Company Inc.

F. Pull Boxes, Gutters, Special Cabinets

1. Schneider-Square D Company, Columbia Electric Manufacturing Company, General Electric Company, Eaton Inc.

2.2 MATERIALS

A. Grounding:

1. Provide and install grounding system as noted on the drawings.

2. Ground all isolated sections of metallic raceways with grounding bushings.

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B. Raceways: Only the raceways specified below shall be utilized on this project. Substitutions shall be pre-approved in writing. All bare conduit ends (stub-ups or stub-outs) shall be provided with bushed ends or manufactured insulated throat connectors:

1. Rigid Type - hot dip galvanized or sherardized steel, use on bridge with completely watertight, threaded fittings throughout. Compression fittings are not acceptable.

    a. All rigid steel conduit couplings and elbows in soil or concrete or under membrane to be ½ lap wrapped with Scotch #50 tape and threaded ends coated with T&B #S.C.40 rust inhibitor prior to installation of couplings.

    b. ½ lap wrap all rigid steel conduit stub-ups from slab or grade to 6" above finished grade level with Scotch #50 tape.

2. In lieu of rigid steel conduit for power and control raceways and branch circuit conduits in soil, "Schedule 40" PVC with Schedule 80 PVC conduit elbows may be used with code size ground wire.

    a. Where schedule 80 PVC is coupled to schedule 40 or other raceways with differing interior dimensions, each end shall be reamed with a reaming tool to reduce the edge profile for protection of the passing conductors during the pull.

3. All conduit cuts (factory or field cut) shall be perfectly square to the length of the conduit and cut ends shall be reamed with a reaming tool to provide a smooth edge to the passing conductors and to remove all burs and scrapes. Use of a hand file is not acceptable.

C. Junction Boxes.

1. Pull boxes: All site pull boxes shall be flush in-ground concrete, with engraved covers identifying service use. Boxes shall be Nema 250, Type 6, outside flanged, with recessed cover for flush mounting, by Christy or equal, with required depth to provide box and conduit depths shown or required.

    a. Provide concrete covers for all boxes in planted or paved areas (up to available concrete cover size).

    b. All covers to be completely flush with finished adjacent surfaces.

D. Wire and Cable (line voltage and signal systems):

1. 600-volt class where used for or run with line voltage power wiring, insulation color coded.

2. All conductors shall be copper.

3. Size and insulation type:

    a. Standard locations: #12 to #1 AWG: THWN for wet locations and THHN for dry locations. #1/0 through #4/0 AWG: XHHW (55 Mils). 250MCM and larger: XHHW (65 Mils). All wire sizes used shall be based on a 75 degree insulation rating, unless specifically used with 90 degree rated breakers and devices.

    b. All wiring (power and signal) installed underground between buildings, or in wet or damp locations, shall be outside listed and rated for wet locations.

4. Install all wiring branch circuits and feeders in conduit. Contractor shall mandrel all raceways and pass a "sock" (or utilize other suitable means) through each raceway prior to pull to remove all water and construction debris. All raceways shall be completely clear of any obstructions or debris and all cut ends shall be reamed, prior to pull. Utilize pulling compound on all runs to insure minimum friction and pulling tension.

5. Megger test all new feeders prior to energizing. See section 26 08 00 for additional information.

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6. Neutral conductor identified by white outer braid, with different tracers of "EZ" numbering tags used where more than one neutral conductor is contained in a single raceway.

7. All wire and cable shall bear the Underwriters' Label, brought to the job in unbroken packages; wire color-coded as follows:

a.	Voltage	Phasing	A	B	C	N
b.	120/208	3PH4W	Black	Red	Blue	White
c.	2083PH	3W	Black	Red	Blue	--

8. The equipment grounding conductor shall be insulated copper; where it is insulated, the insulation shall be colored green.

9. Label each wire of each electrical system in each pull box, junction box, outlet box, terminal cabinet, and panelboard in which it appears with "EZ" numbering tags indicating the connected circuit numbers.

E. Lugs and Connectors: Thomas and Betts "lock-tite", for No. 4 and larger wire; 3M "Scotchlock" fixed spring screw-on type wire connectors with insulator for No. 6 and smaller wire.

1. All splices shall be made up with screw-on type connectors - no plug-in or push-in style connectors acceptable. Wires shall be solidly twisted together with electricians pliers before screw-on connector is installed to ensure a proper connection in the event of wire nut failure. No exceptions.

2. Connectors listed or labeled for “no wire twisting required” are not an acceptable substitute for actual wire twisting.

3. Utilize porcelain type connectors in all high temperature environments (above 105 degrees Celsius).

F. Splice Insulation: "Scotch" electrical tape with vinyl plastic backing or rubber tape with protective friction tape for interior work.

1. Splices in electrical cables of 600 volt insulation class in underground system duct shall be made only in accessible locations such as pullboxes, light pole handholes, etc., using a compression connector on the conductor and by insulating and waterproofing (for exterior and underground locations) by one of the following methods:

a. Cast type splice insulation shall be provided by means of a molded casting process employing a thermosetting epoxy resin insulating material which shall be applied by a gravity poured method or by a pressure injected method. The component materials of the resin insulation shall be in a packaged form ready for convenient mixing after removing from the package. Do not allow the cables to be removed until after the splicing material has completely set.

b. Gravity poured method shall employ materials and equipment contained in an approved commercial splicing kit which includes a mold suitable for the cables to be applied. When the mold is in place around the joined conductors, the resin mix shall be prepared and poured into the mold. Do not allow cables to be moved until after the splicing materials have completely set.

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PART 3 - EXECUTION

3.1 REFER TO BASIC ELECTRICAL REQUIREMENTS - SECTION 26 05 00 FOR WORK UNDER THIS SECTION.

3.2 TESTS

A. Testing and Inspection: See Section 26 08 00 - Testing.

END OF SECTION

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SECTION 31 1000
SITE PREPARATION

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Locate and mark existing utilities within the limits of work.
   2. Remove all existing structures, surface and subsurface improvements within the area indicated, except for existing surface improvements and utilities indicated to remain on the drawings.
   3. Install and maintain tree protective fencing around trees to be saved and remove all existing trees within the limits of work except those designated to remain.
   4. Properly dispose of all unsuitable material.
   5. Strip all areas within the limits of work.
   6. Relocate existing utilities as indicated to maintain service.
   7. Deploy and subsequently remove temporary construction area fencing at completion of construction.
   8. Obtain and pay for encroachment permit for work in public right of way.

1.02 RELATED SECTIONS

A. Section 31 2000 – Earthwork

B. Section 31 2316 – Trenching, Backfilling and Compaction

1.03 REFERENCES

A. Reference Data:
   1. If the year of the adoption or latest revision is omitted from the designation, it shall mean the specification, manual or test designation in effect the date the Notice to Proceed with the work is given.

B. City of San Rafael Standard Plans and Specifications.

C. Caltrans Standard Plans and Specifications, where applicable.

PART 2 PRODUCTS

2.01 CLEARED MATERIAL

A. The unsuitable cleared material including fencing, gates, structural fragments, broken concrete, asphalt, header board, underground utilities, trees, mulch, benches, basketball hoops and other similar debris, shall be completely removed from the project site and disposed of properly.

B. Certain improvements as designated on the plan shall be carefully removed and returned to the owner's maintenance facility.

2.02 STRIPPED MATERIAL

A. Objectionable and excess stripped material shall be removed from the project site and disposed of properly.

PART 3 EXECUTION

3.01 EROSION CONTROL

A. Install and maintain fiber rolls, drainage inlet protection etc., until such time as all vegetative and hard surface improvements within their individual tributary areas are completed, if work is undertaken prior to April 15 or is incomplete on October 15. Provide periodic maintenance of all such devices, and following completion of said improvements, remove and dispose of erosion control devices and repair surfaces to match final specified surface finishes.

3.02 CLEARING AND GRUBBING

A. Install tree protective fencing around trees designated to be saved prior to the start of demolition work. See Landscape Plans and Specifications. Install fencing as far from the trunk as possible to allow for construction of proposed improvements. Maintain fencing throughout duration of construction.

B. The area above the natural ground surface shall be cleared of all vegetable growth such as trees not designated to be saved, roots, brush, grass and weeds and all other objectionable material including concrete, asphalt, baserock, masonry, sheet metal, lumber, retaining walls, utility enclosures, guardrails, stairs and similar materials within the limits of construction.

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C. The natural ground surface within the entire site, except within the tree protection zones, shall be grubbed to a depth necessary to remove all stumps, buried logs, roots over 2-inches in diameter and all other unsuitable material. Stumps shall be removed to a depth of at least 24" below original grade.

D. Existing utilities to be abandoned that are located within the limit of work line shall be removed.

E. All excess and unsuitable material shall be removed from the construction area and disposed of properly. Comply with hazardous materials abatement regulations that may apply.

F. Certain improvements designated on the plan shall be carefully removed and shall be returned to the owner's maintenance facility.

3.03 STRIPPING

A. The upper soils containing grass, small roots and other vegetation to a depth of 4 inches shall be stripped from and removed from the site. Deeper stripping may be required in localized areas to remove roots or other concentrations of organic material.

B. Dust control shall be performed by the contractor during all phases of the construction. Payment for the dust control work involved shall be considered included in the various other items of work and no additional allowance will be made therefor.

C. The Geotechnical Engineer will observe the clearing and stripping operations and recommend the maximum depth of stripping required and any additional excavation necessary due to contamination of materials or concentrations of vegetation.

D. All suitable stripped material in excess of those needed to backfill planter areas shall be removed from the project site and disposed of properly.

3.04 SURFACE IMPROVEMENT AND UTILITY REMOVAL AND RELOCATION

A. The Contractor shall have Underground Service Alert mark all existing public utilities as a first order of work. Additionally, the contractor shall have a locating service mark all existing private utilities within the limits of work.

B. The Contractor shall pothole each existing utility that will be extended or reused at its point of cut and removal to confirm the actual locations and depths. Notify engineer of results.

C. Existing water, sewer, storm drain, gas, electrical, communication (data) services and mains to be abandoned and removed as indicated on the plans. Comply with construction sequencing requirements to limit utility outages as required by the owner.

D. All concrete and asphalt pavements and other existing improvements within the areas to be developed should be removed during site demolition.

E. See Mechanical, Electrical, and Civil plans for detailed removal/replacements requirements.

3.05 CLEAN UP

A. Remove all debris and stains resulting from the work of this section.

END OF SECTION

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SECTION 31-2000
EARTHWORK

PART 1 GENERAL

1.01 SUMMARY

A. Section includes:
   1. Excavation and/or overexcavation of earth and rock, regardless of character and subsurface condition.
   2. Preparation of subgrade for the placement of other material thereon.
   3. Transportation, placement, compaction and finish filling materials.
   4. Mixing, blending and moisture conditioning materials as required.
   5. Removal and replacement of unsuitable materials.
   6. Dewatering or other measures to control and remove groundwater.
   7. Disposal of surplus excavated material properly offsite.

1.02 RELATED SECTIONS

A. Section 31-1000 – Site Preparation

B. Section 31-2316 – Trenching, Backfilling and Compaction

1.03 REFERENCES

A. ASTM International (ASTM)
   1. ASTM D1557 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3)
   2. ASTM D4253 – Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table

B. California Department of Transportation Standard Test Method
   1. California Test Method No. 202 – Method of Test for Sieve Analysis of Fine and Coarse Aggregates
   2. California Test Method No. 217 – Method of Test for Sand Equivalent

1.04 DEFINITIONS

A. Geotechnical Engineer: This designation shall be understood to include both them and their representative.

B. Optimum Moisture Content: The moisture content, percent (by dry weight) corresponding to the maximum dry density of the same material as determined by the ASTM test procedure D1557, latest edition.

C. Overexcavation: Removal of native materials beyond the limits of excavation or subexcavation defined by the drawings and specifications.
   1. Percent Compaction: The required in-place dry density of the material, expressed as a percentage of the maximum dry density of the same material determined by the ASTM test procedure, Dl557, latest edition.

D. Percent Relative Density: The required in-place dry density of the material, expressed as a percentage of the difference between minimum dry density and maximum dry density of the same material determined in accordance with the ASTM test method D4253, latest edition.

E. Soil Subgrade: The surface on which aggregate base is placed within asphalt-paved areas and exterior slab areas.

F. Subexcavation: Removal of native materials below the plane established by the stripping operations from those areas upon which materials or structures will be placed.

1.05 SUBMITTALS

A. Submit samples of select import fill for approval by the Geotechnical Engineer.

1.06 GEOTECHNICAL REPORT

A. Site grading shall comply with the applicable sections of Title 24 and of Chapter 33A of the Uniform Building Code, latest adopted edition, and with the recommendations contained in the geotechnical investigation entitled “Brookside Elementary School”; prepared by RGH Geotechnical Consultants, dated December 11, 2024.

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1.07 PROTECTION

A. Adequate protection measures shall be provided to protect workmen and passers-by at the site. Streets and adjacent property shall be fully protected throughout the operations.

B. In accordance with generally accepted construction practices, the Contractor shall be solely and completely responsible for working conditions at the job site, including safety of all persons and property during performance of the work. This requirement shall apply continuously and shall not be limited to normal working hours.

C. Any construction review of the Contractor's performance conducted by the Geotechnical Engineer is not intended to include review of the adequacy of the Contractor's safety measures, in, or near the construction site.

D. Adjacent streets and sidewalks shall be kept free of mud, dirt, or similar nuisances resulting from earthwork operations.

E. Surface drainage provisions shall be made during the period of construction in a manner to avoid creating a nuisance to adjacent areas.

F. The site and adjacent influenced areas shall be watered as required to suppress dust nuisance.

PART 2 Products

2.01 EARTH AND ROCK MATERIALS

A. Engineered Fill Materials
   1. Engineered fill materials shall be of approved local materials from required excavations. Approved onsite materials are defined as onsite soils free of rubble, rubbish and vegetation, and having been favorably reviewed by the Geotechnical Engineer prior to use. Review may include laboratory testing. Clods, rocks or hard lumps exceeding four inches (4") in final size shall not be allowed in the fill. Additionally, onsite materials shall have a liquid limit less than 40 and a plasticity index of less than 15 and consist of at least 50% retained on the #200 sieve.

B. Import Fill Materials
   1. Imported fill materials shall be approved by the Geotechnical Engineer prior to importation to the site and shall meet the same characteristics of the Engineered Fill (above).

PART 3 EXECUTION

3.01 LAYOUT AND PREPARATION

A. Lay out all work, establish grades, locate existing underground utilities, set markers and stakes, set up and maintain barricades and protect all utilities prior to beginning actual earthwork operations.

3.02 SEASONAL LIMITS

A. Fill material shall not be placed, spread, or rolled during unfavorable weather conditions. When the work is interrupted by heavy rains, fill operations shall not be resumed until field tests indicate that the moisture contents of the subgrade and fill materials are satisfactory, as determined by the Geotechnical Engineer

3.03 EXCAVATION

A. Subgrade exposed by completed excavations shall be scarified to a depth of 6 inches, moisture conditioned to within 3% above optimum moisture content and recompacted to 95% relative compaction.

B. Final surfaces exposed by the completed excavations (cutting) shall be finished true to line and grade and present a smooth, firm surface. Depressions shall be filled and compacted, and loose material shall be removed.

C. Temporary cut slopes shall not exceed requirements set forth in Cal-OSHA Industrial Safety Orders, or ratio suggested in the field by the Geotechnical Engineer.

D. Excavation extending into the groundwater level shall be dewatered. Unstable/weak soil encountered at the bottom of the excavations should be improved prior to fill placement and compaction. Improvement should consist of removing 6 to 18 inches of the subgrade and placing a geotextile and granular fill such as aggregate base. The extent of soil to be improved should be evaluated in the field by the Geotechnical Engineer.

E. Dewatering shall be performed under a contractor-obtained permit from either the City of San Rafael (if discharge is to the sewer system) or the Regional Water Quality Control Board (if discharge is to the storm drain system). The Contractor is advised that both of these agencies may require testing of the proposed dewatering discharge for contaminants. It shall be the sole responsibility of the Contractor to apply for and obtain the necessary permits, obtain and pay for any required water quality tests, design shoring and dewatering systems, and pay any

fees associated with discharging the water to the sanitary sewer system if that option is selected. Permits must be obtained prior to any discharge occurring.

3.04 SUBGRADE PREPARATION

A. The exposed subgrade on which fill is to be placed shall be prepared and favorably field-reviewed by the Geotechnical Engineer prior to placement of fill materials thereon. Subgrade preparation shall be as follows:
   1. Subgrade shall be scarified to 6” in depth, moisture-conditioned to within 3% of optimum moisture content and uniformly compacted to at least 95% relative compaction.
   2. Subgrade within materials other than hard rock shall be proof-rolled, or otherwise tested by a method approved by the Engineer, to detect soft or loose areas. Soft or loose areas shall be either excavated and replaced with suitable materials as specified herein or scarified to a depth of 6 inches, conditioned to within 3% of optimum moisture and compacted to not less than 95% relative compaction per ASTM D1557 unless otherwise specified. The method of treatment for soft and loose areas shall be at the sole discretion of the Geotechnical Engineer.

B. The finish subgrade shall not vary more than 0.05 foot above or 0.10 foot below the grade established by the Engineer. Subgrade that does not meet the above requirements shall be reshaped to conform to the specified tolerances and watered and recompacted, all at the Contractor's expense.

3.05 MATERIALS PLACEMENT

A. Fill Materials Placement
   1. Fill material shall be spread in uniform layers not exceeding 8-inches compacted thickness.
   2. Water shall be added to the fill, or the fill allowed to dry, and mixed as necessary to obtain a moisture content within 3% of optimum moisture content and which is adequate to achieve compaction as specified.
   3. Each layer of fill shall be compacted to not less than 95% of maximum dry density per ASTM D1557 unless otherwise specified. Compaction shall be accomplished by sheepsfoot roller, multiple-wheel pneumatic roller or other acceptable equipment of such design that the fill can be compacted as specified. Fill operations shall be continued until the fills have been brought to the finished slopes and grades as shown on the Drawings.
   4. Work that has been suspended by weather, scheduling or for any other reason, shall be protected against the effects of such weather or other conditions. Grading which has been considered acceptable but which has been subsequently damaged shall be re-worked to meet the requirements of the specifications.
   5. If work has been interrupted by weather, scheduling or for any other reason, the Geotechnical Engineer shall be notified by the superintendent of grading at least 24 hours prior to the intended resumption of grading. It may be necessary to re-affirm suitability of compacted soils which have been exposed to adverse weather conditions.

3.06 COMPACTION CONTROL AND TESTING

A. Field density tests may be made on each layer of material placed. Sufficient tests will be made to assure that the required compaction has been achieved throughout the fill. When a test indicates that the specified compaction has not been achieved, that portion of the fill shall be reworked until the required density has been attained.

B. In connection with earthwork, tests shall be made in conformance with the following:

Test	**Method**
Relative Compaction	ASTM D 1557
Sand Equivalent	Calif. No. 217
Sieve Analysis	Calif. No. 202

C. All tests shall be performed by the City of San Rafael. Tests shall be for the purpose of determining compliance with these Specifications and the frequency and locations of tests shall be at the sole discretion of the Geotechnical Engineer. The Contractor may conduct independent tests for his convenience and control purposes at his sole expense, however, such tests will not be recognized for the purpose of establishing compliance with Specification requirements.

3.07 OBSERVATION

A. A minimum of 24-hours’ notice shall be given the Geotechnical Engineer by the Contractor prior to commencing or recommencing any earthwork operations; additional time may be required for review/testing of materials proposed for placement. No materials shall be placed prior to favorable field review of subgrade or previously graded surface by the Geotechnical Engineer.

B. Preparation of subgrade and placement of materials shall be observed by the Geotechnical Engineer so that he can render a professional opinion as to the conformance of the completed fill to the specifications.

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3.08 DISPOSAL OF SURPLUS MATERIAL

A. The Contractor shall stockpile, load, haul from the site of work and properly dispose of all surplus excavated material.

B. The Contractor shall satisfy itself of the required quantities of all impart and/or off-haul of materials to meet grades noted on the drawings.

END OF SECTION

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SECTION 32-1216

ASPHALT CONCRETE PAVING, BASE AND SEALCOAT

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Section Includes:
   1. Provide, spread and compact aggregate base.
   2. Provide, spread and compact asphaltic concrete pavement.
   3. Provide and spread sealcoat.
   4. Provide and spread crack filler.
   5. Adjust to finish grade new and existing manholes, sewer cleanouts, sewer structures, drainage structures, valve boxes, irrigation controllers, etc., included in the limits of work.
   6. Obtain and pay for encroachment permit(s) for work in public right-of-way.

B. Related Documents:
   1. Documents affecting work of this section include, but are not limited to, General Conditions, Supplementary Conditions, and Sections in Division 01 of these specifications. Contractor is responsible for coordinating all work.

C. Related Sections:
   1. Section 31-2000 – Earthwork
   2. Section 31-2316 – Trenching, Backfilling and Compaction
   3. Section 32-1600 – Concrete Curb, Gutter, and Sidewalk/Walkway

1.03 REFERENCES

A. Reference Data:
   1. If the year of the adoption or latest revision is omitted from the designation, it shall mean the specification, manual or test designation in effect the date the Notice to Proceed with the Work is given.

B. City of San Rafael Standard Plans and Specifications, latest edition.

C. Caltrans Standard Specifications, latest edition.

1.04 QUALITY ASSURANCE

A. A testing laboratory retained and paid for by the District shall do testing and inspection of the aggregate base and asphaltic concrete. Any areas receiving failing tests shall be reworked by the Contractor to achieve the minimum specified degree of compaction. It shall be the sole responsibility of the Contractor to achieve satisfactory results.

B. Test Methods: Unless otherwise indicated, tests shall be made in conformance with the following standard methods:
   1. Relative compaction shall be determined by Test Method No. California 216 and 231.
   2. Design and Construction Standards of the County of Marin, latest edition.
   3. Caltrans Standards and Specifications, latest edition.

1.05 SUBMITTALS

1. Submit asphalt mix design parameters and certificates of compliance.
2. Submit certificate of compliance for aggregate base and aggregate subbase.
3. Submittals shall conform to the requirements of Section 01 33 00.
4. Submit manufacturer’s data sheet for crack sealant material
5. Submit product data sheets for seal coat material.

PART 2 PRODUCTS

2.01 AGGREGATE BASE

A. Aggregate for aggregate bases shall be clean and free of vegetable matter and other deleterious substances.

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B. Aggregate base shall be of such a nature that it can be compacted readily under watering and rolling to form a firm, stable base.

C. Aggregate base shall be Class 2, and the combined aggregate shall conform to the 3/4-inch maximum grading specified in Section 26-1.02B "Class 2 Aggregate Base" of the current Caltrans Specifications.

D. Recycled Class 2 Aggregate Base may be used for onsite applications so long as it meets the gradation and strength parameters of virgin material.

2.02 ASPHALT CONCRETE

A. The asphalt concrete for onsite, pedestrian uses shall be Type A, 1/2 inch maximum, medium, and shall conform to the applicable portions of Section 39 of the Caltrans Standard Specifications. For offsite and onsite, vehicular uses, use Type A, ¾" maximum medium.

2.03 SEALCOAT

A. The materials for asphalt sealcoat immediately prior to mixing shall conform to the following requirements:
   1. Asphaltic emulsion shall be SS1h or CSS1h, conforming to the requirements in Section 94 of the California Standard Specification, "Asphaltic Emulsions." Table 1 or 2, with the exception of the penetration on residue from distillation which will conform to a value of 20 to 60, clay stabilized emulsion, with a pH not greater than 7.0, and a solids content not less than 45 percent may be used.
   2. The properties of the SS1h shall be determined in accordance with AASHTO designation T59 "testing emulsified asphalt."
   3. Water shall be potable and of such quality that the water will not separate from the emulsion before the sealcoat is applied.
   4. Mineral aggregate components shall be 100 percent passing the #16 mesh sieve. These components shall be a natural or manufactured consisting of clean, hard, durable, uncoated particles that are clean and free from decomposed materials, organic materials and other deleterious substances. The sieve analysis of the mineral aggregate components shall be determined in accordance with the ASTM test methods C136 or Cal Test 202.

Table 1

The Asphalt Sealcoat materials, as manufactured, undiluted, except as noted, shall conform to the following requirements.

	MIN	MAX	METHOD
Weight (per gallon)	9.0 lbs		ASTM D244
Cone Penetration	340m. m.	700	ASTM D217
% Non-Volatile	50		ASMAA-1*
% Non-Volatile Soluble in Tri-Clorethylene	10	35	ASTM D2042
Wet Track Abrasion		35 gram loss	ASTM D3910
Mineral Aggregate Components	#16 Sieve 100% passing		ASTM C136
Dried Film Color Viscosity	Black 75 KREB		ASTM D562
Accelerate Weathering	No		Fed Spec TI-C-555B

*Weigh 10 grams of homogenous product into a previously tared ointment can. Place in a constant temperature oven at 325 degrees F for 90 minutes. Cool, reweigh and calculate non-volatile components.

2.04 CRACK FILLER

A. The crack filler material shall hot-applied meeting the following specification when heated in accordance with ASTM D5078 to the maximum heating temperature.

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Table 2	
TEST	**RECOMMENDED SPECIFICATION**
Cone Penetration (ASTM D5329)	20-40
Resilience (ASTM D5329)	30% min.
Softening Point (ASTM D36)	210°F (99°) min.
Ductility, 77F (25C) (ASTM D113)	30 cm min.
Flexibility (ASTM D3111 Modified)	Pass at 30°F (-1°C)
Flow 140°F (60°C) (ASTM D5329)	3 mm max.
Brookfield Viscosity, 400°F (205°C) (ASTM D2669)	100 Poise max.
Asphalt Compatibility (ASTM D5329)	Pass
Bitumen content (ASTM D4)	60% min.
Tensile Adhesion, 1” (ASTM D5329)	400% min.
Maximum Heating Temperature	400°F (204°C)
Minimum Application Temperature	380°F (193°C)

PART 3 EXECUTION

3.01 SUBGRADE PREPARATION FOR BASE MATERIAL

A. Subgrade preparation shall conform to the requirements in Section 31-2000 – Earthwork, and shall not vary more than 0.05 foot above, or 0.05 foot below the grade established by the plans.

B. Prepared subgrade shall be inspected by the independent testing laboratory retained by the County prior to the placement of any aggregate base.

C. Subgrade soils shall be in a stable, non-pumping condition at the time of Aggregate Base Rock materials are placed and compacted.

D. Subgrade Soils shall not be allowed to become or saturated or overly dried out prior to the placement of finished surfacing.

3.02 SPREADING

A. Aggregate base shall be delivered to the roadbed as uniform mixtures and shall be graded in layers or windrows. Segregation shall be avoided and the base shall be free from pockets of coarse or fine material.

B. The aggregate base, after spreading as above specified, shall be shaped to such thickness that after watering and compacting the completed base will conform to the required grade and cross section, within the tolerances specified in Section 26-1.03E "Compacting" of the Caltrans Specifications.

C. The base shall be spread, watered and compacted in layers not to exceed 6 inches in compacted thickness to achieve the specified thickness.

3.03 COMPACTION AND TOLERANCE

A. The relative compaction of the base shall not be less than 95 percent.

B. The finished surface of the aggregate base shall not vary more than 0.05 foot from the design grades.

C. Aggregate base which fails to meet the specified tolerances shall be reshaped, rewatered and recompacted at the Contractor's expense.

3.04 SUBGRADE PREPARATION FOR ASPHALT CONCRETE

A. All construction beneath the subgrade shall be completed, including pipeline testing, prior to asphalt concrete placement.

B. Subgrade shall not vary more than 0.05 foot above or below design grade.

C. Any soft spots in the subgrade shall be repaired by the Contractor, regardless of cause, prior to paving.

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3.05 TACK COAT

A. Apply tack coat of RS-1 or CRS1 Emulsion to vertical surfaces of existing surfacing that will come into contact with asphalt concrete.

3.06 SPREADING AND COMPACTING ASPHALT CONCRETE

A. Shall be in accordance with Section 39 of the Caltrans Standard Specifications.

3.07 STRUCTURE ADJUSTMENT

A. The Contractor shall mark the location of all structures to be adjusted to grade and shall be responsible for their location after paving operations are completed.

B. After surfacing or resurfacing is completed, the Contractor shall construct or reconstruct the structures to grade as shown on the plans.

3.08 CRACK FILLER

A. Prior to application of crack filler and seal coat, all crack (1/8” to ½”) should be cleaned.

B. A variety of equipment including routers, high powered compressed air and/or power brushes can be used to clean cracks.

C. Care should be taken to ensure that bonding surfaces are free from oil, dirt, dust, organic material, moisture and any other contaminants that would inhibit good bonding of the crack filler to the asphalt.

D. All weeds should be removed and cracks sterilized to prevent week growth through the crack filler.

E. Apply crack filler shall be applied at 10 pounds per gallon at 60 degrees Fahrenheit per manufacturer’s recommendations.

3.09 SEALCOAT

A. The surface to receive Asphalt Sealcoat must be free of all foreign material and dry immediately prior to sealcoat application. Cleaning may be by air blowing, vacuum, mechanical sweeper, washing, or other techniques as approved by the Engineer. If washing the existing surface is used, the surface shall not have any standing water prior to application of the sealcoat. Salt, cleaning agents, fertilizers, hard water deposits and other such chemicals will promote lack of bonding of the sealcoat to the existing surface any may require extraordinary cleaning measures.

B. Prior to application of sealcoat, deposits of grease or oil shall be cleaned by scraping, burning, and/or or the use of approved detergents in order to promote adhesion of the sealcoat. After cleaning the areas above, the areas shall be sealed with an oilseal. Oilseal shall be a quick drying latex emulsion with suitable admixtures manufactures specifically for the purpose of isolating the Asphalt Sealcoat from any residual oils, petroleum grease, and gasoline stained pavement. The properties of the Oilseal shall be such as to be compatible with the Asphalt Sealcoat.

C. In areas where the foreign oil or grease has penetrated the asphalt concrete such that cleaning as described above is not effective, the affected areas shall be removed to the depth necessary but not less than 3/4 inch. The removed asphalt concrete shall be replaced with new asphalt concrete conforming to Section 39 of the California Standard Specification.

D. On excessively weathered surfaces or areas such that cleaning operation leave a film of dust, a tack coat of SS1h conforming to Section 94 of the California Standard Specifications shall be applied. The tack coat shall consist of one (1) part SS1h with four (4) parts water or two (2) parts Asphalt Sealcoat with one (1) part water applied at a rate of 0.05 to 0.10 gal/sq. yd. The tack coat must be dry prior to application of the Asphalt Sealcoat.

E. Application of the Asphalt Sealcoat shall be by mechanical means using rubber faced squeegees, brooms, distributor bar/wand, or combinations of these or other techniques approved by the Manufacturer and by the Engineer.

F. The Asphalt Sealcoat being applied shall be uniform and freeflowing, free of lumps and other inconsistencies. Potable water may be added as necessary as per manufacturer's recommendation, for consistency and spreadability but shall not exceed 15% by volume or as directed by Engineer. If, after the addition of the maximum allowable water volume the sealcoat is unsuitable, the materials shall be rejected and removed from the site.

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G. **Asphalt Sealcoats shall consist of two application coats of material.** The sealcoat must be thoroughly dry prior to application of the second or subsequent coats.

H. Application of Asphalt Sealcoat in ambient temperatures in excess of 80 degrees Fahrenheit shall require pretreatment of the asphalt concrete surface with a water mist. The water must not be standing but the surface should be damp prior to sealcoat application. This treatment is also recommended for application on porous surfaces where the water within the sealcoat may be absorbed too quickly by the existing pavement surface.

I. Asphalt Sealcoat shall be applied uniformly over the prescribed area in continuous parallel lines in a manner so that no ridges or uncoated areas shall exist. Application rates will vary depending on the texture of the existing asphalt surfaces requiring more sealcoat than smooth surfaces. The following application rate is a guideline only:

Smooth Dense Surface 20-30 gallons/1000 sf

J. Asphalt Sealcoat shall not be applied when the ambient temperature is less than 55 degrees and the surface temperature is less than 60 degrees F. Sealcoat shall not be applied within 24 hours prior to forecasted rain, freezing temperatures, during rain, or when the surface contains standing water.

K. Traffic shall not be allowed on the Asphalt Sealcoat until the sealcoat is thoroughly cured, which in warm weather conditions is approximately 24 hours. Minor scuffing or power steering marks may occur on a newly applied surface in warm weather. Irrigation watering shall be kept off for at least 24 hours prior to and after the application of Asphalt Sealcoat.

L. Striping for parking and traffic flow should be done only after the sealcoat has thoroughly dried. For best results, a high quality Traffic Line paint is recommended.

3.10 FLOW TEST

A. Finished pavement areas shall be flow tested in the presence of the Inspector of record to confirm that positive gradients that facilitate proper and complete surfacing drainage have been achieved in all paved areas.

B. Any areas that fail the flow test, defined as any area where depth of ponding water exceeds 1/8 inch or where the surface of a ponding area exceeds 10 square feet, shall be repaved to achieve positive drainage.

3.11 CLEAN UP

A. Remove all debris and stains resulting from the work of this section.

END OF SECTION

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SECTION 32-1223
PAVEMENT MARKINGS AND SIGNS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This Section includes the following:
   1. Furnish materials and install painted traffic striping and markings.
   2. Furnish materials and install traffic signs and posts.

B. Related Sections include the following:
   1. Section 32-1216 – Asphalt Concrete Paving, Base and Sealcoat.
   2. Section 32-1600 – Concrete Curb, Gutter, and Sidewalk/Walkway.

1.03 SUBMITTALS

A. In accordance with Section 01 3000, Submittals.
   1. Paint product data.
   2. Sign product data.

1.04 REFERENCES

A. California Manual of Uniform Traffic Control Devices (MUTCD), latest edition.

B. California Code of Regulations, Title 24, Part 2 – California Building Code (CBC), latest edition.

C. American with Disabilities Act (ADA), latest edition.

PART 2 PRODUCTS

2.01 STRIPING PAINT

A. The paint to be used on striping shall be commercial quality paint. Thinner shall not be mixed with paint.

B. White paint shall be used on new stall stripes. Blue paint shall be used on all accessible stall markings as required by CBC. Yellow paint shall be used for all crosswalks, loading/unloading zones and curbs (where noted). Red paint shall be used at all “no parking” areas, fire lanes and curbs (where noted).

C. Paint shall dry "track free" in not less than thirty (30) minutes and not more than ninety (90) minutes.

D. The air compressor used shall have a capacity of sixty (60) cubic feet per minute.

E. The rate of application of paint:
   1. Solid single stripes: seventeen (17) to eighteen (18) gallons per mile.

2.02 SIGNS

A. Traffic and regulatory signs shall conform to the requirements of the MUTCD for the type of sign indicated on the plans. Accessible parking signs shall also comply with the applicable sections of the CBC and the ADA.

B. Signs shall be mounted at standard heights on two (2) inch square unistrut posts set in concrete.

2.03 WHEELSTOPS

A. Wheelstops shall be four feet long and a minimum of four (4) inches high, premanufactured concrete wheel stops.

PART 3 EXECUTION

3.01 STRIPING

A. No striping shall be started until all paving work on the entire job has been completed, and the various finished surfaces are sufficiently cured to prevent undue tracking onto new striping.

B. All stripes for parking spaces shall have a width of four inches. All widths shall be within 1/4 inch of the specified widths.

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C. All lines and other shapes shall be clean and sharp as to dimensions and shall be painted or painted out in the locations shows on the plans. Ragged ends of segments, fogginess along the sides, or objectionable dribbling along the unpainted portions of the stripe shall not be permitted.

D. The finished product shall have an opaque, well painted appearance with no black or other discolorations showing through. Any smears shall be painted out with black paint to the satisfaction of the Owner's Representative.

E. The Contractor shall take all reasonable precautions to protect the paint during drying time and may be required to paint out all objectionable tracking. Appropriate traffic control necessary to insure non-tracking as well as reasonable traffic flows shall be the Contractor’s responsibility.

F. Painted stripes shall receive two coats of paint to achieve the desired coverage.

G. No work shall be done when the pavement is appreciably damp.

3.02 SIGNS

A. Signs shall be installed in the locations shown on the plans and in accordance with the referenced standards for height, setback from the curb, and embedment.

B. Signs for Disabled accessibility shall be installed in accordance with the requirements of the California Building Code.

3.03 WHEELSTOPS

A. Wheelstops shall be installed in the locations shown on the plans and accordance with the manufacturer’s recommendations.

3.04 CLEAN UP

A. Remove all debris and stains resulting from the work of this section.

END OF SECTION

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SECTION 32-1600
CONCRETE CURB, GUTTER AND SIDEWALK/WALKWAY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Place concrete curbs, gutters, valley gutters, and sidewalks/walkways.

B. Provide mock-up of exterior concrete walk finish, including, but not limited to, texture, color, and score pattern.

1.02 RELATED DOCUMENTS

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

B. Related Sections include, but are not limited to, the following:
1. Concrete Reinforcing – Section 03-2000
2. Cast-in-Place Concrete – Section 03 3000
3. Earthwork – Section 31-2000
4. Asphalt Concrete Paving, Base and Sealcoat – Section 32-1216

1.03 REFERENCES

A. Reference Data:
1. If the year of the adoption or latest revision is omitted from the designation, it shall mean the specification, manual or test designation in effect the date the Notice to Proceed with the Work is given.

B. City of San Rafael Standard Plans and Specifications.

C. Caltrans Standard Specifications, Sections 73 (Concrete Curbs and Sidewalks) and 90 (Concrete).

1.04 SUBMITTALS

A. Submit concrete mix design to Engineer for review at least 21 days prior to concrete.

B. Submit mock-up of exterior concrete walk finish, including, but not limited to, texture, color, and score pattern to Architect for review prior to any concrete installation.

PART 2 PRODUCTS

2.01 CONCRETE

A. Concrete shall comply with the applicable provisions of Section 90 " Concrete" of the Caltrans Standard Specifications for Section 90-2 ”Minor Concrete” and meet the following requirements listed below.
1. Concrete shall have a minimum 28 day compressive strength of 3,000 psi.
2. Concrete shall have a maximum slump of 4 inches.
3. Concrete must contain at least 505 pounds of cementitous material per cubic yard.
4. Cementitious material must be Type II or V Portland cement or a combination of Type II or V Portland cement and other approved Supplementary Cementitious Materials (SCM’s). Typical SCM’s are ground granulated blast furnace slag, fly ash, silica flume, rice hull ash and natural pozzolans such as calcined shale, calcined clay and metakaolin. The amount of SCM’s in the concrete mix shall not exceed the requirements listed in section 90-1.02B of the Caltrans Standard Specifications.
5. The quantity of free water must not exceed 310 pounds per cubic yard of concrete plus 20 pounds of free water for each required 100 pounds of cementitious material in excess of 550 pounds of cementitious material per cubic yard of concrete.
6. The maximum course aggregate size must not be larger than 1-1/2” or smaller than ¾” and meet the gradation requirements in section 90-1.02C(4)(b).
7. Fine Aggregate grading shall meet the gradation requirements in section 90-1.02C(4)(c).
8. Acceptable admixtures shall conform to Section 90-1.02E. Chemical admixtures must comply with ASTM C 494, Air-entraining admixtures must comply with ASTM C 260.
9. For textured and colored concrete surfaces, aggregate must comply with the grading requirements for fine aggregate in section 90-1.02C(4)(c). Aggregate used in grout for textured and colored concrete surfaces must comply with the grading requirements listed in section 73-4.02. Color pigments for dry-shake method must comply with ASTM C 979.

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B. Concrete for sidewalk/walkway, valley gutters, curbs and gutter for improvements in public right of way shall conform to City of San Rafael requirements.

PART 3 EXECUTION

3.01 GENERAL

A. Curbs, gutter, valley gutters, and sidewalks/walkways shall conform to the details shown on the plans and any applicable City of San Rafael Standards for those improvements constructed within the public right of way.

B. Provide representative mock up of sidewalk including, but not limited to, texture, color, and score pattern for review and approval by Architect prior to construction.

C. Concrete finishes along accessible routes of travel shall be at least as slip-resistant as that described as a medium salted finish for slopes of less than 6%, and slip-resistant at slopes of 6% or greater.

D. Concrete finishes within the public right of way shall conform to the City of San Rafael details and specifications.

E. Concrete finishes in non-accessible path of travel areas should be a medium broom finish.

3.02 SUBGRADE PREPARATION

A. As per Section 31 20 00, Earthwork.

B. Minimum Class 2 aggregate base material under sidewalks/walkways as shown on the Drawings shall be at least 4 inches in compacted thickness, or otherwise noted.

C. Material under public sidewalks/walkways/ driveway aprons shall conform to the City of San Rafael details and specifications.

D. Subgrade and forms shall be wet immediately before concrete placement.

E. Reinforcement shall be carefully placed and supported.

F. Steel dowels and reinforcement steel must comply with Section 52-102B “Bar Reinforcement” of the California Standard Specification (ASTM A615/A615M Grade 60 reinforcing bar).

G. Welded wire reinforcement must comply with Section 52-102C “welded Wire Reinforcement” of the California Standard Specifications (ASTM A1064/A1064M).

H. Steel dowels, reinforcement steel and welded wire reinforcement must comply with Section 52 “Reinforcement” of the California Standard Specifications

I. Apply soil sterilizer 6” each side of the edges of sidewalks/walkways to prevent growth of vegetation under sidewalks/walkways.

J. Excavate for thickened edges where they occur.

3.03 EXISTING CURBS, GUTTERS AND SIDEWALKS

A. Joint shall be cut to a minimum depth of 1-1/2 inches with an abrasive type saw.

B. Joint shall be at first scoring line at or beyond the planned joint location.

3.04 FORMS

A. Smooth face against concrete, true smooth upper edge and rigid enough to withstand pressure of fresh concrete without distortion.

B. Clean and oil coated.

C. Carefully set to alignment, grade and required dimensions.

D. Adequately secured from movement by stakes, clamps, spreaders and braces.

3.05 CURB, GUTTER AND SIDEWALK/WALKWAY CONSTRUCTION

A. Dimensions as shown on Drawings.

B. Public sidewalks/walkways concrete thickness shall conform to City of San Rafael specifications.

C. Weakened plane joints shall be constructed at intervals not exceeding 15 feet.

D. Expansion joints, 1/2 inch wide, shall be installed where the new walkway joins existing curbs, drainage structures and other fixed objects.

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E. Expansion joints shall contain 1/2-inch thick premolded joint fillers the full thickness of concrete. Preformed expansion joint filler must comply with ASTM D 1751.

F. The top and face of curbs, and non-decorative sidewalks/walkways shall be finished with a steel trowel and be given a final fine brush finish.

G. The top and face of curb shall be true and straight and not vary more than 0.01 foot above or below the staked grade.

H. Concrete curing shall be as provided in Section 90-1.03B of the California Standard Specifications.

I. Repairs shall be made by removing and replacing the entire unit between scoring lines or joints

J. Curb and sidewalk construction in public right-of-way shall be performed under the term of an encroachment permit to be obtained and paid for by the Contractor from the City of San Rafael.

K. Dowel sidewalks to building slabs at all doorways.

3.06 ADJUST UTILITY BOXES

A. The Contractor shall adjust all existing and new utility boxes, and any other service castings falling within the limits of work to exact grade at the same time the concrete improvements are being constructed and shall maintain these appurtenances to true and exact grade until concrete is thoroughly set.

3.07 CURING

A. Moist Curing: Cover with reinforced waterproof curing paper. Seal all joints and weights down edges. Maintain moist for 14 days.

B. Liquid Curing Compound: Locations as approved by Architect. Apply a uniform coating within two hours of final troweling.

3.08 REPAIRS AND PROTECTIONS

A. Repair or replace broken or defective concrete as directed by Architect.

B. Protect concrete from damage until acceptance of work. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.

3.09 CLEAN UP

A. Remove all debris and stains resulting from the work of this section.

END OF SECTION

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SECTION 32-1726

CAST IN PLACE DETECTABLE/TACTILE WARNING SURFACES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This Section specifies furnishing and installing Cast in Place Detectable/Tactile Warning Surface Tiles where indicated.

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's literature describing products, installation procedures and routine maintenance.

B. Samples for Verification Purposes: Submit two (2) tile samples, minimum 12 inches x 12 inches, of the kind proposed for use.

C. Shop drawings are required for products specified showing fabrication details, composite structural system, tile surface profile, sound on cane contact amplification feature, plans of tile placement including joints, and material to be used as well as outlining installation materials and procedure.

D. Material Test Reports: Submit complete test reports from qualified accredited independent testing laboratory's to quality that materials proposed for use are in compliance with requirements and meet or exceed the properties indicated on the specifications. All tests shall be conducted on a Cast in Place Detectable/Tactile Warning Surface Tile system as certified by a qualified independent testing laboratory and be current within a two year (24 month) period.

E. Maintenance Instructions: Submit copies of manufacturer's specified installation and maintenance practices for each type of Detectable Warning Surface Tile and accessory as required.

1.04 QUALITY ASSURANCE

A. Provide Cast In Place Detectable/Tactile Warning Surface Tiles and accessories as produced by a single manufacturer with a minimum of three (3) years of experience in the manufacturing of Cast In Place Detectable/Tactile Warning Surface Tiles.

B. Installer Qualifications: Engage an experienced Installer certified in writing by Cast In Place Detectable/Tactile Warning Surface Tile manufacturer as qualified for installation, who has successfully completed installations similar in material, design, and extent to that indicated for Project.

C. Americans with Disabilities Act (ADA): Provide Surface Applied Detectable/Tactile Warning Surface Tiles that comply with the detectable warnings on walking surfaces section of the Americans with Disabilities Act (Title III Regulations, 28 CFR Part 36 ADA STANDARDS FOR ACCESSIBLE DESIGN, Appendix A, Section 4.29.2 DETECTABLE WARNINGS ON WALKING SURFACES).

D. California Code of Regulations (CCR): Provide only approved DSAAC detectable warning products as provided in the California Code of Regulations (CCR) Title 24, Part 2, Section 205 definition of "Detectable Warning". Section 1117A.4 and 1127B.5 for "Curb Ramps" and Section 1133B.8.5 for "Detectable Warnings at Hazardous Vehicular Areas".

E. Vitrified Polymer Composite (VPC) Cast In Place Detectable/Tactile Warning Surface Tiles shall be an epoxy polymer composition with an ultra violet stabilized coating employing aluminum oxide particles in the truncated domes. The tile shall incorporate an in-line pattern of truncated domes measuring nominal 0.2 inch height, 0.9 inch base diameter, and 0.45 inch top diameter, spaced center-to-center 2.3 inch minimum to 2.4 inch maximum, and a base-to-base spacing of 0.65 inch minimum, measured between the most adjacent domes on a squared grid. For wheelchair safety the field area shall consist of a non-slip surface with a minimum of 40-90° raised points 0.045 inch high, per square inch; "Armor-Tile" as manufactured by Engineered Plastics Inc., Tel: 800-682-2525, or approved equal.

F. Dimensions: Cast In Place Detectable/Tactile Warning Surface Tiles shall be held within the following dimensions and tolerances:

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Length: 36 inch x 60 inch nominal
Depth: 1.375 (1-3/8 inch) (+/-) 5% max.
Face Thickness: 0.1875 (3/16 inch) (+/-) 5% max.
Warpage of Edge: 0.5% max.
Embedment Flange Spacing: shall be no greater than 3.1 inch

G. Water Absorption of Tile when tested by ASTM D 570-98 not to exceed 0.05%.

H. Slip Resistance of Tile when tested by ASTM C 1028-96 the combined Wet and Dry Static Co-efficient of Friction not to be less than 0.80 on top of domes and field area.

I. Compressive Strength of Tile when tested by ASTM D 695-02a not to be less than 28,000 psi.

J. Tensile Strength of Tile when tested by ASTM D 638-03 not to be less than 19,000 psi.

K. Flexural Strength of Tile when tested by ASTM D 790-03 not to be less than 25,000 psi.

L. Chemical Stain Resistance of Tile when tested by ASTM D 543-95 (re approved 2001) to withstand without discoloration or staining – 10% hydrochloric acid, urine, saturated calcium chloride, black stamp pad ink, chewing gum, red aerosol paint, 10% ammonium hydroxide, 1% soap solution, turpentine, Urea 5%, diesel fuel and motor oil.

M. Abrasive Wear of Tile when tested by BYK – Gardner Tester ASTM D 2486-00 with reciprocating linear motion of 37 +/- cycles per minute over a 10” travel. The abrasive medium, a 40 grit Norton Metallite sand paper, to be fixed and leveled to a holder. The combined mass of the sled, weight and wood block is to be 3.2 lb. Average wear depth shall not exceed 0.060 after 1000 abrasion cycles when measured on the top surface of the dome representing the average of three measurement locations per sample.

N. Resistance to Wear of Unglazed Ceramic Tile by Taber Abrasion per ASTM C501-84 (re approved 2002) shall not be less than 500.

O. Gardner Impact to Geometry “GE” of the standard when tested by ASTM D 5420-04 to have a mean failure energy expressed as a function of specimen thickness of not less than 550 in. lbf/in. A failure is noted when a crack is visible on either surface or when any brittle splitting is observed on the bottom plaque in the specimen.

P. Accelerated Weathering of Tile when tested by ASTM G 155-05a for 3000 hours shall exhibit the following result - $\Delta E < 4.5$, as well as no deterioration, fading or chalking of surface of tile color No. 33538.

Q. Accelerated Aging and Freeze Thaw Test of Tile and Adhesive System when tested to ASTM D 1037-99 shall show no evidence of cracking, delamination, warpage, checking, blistering, color change, loosening of tiles or other detrimental defects.

R. Salt and Spray Performance of Tile when tested to ASTM B 117-03 not to show any deterioration or other defects after 200 hours of exposure.

S. AASHTO HB-17 single wheel HS20-44 loading “Standard Specifications for Highways and Bridges”. The Cast In Place Tile shall be mounted on a concrete platform with a 1/2 inch airspace at the underside of the tile top plate then subjected to the specified maximum load of 10,400 lbs., corresponding to an 8,000 lb individual wheel load and a thirty percent (30%) impact factor. The tile shall exhibit no visible damage at the maximum load of 10,400 lbs.

T. Embedment flange spacing shall be no greater than 3.1 inches center-to-center spacing as illustrated on the produce Cast In Place drawing.

1.05 DELIVERY, STORAGE AND HANDLING

A. Cast In Place Detectable/Tactile Warning Surface Tiles shall be suitably packaged or crated to prevent damage in shipment of handling. Finished surfaces shall be protected by sturdy plastic wrappings to protect tile from concrete residue during installation and tile type shall be identified by part number.

B. Cast In Place Detectable Tactile Warning Surface Tiles shall be delivered to location at building site for storage prior to installation.

1.06 SITE CONDITIONS

A. Environmental Conditions and Protection: Maintain minimum temperature of forty degrees Fahrenheit (40°F) in spaces to receive Cast In Place Detectable/Tactile Warning Surface Files for at least two days (24 hours) prior to installation, during installation, and for not less than two days (24 hours) after installation.

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B. The use of water for work, cleaning or dust control, etc. shall be contained and controlled and shall not be allowed to come into contact with the general public. Provide barricades or screens to protect the general public.

1.07 GUARANTEE

A. Cast In Place Detectable/Tactile Warning Surface Tiles shall be guaranteed in writing for a period of five (5) years from date of final completion. The guarantee defective work, breakage, deformation, fading and loosening of tiles.

PART 2 PRODUCTS

2.01 DETECTABLE WARNING SURFACES

A. Detectable Warning Surfaces shall comply with CBC Section 11B-705.1

B. Detectable warning surfaces at transit boarding platform edges, bus stops, hazardous vehicular areas, reflecting pools, and track crossings shall be yellow and approximate FS 33538 of Federal Standard 595C. Detectable warning surfaces at other locations shall be either the aforementioned yellow or a color providing a 70 percent minimum visual contrast with that of adjacent walking surfaces. The material used to provide visual contrast shall be on integral part of the surface. CBC Section 11B-705.1.1.3

C. Detectable warning surfaces shall differ from adjoining surfaces in resiliency or sound-on-cane contact. Such constraint shall not be required for detectable warning surfaces at curb ramps, islands, or cut-through medians. CBC Section 11B-705.1.1.4

2.02 MANUFACTURERS

A. The vitrified Polymer Composite (VPC) Cast In Place Detectable/Tactile Warning Surface Tile specified is based on Armor-tile manufactured by Engineered Plastics Inc. (800-682-2525). Existing engineered and field tested products, which have been in successful service for a period of three (3) years, are subject to compliance with requirements, may be incorporated in the work and shall meet or exceed the specified test criteria and characteristics.

B. Color: Yellow conforming to Federal Color No. 23594. Color shall be homogeneous throughout the tile.

PART 3 EXECUTION

3.01 INSTALLATION

A. During Cast In Place Detectable/Tactile Warning Surface tile installation procedures, ensure adequate safety guidelines are in place and that they are in accordance with the applicable industry and government standards.

B. Prior to placement of the Cast In Place Detectable/Tactile Warning Surface Tile system, review manufacturer and contract drawings with the Contractor prior to the construction and refer any and all discrepancies to the Engineer.

C. The specifications of the structural embedment flange system and related materials shall be in strict accordance with the contract documents and the guidelines set by their respective manufacturers. Not recommended for asphalt applications.

D. The physical characteristics of the concrete shall be consistent with the contract specifications while maintaining a slump range of four (4) to seven (7), to permit solid placement of the Cast In Place Detectable/Tactile Warning Surface Tile system. An overly wet mix will cause the tile to float. Under these conditions, suitable weights such as two (2) concrete blocks or sandbags, weighing twenty-five pounds (25 lb), shall be placed on each tile.

E. The concrete pouring and finishing operations require typical mason’s tools, however, a four (4) foot long level with electronic slope readout, twenty-five pound (25 lb) weights, and a large non-marring rubber mallet are specific to the installation of the Cast In Place Detectable/Tactile Warning Surface Tile system. A vibrating mechanism such as that manufactured by Vibco can be employed, if desired. The vibrating unit should be fixed to a soft base such as wood, at least one square foot (1 sq ft).

F. The factory-installed plastic sheeting must remain in place during the entire installation process to prevent the splashing of concrete onto the finished surface of the tile.

G. When preparing to set the tile, it is important that no concrete be removed in the area to accept the tile. It is imperative that the installation technique eliminates any air voids under the tile. Holes in the tile perimeter allow air to escape during the installation process. Concrete will flow through the large holes in each embedment flange on the underside of the tile. This will lock the tile solidly into the cured concrete.

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H. The concrete shall be poured and finished true and smooth to the required dimensions and slope prior to the tile placement. Immediately after finishing concrete, the electronic level should be used to check that the required slope is achieved. The tile shall be placed true and square to the curb edge in accordance with the contract drawings. The Cast In Place Detectable/Tactile Warning Surface Tiles shall be tamped (or vibrated) into the fresh concrete to ensure that the field level of the tile is flush to the adjacent concrete surface. The embedment process should not be accomplished by stepping on the tile as this may cause uneven setting which can result in air voids under the tile surface. The contract drawings indicate that the tile field level (base of truncated dome) is flush to adjacent surfaces to permit proper water drainage and eliminate tripping hazards between adjacent finishes.

I. In cold weather climates it is recommended that the Cast In Place Detectable/Tactile Warning Surface Tiles be set deeper such that the top of domes are level to the adjacent concrete on the top and sides of ramp and that the base of domes to allow water drainage. This installation will reduce the possibility of damage due to snow clearing operations.

J. Immediately after placement, the tile elevation is to be checked to adjacent concrete. The elevation and slope should be set consistent with contract drawings to permit water drainage to curb as the design dictates. Ensure that the field surface of the tile is flush with the surrounding concrete and back of curb so that no ponding is possible on the tile at the backside of curb.

K. While concrete is workable, a 3/8 inch radius edging tool shall be used to create a finished edge of concrete, then a steel trowel shall be used to finish the concrete around the tile's perimeter, flush to the field level of the tile

L. During and after the tile installation and the concrete curing stage, it is imperative that there is no walking, leaning or external forces placed on the tile that may rock the tile causing a void between the underside of tile and concrete.

M. Following tile placement, review installation tolerance to contract drawings and adjust tile before the concrete sets. Two suitable weights of twenty-five pounds (25 lbs) each may be required to be placed on each tile as necessary to ensure solid contact of the underside of tile to concrete.

N. Following the concrete curing stage, protective plastic wrap is to be removed from the tile surface by cutting the plastic with a sharp knife, tight to the concrete/tile interface. If concrete bled under the plastic, a soft brass wire brush will clean the residue without damage to the tile surface.

O. If desired, individual tiles can be bolted together using ¼ inch or equivalent hardware. This can help to ensure that adjacent tiles are flush to each other during the installation process. Tape or caulking can be placed on the underside of the bolted butt joint to ensure that concrete does not rise up between the tiles during installation. Any protective plastic wrap that was peeled back to facilitate bolting or cutting, should be replaced and taped to ensure that the tile surface remains free of concrete during the installation process.

P. Tiles can be cut to custom sizes, or to make a radius, using a continuous rim diamond blade in a circular saw or mini-grinder. Use of a straightedge to guide the cut is advisable where appropriate.

Q. Any sound-amplifying plates on the underside of the tile, which are dislodged during handling or cutting, should be replaced and secured with construction adhesive. The air gap created between these plates and the bottom of the tile is important in preserving the sound on cane audible properties of the Armor-Tile system as required in various jurisdictions.

3.02 CLEANING, PROTECTING AND MAINTENANCE

A. Protect tiles against damage during construction period to comply with Tactile Tile manufacturer's specification.

B. Protect tiles against damage from rolling loads following installation by covering with plywood or hardwood.

C. Clean Tactile Tiles not more than four days prior to date schedules for inspection intended to establish date of substantial completion in each area of project. Clean Tactile Tile by method specified by Tactile Tile manufacturer.

D. Comply with manufacturers maintenance manual for cleaning and maintaining tile surface and it is recommended to perform annual inspections for safety and tile integrity.

END OF SECTION

SECTION 32-3113
CHAIN LINK FENCES AND GATES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Posts, rails, and frames.

B. Wire fabric.

C. Accessories.

1.02 REFERENCE STANDARDS

A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.

B. ASTM F567 - Standard Practice for Installation of Chain-Link Fence; 2023.

C. CLFMI CLF-FIG0111 - Field Inspection Guide; 2014.

D. CLFMI CLF-PM0610 - Product Manual; 2017.

E. CLFMI CLF-SFR0111 - Security Fencing Recommendations; 2014.

F. FS RR-F-191/1D - Fencing, Wire and Post Metal (Chain-Link Fence Fabric); 1990.

1.03 SUBMITTALS

A. See Section 01-3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on fabric, posts, accessories, fittings and hardware.

C. Shop Drawings: Indicate plan layout, spacing of components, post foundation dimensions, hardware anchorage, and schedule of components. See CLFMI CLF-SFR0111 for planning and design recommendations.

D. Manufacturer's Installation Instructions: Indicate installation requirements, post foundation anchor bolt templates, and connections to existing fencing systems.

E. Manufacturer's Qualification Statement.

F. Fence Installer Qualification Statement.

1.04 WARRANTY

A. See Section 01-7800 - Closeout Submittals, for additional warranty requirements.

B. Correct defective Work within a five year period after Date of Substantial Completion.

PART 2 PRODUCTS

2.01 COMPONENTS

A. Line Posts: 1.9 inch diameter.

B. Corner and Terminal Posts: 2.38 inch diameter.

C. Top and Brace Rail: 1.66 inch diameter, plain end, sleeve coupled.

D. Bottom Rail: 1.66 inch diameter, plain end, sleeve coupled.

E. Fabric: 2 inch diamond mesh interwoven wire, 6 gauge, 0.1920 inch thick, top selvage knuckle end closed, bottom selvage twisted tight.

F. Tension Wire: 6 gauge, 0.1920 inch thick steel, single strand.

G. Tie Wire: Aluminum alloy steel wire.

2.02 MATERIALS

A. Posts, Rails, and Frames: _____:
   1. Line Posts: Type I round in accordance with FS RR-F-191/1D.
   2. Terminal, Corner, Rail, Brace, and Gate Posts: Type I round in accordance with FS RR-F-191/1D.

B. Wire Fabric:
   1. Comply with CLFMI CLF-PM0610.

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2.03 ACCESSORIES

A. Caps: Cast steel galvanized; sized to post diameter, set screw retainer.

B. Fittings: Sleeves, bands, clips, rail ends, tension bars, fasteners and fittings; steel.

2.04 FINISHES

A. Components and Fabric: Vinyl coated over coating of 1.8 ounces per square foot galvanizing.

B. Hardware: Hot-dip galvanized to weight required by ASTM A153/A153M.

C. Accessories: Same finish as framing.

D. Color(s): Black.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verification of Conditions: Verify that areas are clear of obstructions or debris.

3.02 PREPARATION

A. Removal: Obstructions or debris.

3.03 INSTALLATION

A. Install framework, fabric, accessories and gates in accordance with ASTM F567.

B. Place fabric on outside of posts and rails.

C. Set intermediate posts plumb , in concrete footings with top of footing 6 inches below finish grade. Slope top of concrete for water runoff.

D. Line Post Footing Depth Below Finish Grade: ASTM F567.

E. Corner, Gate and Terminal Post Footing Depth Below Finish Grade: ASTM F567.

F. Brace each gate and corner post to adjacent line post with horizontal center brace rail and diagonal truss rods. Install brace rail one bay from end and gate posts.

G. Do not stretch fabric until concrete foundation has cured 28 days.

H. Position bottom of fabric 1 inches above finished grade.

I. Fasten fabric to top rail, line posts, braces, and bottom tension wire with tie wire at maximum 15 inches on centers.

J. Attach fabric to end, corner, and gate posts with tension bars and tension bar clips.

K. Install bottom tension wire stretched taut between terminal posts.

3.04 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch.

B. Maximum Offset From True Position: 1 inch.

C. Do not infringe on adjacent property lines.

3.05 FIELD QUALITY CONTROL

A. See Section 01-4000 - Quality Requirements, for additional requirements.

B. Layout: Verify that fence installation markings are accurate to design, paying attention to gate locations, underground utilities, and property lines.

C. Post Settings: Randomly inspect three locations against design for:
   1. Hole diameter.
   2. Hole depth.
   3. Hole spacing.

D. Fence Height: Randomly measure fence height at three locations or at areas that appear out of compliance with design.

E. Workmanship: Verify neat installation free of defects. See CLFMI CLF-FIG0111 for field inspection guidance.

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3.06 CLEANING

A. Leave immediate work area neat at end of each work day.

B. Clean jobsite of excess materials; scatter excess material from post hole excavations uniformly away from posts. Remove excess material if required.

C. Clean fence with mild household detergent and clean water rinse well.

D. Remove mortar from exposed posts and other fencing material using a 10 percent solution of muriatic acid followed immediately by several rinses with clean water.

E. Touch up scratched surfaces using materials recommended by manufacturer. Match touched-up paint color to factory-applied finish.

F. See Section 01-7419 - Construction Waste Management and Disposal, for additional requirements.

3.07 CLOSEOUT ACTIVITIES

A. See Section 01-7800 - Closeout Submittals, for closeout submittals.

END OF SECTION

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Brookside ES Bridge

Volume 1 = Bridge Superstructure Calculations
Volume 2 = Bridge Substructure Calculations

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Narrative: superstructure of bridge designed using STAAD. Risk category III conservatively used. Seismic design conservatively based on R = 1 design. Detailed computer output provided in lieu of software file because DSA does not have STAAD software.

RECOMMENDATIONS

Seismic Design

Based on the results of the site specific seismic analysis described above, we developed the seismic design criteria presented in the table below.

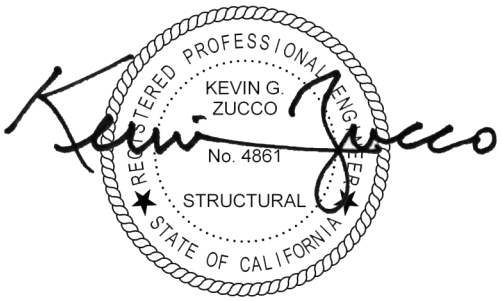
Site Class	D
S_s (0.2 second period)	1.500
S_1 (1 second period)	0.600
S_{MS} (0.2 second period)	1.643
S_{M1} (1 second period)	1.467
S_{DS} (0.2 second period)	1.095
S_{D1} (1 second period)	0.978
Seismic Design Category	D

Excerpt from Geohazard report

Prepared By:

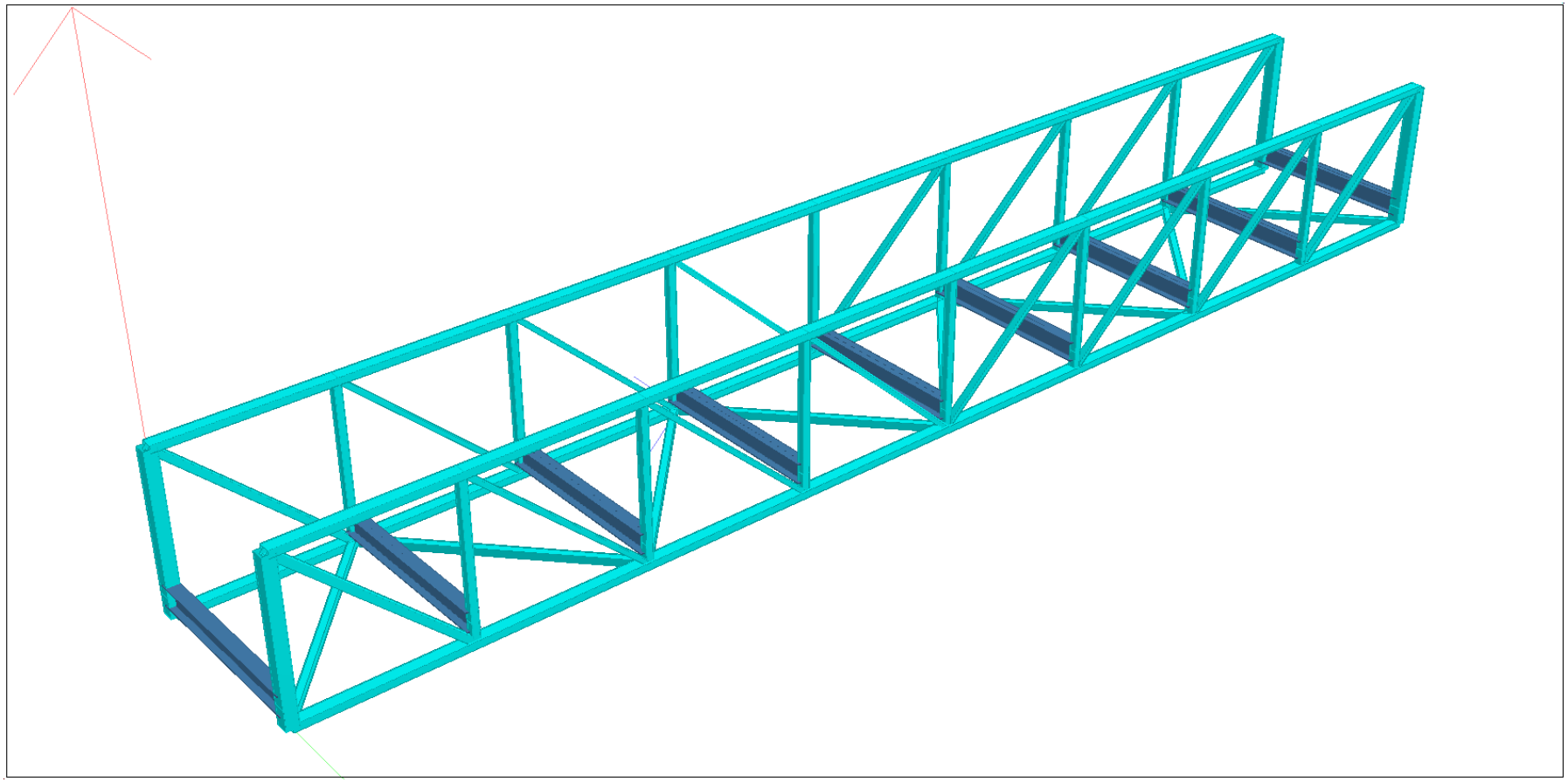
Andrew Thorstad, PE (Contech)
Nik Blanchette, SE (ZFA)
Kevin Zucco, SE (ZFA)

ZFA STRUCTURAL ENGINEERS
250 D Street | Suite 200 | Santa Rosa CA 95404 | 707.526.0992 | zfa.com



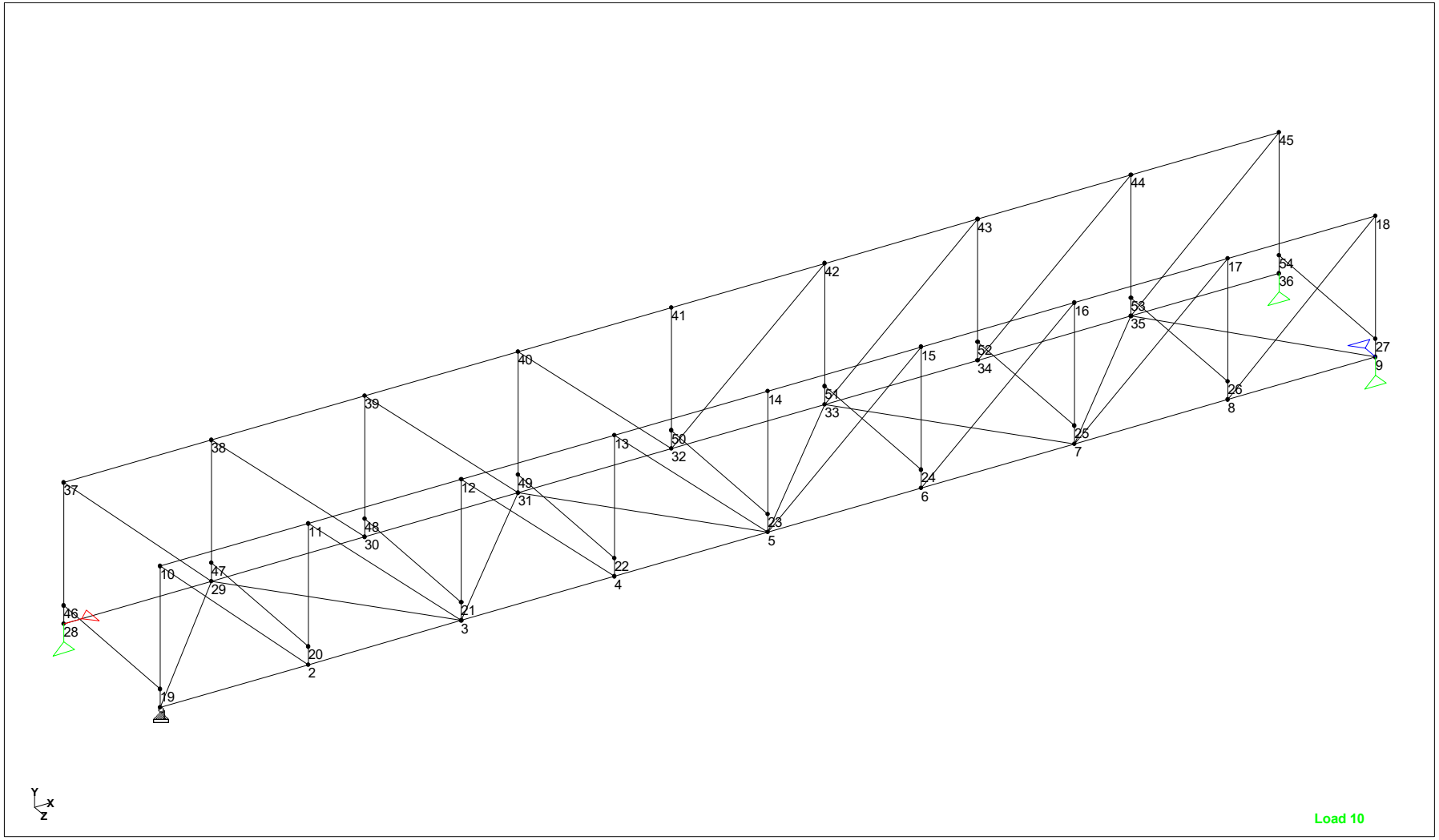
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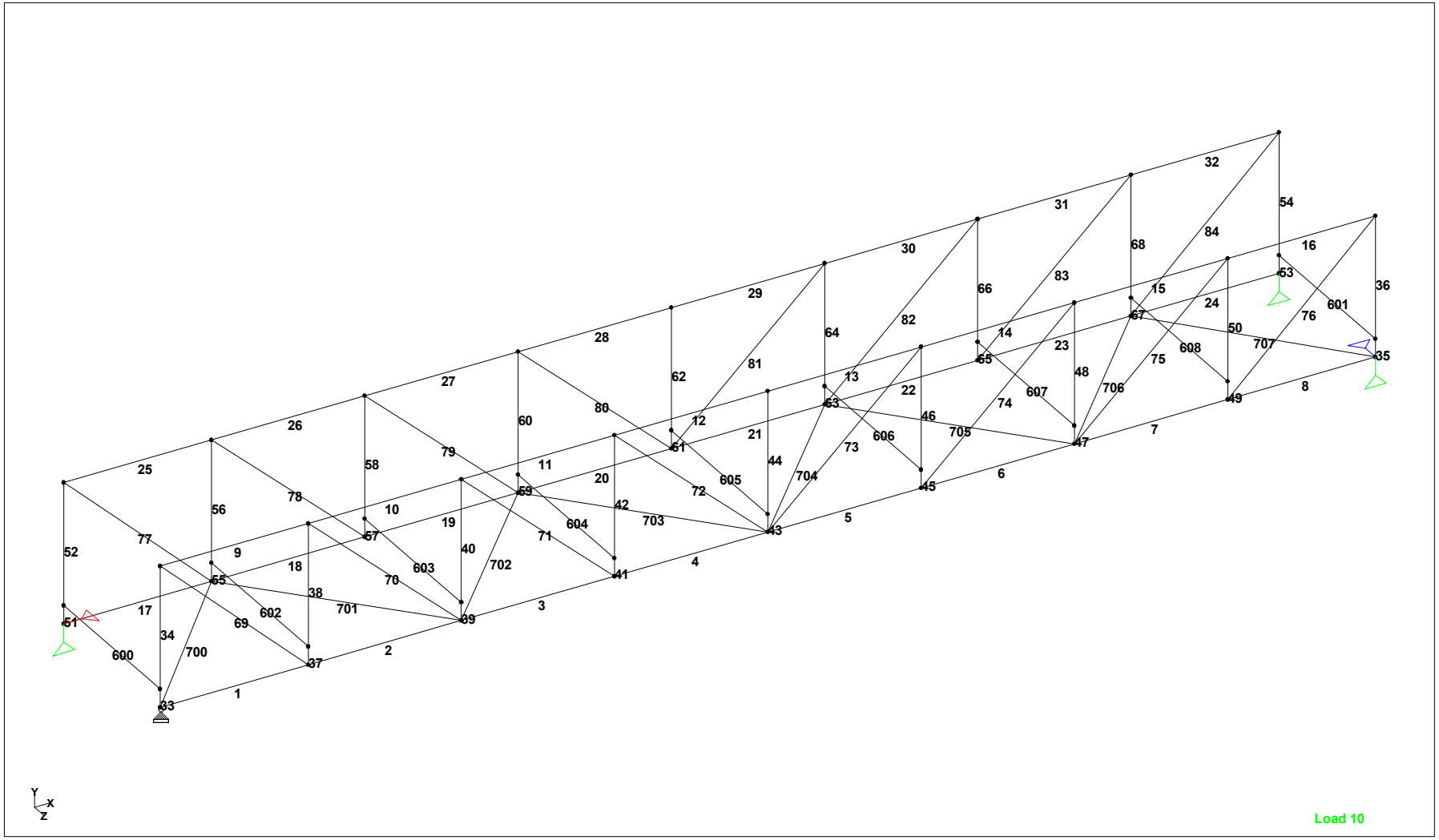
3D Rendered View

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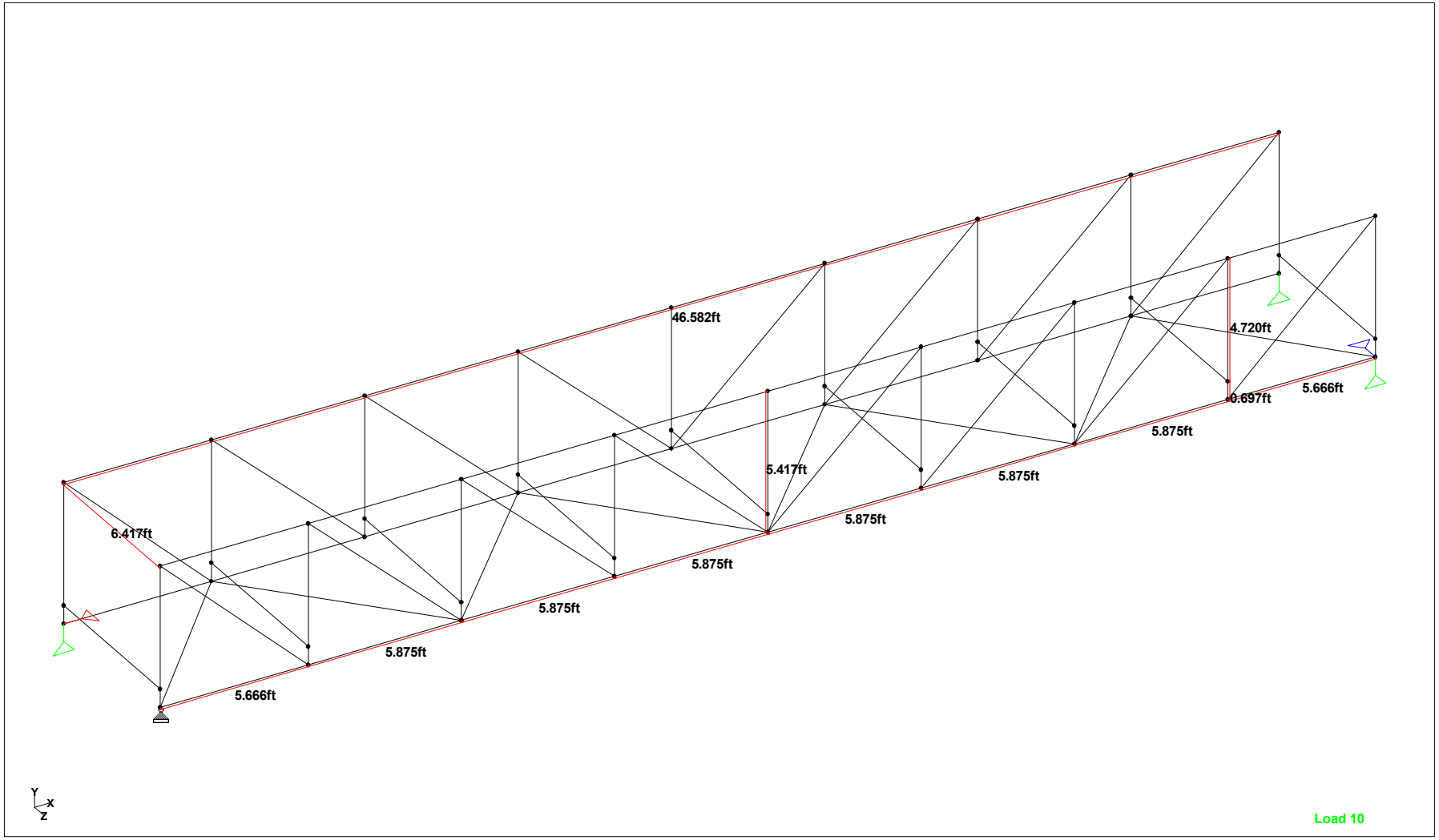
Nodes

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Beams

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Whole Structure

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Job Information

Engineer **Checked** **Approved**

Name: ATT
Date: 8/1/2025 12:00:00 AM

Project ID
Project Name

Structure Type SPACE FRAME

Number of Nodes	54	Highest Node	54
Number of Elements	101	Highest Beam	707

Number of Basic Load Cases	10
Number of Combination Load Cases	12

Included in this printout are data for:
All The Whole Structure

Included in this printout are results for load cases:

Type	L/C	Name
Primary	2	DL-DEAD LOAD
Primary	3	DK-DECK
Primary	4	LL-LIVE LOAD
Primary	5	WL-WIND LOAD
Generation	6	LOAD GENERATION, LOAD #6, (1 of 2)
Generation	7	LOAD GENERATION, LOAD #7, (2 of 2)
Primary	8	LATERAL FREQ
Primary	9	UL-UTILITY LOADING
Primary	10	E(T):SEISMIC (TRANSVERSE)
Primary	11	E(L):SEISMIC (LONGITUDINAL)
Combination	20	TD-TOTAL DEAD
Combination	21	1. 1.4DL
Combination	22	2. 1.2DL+1.6LL
Combination	23	4. 1.2DL+1.0WL+1.0LL
Combination	24	5. 1.2DL+1.0LL
Combination	25	6. 0.9DL+1.0WL
Combination	26	2. 1.2DL+1.6VL1
Combination	27	2. 1.2DL+1.6VL2
Combination	28	6A. 1.2D+1.0E+1.0LL
Combination	29	6A. 1.2D+1.0E+1.0LL
Combination	30	6B. 0.9D+1.0E
Combination	31	6B. 0.9D+1.0E

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Nodes

Node	X (ft)	Y (ft)	Z (ft)
1	0	0	6.417
2	5.666	0	6.417
3	11.541	0	6.417
4	17.416	0	6.417
5	23.291	0	6.417
6	29.166	0	6.417
7	35.041	0	6.417
8	40.916	0	6.417
9	46.582	0	6.417
10	0	5.417	6.417
11	5.666	5.417	6.417
12	11.541	5.417	6.417
13	17.416	5.417	6.417
14	23.291	5.417	6.417
15	29.166	5.417	6.417
16	35.041	5.417	6.417
17	40.916	5.417	6.417
18	46.582	5.417	6.417
19	0	0.697	6.417
20	5.666	0.697	6.417
21	11.541	0.697	6.417
22	17.416	0.697	6.417
23	23.291	0.697	6.417
24	29.166	0.697	6.417
25	35.041	0.697	6.417
26	40.916	0.697	6.417
27	46.582	0.697	6.417
28	0	0	0
29	5.666	0	0
30	11.541	0	0
31	17.416	0	0
32	23.291	0	0
33	29.166	0	0
34	35.041	0	0
35	40.916	0	0
36	46.582	0	0
37	0	5.417	0
38	5.666	5.417	0
39	11.541	5.417	0
40	17.416	5.417	0
41	23.291	5.417	0
42	29.166	5.417	0
43	35.041	5.417	0
44	40.916	5.417	0
45	46.582	5.417	0

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Nodes Cont...

Node	X (ft)	Y (ft)	Z (ft)
46	0	0.697	0
47	5.666	0.697	0
48	11.541	0.697	0
49	17.416	0.697	0
50	23.291	0.697	0
51	29.166	0.697	0
52	35.041	0.697	0
53	40.916	0.697	0
54	46.582	0.697	0

Beams

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
1	1	2	5.666	1	90
2	2	3	5.875	1	90
3	3	4	5.875	1	90
4	4	5	5.875	1	90
5	5	6	5.875	1	90
6	6	7	5.875	1	90
7	7	8	5.875	1	90
8	8	9	5.666	1	90
9	10	11	5.666	8	90
10	11	12	5.875	8	90
11	12	13	5.875	8	90
12	13	14	5.875	8	90
13	14	15	5.875	8	90
14	15	16	5.875	8	90
15	16	17	5.875	8	90
16	17	18	5.666	8	90
17	28	29	5.666	1	90
18	29	30	5.875	1	90
19	30	31	5.875	1	90
20	31	32	5.875	1	90
21	32	33	5.875	1	90
22	33	34	5.875	1	90
23	34	35	5.875	1	90
24	35	36	5.666	1	90
25	37	38	5.666	8	90
26	38	39	5.875	8	90
27	39	40	5.875	8	90
28	40	41	5.875	8	90
29	41	42	5.875	8	90
30	42	43	5.875	8	90

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Beams Cont...

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
31	43	44	5.875	8	90
32	44	45	5.666	8	90
33	1	19	0.697	6	90
34	19	10	4.720	6	90
35	9	27	0.697	6	90
36	27	18	4.720	6	90
37	2	20	0.697	9	90
38	20	11	4.720	9	90
39	3	21	0.697	9	90
40	21	12	4.720	9	90
41	4	22	0.697	9	90
42	22	13	4.720	9	90
43	5	23	0.697	9	90
44	23	14	4.720	9	90
45	6	24	0.697	9	90
46	24	15	4.720	9	90
47	7	25	0.697	9	90
48	25	16	4.720	9	90
49	8	26	0.697	9	90
50	26	17	4.720	9	90
51	28	46	0.697	6	90
52	46	37	4.720	6	90
53	36	54	0.697	6	90
54	54	45	4.720	6	90
55	29	47	0.697	9	90
56	47	38	4.720	9	90
57	30	48	0.697	9	90
58	48	39	4.720	9	90
59	31	49	0.697	9	90
60	49	40	4.720	9	90
61	32	50	0.697	9	90
62	50	41	4.720	9	90
63	33	51	0.697	9	90
64	51	42	4.720	9	90
65	34	52	0.697	9	90
66	52	43	4.720	9	90
67	35	53	0.697	9	90
68	53	44	4.720	9	90
69	10	2	7.839	3	90
70	11	3	7.991	4	90
71	12	4	7.991	4	90
72	13	5	7.991	4	90
73	5	15	7.991	4	90
74	6	16	7.991	4	90
75	7	17	7.991	4	90

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Beams Cont...

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
76	8	18	7.839	3	90
77	37	29	7.839	3	90
78	38	30	7.991	4	90
79	39	31	7.991	4	90
80	40	32	7.991	4	90
81	32	42	7.991	4	90
82	33	43	7.991	4	90
83	34	44	7.991	4	90
84	35	45	7.839	3	90
600	46	19	6.417	5	0
601	54	27	6.417	5	0
602	47	20	6.417	7	0
603	48	21	6.417	7	0
604	49	22	6.417	7	0
605	50	23	6.417	7	0
606	51	24	6.417	7	0
607	52	25	6.417	7	0
608	53	26	6.417	7	0
700	29	1	8.560	2	0
701	29	3	8.700	2	0
702	31	3	8.700	2	0
703	31	5	8.700	2	0
704	33	5	8.700	2	0
705	33	7	8.700	2	0
706	35	7	8.700	2	0
707	35	9	8.560	2	0

Section Properties

Prop	Section	Area (in^2)	I_{yy} (in^4)	I_{zz} (in^4)	J (in^4)	Material
1	HSST5X3X0.25	3.370	4.810	10.700	10.761	STEEL
2	HSST3X3X0.25	2.440	3.020	3.020	4.936	STEEL
3	HSST3X3X0.25	2.440	3.020	3.020	4.936	STEEL
4	HSST3X2X0.25	1.970	1.110	2.130	2.457	STEEL
5	W8X21	6.160	9.770	75.300	0.282	STEEL
6	HSST5X5X0.25	4.300	16.000	16.000	25.240	STEEL
7	W8X21	6.160	9.770	75.300	0.282	STEEL
8	HSST5X3X0.25	3.370	4.810	10.700	10.761	STEEL
9	HSST3X3X0.25	2.440	3.020	3.020	4.936	STEEL

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Materials

Mat	Name	E (kip/in^2)	ν	Density (kip/ft^3)	α (/°F)
1	STEEL	29E+3	0.300	0.489	6E -6
2	CONCRETE	3.15E+3	0.170	0.150	5.5E -6
3	ALUMINUM	10E+3	0.330	0.169	12.8E -6
4	STAINLESSSTEEL	28E+3	0.300	0.489	9.9E -6
5	STEEL_36_KSI	29E+3	0.300	0.489	6.5E -6
6	STEEL_50_KSI	29E+3	0.300	0.489	6.5E -6
7	STEEL_275_NMM2	29.7E+3	0.300	0.490	6.67E -6
8	STEEL_355_NMM2	29.7E+3	0.300	0.490	6.67E -6
9	Q235	29.9E+3	0.300	0.490	6.67E -6
10	Q345	29.9E+3	0.300	0.490	6.67E -6
11	Q355	29.9E+3	0.300	0.490	6.67E -6
12	Q390	29.9E+3	0.300	0.490	6.67E -6
13	Q420	29.9E+3	0.300	0.490	6.67E -6
14	Q460	29.9E+3	0.300	0.490	6.67E -6
15	TIMBER	1.5E+3	0.150	0.025	3E -6

Supports

Node	X (kip/in)	Y (kip/in)	Z (kip/in)	rX (kip-ft/deg)	rY (kip-ft/deg)	rZ (kip-ft/deg)
1	Fixed	Fixed	Fixed	-	-	-
9	-	Fixed	Fixed	-	-	-
28	Fixed	Fixed	-	-	-	-
36	-	Fixed	-	-	-	-

Releases

There is no data of this type.

Primary Load Cases

Number	Name	Type
2	DL-DEAD LOAD	Dead
3	DK-DECK	Dead
4	LL-LIVE LOAD	Live
5	WL-WIND LOAD	Wind
8	LATERAL FREQ	None
9	UL-UTILITY LOADING	None
10	E(T):SEISMIC (TRANSVERSE)	None
11	E(L):SEISMIC (LONGITUDINAL)	None

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Combination Load Cases

Comb.	Combination L/C Name	Primary	Primary L/C Name	Factor
20	TD-TOTAL DEAD	2	DL-DEAD LOAD	1.00
		3	DK-DECK	1.00
21	1. 1.4DL	2	DL-DEAD LOAD	1.40
		3	DK-DECK	1.40
		9	UL-UTILITY LOADING	1.40
22	2. 1.2DL+1.6LL	2	DL-DEAD LOAD	1.20
		3	DK-DECK	1.20
		4	LL-LIVE LOAD	1.60
		9	UL-UTILITY LOADING	1.20
23	4. 1.2DL+1.0WL+1.0LL	2	DL-DEAD LOAD	1.20
		3	DK-DECK	1.20
		4	LL-LIVE LOAD	1.00
		5	WL-WIND LOAD	1.00
		9	UL-UTILITY LOADING	1.20
24	5. 1.2DL+1.0LL	2	DL-DEAD LOAD	1.20
		3	DK-DECK	1.20
		4	LL-LIVE LOAD	1.00
		9	UL-UTILITY LOADING	1.20
25	6. 0.9DL+1.0WL	2	DL-DEAD LOAD	0.90
		3	DK-DECK	0.90
		5	WL-WIND LOAD	1.00
		9	UL-UTILITY LOADING	0.90
26	2. 1.2DL+1.6VL1	2	DL-DEAD LOAD	1.20
		3	DK-DECK	1.20
		6	LOAD GENERATION, LOAD #6, (1 of 2)	1.60
		9	UL-UTILITY LOADING	1.20
27	2. 1.2DL+1.6VL2	2	DL-DEAD LOAD	1.20
		3	DK-DECK	1.20
		7	LOAD GENERATION, LOAD #7, (2 of 2)	1.60
		9	UL-UTILITY LOADING	1.20
28	6A. 1.2D+1.0E+1.0LL	2	DL-DEAD LOAD	1.42
		3	DK-DECK	1.42
		10	E(T):SEISMIC (TRANSVERSE)	1.37
		11	E(L):SEISMIC (LONGITUDINAL)	0.41
		4	LL-LIVE LOAD	1.00
		9	UL-UTILITY LOADING	1.42
29	6A. 1.2D+1.0E+1.0LL	2	DL-DEAD LOAD	1.42
		3	DK-DECK	1.42
		10	E(T):SEISMIC (TRANSVERSE)	0.41
		11	E(L):SEISMIC (LONGITUDINAL)	1.37
		4	LL-LIVE LOAD	1.00
		9	UL-UTILITY LOADING	1.42
30	6B. 0.9D+1.0E	2	DL-DEAD LOAD	0.68
		3	DK-DECK	0.68
		10	E(T):SEISMIC (TRANSVERSE)	1.37

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Combination Load Cases Cont...

Comb.	Combination L/C Name	Primary	Primary L/C Name	Factor
		11	E(L):SEISMIC (LONGITUDINAL)	0.41
		9	UL-UTILITY LOADING	0.68
31	6B. 0.9D+1.0E	2	DL-DEAD LOAD	0.68
		3	DK-DECK	0.68
		10	E(T):SEISMIC (TRANSVERSE)	0.41
		11	E(L):SEISMIC (LONGITUDINAL)	1.37
		9	UL-UTILITY LOADING	0.68

Moving Load Definition : Type 1

Width (ft)
2.660

Force (kip)	Distance (ft)
1.200	-
0.800	4.000

2 DL-DEAD LOAD : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-ft)	MY (kip-ft)	MZ (kip-ft)
10	-	-0.127	-	-	-	-
11	-	-0.264	-	-	-	-
12	-	-0.264	-	-	-	-
13	-	-0.264	-	-	-	-
14	-	-0.264	-	-	-	-
15	-	-0.264	-	-	-	-
16	-	-0.264	-	-	-	-
17	-	-0.264	-	-	-	-
18	-	-0.127	-	-	-	-
37	-	-0.127	-	-	-	-
38	-	-0.264	-	-	-	-
39	-	-0.264	-	-	-	-
40	-	-0.264	-	-	-	-
41	-	-0.264	-	-	-	-
42	-	-0.264	-	-	-	-
43	-	-0.264	-	-	-	-
44	-	-0.264	-	-	-	-
45	-	-0.127	-	-	-	-

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2 DL-DEAD LOAD : Selfweight

Direction	Factor	Assigned Geometry
Y	-1.000	ALL

3 DK-DECK : Beam Loads

Beam	Type		Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
600	UNI	lbf/ft	GY	-184.145	0.208	-	6.209	-
601	UNI	lbf/ft	GY	-184.145	0.208	-	6.209	-
602	UNI	lbf/ft	GY	-381.875	0.208	-	6.209	-
603	UNI	lbf/ft	GY	-381.875	0.208	-	6.209	-
604	UNI	lbf/ft	GY	-381.875	0.208	-	6.209	-
605	UNI	lbf/ft	GY	-381.875	0.208	-	6.209	-
606	UNI	lbf/ft	GY	-381.875	0.208	-	6.209	-
607	UNI	lbf/ft	GY	-381.875	0.208	-	6.209	-
608	UNI	lbf/ft	GY	-381.875	0.208	-	6.209	-

4 LL-LIVE LOAD : Beam Loads

Beam	Type		Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
9	UNI	lbf/ft	GZ	50.000	-	-	-	-
10	UNI	lbf/ft	GZ	50.000	-	-	-	-
11	UNI	lbf/ft	GZ	50.000	-	-	-	-
12	UNI	lbf/ft	GZ	50.000	-	-	-	-
13	UNI	lbf/ft	GZ	50.000	-	-	-	-
14	UNI	lbf/ft	GZ	50.000	-	-	-	-
15	UNI	lbf/ft	GZ	50.000	-	-	-	-
16	UNI	lbf/ft	GZ	50.000	-	-	-	-
25	UNI	lbf/ft	GZ	-50.000	-	-	-	-
26	UNI	lbf/ft	GZ	-50.000	-	-	-	-
27	UNI	lbf/ft	GZ	-50.000	-	-	-	-
28	UNI	lbf/ft	GZ	-50.000	-	-	-	-
29	UNI	lbf/ft	GZ	-50.000	-	-	-	-
30	UNI	lbf/ft	GZ	-50.000	-	-	-	-
31	UNI	lbf/ft	GZ	-50.000	-	-	-	-
32	UNI	lbf/ft	GZ	-50.000	-	-	-	-
600	UNI	lbf/ft	GY	-283.300	0.208	-	6.209	-
601	UNI	lbf/ft	GY	-283.300	0.208	-	6.209	-
602	UNI	lbf/ft	GY	-587.500	0.208	-	6.209	-
603	UNI	lbf/ft	GY	-587.500	0.208	-	6.209	-
604	UNI	lbf/ft	GY	-587.500	0.208	-	6.209	-
605	UNI	lbf/ft	GY	-587.500	0.208	-	6.209	-
606	UNI	lbf/ft	GY	-587.500	0.208	-	6.209	-
607	UNI	lbf/ft	GY	-587.500	0.208	-	6.209	-

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4 LL-LIVE LOAD : Beam Loads Cont...

Beam	Type	Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
608	UNI	lbf/ft GY	-587.500	0.208	-	6.209	-

5 WL-WIND LOAD : Floor Loads

Load (psf)	Min Ht. (ft)	Max Ht. (ft)	Min X (ft)	Max X (ft)	Min Y (ft)	Max Y (ft)
-25.000	-1.000	1.000	-	-	-	-
-25.000	5.417	7.417	-	-	-	-

Moving Loads: Loads 6 to 7

Type	Initial Position X (ft)	Y (ft)	Z (ft)	Increment X (ft)	Y (ft)	Z (ft)	Range (ft)
1	5.666	0.697	4.413	17.625	-	-	-

8 LATERAL FREQ : Selfweight

Direction	Factor	Assigned Geometry
Z	1.000	ALL

9 UL-UTILITY LOADING : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-ft)	MY (kip-ft)	MZ (kip-ft)
46	-	-0.176	-	-	-	-
47	-	-0.352	-	-	-	-
48	-	-0.352	-	-	-	-
49	-	-0.352	-	-	-	-
50	-	-0.352	-	-	-	-
51	-	-0.352	-	-	-	-
52	-	-0.352	-	-	-	-
53	-	-0.352	-	-	-	-
54	-	-0.176	-	-	-	-

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10 E(T):SEISMIC (TRANSVERSE) : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-ft)	MY (kip-ft)	MZ (kip-ft)
19	-	-	-1.443	-	-	-
20	-	-	-2.933	-	-	-
21	-	-	-2.933	-	-	-
22	-	-	-2.933	-	-	-
23	-	-	-2.933	-	-	-
24	-	-	-2.933	-	-	-
25	-	-	-2.933	-	-	-
26	-	-	-2.933	-	-	-
27	-	-	-1.443	-	-	-

10 E(T):SEISMIC (TRANSVERSE) : Beam Loads

Beam	Type		Direction	Fa	Da (ft)	Fb	Db	Ecc. (ft)
600	CMO	kip-ft	Z	0.395	2.000	-	-	-
601	CMO	kip-ft	Z	0.395	2.000	-	-	-
602	CMO	kip-ft	Z	0.909	2.000	-	-	-
603	CMO	kip-ft	Z	0.909	2.000	-	-	-
604	CMO	kip-ft	Z	0.909	2.000	-	-	-
605	CMO	kip-ft	Z	0.909	2.000	-	-	-
606	CMO	kip-ft	Z	0.909	2.000	-	-	-
607	CMO	kip-ft	Z	0.909	2.000	-	-	-
608	CMO	kip-ft	Z	0.909	2.000	-	-	-

10 E(T):SEISMIC (TRANSVERSE) : Selfweight

Direction	Factor	Assigned Geometry
Z	-1.000	ALL

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11 E(L):SEISMIC (LONGITUDINAL) : Node Loads

Node	FX (kip)	FY (kip)	FZ (kip)	MX (kip-ft)	MY (kip-ft)	MZ (kip-ft)
19	-	-	-	-	-	0.198
	-0.722	-	-	-	-	-
20	-	-	-	-	-	0.455
	-1.467	-	-	-	-	-
21	-	-	-	-	-	0.455
	-1.467	-	-	-	-	-
22	-	-	-	-	-	0.455
	-1.467	-	-	-	-	-
23	-	-	-	-	-	0.455
	-1.467	-	-	-	-	-
24	-	-	-	-	-	0.455
	-1.467	-	-	-	-	-
25	-	-	-	-	-	0.455
	-1.467	-	-	-	-	-
26	-	-	-	-	-	0.455
	-1.467	-	-	-	-	-
27	-	-	-	-	-	0.198
	-0.722	-	-	-	-	-
46	-	-	-	-	-	0.198
	-0.722	-	-	-	-	-
47	-	-	-	-	-	0.455
	-1.467	-	-	-	-	-
48	-	-	-	-	-	0.455
	-1.467	-	-	-	-	-
49	-	-	-	-	-	0.455
	-1.467	-	-	-	-	-
50	-	-	-	-	-	0.455
	-1.467	-	-	-	-	-
51	-	-	-	-	-	0.455
	-1.467	-	-	-	-	-
52	-	-	-	-	-	0.455
	-1.467	-	-	-	-	-
53	-	-	-	-	-	0.455
	-1.467	-	-	-	-	-
54	-	-	-	-	-	0.198
	-0.722	-	-	-	-	-

11 E(L):SEISMIC (LONGITUDINAL) : Selfweight

Direction	Factor	Assigned Geometry
X	-1.000	ALL

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Reactions

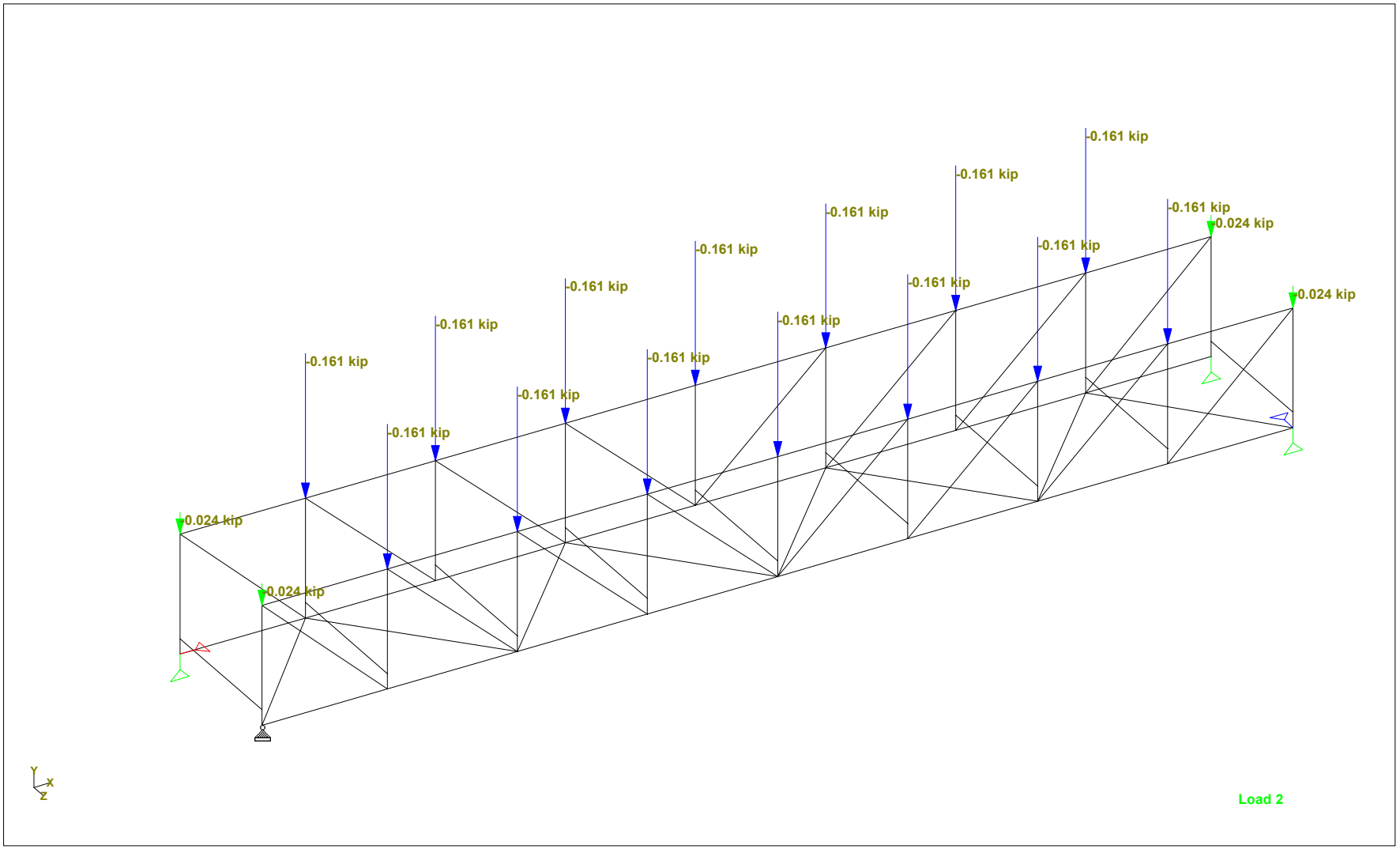
Node	L/C	Horizontal FX (kip)	Vertical FY (kip)	Horizontal FZ (kip)	Moment MX (kip-ft)	MY (kip-ft)	MZ (kip-ft)
1	2:DL-DEAD LC	0.000	2.493	-0.000	0	0	0
	3:DK-DECK	-0.000	4.562	-0.000	0	0	0
	4:LL-LIVE LOA	-0.000	7.019	0.000	0	0	0
	5:WL-WIND L(	-0.000	-2.663	6.308	0	0	0
	6:LOAD GENE	-0.000	1.622	0.000	0	0	0
	7:LOAD GENE	-0.000	0.895	-0.000	0	0	0
	8:LATERAL FR	0.000	0.905	-2.881	0	0	0
	9:UL-UTILITY I	-0.000	0.000	-0.000	0	0	0
	10:E(T):SEISM	-0.000	-2.735	14.590	0	0	0
	11:E(L):SEISM	14.739	0.376	-0.021	0	0	0
	20:TD-TOTAL	0.000	7.055	-0.000	0	0	0
	21:1. 1.4DL	0.000	9.878	-0.000	0	0	0
	22:2. 1.2DL+1.(	0.000	19.697	-0.000	0	0	0
	23:4. 1.2DL+1.(	0.000	12.823	6.308	0	0	0
	24:5. 1.2DL+1.(	0.000	15.486	-0.000	0	0	0
	25:6. 0.9DL+1.(	0.000	3.687	6.308	0	0	0
	26:2. 1.2DL+1.(	0.000	11.062	-0.000	0	0	0
	27:2. 1.2DL+1.(	0.000	9.899	-0.000	0	0	0
	28:6A. 1.2D+1.	6.052	13.442	19.965	0	0	0
	29:6A. 1.2D+1.	20.178	16.422	5.968	0	0	0
	30:6B. 0.9D+1.	6.052	1.216	19.965	0	0	0
	31:6B. 0.9D+1.	20.175	4.196	5.968	0	0	0
9	2:DL-DEAD LC	0	2.493	0.000	0	0	0
	3:DK-DECK	0	4.562	-0.000	0	0	0
	4:LL-LIVE LOA	0	7.019	-0.000	0	0	0
	5:WL-WIND L(	0	-2.663	6.308	0	0	0
	6:LOAD GENE	0	0.300	-0.000	0	0	0
	7:LOAD GENE	0	1.027	-0.000	0	0	0
	8:LATERAL FR	0	0.905	-2.881	0	0	0
	9:UL-UTILITY I	0	-0.000	-0.000	0	0	0
	10:E(T):SEISM	0	-2.735	14.590	0	0	0
	11:E(L):SEISM	0	-0.376	0.021	0	0	0
	20:TD-TOTAL	0	7.055	0.000	0	0	0
	21:1. 1.4DL	0	9.878	0.000	0	0	0
	22:2. 1.2DL+1.(	0	19.697	0.000	0	0	0
	23:4. 1.2DL+1.(	0	12.823	6.308	0	0	0
	24:5. 1.2DL+1.(	0	15.486	0.000	0	0	0
	25:6. 0.9DL+1.(	0	3.687	6.308	0	0	0
	26:2. 1.2DL+1.(	0	8.946	0.000	0	0	0
	27:2. 1.2DL+1.(	0	10.110	0.000	0	0	0
	28:6A. 1.2D+1.	0	13.133	19.982	0	0	0
	29:6A. 1.2D+1.	0	15.392	6.025	0	0	0
	30:6B. 0.9D+1.	0	0.907	19.982	0	0	0
	31:6B. 0.9D+1.	0	3.166	6.025	0	0	0

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Reactions Cont...

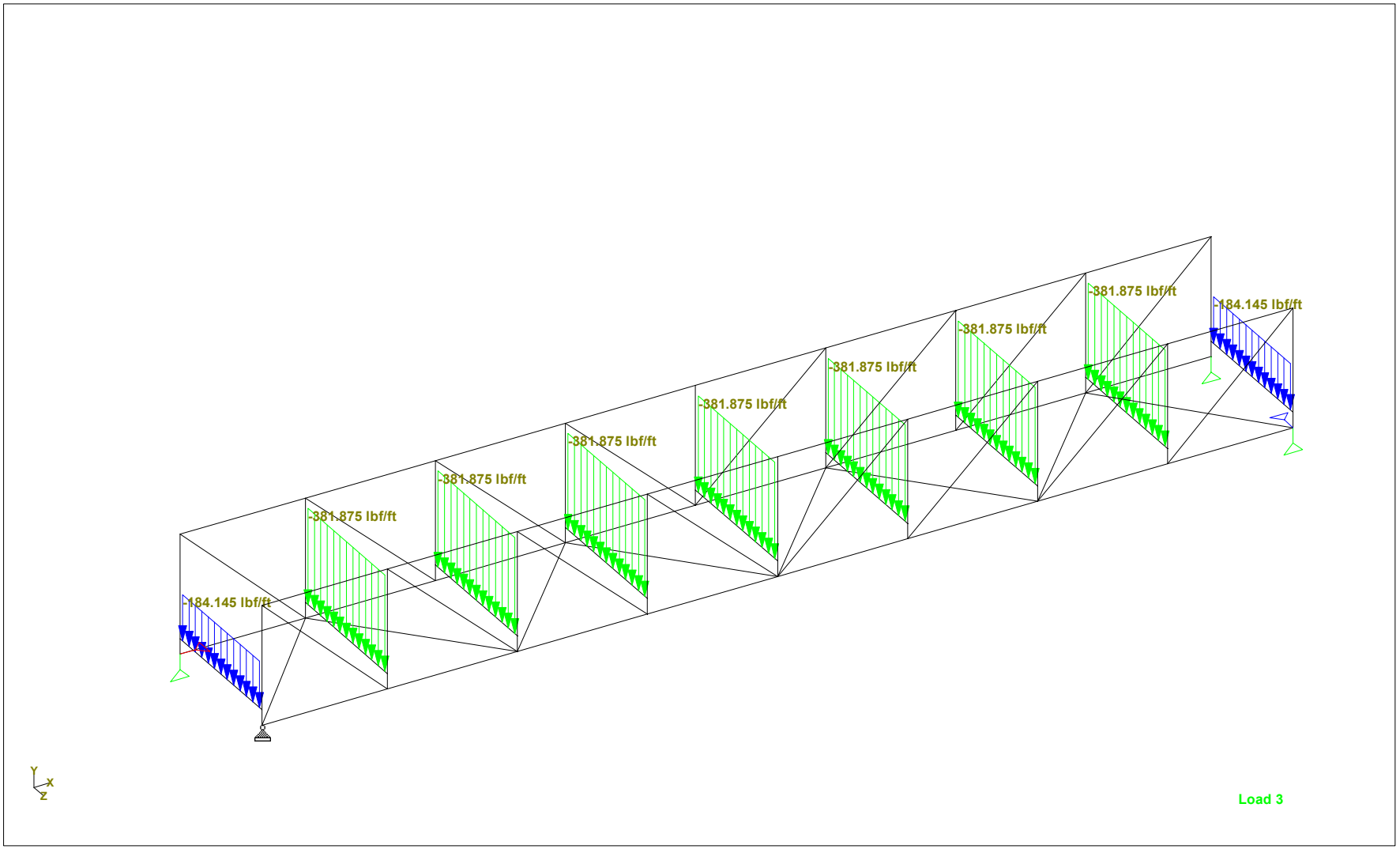
Node	L/C	Horizontal FX (kip)	Vertical FY (kip)	Horizontal FZ (kip)	Moment MX (kip-ft)	MY (kip-ft)	MZ (kip-ft)
28	2:DL-DEAD LC	0	2.493	0	0	0	0
	3:DK-DECK	0	4.562	0	0	0	0
	4:LL-LIVE LOA	0	7.019	0	0	0	0
	5:WL-WIND LC	0	2.663	0	0	0	0
	6:LOAD GENE	0	1.754	0	0	0	0
	7:LOAD GENE	0	0.968	0	0	0	0
	8:LATERAL FR	0	-0.905	0	0	0	0
	9:UL-UTILITY I	0	1.410	0	0	0	0
	10:E(T):SEISM	0	2.735	0	0	0	0
	11:E(L):SEISM	14.440	0.377	0	0	0	0
	20:TD-TOTAL	0	7.055	0	0	0	0
	21:1. 1.4DL	0	11.852	0	0	0	0
	22:2. 1.2DL+1.(	0	21.389	0	0	0	0
	23:4. 1.2DL+1.(	0	19.840	0	0	0	0
	24:5. 1.2DL+1.(	0	17.178	0	0	0	0
	25:6. 0.9DL+1.(	0	10.282	0	0	0	0
	26:2. 1.2DL+1.(	0	12.965	0	0	0	0
	27:2. 1.2DL+1.(	0	11.707	0	0	0	0
	28:6A. 1.2D+1.	5.929	22.930	0	0	0	0
	29:6A. 1.2D+1.	19.769	20.672	0	0	0	0
	30:6B. 0.9D+1.	5.929	9.664	0	0	0	0
	31:6B. 0.9D+1.	19.766	7.405	0	0	0	0
36	2:DL-DEAD LC	0	2.493	0	0	0	0
	3:DK-DECK	0	4.562	0	0	0	0
	4:LL-LIVE LOA	0	7.019	0	0	0	0
	5:WL-WIND LC	0	2.663	0	0	0	0
	6:LOAD GENE	0	0.324	0	0	0	0
	7:LOAD GENE	0	1.110	0	0	0	0
	8:LATERAL FR	0	-0.905	0	0	0	0
	9:UL-UTILITY I	0	1.410	0	0	0	0
	10:E(T):SEISM	0	2.735	0	0	0	0
	11:E(L):SEISM	0	-0.377	0	0	0	0
	20:TD-TOTAL	0	7.055	0	0	0	0
	21:1. 1.4DL	0	11.852	0	0	0	0
	22:2. 1.2DL+1.(	0	21.389	0	0	0	0
	23:4. 1.2DL+1.(	0	19.840	0	0	0	0
	24:5. 1.2DL+1.(	0	17.178	0	0	0	0
	25:6. 0.9DL+1.(	0	10.282	0	0	0	0
	26:2. 1.2DL+1.(	0	10.677	0	0	0	0
	27:2. 1.2DL+1.(	0	11.935	0	0	0	0
	28:6A. 1.2D+1.	0	22.620	0	0	0	0
	29:6A. 1.2D+1.	0	19.639	0	0	0	0
	30:6B. 0.9D+1.	0	9.354	0	0	0	0
	31:6B. 0.9D+1.	0	6.373	0	0	0	0

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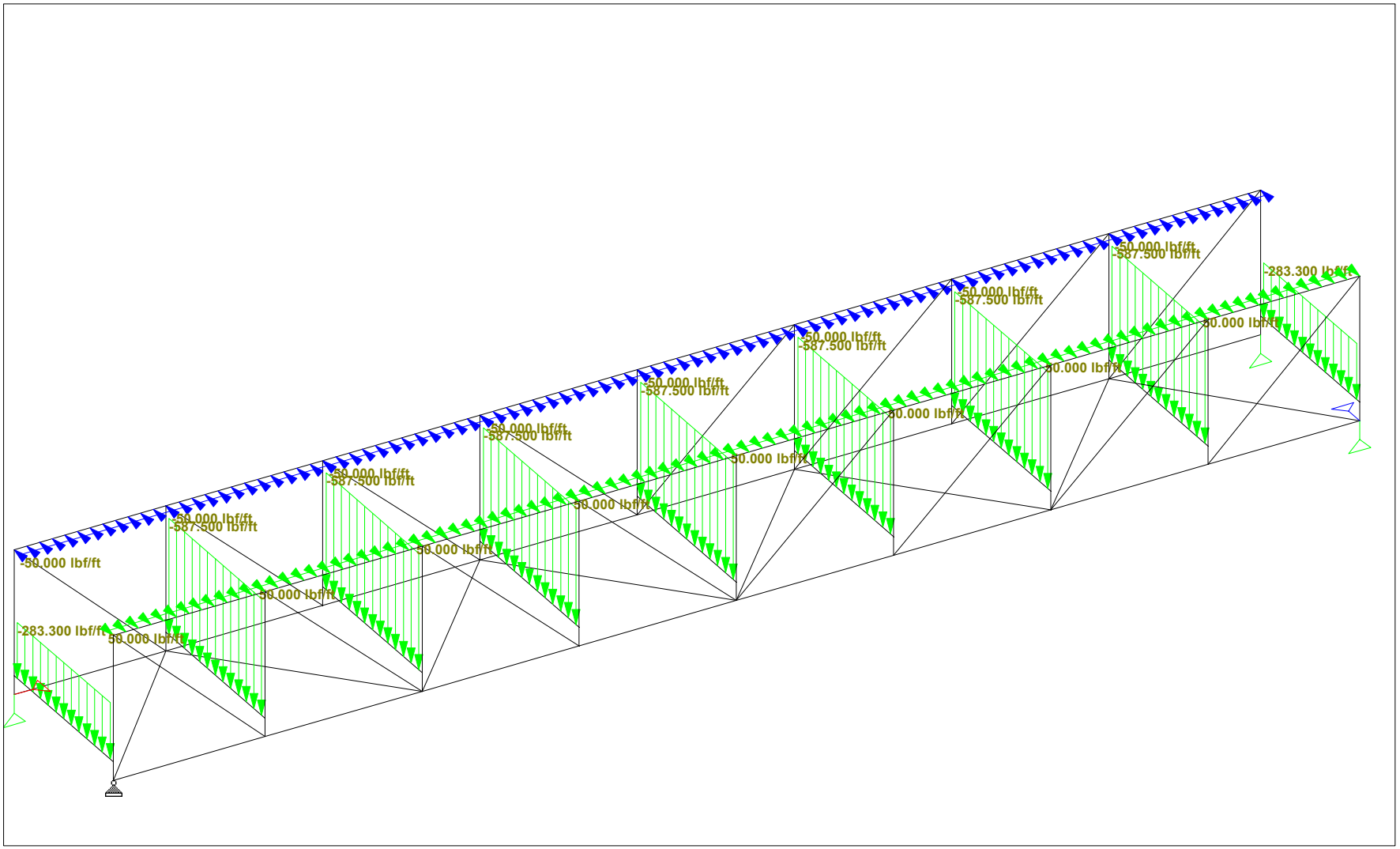
Dead Load Illustration

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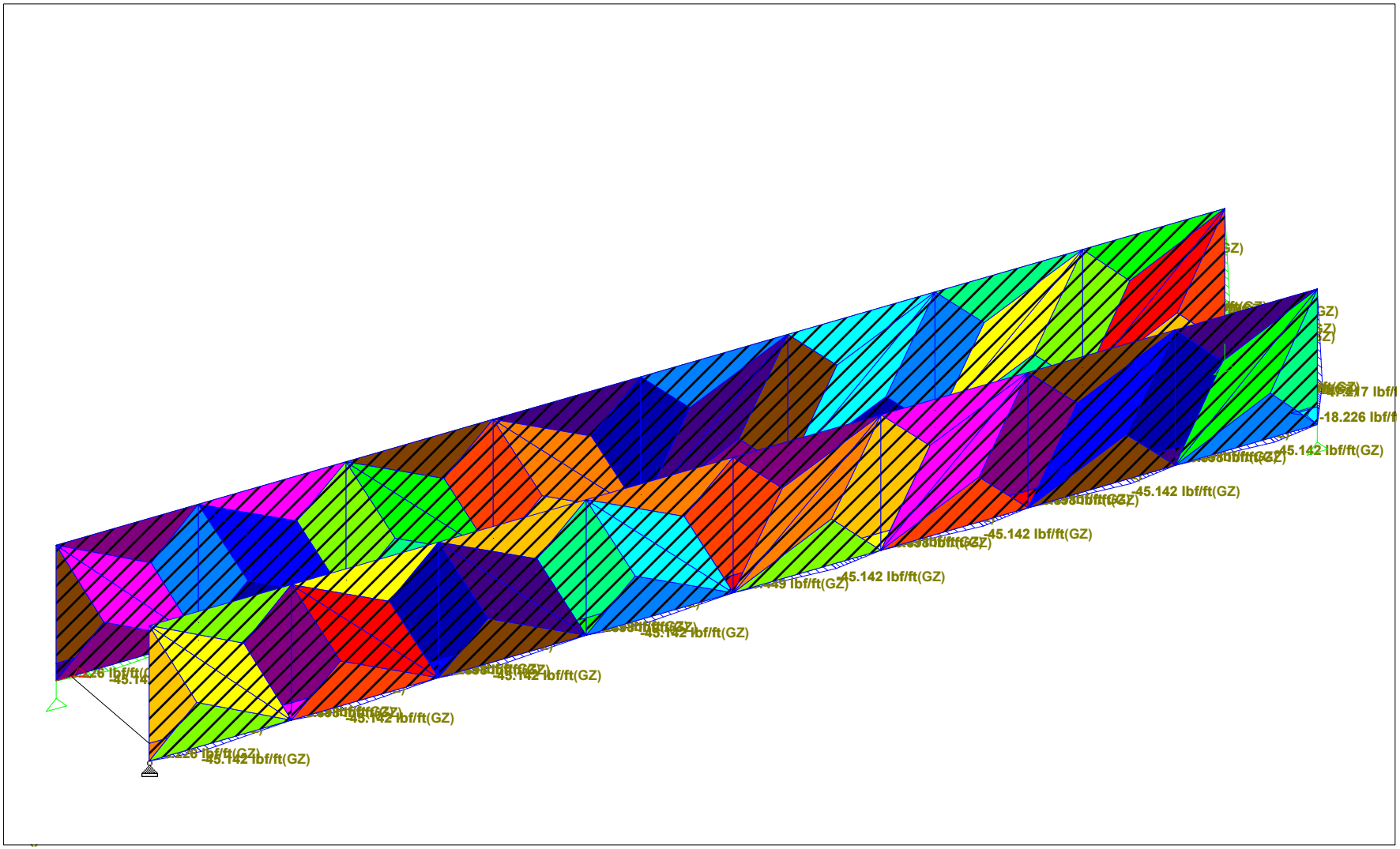
DK-Deck Load Illustration

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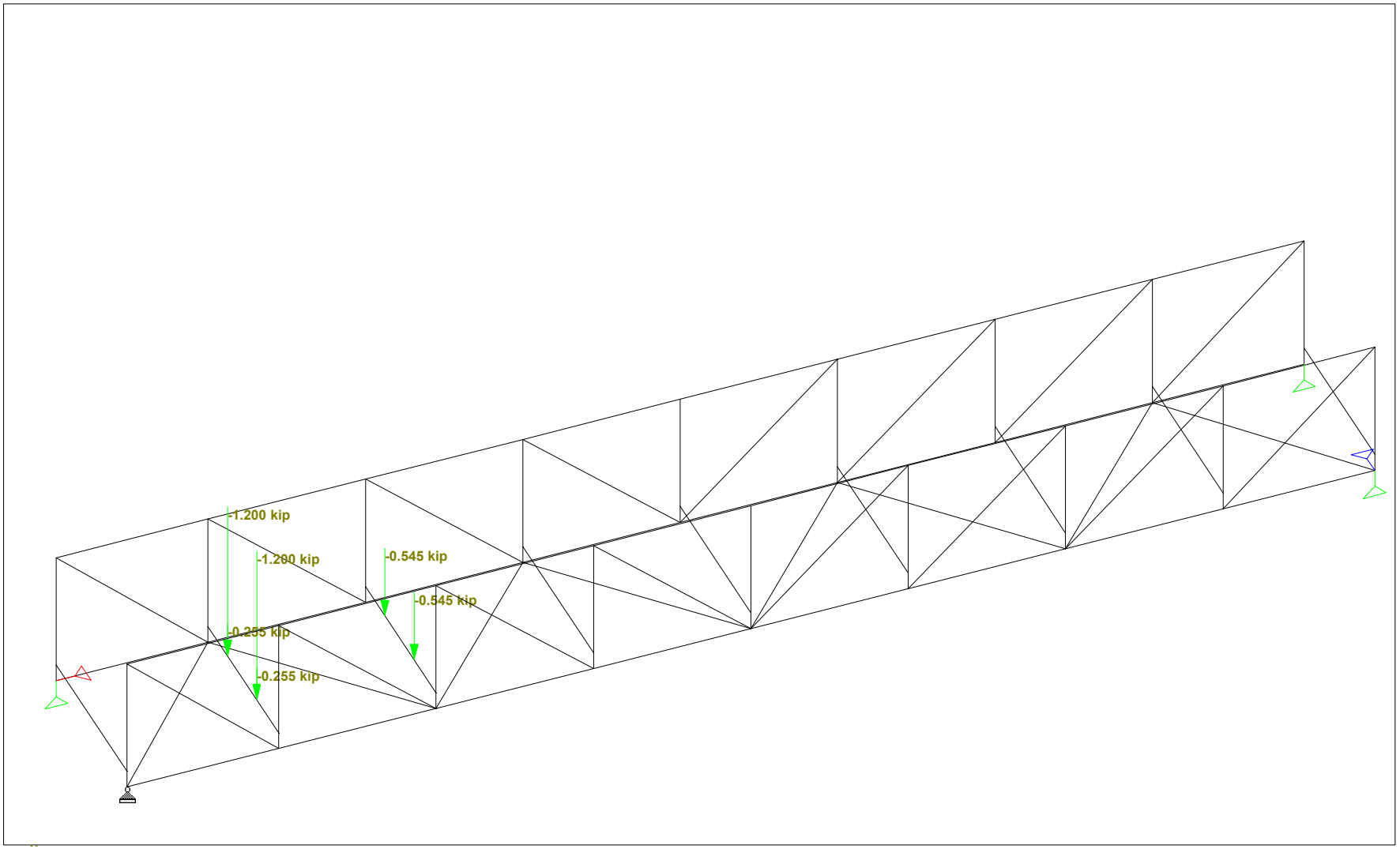
LL-Live Load Illustration

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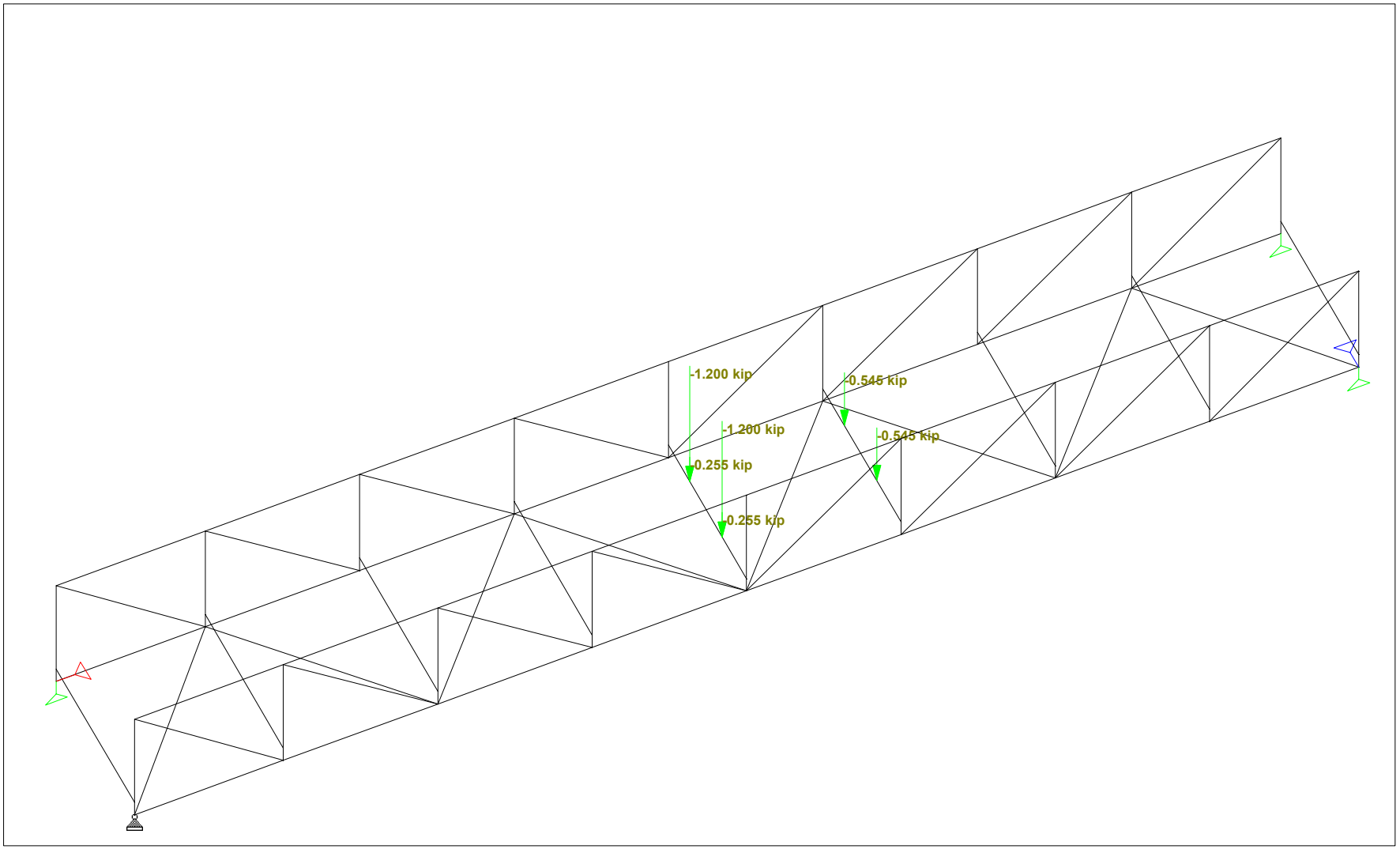
WL-Wind Load Illustration

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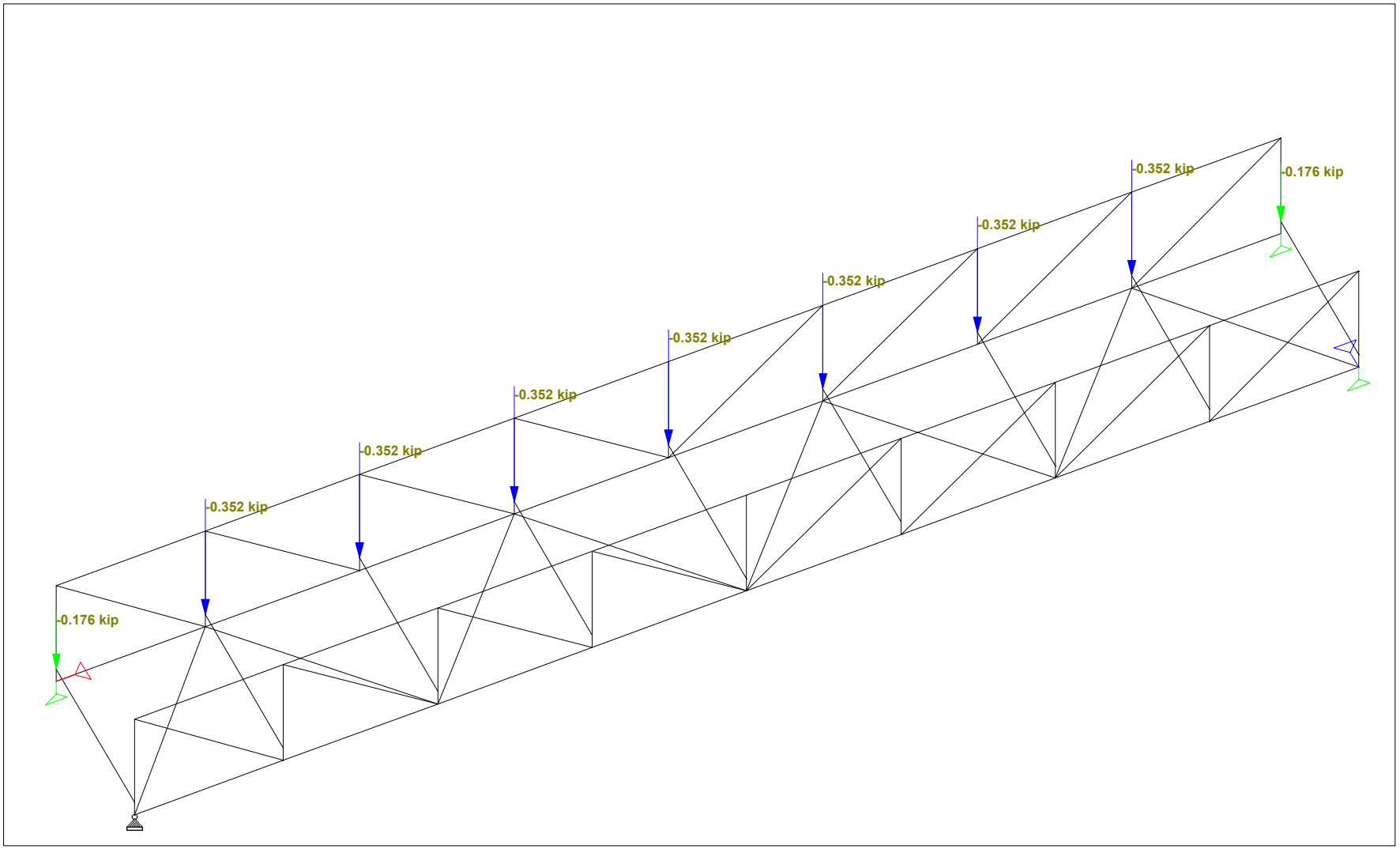
VL: Vehicle Load Generation #1

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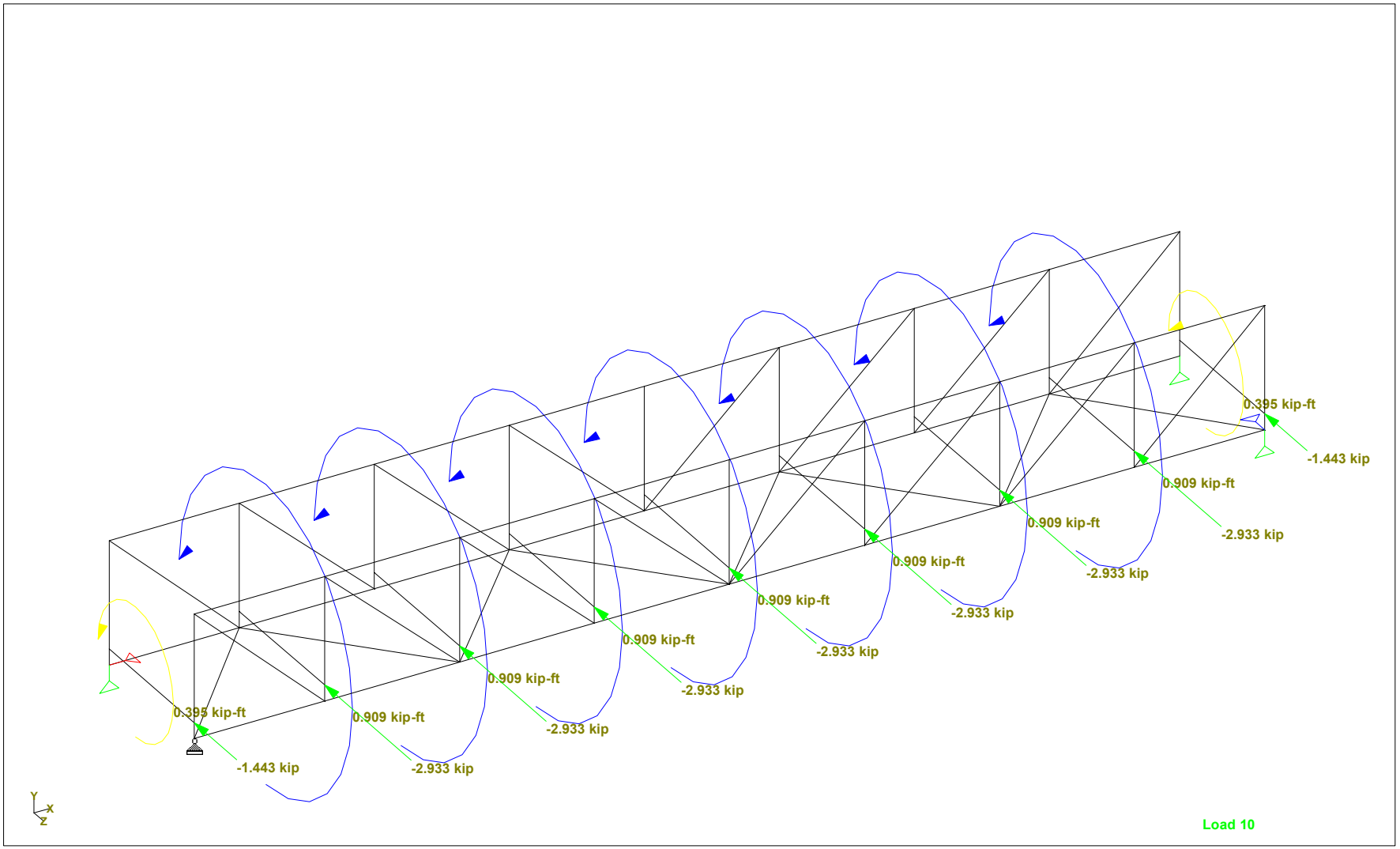
VL: Vehicle Load Generation #2

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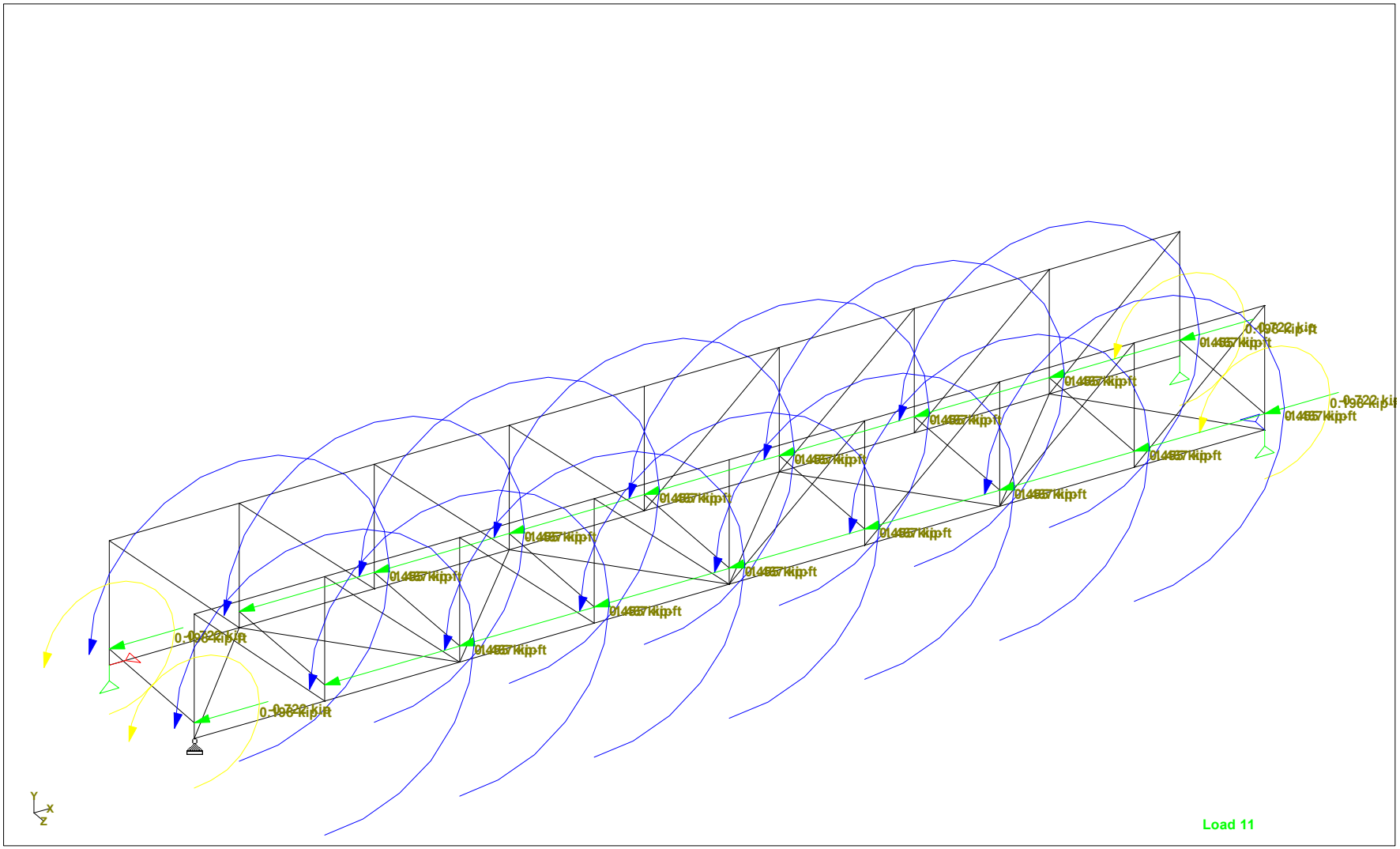
Utility Loading

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E(T): Seismic Load (Transverse) Illustration

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E(L): Seismic (Longitudinal) Load Illustration

	DEAD LOAD NODAL LOAD DERIVATION	JOB #	855412-10

Location : SAN ANSELMO, CA Engineer : ATT

Total Steel Weight = 8029 lbs.
Conc. Deck Weight = 18330 lbs.
Utilites Weight = 2820 lbs.
Total Bridge Weight = 29179 lbs.
Railing & Ancillery Steel Weight = 2354 lbs

Ancillary Steel Weight/truss = 2354/2 trusses/47' = 27.4 lb/ft
Nodal Load applied to interior verticals = 27.4 lb/ft * 5.875'= 161 lbs

	DK-DECK BEAM LOAD DERIVATIONS	JOB #	855412-10

Location : SAN ANSELMO, CA Engineer : ATT

Conc Weight/ sq ft = 65 psf
Deck Area = 282 sq ft
Conc. Deck Weight = 18330 lbs.
Tributary Width (bay spacing) = 5.875'

Beam Load to Interior Floor Beam = 65psf x 5.875' = 381.9 plf
Beam Load to End Floor Beam = 65 psf x (5.875' /2) = 190.9 plf

	LL-LIVE BEAM LOAD DERIVATIONS	JOB # 855412-10

Location : SAN ANSELMO, CA Engineer : ATT

LL/ sq ft = 100 psf

Deck Area = 282 sq ft

Live Load Reaction = 54000 lbs.

Tributary Width (bay spacing) = 5.875'

Beam Load to Interior Floor Beam = 100psf x 5.875' = 587.5 plf

Beam Load to End Floor Beam = 100 psf x (5.875' /2) = 293.75 plf

Railing Beam Load to Top Chord = 50 plf

	EQ(T) SEISMIC TRANSVERSE LOAD DERIVATIONS	JOB #	855412-10

Location : SAN ANSELMO, CA Engineer : ATT

Apply transverse seismic to STAAD model at 1G

E(T) Total Staad Reaction = Bridge Steel + concrete + Utility Load = 29200 lbs

Apply Bridge steel as a self weight load in Z direction

Apply Ancillary Bridge Steel + Concrete + Utility Seismic Load as point loads to floor beams

Concrete seismic load per bay = 65psf x 5.875'x6' = 2291.25 lbs

Utility Seismic Load per bay =60 plf x 5.875' = 352.5 lbs

Ancillary Bridge Steel load per bay = (2354 lbs /47')x5.875' = 283.375 lbs

Nodal Load Applied to STAAD Model at each interior floor beam = 2291.25 + 352.5 + 289.25 = 2933 lbs

Concentrated Moment applied at each floor beam to account for concrete deck eccentricity:

Concrete weight per bay = 2291.25 lbs

Fixed Concentrated Moment applied = Concrete weight x (0.5 x height of floor beam)

= 0.909 k-ft

	EQ(L) SEISMIC LONGITUDINAL LOAD DERIVATIONS	JOB #	855412-10

Location : SAN ANSELMO, CA Engineer : ATT

Apply longitudinal seismic to STAAD model at 1G

E(L) Total Staad Reaction = Bridge Steel + concrete + Utility Load = 29200 lbs

Apply Bridge steel as a self weight load in X direction

Apply Ancillary Bridge Steel + Concrete + Utility Seismic Load as point loads to ends of all floor beams

Concrete seismic load per bay = 65psf x 5.875'x6'/2 beam ends= 1145.6 lbs

Utility Seismic Load per bay =60 plf x 5.875' /2 beam ends = 176.25 lbs

Ancillary Bridge Steel load per bay = (2354 lbs /47')x5.875'/2 beam ends = 147.1 lbs

Nodal Load Applied to STAAD Model at each interior floor beam =1145.6 + 176.25 + 147.1 = 1468 lbs

Concentrated Moment applied at each floor beam end to account for concrete deck eccentricity:

Concrete weight per bay / 2 ends of beam= 1145.65 lbs

Fixed Concentrated Moment applied = Concrete weight x (0.5 x height of floor beam)

= 0.4546 k-ft

MEMBER	MEMBER SIZE				WEIGHT	LENGTH	NO.	TOTAL
	TYPE	X	Y	Z	(#/FT.)	(FT.)	PCS.	WEIGHT
TOP CHORD	HSS	5	3	0.233	12.21	46.17'	2	1127
						.0'		
BOTTOM CHORD	HSS	5	3	0.233	12.21	46.17'	2	1127
						.0'		
VERTICALS	HSS	3	3	0.233	8.81	5.17'	14	637
END VERTICALS	HSS	5	5	0.233	15.62	5.67'	4	354
DIAGONALS								
END DBL MITER	HSS	3	3	0.233	8.81	7.64'	4	269
LOCATION	HSS	3	2	0.233	7.11	7.64'	12	652
ALTERN. SIZE							0	
ALT. ALT. SIZE							0	
SINGLE DBL MITER								
SINGLE TENSION							0	
DBL T/SIN COMP								
BRACE DIAGONALS	HSS	3	3	0.233	8.81	8.21'	8	579
						#VALUE!		
						.0'		
FLOOR BEAM	W8X21	0.25	8.28	5.27	21	6.17'	7	907
							2	
END FLOOR BEAM	W8X21	0.25	8.28	5.27	21	6.0'	2	252
DECK SUPPORT						4.83'		
SIDE DAM	L	6	5	0.1345	5.0344	47.0'	2	473
TOE/RUB RAIL	C4X1X10GA	4	1	0.1345	2.746	47.0'	4	516
SAFETY RAIL	L	1.25	1.25	0.125	1.01	47.0'	10	475
TOE PLATES								
COVER PLATES	FLT		6	0.25	5.10	5.92	2.00	60.40
BEARING PLATES		0	0	0				600
Plaque	PLQ	SPECIAL			250-092081		2	

TOTAL STEEL WEIGHT (LB) =	8029
STEEL WEIGHT/FT=	170.82
CONCRETE WT. (LB)=	18330
UTILITIES WT. (LB) =	2820
TOTAL BRIDGE WEIGHT (LB) =	29,179

CBC LRFD	SEISMIC DESIGN LOADING	JOB #	855412-10

Location : SAN ANSELMO, CA Engineer : ATT

Assumptions:
Site Class = D
Risk Category = III
Weight of structure= 29200 lbs.

Per USGS Design Maps (Attached):

S_s = 1.500 S_{DS} = 1.095

I_e = 1.25

Bridge Seismic Reactions:
Transverse - Assume $T_0 < T < T_S$
Therefore $S_a = S_{DS}$ = 1.3688 ----------> Calculate Reactions Based on R = 1.0 & I = 1.25
$V_s = (S_{DS} * \text{Weight of structure}) / 2 \text{ Supports}$ = 19984 lbs./abutment

Longitudinal - Assume $T_0 < T < T_S$
Therefore $S_a = S_{DS}$ = 1.3688 ----------> Calculate Reactions Based on R = 1.0 & I = 1.25
$V_s = (S_{DS} * \text{Weight of structure}) / 2 \text{ Supports}$ = 19984 lbs./support

Seismic Bridge Design:
For bridge design use R =1.0

Transverse Seismic Load = $Q_{ET} = ((I*S_{DS})/R)*W_{DL(T)}$ = 1.369 $W_{DL(T)}$
Longitudinal Seismic Load = $Q_{ET} = ((I*S_{DS})/R)*W_{DL(T)}$ = 1.369 $W_{DL(L)}$
($W_{DL(T)}$ = Full weight of structure applied transverse & $W_{DL(L)}$ = Full weight of structure applied longitudinally)

Design Bridge for 100% Q_{E1} + 30% Q_{E2}
Basic Load Combinations (For Staad Input):

1). $(1.2+0.2S_{DS})DL + Q_E + LL$ =

A. 1.419 DL + 1.369 $W_{DL(T)}$ + 0.4106 $W_{DL(L)}$ + LL
B. 1.419 DL + 0.411 $W_{DL(T)}$ + 1.369 $W_{DL(L)}$ + LL

2). $(0.9-0.2S_{DS})DL + Q_E$ =

A. 0.681 DL + 1.369 $W_{DL(T)}$ + 0.4106 $W_{DL(L)}$
B. 0.681 DL + 0.411 $W_{DL(T)}$ + 1.3688 $W_{DL(L)}$

			Reference
Design Wind Speed = V =	99	mph	ASCE Fig 26.5-1A
Service Wind Speed = V_s =	72	mph	ASCE Fig CC.2-1
Wind Exposure Category =	C		ASCE 26.7.3
Wind Pressure = $q_Z = 2.56x10^{-3}K_ZK_{zt}K_dK_eV^2$ =	18.104	psf	ASCE (26.10-1)
Design Wind Pressure = $P_Z = q_ZGC_f$ =	24.622	psf	ASCE (29.4-1)

Wind

Results:

Wind Speed	99 Vmph
10-year MRI	64 Vmph
25-year MRI	70 Vmph
50-year MRI	74 Vmph
100-year MRI	79 Vmph
Data Source:	ASCE/SEI 7-16, Fig. 26.5-1C and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed:	Fri Jul 11 2025

Excerpt from ASCE Hazard tool

			Reference
$K_z = 2.01\,(Z/z_g)^{2/\alpha}$ =	0.8489		ASCE Tbl 26.10-1
Z =	15	ft	
α =	9.5		ASCE Tbl 26.11-1
z_g =	900		ASCE Tbl 26.11-1
Topographic Factor = K_{zt} =	***1.00***		ASCE 26.8.2
Wind Directionality Factor = K_d =	***0.85***		ASCE Tbl 26.6-1
Ground Elevation Factor = K_e =	***1.00***		ASCE 26.9
Structure Height = h =	15	ft (15ft minimum)	ASCE Tbl 29.3-1
Gust Effect Factor = G =	*0.850*		ASCE 26.11.1
Drag Coefficient = $C_D = C_f$ =	*1.600*		ASCE Fig 29.5-2
A_{gross} =	532.67	sf	
A_{solid} =	238.79	sf	
$\varepsilon = A_{solid}/A_{gross}$ =	0.4483	*Structure shall be considered an open sign*	ASCE 29.5-2
Projected Area of Truss =	96.899	sf	
Projected Area of Deck & Rail =	141.89	sf	
Projected Area of Roof =	0	sf	
Total Projected Area = A_P =	238.79	sf	

Gust Effect Factor — ASCE 26.11

			Reference
Natural Frequency = $n_1 = 1/T$ =	9.0221	Hz, therefore structure is: **rigid**	ASCE 26.2
$G = 0.925(1+1.7g_Q I_{\check{z}}Q)/(1+1.7g_v I_{\check{z}})$ =	0.8793	use G = 0.85	ASCE (26.11-6)
$I_{\check{z}} = c(33/\check{z})^{1/6}$ =	0.2281		ASCE (26.11-7)
$\check{z} = 0.6h$ or z_{min} =	15	ft	ASCE 26.11.4
$Q = (1+0.63[(B+h)/L_{\check{z}}]^{0.63})^{-0.5}$ =	0.9132		ASCE (26.11-8)
$L_{\check{z}} = l(\check{z}/33)^{\acute{\varepsilon}}$ =	385.58		ASCE 26.9-9
z_{min} =	15	ft	ASCE Tbl 26.11-1
l =	500		ASCE Tbl 26.11-1
$\acute{\varepsilon}$ =	0.2		ASCE Tbl 26.11-1
B =	47	ft	ASCE 26.3

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Nodes

Node	X (ft)	Y (ft)	Z (ft)
50	23.291	0.697	0

Node Displacements

Node	L/C	X (in)	Y (in)	Z (in)	Resultant (in)	rX (deg)	rY (deg)	rZ (deg)
50	2:DL-DEAD LC	0.006	-0.061	-0.002	0.061	0.000	-0.000	-0.000
	3:DK-DECK	0.015	-0.138	-0.005	0.139	0.015	-0.000	-0.000
	4:LL-LIVE LOA	0.023	-0.212	-0.006	0.213	0.006	-0.000	-0.000
	5:WL-WIND L(	-0.029	-0.110	-0.194	0.225	-0.167	0.000	0.000
	6:LOAD GENE	0.004	-0.021	-0.001	0.022	-0.001	0.000	0.001
	7:LOAD GENE	0.004	-0.053	-0.005	0.053	0.018	0.000	-0.001
	8:LATERAL FR	0.012	0.040	0.077	0.087	0.060	-0.000	0.000
	9:UL-UTILITY I	0.000	-0.041	-0.015	0.044	-0.030	0.000	-0.000
	10:E(T):SEISM	-0.057	-0.171	-0.381	0.422	-0.251	0.000	-0.000
	11:E(L):SEISM	-0.038	0.033	-0.001	0.051	0.000	-0.004	0.052
	20:TD-TOTAL	0.021	-0.199	-0.007	0.200	0.015	-0.000	-0.000
	21:1. 1.4DL	0.030	-0.336	-0.031	0.339	-0.021	-0.000	-0.000
	22:2. 1.2DL+1.(	0.062	-0.627	-0.036	0.631	-0.008	-0.000	-0.000
	23:4. 1.2DL+1.(	0.019	-0.610	-0.227	0.651	-0.179	0.000	-0.000
	24:5. 1.2DL+1.(	0.048	-0.500	-0.033	0.503	-0.012	-0.000	-0.000
	25:6. 0.9DL+1.(	-0.010	-0.326	-0.214	0.390	-0.181	0.000	0.000
	26:2. 1.2DL+1.(	0.031	-0.322	-0.029	0.325	-0.020	0.000	0.002
	27:2. 1.2DL+1.(	0.032	-0.372	-0.034	0.375	0.012	0.000	-0.001
	28:6A. 1.2D+1.	-0.041	-0.772	-0.560	0.955	-0.359	-0.002	0.022
	29:6A. 1.2D+1.	-0.023	-0.577	-0.196	0.610	-0.118	-0.006	0.072
	30:6B. 0.9D+1.	-0.080	-0.383	-0.538	0.665	-0.354	-0.002	0.022
	31:6B. 0.9D+1.	-0.062	-0.188	-0.173	0.263	-0.113	-0.006	0.072

DEFLECTION CALCULATION	JOB # 855412-10

LIVE LOAD DEFLECTION CHECKS

Vertical Truss Deflection Check - Live Load

Node =	50	
L =	47	FT
Vertical Truss Deflection =	0.21	IN
Allowable Deflection =	L /	360
Actual Deflection =	L /	2660

L / 2660 < L / 360 GOOD

Horizontal Truss Deflection Check - Seismic Load (Transverse)

Node =	50	
L =	47	FT
Horizontal Truss Deflection =	0.38	IN
Allowable Deflection =	L /	500
Actual Deflection =	L /	1480

L / 1480 < L / 500 GOOD

VIBRATION CHECK

Node =	50				
L =	47	FT			
Bridge Weight =	29.18	Kips			
Dead Load Deflection = Δ_{DL} =	0.24	IN			
Gravitational Acceleration = g =	32.2	ft/s^2			
Minimum desirable frequency =	3.0	Hz	or	2.86 ln (180/W)	5.20 Hz
Actual frequency = $0.18*(g/\Delta_{DL})^{1/2}$ =	7.22	Hz			

7.22 > 3.00 GOOD

U-FRAME CALCULATION	JOB # 855412-10

Location : SAN ANSELMO, CA **Engineer :** ATT

The maximum top chord service compression loads at the midspan of the truss, as taken from the computer analysis are:

	Max Load		Load Combination	Member #
P_c =	32.04	kips	DL + LL	28

The recommended minimum C_{req} value is $\frac{1.46\,P}{L}$

Where "P" is the top chord compression load times the appropriate safety factor:

F.S. = 1.0 (uniform live load)

F.S. = 1.5 (vehicle load)

"L" is the spacing between verticals → 70.5 in

C_{req} = 0.66

"C_{furn}" is the u-frame spring constant (or "elastic frame stiffness") as determined by the folowing equation :

$$C_{furn} = \frac{E}{h2[(h/3Iv)+(b/2Ib)]}$$

Where :

E = Steel Modulus of Elasticity	→	29000 ksi
b = Width of bridge from center line of chord to chord.	→	77.0 in
h = Height of truss from center lines of top chord and floorbeam.	→	56.64 in
I_v = Moment of inertia of the verticals.	→	3.02 in^4
I_b = Moment of inertia of the floorbeam.	→	75.3 in^4

C_{furn} = 1.34

1.34 > .66 **GOOD**

By extrapolation from the table of "*1/k for various values of CL/P_c*", you are able to calculate a k value.

CL/P_c = 1.96 Safety Factor = 1.50

1/k = 0.83 ← Read off chart. (See following page)

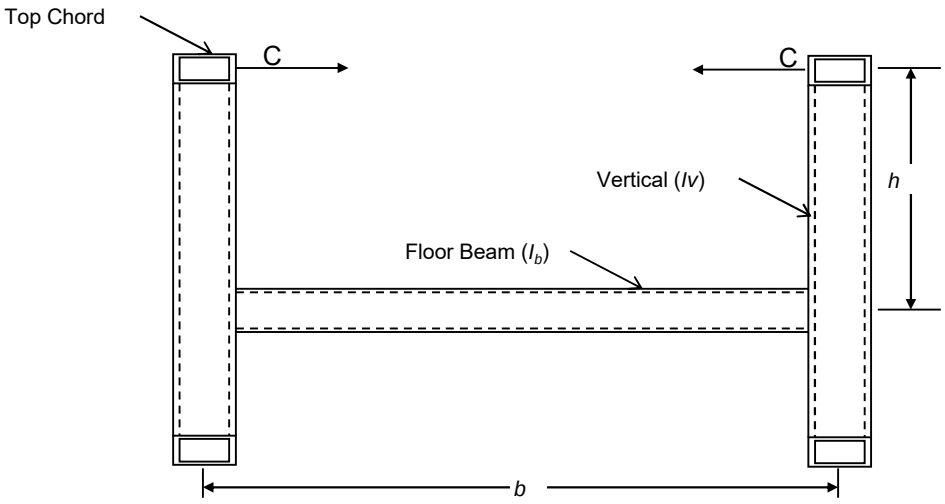
k_{Actual} = 1.21 **$k_{TC\ DESIGN}$ = 1.30**

Note :

Use a minimum k value for design fo the top chord of 1.3; However, conservatively use an out-of-plane bending force of 1/100k times the top chord compression, (with a k value of 1.21), for strength design of the verticals and floor beams and their connections.

1/K FOR VARIOUS VALUES OF CL/P_c and n

	n						
1/K	**4**	**6**	**8**	**10**	**12**	**14**	**16**
1	3.686	3.616	3.66	3.714	3.754	3.785	3.809
0.98		3.284	2.944	2.806	2.787	2.771	2.774
0.96		3	2.665	2.542	2.456	2.454	2.479
0.95			2.595				
0.94		2.754		2.303	2.252	2.254	2.282
0.92		2.643		2.146	2.094	2.101	2.121
0.9	3.352	2.593	2.263	2.045	1.951	1.968	1.981
0.85		2.46	2.013	1.794	1.709	1.681	1.694
0.8	2.961	2.313	1.889	1.629	1.48	1.456	1.465
0.75		2.147	1.75	1.501	1.344	1.273	1.262
0.7	2.448	1.955	1.595	1.359	1.2	1.111	1.088
0.65		1.739	1.442	1.236	1.087	0.988	0.94
0.6	2.035	1.639	1.338	1.133	0.985	0.878	0.808
0.55		1.517	1.211	1.007	0.86	0.768	0.708
0.5	1.75	1.362	1.047	0.847	0.75	0.668	0.6
0.45		1.158	0.829	0.714	0.624	0.537	0.5
0.4	1.232	0.886	0.627	0.555	0.454	0.428	0.383



Where: $$C = \frac{E}{h^2\,[h/3I_v + b/2I_b]}$$

L = Length in Inches of One Truss Panel

*P = Buckling Load = Top Chord Compression * F.S.*

n = Number of Panels

Reference: Galambos, T.V. (1988) “Guide to Stability Design Criteria for Metal Structures”, 4th Ed., PP 515-529. Copyright © 1988. Reprinted by permission of John Wiley and Sons, Inc.

AISC LRFD	TOP CHORD	JOB # 855412-10

Location : SAN ANSELMO, CA

Engineer : ATT

The critical combined axial and bending loads in the top chord, as taken from the computer analysis are:

Axial load (P_u) =	45.60	kips
In-plane bending moment (M_{uy}) =	0.30	ft-kips
Out-of-plane bending moment (M_{ux}) =	0.56	ft-kips
Member # (from analysis) =	28	
Load combination =	1.2DL + 1.0E + 1.0LL	

HSS5X3X1/4		
Properties		
Area =	3.37	in^2
S_x =	3.21	in^3
S_y =	4.29	in^3
I_x =	4.81	in^4
I_y =	10.70	in^4
r_x =	1.19	in.
r_y =	1.78	in.
Z_x =	3.77	in^3
Z_y =	5.38	in^3
F_y=	50	ksi
E=	29000	ksi

Slenderness

K_x = 1.00 $\quad \frac{K_x l}{r_x}$ = 59.24 $\quad \frac{K_y l}{r_y}$ = 51.49

K_y = 1.30

l = 70.5 in $\quad$ Max = 59.24 ≤ 200 $\quad$ GOOD $\quad$ AISC E2

Compressive Resistance

$P_n = F_{cr} A_g$ AISC E3-1

$\frac{K l}{r} \le 4.71\sqrt{E/F_y}$ $\left(or\ F_y/F_e \le 2.25\right)$ $F_{cr} = \left[0.658^{F_y/F_e}\right] F_y$ 38.683 ksi AISC E3-2

$\frac{K l}{r} > 4.71\sqrt{E/F_y}$ $\left(or\ F_y/F_e > 2.25\right)$ $F_{cr} = 0.877 F_e$ NA AISC E3-3

Where: $F_e = \pi^2 E \Big/ \left(\frac{K l}{r}\right)^2$ = 81.548 ksi AISC E3-4

$4.71\sqrt{E/F_y}$ = 113.43 $\quad \left(or\ F_y/F_e \le 2.25\right)$ = 0.6131

$P_n = F_{cr} A_g$ $\quad P_n$ = 130.36 kips

$P_r = \Phi_c P_n$ $\quad \Phi_c$ = 0.9 $\quad P_r$ = 117.32 kips

Flexural Resistance AISC F7

Yielding:

$M_n = M_p = F_yZ$ $Z_x =$ 3.77 in^3 $Z_y =$ 5.38 in^3 AISC F7-1

$M_{nx}=M_{px}=$ 188.5 k-in $M_{ny}=M_{py}=$ 269 k-in

Local Flange Buckling: AISC Table B4.1b

If $\lambda_f > \lambda_{pf}$, then:

$\lambda_{fx} = b_{xfc}/t_{xfc} =$ 9.88 $\lambda_{fy} = b_{yfc}/t_{yfc} =$ 18.46

$b_{xfc} =$ 2.301 in $b_{yfc} =$ 4.301 in

λ_{pf} (compact flange) = $1.12\sqrt{\frac{E}{F_y}} =$ 26.97 (AISC Table B4.1b - 17)

λ_{rf} (non-compact flange) = $1.40\sqrt{\frac{E}{F_y}} =$ 33.72 (AISC Table B4.1b - 17)

If $\lambda_f \le \lambda_{rf}$, then, $M_n = M_p - (M_p - F_y S_x)\left\{3.57\frac{b_{fc}}{t_{fc}}\sqrt{\frac{F_y}{E}} - 4.0\right\} \le M_p$ AISC F7-2 NA

$M_{nx}=$ NA k-in $M_{ny}=$ NA k-in

If $\lambda_f > \lambda_{rf}$, then, $M_n = F_y S_{eff}$ $b_e = 1.92\, t_{fc}\sqrt{\frac{E}{F_y}}\left\{1 - \frac{0.38}{b_{fc}/t_{fc}}\sqrt{\frac{E}{F_y}}\right\} \le b_{fc}$ AISC F7-3,4 NA

$b_{xe} =$ NA in $b_{ye} =$ NA in

$S_{effx} =$ NA in^3 $S_{effy} =$ NA in^3

$M_{nx}=$ NA k-in $M_{ny}=$ NA k-in

Web Local Buckling: AISC F7-5

If $D/t_w > \lambda_{pw}$, then: $M_n = M_p - (M_p - F_y S)\left\{0.305\frac{D}{t_w}\sqrt{\frac{F_y}{E}} - 0.738\right\} \le M_p$ NA

λ_{pw} (compact web) = $2.42\sqrt{\frac{E}{F_y}} =$ 58.28 (AISC Table B4.1b - 19)

Dx/t_w = 9.88 Dy/t_w = 18.46

M_{nx}= NA k-in M_{ny}= NA k-in

M_{nx}min= 188.50 k-in M_{ny}min = 269.00 k-in

Φ_f = 0.9 $M_{rx} = \Phi_f M_{nx}$ $M_{ry} = \Phi_f M_{ny}$

M_{rx} = 169.65 k-in M_{ry} = 242.10 k-in

Check Combined Axial Compression and Flexure

M_{ux} = 3.61 k-in

M_{uy} = 6.72 k-in

$If\ \frac{P_u}{P_r} < 0.2, then\ \frac{P_u}{2.0P_r} + \left(\frac{M_{ux}}{M_{rx}} + \frac{M_{uy}}{M_{ry}}\right) \le 1.0$ AISC H1-1a

$If\ \frac{P_u}{P_r} \ge 0.2, then\ \frac{P_u}{P_r} + \frac{8.0}{9.0}\left(\frac{M_{ux}}{M_{rx}} + \frac{M_{uy}}{M_{ry}}\right) \le 1.0$ AISC H1-1b

$\frac{P_u}{P_r} =$ 0.389

Unity Check

0.43 ≤ 1.0 GOOD

AISC LRFD	BOTTOM CHORD	JOB # 855412-10

Location : SAN ANSELMO, CA

Engineer : ATT

The critical combined axial and bending loads in the bottom chord, as taken from the computer analysis are:

Axial load (P_u) =	74.30	kips
In-plane bending moment (M_{uy}) =	0.35	ft-kips
Out-of-plane bending moment (M_{ux}) =	1.41	ft-kips
Member # (from analysis) =	20	
Load combination =	1.2DL + 1.0E + 1.0LL	

HSS5X3X1/4		
Properties		
Area =	3.37	in^2
S_x =	3.21	in^3
S_y =	4.29	in^3
I_x =	4.81	in^4
I_y =	10.70	in^4
r_x =	1.19	in.
r_y =	1.78	in.
Z_x =	3.77	in^3
Z_y =	5.38	in^3
F_y=	50	ksi
E=	29000	ksi

Tensile Resistance

Φ_y = 0.9 — P_r = Lessor of two values

A_g = 3.37

Φ_r = NA — $P_r = \Phi_y F_y A_g$ — P_r = 151.65 — AISC D2-1

A_n = NA — $P_r = \Phi_r F_u A_n U$ — P_r = NA — Not Spliced — AISC D2-2

U = NA

P_r = 151.65 kips

Flexural Resistance

AISC F7

Yielding:

$M_n = M_p = F_y Z$ — Z_x = 3.77 in^3 — Z_y = 5.38 in^3 — AISC F7-1

$M_{nx}=M_{px}$= 188.5 k-in — $M_{ny}=M_{py}$= 269 k-in

Local Flange Buckling:

If $\lambda_f > \lambda_{pf}$, then: — $\lambda_{fx} = b_{xfc}/t_{xfc}$ = 9.88 — $\lambda_{fy} = b_{yfc}/t_{yfc}$ = 18.46 — AISC Table B4.1b

b_{xfc} = 2.301 in — b_{yfc} = 4.301 in

λ_{pf} (compact flange) = $1.12\sqrt{\frac{E}{F_y}}$ = 26.97 — (AISC Table B4.1b - 17)

λ_{rf} (non-compact flange) = $1.40\sqrt{\frac{E}{F_y}}$ = 33.72 — (AISC Table B4.1b - 17)

If $\lambda_f \le \lambda_{rf}$, then, $M_n = M_p - (M_p - F_y S_x)\left\{3.57\frac{b_{fc}}{t_{fc}}\sqrt{\frac{F_y}{E}} - 4.0\right\} \le M_p$ — AISC F7-2 — NA

M_{nx}= NA k-in — M_{ny}= NA k-in

If $\lambda_f > \lambda_{rf}$, then, $M_n = F_y S_{eff}$ $b_e = 1.92\, t_{fc}\sqrt{\frac{E}{F_y}}\left\{1 - \frac{0.38}{b_{fc}/t_{fc}}\sqrt{\frac{E}{F_y}}\right\} \le b_{fc}$ — AISC F7-3,4 — NA

b_{xe} = NA in — b_{ye} = NA in

S_{effx} = NA in^3 — S_{effy} = NA in^3

M_{nx}= NA k-in — M_{ny}= NA k-in

Web Local Buckling: AISC F7-5

If $D/t_w > \lambda p_w$, then:

$$M_n = M_p - (M_p - F_y S)\left\{0.305\frac{D}{t_w}\sqrt{\frac{F_y}{E}} - 0.738\right\} \le M_p \qquad \text{NA}$$

λ_{pw} (compact web) = $2.42\sqrt{\frac{E}{F_y}} =$ 58.28 (AISC Table B4.1b - 19)

Dx/t_w = 9.88 Dy/t_w = 18.46

M_{nx}= NA k-in M_{ny}= NA k-in

M_{nx}min= 188.50 k-in M_{ny}min = 269.00 k-in

Φ_f = 0.9 $M_{rx} = \Phi_f M_{nx}$ $M_{ry} = \Phi_f M_{ny}$

M_{rx} = 169.65 k-in M_{ry} = 242.10 k-in

Check Combined Axial Tension and Flexure

M_{ux} = 4.20 k-in
M_{uy} = 16.92 k-in

$$If\ \frac{P_u}{P_r} < 0.2,\ then\ \frac{P_u}{2.0P_r} + \left(\frac{M_{ux}}{M_{rx}} + \frac{M_{uy}}{M_{ry}}\right) \le 1.0 \qquad \text{AISC H1-1a}$$

$$If\ \frac{P_u}{P_r} \ge 0.2,\ then\ \frac{P_u}{P_r} + \frac{8.0}{9.0}\left(\frac{M_{ux}}{M_{rx}} + \frac{M_{uy}}{M_{ry}}\right) \le 1.0 \qquad \text{AISC H1-1b}$$

$$\frac{P_u}{P_r} = 0.49$$

Unity Check

0.57 ≤ 1.0 GOOD

AISC LRFD	END VERTICAL DESIGN	JOB # 855412-10

Location : SAN ANSELMO, CA

Engineer : ATT

The critical combined axial and bending loads in the end vertical, as taken from the computer analysis are:

Axial load (P_u) =	18.81	kips
In-plane bending moment (M_{ux}) =	0.62	ft-kips
Out-of-plane bending moment (M_{uy}) =	3.30	ft-kips
Out-of-plane U-frame (M_{uy}) =	0.89	ft-kips
Total Out-of-plane moment (M_{uy}) =	4.19	ft-kips
Member # (from analysis) =	52	
Load combination =	1.2DL + 1.0E + 1.0LL	

HSS5X5X1/4		
Properties		
Area =	4.30	in^2
S_x =	6.41	in^3
S_y =	6.41	in^3
I_x =	16.00	in^4
I_y =	16.00	in^4
r_x =	1.93	in.
r_y =	1.93	in.
Z_x =	7.61	in^3
Z_y =	7.61	in^3
F_y=	50	ksi
E=	29000	ksi

Slenderness

K_x = 1.00 I_x = 64.00 in $\frac{K_x l}{r_x}$ = 33.16 $\frac{K_y l}{r_y}$ = 58.69

K_y = 2.00 I_y = 56.64 in

Max = 58.69 ≤ 200 GOOD AISC E2

Compressive Resistance

$P_n = F_{cr} A_g$ AISC E3-1

$\frac{Kl}{r} \le 4.71\sqrt{E/F_y}$ $\left(or\ F_y/F_e \le 2.25\right)$ $F_{cr} = \left[0.658^{F_y/F_e}\right] F_y$ 38.866 ksi AISC E3-2

$\frac{Kl}{r} > 4.71\sqrt{E/F_y}$ $\left(or\ F_y/F_e > 2.25\right)$ $F_{cr} = 0.877 F_e$ NA AISC E3-3

Where: $F_e = \pi^2 E \Big/ \left(\frac{Kl}{r}\right)^2$ = 83.082 ksi AISC E3-4

$4.71\sqrt{E/F_y}$ = 113.43 $\left(or\ F_y/F_e \le 2.25\right)$ = 0.6018

$P_n = F_{cr} A_g$ P_n = 167.13 kips

$P_r = \Phi_c P_n$ Φ_c = 0.9 P_r = 150.41 kips

Yielding: AISC F7

$M_n = M_p = F_y Z$ Z_x = 7.61 in^3 Z_y = 7.61 in^3

$M_{nx}=M_{px}$= 380.5 k-in $M_{ny}=M_{py}$= 380.5 k-in AISC F7-1

Local Flange Buckling: AISC Table B4.1b

If $\lambda_f > \lambda_{pf}$, then:

$\lambda_{fx} = b_{xfc}/t_{xfc}$ = 18.46 $\lambda_{fy} = b_{yfc}/t_{yfc}$ = 18.46

b_{xfc} = 4.301 in b_{yfc} = 4.301 in

λ_{pf} (compact flange) = $1.12\sqrt{\frac{E}{F_y}}$ = 26.97 (AISC Table B4.1b - 17)

λ_{rf} (non-compact flange) = $1.40\sqrt{\frac{E}{F_y}}$ = 33.72 (AISC Table B4.1b - 17)

If $\lambda_f \le \lambda_{rf}$, then, $M_n = M_p - (M_p - F_y S_x)\left\{3.57\frac{b_{fc}}{t_{fc}}\sqrt{\frac{F_y}{E}} - 4.0\right\} \le M_p$ AISC F7-2 NA

M_{nx}= NA k-in M_{ny}= NA k-in

If $\lambda_f > \lambda_{rf}$, then, $M_n = F_y S_{eff}$ $b_e = 1.92\, t_{fc}\sqrt{\frac{E}{F_y}}\left\{1 - \frac{0.38}{b_{fc}/t_{fc}}\sqrt{\frac{E}{F_y}}\right\} \le b_{fc}$ AISC F7-3,4 NA

b_{xe} = NA in b_{ye} = NA in

S_{effx} = NA in^3 S_{effy} = NA in^3

M_{nx}= NA k-in M_{ny}= NA k-in

Web Local Buckling: AISC F7-5

If $D/t_w > \lambda p_w$, then: $M_n = M_p - (M_p - F_y S)\left\{0.305\frac{D}{t_w}\sqrt{\frac{F_y}{E}} - 0.738\right\} \le M_p$ NA

λ_{pw} (compact web) = $2.42\sqrt{\frac{E}{F_y}}$ = 58.28 (AISC Table B4.1b - 19)

Dx/t_w = 18.46 Dy/t_w = 18.46

M_{nx}= NA k-in M_{ny}= NA k-in

M_{nx}min= 380.50 k-in M_{ny}min = 380.50 k-in

Φ_f = 1.0 $M_{rx} = \Phi_f M_{nx}$ $M_{ry} = \Phi_f M_{ny}$

M_{rx} = 380.50 k-in M_{ry} = 380.50 k-in

Check Combined Axial Compression and Flexure

M_{ux} = 7.44 k-in
M_{uy} = 50.25 k-in

$$If\ \frac{P_u}{P_r} < 0.2,\ then\ \frac{P_u}{2.0P_r} + \left(\frac{M_{ux}}{M_{rx}} + \frac{M_{uy}}{M_{ry}}\right) \le 1.0$$ AISC H1-1a

$$If\ \frac{P_u}{P_r} \ge 0.2,\ then\ \frac{P_u}{P_r} + \frac{8.0}{9.0}\left(\frac{M_{ux}}{M_{rx}} + \frac{M_{uy}}{M_{ry}}\right) \le 1.0$$ AISC H1-1b

$$\frac{P_u}{P_r} = 0.125$$

Unity Check

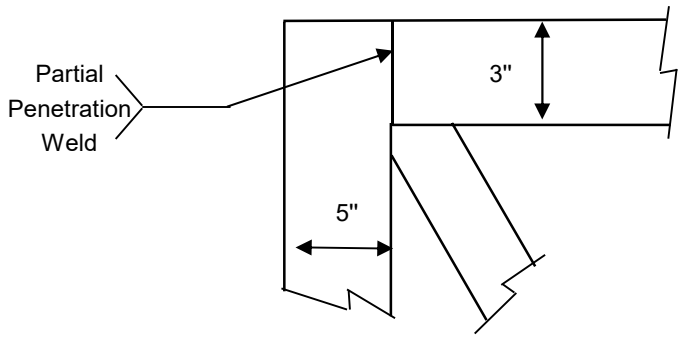
0.21 ≤ 1.0 GOOD

End Vertical to Top Chord Connection

Axial load (P_u) =	9.41*	kips
In-plane bending moment (M_{ux}) =	0.62	ft-kips
Total Out-of-plane moment (M_{uy}) =	4.19	ft-kips
Member # (from analysis) =	52	
Load combination =	1.2DL + 1.0E + 1.0LL	

*Only 1/2 of the axial load due to the double mitered diagonal.

Assume all the stresses go through the three partial penetration welds.



Calculate Factored Resistance — AISC J2

Φ_{el} = 0.75 F_{exx} = 70 ksi Rr = 0.6Φel Fexx R_r = 31.50 ksi

Calculate Connection Factored Stress

A_{eff}= $(2H_{tc}+B_{tc})t_f$ H_{tc} = 3"
S_{in}= $[(H_{tc}^2)/3 +(2/3)H_{tc}B_{tc}]t_f$ B_{tc}= 5"
S_{out}= $[(H_{tc}^2)/6 + H_{tc}B_{tc}]t_f$

t_f = 0.233 in (Controling thickness of weld throat)
A_{eff} = 2.563 in^2
S_{in} = 3.029 in^3
S_{out} = 3.8445 in^3
M_{ux} = 7.44 k-in
M_{uy} = 50.25 k-in

$$\frac{P}{A_{eff}} + \frac{M_{ux}}{S_{in}} + \frac{M_{uy}}{S_{out}} \le R_r$$

19.2 ksi ≤ 31.50 ksi GOOD

AISC LRFD	INTERIOR VERTICAL DESIGN	JOB # 855412-10

Location : SAN ANSELMO, CA

Engineer : ATT

The critical combined axial and bending loads in the interior vertical, as taken from the computer analysis are:

Axial load (P_u) =	18.30	kips
In-plane bending moment (M_{ux}) =	0.96	ft-kips
Out-of-plane from Analysis (M_{uy}) =	2.64	ft-kips
Out-of-plane U-frame (M_{uy}) =	1.33	ft-kips
Total Out-of-plane moment (M_{uy}) =	3.97	ft-kips
Member # (from analysis) =	55	
Load combination =	1.2DL + 1.0E + 1.0LL	

HSS3X3X1/4		
Properties		
Area =	2.44	in^2
S_x =	2.01	in^3
S_y =	2.01	in^3
I_x =	3.02	in^4
I_y =	3.02	in^4
r_x =	1.11	in.
r_y =	1.11	in.
Z_x =	2.48	in^3
Z_y =	2.48	in^3
F_y=	50	ksi
E=	29000	ksi

Slenderness

K_x = 1.00 I_x = 64.00 in $\frac{K_x l}{r_x}$ = 57.66 $\frac{K_y l}{r_y}$ = 102.05

K_y = 2.00 I_y = 56.64 in

Max = 102.05 ≤ 200 GOOD AISC E2

Compressive Resistance

$P_n = F_{cr} A_g$ AISC E3-1

$\frac{K l}{r} \le 4.71\sqrt{E/F_y}$ $\left(or\ F_y/F_e \le 2.25\right)$ $F_{cr} = \left[0.658^{F_y/F_e}\right] F_y$ 23.348 ksi AISC E3-2

$\frac{K l}{r} > 4.71\sqrt{E/F_y}$ $\left(or\ F_y/F_e > 2.25\right)$ $F_{cr} = 0.877 F_e$ NA AISC E3-3

Where: $F_e = \pi^2 E \Big/ \left(\frac{K l}{r}\right)^2$ = 27.481 ksi AISC E3-4

$4.71\sqrt{E/F_y}$ = 113.43 $\left(or\ F_y/F_e \le 2.25\right)$ = 1.8194

$P_n = F_{cr} A_g$ P_n = 56.969 kips

$P_r = \Phi_c P_n$ Φ_c = 0.9 P_r = 51.27 kips

Yielding: AISC F7

$M_n = M_p = F_y Z$ Z_x = 2.48 in^3 Z_y = 2.48 in^3

$M_{nx}=M_{px}$= 124 k-in $M_{ny}=M_{py}$= 124 k-in AISC F7-1

Local Flange Buckling: AISC Table B4.1b

If $\lambda_f > \lambda_{pf}$, then:

$\lambda_{fx} = b_{xfc}/t_{xfc}$ = 9.88 $\lambda_{fy} = b_{yfc}/t_{yfc}$ = 9.88

b_{xfc} = 2.301 in b_{yfc} = 2.301 in

λ_{pf} (compact flange) = $1.12\sqrt{\frac{E}{F_y}}$ = 26.97 (AISC Table B4.1b - 17)

λ_{rf} (non-compact flange) = $1.40\sqrt{\frac{E}{F_y}}$ = 33.72 (AISC Table B4.1b - 17)

If $\lambda_f \le \lambda_{rf}$, then, $M_n = M_p - (M_p - F_y S_x)\left\{3.57\frac{b_{fc}}{t_{fc}}\sqrt{\frac{F_y}{E}} - 4.0\right\} \le M_p$ AISC F7-2 NA

M_{nx}= NA k-in M_{ny}= NA k-in

If $\lambda_f > \lambda_{rf}$, then, $M_n = F_y S_{eff}$ $b_e = 1.92\, t_{fc}\sqrt{\frac{E}{F_y}}\left\{1 - \frac{0.38}{b_{fc}/t_{fc}}\sqrt{\frac{E}{F_y}}\right\} \le b_{fc}$ AISC F7-3,4 NA

b_{xe} = NA in b_{ye} = NA in

S_{effx} = NA in^3 S_{effy} = NA in^3

M_{nx}= NA k-in M_{ny}= NA k-in

Web Local Buckling:

If $D/t_w > \lambda p_w$, then: $M_n = M_p - (M_p - F_y S)\left\{0.305\frac{D}{t_w}\sqrt{\frac{F_y}{E}} - 0.738\right\} \le M_p$ AISC F7-5 NA

λ_{pw} (compact web) = $2.42\sqrt{\frac{E}{F_y}}$ = 58.28 (AISC Table B4.1b - 19)

Dx/t_w = 9.88 Dy/t_w = 9.88

M_{nx}= NA k-in M_{ny}= NA k-in

M_{nx}min=	124.00	k-in	M_{ny}min =	124.00	k-in

Φ_f = 1.0 $M_{rx} = \Phi_f M_{nx}$ $M_{ry} = \Phi_f M_{ny}$

M_{rx} = 124.00 k-in M_{ry} = 124.00 k-in

Check Combined Axial Compression and Flexure

M_{ux} = 11.52 k-in
M_{uy} = 47.64 k-in

$$If\ \frac{P_u}{P_r} < 0.2,\ then\ \frac{P_u}{2.0P_r} + \left(\frac{M_{ux}}{M_{rx}} + \frac{M_{uy}}{M_{ry}}\right) \le 1.0$$ AISC H1-1a

$$If\ \frac{P_u}{P_r} \ge 0.2,\ then\ \frac{P_u}{P_r} + \frac{8.0}{9.0}\left(\frac{M_{ux}}{M_{rx}} + \frac{M_{uy}}{M_{ry}}\right) \le 1.0$$ AISC H1-1b

$$\frac{P_u}{P_r} = 0.357$$

Unity Check

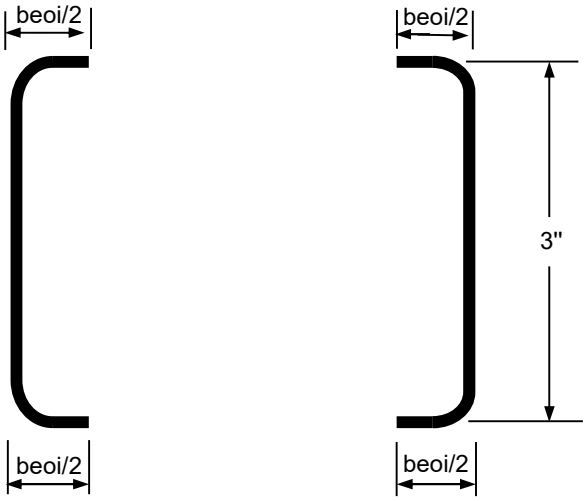
0.78 ≤ 1.0 GOOD

Interior Vertical to Top and Bottom Chord Connection

Axial load (P_u) =	9.15	kips
In-plane bending moment (M_{ux}) =	0.96	ft-kips
Total Out-of-plane moment (M_{uy}) =	2.64	ft-kips
Member # (from analysis) =	55	
Load combination =	1.2DL + 1.0E + 1.0LL	

Use Effective Weld Properties From AISC, 16th Ed.

** For overlapped joints, assume 1/2 of the axial load passes through the connection, the other 1/2 of the axial load is transferred directly between the overlapped diagonal and the vertical.



Factored Resistance AISC J2

Φ_{el} = 0.75 F_{exx} = 70 ksi $R_r = 0.6\,\Phi_{el}\,F_{exx}$ R_r = 31.50 ksi

Connection Check:

t_w = 0.1768 in (thickness of weld throat) $\beta = B_b/B$ = 0.60 θ = 90°

$$l_e = 2H_b + 2b_{eoi} = 8.796 \text{ in.}$$ (beoi Included) (AISC K5-5)

A_{eff} = 1.5549 in^2

$$S_{ip} = \frac{t_w}{3}H_b^2 + t_w b_{eoi} H_b = 1.27 \text{ in.}^3$$ (beoi Included) (AISC K5-6)

$$S_{op} = t_w H_b B_b + \frac{t_w}{3}B_b^2 - \frac{(t_w/3)(B_b - b_{eoi})^3}{B_b} = 2.04 \text{ in.}^3$$ (beoi Included) (AISC K5-7)

$$b_{eoi} = \frac{10}{B/t}\left(\frac{t}{t_b}\right)B_b \le B_b \qquad 1.40 \le 3 \text{ in.} \qquad \text{(AISC K1-1)}$$

but when β > 0.85 or θ > 50°, $b_{eoi}/2$ shall not > $B_b/4$ = 0.699 in. b_{eoi} used = 1.398 in.

M_{ux} = 11.52 k-in
M_{uy} = 31.68 k-in

$$\frac{P}{A_{eff}} + \frac{M_{ux}}{S_{in}} + \frac{M_{uy}}{S_{out}} \le R_r$$

30.47 ksi < 31.50 ksi GOOD

Available Strengths:

β = B_b/B = 0.60 η = H_b/B = 0.6 Qf = 1 θ = 90° γ = B/2t =
t = 0.233 in. lb = 3.00 in. k=1.5t = 0.35 in.

$\beta_{eop} = 5\beta/\gamma \le \beta$ - 0.28 ≤ 0.60 (AISC K2-25)

Chord Wall Plastification (When Beta ≤ 0.85): (AISC DG24 LS1)

Φ = 1

$$P_n = F_y t^2\left[\frac{2\eta}{(1-\beta)} + \frac{4}{\sqrt{1-\beta}}\right]Q_f = 25.3 \text{ kips}$$

25.311 kips < 18.30 kips GOOD

Shear Yielding - Punching (0.85 < β ≤1-1/γ or B/t < 10): (AISC DG24 LS2)

Φ = 0.95 $P_n = 0.6F_y tB(2\eta+\beta eop)$ = NA kips

NA kips > 18.30 kips NA

Sidewall Local Yielding (When Beta = 1): (AISC DG24 LS4)

Φ = 1 $P_n = 2F_y t(5k+l_b)$ = NA kips

NA kips > 18.30 kips GOOD

Chord Wall Plastification (When Beta ≤ 0.85): M_u = 11.52 k-in (AISC DG24 T10-2 LS1)

Φ = 1

$$M_n = F_y t^2 H_b\left[\frac{1}{2\eta} + \frac{2}{\sqrt{1-\beta}} + \frac{\eta}{(1-\beta)}\right]Q_f = 44.8 \text{ k-in}$$

44.8 k-in > 11.52 k-in GOOD

Sidewall Local Yielding (When Beta>0.85): M_u = 31.68 k-in (AISC DG24 T10-2 LS4)

Φ = 1 $M_n = 0.5F_y t(H_b+5t)^2$ = NA k-in

NA k-in > 31.68 k-in NA

Chord Wall Plastification (When Beta ≤ 0.85): M_u = 31.68 k-in (AISC DG24 T10-2 LS6)

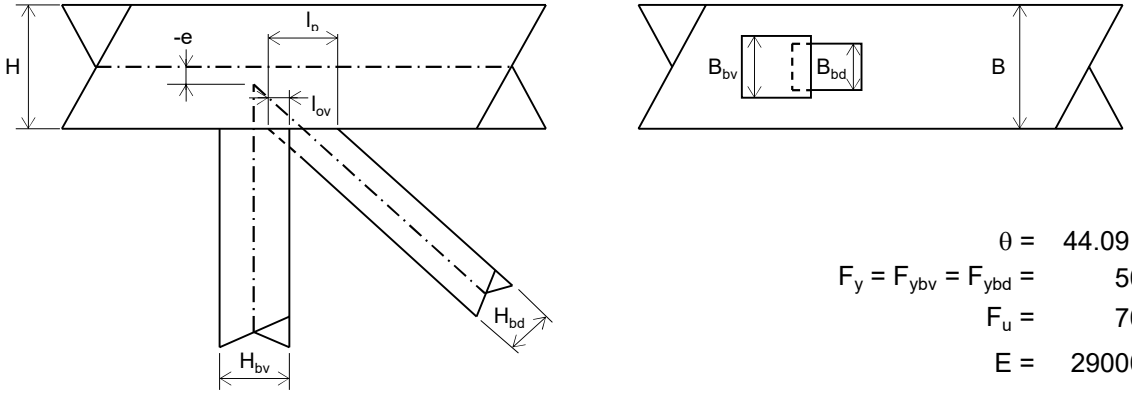
Φ = 1

$$M_n = F_y t^2\left[\frac{0.5H_b(1+\beta)}{(1-\beta)} + \sqrt{\frac{2BB_b(1+\beta)}{(1-\beta)}}\right]Q_f = 46.0 \text{ k-in}$$

46.0 k-in > 31.68 k-in GOOD

Reference

	Orientation	Thickness (in)		Height (in)		Width (in)	
Chord : HSS5X3X1/4	Y	t =	0.233	H =	3	B =	5
Vertical: HSS3X3X1/4	Y	t_{bv} =	0.233	H_{bv} =	3	B_{bv} =	3
Diagonal: HSS3X3X1/4	Y	t_{bd} =	0.233	H_{bd} =	3	B_{bd} =	3



θ = 44.091 deg

$F_y = F_{ybv} = F_{ybd}$ = 50 ksi

F_u = 70 ksi

E = 29000 ksi

Area of Diagonal = A_g = 2.44 in^2

Load Case = 6A Member: 77

Load Applied to Diagonal = P = 26.66 k ***T*** (T = Tension, C = Compression)

l_{ov} = 2.16 in $O_v = l_{ov}/l_p$ = 50.00%

$l_p = H_{bd}/\sin\theta$ = 4.31 in e = -0.0469

Check Applicability: AISC Table K3.2A

Joint Eccentricity:	-.55H =	-1.65	<= e	**OK**
	0.25H =	0.75	>= e	**OK**
Branch Angle:	θ >= 30°			**OK**
Chord Wall Slenderness:	B/t=	18.5	<= 30	**OK**
	H/t=	9.88	<= 35	**OK**
Tension Branch Wall Slenderness:	B_{bd}/t_{bd} =	9.88	<= 35	**OK**
Comp Branch Wall Slenderness:	B_{bd}/t_{bd} =	9.88	N/A	**N/A**
	$1.1(E/F_y)^{0.5}$ =	26.492	>= B_{bd}/t_{bd}	**N/A**
Width Ratio:	B_{bd}/B & H_{bd}/B =	0.6	>= 0.25	**OK**
Aspect Ratio:	H/B & H_{bd}/B_{bd} =	0.6	>= 0.5	**OK**
	H/B & H_{bd}/B_{bd} =	1	<= 2.0	**OK**
Overlap:	O_v =	50.00%	>=25%	**OK**
	O_v =	50.00%	<=100%	**OK**
Branch Width Ratio:	B_{bd}/B_{bv} =	1	>= 0.75	**OK**
Branch Thickness Ratio:	t_{bd}/t_{bv} =	1	<=1	**OK**
Strength:	F_y <= 52 ksi			**OK**
Ductility:	F_y/F_u =	0.71	<= 0.8	**OK**

Check Connection for Local Yielding due to Uneven Load Distribution: AISC Tbl K3.2

$B_{ei} = (10(t_{bv}/B_{bv}))((F_y t_{bv})/(F_y t_{bd}))B_{bd}$ = 2.33 in <= B_{bd} use 2.33 in — AISC (K1-1)

$B_{ej} = (10(t/B))((F_y t)/(F_y t_{bv}))B_{bv}$ = 1.398 in <= B_{bd} use 1.398 in — AISC (K1-1)

25% <= O_v <= 50%

$P_n = \phi F_y t_{bd}((Ov/50)(2H_{bd}-4t_{bd})+B_{ei}+B_{ej})$ = 97.35 k >=P **OK** — AISC (K3-10)

50% <= O_v <= 80%

$P_n = \phi F_y t_{bd}(2H_{bd}-4t_{bd}+B_{ei}+B_{ej})$ = 97.35 k >=P **OK** — AISC (K3-11)

80% <= O_v <= 100%

$P_n = \phi F_y t_{bd}(2H_{bd}-4t_{bd}+B_{bd}+B_{ej})$ = N/A N/A **N/A** — AISC (K3-12)

ϕ = ***0.95***

Resistance Factors

ϕ_y = 0.9 ϕ_u = 0.8 ϕ_e = 0.75

Check Axial Tension Capacity

$P_r = \phi_y P_{ny} = \phi_y F_y A$ = 109.8 k

P_r = 109.8 k >=P **OK** — AISC D2-1

$A_n = A_g$ = 2.44 in^2

Top Chord Check Weld Connection

$l_w = 2O_v/50[(1-O_v/100)(H_{bd}/\sin\theta)+O_v/100(H_{bd}/\sin(\theta+\beta))]+B_{ei}+B_{ej}$ = N/A in — AISC (K5-10)

$l_w = 2[(1-O_v/100)(H_{bd}/\sin\theta)+O_v/100(H_{bd}/\sin(\theta+\beta))]+B_{ei}+B_{ej}$ = 12.22 in — AISC (K5-11)

$l_w = 2[(1-O_v/100)(H_{bd}/\sin\theta)+O_v/100(H_{bd}/\sin(\theta+\beta))]+B_b+B_{ej}$ = N/A in — AISC (K5-12)

Use l_w = 12.22 in

when $B_{bd}/B > 0.85$, $B_{ei}/2$ shall not exceed $B_{bd}/4$ = 0.75 in Use B_{ei} = 2.33 in — AISC Tbl K5.1

and when $B_{bd}/B_{bv} > 0.85$, $B_{ej}/2$ shall not exceed $B_{bd}/4$ = 0.75 in Use B_{ej} = 1.398 in — AISC Tbl K5.1

Fillet Weld Size = t = 1/4 in

$t_e = 0.707t$ = 0.177 in

2

$f_w = (P/l_w)/t_e$ = 12.347 ksi

$R_r = \alpha\phi_e F_{EXX}$ = 31.5 ksi <= F_y, Use 31.5 ksi > f_w **OK** — AISC J2

F_{EXX} = ***70*** ksi

α = 0.60

Bottom Chord Check Weld Connection

$l_w = 2O_v/50[(1-O_v/100)(H_{bd}/\sin\theta)+O_v/100(H_{bd}/\sin(\theta+\beta))]+B_{ei}+B_{ej}$ = N/A in — AISC (K5-10)

$l_w = 2[(1-O_v/100)(H_{bd}/\sin\theta)+O_v/100(H_{bd}/\sin(\theta+\beta))]+B_{ei}+B_{ej}$ = 12.22 in — AISC (K5-11)

$l_w = 2[(1-O_v/100)(H_{bd}/\sin\theta)+O_v/100(H_{bd}/\sin(\theta+\beta))]+B_b+B_{ej}$ = N/A in — AISC (K5-12)

Use l_w = 12.22 in

when $B_{bd}/B > 0.85$, $B_{ei}/2$ shall not exceed $B_{bd}/4$ = 0.75 in Use B_{ei} = 2.33 in — AISC Tbl K5.1

and when $B_{bd}/B_{bv} > 0.85$, $B_{ej}/2$ shall not exceed $B_{bd}/4$ = 0.75 in Use B_{ej} = 1.40 in

Fillet Weld Size = t = 1/4 in

$t_e = 0.707t$ = 0.177 in

Additional F.S. = 2

$f_w = (P/l_w)/t_e$ = 24.69 ksi

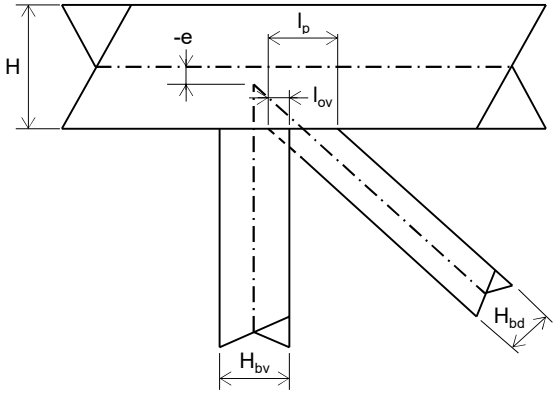
$R_r = \alpha\phi_e F_{EXX}$ = 31.5 ksi <= F_y, Use 31.5 ksi > f_w **OK** — AISC J2

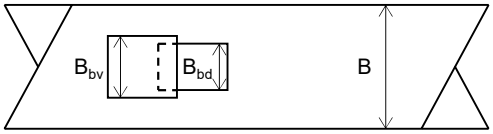
F_{EXX} = ***70*** ksi

α = 0.60

Reference

	Orientation	Thickness (in)		Height (in)		Width (in)	
Chord : HSS5X3X1/4	Y	t =	0.233	H =	3	B =	5
Vertical: HSS3X3X1/4	Y	t_{bv} =	0.233	H_{bv} =	3	B_{bv} =	3
Diagonal: HSS3X2X1/4	Y	t_{bd} =	0.233	H_{bd} =	2	B_{bd} =	3





θ = 42.568 deg
$F_y = F_{ybv} = F_{ybd}$ = 50 ksi
F_u = 70 ksi
E = 29000 ksi

Area of Diagonal = A_g = 1.97 in^2

Load Case = 6A Member: 78
Load Applied to Diagonal = P = 19.66 k ***T*** (T = Tension, C = Compression)

l_{ov} = 1.48 in $O_v = l_{ov}/l_p$ = 50.00%
$l_p = H_{bd}/\sin\theta$ = 2.96 in e = -0.1222

Check Applicability: AISC Table K3.2A

Joint Eccentricity:	-.55H =	-1.65	<= e	**OK**
	0.25H =	0.75	>= e	**OK**
Branch Angle:	θ >= 30°			**OK**
Chord Wall Slenderness:	B/t=	18.5	<= 30	**OK**
	H/t=	9.88	<= 35	**OK**
Tension Branch Wall Slenderness:	B_{bd}/t_{bd} =	9.88	<= 35	**OK**
Comp Branch Wall Slenderness:	B_{bd}/t_{bd} =	9.88	N/A	**N/A**
	$1.1(E/F_y)^{0.5}$ =	26.492	>= B_{bd}/t_{bd}	**N/A**
Width Ratio:	B_{bd}/B & H_{bd}/B =	0.4	>= 0.25	**OK**
Aspect Ratio:	H/B & H_{bd}/B_{bd} =	0.6	>= 0.5	**OK**
	H/B & H_{bd}/B_{bd} =	0.6667	<= 2.0	**OK**
Overlap:	O_v =	50.00%	>=25%	**OK**
	O_v =	50.00%	<=100%	**OK**
Branch Width Ratio:	B_{bd}/B_{bv} =	1	>= 0.75	**OK**
Branch Thickness Ratio:	t_{bd}/t_{bv} =	1	<=1	**OK**
Strength:	F_y <= 52 ksi			**OK**
Ductility:	F_y/F_u =	0.71	<= 0.8	**OK**

Check Connection for Local Yielding due to Uneven Load Distribution: AISC Tbl K3.2

$B_{ei} = (10(t_{bv}/B_{bv}))((F_y t_{bv})/(F_y t_{bd}))B_{bd} =$ 2.33 in <= B_{bd} use 2.33 in — AISC (K1-1)

$B_{ej} = (10(t/B))((F_y t)/(F_y t_{bv}))B_{bv} =$ 1.40 in <= B_{bd} use 1.40 in — AISC (K1-1)

25% <= O_v <= 50%

$P_n = \phi F_y t_{bd}((Ov/50)(2H_{bd}-4t_{bd})+B_{ei}+B_{ej}) =$ 75.215 k >=P **OK** — AISC (K3-10)

50% <= O_v <= 80%

$P_n = \phi F_y t_{bd}(2H_{bd}-4t_{bd}+B_{ei}+B_{ej}) =$ 75.215 k >=P **OK** — AISC (K3-11)

80% <= O_v <= 100%

$P_n = \phi F_y t_{bd}(2H_{bd}-4t_{bd}+B_{bd}+B_{ej}) =$ N/A N/A **N/A** — AISC (K3-12)

$\phi =$ ***0.95***

Resistance Factors

$\phi_y =$ 0.9 $\phi_e =$ 0.75

Check Axial Tension Capacity

$P_r = \phi_y P_{ny} = \phi_y F_y A =$ 88.65 k

Use $P_r =$ 88.65 k >=P **OK** — AISC D2-1

$A_n = A_g =$ 1.97 in^2

Top Chord Check Weld Connection

$l_w = 2O_v/50[(1-O_v/100)(H_{bd}/\sin\theta)+O_v/100(H_{bd}/\sin(\theta+\beta))]+B_{ei}+B_{ej} =$ N/A in — AISC (K5-10)

$l_w = 2[(1-O_v/100)(H_{bd}/\sin\theta)+O_v/100(H_{bd}/\sin(\theta+\beta))]+B_{ei}+B_{ej} =$ 9.40 in — AISC (K5-11)

$l_w = 2[(1-O_v/100)(H_{bd}/\sin\theta)+O_v/100(H_{bd}/\sin(\theta+\beta))]+B_b+B_{ej} =$ N/A in — AISC (K5-12)

Use $l_w =$ 9.40 in

when $B_{bd}/B > 0.85$, $B_{ei}/2$ shall not exceed $B_{bd}/4 =$ 0.75 in Use $B_{ei} =$ 2.33 in — AISC Tbl K5.1

and when $B_{bd}/B_{bv} > 0.85$, $B_{ej}/2$ shall not exceed $B_{bd}/4 =$ 0.75 in Use $B_{ej} =$ 1.40 in — AISC Tbl K5.1

Fillet Weld Size = t = 1/4 in

$t_e = 0.707t =$ 0.177 in

$f_w = (P/l_w)/t_e =$ 11.83 ksi

$R_r = \alpha\phi_e F_{EXX} =$ 31.5 ksi <= F_y, Use 31.5 ksi > f_w **OK** — ABDS 6.13.3.2.3

$F_{EXX} =$ ***70*** ksi

$\alpha =$ 0.60

Bottom Chord Check Weld Connection

$l_w = 2O_v/50[(1-O_v/100)(H_{bd}/\sin\theta)+O_v/100(H_{bd}/\sin(\theta+\beta))]+B_{ei}+B_{ej} =$ N/A in — AISC (K5-10)

$l_w = 2[(1-O_v/100)(H_{bd}/\sin\theta)+O_v/100(H_{bd}/\sin(\theta+\beta))]+B_{ei}+B_{ej} =$ 9.40 in — AISC (K5-11)

$l_w = 2[(1-O_v/100)(H_{bd}/\sin\theta)+O_v/100(H_{bd}/\sin(\theta+\beta))]+B_b+B_{ej} =$ N/A in — AISC (K5-12)

Use $l_w =$ 9.40 in

when $B_{bd}/B > 0.85$, $B_{ei}/2$ shall not exceed $B_{bd}/4 =$ 0.75 in Use $B_{ei} =$ 2.33 in — AISC Tbl K5.1

and when $B_{bd}/B_{bv} > 0.85$, $B_{ej}/2$ shall not exceed $B_{bd}/4 =$ 0.75 in Use $B_{ej} =$ 1.40 in

Fillet Weld Size = t = 1/4 in

$t_e = 0.707t =$ 0.177 in

$f_w = (P/l_w)/t_e =$ 11.833 ksi

$R_r = \alpha\phi_e F_{EXX} =$ 31.5 ksi <= F_y, Use 31.5 ksi > f_w **OK** — ABDS 6.13.3.2.3

$F_{EXX} =$ ***70*** ksi

$\alpha =$ 0.60

AISC LRFD	FLOOR BEAM DESIGN	JOB # 855412-10

Location : SAN ANSELMO, CA

Engineer : ATT

Floor beam is designed as a simple beam with additional end moments applied from the truss verticals due to "U-Frame" action.

CONSERVATIVELY, U-FRAME CALCULATED BASED ON AXIAL LOAD IN TOP CHORD AT MIDSPAN

Axial Load (P_u) =	4.1	kips
Shear load (V) =	4.20	kips
In-plane from Analysis at End (M_{uy}) =	3.72	ft-kips
In-plane U-frame at End (M_{uy}) =	1.8	ft-kips
Total In-plane moment at End (M_{uy}) =	5.52	ft-kips
In-plane from Analysis at Center (M_{uy}) =	8.00	ft-kips
Member # (from analysis) =	602	
Load combination =	1.2DL + 1.0E + 1.0LL	

W8X21 Floor Beam Properties		
Area =	6.16	in^2
S_x =	18.2	in^3
S_y =	3.71	in^3
I_x =	75.30	in^4
I_y =	9.77	in^4
r_x =	3.49	in.
r_y =	1.26	in.
Zx =	20.40	in^3
Zy =	5.69	in^3
h =	8.28	in.
b =	5.27	in.
t_f =	0.4	in.
t_w =	0.25	in.
k_1 =	0.5625	in.
F_y=	50	ksi

Flexural Resistance - Floor Beam AISC F7-1

Yielding:

$M_n = M_p = F_y Z$ Z_x = 20.40 in^3 Z_y = 5.69 in^3

$M_{nx}=M_{px}$ = 1020 *k-in* $M_{ny}=M_{py}$ = 0 *k-in*

Φ_f = 1.0 $M_r=\Phi_f M_p$ = 1020 M_u = 96.00 *k-in*

1020.0 k-in > 96.0 k-in GOOD

Flexural Resistance - Vertical AISC F7-1

Yielding:

$M_n = M_p = F_y Z$ Z_x = 2.48 in^3 Z_y = 2.48 in^3

$M_{nx}=M_{px}$ = 124 k-in $M_{ny}=M_{py}$ = 0 k-in

Φ_f = 1.0 $M_r=\Phi_f M_p$ = 124 M_u = 66.24 k-in

124.0 k-in > 66.2 k-in GOOD

HSS3X3X1/4 Vertical Properties		
Area =	2.44	in^2
S_x =	2.01	in^3
S_y =	2.01	in^3
I_x =	3.02	in^4
I_y =	3.02	in^4
r_x =	1.11	in.
r_y =	1.11	in.
Zx =	2.48	in^3
Zy =	2.48	in^3
h =	3.0	in.
b =	3.0 in	in.
t_w =	0.233	in.
F_y=	50	ksi

Limits of Applicabilty:

Vertical (B/t) or (H/t)=	12.88	≤	35.00	OK
Width Ratio B_b/B =	1.76	≥	0.25	OK

From Analysis:

Flange Force (includes 1/2 P_u) = 10.46 kips

Available Strengths:

Beta = 1.76 ≤ 1.0 Qf (conservative) = 1

$B_{ep} = (10B_p)/(B/t)$ 4.093 ≤ B_p

Local Yielding of Flange (For all Beta): (AISC DG24 T8-2 LS3)

Φ = 0.95 $Rn = \Phi\,(10/(B/t))F_y t_w B_p \le F_y t_f B_p)$ = 45.30 kips

45.30 kips > 10.46 kips GOOD

Chord Shear Yielding (When 0.85B≤Bp≤B-2tw): (AISC DG24 T8-2 LS2)

Φ = 1 $Rn = \Phi\ 0.6F_y t_w (2tf + 2B_{ep})$ = NA kips

NA kips < 10.46 kips NA

Local Yielding of Sidewalls (When Beta = 1.0): (AISC DG24 T8-2 LS4)

Φ = 1 $Rn = \Phi\ 2F_y t_w (5k + t_f)$ = 50.04 kips

50.04 kips > 10.46 kips GOOD

Local Crippling of Sidewalls (For Beta = 1.0): (AISC DG24 T8-2 LS5)

$Rn = \Phi\ 1.6t_{w2}(1+(3lb)/(H-3tw))*(EFy)^{0.5}*Qf$ = 119.36 kips

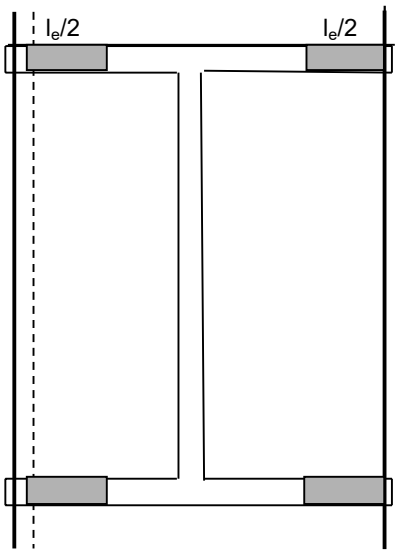
Φ = 0.75

119.36 kips > 10.46 kips GOOD

Connection Check:

Effective Weld Length - One Side: (ASIC K5-4)

$l_e = (10/(B/t))*(Fytw)/(Fytf)Bp \le 2Bp$ = 1.36 in.



Available Weld Length taking into account for k1 - One Side:

Bp>B,Use B-2*k1 = 1.88 in.

Use: l_e = 1.36 in.

N_1 = 27.14 kips. > 10.46 kips. GOOD

Φ_{el} = 0.75 F_{exx} = 70 ksi

$R_r = 0.6\ \Phi_{el}\ F_{exx}$ R_r = 31.50 ksi

Flange Weld Req. = 3.852 k/in. T_e = 0.122 in.

Fillet = 0.173 in. Use = 3/16 in.

Web Weld Req. = 0.009 in. Use = 3/16 in.

AISC LRFD	BRACE DIAGONAL	JOB # 855412-10

Location : SAN ANSELMO, CA

Engineer : ATT

The critical axial load in the brace diagonal from the computer analysis is:

Axial load (P_u) = 22.30 kips

Member # (from analysis) = 700

Load combination = 1.2DL + 1.0E + 1.0LL

HSS3X3X1/4		
BD - Properties		
Area =	2.440	in^2
rx =	1.110	in.
ry =	1.110	in.
Bb =	3.000	in.
Hb =	3.000	in.
t_w =	0.233	in.

HSS5X3X1/4		
BC Properties		
B =	3.000	in.
H =	5.000	in.
t_w =	0.233	in.

Tensile Resistance

$P_r = \Phi_y F_y A_g$ AISC D2-1

Φ_y = 0.9 A_g = 2.44 in^2 P_r = 109.80 kips

F_y = 50 ksi

Unity Check 0.20 ≤ 1.0 GOOD

Slenderness

K_x = 1.00 $\frac{K_x l}{r_x}$ = 90.78 $\frac{K_y l}{r_y}$ = 90.78 AISC E2

K_y = 1.00

l = 100.77 in Max = 91 ≤ 200 GOOD

Compressive Resistance

$P_n = F_{cr} A_g$ E= 29000 ksi AISC E3-1

$\frac{Kl}{r} \le 4.71\sqrt{E/F_y}$ $\left(or\ F_y/F_e \le 2.25\right)$ $F_{cr} = \left[0.658^{F_y/F_e}\right] F_y$ 27.37 ksi AISC E3-2

$\frac{Kl}{r} > 4.71\sqrt{E/F_y}$ $\left(or\ F_y/F_e > 2.25\right)$ $F_{cr} = 0.877 F_e$ NA AISC E3-3

Where: $F_e = \pi^2 E \Big/ \left(\frac{Kl}{r}\right)^2$ = 34.729 ksi AISC E3-4

$4.71\sqrt{E/F_y}$ = 113.43 $\left(or\ F_y/F_e \le 2.25\right)$ = 1.4397

$P_n = F_{cr} A_g$ P_n = 66.782 kips

$P_r = \Phi_c P_n$ Φ_c = 0.9 P_r = 60.10 kips

Unity Check 0.37 ≤ 1.0 GOOD

Functions:

θ = 44.397 ° β = B_b/B = 1.00 η = l_b/B = 1.43 Q = 1 (AISC K1)

γ = B/2t = 6.438 k=1.5t = 0.35 in. $\beta_{eop} = 5\beta/\gamma \le \beta$ - 0.777 ≤ 1.00 (AISC K1)

$l_b = H_b/\sin\theta$ = 4.29 in.

Limits of Applicabilty AISC DG24 Table 9-2A:

Branch Angle =	44.40	≥	30.00	OK
Chord Wall (B/t) or (H/t)=	21.46	≤	35.00	OK
Branch Wall (B_b/t_b) and (H_b/t_b)=	12.88	≤	35.00	OK
		≤	30.10	OK
		≤	26.49	OK
Width Ratio B_b/B and H_b/B=	1.00	≥	0.25	OK
Aspect Ratio H_b/B_b or H/B =	0.50	≤	1.00	OK
	1.67	≤	2.00	OK

Chord Wall Plastification (When Beta ≤ 0.85): (AISC DG24 T9-2 LS1)

Φ = 1

$$P_n \sin\Theta = F_y t^2 \left[\frac{2\eta}{(1-\beta)} + \frac{4}{\sqrt{1-\beta}}\right] Q_f = \text{NA kips}$$

NA kips > 22.30 kips NA

Shear Yielding - Punching (0.85 < β ≤1-1/γ or B/t < 10): (AISC DG24 T9-2 LS2)

Φ = 0.95 $P_n \sin\theta = 0.6F_y tB(2\eta+\beta eop)$ = NA kips

NA kips > 22.30 kips NA

Sidewall Local Yielding (When Beta = 1): (AISC DG24 T9-2 LS4)

Φ = 1 $P_n \sin\theta = 2F_y t(5k+l_b)$ = 140.6 kips

201 kips > 22.30 kips GOOD

Connection Check:

Φ_{el} = 0.75 F_{exx} = 70 ksi $R_r = 0.6\,\Phi_{el}\,F_{exx}$ R_r = 31.50 ksi

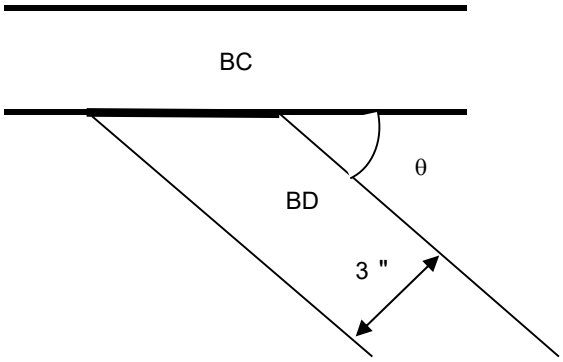
$$l_e = 2H_b + 2b_{eoi} = 7.864 \text{ in.} \quad \text{(AISC K5-5)}$$

$$b_{eoi} = \frac{10}{B/t}\left(\frac{t}{t_b}\right)B_b \le B_b \quad 2.33 \le 3 \quad \text{(AISC K1-1)}$$

but when β > 0.85 or θ > 50°, $b_{eoi}/2$ shall not > 2t = 0.466 in. b_{eoi} used = 0.932 in.

t_w = 0.18 in (thickness of weld throat) A_{eff} = 1.3902 in^2

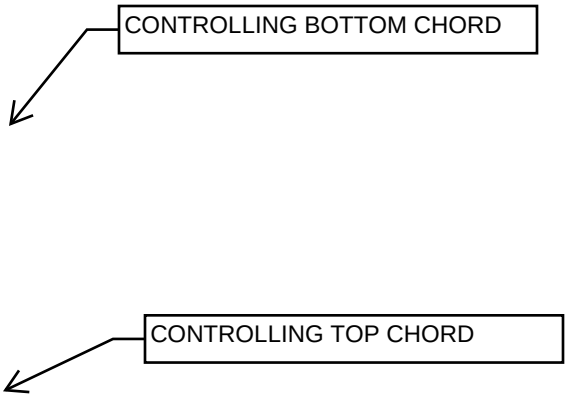
$\frac{P}{A_{eff}} \le R_r$ 16.04 ksi < 31.50 ksi GOOD



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Beams

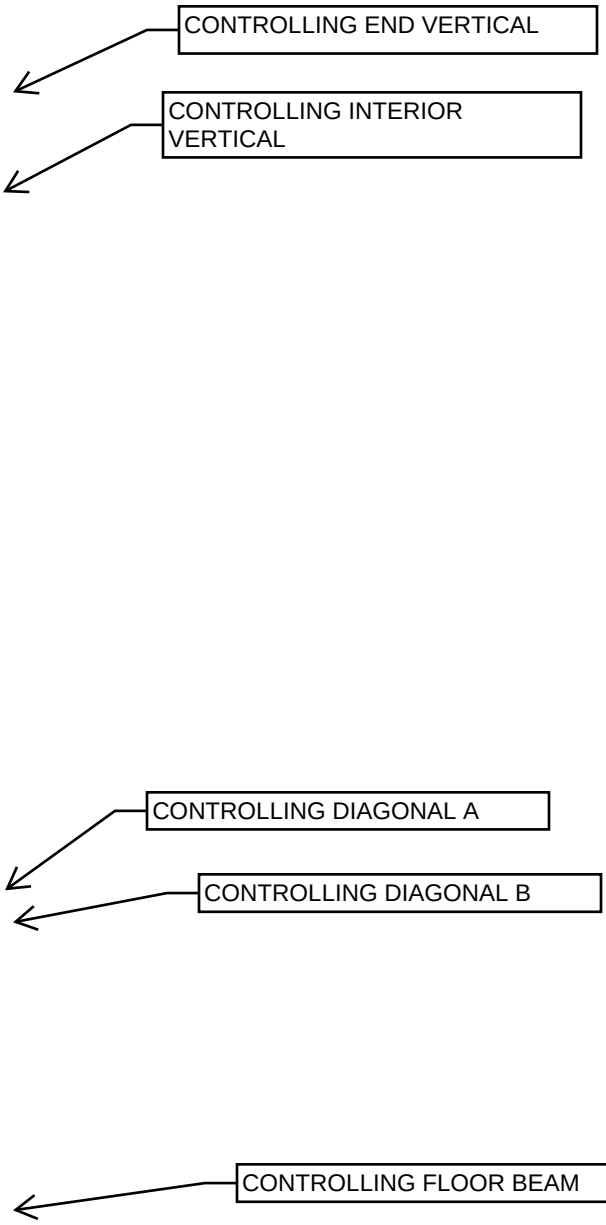
Beam	Node A	Node B	Length (ft)	Property	β (degrees)
1	1	2	5.666	1	90
2	2	3	5.875	1	90
3	3	4	5.875	1	90
4	4	5	5.875	1	90
5	5	6	5.875	1	90
6	6	7	5.875	1	90
7	7	8	5.875	1	90
8	8	9	5.666	1	90
9	10	11	5.666	8	90
10	11	12	5.875	8	90
11	12	13	5.875	8	90
12	13	14	5.875	8	90
13	14	15	5.875	8	90
14	15	16	5.875	8	90
15	16	17	5.875	8	90
16	17	18	5.666	8	90
17	28	29	5.666	1	90
18	29	30	5.875	1	90
19	30	31	5.875	1	90
20	31	32	5.875	1	90
21	32	33	5.875	1	90
22	33	34	5.875	1	90
23	34	35	5.875	1	90
24	35	36	5.666	1	90
25	37	38	5.666	8	90
26	38	39	5.875	8	90
27	39	40	5.875	8	90
28	40	41	5.875	8	90
29	41	42	5.875	8	90
30	42	43	5.875	8	90
31	43	44	5.875	8	90
32	44	45	5.666	8	90
33	1	19	0.697	6	90
34	19	10	4.720	6	90
35	9	27	0.697	6	90
36	27	18	4.720	6	90
37	2	20	0.697	9	90
38	20	11	4.720	9	90
39	3	21	0.697	9	90
40	21	12	4.720	9	90
41	4	22	0.697	9	90
42	22	13	4.720	9	90
43	5	23	0.697	9	90
44	23	14	4.720	9	90
45	6	24	0.697	9	90



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Beams Cont...

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
46	24	15	4.720	9	90
47	7	25	0.697	9	90
48	25	16	4.720	9	90
49	8	26	0.697	9	90
50	26	17	4.720	9	90
51	28	46	0.697	6	90
52	46	37	4.720	6	90
53	36	54	0.697	6	90
54	54	45	4.720	6	90
55	29	47	0.697	9	90
56	47	38	4.720	9	90
57	30	48	0.697	9	90
58	48	39	4.720	9	90
59	31	49	0.697	9	90
60	49	40	4.720	9	90
61	32	50	0.697	9	90
62	50	41	4.720	9	90
63	33	51	0.697	9	90
64	51	42	4.720	9	90
65	34	52	0.697	9	90
66	52	43	4.720	9	90
67	35	53	0.697	9	90
68	53	44	4.720	9	90
69	10	2	7.839	3	90
70	11	3	7.991	4	90
71	12	4	7.991	4	90
72	13	5	7.991	4	90
73	5	15	7.991	4	90
74	6	16	7.991	4	90
75	7	17	7.991	4	90
76	8	18	7.839	3	90
77	37	29	7.839	3	90
78	38	30	7.991	4	90
79	39	31	7.991	4	90
80	40	32	7.991	4	90
81	32	42	7.991	4	90
82	33	43	7.991	4	90
83	34	44	7.991	4	90
84	35	45	7.839	3	90
600	46	19	6.417	5	0
601	54	27	6.417	5	0
602	47	20	6.417	7	0
603	48	21	6.417	7	0
604	49	22	6.417	7	0
605	50	23	6.417	7	0



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Beams Cont...

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
606	51	24	6.417	7	0
607	52	25	6.417	7	0
608	53	26	6.417	7	0
700	29	1	8.560	2	0
701	29	3	8.700	2	0
702	31	3	8.700	2	0
703	31	5	8.700	2	0
704	33	5	8.700	2	0
705	33	7	8.700	2	0
706	35	7	8.700	2	0
707	35	9	8.560	2	0



Beam Force Detail

Sign convention as diagrams:- positive above line, negative below line except Fx where positive is compression. Distance d is given from beam end A.

			Axial	Shear		Torsion	Bending	
Beam	L/C	d (ft)	Fx (kip)	Fy (kip)	Fz (kip)	Mx (kip-ft)	My (kip-ft)	Mz (kip-ft)
1	21:1. 1.4DL	0	-0.042	-0.056	-0.120	0.050	0.286	-0.105
		2.833	-0.042	-0.056	-0.074	0.050	0.012	0.055
		5.666	-0.042	-0.056	-0.029	0.050	-0.135	0.214
	22:2. 1.2DL+1.(	0	-0.097	-0.023	-0.196	0.095	0.552	0.148
		2.833	-0.097	-0.023	-0.157	0.095	0.051	0.214
		5.666	-0.097	-0.023	-0.119	0.095	-0.340	0.281
	23:4. 1.2DL+1.(	0	4.700	0.069	-0.138	0.196	0.370	0.135
		2.833	4.700	-0.010	-0.099	0.196	0.033	0.024
		5.666	4.700	-0.058	-0.060	0.196	-0.193	0.144
	24:5. 1.2DL+1.(	0	-0.074	-0.033	-0.161	0.076	0.437	0.059
		2.833	-0.074	-0.033	-0.122	0.076	0.036	0.152
		5.666	-0.074	-0.033	-0.083	0.076	-0.255	0.244
	25:6. 0.9DL+1.(	0	4.747	0.066	-0.054	0.153	0.116	0.009
		2.833	4.747	-0.014	-0.025	0.153	0.005	-0.092
		5.666	4.747	-0.062	0.004	0.153	-0.024	0.038
	26:2. 1.2DL+1.(	0	-0.016	-0.108	-0.133	0.103	0.336	-0.217
		2.833	-0.016	-0.108	-0.094	0.103	0.015	0.089
		5.666	-0.016	-0.108	-0.055	0.103	-0.195	0.395
	27:2. 1.2DL+1.(	0	-0.048	-0.052	-0.115	0.045	0.287	-0.094
		2.833	-0.048	-0.052	-0.076	0.045	0.017	0.052
		5.666	-0.048	-0.052	-0.037	0.045	-0.142	0.198
	28:6A. 1.2D+1.	0	20.585	0.246	-0.203	0.381	0.552	0.634
		2.833	20.572	0.201	-0.157	0.381	0.041	0.001
		5.666	20.559	0.157	-0.111	0.381	-0.339	-0.507
	29:6A. 1.2D+1.	0	23.398	0.093	-0.353	0.180	0.937	0.298
		2.833	23.353	0.080	-0.307	0.180	0.003	0.054

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		5.666	23.309	0.066	-0.261	0.180	-0.801	-0.153
	30:6B. 0.9D+1.	0	20.646	0.260	-0.082	0.322	0.209	0.541
		2.833	20.632	0.216	-0.060	0.322	0.009	-0.133
		5.666	20.619	0.171	-0.037	0.322	-0.128	-0.681
	31:6B. 0.9D+1.	0	23.455	0.107	-0.231	0.121	0.594	0.205
		2.833	23.411	0.094	-0.209	0.121	-0.029	-0.080
		5.666	23.366	0.081	-0.187	0.121	-0.589	-0.327
2	21:1. 1.4DL	0	-8.386	0.104	-0.084	0.028	0.093	0.251
		2.938	-8.386	0.104	-0.037	0.028	-0.085	-0.053
		5.875	-8.386	0.104	0.010	0.028	-0.125	-0.358
	22:2. 1.2DL+1.(	0	-17.463	0.179	-0.117	0.008	0.135	0.417
		2.938	-17.463	0.179	-0.076	0.008	-0.149	-0.110
		5.875	-17.463	0.179	-0.036	0.008	-0.314	-0.637
	23:4. 1.2DL+1.(	0	-6.897	0.206	-0.086	0.216	0.099	0.316
		2.938	-6.897	0.123	-0.046	0.216	-0.095	-0.196
		5.875	-6.897	0.073	-0.006	0.216	-0.171	-0.460
	24:5. 1.2DL+1.(	0	-13.610	0.145	-0.100	0.014	0.114	0.341
		2.938	-13.610	0.145	-0.060	0.014	-0.120	-0.086
		5.875	-13.610	0.145	-0.019	0.014	-0.236	-0.513
	25:6. 0.9DL+1.(	0	1.322	0.127	-0.040	0.220	0.044	0.136
		2.938	1.322	0.044	-0.010	0.220	-0.030	-0.145
		5.875	1.322	-0.006	0.020	0.220	-0.015	-0.177
	26:2. 1.2DL+1.(	0	-9.835	0.156	-0.070	-0.008	0.048	0.433
		2.938	-9.835	0.156	-0.030	-0.008	-0.098	-0.025
		5.875	-9.835	0.156	0.011	-0.008	-0.126	-0.483
	27:2. 1.2DL+1.(	0	-8.690	0.100	-0.082	0.026	0.100	0.235
		2.938	-8.690	0.100	-0.042	0.026	-0.082	-0.057
		5.875	-8.690	0.100	-0.001	0.026	-0.144	-0.350
	28:6A. 1.2D+1.	0	7.887	0.096	-0.159	0.513	0.329	-0.125
		2.938	7.874	0.050	-0.111	0.513	-0.067	-0.340
		5.875	7.860	0.004	-0.063	0.513	-0.322	-0.420
	29:6A. 1.2D+1.	0	6.970	0.061	-0.334	0.171	0.834	-0.010
		2.938	6.924	0.047	-0.286	0.171	-0.077	-0.169
		5.875	6.878	0.033	-0.238	0.171	-0.847	-0.287
	30:6B. 0.9D+1.	0	18.730	-0.015	-0.086	0.508	0.245	-0.383
		2.938	18.716	-0.061	-0.063	0.508	0.026	-0.272
		5.875	18.702	-0.107	-0.040	0.508	-0.127	-0.025
	31:6B. 0.9D+1.	0	17.810	-0.050	-0.261	0.166	0.750	-0.268
		2.938	17.764	-0.064	-0.239	0.166	0.016	-0.101
		5.875	17.718	-0.078	-0.216	0.166	-0.652	0.107
3	21:1. 1.4DL	0	-14.627	-0.137	-0.068	0.021	0.029	-0.378
		2.938	-14.627	-0.137	-0.021	0.021	-0.102	0.023
		5.875	-14.627	-0.137	0.026	0.021	-0.094	0.424
	22:2. 1.2DL+1.(	0	-30.373	-0.239	-0.085	0.011	0.005	-0.650

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		2.938	-30.373	-0.239	-0.044	0.011	-0.184	0.053
		5.875	-30.373	-0.239	-0.004	0.011	-0.255	0.757
	23:4. 1.2DL+1.(	0	-9.756	-0.069	-0.071	0.041	0.041	-0.410
		2.938	-9.756	-0.151	-0.031	0.041	-0.109	-0.116
		5.875	-9.756	-0.201	0.010	0.041	-0.140	0.426
	24:5. 1.2DL+1.(	0	-23.684	-0.194	-0.075	0.014	0.013	-0.528
		2.938	-23.684	-0.194	-0.034	0.014	-0.148	0.041
		5.875	-23.684	-0.194	0.006	0.014	-0.189	0.609
	25:6. 0.9DL+1.(	0	4.525	0.037	-0.040	0.041	0.047	-0.125
		2.938	4.525	-0.046	-0.010	0.041	-0.027	-0.142
		5.875	4.525	-0.095	0.020	0.041	-0.011	0.089
	26:2. 1.2DL+1.(	0	-15.611	-0.155	-0.054	-0.008	-0.003	-0.471
		2.938	-15.611	-0.155	-0.013	-0.008	-0.101	-0.016
		5.875	-15.611	-0.155	0.027	-0.008	-0.081	0.439
	27:2. 1.2DL+1.(	0	-15.563	-0.140	-0.066	0.029	0.035	-0.378
		2.938	-15.563	-0.140	-0.026	0.029	-0.099	0.033
		5.875	-15.563	-0.140	0.015	0.029	-0.114	0.443
	28:6A. 1.2D+1.	0	15.923	0.029	-0.151	0.009	0.308	-0.258
		2.938	15.909	-0.017	-0.103	0.009	-0.065	-0.275
		5.875	15.895	-0.063	-0.055	0.009	-0.298	-0.157
	29:6A. 1.2D+1.	0	-0.666	-0.080	-0.301	0.012	0.701	-0.296
		2.938	-0.712	-0.094	-0.253	0.012	-0.114	-0.040
		5.875	-0.758	-0.108	-0.206	0.012	-0.788	0.257
	30:6B. 0.9D+1.	0	34.780	0.177	-0.099	0.002	0.305	0.145
		2.938	34.766	0.131	-0.076	0.002	0.049	-0.308
		5.875	34.752	0.085	-0.053	0.002	-0.140	-0.626
	31:6B. 0.9D+1.	0	18.189	0.068	-0.249	0.005	0.698	0.107
		2.938	18.143	0.054	-0.226	0.005	0.000	-0.073
		5.875	18.097	0.041	-0.203	0.005	-0.630	-0.213
4	21:1. 1.4DL	0	-18.327	0.159	-0.056	0.002	-0.018	0.441
		2.938	-18.327	0.159	-0.009	0.002	-0.114	-0.025
		5.875	-18.327	0.159	0.038	0.002	-0.071	-0.492
	22:2. 1.2DL+1.(	0	-38.093	0.283	-0.058	-0.004	-0.098	0.795
		2.938	-38.093	0.283	-0.017	-0.004	-0.208	-0.035
		5.875	-38.093	0.283	0.023	-0.004	-0.199	-0.865
	23:4. 1.2DL+1.(	0	-14.841	0.267	-0.062	0.082	-0.013	0.491
		2.938	-14.841	0.184	-0.021	0.082	-0.135	-0.201
		5.875	-14.841	0.134	0.019	0.082	-0.139	-0.644
	24:5. 1.2DL+1.(	0	-29.699	0.228	-0.054	-0.002	-0.067	0.639
		2.938	-29.699	0.228	-0.014	-0.002	-0.166	-0.030
		5.875	-29.699	0.228	0.027	-0.002	-0.147	-0.699
	25:6. 0.9DL+1.(	0	3.076	0.141	-0.044	0.085	0.042	0.136
		2.938	3.076	0.058	-0.014	0.085	-0.042	-0.187
		5.875	3.076	0.009	0.017	0.085	-0.037	-0.262

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
	26:2. 1.2DL+1.(	0	-18.266	0.156	-0.046	-0.001	-0.031	0.447
		2.938	-18.266	0.156	-0.005	-0.001	-0.105	-0.010
		5.875	-18.266	0.156	0.035	-0.001	-0.061	-0.467
	27:2. 1.2DL+1.(	0	-20.282	0.173	-0.064	0.056	0.000	0.466
		2.938	-20.282	0.173	-0.024	0.056	-0.128	-0.042
		5.875	-20.282	0.173	0.017	0.056	-0.138	-0.549
	28:6A. 1.2D+1.	0	9.908	0.147	-0.157	0.224	0.272	-0.037
		2.938	9.894	0.101	-0.109	0.224	-0.119	-0.402
		5.875	9.880	0.055	-0.061	0.224	-0.369	-0.631
	29:6A. 1.2D+1.	0	-9.303	0.159	-0.293	0.065	0.636	0.286
		2.938	-9.349	0.145	-0.245	0.065	-0.153	-0.160
		5.875	-9.395	0.131	-0.197	0.065	-0.803	-0.565
	30:6B. 0.9D+1.	0	33.559	-0.028	-0.121	0.227	0.332	-0.531
		2.938	33.545	-0.074	-0.098	0.227	0.010	-0.380
		5.875	33.532	-0.120	-0.075	0.227	-0.245	-0.095
	31:6B. 0.9D+1.	0	14.347	-0.017	-0.257	0.068	0.697	-0.207
		2.938	14.301	-0.030	-0.234	0.068	-0.025	-0.138
		5.875	14.255	-0.044	-0.211	0.068	-0.679	-0.028
5	21:1. 1.4DL	0	-18.327	-0.159	-0.038	-0.002	-0.071	-0.492
		2.938	-18.327	-0.159	0.009	-0.002	-0.114	-0.025
		5.875	-18.327	-0.159	0.056	-0.002	-0.018	0.441
	22:2. 1.2DL+1.(	0	-38.093	-0.283	-0.023	0.004	-0.199	-0.865
		2.938	-38.093	-0.283	0.017	0.004	-0.208	-0.035
		5.875	-38.093	-0.283	0.058	0.004	-0.098	0.795
	23:4. 1.2DL+1.(	0	-14.841	-0.134	-0.019	-0.082	-0.139	-0.644
		2.938	-14.841	-0.184	0.021	-0.082	-0.135	-0.201
		5.875	-14.841	-0.267	0.062	-0.082	-0.013	0.491
	24:5. 1.2DL+1.(	0	-29.699	-0.228	-0.027	0.002	-0.147	-0.699
		2.938	-29.699	-0.228	0.014	0.002	-0.166	-0.030
		5.875	-29.699	-0.228	0.054	0.002	-0.067	0.639
	25:6. 0.9DL+1.(	0	3.076	-0.009	-0.017	-0.085	-0.037	-0.262
		2.938	3.076	-0.058	0.014	-0.085	-0.042	-0.187
		5.875	3.076	-0.141	0.044	-0.085	0.042	0.136
	26:2. 1.2DL+1.(	0	-17.247	-0.147	-0.030	-0.002	-0.077	-0.461
		2.938	-17.247	-0.147	0.011	-0.002	-0.104	-0.029
		5.875	-17.247	-0.147	0.051	-0.002	-0.014	0.402
	27:2. 1.2DL+1.(	0	-20.937	-0.186	-0.023	-0.033	-0.126	-0.563
		2.938	-20.937	-0.186	0.017	-0.033	-0.134	-0.016
		5.875	-20.937	-0.186	0.058	-0.033	-0.024	0.532
	28:6A. 1.2D+1.	0	9.012	-0.064	-0.066	-0.225	0.003	-0.647
		2.938	8.999	-0.110	-0.018	-0.225	-0.120	-0.392
		5.875	8.985	-0.156	0.030	-0.225	-0.103	-0.002
	29:6A. 1.2D+1.	0	-12.288	-0.159	-0.226	-0.070	0.438	-0.616
		2.938	-12.335	-0.173	-0.179	-0.070	-0.157	-0.127

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		5.875	-12.381	-0.187	-0.131	-0.070	-0.612	0.402
	30:6B. 0.9D+1.	0	32.664	0.112	-0.052	-0.228	0.127	-0.110
		2.938	32.650	0.066	-0.029	-0.228	0.009	-0.371
		5.875	32.636	0.020	-0.006	-0.228	-0.042	-0.496
	31:6B. 0.9D+1.	0	11.362	0.016	-0.212	-0.072	0.562	-0.079
		2.938	11.316	0.002	-0.189	-0.072	-0.028	-0.106
		5.875	11.270	-0.012	-0.166	-0.072	-0.551	-0.091
6	21:1. 1.4DL	0	-14.627	0.137	-0.026	-0.021	-0.094	0.424
		2.938	-14.627	0.137	0.021	-0.021	-0.102	0.023
		5.875	-14.627	0.137	0.068	-0.021	0.029	-0.378
	22:2. 1.2DL+1.(	0	-30.373	0.239	0.004	-0.011	-0.255	0.757
		2.938	-30.373	0.239	0.044	-0.011	-0.184	0.053
		5.875	-30.373	0.239	0.085	-0.011	0.005	-0.650
	23:4. 1.2DL+1.(	0	-9.756	0.201	-0.010	-0.041	-0.140	0.426
		2.938	-9.756	0.151	0.031	-0.041	-0.109	-0.116
		5.875	-9.756	0.069	0.071	-0.041	0.041	-0.410
	24:5. 1.2DL+1.(	0	-23.684	0.194	-0.006	-0.014	-0.189	0.609
		2.938	-23.684	0.194	0.034	-0.014	-0.148	0.041
		5.875	-23.684	0.194	0.075	-0.014	0.013	-0.528
	25:6. 0.9DL+1.(	0	4.525	0.095	-0.020	-0.041	-0.011	0.089
		2.938	4.525	0.046	0.010	-0.041	-0.027	-0.142
		5.875	4.525	-0.037	0.040	-0.041	0.047	-0.125
	26:2. 1.2DL+1.(	0	-13.557	0.123	-0.019	-0.019	-0.094	0.385
		2.938	-13.557	0.123	0.021	-0.019	-0.092	0.024
		5.875	-13.557	0.123	0.061	-0.019	0.029	-0.338
	27:2. 1.2DL+1.(	0	-15.999	0.160	-0.011	-0.049	-0.132	0.511
		2.938	-15.999	0.160	0.029	-0.049	-0.105	0.041
		5.875	-15.999	0.160	0.070	-0.049	0.041	-0.429
	28:6A. 1.2D+1.	0	13.570	0.072	-0.071	-0.011	0.073	-0.141
		2.938	13.556	0.026	-0.024	-0.011	-0.067	-0.284
		5.875	13.543	-0.020	0.024	-0.011	-0.067	-0.291
	29:6A. 1.2D+1.	0	-8.509	0.135	-0.218	-0.017	0.449	0.309
		2.938	-8.555	0.121	-0.170	-0.017	-0.120	-0.068
		5.875	-8.601	0.108	-0.122	-0.017	-0.548	-0.405
	30:6B. 0.9D+1.	0	32.428	-0.077	-0.074	-0.004	0.231	-0.610
		2.938	32.414	-0.123	-0.051	-0.004	0.047	-0.317
		5.875	32.400	-0.169	-0.028	-0.004	-0.070	0.112
	31:6B. 0.9D+1.	0	10.347	-0.013	-0.220	-0.010	0.608	-0.160
		2.938	10.301	-0.027	-0.197	-0.010	-0.006	-0.101
		5.875	10.255	-0.041	-0.174	-0.010	-0.551	-0.002
7	21:1. 1.4DL	0	-8.386	-0.104	-0.010	-0.028	-0.125	-0.358
		2.938	-8.386	-0.104	0.037	-0.028	-0.085	-0.053
		5.875	-8.386	-0.104	0.084	-0.028	0.093	0.251
	22:2. 1.2DL+1.(	0	-17.463	-0.179	0.036	-0.008	-0.314	-0.637

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		2.938	-17.463	-0.179	0.076	-0.008	-0.149	-0.110
		5.875	-17.463	-0.179	0.117	-0.008	0.135	0.417
	23:4. 1.2DL+1.(	0	-6.897	-0.073	0.006	-0.216	-0.171	-0.460
		2.938	-6.897	-0.123	0.046	-0.216	-0.095	-0.196
		5.875	-6.897	-0.206	0.086	-0.216	0.099	0.316
	24:5. 1.2DL+1.(	0	-13.610	-0.145	0.019	-0.014	-0.236	-0.513
		2.938	-13.610	-0.145	0.060	-0.014	-0.120	-0.086
		5.875	-13.610	-0.145	0.100	-0.014	0.114	0.341
	25:6. 0.9DL+1.(	0	1.322	0.006	-0.020	-0.220	-0.015	-0.177
		2.938	1.322	-0.044	0.010	-0.220	-0.030	-0.145
		5.875	1.322	-0.127	0.040	-0.220	0.044	0.136
	26:2. 1.2DL+1.(	0	-7.692	-0.092	-0.005	-0.025	-0.119	-0.319
		2.938	-7.692	-0.092	0.035	-0.025	-0.076	-0.049
		5.875	-7.692	-0.092	0.075	-0.025	0.086	0.221
	27:2. 1.2DL+1.(	0	-8.909	-0.108	0.002	-0.030	-0.148	-0.390
		2.938	-8.909	-0.108	0.042	-0.030	-0.082	-0.071
		5.875	-8.909	-0.108	0.083	-0.030	0.102	0.248
	28:6A. 1.2D+1.	0	4.007	-0.027	-0.071	-0.513	0.057	-0.482
		2.938	3.993	-0.073	-0.023	-0.513	-0.080	-0.336
		5.875	3.979	-0.119	0.025	-0.513	-0.078	-0.055
	29:6A. 1.2D+1.	0	-5.969	-0.108	-0.208	-0.169	0.418	-0.494
		2.938	-6.015	-0.122	-0.160	-0.169	-0.122	-0.156
		5.875	-6.061	-0.136	-0.112	-0.169	-0.522	0.223
	30:6B. 0.9D+1.	0	14.849	0.085	-0.093	-0.508	0.252	-0.087
		2.938	14.836	0.038	-0.070	-0.508	0.012	-0.268
		5.875	14.822	-0.008	-0.048	-0.508	-0.161	-0.313
	31:6B. 0.9D+1.	0	4.873	0.003	-0.230	-0.164	0.613	-0.100
		2.938	4.827	-0.011	-0.207	-0.164	-0.030	-0.088
		5.875	4.781	-0.025	-0.185	-0.164	-0.606	-0.035
8	21:1. 1.4DL	0	-0.042	0.056	0.029	-0.050	-0.135	0.214
		2.833	-0.042	0.056	0.074	-0.050	0.012	0.055
		5.666	-0.042	0.056	0.120	-0.050	0.286	-0.105
	22:2. 1.2DL+1.(	0	-0.097	0.023	0.119	-0.095	-0.340	0.281
		2.833	-0.097	0.023	0.157	-0.095	0.051	0.214
		5.666	-0.097	0.023	0.196	-0.095	0.552	0.148
	23:4. 1.2DL+1.(	0	4.700	0.058	0.060	-0.196	-0.193	0.144
		2.833	4.700	0.010	0.099	-0.196	0.033	0.024
		5.666	4.700	-0.069	0.138	-0.196	0.370	0.135
	24:5. 1.2DL+1.(	0	-0.074	0.033	0.083	-0.076	-0.255	0.244
		2.833	-0.074	0.033	0.122	-0.076	0.036	0.152
		5.666	-0.074	0.033	0.161	-0.076	0.437	0.059
	25:6. 0.9DL+1.(	0	4.747	0.062	-0.004	-0.153	-0.024	0.038
		2.833	4.747	0.014	0.025	-0.153	0.005	-0.092
		5.666	4.747	-0.066	0.054	-0.153	0.116	0.009

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
	26:2. 1.2DL+1.(	0	-0.041	0.049	0.029	-0.044	-0.124	0.188
		2.833	-0.041	0.049	0.068	-0.044	0.012	0.049
		5.666	-0.041	0.049	0.107	-0.044	0.259	-0.091
	27:2. 1.2DL+1.(	0	-0.049	0.054	0.039	-0.045	-0.147	0.208
		2.833	-0.049	0.054	0.078	-0.045	0.018	0.055
		5.666	-0.049	0.054	0.117	-0.045	0.294	-0.097
	28:6A. 1.2D+1.	0	15.234	-0.148	0.007	-0.379	-0.006	-0.462
		2.833	15.220	-0.192	0.053	-0.379	0.078	0.020
		5.666	15.207	-0.237	0.099	-0.379	0.292	0.628
	29:6A. 1.2D+1.	0	5.554	-0.036	-0.088	-0.175	0.311	-0.003
		2.833	5.510	-0.049	-0.042	-0.175	0.126	0.118
		5.666	5.465	-0.063	0.004	-0.175	0.071	0.277
	30:6B. 0.9D+1.	0	15.294	-0.162	-0.067	-0.320	0.205	-0.636
		2.833	15.280	-0.207	-0.045	-0.320	0.046	-0.113
		5.666	15.267	-0.251	-0.023	-0.320	-0.051	0.535
	31:6B. 0.9D+1.	0	5.614	-0.050	-0.162	-0.116	0.522	-0.176
		2.833	5.570	-0.063	-0.140	-0.116	0.094	-0.015
		5.666	5.525	-0.077	-0.118	-0.116	-0.272	0.183
9	21:1. 1.4DL	0	8.381	0.016	-0.126	0.032	0.301	0.084
		2.833	8.381	0.016	-0.081	0.032	0.007	0.038
		5.666	8.381	0.016	-0.035	0.032	-0.157	-0.007
	22:2. 1.2DL+1.(	0	17.420	-0.335	-0.208	-0.403	0.578	-0.440
		2.833	17.420	-0.108	-0.169	-0.403	0.043	0.187
		5.666	17.420	0.118	-0.130	-0.403	-0.382	0.173
	23:4. 1.2DL+1.(	0	11.743	0.021	-0.161	0.109	0.438	0.388
		2.833	11.743	0.114	-0.122	0.109	0.037	0.174
		5.666	11.743	0.176	-0.083	0.109	-0.255	-0.209
	24:5. 1.2DL+1.(	0	13.581	-0.204	-0.171	-0.241	0.458	-0.248
		2.833	13.581	-0.063	-0.132	-0.241	0.029	0.129
		5.666	13.581	0.079	-0.093	-0.241	-0.289	0.106
	25:6. 0.9DL+1.(	0	3.550	0.235	-0.072	0.371	0.174	0.690
		2.833	3.550	0.187	-0.042	0.371	0.012	0.069
		5.666	3.550	0.107	-0.013	0.371	-0.067	-0.320
	26:2. 1.2DL+1.(	0	9.866	0.035	-0.137	0.030	0.340	0.130
		2.833	9.866	0.035	-0.098	0.030	0.008	0.030
		5.666	9.866	0.035	-0.059	0.030	-0.213	-0.070
	27:2. 1.2DL+1.(	0	8.675	0.014	-0.122	0.033	0.305	0.079
		2.833	8.675	0.014	-0.083	0.033	0.014	0.040
		5.666	8.675	0.014	-0.044	0.033	-0.167	0.002
	28:6A. 1.2D+1.	0	12.283	0.027	-0.174	0.027	0.506	0.480
		2.833	12.269	0.124	-0.128	0.027	0.079	0.266
		5.666	12.256	0.222	-0.082	0.027	-0.218	-0.224
	29:6A. 1.2D+1.	0	14.287	-0.128	-0.150	-0.167	0.461	-0.030
		2.833	14.242	0.000	-0.104	-0.167	0.102	0.151

Software licensed to Contech Engineered Solutions CONNECTED User: Andrew Thorstad	Job No **855412-10**	Sheet No	Rev
	Part		
Job Title Brookside Elementary - San Anselmo, CA	Ref		
	By ATT	Date 8/1/2025 12:00:00 A	
Client	File 855412-10.std	Date/Time 12-Aug-2025 10:52	

Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		5.666	14.198	0.129	-0.058	-0.167	-0.128	-0.032
	30:6B. 0.9D+1.	0	1.467	0.236	-0.045	0.279	0.148	0.756
		2.833	1.454	0.192	-0.023	0.279	0.052	0.149
		5.666	1.441	0.148	-0.000	0.279	0.020	-0.333
	31:6B. 0.9D+1.	0	3.471	0.082	-0.021	0.085	0.103	0.246
		2.833	3.427	0.068	0.001	0.085	0.075	0.034
		5.666	3.383	0.055	0.023	0.085	0.110	-0.141
10	21:1. 1.4DL	0	14.700	0.016	-0.081	0.016	0.080	0.014
		2.938	14.700	0.016	-0.034	0.016	-0.089	-0.034
		5.875	14.700	0.016	0.013	0.016	-0.118	-0.083
	22:2. 1.2DL+1.(	0	30.505	-0.215	-0.109	-0.294	0.106	0.073
		2.938	30.505	0.020	-0.069	-0.294	-0.156	0.359
		5.875	30.505	0.255	-0.029	-0.294	-0.299	-0.046
	23:4. 1.2DL+1.(	0	20.467	-0.023	-0.087	0.109	0.096	-0.093
		2.938	20.467	0.074	-0.046	0.109	-0.100	-0.192
		5.875	20.467	0.138	-0.006	0.109	-0.177	-0.473
	24:5. 1.2DL+1.(	0	23.791	-0.129	-0.094	-0.178	0.092	0.050
		2.938	23.791	0.018	-0.054	-0.178	-0.126	0.213
		5.875	23.791	0.165	-0.014	-0.178	-0.225	-0.055
	25:6. 0.9DL+1.(	0	6.126	0.116	-0.044	0.297	0.055	-0.134
		2.938	6.126	0.066	-0.014	0.297	-0.031	-0.427
		5.875	6.126	-0.016	0.016	0.297	-0.028	-0.470
	26:2. 1.2DL+1.(	0	15.703	0.011	-0.067	0.015	0.037	-0.046
		2.938	15.703	0.011	-0.026	0.015	-0.100	-0.077
		5.875	15.703	0.011	0.014	0.015	-0.118	-0.108
	27:2. 1.2DL+1.(	0	15.646	0.013	-0.078	0.025	0.085	0.023
		2.938	15.646	0.013	-0.038	0.025	-0.085	-0.017
		5.875	15.646	0.013	0.003	0.025	-0.136	-0.056
	28:6A. 1.2D+1.	0	21.427	0.019	-0.080	0.106	0.089	-0.048
		2.938	21.413	0.119	-0.032	0.106	-0.076	-0.251
		5.875	21.399	0.220	0.015	0.106	-0.102	-0.750
	29:6A. 1.2D+1.	0	24.867	-0.092	-0.046	-0.075	-0.034	-0.019
		2.938	24.821	0.041	0.001	-0.075	-0.100	0.057
		5.875	24.775	0.174	0.049	-0.075	-0.026	-0.259
	30:6B. 0.9D+1.	0	2.487	0.153	-0.012	0.290	0.023	-0.094
		2.938	2.473	0.107	0.010	0.290	0.020	-0.476
		5.875	2.459	0.061	0.033	0.290	0.084	-0.722
	31:6B. 0.9D+1.	0	5.927	0.042	0.021	0.109	-0.100	-0.064
		2.938	5.881	0.028	0.044	0.109	-0.004	-0.168
		5.875	5.835	0.014	0.067	0.109	0.160	-0.231
11	21:1. 1.4DL	0	18.434	-0.008	-0.068	0.046	0.028	-0.065
		2.938	18.434	-0.008	-0.020	0.046	-0.101	-0.041
		5.875	18.434	-0.008	0.027	0.046	-0.092	-0.016
	22:2. 1.2DL+1.(	0	38.292	-0.237	-0.083	-0.079	0.002	-0.088

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	By ATT	Date 8/1/2025 12:00:00 A
Client	File 855412-10.std	Date/Time 12-Aug-2025 10:52

Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		2.938	38.292	-0.002	-0.042	-0.079	-0.182	0.262
		5.875	38.292	0.233	-0.002	-0.079	-0.248	-0.078
	23:4. 1.2DL+1.(	0	25.619	-0.094	-0.074	0.117	0.052	-0.390
		2.938	25.619	0.003	-0.034	0.117	-0.106	-0.280
		5.875	25.619	0.067	0.007	0.117	-0.146	-0.353
	24:5. 1.2DL+1.(	0	29.858	-0.151	-0.073	-0.035	0.010	-0.076
		2.938	29.858	-0.004	-0.033	-0.035	-0.146	0.151
		5.875	29.858	0.143	0.007	-0.035	-0.184	-0.054
	25:6. 0.9DL+1.(	0	7.612	0.051	-0.044	0.181	0.060	-0.356
		2.938	7.612	0.001	-0.014	0.181	-0.025	-0.457
		5.875	7.612	-0.082	0.016	0.181	-0.021	-0.309
	26:2. 1.2DL+1.(	0	18.388	-0.019	-0.053	0.042	-0.001	-0.099
		2.938	18.388	-0.019	-0.013	0.042	-0.098	-0.045
		5.875	18.388	-0.019	0.027	0.042	-0.077	0.010
	27:2. 1.2DL+1.(	0	20.399	-0.007	-0.067	0.058	0.037	-0.035
		2.938	20.399	-0.007	-0.027	0.058	-0.101	-0.014
		5.875	20.399	-0.007	0.014	0.058	-0.120	0.007
	28:6A. 1.2D+1.	0	26.813	-0.083	-0.077	0.170	0.097	-0.603
		2.938	26.800	0.018	-0.030	0.170	-0.060	-0.508
		5.875	26.786	0.119	0.018	0.170	-0.077	-0.709
	29:6A. 1.2D+1.	0	31.158	-0.128	-0.032	0.021	-0.084	-0.233
		2.938	31.112	0.005	0.016	0.021	-0.108	-0.054
		5.875	31.066	0.139	0.063	0.021	0.008	-0.265
	30:6B. 0.9D+1.	0	3.039	0.065	-0.026	0.219	0.096	-0.548
		2.938	3.025	0.019	-0.003	0.219	0.053	-0.672
		5.875	3.011	-0.027	0.020	0.219	0.077	-0.661
	31:6B. 0.9D+1.	0	7.383	0.020	0.019	0.071	-0.085	-0.178
		2.938	7.337	0.007	0.042	0.071	0.005	-0.218
		5.875	7.291	-0.007	0.065	0.071	0.162	-0.217
12	21:1. 1.4DL	0	19.740	0.014	-0.055	-0.018	-0.017	-0.008
		2.938	19.740	0.014	-0.008	-0.018	-0.110	-0.050
		5.875	19.740	0.014	0.039	-0.018	-0.064	-0.092
	22:2. 1.2DL+1.(	0	40.969	-0.204	-0.055	-0.078	-0.096	-0.091
		2.938	40.969	0.031	-0.015	-0.078	-0.199	0.163
		5.875	40.969	0.266	0.025	-0.078	-0.184	-0.274
	23:4. 1.2DL+1.(	0	27.397	-0.089	-0.061	-0.024	-0.007	-0.321
		2.938	27.397	0.008	-0.021	-0.024	-0.128	-0.226
		5.875	27.397	0.072	0.019	-0.024	-0.131	-0.313
	24:5. 1.2DL+1.(	0	31.951	-0.123	-0.052	-0.055	-0.065	-0.059
		2.938	31.951	0.024	-0.012	-0.055	-0.160	0.086
		5.875	31.951	0.171	0.028	-0.055	-0.136	-0.201
	25:6. 0.9DL+1.(	0	8.136	0.043	-0.044	0.018	0.047	-0.267
		2.938	8.136	-0.007	-0.014	0.018	-0.039	-0.343
		5.875	8.136	-0.090	0.016	0.018	-0.036	-0.171

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Client	File 855412-10.std	Date/Time 12-Aug-2025 10:52

Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
	26:2. 1.2DL+1.(	0	18.988	0.014	-0.045	-0.028	-0.029	0.011
		2.938	18.988	0.014	-0.005	-0.028	-0.102	-0.029
		5.875	18.988	0.014	0.036	-0.028	-0.056	-0.069
	27:2. 1.2DL+1.(	0	23.068	0.037	-0.061	-0.032	-0.004	0.024
		2.938	23.068	0.037	-0.020	-0.032	-0.123	-0.083
		5.875	23.068	0.037	0.020	-0.032	-0.124	-0.190
	28:6A. 1.2D+1.	0	28.637	-0.074	-0.076	0.005	0.042	-0.637
		2.938	28.623	0.026	-0.028	0.005	-0.110	-0.567
		5.875	28.609	0.127	0.020	0.005	-0.123	-0.793
	29:6A. 1.2D+1.	0	33.312	-0.112	-0.018	-0.031	-0.164	-0.254
		2.938	33.266	0.021	0.030	-0.031	-0.147	-0.119
		5.875	33.220	0.154	0.078	-0.031	0.011	-0.375
	30:6B. 0.9D+1.	0	3.200	0.053	-0.042	0.054	0.102	-0.581
		2.938	3.187	0.007	-0.019	0.054	0.013	-0.669
		5.875	3.173	-0.039	0.004	0.054	-0.008	-0.623
	31:6B. 0.9D+1.	0	7.876	0.015	0.016	0.018	-0.105	-0.197
		2.938	7.830	0.001	0.039	0.018	-0.023	-0.221
		5.875	7.784	-0.013	0.062	0.018	0.126	-0.204
13	21:1. 1.4DL	0	19.740	-0.014	-0.039	0.018	-0.064	-0.092
		2.938	19.740	-0.014	0.008	0.018	-0.110	-0.050
		5.875	19.740	-0.014	0.055	0.018	-0.017	-0.008
	22:2. 1.2DL+1.(	0	40.969	-0.266	-0.025	0.078	-0.184	-0.274
		2.938	40.969	-0.031	0.015	0.078	-0.199	0.163
		5.875	40.969	0.204	0.055	0.078	-0.096	-0.091
	23:4. 1.2DL+1.(	0	27.397	-0.072	-0.019	0.024	-0.131	-0.313
		2.938	27.397	-0.008	0.021	0.024	-0.128	-0.226
		5.875	27.397	0.089	0.061	0.024	-0.007	-0.321
	24:5. 1.2DL+1.(	0	31.951	-0.171	-0.028	0.055	-0.136	-0.201
		2.938	31.951	-0.024	0.012	0.055	-0.160	0.086
		5.875	31.951	0.123	0.052	0.055	-0.065	-0.059
	25:6. 0.9DL+1.(	0	8.136	0.090	-0.016	-0.018	-0.036	-0.171
		2.938	8.136	0.007	0.014	-0.018	-0.039	-0.343
		5.875	8.136	-0.043	0.044	-0.018	0.047	-0.267
	26:2. 1.2DL+1.(	0	18.983	-0.012	-0.031	0.011	-0.069	-0.071
		2.938	18.983	-0.012	0.009	0.011	-0.101	-0.037
		5.875	18.983	-0.012	0.050	0.011	-0.015	-0.002
	27:2. 1.2DL+1.(	0	23.071	-0.031	-0.025	0.035	-0.114	-0.187
		2.938	23.071	-0.031	0.015	0.035	-0.127	-0.097
		5.875	23.071	-0.031	0.056	0.035	-0.023	-0.006
	28:6A. 1.2D+1.	0	28.533	-0.128	0.018	-0.005	-0.233	-0.795
		2.938	28.519	-0.028	0.065	-0.005	-0.111	-0.566
		5.875	28.505	0.073	0.113	-0.005	0.151	-0.633
	29:6A. 1.2D+1.	0	32.966	-0.158	0.047	0.031	-0.356	-0.382
		2.938	32.920	-0.025	0.094	0.031	-0.148	-0.115

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		5.875	32.874	0.109	0.142	0.031	0.199	-0.238
	30:6B. 0.9D+1.	0	3.096	0.038	0.033	-0.054	-0.118	-0.625
		2.938	3.083	-0.008	0.056	-0.054	0.013	-0.668
		5.875	3.069	-0.054	0.079	-0.054	0.211	-0.576
	31:6B. 0.9D+1.	0	7.529	0.009	0.062	-0.017	-0.241	-0.212
		2.938	7.483	-0.005	0.085	-0.017	-0.025	-0.217
		5.875	7.437	-0.019	0.108	-0.017	0.259	-0.181
14	21:1. 1.4DL	0	18.434	0.008	-0.027	-0.046	-0.092	-0.016
		2.938	18.434	0.008	0.020	-0.046	-0.101	-0.041
		5.875	18.434	0.008	0.068	-0.046	0.028	-0.065
	22:2. 1.2DL+1.(	0	38.292	-0.233	0.002	0.079	-0.248	-0.078
		2.938	38.292	0.002	0.042	0.079	-0.182	0.262
		5.875	38.292	0.237	0.083	0.079	0.002	-0.088
	23:4. 1.2DL+1.(	0	25.619	-0.067	-0.007	-0.117	-0.146	-0.353
		2.938	25.619	-0.003	0.034	-0.117	-0.106	-0.280
		5.875	25.619	0.094	0.074	-0.117	0.052	-0.390
	24:5. 1.2DL+1.(	0	29.858	-0.143	-0.007	0.035	-0.184	-0.054
		2.938	29.858	0.004	0.033	0.035	-0.146	0.151
		5.875	29.858	0.151	0.073	0.035	0.010	-0.076
	25:6. 0.9DL+1.(	0	7.612	0.082	-0.016	-0.181	-0.021	-0.309
		2.938	7.612	-0.001	0.014	-0.181	-0.025	-0.457
		5.875	7.612	-0.051	0.044	-0.181	0.060	-0.356
	26:2. 1.2DL+1.(	0	17.341	0.008	-0.019	-0.043	-0.094	-0.010
		2.938	17.341	0.008	0.021	-0.043	-0.092	-0.033
		5.875	17.341	0.008	0.061	-0.043	0.029	-0.056
	27:2. 1.2DL+1.(	0	21.071	0.002	-0.012	-0.055	-0.131	-0.023
		2.938	21.071	0.002	0.029	-0.055	-0.106	-0.028
		5.875	21.071	0.002	0.069	-0.055	0.038	-0.034
	28:6A. 1.2D+1.	0	26.718	-0.119	0.017	-0.172	-0.184	-0.709
		2.938	26.704	-0.018	0.065	-0.172	-0.064	-0.508
		5.875	26.690	0.083	0.113	-0.172	0.197	-0.603
	29:6A. 1.2D+1.	0	30.839	-0.138	0.054	-0.029	-0.350	-0.265
		2.938	30.793	-0.005	0.102	-0.029	-0.120	-0.054
		5.875	30.747	0.128	0.150	-0.029	0.249	-0.233
	30:6B. 0.9D+1.	0	2.943	0.027	0.016	-0.222	-0.030	-0.660
		2.938	2.929	-0.019	0.039	-0.222	0.049	-0.672
		5.875	2.916	-0.065	0.061	-0.222	0.196	-0.548
	31:6B. 0.9D+1.	0	7.064	0.007	0.053	-0.079	-0.196	-0.216
		2.938	7.018	-0.006	0.076	-0.079	-0.007	-0.218
		5.875	6.972	-0.020	0.098	-0.079	0.248	-0.178
15	21:1. 1.4DL	0	14.700	-0.016	-0.013	-0.016	-0.118	-0.083
		2.938	14.700	-0.016	0.034	-0.016	-0.089	-0.034
		5.875	14.700	-0.016	0.081	-0.016	0.080	0.014
	22:2. 1.2DL+1.(	0	30.505	-0.255	0.029	0.294	-0.299	-0.046

	Job No 855412-10	Sheet No / Rev
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Job Title Brookside Elementary - San Anselmo, CA	Ref	
	By ATT	Date 8/1/2025 12:00:00 A
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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		2.938	30.505	-0.020	0.069	0.294	-0.156	0.359
		5.875	30.505	0.215	0.109	0.294	0.106	0.073
	23:4. 1.2DL+1.(	0	20.467	-0.138	0.006	-0.109	-0.177	-0.473
		2.938	20.467	-0.074	0.046	-0.109	-0.100	-0.192
		5.875	20.467	0.023	0.087	-0.109	0.096	-0.093
	24:5. 1.2DL+1.(	0	23.791	-0.165	0.014	0.178	-0.225	-0.055
		2.938	23.791	-0.018	0.054	0.178	-0.126	0.213
		5.875	23.791	0.129	0.094	0.178	0.092	0.050
	25:6. 0.9DL+1.(	0	6.126	0.016	-0.016	-0.297	-0.028	-0.470
		2.938	6.126	-0.066	0.014	-0.297	-0.031	-0.427
		5.875	6.126	-0.116	0.044	-0.297	0.055	-0.134
	26:2. 1.2DL+1.(	0	13.621	-0.014	-0.009	-0.015	-0.113	-0.072
		2.938	13.621	-0.014	0.032	-0.015	-0.079	-0.030
		5.875	13.621	-0.014	0.072	-0.015	0.074	0.013
	27:2. 1.2DL+1.(	0	16.094	-0.014	-0.001	-0.027	-0.142	-0.057
		2.938	16.094	-0.014	0.039	-0.027	-0.086	-0.015
		5.875	16.094	-0.014	0.079	-0.027	0.088	0.028
	28:6A. 1.2D+1.	0	21.341	-0.224	0.022	-0.102	-0.214	-0.754
		2.938	21.327	-0.123	0.070	-0.102	-0.079	-0.246
		5.875	21.313	-0.022	0.117	-0.102	0.195	-0.034
	29:6A. 1.2D+1.	0	24.580	-0.185	0.075	0.089	-0.400	-0.272
		2.938	24.534	-0.051	0.122	0.089	-0.110	0.074
		5.875	24.488	0.082	0.170	0.089	0.319	0.030
	30:6B. 0.9D+1.	0	2.401	-0.064	0.004	-0.285	-0.028	-0.726
		2.938	2.387	-0.110	0.027	-0.285	0.017	-0.470
		5.875	2.373	-0.156	0.050	-0.285	0.129	-0.079
	31:6B. 0.9D+1.	0	5.640	-0.025	0.057	-0.095	-0.214	-0.244
		2.938	5.594	-0.039	0.080	-0.095	-0.014	-0.150
		5.875	5.548	-0.053	0.102	-0.095	0.253	-0.015
16	21:1. 1.4DL	0	8.381	-0.016	0.035	-0.032	-0.157	-0.007
		2.833	8.381	-0.016	0.081	-0.032	0.007	0.038
		5.666	8.381	-0.016	0.126	-0.032	0.301	0.084
	22:2. 1.2DL+1.(	0	17.420	-0.118	0.130	0.403	-0.382	0.173
		2.833	17.420	0.108	0.169	0.403	0.043	0.187
		5.666	17.420	0.335	0.208	0.403	0.578	-0.440
	23:4. 1.2DL+1.(	0	11.743	-0.176	0.083	-0.109	-0.255	-0.209
		2.833	11.743	-0.114	0.122	-0.109	0.037	0.174
		5.666	11.743	-0.021	0.161	-0.109	0.438	0.388
	24:5. 1.2DL+1.(	0	13.581	-0.079	0.093	0.241	-0.289	0.106
		2.833	13.581	0.063	0.132	0.241	0.029	0.129
		5.666	13.581	0.204	0.171	0.241	0.458	-0.248
	25:6. 0.9DL+1.(	0	3.550	-0.107	0.013	-0.371	-0.067	-0.320
		2.833	3.550	-0.187	0.042	-0.371	0.012	0.069
		5.666	3.550	-0.235	0.072	-0.371	0.174	0.690

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
	26:2. 1.2DL+1.(	0	7.684	-0.014	0.035	-0.028	-0.146	-0.006
		2.833	7.684	-0.014	0.074	-0.028	0.009	0.034
		5.666	7.684	-0.014	0.113	-0.028	0.273	0.074
	27:2. 1.2DL+1.(	0	8.894	-0.014	0.046	-0.036	-0.171	0.006
		2.833	8.894	-0.014	0.085	-0.036	0.015	0.044
		5.666	8.894	-0.014	0.124	-0.036	0.311	0.082
	28:6A. 1.2D+1.	0	12.197	-0.221	0.110	-0.030	-0.322	-0.213
		2.833	12.183	-0.123	0.156	-0.030	0.056	0.275
		5.666	12.170	-0.026	0.202	-0.030	0.564	0.487
	29:6A. 1.2D+1.	0	14.001	-0.126	0.153	0.158	-0.474	0.007
		2.833	13.956	0.002	0.199	0.158	0.026	0.182
		5.666	13.912	0.131	0.245	0.158	0.655	-0.006
	30:6B. 0.9D+1.	0	1.381	-0.147	0.029	-0.282	-0.084	-0.321
		2.833	1.368	-0.191	0.051	-0.282	0.030	0.158
		5.666	1.355	-0.236	0.073	-0.282	0.206	0.763
	31:6B. 0.9D+1.	0	3.185	-0.052	0.072	-0.094	-0.237	-0.102
		2.833	3.141	-0.066	0.094	-0.094	-0.001	0.065
		5.666	3.097	-0.079	0.116	-0.094	0.297	0.270
17	21:1. 1.4DL	0	-0.122	-0.045	-0.138	0.027	0.341	-0.070
		2.833	-0.122	-0.045	-0.092	0.027	0.014	0.057
		5.666	-0.122	-0.045	-0.047	0.027	-0.183	0.184
	22:2. 1.2DL+1.(	0	-0.209	-0.137	-0.213	-0.029	0.598	-0.401
		2.833	-0.209	-0.137	-0.174	-0.029	0.051	-0.012
		5.666	-0.209	-0.137	-0.135	-0.029	-0.386	0.378
	23:4. 1.2DL+1.(	0	-0.384	-0.043	-0.208	0.197	0.579	-0.274
		2.833	-0.384	-0.123	-0.169	0.197	0.044	-0.067
		5.666	-0.384	-0.171	-0.130	0.197	-0.380	0.372
	24:5. 1.2DL+1.(	0	-0.170	-0.100	-0.177	-0.009	0.483	-0.273
		2.833	-0.170	-0.100	-0.138	-0.009	0.036	0.011
		5.666	-0.170	-0.100	-0.099	-0.009	-0.300	0.295
	25:6. 0.9DL+1.(	0	-0.292	0.029	-0.120	0.224	0.315	-0.046
		2.833	-0.292	-0.051	-0.090	0.224	0.018	-0.041
		5.666	-0.292	-0.099	-0.061	0.224	-0.197	0.195
	26:2. 1.2DL+1.(	0	-0.122	-0.051	-0.150	-0.032	0.385	-0.069
		2.833	-0.122	-0.051	-0.111	-0.032	0.016	0.076
		5.666	-0.122	-0.051	-0.072	-0.032	-0.244	0.222
	27:2. 1.2DL+1.(	0	-0.123	-0.042	-0.132	0.027	0.338	-0.063
		2.833	-0.123	-0.042	-0.093	0.027	0.020	0.055
		5.666	-0.123	-0.042	-0.054	0.027	-0.188	0.174
	28:6A. 1.2D+1.	0	5.048	0.043	-0.311	0.568	0.847	0.088
		2.833	5.035	-0.001	-0.265	0.568	0.031	0.029
		5.666	5.021	-0.046	-0.219	0.568	-0.653	0.095
	29:6A. 1.2D+1.	0	18.404	0.015	-0.400	0.159	1.073	0.009
		2.833	18.360	0.002	-0.354	0.159	0.004	-0.016

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		5.666	18.315	-0.011	-0.308	0.159	-0.934	-0.002
	30:6B. 0.9D+1.	0	5.178	0.129	-0.179	0.586	0.476	0.338
		2.833	5.164	0.084	-0.157	0.586	-0.000	0.037
		5.666	5.151	0.040	-0.135	0.586	-0.413	-0.139
	31:6B. 0.9D+1.	0	18.531	0.101	-0.269	0.177	0.702	0.259
		2.833	18.487	0.088	-0.246	0.177	-0.027	-0.008
		5.666	18.442	0.074	-0.224	0.177	-0.694	-0.237
18	21:1. 1.4DL	0	-10.118	0.098	-0.092	0.035	0.106	0.228
		2.938	-10.118	0.098	-0.045	0.035	-0.094	-0.061
		5.875	-10.118	0.098	0.002	0.035	-0.156	-0.350
	22:2. 1.2DL+1.(	0	-18.906	0.169	-0.123	0.043	0.150	0.394
		2.938	-18.906	0.169	-0.083	0.043	-0.153	-0.102
		5.875	-18.906	0.169	-0.043	0.043	-0.338	-0.599
	23:4. 1.2DL+1.(	0	-25.296	0.268	-0.115	0.127	0.122	0.482
		2.938	-25.296	0.185	-0.075	0.127	-0.156	-0.213
		5.875	-25.296	0.135	-0.034	0.127	-0.316	-0.660
	24:5. 1.2DL+1.(	0	-15.068	0.137	-0.107	0.038	0.128	0.320
		2.938	-15.068	0.137	-0.066	0.038	-0.126	-0.084
		5.875	-15.068	0.137	-0.026	0.038	-0.262	-0.487
	25:6. 0.9DL+1.(	0	-16.732	0.194	-0.067	0.111	0.062	0.309
		2.938	-16.732	0.111	-0.037	0.111	-0.090	-0.169
		5.875	-16.732	0.061	-0.007	0.111	-0.154	-0.398
	26:2. 1.2DL+1.(	0	-11.545	0.120	-0.077	0.063	0.059	0.280
		2.938	-11.545	0.120	-0.037	0.063	-0.108	-0.073
		5.875	-11.545	0.120	0.004	0.063	-0.156	-0.426
	27:2. 1.2DL+1.(	0	-10.278	0.098	-0.089	0.035	0.113	0.219
		2.938	-10.278	0.098	-0.049	0.035	-0.089	-0.070
		5.875	-10.278	0.098	-0.008	0.035	-0.173	-0.358
	28:6A. 1.2D+1.	0	-40.699	0.317	-0.195	0.166	0.302	0.466
		2.938	-40.712	0.271	-0.147	0.166	-0.200	-0.396
		5.875	-40.726	0.225	-0.099	0.166	-0.561	-1.123
	29:6A. 1.2D+1.	0	-9.138	0.130	-0.349	0.081	0.834	0.168
		2.938	-9.184	0.116	-0.302	0.081	-0.123	-0.193
		5.875	-9.230	0.102	-0.254	0.081	-0.939	-0.514
	30:6B. 0.9D+1.	0	-28.969	0.212	-0.118	0.139	0.209	0.222
		2.938	-28.983	0.166	-0.095	0.139	-0.105	-0.333
		5.875	-28.997	0.120	-0.072	0.139	-0.351	-0.752
	31:6B. 0.9D+1.	0	2.589	0.025	-0.273	0.054	0.741	-0.076
		2.938	2.543	0.011	-0.250	0.054	-0.028	-0.130
		5.875	2.497	-0.002	-0.227	0.054	-0.728	-0.143
19	21:1. 1.4DL	0	-17.593	-0.136	-0.074	0.029	0.029	-0.373
		2.938	-17.593	-0.136	-0.027	0.029	-0.120	0.026
		5.875	-17.593	-0.136	0.020	0.029	-0.130	0.424
	22:2. 1.2DL+1.(	0	-32.920	-0.247	-0.090	0.038	0.003	-0.670

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		2.938	-32.920	-0.247	-0.049	0.038	-0.201	0.054
		5.875	-32.920	-0.247	-0.009	0.038	-0.287	0.778
	23:4. 1.2DL+1.(	0	-37.999	-0.154	-0.087	0.178	-0.004	-0.651
		2.938	-37.999	-0.237	-0.046	0.178	-0.200	-0.107
		5.875	-37.999	-0.287	-0.006	0.178	-0.277	0.686
	24:5. 1.2DL+1.(	0	-26.230	-0.198	-0.080	0.033	0.011	-0.539
		2.938	-26.230	-0.198	-0.040	0.033	-0.164	0.042
		5.875	-26.230	-0.198	0.001	0.033	-0.221	0.623
	25:6. 0.9DL+1.(	0	-23.080	-0.044	-0.054	0.163	0.003	-0.352
		2.938	-23.080	-0.126	-0.024	0.163	-0.113	-0.132
		5.875	-23.080	-0.176	0.006	0.163	-0.139	0.336
	26:2. 1.2DL+1.(	0	-18.369	-0.155	-0.059	0.055	-0.004	-0.446
		2.938	-18.369	-0.155	-0.018	0.055	-0.116	0.010
		5.875	-18.369	-0.155	0.022	0.055	-0.111	0.466
	27:2. 1.2DL+1.(	0	-18.356	-0.155	-0.072	0.020	0.036	-0.388
		2.938	-18.356	-0.155	-0.032	0.020	-0.117	0.066
		5.875	-18.356	-0.155	0.008	0.020	-0.151	0.520
	28:6A. 1.2D+1.	0	-55.946	-0.224	-0.165	0.397	0.158	-0.986
		2.938	-55.959	-0.270	-0.118	0.397	-0.257	-0.260
		5.875	-55.973	-0.316	-0.070	0.397	-0.532	0.602
	29:6A. 1.2D+1.	0	-24.559	-0.146	-0.310	0.146	0.654	-0.482
		2.938	-24.605	-0.160	-0.262	0.146	-0.186	-0.033
		5.875	-24.651	-0.174	-0.214	0.146	-0.885	0.456
	30:6B. 0.9D+1.	0	-35.522	-0.071	-0.110	0.374	0.157	-0.570
		2.938	-35.535	-0.117	-0.087	0.374	-0.132	-0.293
		5.875	-35.549	-0.163	-0.064	0.374	-0.354	0.119
	31:6B. 0.9D+1.	0	-4.137	0.007	-0.254	0.123	0.652	-0.067
		2.938	-4.183	-0.007	-0.231	0.123	-0.061	-0.067
		5.875	-4.229	-0.021	-0.208	0.123	-0.707	-0.027
20	21:1. 1.4DL	0	-22.085	0.158	-0.057	0.006	-0.033	0.440
		2.938	-22.085	0.158	-0.010	0.006	-0.131	-0.024
		5.875	-22.085	0.158	0.037	0.006	-0.091	-0.488
	22:2. 1.2DL+1.(	0	-41.312	0.281	-0.058	0.005	-0.109	0.795
		2.938	-41.312	0.281	-0.018	0.005	-0.222	-0.031
		5.875	-41.312	0.281	0.022	0.005	-0.216	-0.857
	23:4. 1.2DL+1.(	0	-48.541	0.352	-0.046	-0.037	-0.138	0.739
		2.938	-48.541	0.269	-0.005	-0.037	-0.213	-0.201
		5.875	-48.541	0.219	0.035	-0.037	-0.170	-0.893
	24:5. 1.2DL+1.(	0	-32.919	0.226	-0.055	0.005	-0.079	0.638
		2.938	-32.919	0.226	-0.014	0.005	-0.181	-0.027
		5.875	-32.919	0.226	0.026	0.005	-0.164	-0.692
	25:6. 0.9DL+1.(	0	-29.820	0.227	-0.027	-0.038	-0.081	0.384
		2.938	-29.820	0.144	0.003	-0.038	-0.117	-0.190
		5.875	-29.820	0.094	0.033	-0.038	-0.064	-0.515

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	Part		
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	By ATT	Date 8/1/2025 12:00:00 A	
Client	File 855412-10.std	Date/Time 12-Aug-2025 10:52	

Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
	26:2. 1.2DL+1.(	0	-21.696	0.158	-0.046	0.008	-0.047	0.462
		2.938	-21.696	0.158	-0.005	0.008	-0.122	-0.002
		5.875	-21.696	0.158	0.035	0.008	-0.078	-0.466
	27:2. 1.2DL+1.(	0	-23.832	0.214	-0.066	-0.049	-0.008	0.573
		2.938	-23.832	0.214	-0.026	-0.049	-0.144	-0.056
		5.875	-23.832	0.214	0.014	-0.049	-0.161	-0.686
	28:6A. 1.2D+1.	0	-74.265	0.410	-0.098	-0.138	-0.045	0.734
		2.938	-74.279	0.364	-0.051	-0.138	-0.264	-0.402
		5.875	-74.293	0.318	-0.003	-0.138	-0.343	-1.403
	29:6A. 1.2D+1.	0	-37.464	0.249	-0.276	-0.034	0.532	0.553
		2.938	-37.510	0.235	-0.228	-0.034	-0.208	-0.158
		5.875	-37.556	0.221	-0.180	-0.034	-0.808	-0.828
	30:6B. 0.9D+1.	0	-48.634	0.235	-0.062	-0.142	0.023	0.241
		2.938	-48.648	0.189	-0.040	-0.142	-0.126	-0.383
		5.875	-48.662	0.143	-0.017	-0.142	-0.209	-0.872
	31:6B. 0.9D+1.	0	-11.835	0.075	-0.240	-0.037	0.600	0.060
		2.938	-11.881	0.061	-0.217	-0.037	-0.071	-0.139
		5.875	-11.927	0.047	-0.194	-0.037	-0.674	-0.297
21	21:1. 1.4DL	0	-22.085	-0.158	-0.037	-0.006	-0.091	-0.488
		2.938	-22.085	-0.158	0.010	-0.006	-0.131	-0.024
		5.875	-22.085	-0.158	0.057	-0.006	-0.033	0.440
	22:2. 1.2DL+1.(	0	-41.312	-0.281	-0.022	-0.005	-0.216	-0.857
		2.938	-41.312	-0.281	0.018	-0.005	-0.222	-0.031
		5.875	-41.312	-0.281	0.058	-0.005	-0.109	0.795
	23:4. 1.2DL+1.(	0	-48.541	-0.219	-0.035	0.037	-0.170	-0.893
		2.938	-48.541	-0.269	0.005	0.037	-0.213	-0.201
		5.875	-48.541	-0.352	0.046	0.037	-0.138	0.739
	24:5. 1.2DL+1.(	0	-32.919	-0.226	-0.026	-0.005	-0.164	-0.692
		2.938	-32.919	-0.226	0.014	-0.005	-0.181	-0.027
		5.875	-32.919	-0.226	0.055	-0.005	-0.079	0.638
	25:6. 0.9DL+1.(	0	-29.820	-0.094	-0.033	0.038	-0.064	-0.515
		2.938	-29.820	-0.144	-0.003	0.038	-0.117	-0.190
		5.875	-29.820	-0.227	0.027	0.038	-0.081	0.384
	26:2. 1.2DL+1.(	0	-20.580	-0.147	-0.029	-0.006	-0.094	-0.460
		2.938	-20.580	-0.147	0.012	-0.006	-0.119	-0.029
		5.875	-20.580	-0.147	0.052	-0.006	-0.026	0.403
	27:2. 1.2DL+1.(	0	-24.557	-0.216	-0.021	0.028	-0.150	-0.688
		2.938	-24.557	-0.216	0.020	0.028	-0.151	-0.053
		5.875	-24.557	-0.216	0.060	0.028	-0.034	0.581
	28:6A. 1.2D+1.	0	-75.125	-0.318	-0.124	0.140	0.029	-1.394
		2.938	-75.139	-0.364	-0.076	0.140	-0.265	-0.392
		5.875	-75.152	-0.410	-0.029	0.140	-0.419	0.745
	29:6A. 1.2D+1.	0	-40.330	-0.222	-0.243	0.039	0.431	-0.798
		2.938	-40.376	-0.236	-0.195	0.039	-0.213	-0.125

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Job Title Brookside Elementary - San Anselmo, CA	Ref	
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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		5.875	-40.422	-0.250	-0.148	0.039	-0.717	0.589
	30:6B. 0.9D+1.	0	-49.494	-0.144	-0.110	0.143	0.163	-0.863
		2.938	-49.508	-0.190	-0.088	0.143	-0.128	-0.373
		5.875	-49.522	-0.236	-0.065	0.143	-0.351	0.252
	31:6B. 0.9D+1.	0	-14.701	-0.048	-0.230	0.042	0.565	-0.267
		2.938	-14.747	-0.062	-0.207	0.042	-0.076	-0.106
		5.875	-14.793	-0.076	-0.184	0.042	-0.649	0.097
22	21:1. 1.4DL	0	-17.593	0.136	-0.020	-0.029	-0.130	0.424
		2.938	-17.593	0.136	0.027	-0.029	-0.120	0.026
		5.875	-17.593	0.136	0.074	-0.029	0.029	-0.373
	22:2. 1.2DL+1.(	0	-32.920	0.247	0.009	-0.038	-0.287	0.778
		2.938	-32.920	0.247	0.049	-0.038	-0.201	0.054
		5.875	-32.920	0.247	0.090	-0.038	0.003	-0.670
	23:4. 1.2DL+1.(	0	-37.999	0.287	0.006	-0.178	-0.277	0.686
		2.938	-37.999	0.237	0.046	-0.178	-0.200	-0.107
		5.875	-37.999	0.154	0.087	-0.178	-0.004	-0.651
	24:5. 1.2DL+1.(	0	-26.230	0.198	-0.001	-0.033	-0.221	0.623
		2.938	-26.230	0.198	0.040	-0.033	-0.164	0.042
		5.875	-26.230	0.198	0.080	-0.033	0.011	-0.539
	25:6. 0.9DL+1.(	0	-23.080	0.176	-0.006	-0.163	-0.139	0.336
		2.938	-23.080	0.126	0.024	-0.163	-0.113	-0.132
		5.875	-23.080	0.044	0.054	-0.163	0.003	-0.352
	26:2. 1.2DL+1.(	0	-16.179	0.123	-0.014	-0.027	-0.126	0.386
		2.938	-16.179	0.123	0.026	-0.027	-0.108	0.026
		5.875	-16.179	0.123	0.067	-0.027	0.029	-0.334
	27:2. 1.2DL+1.(	0	-18.833	0.158	-0.004	-0.001	-0.169	0.530
		2.938	-18.833	0.158	0.036	-0.001	-0.123	0.066
		5.875	-18.833	0.158	0.076	-0.001	0.042	-0.398
	28:6A. 1.2D+1.	0	-58.277	0.333	-0.057	-0.397	-0.160	0.642
		2.938	-58.291	0.287	-0.009	-0.397	-0.258	-0.269
		5.875	-58.305	0.241	0.038	-0.397	-0.216	-1.044
	29:6A. 1.2D+1.	0	-32.332	0.230	-0.209	-0.143	0.354	0.591
		2.938	-32.378	0.216	-0.161	-0.143	-0.190	-0.063
		5.875	-32.424	0.202	-0.114	-0.143	-0.594	-0.677
	30:6B. 0.9D+1.	0	-37.853	0.180	-0.063	-0.373	0.018	0.160
		2.938	-37.867	0.134	-0.040	-0.373	-0.134	-0.302
		5.875	-37.881	0.088	-0.017	-0.373	-0.218	-0.628
	31:6B. 0.9D+1.	0	-11.909	0.077	-0.215	-0.120	0.532	0.108
		2.938	-11.955	0.063	-0.192	-0.120	-0.065	-0.097
		5.875	-12.001	0.049	-0.169	-0.120	-0.596	-0.261
23	21:1. 1.4DL	0	-10.118	-0.098	-0.002	-0.035	-0.156	-0.350
		2.938	-10.118	-0.098	0.045	-0.035	-0.094	-0.061
		5.875	-10.118	-0.098	0.092	-0.035	0.106	0.228
	22:2. 1.2DL+1.(	0	-18.906	-0.169	0.043	-0.043	-0.338	-0.599

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		2.938	-18.906	-0.169	0.083	-0.043	-0.153	-0.102
		5.875	-18.906	-0.169	0.123	-0.043	0.150	0.394
	23:4. 1.2DL+1.(	0	-25.296	-0.135	0.034	-0.127	-0.316	-0.660
		2.938	-25.296	-0.185	0.075	-0.127	-0.156	-0.213
		5.875	-25.296	-0.268	0.115	-0.127	0.122	0.482
	24:5. 1.2DL+1.(	0	-15.068	-0.137	0.026	-0.038	-0.262	-0.487
		2.938	-15.068	-0.137	0.066	-0.038	-0.126	-0.084
		5.875	-15.068	-0.137	0.107	-0.038	0.128	0.320
	25:6. 0.9DL+1.(	0	-16.732	-0.061	0.007	-0.111	-0.154	-0.398
		2.938	-16.732	-0.111	0.037	-0.111	-0.090	-0.169
		5.875	-16.732	-0.194	0.067	-0.111	0.062	0.309
	26:2. 1.2DL+1.(	0	-9.211	-0.088	0.001	-0.032	-0.147	-0.313
		2.938	-9.211	-0.088	0.042	-0.032	-0.084	-0.056
		5.875	-9.211	-0.088	0.082	-0.032	0.098	0.201
	27:2. 1.2DL+1.(	0	-10.509	-0.101	0.009	-0.031	-0.176	-0.367
		2.938	-10.509	-0.101	0.049	-0.031	-0.090	-0.071
		5.875	-10.509	-0.101	0.090	-0.031	0.115	0.225
	28:6A. 1.2D+1.	0	-44.486	-0.241	-0.034	-0.165	-0.182	-1.163
		2.938	-44.500	-0.287	0.013	-0.165	-0.213	-0.388
		5.875	-44.514	-0.333	0.061	-0.165	-0.104	0.522
	29:6A. 1.2D+1.	0	-21.767	-0.156	-0.191	-0.079	0.324	-0.646
		2.938	-21.813	-0.170	-0.144	-0.079	-0.168	-0.166
		5.875	-21.859	-0.184	-0.096	-0.079	-0.520	0.354
	30:6B. 0.9D+1.	0	-32.757	-0.136	-0.061	-0.139	0.028	-0.792
		2.938	-32.771	-0.182	-0.038	-0.139	-0.118	-0.325
		5.875	-32.784	-0.228	-0.015	-0.139	-0.197	0.277
	31:6B. 0.9D+1.	0	-10.038	-0.052	-0.218	-0.053	0.534	-0.275
		2.938	-10.084	-0.065	-0.195	-0.053	-0.073	-0.103
		5.875	-10.130	-0.079	-0.172	-0.053	-0.613	0.109
24	21:1. 1.4DL	0	-0.122	0.045	0.047	-0.027	-0.183	0.184
		2.833	-0.122	0.045	0.092	-0.027	0.014	0.057
		5.666	-0.122	0.045	0.138	-0.027	0.341	-0.070
	22:2. 1.2DL+1.(	0	-0.209	0.137	0.135	0.029	-0.386	0.378
		2.833	-0.209	0.137	0.174	0.029	0.051	-0.012
		5.666	-0.209	0.137	0.213	0.029	0.598	-0.401
	23:4. 1.2DL+1.(	0	-0.384	0.171	0.130	-0.197	-0.380	0.372
		2.833	-0.384	0.123	0.169	-0.197	0.044	-0.067
		5.666	-0.384	0.043	0.208	-0.197	0.579	-0.274
	24:5. 1.2DL+1.(	0	-0.170	0.100	0.099	0.009	-0.300	0.295
		2.833	-0.170	0.100	0.138	0.009	0.036	0.011
		5.666	-0.170	0.100	0.177	0.009	0.483	-0.273
	25:6. 0.9DL+1.(	0	-0.292	0.099	0.061	-0.224	-0.197	0.195
		2.833	-0.292	0.051	0.090	-0.224	0.018	-0.041
		5.666	-0.292	-0.029	0.120	-0.224	0.315	-0.046

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
	26:2. 1.2DL+1.(	0	-0.111	0.039	0.045	-0.025	-0.167	0.162
		2.833	-0.111	0.039	0.084	-0.025	0.015	0.050
		5.666	-0.111	0.039	0.123	-0.025	0.308	-0.061
	27:2. 1.2DL+1.(	0	-0.125	0.042	0.056	-0.027	-0.193	0.177
		2.833	-0.125	0.042	0.095	-0.027	0.021	0.057
		5.666	-0.125	0.042	0.134	-0.027	0.345	-0.063
	28:6A. 1.2D+1.	0	-0.240	0.073	0.113	-0.570	-0.319	0.178
		2.833	-0.253	0.028	0.159	-0.570	0.067	0.035
		5.666	-0.266	-0.016	0.205	-0.570	0.584	0.017
	29:6A. 1.2D+1.	0	0.774	0.102	-0.043	-0.166	0.182	0.274
		2.833	0.730	0.089	0.003	-0.166	0.124	0.004
		5.666	0.686	0.075	0.049	-0.166	0.197	-0.228
	30:6B. 0.9D+1.	0	-0.110	-0.013	0.029	-0.588	-0.079	-0.056
		2.833	-0.123	-0.057	0.051	-0.588	0.036	0.042
		5.666	-0.137	-0.101	0.074	-0.588	0.213	0.267
	31:6B. 0.9D+1.	0	0.904	0.016	-0.127	-0.184	0.422	0.039
		2.833	0.860	0.003	-0.105	-0.184	0.093	0.012
		5.666	0.815	-0.010	-0.083	-0.184	-0.174	0.022
25	21:1. 1.4DL	0	10.148	0.003	-0.143	0.023	0.356	0.045
		2.833	10.148	0.003	-0.098	0.023	0.014	0.036
		5.666	10.148	0.003	-0.052	0.023	-0.198	0.027
	22:2. 1.2DL+1.(	0	18.937	0.350	-0.223	0.456	0.626	0.570
		2.833	18.937	0.123	-0.184	0.456	0.050	-0.101
		5.666	18.937	-0.103	-0.145	0.456	-0.416	-0.129
	23:4. 1.2DL+1.(	0	16.929	0.456	-0.203	0.641	0.554	1.043
		2.833	16.929	0.266	-0.164	0.641	0.034	-0.002
		5.666	16.929	0.045	-0.125	0.641	-0.375	-0.414
	24:5. 1.2DL+1.(	0	15.097	0.220	-0.185	0.292	0.506	0.371
		2.833	15.097	0.078	-0.146	0.292	0.036	-0.051
		5.666	15.097	-0.064	-0.107	0.292	-0.324	-0.072
	25:6. 0.9DL+1.(	0	8.356	0.238	-0.110	0.364	0.276	0.702
		2.833	8.356	0.190	-0.080	0.364	0.008	0.073
		5.666	8.356	0.110	-0.051	0.364	-0.179	-0.325
	26:2. 1.2DL+1.(	0	11.605	-0.024	-0.154	0.032	0.396	-0.005
		2.833	11.605	-0.024	-0.115	0.032	0.015	0.062
		5.666	11.605	-0.024	-0.076	0.032	-0.256	0.129
	27:2. 1.2DL+1.(	0	10.302	0.005	-0.138	0.018	0.355	0.043
		2.833	10.302	0.005	-0.099	0.018	0.020	0.030
		5.666	10.302	0.005	-0.060	0.018	-0.204	0.016
	28:6A. 1.2D+1.	0	19.383	0.487	-0.226	0.555	0.619	1.221
		2.833	19.370	0.301	-0.180	0.555	0.045	0.104
		5.666	19.357	0.115	-0.134	0.555	-0.400	-0.485
	29:6A. 1.2D+1.	0	17.647	0.309	-0.176	0.361	0.527	0.643
		2.833	17.602	0.154	-0.130	0.361	0.094	-0.014

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		5.666	17.558	-0.001	-0.084	0.361	-0.209	-0.231
	30:6B. 0.9D+1.	0	7.635	0.268	-0.088	0.270	0.231	0.865
		2.833	7.622	0.224	-0.066	0.270	0.013	0.167
		5.666	7.608	0.180	-0.044	0.270	-0.141	-0.404
	31:6B. 0.9D+1.	0	5.898	0.090	-0.038	0.076	0.139	0.287
		2.833	5.854	0.077	-0.016	0.076	0.063	0.050
		5.666	5.810	0.064	0.006	0.076	0.049	-0.150
26	21:1. 1.4DL	0	17.661	0.017	-0.086	0.001	0.081	0.040
		2.938	17.661	0.017	-0.039	0.001	-0.103	-0.011
		5.875	17.661	0.017	0.008	0.001	-0.148	-0.062
	22:2. 1.2DL+1.(	0	33.026	0.260	-0.114	0.280	0.106	0.001
		2.938	33.026	0.025	-0.073	0.280	-0.169	-0.416
		5.875	33.026	-0.210	-0.033	0.280	-0.325	-0.143
	23:4. 1.2DL+1.(	0	29.646	0.267	-0.101	0.474	0.068	-0.156
		2.938	29.646	0.070	-0.060	0.474	-0.169	-0.675
		5.875	29.646	-0.160	-0.020	0.474	-0.287	-0.513
	24:5. 1.2DL+1.(	0	26.318	0.168	-0.099	0.175	0.092	0.013
		2.938	26.318	0.021	-0.058	0.175	-0.138	-0.264
		5.875	26.318	-0.126	-0.018	0.175	-0.251	-0.109
	25:6. 0.9DL+1.(	0	14.682	0.110	-0.057	0.300	0.027	-0.143
		2.938	14.682	0.060	-0.027	0.300	-0.097	-0.418
		5.875	14.682	-0.023	0.003	0.300	-0.132	-0.444
	26:2. 1.2DL+1.(	0	18.479	0.032	-0.070	-0.020	0.034	0.136
		2.938	18.479	0.032	-0.030	-0.020	-0.114	0.041
		5.875	18.479	0.032	0.010	-0.020	-0.143	-0.053
	27:2. 1.2DL+1.(	0	18.415	0.018	-0.083	-0.006	0.088	0.028
		2.938	18.415	0.018	-0.043	-0.006	-0.098	-0.024
		5.875	18.415	0.018	-0.003	-0.006	-0.165	-0.076
	28:6A. 1.2D+1.	0	33.871	0.294	-0.087	0.497	-0.034	-0.162
		2.938	33.857	0.102	-0.039	0.497	-0.220	-0.744
		5.875	33.844	-0.091	0.008	0.497	-0.266	-0.759
	29:6A. 1.2D+1.	0	30.688	0.201	-0.052	0.288	-0.070	-0.065
		2.938	30.642	0.040	-0.005	0.288	-0.154	-0.419
		5.875	30.596	-0.120	0.043	0.288	-0.098	-0.301
	30:6B. 0.9D+1.	0	13.382	0.132	-0.017	0.322	-0.100	-0.162
		2.938	13.368	0.086	0.006	0.322	-0.116	-0.483
		5.875	13.354	0.040	0.029	0.322	-0.064	-0.670
	31:6B. 0.9D+1.	0	10.198	0.039	0.018	0.113	-0.136	-0.065
		2.938	10.152	0.025	0.041	0.113	-0.050	-0.159
		5.875	10.106	0.011	0.064	0.113	0.104	-0.212
27	21:1. 1.4DL	0	22.233	-0.006	-0.073	0.038	0.028	-0.048
		2.938	22.233	-0.006	-0.026	0.038	-0.117	-0.029
		5.875	22.233	-0.006	0.021	0.038	-0.123	-0.010
	22:2. 1.2DL+1.(	0	41.556	0.202	-0.088	0.195	0.003	-0.071

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Job Title Brookside Elementary - San Anselmo, CA	Ref	
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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		2.938	41.556	-0.033	-0.047	0.195	-0.195	-0.319
		5.875	41.556	-0.268	-0.007	0.195	-0.275	0.123
	23:4. 1.2DL+1.(	0	37.355	0.187	-0.081	0.282	-0.018	-0.358
		2.938	37.355	-0.009	-0.040	0.282	-0.196	-0.644
		5.875	37.355	-0.239	-0.000	0.282	-0.256	-0.250
	24:5. 1.2DL+1.(	0	33.119	0.124	-0.078	0.134	0.011	-0.060
		2.938	33.119	-0.023	-0.038	0.134	-0.159	-0.209
		5.875	33.119	-0.170	0.002	0.134	-0.211	0.074
	25:6. 0.9DL+1.(	0	18.529	0.059	-0.049	0.172	-0.011	-0.329
		2.938	18.529	0.009	-0.019	0.172	-0.112	-0.454
		5.875	18.529	-0.073	0.011	0.172	-0.124	-0.330
	26:2. 1.2DL+1.(	0	21.845	0.000	-0.058	0.044	-0.003	-0.033
		2.938	21.845	0.000	-0.017	0.044	-0.113	-0.033
		5.875	21.845	0.000	0.023	0.044	-0.104	-0.033
	27:2. 1.2DL+1.(	0	24.010	-0.007	-0.072	0.024	0.038	-0.065
		2.938	24.010	-0.007	-0.032	0.024	-0.115	-0.044
		5.875	24.010	-0.007	0.009	0.024	-0.149	-0.022
	28:6A. 1.2D+1.	0	42.642	0.215	-0.073	0.326	-0.108	-0.532
		2.938	42.628	0.022	-0.026	0.326	-0.253	-0.879
		5.875	42.614	-0.171	0.022	0.326	-0.258	-0.660
	29:6A. 1.2D+1.	0	38.592	0.157	-0.034	0.186	-0.146	-0.190
		2.938	38.546	-0.004	0.013	0.186	-0.177	-0.414
		5.875	38.500	-0.165	0.061	0.186	-0.068	-0.166
	30:6B. 0.9D+1.	0	16.860	0.088	-0.019	0.205	-0.110	-0.488
		2.938	16.846	0.042	0.004	0.205	-0.132	-0.680
		5.875	16.832	-0.004	0.027	0.205	-0.087	-0.737
	31:6B. 0.9D+1.	0	12.810	0.030	0.020	0.065	-0.148	-0.146
		2.938	12.764	0.017	0.043	0.065	-0.056	-0.215
		5.875	12.718	0.003	0.066	0.065	0.103	-0.243
28	21:1. 1.4DL	0	23.713	0.015	-0.055	-0.020	-0.036	-0.003
		2.938	23.713	0.015	-0.008	-0.020	-0.127	-0.047
		5.875	23.713	0.015	0.039	-0.020	-0.081	-0.091
	22:2. 1.2DL+1.(	0	44.354	0.254	-0.055	-0.003	-0.113	0.149
		2.938	44.354	0.019	-0.014	-0.003	-0.215	-0.251
		5.875	44.354	-0.216	0.026	-0.003	-0.197	0.039
	23:4. 1.2DL+1.(	0	39.898	0.189	-0.041	0.030	-0.146	-0.194
		2.938	39.898	-0.008	-0.001	0.030	-0.208	-0.485
		5.875	39.898	-0.237	0.039	0.030	-0.151	-0.095
	24:5. 1.2DL+1.(	0	35.343	0.163	-0.052	-0.008	-0.082	0.092
		2.938	35.343	0.017	-0.011	-0.008	-0.175	-0.172
		5.875	35.343	-0.130	0.029	-0.008	-0.149	-0.005
	25:6. 0.9DL+1.(	0	19.799	0.035	-0.025	0.025	-0.087	-0.288
		2.938	19.799	-0.015	0.006	0.025	-0.115	-0.343
		5.875	19.799	-0.098	0.036	0.025	-0.054	-0.148

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
	26:2. 1.2DL+1.(	0	22.549	0.013	-0.045	-0.009	-0.046	-0.020
		2.938	22.549	0.013	-0.004	-0.009	-0.117	-0.058
		5.875	22.549	0.013	0.036	-0.009	-0.070	-0.097
	27:2. 1.2DL+1.(	0	26.936	0.001	-0.061	-0.022	-0.020	-0.025
		2.938	26.936	0.001	-0.021	-0.022	-0.141	-0.026
		5.875	26.936	0.001	0.019	-0.022	-0.143	-0.028
	28:6A. 1.2D+1.	0	45.585	0.189	-0.010	0.076	-0.301	-0.558
		2.938	45.571	-0.004	0.038	0.076	-0.260	-0.831
		5.875	45.557	-0.197	0.086	0.076	-0.078	-0.537
	29:6A. 1.2D+1.	0	41.204	0.169	0.002	0.024	-0.282	-0.116
		2.938	41.158	0.009	0.050	0.024	-0.205	-0.377
		5.875	41.112	-0.152	0.098	0.024	0.013	-0.167
	30:6B. 0.9D+1.	0	18.067	0.031	0.024	0.077	-0.230	-0.652
		2.938	18.053	-0.015	0.047	0.077	-0.127	-0.674
		5.875	18.039	-0.061	0.070	0.077	0.044	-0.562
	31:6B. 0.9D+1.	0	13.686	0.011	0.036	0.025	-0.211	-0.209
		2.938	13.640	-0.003	0.059	0.025	-0.072	-0.221
		5.875	13.594	-0.017	0.082	0.025	0.135	-0.192
29	21:1. 1.4DL	0	23.713	-0.015	-0.039	0.020	-0.081	-0.091
		2.938	23.713	-0.015	0.008	0.020	-0.127	-0.047
		5.875	23.713	-0.015	0.055	0.020	-0.036	-0.003
	22:2. 1.2DL+1.(	0	44.354	0.216	-0.026	0.003	-0.197	0.039
		2.938	44.354	-0.019	0.014	0.003	-0.215	-0.251
		5.875	44.354	-0.254	0.055	0.003	-0.113	0.149
	23:4. 1.2DL+1.(	0	39.898	0.237	-0.039	-0.030	-0.151	-0.095
		2.938	39.898	0.008	0.001	-0.030	-0.208	-0.485
		5.875	39.898	-0.189	0.041	-0.030	-0.146	-0.194
	24:5. 1.2DL+1.(	0	35.343	0.130	-0.029	0.008	-0.149	-0.005
		2.938	35.343	-0.017	0.011	0.008	-0.175	-0.172
		5.875	35.343	-0.163	0.052	0.008	-0.082	0.092
	25:6. 0.9DL+1.(	0	19.799	0.098	-0.036	-0.025	-0.054	-0.148
		2.938	19.799	0.015	-0.006	-0.025	-0.115	-0.343
		5.875	19.799	-0.035	0.025	-0.025	-0.087	-0.288
	26:2. 1.2DL+1.(	0	22.544	-0.015	-0.031	0.023	-0.085	-0.095
		2.938	22.544	-0.015	0.009	0.023	-0.117	-0.051
		5.875	22.544	-0.015	0.050	0.023	-0.031	-0.007
	27:2. 1.2DL+1.(	0	26.940	-0.009	-0.025	0.024	-0.131	-0.032
		2.938	26.940	-0.009	0.015	0.024	-0.145	-0.004
		5.875	26.940	-0.009	0.056	0.024	-0.041	0.023
	28:6A. 1.2D+1.	0	45.481	0.197	-0.048	-0.075	-0.188	-0.534
		2.938	45.467	0.004	-0.001	-0.075	-0.260	-0.829
		5.875	45.453	-0.189	0.047	-0.075	-0.192	-0.558
	29:6A. 1.2D+1.	0	40.858	0.153	0.026	-0.020	-0.353	-0.160
		2.938	40.812	-0.008	0.074	-0.020	-0.205	-0.373

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		5.875	40.766	-0.168	0.122	-0.020	0.082	-0.114
	30:6B. 0.9D+1.	0	17.963	0.062	-0.032	-0.077	-0.065	-0.560
		2.938	17.949	0.016	-0.009	-0.077	-0.127	-0.673
		5.875	17.935	-0.030	0.013	-0.077	-0.121	-0.651
	31:6B. 0.9D+1.	0	13.340	0.018	0.042	-0.022	-0.230	-0.185
		2.938	13.294	0.004	0.065	-0.022	-0.072	-0.217
		5.875	13.248	-0.010	0.088	-0.022	0.153	-0.208
30	21:1. 1.4DL	0	22.233	0.006	-0.021	-0.038	-0.123	-0.010
		2.938	22.233	0.006	0.026	-0.038	-0.117	-0.029
		5.875	22.233	0.006	0.073	-0.038	0.028	-0.048
	22:2. 1.2DL+1.(	0	41.556	0.268	0.007	-0.195	-0.275	0.123
		2.938	41.556	0.033	0.047	-0.195	-0.195	-0.319
		5.875	41.556	-0.202	0.088	-0.195	0.003	-0.071
	23:4. 1.2DL+1.(	0	37.355	0.239	0.000	-0.282	-0.256	-0.250
		2.938	37.355	0.009	0.040	-0.282	-0.196	-0.644
		5.875	37.355	-0.187	0.081	-0.282	-0.018	-0.358
	24:5. 1.2DL+1.(	0	33.119	0.170	-0.002	-0.134	-0.211	0.074
		2.938	33.119	0.023	0.038	-0.134	-0.159	-0.209
		5.875	33.119	-0.124	0.078	-0.134	0.011	-0.060
	25:6. 0.9DL+1.(	0	18.529	0.073	-0.011	-0.172	-0.124	-0.330
		2.938	18.529	-0.009	0.019	-0.172	-0.112	-0.454
		5.875	18.529	-0.059	0.049	-0.172	-0.011	-0.329
	26:2. 1.2DL+1.(	0	20.715	0.005	-0.015	-0.033	-0.122	-0.013
		2.938	20.715	0.005	0.026	-0.033	-0.106	-0.028
		5.875	20.715	0.005	0.066	-0.033	0.029	-0.043
	27:2. 1.2DL+1.(	0	24.741	0.016	-0.006	-0.034	-0.161	0.023
		2.938	24.741	0.016	0.034	-0.034	-0.120	-0.024
		5.875	24.741	0.016	0.074	-0.034	0.039	-0.072
	28:6A. 1.2D+1.	0	42.548	0.173	0.013	-0.328	-0.366	-0.655
		2.938	42.534	-0.020	0.061	-0.328	-0.257	-0.879
		5.875	42.520	-0.213	0.109	-0.328	-0.008	-0.537
	29:6A. 1.2D+1.	0	38.280	0.170	0.057	-0.191	-0.426	-0.152
		2.938	38.234	0.009	0.104	-0.191	-0.190	-0.415
		5.875	38.188	-0.151	0.152	-0.191	0.187	-0.206
	30:6B. 0.9D+1.	0	16.766	0.005	0.009	-0.206	-0.195	-0.732
		2.938	16.753	-0.041	0.031	-0.206	-0.136	-0.680
		5.875	16.739	-0.087	0.054	-0.206	-0.010	-0.493
	31:6B. 0.9D+1.	0	12.498	0.003	0.052	-0.070	-0.256	-0.229
		2.938	12.452	-0.011	0.075	-0.070	-0.069	-0.216
		5.875	12.406	-0.025	0.098	-0.070	0.185	-0.162
31	21:1. 1.4DL	0	17.661	-0.017	-0.008	-0.001	-0.148	-0.062
		2.938	17.661	-0.017	0.039	-0.001	-0.103	-0.011
		5.875	17.661	-0.017	0.086	-0.001	0.081	0.040
	22:2. 1.2DL+1.(	0	33.026	0.210	0.033	-0.280	-0.325	-0.143

Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		2.938	33.026	-0.025	0.073	-0.280	-0.169	-0.416
		5.875	33.026	-0.260	0.114	-0.280	0.106	0.001
	23:4. 1.2DL+1.(	0	29.646	0.160	0.020	-0.474	-0.287	-0.513
		2.938	29.646	-0.070	0.060	-0.474	-0.169	-0.675
		5.875	29.646	-0.267	0.101	-0.474	0.068	-0.156
	24:5. 1.2DL+1.(	0	26.318	0.126	0.018	-0.175	-0.251	-0.109
		2.938	26.318	-0.021	0.058	-0.175	-0.138	-0.264
		5.875	26.318	-0.168	0.099	-0.175	0.092	0.013
	25:6. 0.9DL+1.(	0	14.682	0.023	-0.003	-0.300	-0.132	-0.444
		2.938	14.682	-0.060	0.027	-0.300	-0.097	-0.418
		5.875	14.682	-0.110	0.057	-0.300	0.027	-0.143
	26:2. 1.2DL+1.(	0	16.235	-0.015	-0.004	-0.001	-0.139	-0.056
		2.938	16.235	-0.015	0.037	-0.001	-0.091	-0.011
		5.875	16.235	-0.015	0.077	-0.001	0.075	0.035
	27:2. 1.2DL+1.(	0	18.899	-0.017	0.004	0.010	-0.171	-0.080
		2.938	18.899	-0.017	0.045	0.010	-0.100	-0.030
		5.875	18.899	-0.017	0.085	0.010	0.091	0.020
	28:6A. 1.2D+1.	0	33.787	0.090	0.029	-0.493	-0.377	-0.759
		2.938	33.773	-0.103	0.076	-0.493	-0.223	-0.740
		5.875	33.759	-0.296	0.124	-0.493	0.071	-0.155
	29:6A. 1.2D+1.	0	30.407	0.116	0.080	-0.273	-0.470	-0.303
		2.938	30.361	-0.045	0.128	-0.273	-0.164	-0.408
		5.875	30.315	-0.205	0.176	-0.273	0.283	-0.041
	30:6B. 0.9D+1.	0	13.297	-0.042	0.008	-0.318	-0.176	-0.670
		2.938	13.284	-0.088	0.031	-0.318	-0.118	-0.480
		5.875	13.270	-0.134	0.054	-0.318	0.006	-0.155
	31:6B. 0.9D+1.	0	9.917	-0.016	0.060	-0.098	-0.268	-0.214
		2.938	9.871	-0.029	0.083	-0.098	-0.059	-0.148
		5.875	9.825	-0.043	0.106	-0.098	0.217	-0.041
32	21:1. 1.4DL	0	10.148	-0.003	0.052	-0.023	-0.198	0.027
		2.833	10.148	-0.003	0.098	-0.023	0.014	0.036
		5.666	10.148	-0.003	0.143	-0.023	0.356	0.045
	22:2. 1.2DL+1.(	0	18.937	0.103	0.145	-0.456	-0.416	-0.129
		2.833	18.937	-0.123	0.184	-0.456	0.050	-0.101
		5.666	18.937	-0.350	0.223	-0.456	0.626	0.570
	23:4. 1.2DL+1.(	0	16.929	-0.045	0.125	-0.641	-0.375	-0.414
		2.833	16.929	-0.266	0.164	-0.641	0.034	-0.002
		5.666	16.929	-0.456	0.203	-0.641	0.554	1.043
	24:5. 1.2DL+1.(	0	15.097	0.064	0.107	-0.292	-0.324	-0.072
		2.833	15.097	-0.078	0.146	-0.292	0.036	-0.051
		5.666	15.097	-0.220	0.185	-0.292	0.506	0.371
	25:6. 0.9DL+1.(	0	8.356	-0.110	0.051	-0.364	-0.179	-0.325
		2.833	8.356	-0.190	0.080	-0.364	0.008	0.073
		5.666	8.356	-0.238	0.110	-0.364	0.276	0.702

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
	26:2. 1.2DL+1.(	0	9.235	-0.003	0.050	-0.021	-0.181	0.023
		2.833	9.235	-0.003	0.089	-0.021	0.015	0.032
		5.666	9.235	-0.003	0.128	-0.021	0.322	0.041
	27:2. 1.2DL+1.(	0	10.539	-0.005	0.062	-0.015	-0.209	0.010
		2.833	10.539	-0.005	0.101	-0.015	0.022	0.026
		5.666	10.539	-0.005	0.140	-0.015	0.362	0.041
	28:6A. 1.2D+1.	0	19.305	-0.112	0.163	-0.560	-0.504	-0.474
		2.833	19.292	-0.298	0.209	-0.560	0.023	0.106
		5.666	19.279	-0.484	0.255	-0.560	0.680	1.212
	29:6A. 1.2D+1.	0	17.386	0.013	0.181	-0.376	-0.557	-0.192
		2.833	17.341	-0.142	0.227	-0.376	0.021	-0.008
		5.666	17.297	-0.297	0.273	-0.376	0.729	0.614
	30:6B. 0.9D+1.	0	7.557	-0.176	0.073	-0.275	-0.246	-0.393
		2.833	7.543	-0.220	0.095	-0.275	-0.009	0.169
		5.666	7.530	-0.265	0.117	-0.275	0.291	0.856
	31:6B. 0.9D+1.	0	5.637	-0.052	0.091	-0.091	-0.299	-0.111
		2.833	5.593	-0.065	0.113	-0.091	-0.011	0.055
		5.666	5.549	-0.079	0.135	-0.091	0.340	0.259
33	21:1. 1.4DL	0	9.057	-0.026	0.115	-0.105	-0.286	-0.050
		0.349	9.050	-0.026	0.115	-0.105	-0.246	-0.041
		0.697	9.043	-0.026	0.115	-0.105	-0.206	-0.032
	22:2. 1.2DL+1.(	0	18.900	-0.122	0.226	0.148	-0.552	-0.095
		0.349	18.894	-0.122	0.226	0.148	-0.474	-0.053
		0.697	18.888	-0.122	0.226	0.148	-0.395	-0.010
	23:4. 1.2DL+1.(	0	12.084	0.945	-0.026	0.135	-0.370	-0.196
		0.349	12.078	0.943	-0.026	0.135	-0.378	-0.525
		0.697	12.072	0.939	-0.026	0.135	-0.387	-0.853
	24:5. 1.2DL+1.(	0	14.724	-0.085	0.178	0.059	-0.437	-0.076
		0.349	14.718	-0.085	0.178	0.059	-0.375	-0.046
		0.697	14.711	-0.085	0.178	0.059	-0.313	-0.017
	25:6. 0.9DL+1.(	0	3.183	1.013	-0.130	0.009	-0.116	-0.153
		0.349	3.178	1.012	-0.130	0.009	-0.161	-0.505
		0.697	3.174	1.007	-0.130	0.009	-0.207	-0.857
	26:2. 1.2DL+1.(	0	10.329	-0.040	0.147	-0.217	-0.336	-0.103
		0.349	10.323	-0.040	0.147	-0.217	-0.284	-0.089
		0.697	10.317	-0.040	0.147	-0.217	-0.233	-0.075
	27:2. 1.2DL+1.(	0	9.183	-0.023	0.114	-0.094	-0.287	-0.045
		0.349	9.177	-0.023	0.114	-0.094	-0.248	-0.037
		0.697	9.171	-0.023	0.114	-0.094	-0.208	-0.029
	28:6A. 1.2D+1.	0	12.528	3.022	0.152	0.634	-0.552	-0.381
		0.349	12.521	3.015	0.149	0.634	-0.499	-1.433
		0.697	12.513	3.008	0.147	0.634	-0.448	-2.483
	29:6A. 1.2D+1.	0	15.359	0.937	1.079	0.298	-0.937	-0.180
		0.349	15.352	0.935	1.072	0.298	-0.562	-0.506

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		0.697	15.344	0.933	1.065	0.298	-0.190	-0.831
	30:6B. 0.9D+1.	0	0.793	3.099	0.012	0.541	-0.209	-0.322
		0.349	0.790	3.092	0.009	0.541	-0.205	-1.400
		0.697	0.786	3.085	0.007	0.541	-0.202	-2.477
	31:6B. 0.9D+1.	0	3.624	1.013	0.939	0.205	-0.594	-0.121
		0.349	3.620	1.011	0.932	0.205	-0.268	-0.473
		0.697	3.617	1.009	0.925	0.205	0.055	-0.825
34	21:1. 1.4DL	0	8.212	0.016	0.108	-0.084	-0.207	0.108
		2.360	8.164	0.016	0.108	-0.084	0.047	0.070
		4.720	8.116	0.016	0.108	-0.084	0.301	0.032
	22:2. 1.2DL+1.(	0	16.816	-0.335	0.206	0.440	-0.396	-1.984
		2.360	16.774	-0.335	0.206	0.440	0.091	-1.193
		4.720	16.733	-0.335	0.206	0.440	0.578	-0.403
	23:4. 1.2DL+1.(	0	11.371	0.270	0.176	-0.388	-0.392	1.030
		2.360	11.329	0.182	0.176	-0.388	0.023	0.488
		4.720	11.288	0.148	0.176	-0.388	0.438	0.109
	24:5. 1.2DL+1.(	0	13.149	-0.204	0.164	0.248	-0.314	-1.205
		2.360	13.108	-0.204	0.164	0.248	0.072	-0.723
		4.720	13.067	-0.204	0.164	0.248	0.458	-0.241
	25:6. 0.9DL+1.(	0	3.500	0.484	0.081	-0.690	-0.211	2.304
		2.360	3.469	0.396	0.081	-0.690	-0.019	1.256
		4.720	3.438	0.363	0.081	-0.690	0.174	0.371
	26:2. 1.2DL+1.(	0	9.604	0.035	0.122	-0.130	-0.234	0.197
		2.360	9.562	0.035	0.122	-0.130	0.053	0.113
		4.720	9.521	0.035	0.122	-0.130	0.340	0.030
	27:2. 1.2DL+1.(	0	8.462	0.014	0.109	-0.079	-0.209	0.098
		2.360	8.421	0.014	0.109	-0.079	0.048	0.066
		4.720	8.379	0.014	0.109	-0.079	0.305	0.033
	28:6A. 1.2D+1.	0	11.942	0.166	0.201	-0.480	-0.376	0.587
		2.360	11.893	0.119	0.187	-0.480	0.082	0.252
		4.720	11.844	0.071	0.173	-0.480	0.506	0.027
	29:6A. 1.2D+1.	0	13.997	-0.086	0.129	0.030	0.077	-0.641
		2.360	13.948	-0.100	0.081	0.030	0.325	-0.420
		4.720	13.899	-0.115	0.034	0.030	0.461	-0.167
	30:6B. 0.9D+1.	0	1.503	0.375	0.073	-0.756	-0.131	1.828
		2.360	1.479	0.328	0.059	-0.756	0.025	0.998
		4.720	1.456	0.281	0.045	-0.756	0.148	0.279
	31:6B. 0.9D+1.	0	3.557	0.123	0.001	-0.246	0.323	0.600
		2.360	3.534	0.109	-0.047	-0.246	0.268	0.326
		4.720	3.511	0.095	-0.094	-0.246	0.103	0.085
35	21:1. 1.4DL	0	9.057	-0.026	-0.115	0.105	0.286	-0.050
		0.349	9.050	-0.026	-0.115	0.105	0.246	-0.041
		0.697	9.043	-0.026	-0.115	0.105	0.206	-0.032
	22:2. 1.2DL+1.(	0	18.900	-0.122	-0.226	-0.148	0.552	-0.095

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		0.349	18.894	-0.122	-0.226	-0.148	0.474	-0.053
		0.697	18.888	-0.122	-0.226	-0.148	0.395	-0.010
	23:4. 1.2DL+1.(	0	12.084	0.945	0.026	-0.135	0.370	-0.196
		0.349	12.078	0.943	0.026	-0.135	0.378	-0.525
		0.697	12.072	0.939	0.026	-0.135	0.387	-0.853
	24:5. 1.2DL+1.(	0	14.724	-0.085	-0.178	-0.059	0.437	-0.076
		0.349	14.718	-0.085	-0.178	-0.059	0.375	-0.046
		0.697	14.711	-0.085	-0.178	-0.059	0.313	-0.017
	25:6. 0.9DL+1.(	0	3.183	1.013	0.130	-0.009	0.116	-0.153
		0.349	3.178	1.012	0.130	-0.009	0.161	-0.505
		0.697	3.174	1.007	0.130	-0.009	0.207	-0.857
	26:2. 1.2DL+1.(	0	8.239	-0.022	-0.104	0.091	0.259	-0.044
		0.349	8.233	-0.022	-0.104	0.091	0.223	-0.036
		0.697	8.227	-0.022	-0.104	0.091	0.187	-0.028
	27:2. 1.2DL+1.(	0	9.392	-0.023	-0.117	0.097	0.294	-0.045
		0.349	9.386	-0.023	-0.117	0.097	0.253	-0.037
		0.697	9.380	-0.023	-0.117	0.097	0.212	-0.029
	28:6A. 1.2D+1.	0	12.324	2.991	0.442	-0.628	0.292	-0.379
		0.349	12.316	2.984	0.440	-0.628	0.446	-1.421
		0.697	12.309	2.977	0.438	-0.628	0.598	-2.459
	29:6A. 1.2D+1.	0	14.678	0.832	0.900	-0.277	0.071	-0.175
		0.349	14.671	0.829	0.893	-0.277	0.383	-0.465
		0.697	14.663	0.827	0.886	-0.277	0.693	-0.753
	30:6B. 0.9D+1.	0	0.589	3.067	0.582	-0.535	-0.051	-0.320
		0.349	0.585	3.060	0.580	-0.535	0.152	-1.388
		0.697	0.582	3.053	0.578	-0.535	0.353	-2.453
	31:6B. 0.9D+1.	0	2.943	0.908	1.039	-0.183	-0.272	-0.116
		0.349	2.940	0.906	1.032	-0.183	0.089	-0.432
		0.697	2.936	0.904	1.025	-0.183	0.448	-0.747
36	21:1. 1.4DL	0	8.212	0.016	-0.108	0.084	0.207	0.108
		2.360	8.164	0.016	-0.108	0.084	-0.047	0.070
		4.720	8.116	0.016	-0.108	0.084	-0.301	0.032
	22:2. 1.2DL+1.(	0	16.816	-0.335	-0.206	-0.440	0.396	-1.984
		2.360	16.774	-0.335	-0.206	-0.440	-0.091	-1.193
		4.720	16.733	-0.335	-0.206	-0.440	-0.578	-0.403
	23:4. 1.2DL+1.(	0	11.371	0.270	-0.176	0.388	0.392	1.030
		2.360	11.329	0.182	-0.176	0.388	-0.023	0.488
		4.720	11.288	0.148	-0.176	0.388	-0.438	0.109
	24:5. 1.2DL+1.(	0	13.149	-0.204	-0.164	-0.248	0.314	-1.205
		2.360	13.108	-0.204	-0.164	-0.248	-0.072	-0.723
		4.720	13.067	-0.204	-0.164	-0.248	-0.458	-0.241
	25:6. 0.9DL+1.(	0	3.500	0.484	-0.081	0.690	0.211	2.304
		2.360	3.469	0.396	-0.081	0.690	0.019	1.256
		4.720	3.438	0.363	-0.081	0.690	-0.174	0.371

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
	26:2. 1.2DL+1.(	0	7.516	0.014	-0.098	0.074	0.188	0.095
		2.360	7.475	0.014	-0.098	0.074	-0.043	0.062
		4.720	7.433	0.014	-0.098	0.074	-0.273	0.028
	27:2. 1.2DL+1.(	0	8.672	0.014	-0.111	0.082	0.213	0.100
		2.360	8.631	0.014	-0.111	0.082	-0.049	0.068
		4.720	8.589	0.014	-0.111	0.082	-0.311	0.036
	28:6A. 1.2D+1.	0	11.736	0.165	-0.251	0.487	0.689	0.586
		2.360	11.687	0.118	-0.266	0.487	0.079	0.252
		4.720	11.638	0.071	-0.280	0.487	-0.564	0.030
	29:6A. 1.2D+1.	0	13.308	-0.089	-0.297	-0.006	0.967	-0.644
		2.360	13.259	-0.103	-0.344	-0.006	0.212	-0.418
		4.720	13.210	-0.117	-0.391	-0.006	-0.655	-0.158
	30:6B. 0.9D+1.	0	1.296	0.375	-0.123	0.763	0.444	1.827
		2.360	1.273	0.327	-0.138	0.763	0.136	0.999
		4.720	1.249	0.280	-0.152	0.763	-0.206	0.282
	31:6B. 0.9D+1.	0	2.868	0.121	-0.169	0.270	0.721	0.597
		2.360	2.845	0.106	-0.216	0.270	0.268	0.329
		4.720	2.821	0.092	-0.263	0.270	-0.297	0.094
37	21:1. 1.4DL	0	7.809	-0.160	0.070	0.037	-0.228	0.022
		0.349	7.805	-0.160	0.070	0.037	-0.203	0.077
		0.697	7.801	-0.160	0.070	0.037	-0.179	0.133
	22:2. 1.2DL+1.(	0	16.420	-0.203	0.153	0.136	-0.475	0.087
		0.349	16.416	-0.203	0.153	0.136	-0.421	0.158
		0.697	16.413	-0.203	0.153	0.136	-0.368	0.229
	23:4. 1.2DL+1.(	0	10.994	-0.392	0.030	0.172	-0.292	-0.020
		0.349	10.990	-0.395	0.030	0.172	-0.281	0.117
		0.697	10.987	-0.402	0.030	0.172	-0.271	0.255
	24:5. 1.2DL+1.(	0	12.772	-0.178	0.118	0.097	-0.370	0.061
		0.349	12.769	-0.178	0.118	0.097	-0.329	0.124
		0.697	12.765	-0.178	0.118	0.097	-0.287	0.186
	25:6. 0.9DL+1.(	0	3.242	-0.317	-0.043	0.099	-0.068	-0.068
		0.349	3.239	-0.319	-0.043	0.099	-0.083	0.043
		0.697	3.236	-0.327	-0.043	0.099	-0.098	0.155
	26:2. 1.2DL+1.(	0	9.262	-0.264	0.074	0.038	-0.243	0.111
		0.349	9.259	-0.264	0.074	0.038	-0.217	0.203
		0.697	9.255	-0.264	0.074	0.038	-0.192	0.295
	27:2. 1.2DL+1.(	0	8.106	-0.151	0.076	0.037	-0.242	0.019
		0.349	8.102	-0.151	0.076	0.037	-0.216	0.071
		0.697	8.099	-0.151	0.076	0.037	-0.189	0.124
	28:6A. 1.2D+1.	0	11.497	0.016	0.535	0.383	-0.668	-0.132
		0.349	11.493	0.012	0.534	0.383	-0.482	-0.137
		0.697	11.489	0.008	0.533	0.383	-0.296	-0.141
	29:6A. 1.2D+1.	0	13.550	-0.008	1.998	0.144	-1.634	0.009
		0.349	13.546	-0.009	1.994	0.144	-0.939	0.012

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		0.697	13.542	-0.010	1.990	0.144	-0.245	0.015
	30:6B. 0.9D+1.	0	1.302	0.142	0.440	0.298	-0.374	-0.187
		0.349	1.300	0.138	0.439	0.298	-0.221	-0.235
		0.697	1.298	0.134	0.438	0.298	-0.068	-0.283
	31:6B. 0.9D+1.	0	3.354	0.117	1.902	0.059	-1.339	-0.046
		0.349	3.352	0.116	1.898	0.059	-0.677	-0.086
		0.697	3.350	0.115	1.894	0.059	-0.016	-0.127
38	21:1. 1.4DL	0	6.108	0.000	0.088	-0.021	-0.179	-0.014
		2.360	6.080	0.000	0.088	-0.021	0.029	-0.015
		4.720	6.053	0.000	0.088	-0.021	0.237	-0.016
	22:2. 1.2DL+1.(	0	12.149	-0.333	0.182	0.100	-0.368	-1.463
		2.360	12.126	-0.333	0.182	0.100	0.060	-0.677
		4.720	12.102	-0.333	0.182	0.100	0.488	0.109
	23:4. 1.2DL+1.(	0	8.197	0.184	0.132	-0.116	-0.275	0.210
		2.360	8.174	0.041	0.132	-0.116	0.038	-0.072
		4.720	8.150	-0.067	0.132	-0.116	0.350	-0.000
	24:5. 1.2DL+1.(	0	9.557	-0.208	0.142	0.056	-0.288	-0.919
		2.360	9.533	-0.208	0.142	0.056	0.047	-0.428
		4.720	9.510	-0.208	0.142	0.056	0.381	0.063
	25:6. 0.9DL+1.(	0	2.567	0.392	0.047	-0.186	-0.102	1.120
		2.360	2.550	0.250	0.047	-0.186	0.010	0.346
		4.720	2.532	0.142	0.047	-0.186	0.121	-0.073
	26:2. 1.2DL+1.(	0	5.576	-0.025	0.094	-0.024	-0.192	-0.132
		2.360	5.552	-0.025	0.094	-0.024	0.029	-0.074
		4.720	5.529	-0.025	0.094	-0.024	0.250	-0.015
	27:2. 1.2DL+1.(	0	6.647	-0.000	0.094	-0.021	-0.190	-0.010
		2.360	6.624	-0.000	0.094	-0.021	0.031	-0.009
		4.720	6.600	-0.000	0.094	-0.021	0.252	-0.009
	28:6A. 1.2D+1.	0	8.710	-0.113	0.098	-0.176	-0.119	-0.580
		2.360	8.683	-0.140	0.090	-0.176	0.103	-0.282
		4.720	8.655	-0.166	0.082	-0.176	0.307	0.079
	29:6A. 1.2D+1.	0	10.260	-0.194	-0.033	-0.013	0.375	-0.861
		2.360	10.233	-0.202	-0.060	-0.013	0.266	-0.394
		4.720	10.205	-0.210	-0.086	-0.013	0.093	0.092
	30:6B. 0.9D+1.	0	1.169	0.095	-0.015	-0.239	0.110	0.334
		2.360	1.156	0.069	-0.023	-0.239	0.066	0.141
		4.720	1.143	0.042	-0.031	-0.239	0.004	0.010
	31:6B. 0.9D+1.	0	2.719	0.014	-0.145	-0.076	0.603	0.053
		2.360	2.706	0.006	-0.172	-0.076	0.228	0.029
		4.720	2.693	-0.002	-0.199	-0.076	-0.210	0.024
39	21:1. 1.4DL	0	5.529	-0.283	0.057	-0.020	-0.154	0.007
		0.349	5.525	-0.283	0.057	-0.020	-0.134	0.105
		0.697	5.521	-0.283	0.057	-0.020	-0.114	0.204
	22:2. 1.2DL+1.(	0	11.731	-0.495	0.122	-0.014	-0.319	-0.003

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Job Title Brookside Elementary - San Anselmo, CA	Ref	
	By ATT	Date 8/1/2025 12:00:00 A
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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		0.349	11.728	-0.495	0.122	-0.014	-0.277	0.170
		0.697	11.724	-0.495	0.122	-0.014	-0.234	0.342
	23:4. 1.2DL+1.(	0	7.738	0.754	0.042	0.050	-0.212	0.175
		0.349	7.734	0.751	0.042	0.050	-0.198	-0.088
		0.697	7.731	0.744	0.042	0.050	-0.183	-0.348
	24:5. 1.2DL+1.(	0	9.109	-0.400	0.095	-0.015	-0.249	0.000
		0.349	9.106	-0.400	0.095	-0.015	-0.216	0.140
		0.697	9.102	-0.400	0.095	-0.015	-0.183	0.279
	25:6. 0.9DL+1.(	0	2.183	0.973	-0.016	0.052	-0.062	0.179
		0.349	2.180	0.970	-0.016	0.052	-0.068	-0.160
		0.697	2.178	0.963	-0.016	0.052	-0.073	-0.497
	26:2. 1.2DL+1.(	0	5.113	-0.337	0.041	0.012	-0.122	0.001
		0.349	5.109	-0.337	0.041	0.012	-0.108	0.118
		0.697	5.106	-0.337	0.041	0.012	-0.094	0.235
	27:2. 1.2DL+1.(	0	6.158	-0.298	0.069	-0.028	-0.180	-0.003
		0.349	6.154	-0.298	0.069	-0.028	-0.156	0.101
		0.697	6.151	-0.298	0.069	-0.028	-0.132	0.205
	28:6A. 1.2D+1.	0	8.162	3.986	0.586	0.161	-0.630	0.504
		0.349	8.158	3.982	0.585	0.161	-0.426	-0.884
		0.697	8.154	3.978	0.584	0.161	-0.222	-2.271
	29:6A. 1.2D+1.	0	9.747	1.058	1.999	-0.008	-1.548	0.159
		0.349	9.743	1.057	1.995	-0.008	-0.852	-0.209
		0.697	9.739	1.055	1.991	-0.008	-0.157	-0.578
	30:6B. 0.9D+1.	0	0.878	4.293	0.510	0.170	-0.432	0.506
		0.349	0.876	4.289	0.509	0.170	-0.254	-0.989
		0.697	0.874	4.285	0.508	0.170	-0.077	-2.483
	31:6B. 0.9D+1.	0	2.463	1.365	1.923	0.000	-1.349	0.161
		0.349	2.461	1.364	1.919	0.000	-0.680	-0.315
		0.697	2.459	1.362	1.915	0.000	-0.012	-0.790
40	21:1. 1.4DL	0	3.790	-0.025	0.055	-0.017	-0.115	-0.088
		2.360	3.763	-0.025	0.055	-0.017	0.016	-0.029
		4.720	3.735	-0.025	0.055	-0.017	0.146	0.029
	22:2. 1.2DL+1.(	0	7.401	-0.492	0.113	0.042	-0.235	-2.108
		2.360	7.378	-0.492	0.113	0.042	0.033	-0.947
		4.720	7.354	-0.492	0.113	0.042	0.301	0.215
	23:4. 1.2DL+1.(	0	5.010	0.156	0.088	-0.083	-0.186	0.075
		2.360	4.986	0.011	0.088	-0.083	0.022	-0.139
		4.720	4.963	-0.099	0.088	-0.083	0.230	0.008
	24:5. 1.2DL+1.(	0	5.844	-0.316	0.089	0.021	-0.183	-1.346
		2.360	5.821	-0.316	0.089	0.021	0.026	-0.601
		4.720	5.797	-0.316	0.089	0.021	0.235	0.144
	25:6. 0.9DL+1.(	0	1.602	0.455	0.035	-0.115	-0.076	1.364
		2.360	1.584	0.311	0.035	-0.115	0.006	0.443
		4.720	1.567	0.200	0.035	-0.115	0.089	-0.116

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Client	File 855412-10.std	Date/Time 12-Aug-2025 10:52

Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
	26:2. 1.2DL+1.(	0	2.774	-0.029	0.045	-0.009	-0.094	-0.110
		2.360	2.750	-0.029	0.045	-0.009	0.012	-0.041
		4.720	2.727	-0.029	0.045	-0.009	0.117	0.027
	27:2. 1.2DL+1.(	0	4.665	-0.021	0.065	-0.021	-0.133	-0.064
		2.360	4.642	-0.021	0.065	-0.021	0.020	-0.015
		4.720	4.618	-0.021	0.065	-0.021	0.173	0.033
	28:6A. 1.2D+1.	0	5.377	-0.213	0.059	-0.147	-0.042	-1.068
		2.360	5.349	-0.240	0.051	-0.147	0.088	-0.534
		4.720	5.322	-0.267	0.043	-0.147	0.198	0.064
	29:6A. 1.2D+1.	0	6.449	-0.274	-0.083	-0.026	0.463	-1.237
		2.360	6.421	-0.282	-0.110	-0.026	0.234	-0.580
		4.720	6.393	-0.290	-0.137	-0.026	-0.058	0.096
	30:6B. 0.9D+1.	0	0.784	0.094	-0.011	-0.174	0.104	0.249
		2.360	0.771	0.068	-0.019	-0.174	0.067	0.058
		4.720	0.757	0.041	-0.028	-0.174	0.012	-0.070
	31:6B. 0.9D+1.	0	1.855	0.033	-0.154	-0.052	0.608	0.080
		2.360	1.842	0.025	-0.181	-0.052	0.214	0.012
		4.720	1.829	0.017	-0.207	-0.052	-0.244	-0.038
41	21:1. 1.4DL	0	3.272	-0.295	0.021	0.017	-0.076	0.019
		0.349	3.268	-0.295	0.021	0.017	-0.068	0.122
		0.697	3.264	-0.295	0.021	0.017	-0.061	0.225
	22:2. 1.2DL+1.(	0	6.989	-0.522	0.048	0.039	-0.157	0.015
		0.349	6.986	-0.522	0.048	0.039	-0.140	0.197
		0.697	6.982	-0.522	0.048	0.039	-0.123	0.379
	23:4. 1.2DL+1.(	0	4.566	-0.601	0.021	0.065	-0.127	-0.041
		0.349	4.563	-0.603	0.021	0.065	-0.119	0.169
		0.697	4.559	-0.611	0.021	0.065	-0.112	0.380
	24:5. 1.2DL+1.(	0	5.420	-0.421	0.037	0.029	-0.122	0.016
		0.349	5.417	-0.421	0.037	0.029	-0.110	0.162
		0.697	5.413	-0.421	0.037	0.029	-0.097	0.309
	25:6. 0.9DL+1.(	0	1.250	-0.369	-0.002	0.046	-0.053	-0.044
		0.349	1.247	-0.372	-0.002	0.046	-0.054	0.085
		0.697	1.244	-0.379	-0.002	0.046	-0.054	0.216
	26:2. 1.2DL+1.(	0	2.330	-0.310	0.016	0.007	-0.050	-0.007
		0.349	2.326	-0.310	0.016	0.007	-0.044	0.101
		0.697	2.323	-0.310	0.016	0.007	-0.039	0.210
	27:2. 1.2DL+1.(	0	4.213	-0.312	0.030	0.023	-0.115	-0.027
		0.349	4.209	-0.312	0.030	0.023	-0.104	0.082
		0.697	4.206	-0.312	0.030	0.023	-0.093	0.191
	28:6A. 1.2D+1.	0	4.824	-0.247	0.594	0.120	-0.570	-0.215
		0.349	4.819	-0.251	0.593	0.120	-0.363	-0.128
		0.697	4.815	-0.255	0.591	0.120	-0.157	-0.040
	29:6A. 1.2D+1.	0	5.921	-0.277	1.951	0.029	-1.424	-0.053
		0.349	5.916	-0.279	1.947	0.029	-0.745	0.044

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		0.697	5.912	-0.280	1.943	0.029	-0.067	0.141
	30:6B. 0.9D+1.	0	0.483	0.077	0.564	0.096	-0.473	-0.224
		0.349	0.481	0.073	0.563	0.096	-0.276	-0.250
		0.697	0.479	0.069	0.562	0.096	-0.080	-0.275
	31:6B. 0.9D+1.	0	1.580	0.046	1.921	0.005	-1.327	-0.062
		0.349	1.578	0.045	1.917	0.005	-0.658	-0.078
		0.697	1.576	0.044	1.913	0.005	0.009	-0.094
42	21:1. 1.4DL	0	1.578	0.023	0.029	-0.008	-0.061	0.043
		2.360	1.550	0.023	0.029	-0.008	0.007	-0.010
		4.720	1.523	0.023	0.029	-0.008	0.075	-0.064
	22:2. 1.2DL+1.(	0	2.740	-0.437	0.058	0.013	-0.124	-2.062
		2.360	2.717	-0.437	0.058	0.013	0.014	-1.031
		4.720	2.693	-0.437	0.058	0.013	0.152	0.001
	23:4. 1.2DL+1.(	0	1.930	0.232	0.053	-0.031	-0.114	0.283
		2.360	1.906	0.087	0.053	-0.031	0.012	-0.110
		4.720	1.883	-0.024	0.053	-0.031	0.138	-0.141
	24:5. 1.2DL+1.(	0	2.220	-0.266	0.046	0.006	-0.097	-1.275
		2.360	2.196	-0.266	0.046	0.006	0.011	-0.648
		4.720	2.173	-0.266	0.046	0.006	0.119	-0.020
	25:6. 0.9DL+1.(	0	0.724	0.512	0.026	-0.042	-0.056	1.585
		2.360	0.707	0.368	0.026	-0.042	0.006	0.531
		4.720	0.689	0.257	0.026	-0.042	0.067	-0.162
	26:2. 1.2DL+1.(	0	0.880	0.032	0.018	-0.002	-0.039	0.082
		2.360	0.857	0.032	0.018	-0.002	0.004	0.006
		4.720	0.833	0.032	0.018	-0.002	0.048	-0.070
	27:2. 1.2DL+1.(	0	2.766	0.044	0.044	-0.018	-0.094	0.116
		2.360	2.743	0.044	0.044	-0.018	0.011	0.013
		4.720	2.719	0.044	0.044	-0.018	0.116	-0.090
	28:6A. 1.2D+1.	0	2.122	-0.103	0.028	-0.072	0.026	-0.778
		2.360	2.094	-0.130	0.020	-0.072	0.082	-0.503
		4.720	2.066	-0.157	0.012	-0.072	0.119	-0.165
	29:6A. 1.2D+1.	0	2.675	-0.224	-0.127	-0.012	0.554	-1.147
		2.360	2.647	-0.232	-0.154	-0.012	0.223	-0.609
		4.720	2.620	-0.240	-0.181	-0.012	-0.172	-0.052
	30:6B. 0.9D+1.	0	0.423	0.170	-0.008	-0.080	0.103	0.512
		2.360	0.410	0.143	-0.017	-0.080	0.074	0.141
		4.720	0.396	0.117	-0.025	-0.080	0.025	-0.166
	31:6B. 0.9D+1.	0	0.976	0.049	-0.163	-0.020	0.631	0.142
		2.360	0.963	0.041	-0.190	-0.020	0.214	0.035
		4.720	0.949	0.033	-0.217	-0.020	-0.266	-0.053
43	21:1. 1.4DL	0	2.105	-0.375	0.000	-0.000	-0.000	0.005
		0.349	2.101	-0.375	0.000	-0.000	-0.000	0.136
		0.697	2.097	-0.375	0.000	-0.000	-0.000	0.266
	22:2. 1.2DL+1.(	0	4.633	-0.662	0.000	-0.000	-0.000	-0.008

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		0.349	4.629	-0.662	0.000	-0.000	-0.000	0.223
		0.697	4.626	-0.662	0.000	-0.000	-0.000	0.453
	23:4. 1.2DL+1.(	0	2.991	0.689	-0.000	0.000	0.000	0.164
		0.349	2.987	0.688	-0.000	0.000	-0.000	-0.076
		0.697	2.984	0.683	-0.000	0.000	-0.000	-0.315
	24:5. 1.2DL+1.(	0	3.572	-0.534	0.000	-0.000	-0.000	-0.003
		0.349	3.568	-0.534	0.000	-0.000	-0.000	0.183
		0.697	3.565	-0.534	0.000	-0.000	-0.000	0.369
	25:6. 0.9DL+1.(	0	0.772	0.983	-0.000	0.000	0.000	0.171
		0.349	0.769	0.981	-0.000	0.000	-0.000	-0.171
		0.697	0.767	0.976	-0.000	0.000	-0.000	-0.512
	26:2. 1.2DL+1.(	0	1.806	-0.358	-0.007	0.007	0.015	0.001
		0.349	1.802	-0.358	-0.007	0.007	0.013	0.126
		0.697	1.799	-0.358	-0.007	0.007	0.011	0.251
	27:2. 1.2DL+1.(	0	4.035	-0.507	0.006	-0.014	-0.013	0.089
		0.349	4.031	-0.507	0.006	-0.014	-0.010	0.266
		0.697	4.028	-0.507	0.006	-0.014	-0.008	0.443
	28:6A. 1.2D+1.	0	3.011	3.897	0.573	-0.015	-0.372	0.450
		0.349	3.007	3.893	0.572	-0.015	-0.173	-0.908
		0.697	3.003	3.889	0.570	-0.015	0.026	-2.264
	29:6A. 1.2D+1.	0	3.608	0.870	1.910	-0.051	-1.241	0.135
		0.349	3.604	0.868	1.906	-0.051	-0.577	-0.168
		0.697	3.600	0.867	1.902	-0.051	0.087	-0.470
	30:6B. 0.9D+1.	0	0.134	4.308	0.573	-0.015	-0.372	0.455
		0.349	0.132	4.304	0.572	-0.015	-0.173	-1.046
		0.697	0.130	4.300	0.570	-0.015	0.026	-2.545
	31:6B. 0.9D+1.	0	0.731	1.280	1.909	-0.051	-1.241	0.140
		0.349	0.729	1.279	1.905	-0.051	-0.577	-0.306
		0.697	0.727	1.278	1.901	-0.051	0.087	-0.751
44	21:1. 1.4DL	0	0.358	-0.029	0.000	-0.000	-0.000	-0.098
		2.360	0.331	-0.029	0.000	-0.000	0.000	-0.031
		4.720	0.304	-0.029	0.000	-0.000	0.000	0.037
	22:2. 1.2DL+1.(	0	0.291	-0.532	0.000	0.000	-0.000	-2.356
		2.360	0.267	-0.532	0.000	0.000	0.000	-1.100
		4.720	0.244	-0.532	0.000	0.000	0.000	0.156
	23:4. 1.2DL+1.(	0	0.279	0.115	0.000	-0.000	-0.000	-0.014
		2.360	0.255	0.009	0.000	-0.000	-0.000	-0.175
		4.720	0.232	-0.143	0.000	-0.000	0.000	0.049
	24:5. 1.2DL+1.(	0	0.297	-0.342	0.000	-0.000	-0.000	-1.504
		2.360	0.273	-0.342	0.000	-0.000	0.000	-0.698
		4.720	0.250	-0.342	0.000	-0.000	0.000	0.109
	25:6. 0.9DL+1.(	0	0.212	0.439	0.000	-0.000	-0.000	1.427
		2.360	0.195	0.333	0.000	-0.000	-0.000	0.503
		4.720	0.177	0.180	0.000	-0.000	0.000	-0.037

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
	26:2. 1.2DL+1.(	0	0.307	-0.025	-0.005	0.003	0.011	-0.081
		2.360	0.283	-0.025	-0.005	0.003	-0.001	-0.021
		4.720	0.260	-0.025	-0.005	0.003	-0.013	0.039
	27:2. 1.2DL+1.(	0	0.285	-0.067	0.004	-0.003	-0.008	-0.251
		2.360	0.261	-0.067	0.004	-0.003	0.001	-0.092
		4.720	0.238	-0.067	0.004	-0.003	0.010	0.067
	28:6A. 1.2D+1.	0	0.286	-0.202	-0.060	0.002	0.213	-1.091
		2.360	0.258	-0.229	-0.068	0.002	0.061	-0.582
		4.720	0.230	-0.256	-0.076	0.002	-0.110	-0.010
	29:6A. 1.2D+1.	0	0.315	-0.295	-0.201	0.007	0.709	-1.369
		2.360	0.287	-0.303	-0.228	0.007	0.203	-0.663
		4.720	0.259	-0.311	-0.255	0.007	-0.366	0.062
	30:6B. 0.9D+1.	0	0.107	0.130	-0.060	0.002	0.213	0.381
		2.360	0.094	0.103	-0.068	0.002	0.061	0.105
		4.720	0.081	0.077	-0.076	0.002	-0.110	-0.107
	31:6B. 0.9D+1.	0	0.136	0.037	-0.201	0.007	0.709	0.102
		2.360	0.123	0.029	-0.228	0.007	0.203	0.024
		4.720	0.110	0.021	-0.255	0.007	-0.366	-0.035
45	21:1. 1.4DL	0	3.272	-0.295	-0.021	-0.017	0.076	0.019
		0.349	3.268	-0.295	-0.021	-0.017	0.068	0.122
		0.697	3.264	-0.295	-0.021	-0.017	0.061	0.225
	22:2. 1.2DL+1.(	0	6.989	-0.522	-0.048	-0.039	0.157	0.015
		0.349	6.986	-0.522	-0.048	-0.039	0.140	0.197
		0.697	6.982	-0.522	-0.048	-0.039	0.123	0.379
	23:4. 1.2DL+1.(	0	4.566	-0.601	-0.021	-0.065	0.127	-0.041
		0.349	4.563	-0.603	-0.021	-0.065	0.119	0.169
		0.697	4.559	-0.611	-0.021	-0.065	0.112	0.380
	24:5. 1.2DL+1.(	0	5.420	-0.421	-0.037	-0.029	0.122	0.016
		0.349	5.417	-0.421	-0.037	-0.029	0.110	0.162
		0.697	5.413	-0.421	-0.037	-0.029	0.097	0.309
	25:6. 0.9DL+1.(	0	1.250	-0.369	0.002	-0.046	0.053	-0.044
		0.349	1.247	-0.372	0.002	-0.046	0.054	0.085
		0.697	1.244	-0.379	0.002	-0.046	0.054	0.216
	26:2. 1.2DL+1.(	0	3.278	-0.270	-0.023	-0.017	0.080	0.017
		0.349	3.275	-0.270	-0.023	-0.017	0.072	0.111
		0.697	3.271	-0.270	-0.023	-0.017	0.064	0.205
	27:2. 1.2DL+1.(	0	4.426	-0.346	-0.028	-0.021	0.108	0.016
		0.349	4.423	-0.346	-0.028	-0.021	0.098	0.136
		0.697	4.419	-0.346	-0.028	-0.021	0.089	0.257
	28:6A. 1.2D+1.	0	4.606	-0.264	0.550	-0.139	-0.175	-0.215
		0.349	4.602	-0.268	0.548	-0.139	0.016	-0.122
		0.697	4.598	-0.272	0.547	-0.139	0.207	-0.028
	29:6A. 1.2D+1.	0	5.194	-0.333	1.861	-0.093	-1.061	-0.053
		0.349	5.190	-0.335	1.857	-0.093	-0.413	0.064

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		0.697	5.186	-0.336	1.853	-0.093	0.233	0.180
	30:6B. 0.9D+1.	0	0.266	0.060	0.579	-0.115	-0.273	-0.224
		0.349	0.264	0.056	0.578	-0.115	-0.071	-0.244
		0.697	0.262	0.052	0.577	-0.115	0.130	-0.263
	31:6B. 0.9D+1.	0	0.854	-0.010	1.890	-0.069	-1.158	-0.062
		0.349	0.852	-0.011	1.886	-0.069	-0.500	-0.059
		0.697	0.850	-0.012	1.882	-0.069	0.157	-0.055
46	21:1. 1.4DL	0	1.578	0.023	-0.029	0.008	0.061	0.043
		2.360	1.550	0.023	-0.029	0.008	-0.007	-0.010
		4.720	1.523	0.023	-0.029	0.008	-0.075	-0.064
	22:2. 1.2DL+1.(	0	2.740	-0.437	-0.058	-0.013	0.124	-2.062
		2.360	2.717	-0.437	-0.058	-0.013	-0.014	-1.031
		4.720	2.693	-0.437	-0.058	-0.013	-0.152	0.001
	23:4. 1.2DL+1.(	0	1.930	0.232	-0.053	0.031	0.114	0.283
		2.360	1.906	0.087	-0.053	0.031	-0.012	-0.110
		4.720	1.883	-0.024	-0.053	0.031	-0.138	-0.141
	24:5. 1.2DL+1.(	0	2.220	-0.266	-0.046	-0.006	0.097	-1.275
		2.360	2.196	-0.266	-0.046	-0.006	-0.011	-0.648
		4.720	2.173	-0.266	-0.046	-0.006	-0.119	-0.020
	25:6. 0.9DL+1.(	0	0.724	0.512	-0.026	0.042	0.056	1.585
		2.360	0.707	0.368	-0.026	0.042	-0.006	0.531
		4.720	0.689	0.257	-0.026	0.042	-0.067	-0.162
	26:2. 1.2DL+1.(	0	1.827	0.020	-0.030	0.008	0.065	0.040
		2.360	1.803	0.020	-0.030	0.008	-0.007	-0.007
		4.720	1.780	0.020	-0.030	0.008	-0.079	-0.054
	27:2. 1.2DL+1.(	0	2.145	0.033	-0.042	0.017	0.089	0.064
		2.360	2.122	0.033	-0.042	0.017	-0.010	-0.013
		4.720	2.098	0.033	-0.042	0.017	-0.109	-0.090
	28:6A. 1.2D+1.	0	1.905	-0.102	-0.147	0.076	0.397	-0.774
		2.360	1.878	-0.129	-0.155	0.076	0.040	-0.502
		4.720	1.850	-0.155	-0.163	0.076	-0.336	-0.167
	29:6A. 1.2D+1.	0	1.953	-0.220	-0.271	0.027	0.857	-1.136
		2.360	1.925	-0.228	-0.298	0.027	0.186	-0.608
		4.720	1.898	-0.236	-0.325	0.027	-0.549	-0.060
	30:6B. 0.9D+1.	0	0.206	0.171	-0.111	0.084	0.320	0.515
		2.360	0.193	0.145	-0.119	0.084	0.049	0.142
		4.720	0.180	0.118	-0.127	0.084	-0.241	-0.168
	31:6B. 0.9D+1.	0	0.254	0.053	-0.235	0.035	0.780	0.153
		2.360	0.241	0.045	-0.262	0.035	0.194	0.037
		4.720	0.227	0.037	-0.288	0.035	-0.454	-0.061
47	21:1. 1.4DL	0	5.529	-0.283	-0.057	0.020	0.154	0.007
		0.349	5.525	-0.283	-0.057	0.020	0.134	0.105
		0.697	5.521	-0.283	-0.057	0.020	0.114	0.204
	22:2. 1.2DL+1.(	0	11.731	-0.495	-0.122	0.014	0.319	-0.003

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		0.349	11.728	-0.495	-0.122	0.014	0.277	0.170
		0.697	11.724	-0.495	-0.122	0.014	0.234	0.342
	23:4. 1.2DL+1.(	0	7.738	0.754	-0.042	-0.050	0.212	0.175
		0.349	7.734	0.751	-0.042	-0.050	0.198	-0.088
		0.697	7.731	0.744	-0.042	-0.050	0.183	-0.348
	24:5. 1.2DL+1.(	0	9.109	-0.400	-0.095	0.015	0.249	0.000
		0.349	9.106	-0.400	-0.095	0.015	0.216	0.140
		0.697	9.102	-0.400	-0.095	0.015	0.183	0.279
	25:6. 0.9DL+1.(	0	2.183	0.973	0.016	-0.052	0.062	0.179
		0.349	2.180	0.970	0.016	-0.052	0.068	-0.160
		0.697	2.178	0.963	0.016	-0.052	0.073	-0.497
	26:2. 1.2DL+1.(	0	5.214	-0.253	-0.055	0.019	0.148	0.006
		0.349	5.211	-0.253	-0.055	0.019	0.129	0.094
		0.697	5.207	-0.253	-0.055	0.019	0.109	0.182
	27:2. 1.2DL+1.(	0	6.364	-0.308	-0.073	0.040	0.189	-0.019
		0.349	6.360	-0.308	-0.073	0.040	0.163	0.088
		0.697	6.357	-0.308	-0.073	0.040	0.138	0.196
	28:6A. 1.2D+1.	0	7.945	3.947	0.562	-0.191	-0.124	0.502
		0.349	7.941	3.943	0.561	-0.191	0.071	-0.873
		0.697	7.937	3.939	0.560	-0.191	0.267	-2.246
	29:6A. 1.2D+1.	0	9.024	0.928	1.830	-0.089	-0.967	0.152
		0.349	9.020	0.926	1.826	-0.089	-0.330	-0.171
		0.697	9.016	0.925	1.822	-0.089	0.306	-0.494
	30:6B. 0.9D+1.	0	0.661	4.254	0.638	-0.199	-0.322	0.504
		0.349	0.659	4.250	0.637	-0.199	-0.100	-0.978
		0.697	0.657	4.246	0.636	-0.199	0.121	-2.458
	31:6B. 0.9D+1.	0	1.740	1.235	1.905	-0.098	-1.165	0.154
		0.349	1.738	1.233	1.901	-0.098	-0.501	-0.276
		0.697	1.736	1.232	1.897	-0.098	0.161	-0.706
48	21:1. 1.4DL	0	3.790	-0.025	-0.055	0.017	0.115	-0.088
		2.360	3.763	-0.025	-0.055	0.017	-0.016	-0.029
		4.720	3.735	-0.025	-0.055	0.017	-0.146	0.029
	22:2. 1.2DL+1.(	0	7.401	-0.492	-0.113	-0.042	0.235	-2.108
		2.360	7.378	-0.492	-0.113	-0.042	-0.033	-0.947
		4.720	7.354	-0.492	-0.113	-0.042	-0.301	0.215
	23:4. 1.2DL+1.(	0	5.010	0.156	-0.088	0.083	0.186	0.075
		2.360	4.986	0.011	-0.088	0.083	-0.022	-0.139
		4.720	4.963	-0.099	-0.088	0.083	-0.230	0.008
	24:5. 1.2DL+1.(	0	5.844	-0.316	-0.089	-0.021	0.183	-1.346
		2.360	5.821	-0.316	-0.089	-0.021	-0.026	-0.601
		4.720	5.797	-0.316	-0.089	-0.021	-0.235	0.144
	25:6. 0.9DL+1.(	0	1.602	0.455	-0.035	0.115	0.076	1.364
		2.360	1.584	0.311	-0.035	0.115	-0.006	0.443
		4.720	1.567	0.200	-0.035	0.115	-0.089	-0.116

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
	26:2. 1.2DL+1.(	0	3.723	-0.022	-0.053	0.015	0.110	-0.078
		2.360	3.700	-0.022	-0.053	0.015	-0.016	-0.025
		4.720	3.676	-0.022	-0.053	0.015	-0.142	0.027
	27:2. 1.2DL+1.(	0	4.869	-0.016	-0.067	0.023	0.138	-0.049
		2.360	4.846	-0.016	-0.067	0.023	-0.021	-0.011
		4.720	4.822	-0.016	-0.067	0.023	-0.180	0.027
	28:6A. 1.2D+1.	0	5.157	-0.216	-0.176	0.151	0.460	-1.077
		2.360	5.130	-0.243	-0.184	0.151	0.034	-0.535
		4.720	5.102	-0.270	-0.192	0.151	-0.410	0.070
	29:6A. 1.2D+1.	0	5.716	-0.285	-0.308	0.039	0.931	-1.266
		2.360	5.688	-0.293	-0.335	0.039	0.173	-0.583
		4.720	5.660	-0.301	-0.361	0.039	-0.649	0.118
	30:6B. 0.9D+1.	0	0.564	0.091	-0.106	0.178	0.314	0.240
		2.360	0.551	0.064	-0.114	0.178	0.055	0.057
		4.720	0.537	0.038	-0.122	0.178	-0.224	-0.064
	31:6B. 0.9D+1.	0	1.122	0.022	-0.237	0.066	0.785	0.051
		2.360	1.109	0.014	-0.264	0.066	0.193	0.008
		4.720	1.096	0.006	-0.291	0.066	-0.462	-0.016
49	21:1. 1.4DL	0	7.809	-0.160	-0.070	-0.037	0.228	0.022
		0.349	7.805	-0.160	-0.070	-0.037	0.203	0.077
		0.697	7.801	-0.160	-0.070	-0.037	0.179	0.133
	22:2. 1.2DL+1.(	0	16.420	-0.203	-0.153	-0.136	0.475	0.087
		0.349	16.416	-0.203	-0.153	-0.136	0.421	0.158
		0.697	16.413	-0.203	-0.153	-0.136	0.368	0.229
	23:4. 1.2DL+1.(	0	10.994	-0.392	-0.030	-0.172	0.292	-0.020
		0.349	10.990	-0.395	-0.030	-0.172	0.281	0.117
		0.697	10.987	-0.402	-0.030	-0.172	0.271	0.255
	24:5. 1.2DL+1.(	0	12.772	-0.178	-0.118	-0.097	0.370	0.061
		0.349	12.769	-0.178	-0.118	-0.097	0.329	0.124
		0.697	12.765	-0.178	-0.118	-0.097	0.287	0.186
	25:6. 0.9DL+1.(	0	3.242	-0.317	0.043	-0.099	0.068	-0.068
		0.349	3.239	-0.319	0.043	-0.099	0.083	0.043
		0.697	3.236	-0.327	0.043	-0.099	0.098	0.155
	26:2. 1.2DL+1.(	0	7.167	-0.141	-0.065	-0.033	0.211	0.019
		0.349	7.163	-0.141	-0.065	-0.033	0.188	0.068
		0.697	7.160	-0.141	-0.065	-0.033	0.165	0.117
	27:2. 1.2DL+1.(	0	8.314	-0.162	-0.078	-0.039	0.249	0.016
		0.349	8.311	-0.162	-0.078	-0.039	0.221	0.072
		0.697	8.307	-0.162	-0.078	-0.039	0.194	0.129
	28:6A. 1.2D+1.	0	11.291	-0.015	0.609	-0.407	-0.072	-0.133
		0.349	11.287	-0.019	0.608	-0.407	0.140	-0.127
		0.697	11.283	-0.023	0.607	-0.407	0.352	-0.120
	29:6A. 1.2D+1.	0	12.862	-0.113	1.817	-0.226	-0.834	0.006
		0.349	12.858	-0.114	1.813	-0.226	-0.201	0.046

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		0.697	12.854	-0.116	1.809	-0.226	0.430	0.086
	30:6B. 0.9D+1.	0	1.096	0.110	0.704	-0.322	-0.367	-0.188
		0.349	1.094	0.106	0.703	-0.322	-0.121	-0.225
		0.697	1.092	0.102	0.702	-0.322	0.124	-0.262
	31:6B. 0.9D+1.	0	2.667	0.012	1.912	-0.141	-1.128	-0.048
		0.349	2.665	0.011	1.908	-0.141	-0.462	-0.052
		0.697	2.663	0.010	1.904	-0.141	0.202	-0.056
50	21:1. 1.4DL	0	6.108	0.000	-0.088	0.021	0.179	-0.014
		2.360	6.080	0.000	-0.088	0.021	-0.029	-0.015
		4.720	6.053	0.000	-0.088	0.021	-0.237	-0.016
	22:2. 1.2DL+1.(	0	12.149	-0.333	-0.182	-0.100	0.368	-1.463
		2.360	12.126	-0.333	-0.182	-0.100	-0.060	-0.677
		4.720	12.102	-0.333	-0.182	-0.100	-0.488	0.109
	23:4. 1.2DL+1.(	0	8.197	0.184	-0.132	0.116	0.275	0.210
		2.360	8.174	0.041	-0.132	0.116	-0.038	-0.072
		4.720	8.150	-0.067	-0.132	0.116	-0.350	-0.000
	24:5. 1.2DL+1.(	0	9.557	-0.208	-0.142	-0.056	0.288	-0.919
		2.360	9.533	-0.208	-0.142	-0.056	-0.047	-0.428
		4.720	9.510	-0.208	-0.142	-0.056	-0.381	0.063
	25:6. 0.9DL+1.(	0	2.567	0.392	-0.047	0.186	0.102	1.120
		2.360	2.550	0.250	-0.047	0.186	-0.010	0.346
		4.720	2.532	0.142	-0.047	0.186	-0.121	-0.073
	26:2. 1.2DL+1.(	0	5.708	0.000	-0.082	0.019	0.166	-0.012
		2.360	5.685	0.000	-0.082	0.019	-0.027	-0.013
		4.720	5.662	0.000	-0.082	0.019	-0.220	-0.013
	27:2. 1.2DL+1.(	0	6.856	0.001	-0.096	0.022	0.195	-0.004
		2.360	6.832	0.001	-0.096	0.022	-0.032	-0.007
		4.720	6.809	0.001	-0.096	0.022	-0.259	-0.009
	28:6A. 1.2D+1.	0	8.509	-0.109	-0.217	0.179	0.548	-0.568
		2.360	8.481	-0.136	-0.226	0.179	0.025	-0.280
		4.720	8.453	-0.162	-0.234	0.179	-0.517	0.072
	29:6A. 1.2D+1.	0	9.589	-0.181	-0.365	0.024	1.056	-0.822
		2.360	9.561	-0.189	-0.392	0.024	0.163	-0.386
		4.720	9.533	-0.197	-0.419	0.024	-0.793	0.069
	30:6B. 0.9D+1.	0	0.968	0.099	-0.105	0.242	0.319	0.346
		2.360	0.955	0.073	-0.113	0.242	0.062	0.143
		4.720	0.941	0.046	-0.121	0.242	-0.214	0.003
	31:6B. 0.9D+1.	0	2.048	0.028	-0.252	0.086	0.827	0.092
		2.360	2.035	0.019	-0.279	0.086	0.200	0.037
		4.720	2.021	0.011	-0.306	0.086	-0.490	0.001
51	21:1. 1.4DL	0	11.063	0.045	0.122	-0.070	-0.341	-0.027
		0.349	11.055	0.045	0.122	-0.070	-0.298	-0.042
		0.697	11.048	0.045	0.122	-0.070	-0.256	-0.058
	22:2. 1.2DL+1.(	0	20.618	0.137	0.209	-0.401	-0.598	0.029

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		0.349	20.612	0.137	0.209	-0.401	-0.525	-0.019
		0.697	20.606	0.137	0.209	-0.401	-0.452	-0.067
	23:4. 1.2DL+1.(	0	19.074	0.043	0.384	-0.274	-0.579	-0.197
		0.349	19.068	0.041	0.384	-0.274	-0.445	-0.212
		0.697	19.062	0.037	0.384	-0.274	-0.312	-0.225
	24:5. 1.2DL+1.(	0	16.442	0.100	0.170	-0.273	-0.483	0.009
		0.349	16.436	0.100	0.170	-0.273	-0.424	-0.025
		0.697	16.430	0.100	0.170	-0.273	-0.365	-0.060
	25:6. 0.9DL+1.(	0	9.743	-0.029	0.292	-0.046	-0.315	-0.224
		0.349	9.739	-0.030	0.292	-0.046	-0.213	-0.214
		0.697	9.734	-0.035	0.292	-0.046	-0.111	-0.202
	26:2. 1.2DL+1.(	0	12.257	0.051	0.122	-0.069	-0.385	0.032
		0.349	12.250	0.051	0.122	-0.069	-0.342	0.014
		0.697	12.244	0.051	0.122	-0.069	-0.300	-0.004
	27:2. 1.2DL+1.(	0	11.017	0.042	0.123	-0.063	-0.338	-0.027
		0.349	11.011	0.042	0.123	-0.063	-0.295	-0.042
		0.697	11.005	0.042	0.123	-0.063	-0.252	-0.056
	28:6A. 1.2D+1.	0	21.959	-0.043	0.881	0.088	-0.847	-0.568
		0.349	21.952	-0.050	0.879	0.088	-0.540	-0.552
		0.697	21.945	-0.057	0.877	0.088	-0.234	-0.533
	29:6A. 1.2D+1.	0	19.611	-0.015	1.365	0.009	-1.073	-0.159
		0.349	19.604	-0.017	1.358	0.009	-0.598	-0.153
		0.697	19.597	-0.020	1.351	0.009	-0.126	-0.146
	30:6B. 0.9D+1.	0	9.168	-0.129	0.752	0.338	-0.476	-0.586
		0.349	9.164	-0.136	0.750	0.338	-0.214	-0.540
		0.697	9.161	-0.143	0.747	0.338	0.047	-0.492
	31:6B. 0.9D+1.	0	6.820	-0.101	1.235	0.259	-0.702	-0.177
		0.349	6.816	-0.103	1.228	0.259	-0.273	-0.141
		0.697	6.813	-0.105	1.221	0.259	0.154	-0.105
52	21:1. 1.4DL	0	9.897	0.003	0.129	-0.045	-0.255	0.038
		2.360	9.849	0.003	0.129	-0.045	0.050	0.030
		4.720	9.801	0.003	0.129	-0.045	0.356	0.023
	22:2. 1.2DL+1.(	0	18.260	0.350	0.228	-0.570	-0.451	2.108
		2.360	18.218	0.350	0.228	-0.570	0.087	1.282
		4.720	18.177	0.350	0.228	-0.570	0.626	0.456
	23:4. 1.2DL+1.(	0	16.365	0.705	0.182	-1.043	-0.307	3.617
		2.360	16.323	0.617	0.182	-1.043	0.123	2.047
		4.720	16.282	0.584	0.182	-1.043	0.554	0.641
	24:5. 1.2DL+1.(	0	14.594	0.220	0.184	-0.371	-0.364	1.330
		2.360	14.552	0.220	0.184	-0.371	0.071	0.811
		4.720	14.511	0.220	0.184	-0.371	0.506	0.292
	25:6. 0.9DL+1.(	0	8.134	0.487	0.081	-0.702	-0.107	2.311
		2.360	8.103	0.399	0.081	-0.702	0.085	1.256
		4.720	8.072	0.366	0.081	-0.702	0.276	0.364

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
	26:2. 1.2DL+1.(	0	11.259	-0.024	0.147	0.005	-0.299	-0.080
		2.360	11.217	-0.024	0.147	0.005	0.049	-0.024
		4.720	11.176	-0.024	0.147	0.005	0.396	0.032
	27:2. 1.2DL+1.(	0	10.015	0.005	0.129	-0.043	-0.252	0.041
		2.360	9.973	0.005	0.129	-0.043	0.052	0.029
		4.720	9.932	0.005	0.129	-0.043	0.355	0.018
	28:6A. 1.2D+1.	0	18.808	0.626	0.176	-1.221	-0.143	3.287
		2.360	18.759	0.579	0.161	-1.221	0.255	1.865
		4.720	18.710	0.532	0.147	-1.221	0.619	0.555
	29:6A. 1.2D+1.	0	17.236	0.351	0.128	-0.643	0.148	1.950
		2.360	17.187	0.337	0.080	-0.643	0.393	1.139
		4.720	17.138	0.323	0.033	-0.643	0.527	0.361
	30:6B. 0.9D+1.	0	7.480	0.407	0.034	-0.865	0.137	1.970
		2.360	7.457	0.360	0.020	-0.865	0.201	1.064
		4.720	7.433	0.313	0.006	-0.865	0.231	0.270
	31:6B. 0.9D+1.	0	5.909	0.132	-0.014	-0.287	0.427	0.633
		2.360	5.885	0.118	-0.061	-0.287	0.339	0.338
		4.720	5.862	0.104	-0.108	-0.287	0.139	0.076
53	21:1. 1.4DL	0	11.063	0.045	-0.122	0.070	0.341	-0.027
		0.349	11.055	0.045	-0.122	0.070	0.298	-0.042
		0.697	11.048	0.045	-0.122	0.070	0.256	-0.058
	22:2. 1.2DL+1.(	0	20.618	0.137	-0.209	0.401	0.598	0.029
		0.349	20.612	0.137	-0.209	0.401	0.525	-0.019
		0.697	20.606	0.137	-0.209	0.401	0.452	-0.067
	23:4. 1.2DL+1.(	0	19.074	0.043	-0.384	0.274	0.579	-0.197
		0.349	19.068	0.041	-0.384	0.274	0.445	-0.212
		0.697	19.062	0.037	-0.384	0.274	0.312	-0.225
	24:5. 1.2DL+1.(	0	16.442	0.100	-0.170	0.273	0.483	0.009
		0.349	16.436	0.100	-0.170	0.273	0.424	-0.025
		0.697	16.430	0.100	-0.170	0.273	0.365	-0.060
	25:6. 0.9DL+1.(	0	9.743	-0.029	-0.292	0.046	0.315	-0.224
		0.349	9.739	-0.030	-0.292	0.046	0.213	-0.214
		0.697	9.734	-0.035	-0.292	0.046	0.111	-0.202
	26:2. 1.2DL+1.(	0	9.996	0.039	-0.111	0.061	0.308	-0.025
		0.349	9.990	0.039	-0.111	0.061	0.269	-0.038
		0.697	9.984	0.039	-0.111	0.061	0.230	-0.052
	27:2. 1.2DL+1.(	0	11.243	0.042	-0.125	0.063	0.345	-0.027
		0.349	11.237	0.042	-0.125	0.063	0.301	-0.042
		0.697	11.231	0.042	-0.125	0.063	0.258	-0.057
	28:6A. 1.2D+1.	0	21.755	-0.016	-0.266	-0.017	0.584	-0.570
		0.349	21.748	-0.023	-0.268	-0.017	0.491	-0.563
		0.697	21.741	-0.030	-0.270	-0.017	0.397	-0.554
	29:6A. 1.2D+1.	0	18.930	0.075	0.686	0.228	0.197	-0.166
		0.349	18.923	0.073	0.679	0.228	0.435	-0.191

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		0.697	18.916	0.071	0.672	0.228	0.670	-0.217
	30:6B. 0.9D+1.	0	8.963	-0.101	-0.137	-0.267	0.213	-0.588
		0.349	8.960	-0.108	-0.139	-0.267	0.165	-0.552
		0.697	8.956	-0.115	-0.141	-0.267	0.116	-0.513
	31:6B. 0.9D+1.	0	6.139	-0.010	0.815	-0.022	-0.174	-0.184
		0.349	6.135	-0.012	0.808	-0.022	0.109	-0.180
		0.697	6.132	-0.014	0.801	-0.022	0.389	-0.175
54	21:1. 1.4DL	0	9.897	0.003	-0.129	0.045	0.255	0.038
		2.360	9.849	0.003	-0.129	0.045	-0.050	0.030
		4.720	9.801	0.003	-0.129	0.045	-0.356	0.023
	22:2. 1.2DL+1.(	0	18.260	0.350	-0.228	0.570	0.451	2.108
		2.360	18.218	0.350	-0.228	0.570	-0.087	1.282
		4.720	18.177	0.350	-0.228	0.570	-0.626	0.456
	23:4. 1.2DL+1.(	0	16.365	0.705	-0.182	1.043	0.307	3.617
		2.360	16.323	0.617	-0.182	1.043	-0.123	2.047
		4.720	16.282	0.584	-0.182	1.043	-0.554	0.641
	24:5. 1.2DL+1.(	0	14.594	0.220	-0.184	0.371	0.364	1.330
		2.360	14.552	0.220	-0.184	0.371	-0.071	0.811
		4.720	14.511	0.220	-0.184	0.371	-0.506	0.292
	25:6. 0.9DL+1.(	0	8.134	0.487	-0.081	0.702	0.107	2.311
		2.360	8.103	0.399	-0.081	0.702	-0.085	1.256
		4.720	8.072	0.366	-0.081	0.702	-0.276	0.364
	26:2. 1.2DL+1.(	0	8.996	0.003	-0.117	0.041	0.229	0.035
		2.360	8.955	0.003	-0.117	0.041	-0.046	0.028
		4.720	8.913	0.003	-0.117	0.041	-0.322	0.021
	27:2. 1.2DL+1.(	0	10.241	0.005	-0.131	0.041	0.257	0.040
		2.360	10.199	0.005	-0.131	0.041	-0.053	0.028
		4.720	10.158	0.005	-0.131	0.041	-0.362	0.015
	28:6A. 1.2D+1.	0	18.606	0.622	-0.229	1.212	0.468	3.275
		2.360	18.557	0.575	-0.243	1.212	-0.089	1.862
		4.720	18.508	0.528	-0.257	1.212	-0.680	0.560
	29:6A. 1.2D+1.	0	16.563	0.339	-0.306	0.614	0.937	1.909
		2.360	16.514	0.325	-0.353	0.614	0.160	1.126
		4.720	16.465	0.311	-0.400	0.614	-0.729	0.376
	30:6B. 0.9D+1.	0	7.278	0.404	-0.087	0.856	0.188	1.957
		2.360	7.255	0.356	-0.102	0.856	-0.035	1.060
		4.720	7.231	0.309	-0.116	0.856	-0.291	0.275
	31:6B. 0.9D+1.	0	5.236	0.120	-0.164	0.259	0.657	0.592
		2.360	5.212	0.106	-0.211	0.259	0.214	0.325
		4.720	5.189	0.092	-0.258	0.259	-0.340	0.091
55	21:1. 1.4DL	0	9.388	0.175	0.120	0.044	-0.289	-0.009
		0.349	9.384	0.175	0.120	0.044	-0.247	-0.070
		0.697	9.380	0.175	0.120	0.044	-0.205	-0.130
	22:2. 1.2DL+1.(	0	17.773	0.232	0.220	0.016	-0.537	-0.072

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		0.349	17.769	0.232	0.220	0.016	-0.460	-0.153
		0.697	17.766	0.232	0.220	0.016	-0.383	-0.234
	23:4. 1.2DL+1.(	0	15.902	1.201	0.263	0.110	-0.502	0.070
		0.349	15.898	1.199	0.263	0.110	-0.411	-0.348
		0.697	15.895	1.191	0.263	0.110	-0.319	-0.764
	24:5. 1.2DL+1.(	0	14.126	0.201	0.176	0.024	-0.428	-0.048
		0.349	14.122	0.201	0.176	0.024	-0.367	-0.118
		0.697	14.119	0.201	0.176	0.024	-0.305	-0.188
	25:6. 0.9DL+1.(	0	7.812	1.112	0.164	0.114	-0.260	0.112
		0.349	7.809	1.109	0.164	0.114	-0.203	-0.275
		0.697	7.806	1.102	0.164	0.114	-0.145	-0.660
	26:2. 1.2DL+1.(	0	10.824	0.295	0.126	0.059	-0.303	-0.095
		0.349	10.821	0.295	0.126	0.059	-0.259	-0.198
		0.697	10.817	0.295	0.126	0.059	-0.215	-0.300
	27:2. 1.2DL+1.(	0	9.567	0.164	0.125	0.045	-0.300	-0.007
		0.349	9.563	0.164	0.125	0.045	-0.257	-0.065
		0.697	9.560	0.164	0.125	0.045	-0.213	-0.122
	28:6A. 1.2D+1.	0	18.280	4.355	0.936	0.371	-0.955	0.402
		0.349	18.276	4.351	0.934	0.371	-0.629	-1.115
		0.697	18.272	4.348	0.933	0.371	-0.304	-2.631
	29:6A. 1.2D+1.	0	16.693	1.308	2.164	0.171	-1.768	0.078
		0.349	16.689	1.307	2.160	0.171	-1.015	-0.378
		0.697	16.685	1.306	2.156	0.171	-0.263	-0.833
	30:6B. 0.9D+1.	0	7.253	4.212	0.799	0.361	-0.622	0.447
		0.349	7.251	4.208	0.798	0.361	-0.344	-1.020
		0.697	7.249	4.204	0.797	0.361	-0.066	-2.486
	31:6B. 0.9D+1.	0	5.666	1.165	2.027	0.161	-1.435	0.122
		0.349	5.664	1.163	2.023	0.161	-0.729	-0.283
		0.697	5.662	1.162	2.019	0.161	-0.025	-0.688
56	21:1. 1.4DL	0	7.184	0.014	0.102	-0.013	-0.204	0.045
		2.360	7.157	0.014	0.102	-0.013	0.038	0.011
		4.720	7.130	0.014	0.102	-0.013	0.279	-0.022
	22:2. 1.2DL+1.(	0	13.055	0.363	0.192	-0.130	-0.383	1.536
		2.360	13.032	0.363	0.192	-0.130	0.069	0.680
		4.720	13.008	0.363	0.192	-0.130	0.521	-0.176
	23:4. 1.2DL+1.(	0	11.825	0.605	0.160	-0.259	-0.315	2.032
		2.360	11.802	0.463	0.160	-0.259	0.064	0.755
		4.720	11.778	0.355	0.160	-0.259	0.442	-0.167
	24:5. 1.2DL+1.(	0	10.469	0.231	0.153	-0.085	-0.305	0.974
		2.360	10.445	0.231	0.153	-0.085	0.055	0.428
		4.720	10.422	0.231	0.153	-0.085	0.416	-0.117
	25:6. 0.9DL+1.(	0	5.975	0.383	0.074	-0.181	-0.141	1.086
		2.360	5.958	0.241	0.074	-0.181	0.032	0.334
		4.720	5.940	0.133	0.074	-0.181	0.206	-0.064

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
	26:2. 1.2DL+1.(	0	6.507	0.056	0.107	-0.006	-0.214	0.212
		2.360	6.483	0.056	0.107	-0.006	0.038	0.080
		4.720	6.460	0.056	0.107	-0.006	0.289	-0.052
	27:2. 1.2DL+1.(	0	7.678	0.013	0.107	-0.011	-0.213	0.037
		2.360	7.654	0.013	0.107	-0.011	0.040	0.006
		4.720	7.631	0.013	0.107	-0.011	0.292	-0.024
	28:6A. 1.2D+1.	0	13.583	0.270	0.108	-0.324	-0.108	1.088
		2.360	13.555	0.243	0.100	-0.324	0.138	0.483
		4.720	13.528	0.216	0.092	-0.324	0.365	-0.058
	29:6A. 1.2D+1.	0	12.499	0.229	-0.021	-0.167	0.363	0.968
		2.360	12.471	0.221	-0.048	-0.167	0.282	0.438
		4.720	12.443	0.213	-0.074	-0.167	0.139	-0.073
	30:6B. 0.9D+1.	0	5.485	0.043	-0.011	-0.242	0.129	0.129
		2.360	5.472	0.016	-0.019	-0.242	0.095	0.059
		4.720	5.459	-0.011	-0.027	-0.242	0.042	0.052
	31:6B. 0.9D+1.	0	4.401	0.002	-0.140	-0.085	0.600	0.009
		2.360	4.388	-0.006	-0.166	-0.085	0.239	0.013
		4.720	4.374	-0.014	-0.193	-0.085	-0.185	0.037
57	21:1. 1.4DL	0	6.719	0.234	0.065	-0.022	-0.185	0.006
		0.349	6.715	0.234	0.065	-0.022	-0.162	-0.076
		0.697	6.711	0.234	0.065	-0.022	-0.140	-0.157
	22:2. 1.2DL+1.(	0	12.735	0.416	0.116	-0.072	-0.341	0.005
		0.349	12.732	0.416	0.116	-0.072	-0.301	-0.140
		0.697	12.728	0.416	0.116	-0.072	-0.261	-0.285
	23:4. 1.2DL+1.(	0	11.493	0.157	0.147	0.008	-0.311	-0.051
		0.349	11.489	0.154	0.147	0.008	-0.260	-0.105
		0.697	11.486	0.147	0.147	0.008	-0.209	-0.158
	24:5. 1.2DL+1.(	0	10.119	0.335	0.093	-0.052	-0.273	0.005
		0.349	10.116	0.335	0.093	-0.052	-0.240	-0.112
		0.697	10.112	0.335	0.093	-0.052	-0.208	-0.228
	25:6. 0.9DL+1.(	0	5.693	-0.028	0.095	0.046	-0.157	-0.052
		0.349	5.690	-0.030	0.095	0.046	-0.124	-0.042
		0.697	5.688	-0.038	0.095	0.046	-0.091	-0.031
	26:2. 1.2DL+1.(	0	6.146	0.275	0.057	-0.020	-0.152	0.008
		0.349	6.142	0.275	0.057	-0.020	-0.133	-0.088
		0.697	6.139	0.275	0.057	-0.020	-0.113	-0.184
	27:2. 1.2DL+1.(	0	7.286	0.253	0.072	-0.030	-0.209	0.014
		0.349	7.282	0.253	0.072	-0.030	-0.184	-0.074
		0.697	7.279	0.253	0.072	-0.030	-0.158	-0.162
	28:6A. 1.2D+1.	0	13.204	0.412	0.775	0.137	-0.719	-0.232
		0.349	13.200	0.408	0.774	0.137	-0.449	-0.375
		0.697	13.196	0.404	0.773	0.137	-0.179	-0.516
	29:6A. 1.2D+1.	0	12.115	0.237	2.052	0.032	-1.592	-0.065
		0.349	12.111	0.236	2.048	0.032	-0.878	-0.148

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		0.697	12.107	0.235	2.044	0.032	-0.165	-0.230
	30:6B. 0.9D+1.	0	5.302	0.154	0.703	0.182	-0.507	-0.235
		0.349	5.300	0.151	0.702	0.182	-0.262	-0.288
		0.697	5.298	0.147	0.701	0.182	-0.018	-0.340
	31:6B. 0.9D+1.	0	4.213	-0.020	1.979	0.077	-1.380	-0.068
		0.349	4.211	-0.022	1.976	0.077	-0.691	-0.061
		0.697	4.209	-0.023	1.972	0.077	-0.003	-0.053
58	21:1. 1.4DL	0	4.552	-0.024	0.067	-0.014	-0.139	-0.074
		2.360	4.525	-0.024	0.067	-0.014	0.018	-0.018
		4.720	4.497	-0.024	0.067	-0.014	0.176	0.037
	22:2. 1.2DL+1.(	0	8.077	0.412	0.125	-0.072	-0.260	1.862
		2.360	8.054	0.412	0.125	-0.072	0.034	0.888
		4.720	8.030	0.412	0.125	-0.072	0.328	-0.085
	23:4. 1.2DL+1.(	0	7.348	0.735	0.101	-0.155	-0.206	2.607
		2.360	7.325	0.591	0.101	-0.155	0.031	1.027
		4.720	7.301	0.480	0.101	-0.155	0.269	-0.193
	24:5. 1.2DL+1.(	0	6.511	0.250	0.099	-0.050	-0.207	1.140
		2.360	6.488	0.250	0.099	-0.050	0.027	0.549
		4.720	6.464	0.250	0.099	-0.050	0.262	-0.041
	25:6. 0.9DL+1.(	0	3.763	0.470	0.044	-0.115	-0.088	1.420
		2.360	3.745	0.325	0.044	-0.115	0.016	0.466
		4.720	3.728	0.214	0.044	-0.115	0.120	-0.127
	26:2. 1.2DL+1.(	0	3.394	-0.032	0.054	-0.021	-0.112	-0.087
		2.360	3.370	-0.032	0.054	-0.021	0.014	-0.011
		4.720	3.347	-0.032	0.054	-0.021	0.141	0.065
	27:2. 1.2DL+1.(	0	5.431	-0.025	0.076	-0.011	-0.158	-0.087
		2.360	5.407	-0.025	0.076	-0.011	0.022	-0.028
		4.720	5.384	-0.025	0.076	-0.011	0.202	0.030
	28:6A. 1.2D+1.	0	8.505	0.396	0.038	-0.227	0.014	1.572
		2.360	8.477	0.369	0.030	-0.227	0.095	0.669
		4.720	8.450	0.343	0.022	-0.227	0.158	-0.171
	29:6A. 1.2D+1.	0	7.930	0.304	-0.081	-0.111	0.460	1.296
		2.360	7.902	0.296	-0.108	-0.111	0.237	0.588
		4.720	7.874	0.288	-0.134	-0.111	-0.048	-0.102
	30:6B. 0.9D+1.	0	3.496	0.138	-0.039	-0.182	0.175	0.408
		2.360	3.483	0.111	-0.047	-0.182	0.074	0.113
		4.720	3.469	0.085	-0.055	-0.182	-0.046	-0.118
	31:6B. 0.9D+1.	0	2.920	0.046	-0.158	-0.066	0.621	0.132
		2.360	2.907	0.038	-0.185	-0.066	0.216	0.032
		4.720	2.894	0.030	-0.212	-0.066	-0.252	-0.048
59	21:1. 1.4DL	0	3.938	0.339	0.041	0.016	-0.097	0.023
		0.349	3.934	0.339	0.041	0.016	-0.083	-0.095
		0.697	3.930	0.339	0.041	0.016	-0.069	-0.213
	22:2. 1.2DL+1.(	0	7.582	0.607	0.072	0.017	-0.178	0.032

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		0.349	7.579	0.607	0.072	0.017	-0.153	-0.179
		0.697	7.575	0.607	0.072	0.017	-0.128	-0.391
	23:4. 1.2DL+1.(	0	6.857	1.668	0.073	0.053	-0.138	0.214
		0.349	6.853	1.665	0.073	0.053	-0.113	-0.367
		0.697	6.850	1.658	0.073	0.053	-0.087	-0.946
	24:5. 1.2DL+1.(	0	6.005	0.488	0.058	0.015	-0.142	0.028
		0.349	6.001	0.488	0.058	0.015	-0.122	-0.143
		0.697	5.998	0.488	0.058	0.015	-0.102	-0.313
	25:6. 0.9DL+1.(	0	3.384	1.398	0.042	0.048	-0.058	0.202
		0.349	3.381	1.395	0.042	0.048	-0.044	-0.285
		0.697	3.379	1.388	0.042	0.048	-0.029	-0.770
	26:2. 1.2DL+1.(	0	2.867	0.356	0.025	-0.004	-0.064	0.047
		0.349	2.864	0.356	0.025	-0.004	-0.055	-0.077
		0.697	2.860	0.356	0.025	-0.004	-0.047	-0.201
	27:2. 1.2DL+1.(	0	4.896	0.364	0.062	0.052	-0.143	0.070
		0.349	4.892	0.364	0.062	0.052	-0.121	-0.057
		0.697	4.889	0.364	0.062	0.052	-0.099	-0.184
	28:6A. 1.2D+1.	0	7.933	4.809	0.663	0.132	-0.488	0.536
		0.349	7.929	4.805	0.661	0.132	-0.257	-1.140
		0.697	7.925	4.802	0.660	0.132	-0.027	-2.814
	29:6A. 1.2D+1.	0	7.328	1.680	1.993	0.097	-1.417	0.180
		0.349	7.324	1.679	1.989	0.097	-0.723	-0.405
		0.697	7.320	1.678	1.985	0.097	-0.031	-0.990
	30:6B. 0.9D+1.	0	3.228	4.433	0.618	0.122	-0.377	0.516
		0.349	3.226	4.429	0.617	0.122	-0.162	-1.029
		0.697	3.224	4.425	0.616	0.122	0.053	-2.571
	31:6B. 0.9D+1.	0	2.623	1.304	1.948	0.087	-1.306	0.160
		0.349	2.621	1.303	1.944	0.087	-0.628	-0.294
		0.697	2.619	1.301	1.940	0.087	0.049	-0.748
60	21:1. 1.4DL	0	1.727	0.021	0.033	-0.008	-0.069	0.043
		2.360	1.700	0.021	0.033	-0.008	0.009	-0.008
		4.720	1.673	0.021	0.033	-0.008	0.087	-0.058
	22:2. 1.2DL+1.(	0	2.843	0.522	0.061	-0.026	-0.127	2.265
		2.360	2.820	0.522	0.061	-0.026	0.017	1.034
		4.720	2.796	0.522	0.061	-0.026	0.161	-0.198
	23:4. 1.2DL+1.(	0	2.620	0.816	0.041	-0.056	-0.085	2.929
		2.360	2.597	0.671	0.041	-0.056	0.012	1.158
		4.720	2.573	0.560	0.041	-0.056	0.110	-0.252
	24:5. 1.2DL+1.(	0	2.332	0.333	0.049	-0.019	-0.102	1.430
		2.360	2.309	0.333	0.049	-0.019	0.014	0.644
		4.720	2.285	0.333	0.049	-0.019	0.129	-0.142
	25:6. 0.9DL+1.(	0	1.398	0.496	0.014	-0.042	-0.028	1.527
		2.360	1.381	0.352	0.014	-0.042	0.005	0.509
		4.720	1.363	0.241	0.014	-0.042	0.037	-0.147

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
	26:2. 1.2DL+1.(	0	0.969	0.013	0.022	-0.013	-0.046	0.009
		2.360	0.946	0.013	0.022	-0.013	0.006	-0.022
		4.720	0.922	0.013	0.022	-0.013	0.058	-0.053
	27:2. 1.2DL+1.(	0	2.995	0.008	0.048	0.002	-0.099	-0.009
		2.360	2.971	0.008	0.048	0.002	0.015	-0.027
		4.720	2.948	0.008	0.048	0.002	0.128	-0.046
	28:6A. 1.2D+1.	0	3.151	0.451	-0.036	-0.101	0.163	1.750
		2.360	3.123	0.424	-0.044	-0.101	0.070	0.718
		4.720	3.095	0.397	-0.052	-0.101	-0.043	-0.250
	29:6A. 1.2D+1.	0	3.090	0.361	-0.144	-0.050	0.593	1.504
		2.360	3.063	0.353	-0.171	-0.050	0.221	0.661
		4.720	3.035	0.345	-0.198	-0.050	-0.214	-0.162
	30:6B. 0.9D+1.	0	1.388	0.125	-0.074	-0.085	0.243	0.334
		2.360	1.375	0.098	-0.082	-0.085	0.059	0.072
		4.720	1.362	0.071	-0.090	-0.085	-0.143	-0.127
	31:6B. 0.9D+1.	0	1.328	0.035	-0.182	-0.034	0.672	0.089
		2.360	1.315	0.027	-0.209	-0.034	0.211	0.015
		4.720	1.301	0.019	-0.236	-0.034	-0.314	-0.039
61	21:1. 1.4DL	0	2.518	0.316	0.000	-0.000	-0.000	0.012
		0.349	2.514	0.316	0.000	-0.000	-0.000	-0.098
		0.697	2.510	0.316	0.000	-0.000	-0.000	-0.208
	22:2. 1.2DL+1.(	0	4.938	0.562	0.000	-0.000	-0.000	0.011
		0.349	4.935	0.562	0.000	-0.000	-0.000	-0.185
		0.697	4.931	0.562	0.000	-0.000	-0.000	-0.381
	23:4. 1.2DL+1.(	0	4.480	0.173	0.000	0.000	-0.000	-0.073
		0.349	4.476	0.171	0.000	0.000	-0.000	-0.133
		0.697	4.473	0.166	0.000	0.000	0.000	-0.192
	24:5. 1.2DL+1.(	0	3.896	0.453	0.000	-0.000	-0.000	0.011
		0.349	3.892	0.453	0.000	-0.000	-0.000	-0.147
		0.697	3.889	0.453	0.000	-0.000	-0.000	-0.305
	25:6. 0.9DL+1.(	0	2.203	-0.077	0.000	0.000	-0.000	-0.076
		0.349	2.200	-0.079	0.000	0.000	-0.000	-0.049
		0.697	2.197	-0.084	0.000	0.000	0.000	-0.021
	26:2. 1.2DL+1.(	0	2.156	0.305	-0.004	0.005	0.016	0.014
		0.349	2.153	0.305	-0.004	0.005	0.014	-0.092
		0.697	2.149	0.305	-0.004	0.005	0.013	-0.198
	27:2. 1.2DL+1.(	0	4.539	0.430	0.002	-0.002	-0.012	-0.077
		0.349	4.536	0.430	0.002	-0.002	-0.011	-0.227
		0.697	4.533	0.430	0.002	-0.002	-0.010	-0.377
	28:6A. 1.2D+1.	0	5.176	0.562	0.571	0.009	-0.372	-0.278
		0.349	5.172	0.558	0.570	0.009	-0.173	-0.473
		0.697	5.168	0.555	0.569	0.009	0.025	-0.667
	29:6A. 1.2D+1.	0	4.546	0.422	1.904	0.030	-1.239	-0.073
		0.349	4.542	0.421	1.900	0.030	-0.576	-0.219

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		0.697	4.538	0.419	1.896	0.030	0.085	-0.366
	30:6B. 0.9D+1.	0	2.111	0.214	0.571	0.009	-0.372	-0.285
		0.349	2.109	0.210	0.570	0.009	-0.173	-0.358
		0.697	2.107	0.206	0.569	0.009	0.025	-0.431
	31:6B. 0.9D+1.	0	1.481	0.073	1.903	0.030	-1.239	-0.079
		0.349	1.479	0.072	1.899	0.030	-0.576	-0.105
		0.697	1.477	0.071	1.896	0.030	0.085	-0.130
62	21:1. 1.4DL	0	0.359	-0.030	0.000	-0.000	-0.000	-0.102
		2.360	0.332	-0.030	0.000	-0.000	0.000	-0.031
		4.720	0.304	-0.030	0.000	-0.000	0.000	0.040
	22:2. 1.2DL+1.(	0	0.292	0.432	0.000	-0.000	-0.000	2.047
		2.360	0.269	0.432	0.000	-0.000	0.000	1.027
		4.720	0.245	0.432	0.000	-0.000	0.000	0.006
	23:4. 1.2DL+1.(	0	0.319	0.734	-0.000	-0.000	0.000	2.797
		2.360	0.296	0.628	-0.000	-0.000	0.000	1.177
		4.720	0.272	0.475	-0.000	-0.000	0.000	-0.060
	24:5. 1.2DL+1.(	0	0.298	0.261	0.000	-0.000	-0.000	1.247
		2.360	0.275	0.261	0.000	-0.000	0.000	0.632
		4.720	0.251	0.261	0.000	-0.000	0.000	0.017
	25:6. 0.9DL+1.(	0	0.252	0.454	-0.000	-0.000	0.000	1.485
		2.360	0.234	0.348	-0.000	-0.000	0.000	0.525
		4.720	0.216	0.195	-0.000	-0.000	-0.000	-0.051
	26:2. 1.2DL+1.(	0	0.307	-0.028	-0.006	-0.002	0.013	-0.101
		2.360	0.284	-0.028	-0.006	-0.002	-0.001	-0.034
		4.720	0.260	-0.028	-0.006	-0.002	-0.015	0.032
	27:2. 1.2DL+1.(	0	0.285	-0.010	0.005	0.003	-0.010	-0.001
		2.360	0.261	-0.010	0.005	0.003	0.001	0.022
		4.720	0.238	-0.010	0.005	0.003	0.012	0.046
	28:6A. 1.2D+1.	0	0.418	0.447	-0.060	-0.002	0.212	1.833
		2.360	0.390	0.420	-0.068	-0.002	0.061	0.810
		4.720	0.362	0.393	-0.076	-0.002	-0.110	-0.150
	29:6A. 1.2D+1.	0	0.355	0.321	-0.201	-0.007	0.707	1.434
		2.360	0.328	0.313	-0.227	-0.007	0.202	0.685
		4.720	0.300	0.305	-0.254	-0.007	-0.366	-0.044
	30:6B. 0.9D+1.	0	0.238	0.176	-0.060	-0.002	0.212	0.553
		2.360	0.225	0.150	-0.068	-0.002	0.061	0.168
		4.720	0.212	0.123	-0.076	-0.002	-0.110	-0.154
	31:6B. 0.9D+1.	0	0.176	0.051	-0.201	-0.007	0.707	0.153
		2.360	0.162	0.043	-0.227	-0.007	0.202	0.043
		4.720	0.149	0.034	-0.254	-0.007	-0.366	-0.048
63	21:1. 1.4DL	0	3.938	0.339	-0.041	-0.016	0.097	0.023
		0.349	3.934	0.339	-0.041	-0.016	0.083	-0.095
		0.697	3.930	0.339	-0.041	-0.016	0.069	-0.213
	22:2. 1.2DL+1.(	0	7.582	0.607	-0.072	-0.017	0.178	0.032

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		0.349	7.579	0.607	-0.072	-0.017	0.153	-0.179
		0.697	7.575	0.607	-0.072	-0.017	0.128	-0.391
	23:4. 1.2DL+1.(	0	6.857	1.668	-0.073	-0.053	0.138	0.214
		0.349	6.853	1.665	-0.073	-0.053	0.113	-0.367
		0.697	6.850	1.658	-0.073	-0.053	0.087	-0.946
	24:5. 1.2DL+1.(	0	6.005	0.488	-0.058	-0.015	0.142	0.028
		0.349	6.001	0.488	-0.058	-0.015	0.122	-0.143
		0.697	5.998	0.488	-0.058	-0.015	0.102	-0.313
	25:6. 0.9DL+1.(	0	3.384	1.398	-0.042	-0.048	0.058	0.202
		0.349	3.381	1.395	-0.042	-0.048	0.044	-0.285
		0.697	3.379	1.388	-0.042	-0.048	0.029	-0.770
	26:2. 1.2DL+1.(	0	3.887	0.310	-0.042	-0.017	0.100	0.021
		0.349	3.884	0.310	-0.042	-0.017	0.086	-0.087
		0.697	3.880	0.310	-0.042	-0.017	0.071	-0.195
	27:2. 1.2DL+1.(	0	5.130	0.405	-0.059	-0.051	0.135	0.029
		0.349	5.126	0.405	-0.059	-0.051	0.115	-0.112
		0.697	5.123	0.405	-0.059	-0.051	0.094	-0.253
	28:6A. 1.2D+1.	0	7.715	4.829	0.483	-0.102	-0.259	0.536
		0.349	7.711	4.825	0.482	-0.102	-0.090	-1.146
		0.697	7.707	4.821	0.481	-0.102	0.077	-2.827
	29:6A. 1.2D+1.	0	6.604	1.744	1.828	0.001	-1.072	0.182
		0.349	6.600	1.743	1.824	0.001	-0.435	-0.426
		0.697	6.596	1.742	1.820	0.001	0.200	-1.033
	30:6B. 0.9D+1.	0	3.010	4.452	0.528	-0.092	-0.369	0.516
		0.349	3.008	4.448	0.527	-0.092	-0.185	-1.035
		0.697	3.006	4.444	0.526	-0.092	-0.002	-2.584
	31:6B. 0.9D+1.	0	1.899	1.368	1.873	0.011	-1.182	0.162
		0.349	1.897	1.367	1.869	0.011	-0.530	-0.315
		0.697	1.895	1.366	1.865	0.011	0.121	-0.791
64	21:1. 1.4DL	0	1.727	0.021	-0.033	0.008	0.069	0.043
		2.360	1.700	0.021	-0.033	0.008	-0.009	-0.008
		4.720	1.673	0.021	-0.033	0.008	-0.087	-0.058
	22:2. 1.2DL+1.(	0	2.843	0.522	-0.061	0.026	0.127	2.265
		2.360	2.820	0.522	-0.061	0.026	-0.017	1.034
		4.720	2.796	0.522	-0.061	0.026	-0.161	-0.198
	23:4. 1.2DL+1.(	0	2.620	0.816	-0.041	0.056	0.085	2.929
		2.360	2.597	0.671	-0.041	0.056	-0.012	1.158
		4.720	2.573	0.560	-0.041	0.056	-0.110	-0.252
	24:5. 1.2DL+1.(	0	2.332	0.333	-0.049	0.019	0.102	1.430
		2.360	2.309	0.333	-0.049	0.019	-0.014	0.644
		4.720	2.285	0.333	-0.049	0.019	-0.129	-0.142
	25:6. 0.9DL+1.(	0	1.398	0.496	-0.014	0.042	0.028	1.527
		2.360	1.381	0.352	-0.014	0.042	-0.005	0.509
		4.720	1.363	0.241	-0.014	0.042	-0.037	-0.147

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
	26:2. 1.2DL+1.(	0	1.991	0.020	-0.034	0.006	0.071	0.039
		2.360	1.968	0.020	-0.034	0.006	-0.010	-0.009
		4.720	1.944	0.020	-0.034	0.006	-0.091	-0.056
	27:2. 1.2DL+1.(	0	2.320	0.025	-0.045	-0.001	0.094	0.062
		2.360	2.297	0.025	-0.045	-0.001	-0.013	0.002
		4.720	2.273	0.025	-0.045	-0.001	-0.121	-0.058
	28:6A. 1.2D+1.	0	2.932	0.452	-0.084	0.097	0.261	1.753
		2.360	2.904	0.425	-0.092	0.097	0.053	0.719
		4.720	2.877	0.398	-0.100	0.097	-0.174	-0.253
	29:6A. 1.2D+1.	0	2.361	0.365	-0.255	0.037	0.821	1.516
		2.360	2.334	0.357	-0.282	0.037	0.188	0.663
		4.720	2.306	0.349	-0.309	0.037	-0.509	-0.171
	30:6B. 0.9D+1.	0	1.170	0.126	-0.046	0.081	0.182	0.338
		2.360	1.157	0.099	-0.054	0.081	0.063	0.073
		4.720	1.143	0.072	-0.062	0.081	-0.074	-0.130
	31:6B. 0.9D+1.	0	0.599	0.040	-0.217	0.021	0.742	0.101
		2.360	0.586	0.031	-0.244	0.021	0.198	0.017
		4.720	0.573	0.023	-0.270	0.021	-0.408	-0.048
65	21:1. 1.4DL	0	6.719	0.234	-0.065	0.022	0.185	0.006
		0.349	6.715	0.234	-0.065	0.022	0.162	-0.076
		0.697	6.711	0.234	-0.065	0.022	0.140	-0.157
	22:2. 1.2DL+1.(	0	12.735	0.416	-0.116	0.072	0.341	0.005
		0.349	12.732	0.416	-0.116	0.072	0.301	-0.140
		0.697	12.728	0.416	-0.116	0.072	0.261	-0.285
	23:4. 1.2DL+1.(	0	11.493	0.157	-0.147	-0.008	0.311	-0.051
		0.349	11.489	0.154	-0.147	-0.008	0.260	-0.105
		0.697	11.486	0.147	-0.147	-0.008	0.209	-0.158
	24:5. 1.2DL+1.(	0	10.119	0.335	-0.093	0.052	0.273	0.005
		0.349	10.116	0.335	-0.093	0.052	0.240	-0.112
		0.697	10.112	0.335	-0.093	0.052	0.208	-0.228
	25:6. 0.9DL+1.(	0	5.693	-0.028	-0.095	-0.046	0.157	-0.052
		0.349	5.690	-0.030	-0.095	-0.046	0.124	-0.042
		0.697	5.688	-0.038	-0.095	-0.046	0.091	-0.031
	26:2. 1.2DL+1.(	0	6.270	0.210	-0.062	0.021	0.176	0.005
		0.349	6.267	0.210	-0.062	0.021	0.154	-0.068
		0.697	6.263	0.210	-0.062	0.021	0.133	-0.141
	27:2. 1.2DL+1.(	0	7.508	0.259	-0.074	0.031	0.217	0.030
		0.349	7.505	0.259	-0.074	0.031	0.191	-0.060
		0.697	7.501	0.259	-0.074	0.031	0.166	-0.150
	28:6A. 1.2D+1.	0	12.982	0.445	0.370	-0.118	-0.034	-0.231
		0.349	12.978	0.441	0.369	-0.118	0.095	-0.386
		0.697	12.974	0.437	0.368	-0.118	0.223	-0.539
	29:6A. 1.2D+1.	0	11.374	0.347	1.767	0.031	-0.918	-0.063
		0.349	11.370	0.346	1.764	0.031	-0.303	-0.184

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		0.697	11.366	0.345	1.760	0.031	0.311	-0.305
	30:6B. 0.9D+1.	0	5.080	0.187	0.442	-0.163	-0.246	-0.234
		0.349	5.078	0.183	0.441	-0.163	-0.092	-0.299
		0.697	5.076	0.180	0.440	-0.163	0.062	-0.362
	31:6B. 0.9D+1.	0	3.473	0.090	1.839	-0.013	-1.129	-0.067
		0.349	3.471	0.088	1.835	-0.013	-0.489	-0.098
		0.697	3.469	0.087	1.831	-0.013	0.150	-0.128
66	21:1. 1.4DL	0	4.552	-0.024	-0.067	0.014	0.139	-0.074
		2.360	4.525	-0.024	-0.067	0.014	-0.018	-0.018
		4.720	4.497	-0.024	-0.067	0.014	-0.176	0.037
	22:2. 1.2DL+1.(	0	8.077	0.412	-0.125	0.072	0.260	1.862
		2.360	8.054	0.412	-0.125	0.072	-0.034	0.888
		4.720	8.030	0.412	-0.125	0.072	-0.328	-0.085
	23:4. 1.2DL+1.(	0	7.348	0.735	-0.101	0.155	0.206	2.607
		2.360	7.325	0.591	-0.101	0.155	-0.031	1.027
		4.720	7.301	0.480	-0.101	0.155	-0.269	-0.193
	24:5. 1.2DL+1.(	0	6.511	0.250	-0.099	0.050	0.207	1.140
		2.360	6.488	0.250	-0.099	0.050	-0.027	0.549
		4.720	6.464	0.250	-0.099	0.050	-0.262	-0.041
	25:6. 0.9DL+1.(	0	3.763	0.470	-0.044	0.115	0.088	1.420
		2.360	3.745	0.325	-0.044	0.115	-0.016	0.466
		4.720	3.728	0.214	-0.044	0.115	-0.120	-0.127
	26:2. 1.2DL+1.(	0	4.413	-0.021	-0.064	0.013	0.132	-0.065
		2.360	4.390	-0.021	-0.064	0.013	-0.018	-0.017
		4.720	4.367	-0.021	-0.064	0.013	-0.168	0.032
	27:2. 1.2DL+1.(	0	5.655	-0.033	-0.080	0.008	0.165	-0.113
		2.360	5.632	-0.033	-0.080	0.008	-0.023	-0.035
		4.720	5.608	-0.033	-0.080	0.008	-0.210	0.044
	28:6A. 1.2D+1.	0	8.286	0.393	-0.156	0.222	0.403	1.564
		2.360	8.258	0.366	-0.164	0.222	0.026	0.668
		4.720	8.231	0.340	-0.172	0.222	-0.369	-0.165
	29:6A. 1.2D+1.	0	7.199	0.294	-0.310	0.096	0.931	1.270
		2.360	7.171	0.286	-0.337	0.096	0.169	0.585
		4.720	7.144	0.278	-0.363	0.096	-0.657	-0.082
	30:6B. 0.9D+1.	0	3.277	0.135	-0.078	0.177	0.242	0.400
		2.360	3.264	0.108	-0.086	0.177	0.048	0.112
		4.720	3.250	0.082	-0.094	0.177	-0.166	-0.112
	31:6B. 0.9D+1.	0	2.190	0.037	-0.232	0.052	0.770	0.106
		2.360	2.177	0.028	-0.259	0.052	0.190	0.029
		4.720	2.163	0.020	-0.286	0.052	-0.454	-0.028
67	21:1. 1.4DL	0	9.388	0.175	-0.120	-0.044	0.289	-0.009
		0.349	9.384	0.175	-0.120	-0.044	0.247	-0.070
		0.697	9.380	0.175	-0.120	-0.044	0.205	-0.130
	22:2. 1.2DL+1.(	0	17.773	0.232	-0.220	-0.016	0.537	-0.072

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		0.349	17.769	0.232	-0.220	-0.016	0.460	-0.153
		0.697	17.766	0.232	-0.220	-0.016	0.383	-0.234
	23:4. 1.2DL+1.(	0	15.902	1.201	-0.263	-0.110	0.502	0.070
		0.349	15.898	1.199	-0.263	-0.110	0.411	-0.348
		0.697	15.895	1.191	-0.263	-0.110	0.319	-0.764
	24:5. 1.2DL+1.(	0	14.126	0.201	-0.176	-0.024	0.428	-0.048
		0.349	14.122	0.201	-0.176	-0.024	0.367	-0.118
		0.697	14.119	0.201	-0.176	-0.024	0.305	-0.188
	25:6. 0.9DL+1.(	0	7.812	1.112	-0.164	-0.114	0.260	0.112
		0.349	7.809	1.109	-0.164	-0.114	0.203	-0.275
		0.697	7.806	1.102	-0.164	-0.114	0.145	-0.660
	26:2. 1.2DL+1.(	0	8.556	0.154	-0.110	-0.040	0.265	-0.008
		0.349	8.552	0.154	-0.110	-0.040	0.227	-0.061
		0.697	8.549	0.154	-0.110	-0.040	0.188	-0.115
	27:2. 1.2DL+1.(	0	9.792	0.175	-0.128	-0.047	0.308	-0.004
		0.349	9.788	0.175	-0.128	-0.047	0.263	-0.065
		0.697	9.785	0.175	-0.128	-0.047	0.218	-0.126
	28:6A. 1.2D+1.	0	18.077	4.396	0.210	-0.344	0.214	0.405
		0.349	18.073	4.392	0.209	-0.344	0.287	-1.126
		0.697	18.069	4.388	0.207	-0.344	0.360	-2.656
	29:6A. 1.2D+1.	0	16.017	1.443	1.655	-0.080	-0.702	0.086
		0.349	16.013	1.442	1.651	-0.080	-0.125	-0.417
		0.697	16.009	1.441	1.647	-0.080	0.449	-0.919
	30:6B. 0.9D+1.	0	7.050	4.252	0.346	-0.334	-0.118	0.450
		0.349	7.048	4.248	0.345	-0.334	0.002	-1.032
		0.697	7.046	4.244	0.344	-0.334	0.122	-2.511
	31:6B. 0.9D+1.	0	4.989	1.299	1.791	-0.070	-1.034	0.131
		0.349	4.988	1.298	1.787	-0.070	-0.411	-0.322
		0.697	4.986	1.297	1.783	-0.070	0.212	-0.774
68	21:1. 1.4DL	0	7.184	0.014	-0.102	0.013	0.204	0.045
		2.360	7.157	0.014	-0.102	0.013	-0.038	0.011
		4.720	7.130	0.014	-0.102	0.013	-0.279	-0.022
	22:2. 1.2DL+1.(	0	13.055	0.363	-0.192	0.130	0.383	1.536
		2.360	13.032	0.363	-0.192	0.130	-0.069	0.680
		4.720	13.008	0.363	-0.192	0.130	-0.521	-0.176
	23:4. 1.2DL+1.(	0	11.825	0.605	-0.160	0.259	0.315	2.032
		2.360	11.802	0.463	-0.160	0.259	-0.064	0.755
		4.720	11.778	0.355	-0.160	0.259	-0.442	-0.167
	24:5. 1.2DL+1.(	0	10.469	0.231	-0.153	0.085	0.305	0.974
		2.360	10.445	0.231	-0.153	0.085	-0.055	0.428
		4.720	10.422	0.231	-0.153	0.085	-0.416	-0.117
	25:6. 0.9DL+1.(	0	5.975	0.383	-0.074	0.181	0.141	1.086
		2.360	5.958	0.241	-0.074	0.181	-0.032	0.334
		4.720	5.940	0.133	-0.074	0.181	-0.206	-0.064

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
	26:2. 1.2DL+1.(	0	6.667	0.012	-0.094	0.012	0.188	0.039
		2.360	6.643	0.012	-0.094	0.012	-0.035	0.010
		4.720	6.620	0.012	-0.094	0.012	-0.257	-0.019
	27:2. 1.2DL+1.(	0	7.903	0.012	-0.110	0.010	0.218	0.030
		2.360	7.879	0.012	-0.110	0.010	-0.041	0.003
		4.720	7.856	0.012	-0.110	0.010	-0.299	-0.025
	28:6A. 1.2D+1.	0	13.376	0.274	-0.228	0.319	0.537	1.102
		2.360	13.348	0.248	-0.236	0.319	-0.010	0.486
		4.720	13.320	0.221	-0.244	0.319	-0.575	-0.067
	29:6A. 1.2D+1.	0	11.807	0.245	-0.378	0.151	1.068	1.016
		2.360	11.779	0.237	-0.404	0.151	0.146	0.447
		4.720	11.751	0.229	-0.431	0.151	-0.840	-0.103
	30:6B. 0.9D+1.	0	5.278	0.048	-0.109	0.238	0.300	0.143
		2.360	5.264	0.021	-0.117	0.238	0.033	0.061
		4.720	5.251	-0.006	-0.125	0.238	-0.252	0.043
	31:6B. 0.9D+1.	0	3.709	0.018	-0.259	0.070	0.831	0.056
		2.360	3.696	0.010	-0.285	0.070	0.189	0.022
		4.720	3.682	0.002	-0.312	0.070	-0.516	0.007
69	21:1. 1.4DL	0	-11.478	0	-0.033	0	0	0
		3.919	-11.447	0	0	0	0	0
		7.839	-11.415	-0	0.033	-0	-0	-0
	22:2. 1.2DL+1.(	0	-23.841	0	-0.028	0	0	0
		3.919	-23.814	0	0	0	0	0
		7.839	-23.787	-0	0.028	-0	-0	-0
	23:4. 1.2DL+1.(	0	-16.030	0.128	-0.028	0	0	0
		3.919	-16.003	0	0	0	0	0
		7.839	-15.976	-0.128	0.028	-0	-0	-0
	24:5. 1.2DL+1.(	0	-18.590	0	-0.028	0	0	0
		3.919	-18.563	0	0	0	0	0
		7.839	-18.536	-0	0.028	-0	-0	-0
	25:6. 0.9DL+1.(	0	-4.818	0.128	-0.021	0	0	0
		3.919	-4.798	0	0	0	0	0
		7.839	-4.778	-0.128	0.021	-0	-0	-0
	26:2. 1.2DL+1.(	0	-13.509	0	-0.028	0	0	0
		3.919	-13.482	0	0	0	0	0
		7.839	-13.455	-0	0.028	-0	-0	-0
	27:2. 1.2DL+1.(	0	-11.878	0	-0.028	0	0	0
		3.919	-11.851	0	0	0	0	0
		7.839	-11.824	-0	0.028	-0	-0	-0
	28:6A. 1.2D+1.	0	-16.794	0.044	-0.043	0	0	0
		3.919	-16.772	0	0	0	0	0
		7.839	-16.750	-0.044	0.043	-0	-0	-0
	29:6A. 1.2D+1.	0	-19.780	0.013	-0.064	0	0	0
		3.919	-19.780	0	0	0	0	0

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Job Title Brookside Elementary - San Anselmo, CA	Ref		
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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		7.839	-19.780	-0.013	0.064	-0	-0	-0
	30:6B. 0.9D+1.	0	-1.992	0.044	-0.025	0	0	0
		3.919	-1.986	0	0	0	0	0
		7.839	-1.981	-0.044	0.025	-0	-0	-0
	31:6B. 0.9D+1.	0	-4.977	0.013	-0.047	0	0	0
		3.919	-4.994	0	0	0	0	0
		7.839	-5.011	-0.013	0.047	-0	-0	-0
70	21:1. 1.4DL	0	-8.500	0	-0.028	0	0	0
		3.996	-8.475	0	0	0	0	0
		7.991	-8.449	-0	0.028	-0	-0	-0
	22:2. 1.2DL+1.(	0	-17.574	0	-0.024	0	0	0
		3.996	-17.552	0	0	0	0	0
		7.991	-17.531	-0	0.024	-0	-0	-0
	23:4. 1.2DL+1.(	0	-11.708	0.133	-0.024	0	0	0
		3.996	-11.686	-0.000	0	0	0	0
		7.991	-11.665	-0.133	0.024	-0	-0	-0
	24:5. 1.2DL+1.(	0	-13.716	0	-0.024	0	0	0
		3.996	-13.694	0	0	0	0	0
		7.991	-13.673	-0	0.024	-0	-0	-0
	25:6. 0.9DL+1.(	0	-3.456	0.133	-0.018	0	0	0
		3.996	-3.440	-0.000	0	0	0	0
		7.991	-3.424	-0.133	0.018	-0	-0	-0
	26:2. 1.2DL+1.(	0	-7.834	0	-0.024	0	0	0
		3.996	-7.812	0	0	0	0	0
		7.991	-7.790	-0	0.024	-0	-0	-0
	27:2. 1.2DL+1.(	0	-9.376	0	-0.024	0	0	0
		3.996	-9.355	0	0	0	0	0
		7.991	-9.333	-0	0.024	-0	-0	-0
	28:6A. 1.2D+1.	0	-12.395	0.037	-0.035	0	0	0
		3.996	-12.377	0	0	0	0	0
		7.991	-12.360	-0.037	0.035	-0	-0	-0
	29:6A. 1.2D+1.	0	-14.677	0.011	-0.053	0	0	0
		3.996	-14.679	0	0	0	0	0
		7.991	-14.680	-0.011	0.053	-0	-0	-0
	30:6B. 0.9D+1.	0	-1.484	0.037	-0.021	0	0	0
		3.996	-1.480	0	0	0	0	0
		7.991	-1.475	-0.037	0.021	-0	-0	-0
	31:6B. 0.9D+1.	0	-3.766	0.011	-0.038	0	0	0
		3.996	-3.781	0	0	0	0	0
		7.991	-3.795	-0.011	0.038	-0	-0	-0
71	21:1. 1.4DL	0	-5.029	0	-0.028	0	0	0
		3.996	-5.003	0	0	0	0	0
		7.991	-4.978	-0	0.028	-0	-0	-0
	22:2. 1.2DL+1.(	0	-10.459	0	-0.024	0	0	0

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	By ATT	Date 8/1/2025 12:00:00 A
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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		3.996	-10.437	0	0	0	0	0
		7.991	-10.415	-0	0.024	-0	-0	-0
	23:4. 1.2DL+1.(	0	-6.910	0.133	-0.024	0	0	0
		3.996	-6.888	0	0	0	0	0
		7.991	-6.867	-0.133	0.024	-0	-0	-0
	24:5. 1.2DL+1.(	0	-8.153	0	-0.024	0	0	0
		3.996	-8.131	0	0	0	0	0
		7.991	-8.110	-0	0.024	-0	-0	-0
	25:6. 0.9DL+1.(	0	-1.990	0.133	-0.018	0	0	0
		3.996	-1.974	0	0	0	0	0
		7.991	-1.957	-0.133	0.018	-0	-0	-0
	26:2. 1.2DL+1.(	0	-3.613	0	-0.024	0	0	0
		3.996	-3.591	0	0	0	0	0
		7.991	-3.570	-0	0.024	-0	-0	-0
	27:2. 1.2DL+1.(	0	-6.400	0	-0.024	0	0	0
		3.996	-6.378	0	0	0	0	0
		7.991	-6.356	-0	0.024	-0	-0	-0
	28:6A. 1.2D+1.	0	-7.339	0.037	-0.035	0	0	0
		3.996	-7.321	0	0	0	0	0
		7.991	-7.303	-0.037	0.035	-0	-0	-0
	29:6A. 1.2D+1.	0	-8.917	0.011	-0.053	0	0	0
		3.996	-8.918	0	0	0	0	0
		7.991	-8.920	-0.011	0.053	-0	-0	-0
	30:6B. 0.9D+1.	0	-0.845	0.037	-0.021	0	0	0
		3.996	-0.841	0	0	0	0	0
		7.991	-0.837	-0.037	0.021	-0	-0	-0
	31:6B. 0.9D+1.	0	-2.424	0.011	-0.038	0	0	0
		3.996	-2.438	0	0	0	0	0
		7.991	-2.453	-0.011	0.038	-0	-0	-0
72	21:1. 1.4DL	0	-1.764	0	-0.028	0	0	0
		3.996	-1.738	0	0	0	0	0
		7.991	-1.713	-0	0.028	-0	-0	-0
	22:2. 1.2DL+1.(	0	-3.584	0	-0.024	0	0	0
		3.996	-3.562	0	0	0	0	0
		7.991	-3.540	-0	0.024	-0	-0	-0
	23:4. 1.2DL+1.(	0	-2.367	0.133	-0.024	0	0	0
		3.996	-2.345	-0.000	0	0	0	0
		7.991	-2.323	-0.133	0.024	-0	-0	-0
	24:5. 1.2DL+1.(	0	-2.807	0	-0.024	0	0	0
		3.996	-2.785	0	0	0	0	0
		7.991	-2.763	-0	0.024	-0	-0	-0
	25:6. 0.9DL+1.(	0	-0.694	0.133	-0.018	0	0	0
		3.996	-0.678	-0.000	0	0	0	0
		7.991	-0.661	-0.133	0.018	-0	-0	-0

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
	26:2. 1.2DL+1.(	0	-0.812	0	-0.024	0	0	0
		3.996	-0.790	0	0	0	0	0
		7.991	-0.768	-0	0.024	-0	-0	-0
	27:2. 1.2DL+1.(	0	-3.591	0	-0.024	0	0	0
		3.996	-3.569	0	0	0	0	0
		7.991	-3.547	-0	0.024	-0	-0	-0
	28:6A. 1.2D+1.	0	-2.535	0.037	-0.035	0	0	0
		3.996	-2.517	0	0	0	0	0
		7.991	-2.499	-0.037	0.035	-0	-0	-0
	29:6A. 1.2D+1.	0	-3.350	0.011	-0.053	0	0	0
		3.996	-3.352	0	0	0	0	0
		7.991	-3.353	-0.011	0.053	-0	-0	-0
	30:6B. 0.9D+1.	0	-0.310	0.037	-0.021	0	0	0
		3.996	-0.306	0	0	0	0	0
		7.991	-0.301	-0.037	0.021	-0	-0	-0
	31:6B. 0.9D+1.	0	-1.125	0.011	-0.038	0	0	0
		3.996	-1.140	0	0	0	0	0
		7.991	-1.155	-0.011	0.038	-0	-0	-0
73	21:1. 1.4DL	0	-1.713	0	-0.028	0	0	0
		3.996	-1.738	0	0	0	0	0
		7.991	-1.764	-0	0.028	-0	-0	-0
	22:2. 1.2DL+1.(	0	-3.540	0	-0.024	0	0	0
		3.996	-3.562	0	0	0	0	0
		7.991	-3.584	-0	0.024	-0	-0	-0
	23:4. 1.2DL+1.(	0	-2.323	0.133	-0.024	0	0	0
		3.996	-2.345	0.000	0	0	0	0
		7.991	-2.367	-0.133	0.024	-0	-0	-0
	24:5. 1.2DL+1.(	0	-2.763	0	-0.024	0	0	0
		3.996	-2.785	0	0	0	0	0
		7.991	-2.807	-0	0.024	-0	-0	-0
	25:6. 0.9DL+1.(	0	-0.661	0.133	-0.018	0	0	0
		3.996	-0.678	0.000	0	0	0	0
		7.991	-0.694	-0.133	0.018	-0	-0	-0
	26:2. 1.2DL+1.(	0	-2.170	0	-0.024	0	0	0
		3.996	-2.191	0	0	0	0	0
		7.991	-2.213	-0	0.024	-0	-0	-0
	27:2. 1.2DL+1.(	0	-2.642	0	-0.024	0	0	0
		3.996	-2.664	0	0	0	0	0
		7.991	-2.686	-0	0.024	-0	-0	-0
	28:6A. 1.2D+1.	0	-2.161	0.037	-0.020	0	0	0
		3.996	-2.195	0	0	0	0	0
		7.991	-2.228	-0.037	0.020	-0	-0	-0
	29:6A. 1.2D+1.	0	-2.224	0.011	-0.003	0	0	0
		3.996	-2.277	0	0	0	0	0

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		7.991	-2.329	-0.011	0.003	-0	-0	-0
	30:6B. 0.9D+1.	0	0.037	0.037	-0.006	0	0	0
		3.996	0.017	0	0	0	0	0
		7.991	-0.004	-0.037	0.006	-0	-0	-0
	31:6B. 0.9D+1.	0	-0.026	0.011	0.011	0	0	0
		3.996	-0.065	0	0	0	0	0
		7.991	-0.104	-0.011	-0.011	-0	-0	-0
74	21:1. 1.4DL	0	-4.978	0	-0.028	0	0	0
		3.996	-5.003	0	0	0	0	0
		7.991	-5.029	-0	0.028	-0	-0	-0
	22:2. 1.2DL+1.(	0	-10.415	0	-0.024	0	0	0
		3.996	-10.437	0	0	0	0	0
		7.991	-10.459	-0	0.024	-0	-0	-0
	23:4. 1.2DL+1.(	0	-6.867	0.133	-0.024	0	0	0
		3.996	-6.888	-0.000	0	0	0	0
		7.991	-6.910	-0.133	0.024	-0	-0	-0
	24:5. 1.2DL+1.(	0	-8.110	0	-0.024	0	0	0
		3.996	-8.131	0	0	0	0	0
		7.991	-8.153	-0	0.024	-0	-0	-0
	25:6. 0.9DL+1.(	0	-1.957	0.133	-0.018	0	0	0
		3.996	-1.974	-0.000	0	0	0	0
		7.991	-1.990	-0.133	0.018	-0	-0	-0
	26:2. 1.2DL+1.(	0	-4.966	0	-0.024	0	0	0
		3.996	-4.988	0	0	0	0	0
		7.991	-5.009	-0	0.024	-0	-0	-0
	27:2. 1.2DL+1.(	0	-6.656	0	-0.024	0	0	0
		3.996	-6.678	0	0	0	0	0
		7.991	-6.700	-0	0.024	-0	-0	-0
	28:6A. 1.2D+1.	0	-6.966	0.037	-0.020	0	0	0
		3.996	-7.000	0	0	0	0	0
		7.991	-7.033	-0.037	0.020	-0	-0	-0
	29:6A. 1.2D+1.	0	-7.794	0.011	-0.003	0	0	0
		3.996	-7.847	0	0	0	0	0
		7.991	-7.899	-0.011	0.003	-0	-0	-0
	30:6B. 0.9D+1.	0	-0.499	0.037	-0.006	0	0	0
		3.996	-0.519	0	0	0	0	0
		7.991	-0.540	-0.037	0.006	-0	-0	-0
	31:6B. 0.9D+1.	0	-1.327	0.011	0.011	0	0	0
		3.996	-1.366	0	0	0	0	0
		7.991	-1.406	-0.011	-0.011	-0	-0	-0
75	21:1. 1.4DL	0	-8.449	0	-0.028	0	0	0
		3.996	-8.475	0	0	0	0	0
		7.991	-8.500	-0	0.028	-0	-0	-0
	22:2. 1.2DL+1.(	0	-17.531	0	-0.024	0	0	0

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		3.996	-17.552	0	0	0	0	0
		7.991	-17.574	-0	0.024	-0	-0	-0
	23:4. 1.2DL+1.(	0	-11.665	0.133	-0.024	0	0	0
		3.996	-11.686	-0.000	0	0	0	0
		7.991	-11.708	-0.133	0.024	-0	-0	-0
	24:5. 1.2DL+1.(	0	-13.673	0	-0.024	0	0	0
		3.996	-13.694	0	0	0	0	0
		7.991	-13.716	-0	0.024	-0	-0	-0
	25:6. 0.9DL+1.(	0	-3.424	0.133	-0.018	0	0	0
		3.996	-3.440	-0.000	0	0	0	0
		7.991	-3.456	-0.133	0.018	-0	-0	-0
	26:2. 1.2DL+1.(	0	-7.943	0	-0.024	0	0	0
		3.996	-7.965	0	0	0	0	0
		7.991	-7.987	-0	0.024	-0	-0	-0
	27:2. 1.2DL+1.(	0	-9.641	0	-0.024	0	0	0
		3.996	-9.663	0	0	0	0	0
		7.991	-9.685	-0	0.024	-0	-0	-0
	28:6A. 1.2D+1.	0	-12.034	0.037	-0.020	0	0	0
		3.996	-12.067	0	0	0	0	0
		7.991	-12.101	-0.037	0.020	-0	-0	-0
	29:6A. 1.2D+1.	0	-13.593	0.011	-0.003	0	0	0
		3.996	-13.646	0	0	0	0	0
		7.991	-13.698	-0.011	0.003	-0	-0	-0
	30:6B. 0.9D+1.	0	-1.149	0.037	-0.006	0	0	0
		3.996	-1.170	0	0	0	0	0
		7.991	-1.190	-0.037	0.006	-0	-0	-0
	31:6B. 0.9D+1.	0	-2.709	0.011	0.011	0	0	0
		3.996	-2.748	0	0	0	0	0
		7.991	-2.788	-0.011	-0.011	-0	-0	-0
76	21:1. 1.4DL	0	-11.415	0	-0.033	0	0	0
		3.919	-11.447	0	0	0	0	0
		7.839	-11.478	-0	0.033	-0	-0	-0
	22:2. 1.2DL+1.(	0	-23.787	0	-0.028	0	0	0
		3.919	-23.814	0	0	0	0	0
		7.839	-23.841	-0	0.028	-0	-0	-0
	23:4. 1.2DL+1.(	0	-15.976	0.128	-0.028	0	0	0
		3.919	-16.003	0.000	0	0	0	0
		7.839	-16.030	-0.128	0.028	-0	-0	-0
	24:5. 1.2DL+1.(	0	-18.536	0	-0.028	0	0	0
		3.919	-18.563	0	0	0	0	0
		7.839	-18.590	-0	0.028	-0	-0	-0
	25:6. 0.9DL+1.(	0	-4.778	0.128	-0.021	0	0	0
		3.919	-4.798	0.000	0	0	0	0
		7.839	-4.818	-0.128	0.021	-0	-0	-0

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	Part		
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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
	26:2. 1.2DL+1.(	0	-10.468	0	-0.028	0	0	0
		3.919	-10.495	0	0	0	0	0
		7.839	-10.522	-0	0.028	-0	-0	-0
	27:2. 1.2DL+1.(	0	-12.124	0	-0.028	0	0	0
		3.919	-12.151	0	0	0	0	0
		7.839	-12.178	-0	0.028	-0	-0	-0
	28:6A. 1.2D+1.	0	-16.390	0.044	-0.024	0	0	0
		3.919	-16.432	0	0	0	0	0
		7.839	-16.473	-0.044	0.024	-0	-0	-0
	29:6A. 1.2D+1.	0	-18.581	0.013	-0.003	0	0	0
		3.919	-18.645	0	0	0	0	0
		7.839	-18.709	-0.013	0.003	-0	-0	-0
	30:6B. 0.9D+1.	0	-1.621	0.044	-0.007	0	0	0
		3.919	-1.646	0	0	0	0	0
		7.839	-1.671	-0.044	0.007	-0	-0	-0
	31:6B. 0.9D+1.	0	-3.811	0.013	0.015	0	0	0
		3.919	-3.859	0	0	0	0	0
		7.839	-3.906	-0.013	-0.015	-0	-0	-0
77	21:1. 1.4DL	0	-13.892	0	-0.033	0	0	0
		3.919	-13.861	0	0	0	0	0
		7.839	-13.829	-0	0.033	-0	-0	-0
	22:2. 1.2DL+1.(	0	-25.910	0	-0.028	0	0	0
		3.919	-25.883	0	0	0	0	0
		7.839	-25.856	-0	0.028	-0	-0	-0
	23:4. 1.2DL+1.(	0	-23.196	0.128	-0.028	0	0	0
		3.919	-23.169	0	0	0	0	0
		7.839	-23.142	-0.128	0.028	-0	-0	-0
	24:5. 1.2DL+1.(	0	-20.659	0	-0.028	0	0	0
		3.919	-20.632	0	0	0	0	0
		7.839	-20.605	-0	0.028	-0	-0	-0
	25:6. 0.9DL+1.(	0	-11.468	0.128	-0.021	0	0	0
		3.919	-11.448	0	0	0	0	0
		7.839	-11.428	-0.128	0.021	-0	-0	-0
	26:2. 1.2DL+1.(	0	-15.878	0	-0.028	0	0	0
		3.919	-15.852	0	0	0	0	0
		7.839	-15.825	-0	0.028	-0	-0	-0
	27:2. 1.2DL+1.(	0	-14.102	0	-0.028	0	0	0
		3.919	-14.075	0	0	0	0	0
		7.839	-14.048	-0	0.028	-0	-0	-0
	28:6A. 1.2D+1.	0	-26.654	0.044	-0.043	0	0	0
		3.919	-26.631	0	0	0	0	0
		7.839	-26.609	-0.044	0.043	-0	-0	-0
	29:6A. 1.2D+1.	0	-24.429	0.013	-0.064	0	0	0
		3.919	-24.430	0	0	0	0	0

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		7.839	-24.430	-0.013	0.064	-0	-0	-0
	30:6B. 0.9D+1.	0	-10.579	0.044	-0.025	0	0	0
		3.919	-10.574	0	0	0	0	0
		7.839	-10.568	-0.044	0.025	-0	-0	-0
	31:6B. 0.9D+1.	0	-8.355	0.013	-0.047	0	0	0
		3.919	-8.372	0	0	0	0	0
		7.839	-8.388	-0.013	0.047	-0	-0	-0
78	21:1. 1.4DL	0	-10.106	0	-0.028	0	0	0
		3.996	-10.080	0	0	0	0	0
		7.991	-10.055	-0	0.028	-0	-0	-0
	22:2. 1.2DL+1.(	0	-18.925	0	-0.024	0	0	0
		3.996	-18.904	0	0	0	0	0
		7.991	-18.882	-0	0.024	-0	-0	-0
	23:4. 1.2DL+1.(	0	-17.101	0.133	-0.024	0	0	0
		3.996	-17.079	-0.000	0	0	0	0
		7.991	-17.057	-0.133	0.024	-0	-0	-0
	24:5. 1.2DL+1.(	0	-15.077	0	-0.024	0	0	0
		3.996	-15.055	0	0	0	0	0
		7.991	-15.033	-0	0.024	-0	-0	-0
	25:6. 0.9DL+1.(	0	-8.521	0.133	-0.018	0	0	0
		3.996	-8.504	-0.000	0	0	0	0
		7.991	-8.488	-0.133	0.018	-0	-0	-0
	26:2. 1.2DL+1.(	0	-9.227	0	-0.024	0	0	0
		3.996	-9.205	0	0	0	0	0
		7.991	-9.184	-0	0.024	-0	-0	-0
	27:2. 1.2DL+1.(	0	-10.911	0	-0.024	0	0	0
		3.996	-10.890	0	0	0	0	0
		7.991	-10.868	-0	0.024	-0	-0	-0
	28:6A. 1.2D+1.	0	-19.650	0.037	-0.035	0	0	0
		3.996	-19.632	0	0	0	0	0
		7.991	-19.614	-0.037	0.035	-0	-0	-0
	29:6A. 1.2D+1.	0	-18.009	0.011	-0.053	0	0	0
		3.996	-18.010	0	0	0	0	0
		7.991	-18.011	-0.011	0.053	-0	-0	-0
	30:6B. 0.9D+1.	0	-7.908	0.037	-0.021	0	0	0
		3.996	-7.904	0	0	0	0	0
		7.991	-7.899	-0.037	0.021	-0	-0	-0
	31:6B. 0.9D+1.	0	-6.267	0.011	-0.038	0	0	0
		3.996	-6.282	0	0	0	0	0
		7.991	-6.296	-0.011	0.038	-0	-0	-0
79	21:1. 1.4DL	0	-6.153	0	-0.028	0	0	0
		3.996	-6.128	0	0	0	0	0
		7.991	-6.102	-0	0.028	-0	-0	-0
	22:2. 1.2DL+1.(	0	-11.455	0	-0.024	0	0	0

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		3.996	-11.433	0	0	0	0	0
		7.991	-11.411	-0	0.024	-0	-0	-0
	23:4. 1.2DL+1.(	0	-10.370	0.133	-0.024	0	0	0
		3.996	-10.349	0	0	0	0	0
		7.991	-10.327	-0.133	0.024	-0	-0	-0
	24:5. 1.2DL+1.(	0	-9.137	0	-0.024	0	0	0
		3.996	-9.115	0	0	0	0	0
		7.991	-9.094	-0	0.024	-0	-0	-0
	25:6. 0.9DL+1.(	0	-5.189	0.133	-0.018	0	0	0
		3.996	-5.173	0	0	0	0	0
		7.991	-5.156	-0.133	0.018	-0	-0	-0
	26:2. 1.2DL+1.(	0	-4.527	0	-0.024	0	0	0
		3.996	-4.505	0	0	0	0	0
		7.991	-4.483	-0	0.024	-0	-0	-0
	27:2. 1.2DL+1.(	0	-7.529	0	-0.024	0	0	0
		3.996	-7.507	0	0	0	0	0
		7.991	-7.486	-0	0.024	-0	-0	-0
	28:6A. 1.2D+1.	0	-11.969	0.037	-0.035	0	0	0
		3.996	-11.952	0	0	0	0	0
		7.991	-11.934	-0.037	0.035	-0	-0	-0
	29:6A. 1.2D+1.	0	-11.108	0.011	-0.053	0	0	0
		3.996	-11.109	0	0	0	0	0
		7.991	-11.110	-0.011	0.053	-0	-0	-0
	30:6B. 0.9D+1.	0	-4.863	0.037	-0.021	0	0	0
		3.996	-4.858	0	0	0	0	0
		7.991	-4.854	-0.037	0.021	-0	-0	-0
	31:6B. 0.9D+1.	0	-4.001	0.011	-0.038	0	0	0
		3.996	-4.016	0	0	0	0	0
		7.991	-4.030	-0.011	0.038	-0	-0	-0
80	21:1. 1.4DL	0	-1.993	0	-0.028	0	0	0
		3.996	-1.967	0	0	0	0	0
		7.991	-1.942	-0	0.028	-0	-0	-0
	22:2. 1.2DL+1.(	0	-3.744	0	-0.024	0	0	0
		3.996	-3.723	0	0	0	0	0
		7.991	-3.701	-0	0.024	-0	-0	-0
	23:4. 1.2DL+1.(	0	-3.425	0.133	-0.024	0	0	0
		3.996	-3.403	-0.000	0	0	0	0
		7.991	-3.381	-0.133	0.024	-0	-0	-0
	24:5. 1.2DL+1.(	0	-2.981	0	-0.024	0	0	0
		3.996	-2.959	0	0	0	0	0
		7.991	-2.937	-0	0.024	-0	-0	-0
	25:6. 0.9DL+1.(	0	-1.725	0.133	-0.018	0	0	0
		3.996	-1.709	-0.000	0	0	0	0
		7.991	-1.693	-0.133	0.018	-0	-0	-0

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
	26:2. 1.2DL+1.(	0	-0.950	0	-0.024	0	0	0
		3.996	-0.928	0	0	0	0	0
		7.991	-0.907	-0	0.024	-0	-0	-0
	27:2. 1.2DL+1.(	0	-3.935	0	-0.024	0	0	0
		3.996	-3.913	0	0	0	0	0
		7.991	-3.891	-0	0.024	-0	-0	-0
	28:6A. 1.2D+1.	0	-4.144	0.037	-0.035	0	0	0
		3.996	-4.126	0	0	0	0	0
		7.991	-4.108	-0.037	0.035	-0	-0	-0
	29:6A. 1.2D+1.	0	-3.996	0.011	-0.053	0	0	0
		3.996	-3.998	0	0	0	0	0
		7.991	-3.999	-0.011	0.053	-0	-0	-0
	30:6B. 0.9D+1.	0	-1.820	0.037	-0.021	0	0	0
		3.996	-1.816	0	0	0	0	0
		7.991	-1.812	-0.037	0.021	-0	-0	-0
	31:6B. 0.9D+1.	0	-1.673	0.011	-0.038	0	0	0
		3.996	-1.688	0	0	0	0	0
		7.991	-1.702	-0.011	0.038	-0	-0	-0
81	21:1. 1.4DL	0	-1.942	0	-0.028	0	0	0
		3.996	-1.967	0	0	0	0	0
		7.991	-1.993	-0	0.028	-0	-0	-0
	22:2. 1.2DL+1.(	0	-3.701	0	-0.024	0	0	0
		3.996	-3.723	0	0	0	0	0
		7.991	-3.744	-0	0.024	-0	-0	-0
	23:4. 1.2DL+1.(	0	-3.381	0.133	-0.024	0	0	0
		3.996	-3.403	0.000	0	0	0	0
		7.991	-3.425	-0.133	0.024	-0	-0	-0
	24:5. 1.2DL+1.(	0	-2.937	0	-0.024	0	0	0
		3.996	-2.959	0	0	0	0	0
		7.991	-2.981	-0	0.024	-0	-0	-0
	25:6. 0.9DL+1.(	0	-1.693	0.133	-0.018	0	0	0
		3.996	-1.709	0.000	0	0	0	0
		7.991	-1.725	-0.133	0.018	-0	-0	-0
	26:2. 1.2DL+1.(	0	-2.419	0	-0.024	0	0	0
		3.996	-2.441	0	0	0	0	0
		7.991	-2.463	-0	0.024	-0	-0	-0
	27:2. 1.2DL+1.(	0	-2.908	0	-0.024	0	0	0
		3.996	-2.930	0	0	0	0	0
		7.991	-2.951	-0	0.024	-0	-0	-0
	28:6A. 1.2D+1.	0	-3.767	0.037	-0.020	0	0	0
		3.996	-3.801	0	0	0	0	0
		7.991	-3.834	-0.037	0.020	-0	-0	-0
	29:6A. 1.2D+1.	0	-2.860	0.011	-0.003	0	0	0
		3.996	-2.913	0	0	0	0	0

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		7.991	-2.965	-0.011	0.003	-0	-0	-0
	30:6B. 0.9D+1.	0	-1.470	0.037	-0.006	0	0	0
		3.996	-1.491	0	0	0	0	0
		7.991	-1.511	-0.037	0.006	-0	-0	-0
	31:6B. 0.9D+1.	0	-0.564	0.011	0.011	0	0	0
		3.996	-0.603	0	0	0	0	0
		7.991	-0.642	-0.011	-0.011	-0	-0	-0
82	21:1. 1.4DL	0	-6.102	0	-0.028	0	0	0
		3.996	-6.128	0	0	0	0	0
		7.991	-6.153	-0	0.028	-0	-0	-0
	22:2. 1.2DL+1.(	0	-11.411	0	-0.024	0	0	0
		3.996	-11.433	0	0	0	0	0
		7.991	-11.455	-0	0.024	-0	-0	-0
	23:4. 1.2DL+1.(	0	-10.327	0.133	-0.024	0	0	0
		3.996	-10.349	-0.000	0	0	0	0
		7.991	-10.370	-0.133	0.024	-0	-0	-0
	24:5. 1.2DL+1.(	0	-9.094	0	-0.024	0	0	0
		3.996	-9.115	0	0	0	0	0
		7.991	-9.137	-0	0.024	-0	-0	-0
	25:6. 0.9DL+1.(	0	-5.156	0.133	-0.018	0	0	0
		3.996	-5.173	-0.000	0	0	0	0
		7.991	-5.189	-0.133	0.018	-0	-0	-0
	26:2. 1.2DL+1.(	0	-5.985	0	-0.024	0	0	0
		3.996	-6.006	0	0	0	0	0
		7.991	-6.028	-0	0.024	-0	-0	-0
	27:2. 1.2DL+1.(	0	-7.816	0	-0.024	0	0	0
		3.996	-7.838	0	0	0	0	0
		7.991	-7.859	-0	0.024	-0	-0	-0
	28:6A. 1.2D+1.	0	-11.597	0.037	-0.020	0	0	0
		3.996	-11.631	0	0	0	0	0
		7.991	-11.665	-0.037	0.020	-0	-0	-0
	29:6A. 1.2D+1.	0	-9.987	0.011	-0.003	0	0	0
		3.996	-10.039	0	0	0	0	0
		7.991	-10.092	-0.011	0.003	-0	-0	-0
	30:6B. 0.9D+1.	0	-4.517	0.037	-0.006	0	0	0
		3.996	-4.538	0	0	0	0	0
		7.991	-4.558	-0.037	0.006	-0	-0	-0
	31:6B. 0.9D+1.	0	-2.907	0.011	0.011	0	0	0
		3.996	-2.946	0	0	0	0	0
		7.991	-2.986	-0.011	-0.011	-0	-0	-0
83	21:1. 1.4DL	0	-10.055	0	-0.028	0	0	0
		3.996	-10.080	0	0	0	0	0
		7.991	-10.106	-0	0.028	-0	-0	-0
	22:2. 1.2DL+1.(	0	-18.882	0	-0.024	0	0	0

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		3.996	-18.904	0	0	0	0	0
		7.991	-18.925	-0	0.024	-0	-0	-0
	23:4. 1.2DL+1.(	0	-17.057	0.133	-0.024	0	0	0
		3.996	-17.079	-0.000	0	0	0	0
		7.991	-17.101	-0.133	0.024	-0	-0	-0
	24:5. 1.2DL+1.(	0	-15.033	0	-0.024	0	0	0
		3.996	-15.055	0	0	0	0	0
		7.991	-15.077	-0	0.024	-0	-0	-0
	25:6. 0.9DL+1.(	0	-8.488	0.133	-0.018	0	0	0
		3.996	-8.504	-0.000	0	0	0	0
		7.991	-8.521	-0.133	0.018	-0	-0	-0
	26:2. 1.2DL+1.(	0	-9.372	0	-0.024	0	0	0
		3.996	-9.394	0	0	0	0	0
		7.991	-9.415	-0	0.024	-0	-0	-0
	27:2. 1.2DL+1.(	0	-11.201	0	-0.024	0	0	0
		3.996	-11.223	0	0	0	0	0
		7.991	-11.244	-0	0.024	-0	-0	-0
	28:6A. 1.2D+1.	0	-19.280	0.037	-0.020	0	0	0
		3.996	-19.314	0	0	0	0	0
		7.991	-19.348	-0.037	0.020	-0	-0	-0
	29:6A. 1.2D+1.	0	-16.897	0.011	-0.003	0	0	0
		3.996	-16.950	0	0	0	0	0
		7.991	-17.003	-0.011	0.003	-0	-0	-0
	30:6B. 0.9D+1.	0	-7.565	0.037	-0.006	0	0	0
		3.996	-7.586	0	0	0	0	0
		7.991	-7.606	-0.037	0.006	-0	-0	-0
	31:6B. 0.9D+1.	0	-5.182	0.011	0.011	0	0	0
		3.996	-5.222	0	0	0	0	0
		7.991	-5.261	-0.011	-0.011	-0	-0	-0
84	21:1. 1.4DL	0	-13.829	0	-0.033	0	0	0
		3.919	-13.861	0	0	0	0	0
		7.839	-13.892	-0	0.033	-0	-0	-0
	22:2. 1.2DL+1.(	0	-25.856	0	-0.028	0	0	0
		3.919	-25.883	0	0	0	0	0
		7.839	-25.910	-0	0.028	-0	-0	-0
	23:4. 1.2DL+1.(	0	-23.142	0.128	-0.028	0	0	0
		3.919	-23.169	0.000	0	0	0	0
		7.839	-23.196	-0.128	0.028	-0	-0	-0
	24:5. 1.2DL+1.(	0	-20.605	0	-0.028	0	0	0
		3.919	-20.632	0	0	0	0	0
		7.839	-20.659	-0	0.028	-0	-0	-0
	25:6. 0.9DL+1.(	0	-11.428	0.128	-0.021	0	0	0
		3.919	-11.448	0.000	0	0	0	0
		7.839	-11.468	-0.128	0.021	-0	-0	-0

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
	26:2. 1.2DL+1.(	0	-12.589	0	-0.028	0	0	0
		3.919	-12.615	0	0	0	0	0
		7.839	-12.642	-0	0.028	-0	-0	-0
	27:2. 1.2DL+1.(	0	-14.372	0	-0.028	0	0	0
		3.919	-14.399	0	0	0	0	0
		7.839	-14.426	-0	0.028	-0	-0	-0
	28:6A. 1.2D+1.	0	-26.256	0.044	-0.024	0	0	0
		3.919	-26.297	0	0	0	0	0
		7.839	-26.339	-0.044	0.024	-0	-0	-0
	29:6A. 1.2D+1.	0	-23.251	0.013	-0.003	0	0	0
		3.919	-23.315	0	0	0	0	0
		7.839	-23.379	-0.013	0.003	-0	-0	-0
	30:6B. 0.9D+1.	0	-10.214	0.044	-0.007	0	0	0
		3.919	-10.239	0	0	0	0	0
		7.839	-10.264	-0.044	0.007	-0	-0	-0
	31:6B. 0.9D+1.	0	-7.210	0.013	0.015	0	0	0
		3.919	-7.257	0	0	0	0	0
		7.839	-7.305	-0.013	-0.015	-0	-0	-0
600	21:1. 1.4DL	0	0.042	0.904	0.007	-0.001	-0.025	0.096
		3.208	0.042	0.037	0.007	-0.001	-0.002	-1.494
		6.417	0.042	-0.831	0.007	-0.001	0.021	-0.140
	22:2. 1.2DL+1.(	0	-0.213	2.135	0.019	-0.001	0.169	2.175
		3.208	-0.213	0.031	0.019	-0.001	0.231	-1.511
		6.417	-0.213	-2.072	0.019	-0.001	0.293	1.973
	23:4. 1.2DL+1.(	0	-0.669	2.486	-0.201	-0.004	0.770	3.842
		3.208	-0.669	0.892	-0.201	-0.004	0.123	-1.734
		6.417	-0.669	-0.701	-0.201	-0.004	-0.523	-1.883
	24:5. 1.2DL+1.(	0	-0.120	1.625	0.014	-0.001	0.098	1.390
		3.208	-0.120	0.031	0.014	-0.001	0.144	-1.425
		6.417	-0.120	-1.562	0.014	-0.001	0.190	1.188
	25:6. 0.9DL+1.(	0	-0.522	1.442	-0.211	-0.004	0.656	2.513
		3.208	-0.522	0.884	-0.211	-0.004	-0.021	-1.270
		6.417	-0.522	0.327	-0.211	-0.004	-0.699	-3.161
	26:2. 1.2DL+1.(	0	0.075	0.774	0.025	-0.001	-0.074	-0.076
		3.208	0.075	0.031	0.025	-0.001	0.007	-1.436
		6.417	0.075	-0.713	0.025	-0.001	0.088	-0.272
	27:2. 1.2DL+1.(	0	0.037	0.778	0.005	-0.001	-0.020	0.097
		3.208	0.037	0.035	0.005	-0.001	-0.003	-1.277
		6.417	0.037	-0.709	0.005	-0.001	0.015	-0.127
	28:6A. 1.2D+1.	0	-0.683	2.887	-0.405	-0.010	1.309	3.820
		3.208	-0.775	1.158	-0.378	-0.010	0.053	-2.299
		6.417	-0.867	-0.571	-0.350	-0.010	-1.114	-3.070
	29:6A. 1.2D+1.	0	-0.370	2.111	-0.235	-0.004	0.652	2.097
		3.208	-0.398	0.382	-0.143	-0.004	0.044	-1.910

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		6.417	-0.426	-1.347	-0.051	-0.004	-0.268	-0.190
	30:6B. 0.9D+1.	0	-0.550	1.561	-0.417	-0.009	1.203	2.461
		3.208	-0.642	1.139	-0.390	-0.009	-0.091	-1.367
		6.417	-0.734	0.717	-0.362	-0.009	-1.297	-4.304
	31:6B. 0.9D+1.	0	-0.237	0.784	-0.247	-0.003	0.546	0.738
		3.208	-0.265	0.362	-0.155	-0.003	-0.100	-0.978
		6.417	-0.292	-0.060	-0.063	-0.003	-0.451	-1.425
601	21:1. 1.4DL	0	0.042	0.904	-0.007	0.001	0.025	0.096
		3.208	0.042	0.037	-0.007	0.001	0.002	-1.494
		6.417	0.042	-0.831	-0.007	0.001	-0.021	-0.140
	22:2. 1.2DL+1.(	0	-0.213	2.135	-0.019	0.001	-0.169	2.175
		3.208	-0.213	0.031	-0.019	0.001	-0.231	-1.511
		6.417	-0.213	-2.072	-0.019	0.001	-0.293	1.973
	23:4. 1.2DL+1.(	0	-0.669	2.486	0.201	0.004	-0.770	3.842
		3.208	-0.669	0.892	0.201	0.004	-0.123	-1.734
		6.417	-0.669	-0.701	0.201	0.004	0.523	-1.883
	24:5. 1.2DL+1.(	0	-0.120	1.625	-0.014	0.001	-0.098	1.390
		3.208	-0.120	0.031	-0.014	0.001	-0.144	-1.425
		6.417	-0.120	-1.562	-0.014	0.001	-0.190	1.188
	25:6. 0.9DL+1.(	0	-0.522	1.442	0.211	0.004	-0.656	2.513
		3.208	-0.522	0.884	0.211	0.004	0.021	-1.270
		6.417	-0.522	0.327	0.211	0.004	0.699	-3.161
	26:2. 1.2DL+1.(	0	0.036	0.776	-0.006	0.001	0.020	0.087
		3.208	0.036	0.033	-0.006	0.001	0.002	-1.280
		6.417	0.036	-0.711	-0.006	0.001	-0.017	-0.123
	27:2. 1.2DL+1.(	0	0.037	0.779	-0.006	0.001	0.022	0.097
		3.208	0.037	0.035	-0.006	0.001	0.003	-1.278
		6.417	0.037	-0.708	-0.006	0.001	-0.015	-0.129
	28:6A. 1.2D+1.	0	-0.652	2.885	0.338	0.010	-1.229	3.829
		3.208	-0.744	1.156	0.365	0.010	-0.101	-2.282
		6.417	-0.836	-0.574	0.393	0.010	1.115	-3.045
	29:6A. 1.2D+1.	0	-0.268	2.103	0.010	0.004	-0.386	2.126
		3.208	-0.295	0.374	0.102	0.004	-0.205	-1.855
		6.417	-0.323	-1.356	0.194	0.004	0.271	-0.109
	30:6B. 0.9D+1.	0	-0.519	1.558	0.350	0.009	-1.123	2.470
		3.208	-0.611	1.136	0.377	0.009	0.043	-1.351
		6.417	-0.703	0.714	0.405	0.009	1.298	-4.280
	31:6B. 0.9D+1.	0	-0.135	0.776	0.022	0.003	-0.280	0.767
		3.208	-0.162	0.354	0.114	0.003	-0.061	-0.923
		6.417	-0.190	-0.068	0.206	0.003	0.453	-1.344
602	21:1. 1.4DL	0	0.160	1.702	-0.018	-0.001	0.057	0.175
		3.208	0.160	0.004	-0.018	-0.001	-0.001	-2.730
		6.417	0.160	-1.694	-0.018	-0.001	-0.058	0.147
	22:2. 1.2DL+1.(	0	-0.130	4.288	-0.028	-0.001	0.147	1.769

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		3.208	-0.130	0.012	-0.028	-0.001	0.055	-5.566
		6.417	-0.130	-4.263	-0.028	-0.001	-0.036	1.691
	23:4. 1.2DL+1.(	0	0.586	3.647	-0.102	-0.004	0.369	2.796
		3.208	0.586	0.429	-0.102	-0.004	0.040	-4.068
		6.417	0.586	-2.789	-0.102	-0.004	-0.288	0.046
	24:5. 1.2DL+1.(	0	-0.030	3.227	-0.024	-0.001	0.110	1.162
		3.208	-0.030	0.009	-0.024	-0.001	0.034	-4.356
		6.417	-0.030	-3.209	-0.024	-0.001	-0.041	1.104
	25:6. 0.9DL+1.(	0	0.719	1.514	-0.090	-0.004	0.295	1.747
		3.208	0.719	0.422	-0.090	-0.004	0.006	-1.467
		6.417	0.719	-0.669	-0.090	-0.004	-0.284	-0.964
	26:2. 1.2DL+1.(	0	0.239	3.888	-0.020	-0.001	0.065	0.512
		3.208	0.239	0.104	-0.020	-0.001	0.001	-6.383
		6.417	0.239	-3.680	-0.020	-0.001	-0.062	0.427
	27:2. 1.2DL+1.(	0	0.151	1.459	-0.018	-0.001	0.056	0.158
		3.208	0.151	0.004	-0.018	-0.001	-0.001	-2.332
		6.417	0.151	-1.452	-0.018	-0.001	-0.058	0.134
	28:6A. 1.2D+1.	0	4.078	4.189	-0.223	-0.009	0.695	3.719
		3.208	3.986	0.705	-0.195	-0.009	0.024	-3.240
		6.417	3.894	-2.778	-0.168	-0.009	-0.559	0.439
	29:6A. 1.2D+1.	0	1.077	3.686	-0.169	-0.003	0.337	1.802
		3.208	1.050	0.202	-0.077	-0.003	-0.057	-4.416
		6.417	1.022	-3.281	0.015	-0.003	-0.157	0.876
	30:6B. 0.9D+1.	0	4.161	1.523	-0.205	-0.009	0.604	2.614
		3.208	4.069	0.698	-0.178	-0.009	-0.011	0.215
		6.417	3.977	-0.128	-0.150	-0.009	-0.537	-0.617
	31:6B. 0.9D+1.	0	1.160	1.021	-0.151	-0.003	0.246	0.698
		3.208	1.132	0.195	-0.059	-0.003	-0.092	-0.960
		6.417	1.105	-0.631	0.032	-0.003	-0.135	-0.180
603	21:1. 1.4DL	0	0.258	1.665	0.002	-0.001	-0.008	0.083
		3.208	0.258	-0.033	0.002	-0.001	-0.002	-2.704
		6.417	0.258	-1.730	0.002	-0.001	0.003	0.292
	22:2. 1.2DL+1.(	0	0.003	4.228	0.009	-0.001	0.000	2.146
		3.208	0.003	-0.047	0.009	-0.001	0.028	-4.998
		6.417	0.003	-4.323	0.009	-0.001	0.056	2.450
	23:4. 1.2DL+1.(	0	-0.588	3.715	-0.046	-0.003	0.163	2.765
		3.208	-0.588	0.497	-0.046	-0.003	0.015	-4.318
		6.417	-0.588	-2.721	-0.046	-0.003	-0.133	-0.423
	24:5. 1.2DL+1.(	0	0.085	3.178	0.006	-0.001	-0.002	1.368
		3.208	0.085	-0.040	0.006	-0.001	0.017	-3.993
		6.417	0.085	-3.258	0.006	-0.001	0.036	1.625
	25:6. 0.9DL+1.(	0	-0.507	1.608	-0.051	-0.003	0.161	1.451
		3.208	-0.507	0.516	-0.051	-0.003	-0.003	-2.063
		6.417	-0.507	-0.576	-0.051	-0.003	-0.167	-1.861

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
	26:2. 1.2DL+1.(	0	0.308	2.322	-0.003	-0.001	0.001	0.097
		3.208	0.308	-0.005	-0.003	-0.001	-0.010	-3.894
		6.417	0.308	-2.332	-0.003	-0.001	-0.021	0.345
	27:2. 1.2DL+1.(	0	0.278	1.425	0.004	-0.001	-0.019	0.075
		3.208	0.278	-0.030	0.004	-0.001	-0.006	-2.306
		6.417	0.278	-1.486	0.004	-0.001	0.007	0.269
	28:6A. 1.2D+1.	0	0.008	4.190	-0.132	-0.007	0.364	2.088
		3.208	-0.084	0.707	-0.105	-0.007	-0.017	-4.877
		6.417	-0.176	-2.777	-0.077	-0.007	-0.309	-1.203
	29:6A. 1.2D+1.	0	-0.069	3.677	-0.117	-0.003	0.143	1.526
		3.208	-0.097	0.193	-0.025	-0.003	-0.085	-4.662
		6.417	-0.124	-3.290	0.067	-0.003	-0.018	0.659
	30:6B. 0.9D+1.	0	0.008	1.562	-0.138	-0.007	0.364	0.747
		3.208	-0.083	0.736	-0.110	-0.007	-0.034	-1.776
		6.417	-0.175	-0.090	-0.083	-0.007	-0.343	-2.732
	31:6B. 0.9D+1.	0	-0.069	1.048	-0.122	-0.002	0.143	0.185
		3.208	-0.096	0.223	-0.030	-0.002	-0.102	-1.561
		6.417	-0.124	-0.603	0.061	-0.002	-0.052	-0.869
604	21:1. 1.4DL	0	0.318	1.709	-0.008	-0.000	0.023	0.256
		3.208	0.318	0.012	-0.008	-0.000	-0.001	-2.672
		6.417	0.318	-1.686	-0.008	-0.000	-0.025	0.182
	22:2. 1.2DL+1.(	0	0.085	4.309	-0.011	-0.000	0.043	2.656
		3.208	0.085	0.033	-0.011	-0.000	0.009	-4.747
		6.417	0.085	-4.242	-0.011	-0.000	-0.025	2.441
	23:4. 1.2DL+1.(	0	0.842	3.807	-0.032	-0.002	0.109	3.875
		3.208	0.842	0.589	-0.032	-0.002	0.006	-3.503
		6.417	0.842	-2.629	-0.032	-0.002	-0.096	0.098
	24:5. 1.2DL+1.(	0	0.155	3.243	-0.009	-0.000	0.034	1.742
		3.208	0.155	0.025	-0.009	-0.000	0.005	-3.826
		6.417	0.155	-3.193	-0.009	-0.000	-0.024	1.584
	25:6. 0.9DL+1.(	0	0.891	1.663	-0.028	-0.002	0.090	2.297
		3.208	0.891	0.571	-0.028	-0.002	0.001	-1.395
		6.417	0.891	-0.520	-0.028	-0.002	-0.088	-1.370
	26:2. 1.2DL+1.(	0	0.343	1.468	-0.003	-0.000	0.009	0.210
		3.208	0.343	0.013	-0.003	-0.000	0.000	-2.309
		6.417	0.343	-1.443	-0.003	-0.000	-0.009	0.128
	27:2. 1.2DL+1.(	0	0.356	1.471	-0.014	-0.000	0.050	0.175
		3.208	0.356	0.016	-0.014	-0.000	0.005	-2.353
		6.417	0.356	-1.440	-0.014	-0.000	-0.040	0.075
	28:6A. 1.2D+1.	0	4.351	4.274	-0.094	-0.003	0.233	4.564
		3.208	4.259	0.790	-0.066	-0.003	-0.023	-2.668
		6.417	4.167	-2.693	-0.039	-0.003	-0.191	0.738
	29:6A. 1.2D+1.	0	1.317	3.730	-0.121	-0.001	0.147	2.494
		3.208	1.289	0.246	-0.029	-0.001	-0.094	-3.863

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Job Title Brookside Elementary - San Anselmo, CA	Ref	
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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		6.417	1.261	-3.237	0.063	-0.001	-0.041	1.288
	30:6B. 0.9D+1.	0	4.301	1.595	-0.087	-0.003	0.207	2.906
		3.208	4.209	0.769	-0.060	-0.003	-0.029	0.276
		6.417	4.117	-0.057	-0.032	-0.003	-0.175	-0.787
	31:6B. 0.9D+1.	0	1.266	1.051	-0.115	-0.001	0.121	0.837
		3.208	1.239	0.225	-0.023	-0.001	-0.100	-0.919
		6.417	1.211	-0.601	0.069	-0.001	-0.025	-0.236
605	21:1. 1.4DL	0	0.346	1.658	0.000	-0.000	-0.000	0.106
		3.208	0.346	-0.040	0.000	-0.000	-0.000	-2.656
		6.417	0.346	-1.738	0.000	-0.000	0.000	0.365
	22:2. 1.2DL+1.(	0	0.130	4.216	0.000	-0.000	-0.000	2.428
		3.208	0.130	-0.059	0.000	-0.000	-0.000	-4.677
		6.417	0.130	-4.335	0.000	-0.000	0.000	2.810
	23:4. 1.2DL+1.(	0	-0.568	3.731	-0.000	0.000	0.000	2.989
		3.208	-0.568	0.513	-0.000	0.000	-0.000	-4.145
		6.417	-0.568	-2.705	-0.000	0.000	-0.000	-0.301
	24:5. 1.2DL+1.(	0	0.192	3.168	0.000	-0.000	-0.000	1.552
		3.208	0.192	-0.050	0.000	-0.000	-0.000	-3.777
		6.417	0.192	-3.268	0.000	-0.000	0.000	1.873
	25:6. 0.9DL+1.(	0	-0.537	1.628	-0.000	0.000	0.000	1.506
		3.208	-0.537	0.537	-0.000	0.000	-0.000	-2.076
		6.417	-0.537	-0.555	-0.000	0.000	-0.000	-1.940
	26:2. 1.2DL+1.(	0	0.333	1.419	-0.002	0.000	0.007	0.097
		3.208	0.333	-0.037	-0.002	0.000	0.002	-2.263
		6.417	0.333	-1.492	-0.002	0.000	-0.004	0.332
	27:2. 1.2DL+1.(	0	0.440	3.825	0.002	-0.000	-0.005	0.376
		3.208	0.440	0.041	0.002	-0.000	0.003	-6.317
		6.417	0.440	-3.743	0.002	-0.000	0.011	0.694
	28:6A. 1.2D+1.	0	0.108	4.250	-0.027	-0.000	0.011	2.500
		3.208	0.016	0.766	0.001	-0.000	-0.030	-4.655
		6.417	-0.076	-2.717	0.029	-0.000	0.017	-1.173
	29:6A. 1.2D+1.	0	0.098	3.682	-0.089	-0.000	0.037	1.799
		3.208	0.071	0.198	0.003	-0.000	-0.100	-4.405
		6.417	0.043	-3.285	0.095	-0.000	0.058	0.899
	30:6B. 0.9D+1.	0	0.029	1.629	-0.027	-0.000	0.011	0.983
		3.208	-0.062	0.803	0.001	-0.000	-0.030	-1.755
		6.417	-0.154	-0.023	0.029	-0.000	0.017	-2.926
	31:6B. 0.9D+1.	0	0.020	1.061	-0.089	-0.000	0.037	0.283
		3.208	-0.007	0.235	0.003	-0.000	-0.100	-1.505
		6.417	-0.035	-0.591	0.095	-0.000	0.058	-0.854
606	21:1. 1.4DL	0	0.318	1.709	0.008	0.000	-0.023	0.256
		3.208	0.318	0.012	0.008	0.000	0.001	-2.672
		6.417	0.318	-1.686	0.008	0.000	0.025	0.182
	22:2. 1.2DL+1.(	0	0.085	4.309	0.011	0.000	-0.043	2.656

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	By ATT	Date 8/1/2025 12:00:00 A
Client	File 855412-10.std	Date/Time 12-Aug-2025 10:52

Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		3.208	0.085	0.033	0.011	0.000	-0.009	-4.747
		6.417	0.085	-4.242	0.011	0.000	0.025	2.441
	23:4. 1.2DL+1.(	0	0.842	3.807	0.032	0.002	-0.109	3.875
		3.208	0.842	0.589	0.032	0.002	-0.006	-3.503
		6.417	0.842	-2.629	0.032	0.002	0.096	0.098
	24:5. 1.2DL+1.(	0	0.155	3.243	0.009	0.000	-0.034	1.742
		3.208	0.155	0.025	0.009	0.000	-0.005	-3.826
		6.417	0.155	-3.193	0.009	0.000	0.024	1.584
	25:6. 0.9DL+1.(	0	0.891	1.663	0.028	0.002	-0.090	2.297
		3.208	0.891	0.571	0.028	0.002	-0.001	-1.395
		6.417	0.891	-0.520	0.028	0.002	0.088	-1.370
	26:2. 1.2DL+1.(	0	0.290	1.466	0.007	0.000	-0.023	0.234
		3.208	0.290	0.011	0.007	0.000	0.001	-2.278
		6.417	0.290	-1.445	0.007	0.000	0.025	0.165
	27:2. 1.2DL+1.(	0	0.379	2.380	0.014	0.000	-0.050	0.315
		3.208	0.379	0.053	0.014	0.000	-0.006	-3.861
		6.417	0.379	-2.274	0.014	0.000	0.037	0.193
	28:6A. 1.2D+1.	0	4.369	4.275	0.037	0.003	-0.200	4.580
		3.208	4.277	0.791	0.065	0.003	-0.037	-2.656
		6.417	4.185	-2.692	0.092	0.003	0.215	0.746
	29:6A. 1.2D+1.	0	1.376	3.734	-0.068	0.001	-0.036	2.550
		3.208	1.349	0.250	0.024	0.001	-0.105	-3.822
		6.417	1.321	-3.233	0.116	0.001	0.120	1.316
	30:6B. 0.9D+1.	0	4.319	1.597	0.030	0.003	-0.173	2.922
		3.208	4.227	0.771	0.058	0.003	-0.031	0.288
		6.417	4.135	-0.055	0.086	0.003	0.199	-0.778
	31:6B. 0.9D+1.	0	1.326	1.056	-0.074	0.001	-0.009	0.892
		3.208	1.298	0.230	0.018	0.001	-0.100	-0.877
		6.417	1.271	-0.596	0.110	0.001	0.104	-0.208
607	21:1. 1.4DL	0	0.258	1.665	-0.002	0.001	0.008	0.083
		3.208	0.258	-0.033	-0.002	0.001	0.002	-2.704
		6.417	0.258	-1.730	-0.002	0.001	-0.003	0.292
	22:2. 1.2DL+1.(	0	0.003	4.228	-0.009	0.001	-0.000	2.146
		3.208	0.003	-0.047	-0.009	0.001	-0.028	-4.998
		6.417	0.003	-4.323	-0.009	0.001	-0.056	2.450
	23:4. 1.2DL+1.(	0	-0.588	3.715	0.046	0.003	-0.163	2.765
		3.208	-0.588	0.497	0.046	0.003	-0.015	-4.318
		6.417	-0.588	-2.721	0.046	0.003	0.133	-0.423
	24:5. 1.2DL+1.(	0	0.085	3.178	-0.006	0.001	0.002	1.368
		3.208	0.085	-0.040	-0.006	0.001	-0.017	-3.993
		6.417	0.085	-3.258	-0.006	0.001	-0.036	1.625
	25:6. 0.9DL+1.(	0	-0.507	1.608	0.051	0.003	-0.161	1.451
		3.208	-0.507	0.516	0.051	0.003	0.003	-2.063
		6.417	-0.507	-0.576	0.051	0.003	0.167	-1.861

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
	26:2. 1.2DL+1.(	0	0.231	1.427	-0.002	0.001	0.008	0.076
		3.208	0.231	-0.029	-0.002	0.001	0.002	-2.310
		6.417	0.231	-1.484	-0.002	0.001	-0.004	0.260
	27:2. 1.2DL+1.(	0	0.292	1.423	-0.006	0.001	0.023	0.037
		3.208	0.292	-0.032	-0.006	0.001	0.003	-2.337
		6.417	0.292	-1.488	-0.006	0.001	-0.016	0.245
	28:6A. 1.2D+1.	0	0.044	4.187	0.079	0.007	-0.341	2.103
		3.208	-0.048	0.704	0.106	0.007	-0.044	-4.852
		6.417	-0.140	-2.780	0.134	0.007	0.342	-1.169
	29:6A. 1.2D+1.	0	0.050	3.667	-0.062	0.003	-0.065	1.575
		3.208	0.023	0.183	0.030	0.003	-0.116	-4.581
		6.417	-0.005	-3.300	0.122	0.003	0.129	0.772
	30:6B. 0.9D+1.	0	0.044	1.559	0.084	0.007	-0.340	0.762
		3.208	-0.048	0.733	0.112	0.007	-0.026	-1.752
		6.417	-0.139	-0.093	0.139	0.007	0.377	-2.698
	31:6B. 0.9D+1.	0	0.051	1.039	-0.056	0.002	-0.065	0.234
		3.208	0.023	0.213	0.036	0.002	-0.098	-1.481
		6.417	-0.005	-0.613	0.127	0.002	0.164	-0.757
608	21:1. 1.4DL	0	0.160	1.702	0.018	0.001	-0.057	0.175
		3.208	0.160	0.004	0.018	0.001	0.001	-2.730
		6.417	0.160	-1.694	0.018	0.001	0.058	0.147
	22:2. 1.2DL+1.(	0	-0.130	4.288	0.028	0.001	-0.147	1.769
		3.208	-0.130	0.012	0.028	0.001	-0.055	-5.566
		6.417	-0.130	-4.263	0.028	0.001	0.036	1.691
	23:4. 1.2DL+1.(	0	0.586	3.647	0.102	0.004	-0.369	2.796
		3.208	0.586	0.429	0.102	0.004	-0.040	-4.068
		6.417	0.586	-2.789	0.102	0.004	0.288	0.046
	24:5. 1.2DL+1.(	0	-0.030	3.227	0.024	0.001	-0.110	1.162
		3.208	-0.030	0.009	0.024	0.001	-0.034	-4.356
		6.417	-0.030	-3.209	0.024	0.001	0.041	1.104
	25:6. 0.9DL+1.(	0	0.719	1.514	0.090	0.004	-0.295	1.747
		3.208	0.719	0.422	0.090	0.004	-0.006	-1.467
		6.417	0.719	-0.669	0.090	0.004	0.284	-0.964
	26:2. 1.2DL+1.(	0	0.141	1.459	0.016	0.001	-0.051	0.154
		3.208	0.141	0.004	0.016	0.001	0.001	-2.337
		6.417	0.141	-1.452	0.016	0.001	0.052	0.129
	27:2. 1.2DL+1.(	0	0.163	1.459	0.019	0.001	-0.057	0.156
		3.208	0.163	0.004	0.019	0.001	0.002	-2.333
		6.417	0.163	-1.452	0.019	0.001	0.062	0.133
	28:6A. 1.2D+1.	0	4.114	4.193	0.167	0.009	-0.663	3.758
		3.208	4.022	0.710	0.195	0.009	-0.082	-3.216
		6.417	3.930	-2.774	0.222	0.009	0.586	0.448
	29:6A. 1.2D+1.	0	1.196	3.702	-0.017	0.003	-0.231	1.935
		3.208	1.168	0.218	0.075	0.003	-0.138	-4.334

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		6.417	1.141	-3.265	0.167	0.003	0.250	0.907
	30:6B. 0.9D+1.	0	4.196	1.528	0.149	0.009	-0.572	2.654
		3.208	4.104	0.702	0.177	0.009	-0.048	0.239
		6.417	4.013	-0.124	0.205	0.009	0.564	-0.608
	31:6B. 0.9D+1.	0	1.279	1.037	-0.035	0.003	-0.140	0.830
		3.208	1.251	0.211	0.057	0.003	-0.104	-0.879
		6.417	1.223	-0.615	0.149	0.003	0.227	-0.148
700	21:1. 1.4DL	0	-0.109	0.050	0	0	0	0
		4.280	-0.109	0	0	0	0	0
		8.560	-0.109	-0.050	-0	-0	-0	-0
	22:2. 1.2DL+1.(	0	-0.194	0.043	0	0	0	0
		4.280	-0.194	0	0	0	0	0
		8.560	-0.194	-0.043	-0	-0	-0	-0
	23:4. 1.2DL+1.(	0	-7.062	0.043	0	0	0	0
		4.280	-7.062	0	0	0	0	0
		8.560	-7.062	-0.043	-0	-0	-0	-0
	24:5. 1.2DL+1.(	0	-0.157	0.043	0	0	0	0
		4.280	-0.157	0	0	0	0	0
		8.560	-0.157	-0.043	-0	-0	-0	-0
	25:6. 0.9DL+1.(	0	-6.976	0.032	0	0	0	0
		4.280	-6.976	0	0	0	0	0
		8.560	-6.976	-0.032	-0	-0	-0	-0
	26:2. 1.2DL+1.(	0	-0.197	0.043	0	0	0	0
		4.280	-0.197	0	0	0	0	0
		8.560	-0.197	-0.043	-0	-0	-0	-0
	27:2. 1.2DL+1.(	0	-0.100	0.043	0	0	0	0
		4.280	-0.100	0	0	0	0	0
		8.560	-0.100	-0.043	-0	-0	-0	-0
	28:6A. 1.2D+1.	0	-22.182	0.050	-0.043	0	0	0
		4.280	-22.209	0	0	0	0	0
		8.560	-22.236	-0.050	0.043	-0	-0	-0
	29:6A. 1.2D+1.	0	-6.590	0.050	-0.046	0	0	0
		4.280	-6.569	0	0	0	0	0
		8.560	-6.547	-0.050	0.046	-0	-0	-0
	30:6B. 0.9D+1.	0	-22.062	0.024	-0.043	0	0	0
		4.280	-22.088	0	0	0	0	0
		8.560	-22.115	-0.024	0.043	-0	-0	-0
	31:6B. 0.9D+1.	0	-6.469	0.024	-0.046	0	0	0
		4.280	-6.448	0	0	0	0	0
		8.560	-6.427	-0.024	0.046	-0	-0	-0
701	21:1. 1.4DL	0	-0.320	0.050	0	0	0	0
		4.350	-0.320	0	0	0	0	0
		8.700	-0.320	-0.050	-0	-0	-0	-0
	22:2. 1.2DL+1.(	0	-0.533	0.043	0	0	0	0

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		4.350	-0.533	0	0	0	0	0
		8.700	-0.533	-0.043	-0	-0	-0	-0
	23:4. 1.2DL+1.(	0	4.781	0.043	0	0	0	0
		4.350	4.781	0	0	0	0	0
		8.700	4.781	-0.043	-0	-0	-0	-0
	24:5. 1.2DL+1.(	0	-0.436	0.043	0	0	0	0
		4.350	-0.436	0	0	0	0	0
		8.700	-0.436	-0.043	-0	-0	-0	-0
	25:6. 0.9DL+1.(	0	5.011	0.032	0	0	0	0
		4.350	5.011	0	0	0	0	0
		8.700	5.011	-0.032	-0	-0	-0	-0
	26:2. 1.2DL+1.(	0	-0.432	0.043	0	0	0	0
		4.350	-0.432	0	0	0	0	0
		8.700	-0.432	-0.043	-0	-0	-0	-0
	27:2. 1.2DL+1.(	0	-0.310	0.043	0	0	0	0
		4.350	-0.310	0	0	0	0	0
		8.700	-0.310	-0.043	-0	-0	-0	-0
	28:6A. 1.2D+1.	0	16.029	0.051	0.022	0	0	0
		4.350	15.982	0	0	0	0	0
		8.700	15.936	-0.051	-0.022	-0	-0	-0
	29:6A. 1.2D+1.	0	4.697	0.051	-0.026	0	0	0
		4.350	4.652	0	0	0	0	0
		8.700	4.608	-0.051	0.026	-0	-0	-0
	30:6B. 0.9D+1.	0	16.359	0.025	0.022	0	0	0
		4.350	16.313	0	0	0	0	0
		8.700	16.266	-0.025	-0.022	-0	-0	-0
	31:6B. 0.9D+1.	0	5.027	0.025	-0.026	0	0	0
		4.350	4.983	0	0	0	0	0
		8.700	4.938	-0.025	0.026	-0	-0	-0
702	21:1. 1.4DL	0	-0.389	0.050	0	0	0	0
		4.350	-0.389	0	0	0	0	0
		8.700	-0.389	-0.050	-0	-0	-0	-0
	22:2. 1.2DL+1.(	0	-0.706	0.043	0	0	0	0
		4.350	-0.706	0	0	0	0	0
		8.700	-0.706	-0.043	-0	-0	-0	-0
	23:4. 1.2DL+1.(	0	-3.771	0.043	0	0	0	0
		4.350	-3.771	0	0	0	0	0
		8.700	-3.771	-0.043	-0	-0	-0	-0
	24:5. 1.2DL+1.(	0	-0.566	0.043	0	0	0	0
		4.350	-0.566	0	0	0	0	0
		8.700	-0.566	-0.043	-0	-0	-0	-0
	25:6. 0.9DL+1.(	0	-3.455	0.032	0	0	0	0
		4.350	-3.455	0	0	0	0	0
		8.700	-3.455	-0.032	-0	-0	-0	-0

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
	26:2. 1.2DL+1.(	0	-0.446	0.043	0	0	0	0
		4.350	-0.446	0	0	0	0	0
		8.700	-0.446	-0.043	-0	-0	-0	-0
	27:2. 1.2DL+1.(	0	-0.418	0.043	0	0	0	0
		4.350	-0.418	0	0	0	0	0
		8.700	-0.418	-0.043	-0	-0	-0	-0
	28:6A. 1.2D+1.	0	-10.335	0.051	-0.044	0	0	0
		4.350	-10.362	0	0	0	0	0
		8.700	-10.388	-0.051	0.044	-0	-0	-0
	29:6A. 1.2D+1.	0	-3.340	0.051	-0.046	0	0	0
		4.350	-3.317	0	0	0	0	0
		8.700	-3.295	-0.051	0.046	-0	-0	-0
	30:6B. 0.9D+1.	0	-9.897	0.025	-0.044	0	0	0
		4.350	-9.924	0	0	0	0	0
		8.700	-9.950	-0.025	0.044	-0	-0	-0
	31:6B. 0.9D+1.	0	-2.902	0.025	-0.046	0	0	0
		4.350	-2.879	0	0	0	0	0
		8.700	-2.857	-0.025	0.046	-0	-0	-0
703	21:1. 1.4DL	0	-0.469	0.050	0	0	0	0
		4.350	-0.469	0	0	0	0	0
		8.700	-0.469	-0.050	-0	-0	-0	-0
	22:2. 1.2DL+1.(	0	-0.832	0.043	0	0	0	0
		4.350	-0.832	0	0	0	0	0
		8.700	-0.832	-0.043	-0	-0	-0	-0
	23:4. 1.2DL+1.(	0	0.465	0.043	0	0	0	0
		4.350	0.465	0	0	0	0	0
		8.700	0.465	-0.043	-0	-0	-0	-0
	24:5. 1.2DL+1.(	0	-0.671	0.043	0	0	0	0
		4.350	-0.671	0	0	0	0	0
		8.700	-0.671	-0.043	-0	-0	-0	-0
	25:6. 0.9DL+1.(	0	0.834	0.032	0	0	0	0
		4.350	0.834	0	0	0	0	0
		8.700	0.834	-0.032	-0	-0	-0	-0
	26:2. 1.2DL+1.(	0	-0.461	0.043	0	0	0	0
		4.350	-0.461	0	0	0	0	0
		8.700	-0.461	-0.043	-0	-0	-0	-0
	27:2. 1.2DL+1.(	0	-0.575	0.043	0	0	0	0
		4.350	-0.575	0	0	0	0	0
		8.700	-0.575	-0.043	-0	-0	-0	-0
	28:6A. 1.2D+1.	0	2.720	0.051	0.022	0	0	0
		4.350	2.673	0	0	0	0	0
		8.700	2.627	-0.051	-0.022	-0	-0	-0
	29:6A. 1.2D+1.	0	0.456	0.051	-0.026	0	0	0
		4.350	0.411	0	0	0	0	0

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		8.700	0.367	-0.051	0.026	-0	-0	-0
	30:6B. 0.9D+1.	0	3.235	0.025	0.022	0	0	0
		4.350	3.189	0	0	0	0	0
		8.700	3.143	-0.025	-0.022	-0	-0	-0
	31:6B. 0.9D+1.	0	0.972	0.025	-0.026	0	0	0
		4.350	0.927	0	0	0	0	0
		8.700	0.883	-0.025	0.026	-0	-0	-0
704	21:1. 1.4DL	0	-0.469	0.050	0	0	0	0
		4.350	-0.469	0	0	0	0	0
		8.700	-0.469	-0.050	-0	-0	-0	-0
	22:2. 1.2DL+1.(	0	-0.832	0.043	0	0	0	0
		4.350	-0.832	0	0	0	0	0
		8.700	-0.832	-0.043	-0	-0	-0	-0
	23:4. 1.2DL+1.(	0	0.465	0.043	0	0	0	0
		4.350	0.465	0	0	0	0	0
		8.700	0.465	-0.043	-0	-0	-0	-0
	24:5. 1.2DL+1.(	0	-0.671	0.043	0	0	0	0
		4.350	-0.671	0	0	0	0	0
		8.700	-0.671	-0.043	-0	-0	-0	-0
	25:6. 0.9DL+1.(	0	0.834	0.032	0	0	0	0
		4.350	0.834	0	0	0	0	0
		8.700	0.834	-0.032	-0	-0	-0	-0
	26:2. 1.2DL+1.(	0	-0.435	0.043	0	0	0	0
		4.350	-0.435	0	0	0	0	0
		8.700	-0.435	-0.043	-0	-0	-0	-0
	27:2. 1.2DL+1.(	0	-0.600	0.043	0	0	0	0
		4.350	-0.600	0	0	0	0	0
		8.700	-0.600	-0.043	-0	-0	-0	-0
	28:6A. 1.2D+1.	0	2.709	0.051	-0.044	0	0	0
		4.350	2.683	0	0	0	0	0
		8.700	2.656	-0.051	0.044	-0	-0	-0
	29:6A. 1.2D+1.	0	0.421	0.051	-0.046	0	0	0
		4.350	0.444	0	0	0	0	0
		8.700	0.466	-0.051	0.046	-0	-0	-0
	30:6B. 0.9D+1.	0	3.225	0.025	-0.044	0	0	0
		4.350	3.199	0	0	0	0	0
		8.700	3.172	-0.025	0.044	-0	-0	-0
	31:6B. 0.9D+1.	0	0.937	0.025	-0.046	0	0	0
		4.350	0.960	0	0	0	0	0
		8.700	0.982	-0.025	0.046	-0	-0	-0
705	21:1. 1.4DL	0	-0.389	0.050	0	0	0	0
		4.350	-0.389	0	0	0	0	0
		8.700	-0.389	-0.050	-0	-0	-0	-0
	22:2. 1.2DL+1.(	0	-0.706	0.043	0	0	0	0

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		4.350	-0.706	0	0	0	0	0
		8.700	-0.706	-0.043	-0	-0	-0	-0
	23:4. 1.2DL+1.(	0	-3.771	0.043	0	0	0	0
		4.350	-3.771	0	0	0	0	0
		8.700	-3.771	-0.043	-0	-0	-0	-0
	24:5. 1.2DL+1.(	0	-0.566	0.043	0	0	0	0
		4.350	-0.566	0	0	0	0	0
		8.700	-0.566	-0.043	-0	-0	-0	-0
	25:6. 0.9DL+1.(	0	-3.455	0.032	0	0	0	0
		4.350	-3.455	0	0	0	0	0
		8.700	-3.455	-0.032	-0	-0	-0	-0
	26:2. 1.2DL+1.(	0	-0.351	0.043	0	0	0	0
		4.350	-0.351	0	0	0	0	0
		8.700	-0.351	-0.043	-0	-0	-0	-0
	27:2. 1.2DL+1.(	0	-0.456	0.043	0	0	0	0
		4.350	-0.456	0	0	0	0	0
		8.700	-0.456	-0.043	-0	-0	-0	-0
	28:6A. 1.2D+1.	0	-10.374	0.051	0.022	0	0	0
		4.350	-10.421	0	0	0	0	0
		8.700	-10.467	-0.051	-0.022	-0	-0	-0
	29:6A. 1.2D+1.	0	-3.470	0.051	-0.026	0	0	0
		4.350	-3.514	0	0	0	0	0
		8.700	-3.558	-0.051	0.026	-0	-0	-0
	30:6B. 0.9D+1.	0	-9.936	0.025	0.022	0	0	0
		4.350	-9.983	0	0	0	0	0
		8.700	-10.029	-0.025	-0.022	-0	-0	-0
	31:6B. 0.9D+1.	0	-3.032	0.025	-0.026	0	0	0
		4.350	-3.076	0	0	0	0	0
		8.700	-3.120	-0.025	0.026	-0	-0	-0
706	21:1. 1.4DL	0	-0.320	0.050	0	0	0	0
		4.350	-0.320	0	0	0	0	0
		8.700	-0.320	-0.050	-0	-0	-0	-0
	22:2. 1.2DL+1.(	0	-0.533	0.043	0	0	0	0
		4.350	-0.533	0	0	0	0	0
		8.700	-0.533	-0.043	-0	-0	-0	-0
	23:4. 1.2DL+1.(	0	4.781	0.043	0	0	0	0
		4.350	4.781	0	0	0	0	0
		8.700	4.781	-0.043	-0	-0	-0	-0
	24:5. 1.2DL+1.(	0	-0.436	0.043	0	0	0	0
		4.350	-0.436	0	0	0	0	0
		8.700	-0.436	-0.043	-0	-0	-0	-0
	25:6. 0.9DL+1.(	0	5.011	0.032	0	0	0	0
		4.350	5.011	0	0	0	0	0
		8.700	5.011	-0.032	-0	-0	-0	-0

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
	26:2. 1.2DL+1.(	0	-0.284	0.043	0	0	0	0
		4.350	-0.284	0	0	0	0	0
		8.700	-0.284	-0.043	-0	-0	-0	-0
	27:2. 1.2DL+1.(	0	-0.326	0.043	0	0	0	0
		4.350	-0.326	0	0	0	0	0
		8.700	-0.326	-0.043	-0	-0	-0	-0
	28:6A. 1.2D+1.	0	15.973	0.051	-0.044	0	0	0
		4.350	15.947	0	0	0	0	0
		8.700	15.920	-0.051	0.044	-0	-0	-0
	29:6A. 1.2D+1.	0	4.511	0.051	-0.046	0	0	0
		4.350	4.534	0	0	0	0	0
		8.700	4.556	-0.051	0.046	-0	-0	-0
	30:6B. 0.9D+1.	0	16.303	0.025	-0.044	0	0	0
		4.350	16.277	0	0	0	0	0
		8.700	16.251	-0.025	0.044	-0	-0	-0
	31:6B. 0.9D+1.	0	4.842	0.025	-0.046	0	0	0
		4.350	4.864	0	0	0	0	0
		8.700	4.887	-0.025	0.046	-0	-0	-0
707	21:1. 1.4DL	0	-0.109	0.050	0	0	0	0
		4.280	-0.109	0	0	0	0	0
		8.560	-0.109	-0.050	-0	-0	-0	-0
	22:2. 1.2DL+1.(	0	-0.194	0.043	0	0	0	0
		4.280	-0.194	0	0	0	0	0
		8.560	-0.194	-0.043	-0	-0	-0	-0
	23:4. 1.2DL+1.(	0	-7.062	0.043	0	0	0	0
		4.280	-7.062	0	0	0	0	0
		8.560	-7.062	-0.043	-0	-0	-0	-0
	24:5. 1.2DL+1.(	0	-0.157	0.043	0	0	0	0
		4.280	-0.157	0	0	0	0	0
		8.560	-0.157	-0.043	-0	-0	-0	-0
	25:6. 0.9DL+1.(	0	-6.976	0.032	0	0	0	0
		4.280	-6.976	0	0	0	0	0
		8.560	-6.976	-0.032	-0	-0	-0	-0
	26:2. 1.2DL+1.(	0	-0.095	0.043	0	0	0	0
		4.280	-0.095	0	0	0	0	0
		8.560	-0.095	-0.043	-0	-0	-0	-0
	27:2. 1.2DL+1.(	0	-0.103	0.043	0	0	0	0
		4.280	-0.103	0	0	0	0	0
		8.560	-0.103	-0.043	-0	-0	-0	-0
	28:6A. 1.2D+1.	0	-22.240	0.050	0.021	0	0	0
		4.280	-22.286	0	0	0	0	0
		8.560	-22.332	-0.050	-0.021	-0	-0	-0
	29:6A. 1.2D+1.	0	-6.782	0.050	-0.027	0	0	0
		4.280	-6.825	0	0	0	0	0

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Beam Force Detail Cont...

Beam	L/C	d	Axial Fx	Shear Fy	Shear Fz	Torsion Mx	Bending My	Bending Mz
		(ft)	(kip)	(kip)	(kip)	(kip-ft)	(kip-ft)	(kip-ft)
		8.560	-6.868	-0.050	0.027	-0	-0	-0
	30:6B. 0.9D+1.	0	-22.119	0.024	0.021	0	0	0
		4.280	-22.165	0	0	0	0	0
		8.560	-22.211	-0.024	-0.021	-0	-0	-0
	31:6B. 0.9D+1.	0	-6.661	0.024	-0.027	0	0	0
		4.280	-6.704	0	0	0	0	0
		8.560	-6.747	-0.024	0.027	-0	-0	-0

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Job No. 855412, Sh. ____ Of ____, Pg ____

Project BROOKSVILLE ELEMENTARY BRIDGE

By AJT Date 8/12/25

Subject MEMBER END RELEASES

- BRACE DIAGONALS : PINNED
- DIAGONAL A : PINNED
- DIAGONAL B : PINNED
- TOP CHORD : FIXED
- BOTTOM CHORD : FIXED
- VERTICAL : FIXED
- END VERTICAL : FIXED
- FLOOR BEAM : FIXED
- END FLOOR BEAM : FIXED

	Job No **855412-10**	Sheet No / Rev
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Beam End Forces

Sign convention is as the action of the joint on the beam.

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
1	1	21:1. 1.4DL	-0.042	-0.056	-0.120	0.050	0.286	-0.105
		22:2. 1.2DL+1.(	-0.097	-0.023	-0.196	0.095	0.552	0.148
		23:4. 1.2DL+1.(	4.700	0.069	-0.138	0.196	0.370	0.135
		24:5. 1.2DL+1.(	-0.074	-0.033	-0.161	0.076	0.437	0.059
		25:6. 0.9DL+1.(	4.747	0.066	-0.054	0.153	0.116	0.009
		26:2. 1.2DL+1.(	-0.016	-0.108	-0.133	0.103	0.336	-0.217
		27:2. 1.2DL+1.(	-0.048	-0.052	-0.115	0.045	0.287	-0.094
		28:6A. 1.2D+1.	20.585	0.246	-0.203	0.381	0.552	0.634
		29:6A. 1.2D+1.	23.398	0.093	-0.353	0.180	0.937	0.298
		30:6B. 0.9D+1.	20.646	0.260	-0.082	0.322	0.209	0.541
		31:6B. 0.9D+1.	23.455	0.107	-0.231	0.121	0.594	0.205
	2	21:1. 1.4DL	0.042	0.056	0.029	-0.050	0.135	-0.214
		22:2. 1.2DL+1.(	0.097	0.023	0.119	-0.095	0.340	-0.281
		23:4. 1.2DL+1.(	-4.700	0.058	0.060	-0.196	0.193	-0.144
		24:5. 1.2DL+1.(	0.074	0.033	0.083	-0.076	0.255	-0.244
		25:6. 0.9DL+1.(	-4.747	0.062	-0.004	-0.153	0.024	-0.038
		26:2. 1.2DL+1.(	0.016	0.108	0.055	-0.103	0.195	-0.395
		27:2. 1.2DL+1.(	0.048	0.052	0.037	-0.045	0.142	-0.198
		28:6A. 1.2D+1.	-20.559	-0.157	0.111	-0.381	0.339	0.507
		29:6A. 1.2D+1.	-23.309	-0.066	0.261	-0.180	0.801	0.153
		30:6B. 0.9D+1.	-20.619	-0.171	0.037	-0.322	0.128	0.681
		31:6B. 0.9D+1.	-23.366	-0.081	0.187	-0.121	0.589	0.327
2	2	21:1. 1.4DL	-8.386	0.104	-0.084	0.028	0.093	0.251
		22:2. 1.2DL+1.(	-17.463	0.179	-0.117	0.008	0.135	0.417
		23:4. 1.2DL+1.(	-6.897	0.206	-0.086	0.216	0.099	0.316
		24:5. 1.2DL+1.(	-13.610	0.145	-0.100	0.014	0.114	0.341
		25:6. 0.9DL+1.(	1.322	0.127	-0.040	0.220	0.044	0.136
		26:2. 1.2DL+1.(	-9.835	0.156	-0.070	-0.008	0.048	0.433
		27:2. 1.2DL+1.(	-8.690	0.100	-0.082	0.026	0.100	0.235
		28:6A. 1.2D+1.	7.887	0.096	-0.159	0.513	0.329	-0.125
		29:6A. 1.2D+1.	6.970	0.061	-0.334	0.171	0.834	-0.010
		30:6B. 0.9D+1.	18.730	-0.015	-0.086	0.508	0.245	-0.383
		31:6B. 0.9D+1.	17.810	-0.050	-0.261	0.166	0.750	-0.268
	3	21:1. 1.4DL	8.386	-0.104	-0.010	-0.028	0.125	0.358
		22:2. 1.2DL+1.(	17.463	-0.179	0.036	-0.008	0.314	0.637
		23:4. 1.2DL+1.(	6.897	-0.073	0.006	-0.216	0.171	0.460
		24:5. 1.2DL+1.(	13.610	-0.145	0.019	-0.014	0.236	0.513
		25:6. 0.9DL+1.(	-1.322	0.006	-0.020	-0.220	0.015	0.177
		26:2. 1.2DL+1.(	9.835	-0.156	-0.011	0.008	0.126	0.483
		27:2. 1.2DL+1.(	8.690	-0.100	0.001	-0.026	0.144	0.350
		28:6A. 1.2D+1.	-7.860	-0.004	0.063	-0.513	0.322	0.420
		29:6A. 1.2D+1.	-6.878	-0.033	0.238	-0.171	0.847	0.287
		30:6B. 0.9D+1.	-18.702	0.107	0.040	-0.508	0.127	0.025

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-17.718	0.078	0.216	-0.166	0.652	-0.107
3	3	21:1. 1.4DL	-14.627	-0.137	-0.068	0.021	0.029	-0.378
		22:2. 1.2DL+1.(	-30.373	-0.239	-0.085	0.011	0.005	-0.650
		23:4. 1.2DL+1.(	-9.756	-0.069	-0.071	0.041	0.041	-0.410
		24:5. 1.2DL+1.(	-23.684	-0.194	-0.075	0.014	0.013	-0.528
		25:6. 0.9DL+1.(	4.525	0.037	-0.040	0.041	0.047	-0.125
		26:2. 1.2DL+1.(	-15.611	-0.155	-0.054	-0.008	-0.003	-0.471
		27:2. 1.2DL+1.(	-15.563	-0.140	-0.066	0.029	0.035	-0.378
		28:6A. 1.2D+1.	15.923	0.029	-0.151	0.009	0.308	-0.258
		29:6A. 1.2D+1.	-0.666	-0.080	-0.301	0.012	0.701	-0.296
		30:6B. 0.9D+1.	34.780	0.177	-0.099	0.002	0.305	0.145
		31:6B. 0.9D+1.	18.189	0.068	-0.249	0.005	0.698	0.107
	4	21:1. 1.4DL	14.627	0.137	-0.026	-0.021	0.094	-0.424
		22:2. 1.2DL+1.(	30.373	0.239	0.004	-0.011	0.255	-0.757
		23:4. 1.2DL+1.(	9.756	0.201	-0.010	-0.041	0.140	-0.426
		24:5. 1.2DL+1.(	23.684	0.194	-0.006	-0.014	0.189	-0.609
		25:6. 0.9DL+1.(	-4.525	0.095	-0.020	-0.041	0.011	-0.089
		26:2. 1.2DL+1.(	15.611	0.155	-0.027	0.008	0.081	-0.439
		27:2. 1.2DL+1.(	15.563	0.140	-0.015	-0.029	0.114	-0.443
		28:6A. 1.2D+1.	-15.895	0.063	0.055	-0.009	0.298	0.157
		29:6A. 1.2D+1.	0.758	0.108	0.206	-0.012	0.788	-0.257
		30:6B. 0.9D+1.	-34.752	-0.085	0.053	-0.002	0.140	0.626
		31:6B. 0.9D+1.	-18.097	-0.041	0.203	-0.005	0.630	0.213
4	4	21:1. 1.4DL	-18.327	0.159	-0.056	0.002	-0.018	0.441
		22:2. 1.2DL+1.(	-38.093	0.283	-0.058	-0.004	-0.098	0.795
		23:4. 1.2DL+1.(	-14.841	0.267	-0.062	0.082	-0.013	0.491
		24:5. 1.2DL+1.(	-29.699	0.228	-0.054	-0.002	-0.067	0.639
		25:6. 0.9DL+1.(	3.076	0.141	-0.044	0.085	0.042	0.136
		26:2. 1.2DL+1.(	-18.266	0.156	-0.046	-0.001	-0.031	0.447
		27:2. 1.2DL+1.(	-20.282	0.173	-0.064	0.056	0.000	0.466
		28:6A. 1.2D+1.	9.908	0.147	-0.157	0.224	0.272	-0.037
		29:6A. 1.2D+1.	-9.303	0.159	-0.293	0.065	0.636	0.286
		30:6B. 0.9D+1.	33.559	-0.028	-0.121	0.227	0.332	-0.531
		31:6B. 0.9D+1.	14.347	-0.017	-0.257	0.068	0.697	-0.207
	5	21:1. 1.4DL	18.327	-0.159	-0.038	-0.002	0.071	0.492
		22:2. 1.2DL+1.(	38.093	-0.283	-0.023	0.004	0.199	0.865
		23:4. 1.2DL+1.(	14.841	-0.134	-0.019	-0.082	0.139	0.644
		24:5. 1.2DL+1.(	29.699	-0.228	-0.027	0.002	0.147	0.699
		25:6. 0.9DL+1.(	-3.076	-0.009	-0.017	-0.085	0.037	0.262
		26:2. 1.2DL+1.(	18.266	-0.156	-0.035	0.001	0.061	0.467
		27:2. 1.2DL+1.(	20.282	-0.173	-0.017	-0.056	0.138	0.549
		28:6A. 1.2D+1.	-9.880	-0.055	0.061	-0.224	0.369	0.631
		29:6A. 1.2D+1.	9.395	-0.131	0.197	-0.065	0.803	0.565
		30:6B. 0.9D+1.	-33.532	0.120	0.075	-0.227	0.245	0.095

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-14.255	0.044	0.211	-0.068	0.679	0.028
5	5	21:1. 1.4DL	-18.327	-0.159	-0.038	-0.002	-0.071	-0.492
		22:2. 1.2DL+1.(	-38.093	-0.283	-0.023	0.004	-0.199	-0.865
		23:4. 1.2DL+1.(	-14.841	-0.134	-0.019	-0.082	-0.139	-0.644
		24:5. 1.2DL+1.(	-29.699	-0.228	-0.027	0.002	-0.147	-0.699
		25:6. 0.9DL+1.(	3.076	-0.009	-0.017	-0.085	-0.037	-0.262
		26:2. 1.2DL+1.(	-17.247	-0.147	-0.030	-0.002	-0.077	-0.461
		27:2. 1.2DL+1.(	-20.937	-0.186	-0.023	-0.033	-0.126	-0.563
		28:6A. 1.2D+1.	9.012	-0.064	-0.066	-0.225	0.003	-0.647
		29:6A. 1.2D+1.	-12.288	-0.159	-0.226	-0.070	0.438	-0.616
		30:6B. 0.9D+1.	32.664	0.112	-0.052	-0.228	0.127	-0.110
		31:6B. 0.9D+1.	11.362	0.016	-0.212	-0.072	0.562	-0.079
	6	21:1. 1.4DL	18.327	0.159	-0.056	0.002	0.018	-0.441
		22:2. 1.2DL+1.(	38.093	0.283	-0.058	-0.004	0.098	-0.795
		23:4. 1.2DL+1.(	14.841	0.267	-0.062	0.082	0.013	-0.491
		24:5. 1.2DL+1.(	29.699	0.228	-0.054	-0.002	0.067	-0.639
		25:6. 0.9DL+1.(	-3.076	0.141	-0.044	0.085	-0.042	-0.136
		26:2. 1.2DL+1.(	17.247	0.147	-0.051	0.002	0.014	-0.402
		27:2. 1.2DL+1.(	20.937	0.186	-0.058	0.033	0.024	-0.532
		28:6A. 1.2D+1.	-8.985	0.156	-0.030	0.225	0.103	0.002
		29:6A. 1.2D+1.	12.381	0.187	0.131	0.070	0.612	-0.402
		30:6B. 0.9D+1.	-32.636	-0.020	0.006	0.228	0.042	0.496
		31:6B. 0.9D+1.	-11.270	0.012	0.166	0.072	0.551	0.091
6	6	21:1. 1.4DL	-14.627	0.137	-0.026	-0.021	-0.094	0.424
		22:2. 1.2DL+1.(	-30.373	0.239	0.004	-0.011	-0.255	0.757
		23:4. 1.2DL+1.(	-9.756	0.201	-0.010	-0.041	-0.140	0.426
		24:5. 1.2DL+1.(	-23.684	0.194	-0.006	-0.014	-0.189	0.609
		25:6. 0.9DL+1.(	4.525	0.095	-0.020	-0.041	-0.011	0.089
		26:2. 1.2DL+1.(	-13.557	0.123	-0.019	-0.019	-0.094	0.385
		27:2. 1.2DL+1.(	-15.999	0.160	-0.011	-0.049	-0.132	0.511
		28:6A. 1.2D+1.	13.570	0.072	-0.071	-0.011	0.073	-0.141
		29:6A. 1.2D+1.	-8.509	0.135	-0.218	-0.017	0.449	0.309
		30:6B. 0.9D+1.	32.428	-0.077	-0.074	-0.004	0.231	-0.610
		31:6B. 0.9D+1.	10.347	-0.013	-0.220	-0.010	0.608	-0.160
	7	21:1. 1.4DL	14.627	-0.137	-0.068	0.021	-0.029	0.378
		22:2. 1.2DL+1.(	30.373	-0.239	-0.085	0.011	-0.005	0.650
		23:4. 1.2DL+1.(	9.756	-0.069	-0.071	0.041	-0.041	0.410
		24:5. 1.2DL+1.(	23.684	-0.194	-0.075	0.014	-0.013	0.528
		25:6. 0.9DL+1.(	-4.525	0.037	-0.040	0.041	-0.047	0.125
		26:2. 1.2DL+1.(	13.557	-0.123	-0.061	0.019	-0.029	0.338
		27:2. 1.2DL+1.(	15.999	-0.160	-0.070	0.049	-0.041	0.429
		28:6A. 1.2D+1.	-13.543	0.020	-0.024	0.011	0.067	0.291
		29:6A. 1.2D+1.	8.601	-0.108	0.122	0.017	0.548	0.405
		30:6B. 0.9D+1.	-32.400	0.169	0.028	0.004	0.070	-0.112

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-10.255	0.041	0.174	0.010	0.551	0.002
7	7	21:1. 1.4DL	-8.386	-0.104	-0.010	-0.028	-0.125	-0.358
		22:2. 1.2DL+1.(	-17.463	-0.179	0.036	-0.008	-0.314	-0.637
		23:4. 1.2DL+1.(	-6.897	-0.073	0.006	-0.216	-0.171	-0.460
		24:5. 1.2DL+1.(	-13.610	-0.145	0.019	-0.014	-0.236	-0.513
		25:6. 0.9DL+1.(	1.322	0.006	-0.020	-0.220	-0.015	-0.177
		26:2. 1.2DL+1.(	-7.692	-0.092	-0.005	-0.025	-0.119	-0.319
		27:2. 1.2DL+1.(	-8.909	-0.108	0.002	-0.030	-0.148	-0.390
		28:6A. 1.2D+1.	4.007	-0.027	-0.071	-0.513	0.057	-0.482
		29:6A. 1.2D+1.	-5.969	-0.108	-0.208	-0.169	0.418	-0.494
		30:6B. 0.9D+1.	14.849	0.085	-0.093	-0.508	0.252	-0.087
		31:6B. 0.9D+1.	4.873	0.003	-0.230	-0.164	0.613	-0.100
	8	21:1. 1.4DL	8.386	0.104	-0.084	0.028	-0.093	-0.251
		22:2. 1.2DL+1.(	17.463	0.179	-0.117	0.008	-0.135	-0.417
		23:4. 1.2DL+1.(	6.897	0.206	-0.086	0.216	-0.099	-0.316
		24:5. 1.2DL+1.(	13.610	0.145	-0.100	0.014	-0.114	-0.341
		25:6. 0.9DL+1.(	-1.322	0.127	-0.040	0.220	-0.044	-0.136
		26:2. 1.2DL+1.(	7.692	0.092	-0.075	0.025	-0.086	-0.221
		27:2. 1.2DL+1.(	8.909	0.108	-0.083	0.030	-0.102	-0.248
		28:6A. 1.2D+1.	-3.979	0.119	-0.025	0.513	0.078	0.055
		29:6A. 1.2D+1.	6.061	0.136	0.112	0.169	0.522	-0.223
		30:6B. 0.9D+1.	-14.822	0.008	0.048	0.508	0.161	0.313
		31:6B. 0.9D+1.	-4.781	0.025	0.185	0.164	0.606	0.035
8	8	21:1. 1.4DL	-0.042	0.056	0.029	-0.050	-0.135	0.214
		22:2. 1.2DL+1.(	-0.097	0.023	0.119	-0.095	-0.340	0.281
		23:4. 1.2DL+1.(	4.700	0.058	0.060	-0.196	-0.193	0.144
		24:5. 1.2DL+1.(	-0.074	0.033	0.083	-0.076	-0.255	0.244
		25:6. 0.9DL+1.(	4.747	0.062	-0.004	-0.153	-0.024	0.038
		26:2. 1.2DL+1.(	-0.041	0.049	0.029	-0.044	-0.124	0.188
		27:2. 1.2DL+1.(	-0.049	0.054	0.039	-0.045	-0.147	0.208
		28:6A. 1.2D+1.	15.234	-0.148	0.007	-0.379	-0.006	-0.462
		29:6A. 1.2D+1.	5.554	-0.036	-0.088	-0.175	0.311	-0.003
		30:6B. 0.9D+1.	15.294	-0.162	-0.067	-0.320	0.205	-0.636
		31:6B. 0.9D+1.	5.614	-0.050	-0.162	-0.116	0.522	-0.176
	9	21:1. 1.4DL	0.042	-0.056	-0.120	0.050	-0.286	0.105
		22:2. 1.2DL+1.(	0.097	-0.023	-0.196	0.095	-0.552	-0.148
		23:4. 1.2DL+1.(	-4.700	0.069	-0.138	0.196	-0.370	-0.135
		24:5. 1.2DL+1.(	0.074	-0.033	-0.161	0.076	-0.437	-0.059
		25:6. 0.9DL+1.(	-4.747	0.066	-0.054	0.153	-0.116	-0.009
		26:2. 1.2DL+1.(	0.041	-0.049	-0.107	0.044	-0.259	0.091
		27:2. 1.2DL+1.(	0.049	-0.054	-0.117	0.045	-0.294	0.097
		28:6A. 1.2D+1.	-15.207	0.237	-0.099	0.379	-0.292	-0.628
		29:6A. 1.2D+1.	-5.465	0.063	-0.004	0.175	-0.071	-0.277
		30:6B. 0.9D+1.	-15.267	0.251	0.023	0.320	0.051	-0.535

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-5.525	0.077	0.118	0.116	0.272	-0.183
9	10	21:1. 1.4DL	8.381	0.016	-0.126	0.032	0.301	0.084
		22:2. 1.2DL+1.(	17.420	-0.335	-0.208	-0.403	0.578	-0.440
		23:4. 1.2DL+1.(	11.743	0.021	-0.161	0.109	0.438	0.388
		24:5. 1.2DL+1.(	13.581	-0.204	-0.171	-0.241	0.458	-0.248
		25:6. 0.9DL+1.(	3.550	0.235	-0.072	0.371	0.174	0.690
		26:2. 1.2DL+1.(	9.866	0.035	-0.137	0.030	0.340	0.130
		27:2. 1.2DL+1.(	8.675	0.014	-0.122	0.033	0.305	0.079
		28:6A. 1.2D+1.	12.283	0.027	-0.174	0.027	0.506	0.480
		29:6A. 1.2D+1.	14.287	-0.128	-0.150	-0.167	0.461	-0.030
		30:6B. 0.9D+1.	1.467	0.236	-0.045	0.279	0.148	0.756
		31:6B. 0.9D+1.	3.471	0.082	-0.021	0.085	0.103	0.246
	11	21:1. 1.4DL	-8.381	-0.016	0.035	-0.032	0.157	0.007
		22:2. 1.2DL+1.(	-17.420	-0.118	0.130	0.403	0.382	-0.173
		23:4. 1.2DL+1.(	-11.743	-0.176	0.083	-0.109	0.255	0.209
		24:5. 1.2DL+1.(	-13.581	-0.079	0.093	0.241	0.289	-0.106
		25:6. 0.9DL+1.(	-3.550	-0.107	0.013	-0.371	0.067	0.320
		26:2. 1.2DL+1.(	-9.866	-0.035	0.059	-0.030	0.213	0.070
		27:2. 1.2DL+1.(	-8.675	-0.014	0.044	-0.033	0.167	-0.002
		28:6A. 1.2D+1.	-12.256	-0.222	0.082	-0.027	0.218	0.224
		29:6A. 1.2D+1.	-14.198	-0.129	0.058	0.167	0.128	0.032
		30:6B. 0.9D+1.	-1.441	-0.148	0.000	-0.279	-0.020	0.333
		31:6B. 0.9D+1.	-3.383	-0.055	-0.023	-0.085	-0.110	0.141
10	11	21:1. 1.4DL	14.700	0.016	-0.081	0.016	0.080	0.014
		22:2. 1.2DL+1.(	30.505	-0.215	-0.109	-0.294	0.106	0.073
		23:4. 1.2DL+1.(	20.467	-0.023	-0.087	0.109	0.096	-0.093
		24:5. 1.2DL+1.(	23.791	-0.129	-0.094	-0.178	0.092	0.050
		25:6. 0.9DL+1.(	6.126	0.116	-0.044	0.297	0.055	-0.134
		26:2. 1.2DL+1.(	15.703	0.011	-0.067	0.015	0.037	-0.046
		27:2. 1.2DL+1.(	15.646	0.013	-0.078	0.025	0.085	0.023
		28:6A. 1.2D+1.	21.427	0.019	-0.080	0.106	0.089	-0.048
		29:6A. 1.2D+1.	24.867	-0.092	-0.046	-0.075	-0.034	-0.019
		30:6B. 0.9D+1.	2.487	0.153	-0.012	0.290	0.023	-0.094
		31:6B. 0.9D+1.	5.927	0.042	0.021	0.109	-0.100	-0.064
	12	21:1. 1.4DL	-14.700	-0.016	-0.013	-0.016	0.118	0.083
		22:2. 1.2DL+1.(	-30.505	-0.255	0.029	0.294	0.299	0.046
		23:4. 1.2DL+1.(	-20.467	-0.138	0.006	-0.109	0.177	0.473
		24:5. 1.2DL+1.(	-23.791	-0.165	0.014	0.178	0.225	0.055
		25:6. 0.9DL+1.(	-6.126	0.016	-0.016	-0.297	0.028	0.470
		26:2. 1.2DL+1.(	-15.703	-0.011	-0.014	-0.015	0.118	0.108
		27:2. 1.2DL+1.(	-15.646	-0.013	-0.003	-0.025	0.136	0.056
		28:6A. 1.2D+1.	-21.399	-0.220	-0.015	-0.106	0.102	0.750
		29:6A. 1.2D+1.	-24.775	-0.174	-0.049	0.075	0.026	0.259
		30:6B. 0.9D+1.	-2.459	-0.061	-0.033	-0.290	-0.084	0.722

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-5.835	-0.014	-0.067	-0.109	-0.160	0.231
11	12	21:1. 1.4DL	18.434	-0.008	-0.068	0.046	0.028	-0.065
		22:2. 1.2DL+1.(	38.292	-0.237	-0.083	-0.079	0.002	-0.088
		23:4. 1.2DL+1.(	25.619	-0.094	-0.074	0.117	0.052	-0.390
		24:5. 1.2DL+1.(	29.858	-0.151	-0.073	-0.035	0.010	-0.076
		25:6. 0.9DL+1.(	7.612	0.051	-0.044	0.181	0.060	-0.356
		26:2. 1.2DL+1.(	18.388	-0.019	-0.053	0.042	-0.001	-0.099
		27:2. 1.2DL+1.(	20.399	-0.007	-0.067	0.058	0.037	-0.035
		28:6A. 1.2D+1.	26.813	-0.083	-0.077	0.170	0.097	-0.603
		29:6A. 1.2D+1.	31.158	-0.128	-0.032	0.021	-0.084	-0.233
		30:6B. 0.9D+1.	3.039	0.065	-0.026	0.219	0.096	-0.548
		31:6B. 0.9D+1.	7.383	0.020	0.019	0.071	-0.085	-0.178
	13	21:1. 1.4DL	-18.434	0.008	-0.027	-0.046	0.092	0.016
		22:2. 1.2DL+1.(	-38.292	-0.233	0.002	0.079	0.248	0.078
		23:4. 1.2DL+1.(	-25.619	-0.067	-0.007	-0.117	0.146	0.353
		24:5. 1.2DL+1.(	-29.858	-0.143	-0.007	0.035	0.184	0.054
		25:6. 0.9DL+1.(	-7.612	0.082	-0.016	-0.181	0.021	0.309
		26:2. 1.2DL+1.(	-18.388	0.019	-0.027	-0.042	0.077	-0.010
		27:2. 1.2DL+1.(	-20.399	0.007	-0.014	-0.058	0.120	-0.007
		28:6A. 1.2D+1.	-26.786	-0.119	-0.018	-0.170	0.077	0.709
		29:6A. 1.2D+1.	-31.066	-0.139	-0.063	-0.021	-0.008	0.265
		30:6B. 0.9D+1.	-3.011	0.027	-0.020	-0.219	-0.077	0.661
		31:6B. 0.9D+1.	-7.291	0.007	-0.065	-0.071	-0.162	0.217
12	13	21:1. 1.4DL	19.740	0.014	-0.055	-0.018	-0.017	-0.008
		22:2. 1.2DL+1.(	40.969	-0.204	-0.055	-0.078	-0.096	-0.091
		23:4. 1.2DL+1.(	27.397	-0.089	-0.061	-0.024	-0.007	-0.321
		24:5. 1.2DL+1.(	31.951	-0.123	-0.052	-0.055	-0.065	-0.059
		25:6. 0.9DL+1.(	8.136	0.043	-0.044	0.018	0.047	-0.267
		26:2. 1.2DL+1.(	18.988	0.014	-0.045	-0.028	-0.029	0.011
		27:2. 1.2DL+1.(	23.068	0.037	-0.061	-0.032	-0.004	0.024
		28:6A. 1.2D+1.	28.637	-0.074	-0.076	0.005	0.042	-0.637
		29:6A. 1.2D+1.	33.312	-0.112	-0.018	-0.031	-0.164	-0.254
		30:6B. 0.9D+1.	3.200	0.053	-0.042	0.054	0.102	-0.581
		31:6B. 0.9D+1.	7.876	0.015	0.016	0.018	-0.105	-0.197
	14	21:1. 1.4DL	-19.740	-0.014	-0.039	0.018	0.064	0.092
		22:2. 1.2DL+1.(	-40.969	-0.266	-0.025	0.078	0.184	0.274
		23:4. 1.2DL+1.(	-27.397	-0.072	-0.019	0.024	0.131	0.313
		24:5. 1.2DL+1.(	-31.951	-0.171	-0.028	0.055	0.136	0.201
		25:6. 0.9DL+1.(	-8.136	0.090	-0.016	-0.018	0.036	0.171
		26:2. 1.2DL+1.(	-18.988	-0.014	-0.036	0.028	0.056	0.069
		27:2. 1.2DL+1.(	-23.068	-0.037	-0.020	0.032	0.124	0.190
		28:6A. 1.2D+1.	-28.609	-0.127	-0.020	-0.005	0.123	0.793
		29:6A. 1.2D+1.	-33.220	-0.154	-0.078	0.031	-0.011	0.375
		30:6B. 0.9D+1.	-3.173	0.039	-0.004	-0.054	0.008	0.623

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-7.784	0.013	-0.062	-0.018	-0.126	0.204
13	14	21:1. 1.4DL	19.740	-0.014	-0.039	0.018	-0.064	-0.092
		22:2. 1.2DL+1.(	40.969	-0.266	-0.025	0.078	-0.184	-0.274
		23:4. 1.2DL+1.(	27.397	-0.072	-0.019	0.024	-0.131	-0.313
		24:5. 1.2DL+1.(	31.951	-0.171	-0.028	0.055	-0.136	-0.201
		25:6. 0.9DL+1.(	8.136	0.090	-0.016	-0.018	-0.036	-0.171
		26:2. 1.2DL+1.(	18.983	-0.012	-0.031	0.011	-0.069	-0.071
		27:2. 1.2DL+1.(	23.071	-0.031	-0.025	0.035	-0.114	-0.187
		28:6A. 1.2D+1.	28.533	-0.128	0.018	-0.005	-0.233	-0.795
		29:6A. 1.2D+1.	32.966	-0.158	0.047	0.031	-0.356	-0.382
		30:6B. 0.9D+1.	3.096	0.038	0.033	-0.054	-0.118	-0.625
		31:6B. 0.9D+1.	7.529	0.009	0.062	-0.017	-0.241	-0.212
	15	21:1. 1.4DL	-19.740	0.014	-0.055	-0.018	0.017	0.008
		22:2. 1.2DL+1.(	-40.969	-0.204	-0.055	-0.078	0.096	0.091
		23:4. 1.2DL+1.(	-27.397	-0.089	-0.061	-0.024	0.007	0.321
		24:5. 1.2DL+1.(	-31.951	-0.123	-0.052	-0.055	0.065	0.059
		25:6. 0.9DL+1.(	-8.136	0.043	-0.044	0.018	-0.047	0.267
		26:2. 1.2DL+1.(	-18.983	0.012	-0.050	-0.011	0.015	0.002
		27:2. 1.2DL+1.(	-23.071	0.031	-0.056	-0.035	0.023	0.006
		28:6A. 1.2D+1.	-28.505	-0.073	-0.113	0.005	-0.151	0.633
		29:6A. 1.2D+1.	-32.874	-0.109	-0.142	-0.031	-0.199	0.238
		30:6B. 0.9D+1.	-3.069	0.054	-0.079	0.054	-0.211	0.576
		31:6B. 0.9D+1.	-7.437	0.019	-0.108	0.017	-0.259	0.181
14	15	21:1. 1.4DL	18.434	0.008	-0.027	-0.046	-0.092	-0.016
		22:2. 1.2DL+1.(	38.292	-0.233	0.002	0.079	-0.248	-0.078
		23:4. 1.2DL+1.(	25.619	-0.067	-0.007	-0.117	-0.146	-0.353
		24:5. 1.2DL+1.(	29.858	-0.143	-0.007	0.035	-0.184	-0.054
		25:6. 0.9DL+1.(	7.612	0.082	-0.016	-0.181	-0.021	-0.309
		26:2. 1.2DL+1.(	17.341	0.008	-0.019	-0.043	-0.094	-0.010
		27:2. 1.2DL+1.(	21.071	0.002	-0.012	-0.055	-0.131	-0.023
		28:6A. 1.2D+1.	26.718	-0.119	0.017	-0.172	-0.184	-0.709
		29:6A. 1.2D+1.	30.839	-0.138	0.054	-0.029	-0.350	-0.265
		30:6B. 0.9D+1.	2.943	0.027	0.016	-0.222	-0.030	-0.660
		31:6B. 0.9D+1.	7.064	0.007	0.053	-0.079	-0.196	-0.216
	16	21:1. 1.4DL	-18.434	-0.008	-0.068	0.046	-0.028	0.065
		22:2. 1.2DL+1.(	-38.292	-0.237	-0.083	-0.079	-0.002	0.088
		23:4. 1.2DL+1.(	-25.619	-0.094	-0.074	0.117	-0.052	0.390
		24:5. 1.2DL+1.(	-29.858	-0.151	-0.073	-0.035	-0.010	0.076
		25:6. 0.9DL+1.(	-7.612	0.051	-0.044	0.181	-0.060	0.356
		26:2. 1.2DL+1.(	-17.341	-0.008	-0.061	0.043	-0.029	0.056
		27:2. 1.2DL+1.(	-21.071	-0.002	-0.069	0.055	-0.038	0.034
		28:6A. 1.2D+1.	-26.690	-0.083	-0.113	0.172	-0.197	0.603
		29:6A. 1.2D+1.	-30.747	-0.128	-0.150	0.029	-0.249	0.233
		30:6B. 0.9D+1.	-2.916	0.065	-0.061	0.222	-0.196	0.548

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-6.972	0.020	-0.098	0.079	-0.248	0.178
15	16	21:1. 1.4DL	14.700	-0.016	-0.013	-0.016	-0.118	-0.083
		22:2. 1.2DL+1.(	30.505	-0.255	0.029	0.294	-0.299	-0.046
		23:4. 1.2DL+1.(	20.467	-0.138	0.006	-0.109	-0.177	-0.473
		24:5. 1.2DL+1.(	23.791	-0.165	0.014	0.178	-0.225	-0.055
		25:6. 0.9DL+1.(	6.126	0.016	-0.016	-0.297	-0.028	-0.470
		26:2. 1.2DL+1.(	13.621	-0.014	-0.009	-0.015	-0.113	-0.072
		27:2. 1.2DL+1.(	16.094	-0.014	-0.001	-0.027	-0.142	-0.057
		28:6A. 1.2D+1.	21.341	-0.224	0.022	-0.102	-0.214	-0.754
		29:6A. 1.2D+1.	24.580	-0.185	0.075	0.089	-0.400	-0.272
		30:6B. 0.9D+1.	2.401	-0.064	0.004	-0.285	-0.028	-0.726
		31:6B. 0.9D+1.	5.640	-0.025	0.057	-0.095	-0.214	-0.244
	17	21:1. 1.4DL	-14.700	0.016	-0.081	0.016	-0.080	-0.014
		22:2. 1.2DL+1.(	-30.505	-0.215	-0.109	-0.294	-0.106	-0.073
		23:4. 1.2DL+1.(	-20.467	-0.023	-0.087	0.109	-0.096	0.093
		24:5. 1.2DL+1.(	-23.791	-0.129	-0.094	-0.178	-0.092	-0.050
		25:6. 0.9DL+1.(	-6.126	0.116	-0.044	0.297	-0.055	0.134
		26:2. 1.2DL+1.(	-13.621	0.014	-0.072	0.015	-0.074	-0.013
		27:2. 1.2DL+1.(	-16.094	0.014	-0.079	0.027	-0.088	-0.028
		28:6A. 1.2D+1.	-21.313	0.022	-0.117	0.102	-0.195	0.034
		29:6A. 1.2D+1.	-24.488	-0.082	-0.170	-0.089	-0.319	-0.030
		30:6B. 0.9D+1.	-2.373	0.156	-0.050	0.285	-0.129	0.079
		31:6B. 0.9D+1.	-5.548	0.053	-0.102	0.095	-0.253	0.015
16	17	21:1. 1.4DL	8.381	-0.016	0.035	-0.032	-0.157	-0.007
		22:2. 1.2DL+1.(	17.420	-0.118	0.130	0.403	-0.382	0.173
		23:4. 1.2DL+1.(	11.743	-0.176	0.083	-0.109	-0.255	-0.209
		24:5. 1.2DL+1.(	13.581	-0.079	0.093	0.241	-0.289	0.106
		25:6. 0.9DL+1.(	3.550	-0.107	0.013	-0.371	-0.067	-0.320
		26:2. 1.2DL+1.(	7.684	-0.014	0.035	-0.028	-0.146	-0.006
		27:2. 1.2DL+1.(	8.894	-0.014	0.046	-0.036	-0.171	0.006
		28:6A. 1.2D+1.	12.197	-0.221	0.110	-0.030	-0.322	-0.213
		29:6A. 1.2D+1.	14.001	-0.126	0.153	0.158	-0.474	0.007
		30:6B. 0.9D+1.	1.381	-0.147	0.029	-0.282	-0.084	-0.321
		31:6B. 0.9D+1.	3.185	-0.052	0.072	-0.094	-0.237	-0.102
	18	21:1. 1.4DL	-8.381	0.016	-0.126	0.032	-0.301	-0.084
		22:2. 1.2DL+1.(	-17.420	-0.335	-0.208	-0.403	-0.578	0.440
		23:4. 1.2DL+1.(	-11.743	0.021	-0.161	0.109	-0.438	-0.388
		24:5. 1.2DL+1.(	-13.581	-0.204	-0.171	-0.241	-0.458	0.248
		25:6. 0.9DL+1.(	-3.550	0.235	-0.072	0.371	-0.174	-0.690
		26:2. 1.2DL+1.(	-7.684	0.014	-0.113	0.028	-0.273	-0.074
		27:2. 1.2DL+1.(	-8.894	0.014	-0.124	0.036	-0.311	-0.082
		28:6A. 1.2D+1.	-12.170	0.026	-0.202	0.030	-0.564	-0.487
		29:6A. 1.2D+1.	-13.912	-0.131	-0.245	-0.158	-0.655	0.006
		30:6B. 0.9D+1.	-1.355	0.236	-0.073	0.282	-0.206	-0.763

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-3.097	0.079	-0.116	0.094	-0.297	-0.270
17	28	21:1. 1.4DL	-0.122	-0.045	-0.138	0.027	0.341	-0.070
		22:2. 1.2DL+1.(	-0.209	-0.137	-0.213	-0.029	0.598	-0.401
		23:4. 1.2DL+1.(	-0.384	-0.043	-0.208	0.197	0.579	-0.274
		24:5. 1.2DL+1.(	-0.170	-0.100	-0.177	-0.009	0.483	-0.273
		25:6. 0.9DL+1.(	-0.292	0.029	-0.120	0.224	0.315	-0.046
		26:2. 1.2DL+1.(	-0.122	-0.051	-0.150	-0.032	0.385	-0.069
		27:2. 1.2DL+1.(	-0.123	-0.042	-0.132	0.027	0.338	-0.063
		28:6A. 1.2D+1.	5.048	0.043	-0.311	0.568	0.847	0.088
		29:6A. 1.2D+1.	18.404	0.015	-0.400	0.159	1.073	0.009
		30:6B. 0.9D+1.	5.178	0.129	-0.179	0.586	0.476	0.338
		31:6B. 0.9D+1.	18.531	0.101	-0.269	0.177	0.702	0.259
	29	21:1. 1.4DL	0.122	0.045	0.047	-0.027	0.183	-0.184
		22:2. 1.2DL+1.(	0.209	0.137	0.135	0.029	0.386	-0.378
		23:4. 1.2DL+1.(	0.384	0.171	0.130	-0.197	0.380	-0.372
		24:5. 1.2DL+1.(	0.170	0.100	0.099	0.009	0.300	-0.295
		25:6. 0.9DL+1.(	0.292	0.099	0.061	-0.224	0.197	-0.195
		26:2. 1.2DL+1.(	0.122	0.051	0.072	0.032	0.244	-0.222
		27:2. 1.2DL+1.(	0.123	0.042	0.054	-0.027	0.188	-0.174
		28:6A. 1.2D+1.	-5.021	0.046	0.219	-0.568	0.653	-0.095
		29:6A. 1.2D+1.	-18.315	0.011	0.308	-0.159	0.934	0.002
		30:6B. 0.9D+1.	-5.151	-0.040	0.135	-0.586	0.413	0.139
		31:6B. 0.9D+1.	-18.442	-0.074	0.224	-0.177	0.694	0.237
18	29	21:1. 1.4DL	-10.118	0.098	-0.092	0.035	0.106	0.228
		22:2. 1.2DL+1.(	-18.906	0.169	-0.123	0.043	0.150	0.394
		23:4. 1.2DL+1.(	-25.296	0.268	-0.115	0.127	0.122	0.482
		24:5. 1.2DL+1.(	-15.068	0.137	-0.107	0.038	0.128	0.320
		25:6. 0.9DL+1.(	-16.732	0.194	-0.067	0.111	0.062	0.309
		26:2. 1.2DL+1.(	-11.545	0.120	-0.077	0.063	0.059	0.280
		27:2. 1.2DL+1.(	-10.278	0.098	-0.089	0.035	0.113	0.219
		28:6A. 1.2D+1.	-40.699	0.317	-0.195	0.166	0.302	0.466
		29:6A. 1.2D+1.	-9.138	0.130	-0.349	0.081	0.834	0.168
		30:6B. 0.9D+1.	-28.969	0.212	-0.118	0.139	0.209	0.222
		31:6B. 0.9D+1.	2.589	0.025	-0.273	0.054	0.741	-0.076
	30	21:1. 1.4DL	10.118	-0.098	-0.002	-0.035	0.156	0.350
		22:2. 1.2DL+1.(	18.906	-0.169	0.043	-0.043	0.338	0.599
		23:4. 1.2DL+1.(	25.296	-0.135	0.034	-0.127	0.316	0.660
		24:5. 1.2DL+1.(	15.068	-0.137	0.026	-0.038	0.262	0.487
		25:6. 0.9DL+1.(	16.732	-0.061	0.007	-0.111	0.154	0.398
		26:2. 1.2DL+1.(	11.545	-0.120	-0.004	-0.063	0.156	0.426
		27:2. 1.2DL+1.(	10.278	-0.098	0.008	-0.035	0.173	0.358
		28:6A. 1.2D+1.	40.726	-0.225	0.099	-0.166	0.561	1.123
		29:6A. 1.2D+1.	9.230	-0.102	0.254	-0.081	0.939	0.514
		30:6B. 0.9D+1.	28.997	-0.120	0.072	-0.139	0.351	0.752

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-2.497	0.002	0.227	-0.054	0.728	0.143
19	30	21:1. 1.4DL	-17.593	-0.136	-0.074	0.029	0.029	-0.373
		22:2. 1.2DL+1.(	-32.920	-0.247	-0.090	0.038	0.003	-0.670
		23:4. 1.2DL+1.(	-37.999	-0.154	-0.087	0.178	-0.004	-0.651
		24:5. 1.2DL+1.(	-26.230	-0.198	-0.080	0.033	0.011	-0.539
		25:6. 0.9DL+1.(	-23.080	-0.044	-0.054	0.163	0.003	-0.352
		26:2. 1.2DL+1.(	-18.369	-0.155	-0.059	0.055	-0.004	-0.446
		27:2. 1.2DL+1.(	-18.356	-0.155	-0.072	0.020	0.036	-0.388
		28:6A. 1.2D+1.	-55.946	-0.224	-0.165	0.397	0.158	-0.986
		29:6A. 1.2D+1.	-24.559	-0.146	-0.310	0.146	0.654	-0.482
		30:6B. 0.9D+1.	-35.522	-0.071	-0.110	0.374	0.157	-0.570
		31:6B. 0.9D+1.	-4.137	0.007	-0.254	0.123	0.652	-0.067
	31	21:1. 1.4DL	17.593	0.136	-0.020	-0.029	0.130	-0.424
		22:2. 1.2DL+1.(	32.920	0.247	0.009	-0.038	0.287	-0.778
		23:4. 1.2DL+1.(	37.999	0.287	0.006	-0.178	0.277	-0.686
		24:5. 1.2DL+1.(	26.230	0.198	-0.001	-0.033	0.221	-0.623
		25:6. 0.9DL+1.(	23.080	0.176	-0.006	-0.163	0.139	-0.336
		26:2. 1.2DL+1.(	18.369	0.155	-0.022	-0.055	0.111	-0.466
		27:2. 1.2DL+1.(	18.356	0.155	-0.008	-0.020	0.151	-0.520
		28:6A. 1.2D+1.	55.973	0.316	0.070	-0.397	0.532	-0.602
		29:6A. 1.2D+1.	24.651	0.174	0.214	-0.146	0.885	-0.456
		30:6B. 0.9D+1.	35.549	0.163	0.064	-0.374	0.354	-0.119
		31:6B. 0.9D+1.	4.229	0.021	0.208	-0.123	0.707	0.027
20	31	21:1. 1.4DL	-22.085	0.158	-0.057	0.006	-0.033	0.440
		22:2. 1.2DL+1.(	-41.312	0.281	-0.058	0.005	-0.109	0.795
		23:4. 1.2DL+1.(	-48.541	0.352	-0.046	-0.037	-0.138	0.739
		24:5. 1.2DL+1.(	-32.919	0.226	-0.055	0.005	-0.079	0.638
		25:6. 0.9DL+1.(	-29.820	0.227	-0.027	-0.038	-0.081	0.384
		26:2. 1.2DL+1.(	-21.696	0.158	-0.046	0.008	-0.047	0.462
		27:2. 1.2DL+1.(	-23.832	0.214	-0.066	-0.049	-0.008	0.573
		28:6A. 1.2D+1.	-74.265	0.410	-0.098	-0.138	-0.045	0.734
		29:6A. 1.2D+1.	-37.464	0.249	-0.276	-0.034	0.532	0.553
		30:6B. 0.9D+1.	-48.634	0.235	-0.062	-0.142	0.023	0.241
		31:6B. 0.9D+1.	-11.835	0.075	-0.240	-0.037	0.600	0.060
	32	21:1. 1.4DL	22.085	-0.158	-0.037	-0.006	0.091	0.488
		22:2. 1.2DL+1.(	41.312	-0.281	-0.022	-0.005	0.216	0.857
		23:4. 1.2DL+1.(	48.541	-0.219	-0.035	0.037	0.170	0.893
		24:5. 1.2DL+1.(	32.919	-0.226	-0.026	-0.005	0.164	0.692
		25:6. 0.9DL+1.(	29.820	-0.094	-0.033	0.038	0.064	0.515
		26:2. 1.2DL+1.(	21.696	-0.158	-0.035	-0.008	0.078	0.466
		27:2. 1.2DL+1.(	23.832	-0.214	-0.014	0.049	0.161	0.686
		28:6A. 1.2D+1.	74.293	-0.318	0.003	0.138	0.343	1.403
		29:6A. 1.2D+1.	37.556	-0.221	0.180	0.034	0.808	0.828
		30:6B. 0.9D+1.	48.662	-0.143	0.017	0.142	0.209	0.872

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	11.927	-0.047	0.194	0.037	0.674	0.297
21	32	21:1. 1.4DL	-22.085	-0.158	-0.037	-0.006	-0.091	-0.488
		22:2. 1.2DL+1.(	-41.312	-0.281	-0.022	-0.005	-0.216	-0.857
		23:4. 1.2DL+1.(	-48.541	-0.219	-0.035	0.037	-0.170	-0.893
		24:5. 1.2DL+1.(	-32.919	-0.226	-0.026	-0.005	-0.164	-0.692
		25:6. 0.9DL+1.(	-29.820	-0.094	-0.033	0.038	-0.064	-0.515
		26:2. 1.2DL+1.(	-20.580	-0.147	-0.029	-0.006	-0.094	-0.460
		27:2. 1.2DL+1.(	-24.557	-0.216	-0.021	0.028	-0.150	-0.688
		28:6A. 1.2D+1.	-75.125	-0.318	-0.124	0.140	0.029	-1.394
		29:6A. 1.2D+1.	-40.330	-0.222	-0.243	0.039	0.431	-0.798
		30:6B. 0.9D+1.	-49.494	-0.144	-0.110	0.143	0.163	-0.863
		31:6B. 0.9D+1.	-14.701	-0.048	-0.230	0.042	0.565	-0.267
	33	21:1. 1.4DL	22.085	0.158	-0.057	0.006	0.033	-0.440
		22:2. 1.2DL+1.(	41.312	0.281	-0.058	0.005	0.109	-0.795
		23:4. 1.2DL+1.(	48.541	0.352	-0.046	-0.037	0.138	-0.739
		24:5. 1.2DL+1.(	32.919	0.226	-0.055	0.005	0.079	-0.638
		25:6. 0.9DL+1.(	29.820	0.227	-0.027	-0.038	0.081	-0.384
		26:2. 1.2DL+1.(	20.580	0.147	-0.052	0.006	0.026	-0.403
		27:2. 1.2DL+1.(	24.557	0.216	-0.060	-0.028	0.034	-0.581
		28:6A. 1.2D+1.	75.152	0.410	0.029	-0.140	0.419	-0.745
		29:6A. 1.2D+1.	40.422	0.250	0.148	-0.039	0.717	-0.589
		30:6B. 0.9D+1.	49.522	0.236	0.065	-0.143	0.351	-0.252
		31:6B. 0.9D+1.	14.793	0.076	0.184	-0.042	0.649	-0.097
22	33	21:1. 1.4DL	-17.593	0.136	-0.020	-0.029	-0.130	0.424
		22:2. 1.2DL+1.(	-32.920	0.247	0.009	-0.038	-0.287	0.778
		23:4. 1.2DL+1.(	-37.999	0.287	0.006	-0.178	-0.277	0.686
		24:5. 1.2DL+1.(	-26.230	0.198	-0.001	-0.033	-0.221	0.623
		25:6. 0.9DL+1.(	-23.080	0.176	-0.006	-0.163	-0.139	0.336
		26:2. 1.2DL+1.(	-16.179	0.123	-0.014	-0.027	-0.126	0.386
		27:2. 1.2DL+1.(	-18.833	0.158	-0.004	-0.001	-0.169	0.530
		28:6A. 1.2D+1.	-58.277	0.333	-0.057	-0.397	-0.160	0.642
		29:6A. 1.2D+1.	-32.332	0.230	-0.209	-0.143	0.354	0.591
		30:6B. 0.9D+1.	-37.853	0.180	-0.063	-0.373	0.018	0.160
		31:6B. 0.9D+1.	-11.909	0.077	-0.215	-0.120	0.532	0.108
	34	21:1. 1.4DL	17.593	-0.136	-0.074	0.029	-0.029	0.373
		22:2. 1.2DL+1.(	32.920	-0.247	-0.090	0.038	-0.003	0.670
		23:4. 1.2DL+1.(	37.999	-0.154	-0.087	0.178	0.004	0.651
		24:5. 1.2DL+1.(	26.230	-0.198	-0.080	0.033	-0.011	0.539
		25:6. 0.9DL+1.(	23.080	-0.044	-0.054	0.163	-0.003	0.352
		26:2. 1.2DL+1.(	16.179	-0.123	-0.067	0.027	-0.029	0.334
		27:2. 1.2DL+1.(	18.833	-0.158	-0.076	0.001	-0.042	0.398
		28:6A. 1.2D+1.	58.305	-0.241	-0.038	0.397	0.216	1.044
		29:6A. 1.2D+1.	32.424	-0.202	0.114	0.143	0.594	0.677
		30:6B. 0.9D+1.	37.881	-0.088	0.017	0.373	0.218	0.628

Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	12.001	-0.049	0.169	0.120	0.596	0.261
23	34	21:1. 1.4DL	-10.118	-0.098	-0.002	-0.035	-0.156	-0.350
		22:2. 1.2DL+1.(	-18.906	-0.169	0.043	-0.043	-0.338	-0.599
		23:4. 1.2DL+1.(	-25.296	-0.135	0.034	-0.127	-0.316	-0.660
		24:5. 1.2DL+1.(	-15.068	-0.137	0.026	-0.038	-0.262	-0.487
		25:6. 0.9DL+1.(	-16.732	-0.061	0.007	-0.111	-0.154	-0.398
		26:2. 1.2DL+1.(	-9.211	-0.088	0.001	-0.032	-0.147	-0.313
		27:2. 1.2DL+1.(	-10.509	-0.101	0.009	-0.031	-0.176	-0.367
		28:6A. 1.2D+1.	-44.486	-0.241	-0.034	-0.165	-0.182	-1.163
		29:6A. 1.2D+1.	-21.767	-0.156	-0.191	-0.079	0.324	-0.646
		30:6B. 0.9D+1.	-32.757	-0.136	-0.061	-0.139	0.028	-0.792
		31:6B. 0.9D+1.	-10.038	-0.052	-0.218	-0.053	0.534	-0.275
	35	21:1. 1.4DL	10.118	0.098	-0.092	0.035	-0.106	-0.228
		22:2. 1.2DL+1.(	18.906	0.169	-0.123	0.043	-0.150	-0.394
		23:4. 1.2DL+1.(	25.296	0.268	-0.115	0.127	-0.122	-0.482
		24:5. 1.2DL+1.(	15.068	0.137	-0.107	0.038	-0.128	-0.320
		25:6. 0.9DL+1.(	16.732	0.194	-0.067	0.111	-0.062	-0.309
		26:2. 1.2DL+1.(	9.211	0.088	-0.082	0.032	-0.098	-0.201
		27:2. 1.2DL+1.(	10.509	0.101	-0.090	0.031	-0.115	-0.225
		28:6A. 1.2D+1.	44.514	0.333	-0.061	0.165	0.104	-0.522
		29:6A. 1.2D+1.	21.859	0.184	0.096	0.079	0.520	-0.354
		30:6B. 0.9D+1.	32.784	0.228	0.015	0.139	0.197	-0.277
		31:6B. 0.9D+1.	10.130	0.079	0.172	0.053	0.613	-0.109
24	35	21:1. 1.4DL	-0.122	0.045	0.047	-0.027	-0.183	0.184
		22:2. 1.2DL+1.(	-0.209	0.137	0.135	0.029	-0.386	0.378
		23:4. 1.2DL+1.(	-0.384	0.171	0.130	-0.197	-0.380	0.372
		24:5. 1.2DL+1.(	-0.170	0.100	0.099	0.009	-0.300	0.295
		25:6. 0.9DL+1.(	-0.292	0.099	0.061	-0.224	-0.197	0.195
		26:2. 1.2DL+1.(	-0.111	0.039	0.045	-0.025	-0.167	0.162
		27:2. 1.2DL+1.(	-0.125	0.042	0.056	-0.027	-0.193	0.177
		28:6A. 1.2D+1.	-0.240	0.073	0.113	-0.570	-0.319	0.178
		29:6A. 1.2D+1.	0.774	0.102	-0.043	-0.166	0.182	0.274
		30:6B. 0.9D+1.	-0.110	-0.013	0.029	-0.588	-0.079	-0.056
		31:6B. 0.9D+1.	0.904	0.016	-0.127	-0.184	0.422	0.039
	36	21:1. 1.4DL	0.122	-0.045	-0.138	0.027	-0.341	0.070
		22:2. 1.2DL+1.(	0.209	-0.137	-0.213	-0.029	-0.598	0.401
		23:4. 1.2DL+1.(	0.384	-0.043	-0.208	0.197	-0.579	0.274
		24:5. 1.2DL+1.(	0.170	-0.100	-0.177	-0.009	-0.483	0.273
		25:6. 0.9DL+1.(	0.292	0.029	-0.120	0.224	-0.315	0.046
		26:2. 1.2DL+1.(	0.111	-0.039	-0.123	0.025	-0.308	0.061
		27:2. 1.2DL+1.(	0.125	-0.042	-0.134	0.027	-0.345	0.063
		28:6A. 1.2D+1.	0.266	0.016	-0.205	0.570	-0.584	-0.017
		29:6A. 1.2D+1.	-0.686	-0.075	-0.049	0.166	-0.197	0.228
		30:6B. 0.9D+1.	0.137	0.101	-0.074	0.588	-0.213	-0.267

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-0.815	0.010	0.083	0.184	0.174	-0.022
25	37	21:1. 1.4DL	10.148	0.003	-0.143	0.023	0.356	0.045
		22:2. 1.2DL+1.(	18.937	0.350	-0.223	0.456	0.626	0.570
		23:4. 1.2DL+1.(	16.929	0.456	-0.203	0.641	0.554	1.043
		24:5. 1.2DL+1.(	15.097	0.220	-0.185	0.292	0.506	0.371
		25:6. 0.9DL+1.(	8.356	0.238	-0.110	0.364	0.276	0.702
		26:2. 1.2DL+1.(	11.605	-0.024	-0.154	0.032	0.396	-0.005
		27:2. 1.2DL+1.(	10.302	0.005	-0.138	0.018	0.355	0.043
		28:6A. 1.2D+1.	19.383	0.487	-0.226	0.555	0.619	1.221
		29:6A. 1.2D+1.	17.647	0.309	-0.176	0.361	0.527	0.643
		30:6B. 0.9D+1.	7.635	0.268	-0.088	0.270	0.231	0.865
		31:6B. 0.9D+1.	5.898	0.090	-0.038	0.076	0.139	0.287
	38	21:1. 1.4DL	-10.148	-0.003	0.052	-0.023	0.198	-0.027
		22:2. 1.2DL+1.(	-18.937	0.103	0.145	-0.456	0.416	0.129
		23:4. 1.2DL+1.(	-16.929	-0.045	0.125	-0.641	0.375	0.414
		24:5. 1.2DL+1.(	-15.097	0.064	0.107	-0.292	0.324	0.072
		25:6. 0.9DL+1.(	-8.356	-0.110	0.051	-0.364	0.179	0.325
		26:2. 1.2DL+1.(	-11.605	0.024	0.076	-0.032	0.256	-0.129
		27:2. 1.2DL+1.(	-10.302	-0.005	0.060	-0.018	0.204	-0.016
		28:6A. 1.2D+1.	-19.357	-0.115	0.134	-0.555	0.400	0.485
		29:6A. 1.2D+1.	-17.558	0.001	0.084	-0.361	0.209	0.231
		30:6B. 0.9D+1.	-7.608	-0.180	0.044	-0.270	0.141	0.404
		31:6B. 0.9D+1.	-5.810	-0.064	-0.006	-0.076	-0.049	0.150
26	38	21:1. 1.4DL	17.661	0.017	-0.086	0.001	0.081	0.040
		22:2. 1.2DL+1.(	33.026	0.260	-0.114	0.280	0.106	0.001
		23:4. 1.2DL+1.(	29.646	0.267	-0.101	0.474	0.068	-0.156
		24:5. 1.2DL+1.(	26.318	0.168	-0.099	0.175	0.092	0.013
		25:6. 0.9DL+1.(	14.682	0.110	-0.057	0.300	0.027	-0.143
		26:2. 1.2DL+1.(	18.479	0.032	-0.070	-0.020	0.034	0.136
		27:2. 1.2DL+1.(	18.415	0.018	-0.083	-0.006	0.088	0.028
		28:6A. 1.2D+1.	33.871	0.294	-0.087	0.497	-0.034	-0.162
		29:6A. 1.2D+1.	30.688	0.201	-0.052	0.288	-0.070	-0.065
		30:6B. 0.9D+1.	13.382	0.132	-0.017	0.322	-0.100	-0.162
		31:6B. 0.9D+1.	10.198	0.039	0.018	0.113	-0.136	-0.065
	39	21:1. 1.4DL	-17.661	-0.017	-0.008	-0.001	0.148	0.062
		22:2. 1.2DL+1.(	-33.026	0.210	0.033	-0.280	0.325	0.143
		23:4. 1.2DL+1.(	-29.646	0.160	0.020	-0.474	0.287	0.513
		24:5. 1.2DL+1.(	-26.318	0.126	0.018	-0.175	0.251	0.109
		25:6. 0.9DL+1.(	-14.682	0.023	-0.003	-0.300	0.132	0.444
		26:2. 1.2DL+1.(	-18.479	-0.032	-0.010	0.020	0.143	0.053
		27:2. 1.2DL+1.(	-18.415	-0.018	0.003	0.006	0.165	0.076
		28:6A. 1.2D+1.	-33.844	0.091	-0.008	-0.497	0.266	0.759
		29:6A. 1.2D+1.	-30.596	0.120	-0.043	-0.288	0.098	0.301
		30:6B. 0.9D+1.	-13.354	-0.040	-0.029	-0.322	0.064	0.670

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-10.106	-0.011	-0.064	-0.113	-0.104	0.212
27	39	21:1. 1.4DL	22.233	-0.006	-0.073	0.038	0.028	-0.048
		22:2. 1.2DL+1.(	41.556	0.202	-0.088	0.195	0.003	-0.071
		23:4. 1.2DL+1.(	37.355	0.187	-0.081	0.282	-0.018	-0.358
		24:5. 1.2DL+1.(	33.119	0.124	-0.078	0.134	0.011	-0.060
		25:6. 0.9DL+1.(	18.529	0.059	-0.049	0.172	-0.011	-0.329
		26:2. 1.2DL+1.(	21.845	0.000	-0.058	0.044	-0.003	-0.033
		27:2. 1.2DL+1.(	24.010	-0.007	-0.072	0.024	0.038	-0.065
		28:6A. 1.2D+1.	42.642	0.215	-0.073	0.326	-0.108	-0.532
		29:6A. 1.2D+1.	38.592	0.157	-0.034	0.186	-0.146	-0.190
		30:6B. 0.9D+1.	16.860	0.088	-0.019	0.205	-0.110	-0.488
		31:6B. 0.9D+1.	12.810	0.030	0.020	0.065	-0.148	-0.146
	40	21:1. 1.4DL	-22.233	0.006	-0.021	-0.038	0.123	0.010
		22:2. 1.2DL+1.(	-41.556	0.268	0.007	-0.195	0.275	-0.123
		23:4. 1.2DL+1.(	-37.355	0.239	0.000	-0.282	0.256	0.250
		24:5. 1.2DL+1.(	-33.119	0.170	-0.002	-0.134	0.211	-0.074
		25:6. 0.9DL+1.(	-18.529	0.073	-0.011	-0.172	0.124	0.330
		26:2. 1.2DL+1.(	-21.845	-0.000	-0.023	-0.044	0.104	0.033
		27:2. 1.2DL+1.(	-24.010	0.007	-0.009	-0.024	0.149	0.022
		28:6A. 1.2D+1.	-42.614	0.171	-0.022	-0.326	0.258	0.660
		29:6A. 1.2D+1.	-38.500	0.165	-0.061	-0.186	0.068	0.166
		30:6B. 0.9D+1.	-16.832	0.004	-0.027	-0.205	0.087	0.737
		31:6B. 0.9D+1.	-12.718	-0.003	-0.066	-0.065	-0.103	0.243
28	40	21:1. 1.4DL	23.713	0.015	-0.055	-0.020	-0.036	-0.003
		22:2. 1.2DL+1.(	44.354	0.254	-0.055	-0.003	-0.113	0.149
		23:4. 1.2DL+1.(	39.898	0.189	-0.041	0.030	-0.146	-0.194
		24:5. 1.2DL+1.(	35.343	0.163	-0.052	-0.008	-0.082	0.092
		25:6. 0.9DL+1.(	19.799	0.035	-0.025	0.025	-0.087	-0.288
		26:2. 1.2DL+1.(	22.549	0.013	-0.045	-0.009	-0.046	-0.020
		27:2. 1.2DL+1.(	26.936	0.001	-0.061	-0.022	-0.020	-0.025
		28:6A. 1.2D+1.	45.585	0.189	-0.010	0.076	-0.301	-0.558
		29:6A. 1.2D+1.	41.204	0.169	0.002	0.024	-0.282	-0.116
		30:6B. 0.9D+1.	18.067	0.031	0.024	0.077	-0.230	-0.652
		31:6B. 0.9D+1.	13.686	0.011	0.036	0.025	-0.211	-0.209
	41	21:1. 1.4DL	-23.713	-0.015	-0.039	0.020	0.081	0.091
		22:2. 1.2DL+1.(	-44.354	0.216	-0.026	0.003	0.197	-0.039
		23:4. 1.2DL+1.(	-39.898	0.237	-0.039	-0.030	0.151	0.095
		24:5. 1.2DL+1.(	-35.343	0.130	-0.029	0.008	0.149	0.005
		25:6. 0.9DL+1.(	-19.799	0.098	-0.036	-0.025	0.054	0.148
		26:2. 1.2DL+1.(	-22.549	-0.013	-0.036	0.009	0.070	0.097
		27:2. 1.2DL+1.(	-26.936	-0.001	-0.019	0.022	0.143	0.028
		28:6A. 1.2D+1.	-45.557	0.197	-0.086	-0.076	0.078	0.537
		29:6A. 1.2D+1.	-41.112	0.152	-0.098	-0.024	-0.013	0.167
		30:6B. 0.9D+1.	-18.039	0.061	-0.070	-0.077	-0.044	0.562

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-13.594	0.017	-0.082	-0.025	-0.135	0.192
29	41	21:1. 1.4DL	23.713	-0.015	-0.039	0.020	-0.081	-0.091
		22:2. 1.2DL+1.(	44.354	0.216	-0.026	0.003	-0.197	0.039
		23:4. 1.2DL+1.(	39.898	0.237	-0.039	-0.030	-0.151	-0.095
		24:5. 1.2DL+1.(	35.343	0.130	-0.029	0.008	-0.149	-0.005
		25:6. 0.9DL+1.(	19.799	0.098	-0.036	-0.025	-0.054	-0.148
		26:2. 1.2DL+1.(	22.544	-0.015	-0.031	0.023	-0.085	-0.095
		27:2. 1.2DL+1.(	26.940	-0.009	-0.025	0.024	-0.131	-0.032
		28:6A. 1.2D+1.	45.481	0.197	-0.048	-0.075	-0.188	-0.534
		29:6A. 1.2D+1.	40.858	0.153	0.026	-0.020	-0.353	-0.160
		30:6B. 0.9D+1.	17.963	0.062	-0.032	-0.077	-0.065	-0.560
		31:6B. 0.9D+1.	13.340	0.018	0.042	-0.022	-0.230	-0.185
	42	21:1. 1.4DL	-23.713	0.015	-0.055	-0.020	0.036	0.003
		22:2. 1.2DL+1.(	-44.354	0.254	-0.055	-0.003	0.113	-0.149
		23:4. 1.2DL+1.(	-39.898	0.189	-0.041	0.030	0.146	0.194
		24:5. 1.2DL+1.(	-35.343	0.163	-0.052	-0.008	0.082	-0.092
		25:6. 0.9DL+1.(	-19.799	0.035	-0.025	0.025	0.087	0.288
		26:2. 1.2DL+1.(	-22.544	0.015	-0.050	-0.023	0.031	0.007
		27:2. 1.2DL+1.(	-26.940	0.009	-0.056	-0.024	0.041	-0.023
		28:6A. 1.2D+1.	-45.453	0.189	-0.047	0.075	0.192	0.558
		29:6A. 1.2D+1.	-40.766	0.168	-0.122	0.020	-0.082	0.114
		30:6B. 0.9D+1.	-17.935	0.030	-0.013	0.077	0.121	0.651
		31:6B. 0.9D+1.	-13.248	0.010	-0.088	0.022	-0.153	0.208
30	42	21:1. 1.4DL	22.233	0.006	-0.021	-0.038	-0.123	-0.010
		22:2. 1.2DL+1.(	41.556	0.268	0.007	-0.195	-0.275	0.123
		23:4. 1.2DL+1.(	37.355	0.239	0.000	-0.282	-0.256	-0.250
		24:5. 1.2DL+1.(	33.119	0.170	-0.002	-0.134	-0.211	0.074
		25:6. 0.9DL+1.(	18.529	0.073	-0.011	-0.172	-0.124	-0.330
		26:2. 1.2DL+1.(	20.715	0.005	-0.015	-0.033	-0.122	-0.013
		27:2. 1.2DL+1.(	24.741	0.016	-0.006	-0.034	-0.161	0.023
		28:6A. 1.2D+1.	42.548	0.173	0.013	-0.328	-0.366	-0.655
		29:6A. 1.2D+1.	38.280	0.170	0.057	-0.191	-0.426	-0.152
		30:6B. 0.9D+1.	16.766	0.005	0.009	-0.206	-0.195	-0.732
		31:6B. 0.9D+1.	12.498	0.003	0.052	-0.070	-0.256	-0.229
	43	21:1. 1.4DL	-22.233	-0.006	-0.073	0.038	-0.028	0.048
		22:2. 1.2DL+1.(	-41.556	0.202	-0.088	0.195	-0.003	0.071
		23:4. 1.2DL+1.(	-37.355	0.187	-0.081	0.282	0.018	0.358
		24:5. 1.2DL+1.(	-33.119	0.124	-0.078	0.134	-0.011	0.060
		25:6. 0.9DL+1.(	-18.529	0.059	-0.049	0.172	0.011	0.329
		26:2. 1.2DL+1.(	-20.715	-0.005	-0.066	0.033	-0.029	0.043
		27:2. 1.2DL+1.(	-24.741	-0.016	-0.074	0.034	-0.039	0.072
		28:6A. 1.2D+1.	-42.520	0.213	-0.109	0.328	0.008	0.537
		29:6A. 1.2D+1.	-38.188	0.151	-0.152	0.191	-0.187	0.206
		30:6B. 0.9D+1.	-16.739	0.087	-0.054	0.206	0.010	0.493

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-12.406	0.025	-0.098	0.070	-0.185	0.162
31	43	21:1. 1.4DL	17.661	-0.017	-0.008	-0.001	-0.148	-0.062
		22:2. 1.2DL+1.(	33.026	0.210	0.033	-0.280	-0.325	-0.143
		23:4. 1.2DL+1.(	29.646	0.160	0.020	-0.474	-0.287	-0.513
		24:5. 1.2DL+1.(	26.318	0.126	0.018	-0.175	-0.251	-0.109
		25:6. 0.9DL+1.(	14.682	0.023	-0.003	-0.300	-0.132	-0.444
		26:2. 1.2DL+1.(	16.235	-0.015	-0.004	-0.001	-0.139	-0.056
		27:2. 1.2DL+1.(	18.899	-0.017	0.004	0.010	-0.171	-0.080
		28:6A. 1.2D+1.	33.787	0.090	0.029	-0.493	-0.377	-0.759
		29:6A. 1.2D+1.	30.407	0.116	0.080	-0.273	-0.470	-0.303
		30:6B. 0.9D+1.	13.297	-0.042	0.008	-0.318	-0.176	-0.670
		31:6B. 0.9D+1.	9.917	-0.016	0.060	-0.098	-0.268	-0.214
	44	21:1. 1.4DL	-17.661	0.017	-0.086	0.001	-0.081	-0.040
		22:2. 1.2DL+1.(	-33.026	0.260	-0.114	0.280	-0.106	-0.001
		23:4. 1.2DL+1.(	-29.646	0.267	-0.101	0.474	-0.068	0.156
		24:5. 1.2DL+1.(	-26.318	0.168	-0.099	0.175	-0.092	-0.013
		25:6. 0.9DL+1.(	-14.682	0.110	-0.057	0.300	-0.027	0.143
		26:2. 1.2DL+1.(	-16.235	0.015	-0.077	0.001	-0.075	-0.035
		27:2. 1.2DL+1.(	-18.899	0.017	-0.085	-0.010	-0.091	-0.020
		28:6A. 1.2D+1.	-33.759	0.296	-0.124	0.493	-0.071	0.155
		29:6A. 1.2D+1.	-30.315	0.205	-0.176	0.273	-0.283	0.041
		30:6B. 0.9D+1.	-13.270	0.134	-0.054	0.318	-0.006	0.155
		31:6B. 0.9D+1.	-9.825	0.043	-0.106	0.098	-0.217	0.041
32	44	21:1. 1.4DL	10.148	-0.003	0.052	-0.023	-0.198	0.027
		22:2. 1.2DL+1.(	18.937	0.103	0.145	-0.456	-0.416	-0.129
		23:4. 1.2DL+1.(	16.929	-0.045	0.125	-0.641	-0.375	-0.414
		24:5. 1.2DL+1.(	15.097	0.064	0.107	-0.292	-0.324	-0.072
		25:6. 0.9DL+1.(	8.356	-0.110	0.051	-0.364	-0.179	-0.325
		26:2. 1.2DL+1.(	9.235	-0.003	0.050	-0.021	-0.181	0.023
		27:2. 1.2DL+1.(	10.539	-0.005	0.062	-0.015	-0.209	0.010
		28:6A. 1.2D+1.	19.305	-0.112	0.163	-0.560	-0.504	-0.474
		29:6A. 1.2D+1.	17.386	0.013	0.181	-0.376	-0.557	-0.192
		30:6B. 0.9D+1.	7.557	-0.176	0.073	-0.275	-0.246	-0.393
		31:6B. 0.9D+1.	5.637	-0.052	0.091	-0.091	-0.299	-0.111
	45	21:1. 1.4DL	-10.148	0.003	-0.143	0.023	-0.356	-0.045
		22:2. 1.2DL+1.(	-18.937	0.350	-0.223	0.456	-0.626	-0.570
		23:4. 1.2DL+1.(	-16.929	0.456	-0.203	0.641	-0.554	-1.043
		24:5. 1.2DL+1.(	-15.097	0.220	-0.185	0.292	-0.506	-0.371
		25:6. 0.9DL+1.(	-8.356	0.238	-0.110	0.364	-0.276	-0.702
		26:2. 1.2DL+1.(	-9.235	0.003	-0.128	0.021	-0.322	-0.041
		27:2. 1.2DL+1.(	-10.539	0.005	-0.140	0.015	-0.362	-0.041
		28:6A. 1.2D+1.	-19.279	0.484	-0.255	0.560	-0.680	-1.212
		29:6A. 1.2D+1.	-17.297	0.297	-0.273	0.376	-0.729	-0.614
		30:6B. 0.9D+1.	-7.530	0.265	-0.117	0.275	-0.291	-0.856

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-5.549	0.079	-0.135	0.091	-0.340	-0.259
33	1	21:1. 1.4DL	9.057	-0.026	0.115	-0.105	-0.286	-0.050
		22:2. 1.2DL+1.(	18.900	-0.122	0.226	0.148	-0.552	-0.095
		23:4. 1.2DL+1.(	12.084	0.945	-0.026	0.135	-0.370	-0.196
		24:5. 1.2DL+1.(	14.724	-0.085	0.178	0.059	-0.437	-0.076
		25:6. 0.9DL+1.(	3.183	1.013	-0.130	0.009	-0.116	-0.153
		26:2. 1.2DL+1.(	10.329	-0.040	0.147	-0.217	-0.336	-0.103
		27:2. 1.2DL+1.(	9.183	-0.023	0.114	-0.094	-0.287	-0.045
		28:6A. 1.2D+1.	12.528	3.022	0.152	0.634	-0.552	-0.381
		29:6A. 1.2D+1.	15.359	0.937	1.079	0.298	-0.937	-0.180
		30:6B. 0.9D+1.	0.793	3.099	0.012	0.541	-0.209	-0.322
		31:6B. 0.9D+1.	3.624	1.013	0.939	0.205	-0.594	-0.121
	19	21:1. 1.4DL	-9.043	0.026	-0.115	0.105	0.206	0.032
		22:2. 1.2DL+1.(	-18.888	0.122	-0.226	-0.148	0.395	0.010
		23:4. 1.2DL+1.(	-12.072	-0.939	0.026	-0.135	0.387	0.853
		24:5. 1.2DL+1.(	-14.711	0.085	-0.178	-0.059	0.313	0.017
		25:6. 0.9DL+1.(	-3.174	-1.007	0.130	-0.009	0.207	0.857
		26:2. 1.2DL+1.(	-10.317	0.040	-0.147	0.217	0.233	0.075
		27:2. 1.2DL+1.(	-9.171	0.023	-0.114	0.094	0.208	0.029
		28:6A. 1.2D+1.	-12.513	-3.008	-0.147	-0.634	0.448	2.483
		29:6A. 1.2D+1.	-15.344	-0.933	-1.065	-0.298	0.190	0.831
		30:6B. 0.9D+1.	-0.786	-3.085	-0.007	-0.541	0.202	2.477
		31:6B. 0.9D+1.	-3.617	-1.009	-0.925	-0.205	-0.055	0.825
34	19	21:1. 1.4DL	8.212	0.016	0.108	-0.084	-0.207	0.108
		22:2. 1.2DL+1.(	16.816	-0.335	0.206	0.440	-0.396	-1.984
		23:4. 1.2DL+1.(	11.371	0.270	0.176	-0.388	-0.392	1.030
		24:5. 1.2DL+1.(	13.149	-0.204	0.164	0.248	-0.314	-1.205
		25:6. 0.9DL+1.(	3.500	0.484	0.081	-0.690	-0.211	2.304
		26:2. 1.2DL+1.(	9.604	0.035	0.122	-0.130	-0.234	0.197
		27:2. 1.2DL+1.(	8.462	0.014	0.109	-0.079	-0.209	0.098
		28:6A. 1.2D+1.	11.942	0.166	0.201	-0.480	-0.376	0.587
		29:6A. 1.2D+1.	13.997	-0.086	0.129	0.030	0.077	-0.641
		30:6B. 0.9D+1.	1.503	0.375	0.073	-0.756	-0.131	1.828
		31:6B. 0.9D+1.	3.557	0.123	0.001	-0.246	0.323	0.600
	10	21:1. 1.4DL	-8.116	-0.016	-0.108	0.084	-0.301	-0.032
		22:2. 1.2DL+1.(	-16.733	0.335	-0.206	-0.440	-0.578	0.403
		23:4. 1.2DL+1.(	-11.288	-0.148	-0.176	0.388	-0.438	-0.109
		24:5. 1.2DL+1.(	-13.067	0.204	-0.164	-0.248	-0.458	0.241
		25:6. 0.9DL+1.(	-3.438	-0.363	-0.081	0.690	-0.174	-0.371
		26:2. 1.2DL+1.(	-9.521	-0.035	-0.122	0.130	-0.340	-0.030
		27:2. 1.2DL+1.(	-8.379	-0.014	-0.109	0.079	-0.305	-0.033
		28:6A. 1.2D+1.	-11.844	-0.071	-0.173	0.480	-0.506	-0.027
		29:6A. 1.2D+1.	-13.899	0.115	-0.034	-0.030	-0.461	0.167
		30:6B. 0.9D+1.	-1.456	-0.281	-0.045	0.756	-0.148	-0.279

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-3.511	-0.095	0.094	0.246	-0.103	-0.085
35	9	21:1. 1.4DL	9.057	-0.026	-0.115	0.105	0.286	-0.050
		22:2. 1.2DL+1.(	18.900	-0.122	-0.226	-0.148	0.552	-0.095
		23:4. 1.2DL+1.(	12.084	0.945	0.026	-0.135	0.370	-0.196
		24:5. 1.2DL+1.(	14.724	-0.085	-0.178	-0.059	0.437	-0.076
		25:6. 0.9DL+1.(	3.183	1.013	0.130	-0.009	0.116	-0.153
		26:2. 1.2DL+1.(	8.239	-0.022	-0.104	0.091	0.259	-0.044
		27:2. 1.2DL+1.(	9.392	-0.023	-0.117	0.097	0.294	-0.045
		28:6A. 1.2D+1.	12.324	2.991	0.442	-0.628	0.292	-0.379
		29:6A. 1.2D+1.	14.678	0.832	0.900	-0.277	0.071	-0.175
		30:6B. 0.9D+1.	0.589	3.067	0.582	-0.535	-0.051	-0.320
		31:6B. 0.9D+1.	2.943	0.908	1.039	-0.183	-0.272	-0.116
	27	21:1. 1.4DL	-9.043	0.026	0.115	-0.105	-0.206	0.032
		22:2. 1.2DL+1.(	-18.888	0.122	0.226	0.148	-0.395	0.010
		23:4. 1.2DL+1.(	-12.072	-0.939	-0.026	0.135	-0.387	0.853
		24:5. 1.2DL+1.(	-14.711	0.085	0.178	0.059	-0.313	0.017
		25:6. 0.9DL+1.(	-3.174	-1.007	-0.130	0.009	-0.207	0.857
		26:2. 1.2DL+1.(	-8.227	0.022	0.104	-0.091	-0.187	0.028
		27:2. 1.2DL+1.(	-9.380	0.023	0.117	-0.097	-0.212	0.029
		28:6A. 1.2D+1.	-12.309	-2.977	-0.438	0.628	-0.598	2.459
		29:6A. 1.2D+1.	-14.663	-0.827	-0.886	0.277	-0.693	0.753
		30:6B. 0.9D+1.	-0.582	-3.053	-0.578	0.535	-0.353	2.453
		31:6B. 0.9D+1.	-2.936	-0.904	-1.025	0.183	-0.448	0.747
36	27	21:1. 1.4DL	8.212	0.016	-0.108	0.084	0.207	0.108
		22:2. 1.2DL+1.(	16.816	-0.335	-0.206	-0.440	0.396	-1.984
		23:4. 1.2DL+1.(	11.371	0.270	-0.176	0.388	0.392	1.030
		24:5. 1.2DL+1.(	13.149	-0.204	-0.164	-0.248	0.314	-1.205
		25:6. 0.9DL+1.(	3.500	0.484	-0.081	0.690	0.211	2.304
		26:2. 1.2DL+1.(	7.516	0.014	-0.098	0.074	0.188	0.095
		27:2. 1.2DL+1.(	8.672	0.014	-0.111	0.082	0.213	0.100
		28:6A. 1.2D+1.	11.736	0.165	-0.251	0.487	0.689	0.586
		29:6A. 1.2D+1.	13.308	-0.089	-0.297	-0.006	0.967	-0.644
		30:6B. 0.9D+1.	1.296	0.375	-0.123	0.763	0.444	1.827
		31:6B. 0.9D+1.	2.868	0.121	-0.169	0.270	0.721	0.597
	18	21:1. 1.4DL	-8.116	-0.016	0.108	-0.084	0.301	-0.032
		22:2. 1.2DL+1.(	-16.733	0.335	0.206	0.440	0.578	0.403
		23:4. 1.2DL+1.(	-11.288	-0.148	0.176	-0.388	0.438	-0.109
		24:5. 1.2DL+1.(	-13.067	0.204	0.164	0.248	0.458	0.241
		25:6. 0.9DL+1.(	-3.438	-0.363	0.081	-0.690	0.174	-0.371
		26:2. 1.2DL+1.(	-7.433	-0.014	0.098	-0.074	0.273	-0.028
		27:2. 1.2DL+1.(	-8.589	-0.014	0.111	-0.082	0.311	-0.036
		28:6A. 1.2D+1.	-11.638	-0.071	0.280	-0.487	0.564	-0.030
		29:6A. 1.2D+1.	-13.210	0.117	0.391	0.006	0.655	0.158
		30:6B. 0.9D+1.	-1.249	-0.280	0.152	-0.763	0.206	-0.282

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-2.821	-0.092	0.263	-0.270	0.297	-0.094
37	2	21:1. 1.4DL	7.809	-0.160	0.070	0.037	-0.228	0.022
		22:2. 1.2DL+1.(	16.420	-0.203	0.153	0.136	-0.475	0.087
		23:4. 1.2DL+1.(	10.994	-0.392	0.030	0.172	-0.292	-0.020
		24:5. 1.2DL+1.(	12.772	-0.178	0.118	0.097	-0.370	0.061
		25:6. 0.9DL+1.(	3.242	-0.317	-0.043	0.099	-0.068	-0.068
		26:2. 1.2DL+1.(	9.262	-0.264	0.074	0.038	-0.243	0.111
		27:2. 1.2DL+1.(	8.106	-0.151	0.076	0.037	-0.242	0.019
		28:6A. 1.2D+1.	11.497	0.016	0.535	0.383	-0.668	-0.132
		29:6A. 1.2D+1.	13.550	-0.008	1.998	0.144	-1.634	0.009
		30:6B. 0.9D+1.	1.302	0.142	0.440	0.298	-0.374	-0.187
		31:6B. 0.9D+1.	3.354	0.117	1.902	0.059	-1.339	-0.046
	20	21:1. 1.4DL	-7.801	0.160	-0.070	-0.037	0.179	-0.133
		22:2. 1.2DL+1.(	-16.413	0.203	-0.153	-0.136	0.368	-0.229
		23:4. 1.2DL+1.(	-10.987	0.402	-0.030	-0.172	0.271	-0.255
		24:5. 1.2DL+1.(	-12.765	0.178	-0.118	-0.097	0.287	-0.186
		25:6. 0.9DL+1.(	-3.236	0.327	0.043	-0.099	0.098	-0.155
		26:2. 1.2DL+1.(	-9.255	0.264	-0.074	-0.038	0.192	-0.295
		27:2. 1.2DL+1.(	-8.099	0.151	-0.076	-0.037	0.189	-0.124
		28:6A. 1.2D+1.	-11.489	-0.008	-0.533	-0.383	0.296	0.141
		29:6A. 1.2D+1.	-13.542	0.010	-1.990	-0.144	0.245	-0.015
		30:6B. 0.9D+1.	-1.298	-0.134	-0.438	-0.298	0.068	0.283
		31:6B. 0.9D+1.	-3.350	-0.115	-1.894	-0.059	0.016	0.127
38	20	21:1. 1.4DL	6.108	0.000	0.088	-0.021	-0.179	-0.014
		22:2. 1.2DL+1.(	12.149	-0.333	0.182	0.100	-0.368	-1.463
		23:4. 1.2DL+1.(	8.197	0.184	0.132	-0.116	-0.275	0.210
		24:5. 1.2DL+1.(	9.557	-0.208	0.142	0.056	-0.288	-0.919
		25:6. 0.9DL+1.(	2.567	0.392	0.047	-0.186	-0.102	1.120
		26:2. 1.2DL+1.(	5.576	-0.025	0.094	-0.024	-0.192	-0.132
		27:2. 1.2DL+1.(	6.647	-0.000	0.094	-0.021	-0.190	-0.010
		28:6A. 1.2D+1.	8.710	-0.113	0.098	-0.176	-0.119	-0.580
		29:6A. 1.2D+1.	10.260	-0.194	-0.033	-0.013	0.375	-0.861
		30:6B. 0.9D+1.	1.169	0.095	-0.015	-0.239	0.110	0.334
		31:6B. 0.9D+1.	2.719	0.014	-0.145	-0.076	0.603	0.053
	11	21:1. 1.4DL	-6.053	-0.000	-0.088	0.021	-0.237	0.016
		22:2. 1.2DL+1.(	-12.102	0.333	-0.182	-0.100	-0.488	-0.109
		23:4. 1.2DL+1.(	-8.150	0.067	-0.132	0.116	-0.350	0.000
		24:5. 1.2DL+1.(	-9.510	0.208	-0.142	-0.056	-0.381	-0.063
		25:6. 0.9DL+1.(	-2.532	-0.142	-0.047	0.186	-0.121	0.073
		26:2. 1.2DL+1.(	-5.529	0.025	-0.094	0.024	-0.250	0.015
		27:2. 1.2DL+1.(	-6.600	0.000	-0.094	0.021	-0.252	0.009
		28:6A. 1.2D+1.	-8.655	0.166	-0.082	0.176	-0.307	-0.079
		29:6A. 1.2D+1.	-10.205	0.210	0.086	0.013	-0.093	-0.092
		30:6B. 0.9D+1.	-1.143	-0.042	0.031	0.239	-0.004	-0.010

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-2.693	0.002	0.199	0.076	0.210	-0.024
39	3	21:1. 1.4DL	5.529	-0.283	0.057	-0.020	-0.154	0.007
		22:2. 1.2DL+1.(	11.731	-0.495	0.122	-0.014	-0.319	-0.003
		23:4. 1.2DL+1.(	7.738	0.754	0.042	0.050	-0.212	0.175
		24:5. 1.2DL+1.(	9.109	-0.400	0.095	-0.015	-0.249	0.000
		25:6. 0.9DL+1.(	2.183	0.973	-0.016	0.052	-0.062	0.179
		26:2. 1.2DL+1.(	5.113	-0.337	0.041	0.012	-0.122	0.001
		27:2. 1.2DL+1.(	6.158	-0.298	0.069	-0.028	-0.180	-0.003
		28:6A. 1.2D+1.	8.162	3.986	0.586	0.161	-0.630	0.504
		29:6A. 1.2D+1.	9.747	1.058	1.999	-0.008	-1.548	0.159
		30:6B. 0.9D+1.	0.878	4.293	0.510	0.170	-0.432	0.506
		31:6B. 0.9D+1.	2.463	1.365	1.923	0.000	-1.349	0.161
	21	21:1. 1.4DL	-5.521	0.283	-0.057	0.020	0.114	-0.204
		22:2. 1.2DL+1.(	-11.724	0.495	-0.122	0.014	0.234	-0.342
		23:4. 1.2DL+1.(	-7.731	-0.744	-0.042	-0.050	0.183	0.348
		24:5. 1.2DL+1.(	-9.102	0.400	-0.095	0.015	0.183	-0.279
		25:6. 0.9DL+1.(	-2.178	-0.963	0.016	-0.052	0.073	0.497
		26:2. 1.2DL+1.(	-5.106	0.337	-0.041	-0.012	0.094	-0.235
		27:2. 1.2DL+1.(	-6.151	0.298	-0.069	0.028	0.132	-0.205
		28:6A. 1.2D+1.	-8.154	-3.978	-0.584	-0.161	0.222	2.271
		29:6A. 1.2D+1.	-9.739	-1.055	-1.991	0.008	0.157	0.578
		30:6B. 0.9D+1.	-0.874	-4.285	-0.508	-0.170	0.077	2.483
		31:6B. 0.9D+1.	-2.459	-1.362	-1.915	-0.000	0.012	0.790
40	21	21:1. 1.4DL	3.790	-0.025	0.055	-0.017	-0.115	-0.088
		22:2. 1.2DL+1.(	7.401	-0.492	0.113	0.042	-0.235	-2.108
		23:4. 1.2DL+1.(	5.010	0.156	0.088	-0.083	-0.186	0.075
		24:5. 1.2DL+1.(	5.844	-0.316	0.089	0.021	-0.183	-1.346
		25:6. 0.9DL+1.(	1.602	0.455	0.035	-0.115	-0.076	1.364
		26:2. 1.2DL+1.(	2.774	-0.029	0.045	-0.009	-0.094	-0.110
		27:2. 1.2DL+1.(	4.665	-0.021	0.065	-0.021	-0.133	-0.064
		28:6A. 1.2D+1.	5.377	-0.213	0.059	-0.147	-0.042	-1.068
		29:6A. 1.2D+1.	6.449	-0.274	-0.083	-0.026	0.463	-1.237
		30:6B. 0.9D+1.	0.784	0.094	-0.011	-0.174	0.104	0.249
		31:6B. 0.9D+1.	1.855	0.033	-0.154	-0.052	0.608	0.080
	12	21:1. 1.4DL	-3.735	0.025	-0.055	0.017	-0.146	-0.029
		22:2. 1.2DL+1.(	-7.354	0.492	-0.113	-0.042	-0.301	-0.215
		23:4. 1.2DL+1.(	-4.963	0.099	-0.088	0.083	-0.230	-0.008
		24:5. 1.2DL+1.(	-5.797	0.316	-0.089	-0.021	-0.235	-0.144
		25:6. 0.9DL+1.(	-1.567	-0.200	-0.035	0.115	-0.089	0.116
		26:2. 1.2DL+1.(	-2.727	0.029	-0.045	0.009	-0.117	-0.027
		27:2. 1.2DL+1.(	-4.618	0.021	-0.065	0.021	-0.173	-0.033
		28:6A. 1.2D+1.	-5.322	0.267	-0.043	0.147	-0.198	-0.064
		29:6A. 1.2D+1.	-6.393	0.290	0.137	0.026	0.058	-0.096
		30:6B. 0.9D+1.	-0.757	-0.041	0.028	0.174	-0.012	0.070

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-1.829	-0.017	0.207	0.052	0.244	0.038
41	4	21:1. 1.4DL	3.272	-0.295	0.021	0.017	-0.076	0.019
		22:2. 1.2DL+1.(	6.989	-0.522	0.048	0.039	-0.157	0.015
		23:4. 1.2DL+1.(	4.566	-0.601	0.021	0.065	-0.127	-0.041
		24:5. 1.2DL+1.(	5.420	-0.421	0.037	0.029	-0.122	0.016
		25:6. 0.9DL+1.(	1.250	-0.369	-0.002	0.046	-0.053	-0.044
		26:2. 1.2DL+1.(	2.330	-0.310	0.016	0.007	-0.050	-0.007
		27:2. 1.2DL+1.(	4.213	-0.312	0.030	0.023	-0.115	-0.027
		28:6A. 1.2D+1.	4.824	-0.247	0.594	0.120	-0.570	-0.215
		29:6A. 1.2D+1.	5.921	-0.277	1.951	0.029	-1.424	-0.053
		30:6B. 0.9D+1.	0.483	0.077	0.564	0.096	-0.473	-0.224
		31:6B. 0.9D+1.	1.580	0.046	1.921	0.005	-1.327	-0.062
	22	21:1. 1.4DL	-3.264	0.295	-0.021	-0.017	0.061	-0.225
		22:2. 1.2DL+1.(	-6.982	0.522	-0.048	-0.039	0.123	-0.379
		23:4. 1.2DL+1.(	-4.559	0.611	-0.021	-0.065	0.112	-0.380
		24:5. 1.2DL+1.(	-5.413	0.421	-0.037	-0.029	0.097	-0.309
		25:6. 0.9DL+1.(	-1.244	0.379	0.002	-0.046	0.054	-0.216
		26:2. 1.2DL+1.(	-2.323	0.310	-0.016	-0.007	0.039	-0.210
		27:2. 1.2DL+1.(	-4.206	0.312	-0.030	-0.023	0.093	-0.191
		28:6A. 1.2D+1.	-4.815	0.255	-0.591	-0.120	0.157	0.040
		29:6A. 1.2D+1.	-5.912	0.280	-1.943	-0.029	0.067	-0.141
		30:6B. 0.9D+1.	-0.479	-0.069	-0.562	-0.096	0.080	0.275
		31:6B. 0.9D+1.	-1.576	-0.044	-1.913	-0.005	-0.009	0.094
42	22	21:1. 1.4DL	1.578	0.023	0.029	-0.008	-0.061	0.043
		22:2. 1.2DL+1.(	2.740	-0.437	0.058	0.013	-0.124	-2.062
		23:4. 1.2DL+1.(	1.930	0.232	0.053	-0.031	-0.114	0.283
		24:5. 1.2DL+1.(	2.220	-0.266	0.046	0.006	-0.097	-1.275
		25:6. 0.9DL+1.(	0.724	0.512	0.026	-0.042	-0.056	1.585
		26:2. 1.2DL+1.(	0.880	0.032	0.018	-0.002	-0.039	0.082
		27:2. 1.2DL+1.(	2.766	0.044	0.044	-0.018	-0.094	0.116
		28:6A. 1.2D+1.	2.122	-0.103	0.028	-0.072	0.026	-0.778
		29:6A. 1.2D+1.	2.675	-0.224	-0.127	-0.012	0.554	-1.147
		30:6B. 0.9D+1.	0.423	0.170	-0.008	-0.080	0.103	0.512
		31:6B. 0.9D+1.	0.976	0.049	-0.163	-0.020	0.631	0.142
	13	21:1. 1.4DL	-1.523	-0.023	-0.029	0.008	-0.075	0.064
		22:2. 1.2DL+1.(	-2.693	0.437	-0.058	-0.013	-0.152	-0.001
		23:4. 1.2DL+1.(	-1.883	0.024	-0.053	0.031	-0.138	0.141
		24:5. 1.2DL+1.(	-2.173	0.266	-0.046	-0.006	-0.119	0.020
		25:6. 0.9DL+1.(	-0.689	-0.257	-0.026	0.042	-0.067	0.162
		26:2. 1.2DL+1.(	-0.833	-0.032	-0.018	0.002	-0.048	0.070
		27:2. 1.2DL+1.(	-2.719	-0.044	-0.044	0.018	-0.116	0.090
		28:6A. 1.2D+1.	-2.066	0.157	-0.012	0.072	-0.119	0.165
		29:6A. 1.2D+1.	-2.620	0.240	0.181	0.012	0.172	0.052
		30:6B. 0.9D+1.	-0.396	-0.117	0.025	0.080	-0.025	0.166

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-0.949	-0.033	0.217	0.020	0.266	0.053
43	5	21:1. 1.4DL	2.105	-0.375	0.000	-0.000	-0.000	0.005
		22:2. 1.2DL+1.(	4.633	-0.662	0.000	-0.000	-0.000	-0.008
		23:4. 1.2DL+1.(	2.991	0.689	-0.000	0.000	0.000	0.164
		24:5. 1.2DL+1.(	3.572	-0.534	0.000	-0.000	-0.000	-0.003
		25:6. 0.9DL+1.(	0.772	0.983	-0.000	0.000	0.000	0.171
		26:2. 1.2DL+1.(	1.806	-0.358	-0.007	0.007	0.015	0.001
		27:2. 1.2DL+1.(	4.035	-0.507	0.006	-0.014	-0.013	0.089
		28:6A. 1.2D+1.	3.011	3.897	0.573	-0.015	-0.372	0.450
		29:6A. 1.2D+1.	3.608	0.870	1.910	-0.051	-1.241	0.135
		30:6B. 0.9D+1.	0.134	4.308	0.573	-0.015	-0.372	0.455
		31:6B. 0.9D+1.	0.731	1.280	1.909	-0.051	-1.241	0.140
	23	21:1. 1.4DL	-2.097	0.375	-0.000	0.000	0.000	-0.266
		22:2. 1.2DL+1.(	-4.626	0.662	-0.000	0.000	0.000	-0.453
		23:4. 1.2DL+1.(	-2.984	-0.683	0.000	-0.000	0.000	0.315
		24:5. 1.2DL+1.(	-3.565	0.534	-0.000	0.000	0.000	-0.369
		25:6. 0.9DL+1.(	-0.767	-0.976	0.000	-0.000	0.000	0.512
		26:2. 1.2DL+1.(	-1.799	0.358	0.007	-0.007	-0.011	-0.251
		27:2. 1.2DL+1.(	-4.028	0.507	-0.006	0.014	0.008	-0.443
		28:6A. 1.2D+1.	-3.003	-3.889	-0.570	0.015	-0.026	2.264
		29:6A. 1.2D+1.	-3.600	-0.867	-1.902	0.051	-0.087	0.470
		30:6B. 0.9D+1.	-0.130	-4.300	-0.570	0.015	-0.026	2.545
		31:6B. 0.9D+1.	-0.727	-1.278	-1.901	0.051	-0.087	0.751
44	23	21:1. 1.4DL	0.358	-0.029	0.000	-0.000	-0.000	-0.098
		22:2. 1.2DL+1.(	0.291	-0.532	0.000	0.000	-0.000	-2.356
		23:4. 1.2DL+1.(	0.279	0.115	0.000	-0.000	-0.000	-0.014
		24:5. 1.2DL+1.(	0.297	-0.342	0.000	-0.000	-0.000	-1.504
		25:6. 0.9DL+1.(	0.212	0.439	0.000	-0.000	-0.000	1.427
		26:2. 1.2DL+1.(	0.307	-0.025	-0.005	0.003	0.011	-0.081
		27:2. 1.2DL+1.(	0.285	-0.067	0.004	-0.003	-0.008	-0.251
		28:6A. 1.2D+1.	0.286	-0.202	-0.060	0.002	0.213	-1.091
		29:6A. 1.2D+1.	0.315	-0.295	-0.201	0.007	0.709	-1.369
		30:6B. 0.9D+1.	0.107	0.130	-0.060	0.002	0.213	0.381
		31:6B. 0.9D+1.	0.136	0.037	-0.201	0.007	0.709	0.102
	14	21:1. 1.4DL	-0.304	0.029	-0.000	0.000	-0.000	-0.037
		22:2. 1.2DL+1.(	-0.244	0.532	-0.000	-0.000	-0.000	-0.156
		23:4. 1.2DL+1.(	-0.232	0.143	-0.000	0.000	-0.000	-0.049
		24:5. 1.2DL+1.(	-0.250	0.342	-0.000	0.000	-0.000	-0.109
		25:6. 0.9DL+1.(	-0.177	-0.180	-0.000	0.000	-0.000	0.037
		26:2. 1.2DL+1.(	-0.260	0.025	0.005	-0.003	0.013	-0.039
		27:2. 1.2DL+1.(	-0.238	0.067	-0.004	0.003	-0.010	-0.067
		28:6A. 1.2D+1.	-0.230	0.256	0.076	-0.002	0.110	0.010
		29:6A. 1.2D+1.	-0.259	0.311	0.255	-0.007	0.366	-0.062
		30:6B. 0.9D+1.	-0.081	-0.077	0.076	-0.002	0.110	0.107

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-0.110	-0.021	0.255	-0.007	0.366	0.035
45	6	21:1. 1.4DL	3.272	-0.295	-0.021	-0.017	0.076	0.019
		22:2. 1.2DL+1.(	6.989	-0.522	-0.048	-0.039	0.157	0.015
		23:4. 1.2DL+1.(	4.566	-0.601	-0.021	-0.065	0.127	-0.041
		24:5. 1.2DL+1.(	5.420	-0.421	-0.037	-0.029	0.122	0.016
		25:6. 0.9DL+1.(	1.250	-0.369	0.002	-0.046	0.053	-0.044
		26:2. 1.2DL+1.(	3.278	-0.270	-0.023	-0.017	0.080	0.017
		27:2. 1.2DL+1.(	4.426	-0.346	-0.028	-0.021	0.108	0.016
		28:6A. 1.2D+1.	4.606	-0.264	0.550	-0.139	-0.175	-0.215
		29:6A. 1.2D+1.	5.194	-0.333	1.861	-0.093	-1.061	-0.053
		30:6B. 0.9D+1.	0.266	0.060	0.579	-0.115	-0.273	-0.224
		31:6B. 0.9D+1.	0.854	-0.010	1.890	-0.069	-1.158	-0.062
	24	21:1. 1.4DL	-3.264	0.295	0.021	0.017	-0.061	-0.225
		22:2. 1.2DL+1.(	-6.982	0.522	0.048	0.039	-0.123	-0.379
		23:4. 1.2DL+1.(	-4.559	0.611	0.021	0.065	-0.112	-0.380
		24:5. 1.2DL+1.(	-5.413	0.421	0.037	0.029	-0.097	-0.309
		25:6. 0.9DL+1.(	-1.244	0.379	-0.002	0.046	-0.054	-0.216
		26:2. 1.2DL+1.(	-3.271	0.270	0.023	0.017	-0.064	-0.205
		27:2. 1.2DL+1.(	-4.419	0.346	0.028	0.021	-0.089	-0.257
		28:6A. 1.2D+1.	-4.598	0.272	-0.547	0.139	-0.207	0.028
		29:6A. 1.2D+1.	-5.186	0.336	-1.853	0.093	-0.233	-0.180
		30:6B. 0.9D+1.	-0.262	-0.052	-0.577	0.115	-0.130	0.263
		31:6B. 0.9D+1.	-0.850	0.012	-1.882	0.069	-0.157	0.055
46	24	21:1. 1.4DL	1.578	0.023	-0.029	0.008	0.061	0.043
		22:2. 1.2DL+1.(	2.740	-0.437	-0.058	-0.013	0.124	-2.062
		23:4. 1.2DL+1.(	1.930	0.232	-0.053	0.031	0.114	0.283
		24:5. 1.2DL+1.(	2.220	-0.266	-0.046	-0.006	0.097	-1.275
		25:6. 0.9DL+1.(	0.724	0.512	-0.026	0.042	0.056	1.585
		26:2. 1.2DL+1.(	1.827	0.020	-0.030	0.008	0.065	0.040
		27:2. 1.2DL+1.(	2.145	0.033	-0.042	0.017	0.089	0.064
		28:6A. 1.2D+1.	1.905	-0.102	-0.147	0.076	0.397	-0.774
		29:6A. 1.2D+1.	1.953	-0.220	-0.271	0.027	0.857	-1.136
		30:6B. 0.9D+1.	0.206	0.171	-0.111	0.084	0.320	0.515
		31:6B. 0.9D+1.	0.254	0.053	-0.235	0.035	0.780	0.153
	15	21:1. 1.4DL	-1.523	-0.023	0.029	-0.008	0.075	0.064
		22:2. 1.2DL+1.(	-2.693	0.437	0.058	0.013	0.152	-0.001
		23:4. 1.2DL+1.(	-1.883	0.024	0.053	-0.031	0.138	0.141
		24:5. 1.2DL+1.(	-2.173	0.266	0.046	0.006	0.119	0.020
		25:6. 0.9DL+1.(	-0.689	-0.257	0.026	-0.042	0.067	0.162
		26:2. 1.2DL+1.(	-1.780	-0.020	0.030	-0.008	0.079	0.054
		27:2. 1.2DL+1.(	-2.098	-0.033	0.042	-0.017	0.109	0.090
		28:6A. 1.2D+1.	-1.850	0.155	0.163	-0.076	0.336	0.167
		29:6A. 1.2D+1.	-1.898	0.236	0.325	-0.027	0.549	0.060
		30:6B. 0.9D+1.	-0.180	-0.118	0.127	-0.084	0.241	0.168

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-0.227	-0.037	0.288	-0.035	0.454	0.061
47	7	21:1. 1.4DL	5.529	-0.283	-0.057	0.020	0.154	0.007
		22:2. 1.2DL+1.(	11.731	-0.495	-0.122	0.014	0.319	-0.003
		23:4. 1.2DL+1.(	7.738	0.754	-0.042	-0.050	0.212	0.175
		24:5. 1.2DL+1.(	9.109	-0.400	-0.095	0.015	0.249	0.000
		25:6. 0.9DL+1.(	2.183	0.973	0.016	-0.052	0.062	0.179
		26:2. 1.2DL+1.(	5.214	-0.253	-0.055	0.019	0.148	0.006
		27:2. 1.2DL+1.(	6.364	-0.308	-0.073	0.040	0.189	-0.019
		28:6A. 1.2D+1.	7.945	3.947	0.562	-0.191	-0.124	0.502
		29:6A. 1.2D+1.	9.024	0.928	1.830	-0.089	-0.967	0.152
		30:6B. 0.9D+1.	0.661	4.254	0.638	-0.199	-0.322	0.504
		31:6B. 0.9D+1.	1.740	1.235	1.905	-0.098	-1.165	0.154
	25	21:1. 1.4DL	-5.521	0.283	0.057	-0.020	-0.114	-0.204
		22:2. 1.2DL+1.(	-11.724	0.495	0.122	-0.014	-0.234	-0.342
		23:4. 1.2DL+1.(	-7.731	-0.744	0.042	0.050	-0.183	0.348
		24:5. 1.2DL+1.(	-9.102	0.400	0.095	-0.015	-0.183	-0.279
		25:6. 0.9DL+1.(	-2.178	-0.963	-0.016	0.052	-0.073	0.497
		26:2. 1.2DL+1.(	-5.207	0.253	0.055	-0.019	-0.109	-0.182
		27:2. 1.2DL+1.(	-6.357	0.308	0.073	-0.040	-0.138	-0.196
		28:6A. 1.2D+1.	-7.937	-3.939	-0.560	0.191	-0.267	2.246
		29:6A. 1.2D+1.	-9.016	-0.925	-1.822	0.089	-0.306	0.494
		30:6B. 0.9D+1.	-0.657	-4.246	-0.636	0.199	-0.121	2.458
		31:6B. 0.9D+1.	-1.736	-1.232	-1.897	0.098	-0.161	0.706
48	25	21:1. 1.4DL	3.790	-0.025	-0.055	0.017	0.115	-0.088
		22:2. 1.2DL+1.(	7.401	-0.492	-0.113	-0.042	0.235	-2.108
		23:4. 1.2DL+1.(	5.010	0.156	-0.088	0.083	0.186	0.075
		24:5. 1.2DL+1.(	5.844	-0.316	-0.089	-0.021	0.183	-1.346
		25:6. 0.9DL+1.(	1.602	0.455	-0.035	0.115	0.076	1.364
		26:2. 1.2DL+1.(	3.723	-0.022	-0.053	0.015	0.110	-0.078
		27:2. 1.2DL+1.(	4.869	-0.016	-0.067	0.023	0.138	-0.049
		28:6A. 1.2D+1.	5.157	-0.216	-0.176	0.151	0.460	-1.077
		29:6A. 1.2D+1.	5.716	-0.285	-0.308	0.039	0.931	-1.266
		30:6B. 0.9D+1.	0.564	0.091	-0.106	0.178	0.314	0.240
		31:6B. 0.9D+1.	1.122	0.022	-0.237	0.066	0.785	0.051
	16	21:1. 1.4DL	-3.735	0.025	0.055	-0.017	0.146	-0.029
		22:2. 1.2DL+1.(	-7.354	0.492	0.113	0.042	0.301	-0.215
		23:4. 1.2DL+1.(	-4.963	0.099	0.088	-0.083	0.230	-0.008
		24:5. 1.2DL+1.(	-5.797	0.316	0.089	0.021	0.235	-0.144
		25:6. 0.9DL+1.(	-1.567	-0.200	0.035	-0.115	0.089	0.116
		26:2. 1.2DL+1.(	-3.676	0.022	0.053	-0.015	0.142	-0.027
		27:2. 1.2DL+1.(	-4.822	0.016	0.067	-0.023	0.180	-0.027
		28:6A. 1.2D+1.	-5.102	0.270	0.192	-0.151	0.410	-0.070
		29:6A. 1.2D+1.	-5.660	0.301	0.361	-0.039	0.649	-0.118
		30:6B. 0.9D+1.	-0.537	-0.038	0.122	-0.178	0.224	0.064

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-1.096	-0.006	0.291	-0.066	0.462	0.016
49	8	21:1. 1.4DL	7.809	-0.160	-0.070	-0.037	0.228	0.022
		22:2. 1.2DL+1.(	16.420	-0.203	-0.153	-0.136	0.475	0.087
		23:4. 1.2DL+1.(	10.994	-0.392	-0.030	-0.172	0.292	-0.020
		24:5. 1.2DL+1.(	12.772	-0.178	-0.118	-0.097	0.370	0.061
		25:6. 0.9DL+1.(	3.242	-0.317	0.043	-0.099	0.068	-0.068
		26:2. 1.2DL+1.(	7.167	-0.141	-0.065	-0.033	0.211	0.019
		27:2. 1.2DL+1.(	8.314	-0.162	-0.078	-0.039	0.249	0.016
		28:6A. 1.2D+1.	11.291	-0.015	0.609	-0.407	-0.072	-0.133
		29:6A. 1.2D+1.	12.862	-0.113	1.817	-0.226	-0.834	0.006
		30:6B. 0.9D+1.	1.096	0.110	0.704	-0.322	-0.367	-0.188
		31:6B. 0.9D+1.	2.667	0.012	1.912	-0.141	-1.128	-0.048
	26	21:1. 1.4DL	-7.801	0.160	0.070	0.037	-0.179	-0.133
		22:2. 1.2DL+1.(	-16.413	0.203	0.153	0.136	-0.368	-0.229
		23:4. 1.2DL+1.(	-10.987	0.402	0.030	0.172	-0.271	-0.255
		24:5. 1.2DL+1.(	-12.765	0.178	0.118	0.097	-0.287	-0.186
		25:6. 0.9DL+1.(	-3.236	0.327	-0.043	0.099	-0.098	-0.155
		26:2. 1.2DL+1.(	-7.160	0.141	0.065	0.033	-0.165	-0.117
		27:2. 1.2DL+1.(	-8.307	0.162	0.078	0.039	-0.194	-0.129
		28:6A. 1.2D+1.	-11.283	0.023	-0.607	0.407	-0.352	0.120
		29:6A. 1.2D+1.	-12.854	0.116	-1.809	0.226	-0.430	-0.086
		30:6B. 0.9D+1.	-1.092	-0.102	-0.702	0.322	-0.124	0.262
		31:6B. 0.9D+1.	-2.663	-0.010	-1.904	0.141	-0.202	0.056
50	26	21:1. 1.4DL	6.108	0.000	-0.088	0.021	0.179	-0.014
		22:2. 1.2DL+1.(	12.149	-0.333	-0.182	-0.100	0.368	-1.463
		23:4. 1.2DL+1.(	8.197	0.184	-0.132	0.116	0.275	0.210
		24:5. 1.2DL+1.(	9.557	-0.208	-0.142	-0.056	0.288	-0.919
		25:6. 0.9DL+1.(	2.567	0.392	-0.047	0.186	0.102	1.120
		26:2. 1.2DL+1.(	5.708	0.000	-0.082	0.019	0.166	-0.012
		27:2. 1.2DL+1.(	6.856	0.001	-0.096	0.022	0.195	-0.004
		28:6A. 1.2D+1.	8.509	-0.109	-0.217	0.179	0.548	-0.568
		29:6A. 1.2D+1.	9.589	-0.181	-0.365	0.024	1.056	-0.822
		30:6B. 0.9D+1.	0.968	0.099	-0.105	0.242	0.319	0.346
		31:6B. 0.9D+1.	2.048	0.028	-0.252	0.086	0.827	0.092
	17	21:1. 1.4DL	-6.053	-0.000	0.088	-0.021	0.237	0.016
		22:2. 1.2DL+1.(	-12.102	0.333	0.182	0.100	0.488	-0.109
		23:4. 1.2DL+1.(	-8.150	0.067	0.132	-0.116	0.350	0.000
		24:5. 1.2DL+1.(	-9.510	0.208	0.142	0.056	0.381	-0.063
		25:6. 0.9DL+1.(	-2.532	-0.142	0.047	-0.186	0.121	0.073
		26:2. 1.2DL+1.(	-5.662	-0.000	0.082	-0.019	0.220	0.013
		27:2. 1.2DL+1.(	-6.809	-0.001	0.096	-0.022	0.259	0.009
		28:6A. 1.2D+1.	-8.453	0.162	0.234	-0.179	0.517	-0.072
		29:6A. 1.2D+1.	-9.533	0.197	0.419	-0.024	0.793	-0.069
		30:6B. 0.9D+1.	-0.941	-0.046	0.121	-0.242	0.214	-0.003

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-2.021	-0.011	0.306	-0.086	0.490	-0.001
51	28	21:1. 1.4DL	11.063	0.045	0.122	-0.070	-0.341	-0.027
		22:2. 1.2DL+1.(	20.618	0.137	0.209	-0.401	-0.598	0.029
		23:4. 1.2DL+1.(	19.074	0.043	0.384	-0.274	-0.579	-0.197
		24:5. 1.2DL+1.(	16.442	0.100	0.170	-0.273	-0.483	0.009
		25:6. 0.9DL+1.(	9.743	-0.029	0.292	-0.046	-0.315	-0.224
		26:2. 1.2DL+1.(	12.257	0.051	0.122	-0.069	-0.385	0.032
		27:2. 1.2DL+1.(	11.017	0.042	0.123	-0.063	-0.338	-0.027
		28:6A. 1.2D+1.	21.959	-0.043	0.881	0.088	-0.847	-0.568
		29:6A. 1.2D+1.	19.611	-0.015	1.365	0.009	-1.073	-0.159
		30:6B. 0.9D+1.	9.168	-0.129	0.752	0.338	-0.476	-0.586
		31:6B. 0.9D+1.	6.820	-0.101	1.235	0.259	-0.702	-0.177
	46	21:1. 1.4DL	-11.048	-0.045	-0.122	0.070	0.256	0.058
		22:2. 1.2DL+1.(	-20.606	-0.137	-0.209	0.401	0.452	0.067
		23:4. 1.2DL+1.(	-19.062	-0.037	-0.384	0.274	0.312	0.225
		24:5. 1.2DL+1.(	-16.430	-0.100	-0.170	0.273	0.365	0.060
		25:6. 0.9DL+1.(	-9.734	0.035	-0.292	0.046	0.111	0.202
		26:2. 1.2DL+1.(	-12.244	-0.051	-0.122	0.069	0.300	0.004
		27:2. 1.2DL+1.(	-11.005	-0.042	-0.123	0.063	0.252	0.056
		28:6A. 1.2D+1.	-21.945	0.057	-0.877	-0.088	0.234	0.533
		29:6A. 1.2D+1.	-19.597	0.020	-1.351	-0.009	0.126	0.146
		30:6B. 0.9D+1.	-9.161	0.143	-0.747	-0.338	-0.047	0.492
		31:6B. 0.9D+1.	-6.813	0.105	-1.221	-0.259	-0.154	0.105
52	46	21:1. 1.4DL	9.897	0.003	0.129	-0.045	-0.255	0.038
		22:2. 1.2DL+1.(	18.260	0.350	0.228	-0.570	-0.451	2.108
		23:4. 1.2DL+1.(	16.365	0.705	0.182	-1.043	-0.307	3.617
		24:5. 1.2DL+1.(	14.594	0.220	0.184	-0.371	-0.364	1.330
		25:6. 0.9DL+1.(	8.134	0.487	0.081	-0.702	-0.107	2.311
		26:2. 1.2DL+1.(	11.259	-0.024	0.147	0.005	-0.299	-0.080
		27:2. 1.2DL+1.(	10.015	0.005	0.129	-0.043	-0.252	0.041
		28:6A. 1.2D+1.	18.808	0.626	0.176	-1.221	-0.143	3.287
		29:6A. 1.2D+1.	17.236	0.351	0.128	-0.643	0.148	1.950
		30:6B. 0.9D+1.	7.480	0.407	0.034	-0.865	0.137	1.970
		31:6B. 0.9D+1.	5.909	0.132	-0.014	-0.287	0.427	0.633
	37	21:1. 1.4DL	-9.801	-0.003	-0.129	0.045	-0.356	-0.023
		22:2. 1.2DL+1.(	-18.177	-0.350	-0.228	0.570	-0.626	-0.456
		23:4. 1.2DL+1.(	-16.282	-0.584	-0.182	1.043	-0.554	-0.641
		24:5. 1.2DL+1.(	-14.511	-0.220	-0.184	0.371	-0.506	-0.292
		25:6. 0.9DL+1.(	-8.072	-0.366	-0.081	0.702	-0.276	-0.364
		26:2. 1.2DL+1.(	-11.176	0.024	-0.147	-0.005	-0.396	-0.032
		27:2. 1.2DL+1.(	-9.932	-0.005	-0.129	0.043	-0.355	-0.018
		28:6A. 1.2D+1.	-18.710	-0.532	-0.147	1.221	-0.619	-0.555
		29:6A. 1.2D+1.	-17.138	-0.323	-0.033	0.643	-0.527	-0.361
		30:6B. 0.9D+1.	-7.433	-0.313	-0.006	0.865	-0.231	-0.270

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-5.862	-0.104	0.108	0.287	-0.139	-0.076
53	36	21:1. 1.4DL	11.063	0.045	-0.122	0.070	0.341	-0.027
		22:2. 1.2DL+1.(	20.618	0.137	-0.209	0.401	0.598	0.029
		23:4. 1.2DL+1.(	19.074	0.043	-0.384	0.274	0.579	-0.197
		24:5. 1.2DL+1.(	16.442	0.100	-0.170	0.273	0.483	0.009
		25:6. 0.9DL+1.(	9.743	-0.029	-0.292	0.046	0.315	-0.224
		26:2. 1.2DL+1.(	9.996	0.039	-0.111	0.061	0.308	-0.025
		27:2. 1.2DL+1.(	11.243	0.042	-0.125	0.063	0.345	-0.027
		28:6A. 1.2D+1.	21.755	-0.016	-0.266	-0.017	0.584	-0.570
		29:6A. 1.2D+1.	18.930	0.075	0.686	0.228	0.197	-0.166
		30:6B. 0.9D+1.	8.963	-0.101	-0.137	-0.267	0.213	-0.588
		31:6B. 0.9D+1.	6.139	-0.010	0.815	-0.022	-0.174	-0.184
	54	21:1. 1.4DL	-11.048	-0.045	0.122	-0.070	-0.256	0.058
		22:2. 1.2DL+1.(	-20.606	-0.137	0.209	-0.401	-0.452	0.067
		23:4. 1.2DL+1.(	-19.062	-0.037	0.384	-0.274	-0.312	0.225
		24:5. 1.2DL+1.(	-16.430	-0.100	0.170	-0.273	-0.365	0.060
		25:6. 0.9DL+1.(	-9.734	0.035	0.292	-0.046	-0.111	0.202
		26:2. 1.2DL+1.(	-9.984	-0.039	0.111	-0.061	-0.230	0.052
		27:2. 1.2DL+1.(	-11.231	-0.042	0.125	-0.063	-0.258	0.057
		28:6A. 1.2D+1.	-21.741	0.030	0.270	0.017	-0.397	0.554
		29:6A. 1.2D+1.	-18.916	-0.071	-0.672	-0.228	-0.670	0.217
		30:6B. 0.9D+1.	-8.956	0.115	0.141	0.267	-0.116	0.513
		31:6B. 0.9D+1.	-6.132	0.014	-0.801	0.022	-0.389	0.175
54	54	21:1. 1.4DL	9.897	0.003	-0.129	0.045	0.255	0.038
		22:2. 1.2DL+1.(	18.260	0.350	-0.228	0.570	0.451	2.108
		23:4. 1.2DL+1.(	16.365	0.705	-0.182	1.043	0.307	3.617
		24:5. 1.2DL+1.(	14.594	0.220	-0.184	0.371	0.364	1.330
		25:6. 0.9DL+1.(	8.134	0.487	-0.081	0.702	0.107	2.311
		26:2. 1.2DL+1.(	8.996	0.003	-0.117	0.041	0.229	0.035
		27:2. 1.2DL+1.(	10.241	0.005	-0.131	0.041	0.257	0.040
		28:6A. 1.2D+1.	18.606	0.622	-0.229	1.212	0.468	3.275
		29:6A. 1.2D+1.	16.563	0.339	-0.306	0.614	0.937	1.909
		30:6B. 0.9D+1.	7.278	0.404	-0.087	0.856	0.188	1.957
		31:6B. 0.9D+1.	5.236	0.120	-0.164	0.259	0.657	0.592
	45	21:1. 1.4DL	-9.801	-0.003	0.129	-0.045	0.356	-0.023
		22:2. 1.2DL+1.(	-18.177	-0.350	0.228	-0.570	0.626	-0.456
		23:4. 1.2DL+1.(	-16.282	-0.584	0.182	-1.043	0.554	-0.641
		24:5. 1.2DL+1.(	-14.511	-0.220	0.184	-0.371	0.506	-0.292
		25:6. 0.9DL+1.(	-8.072	-0.366	0.081	-0.702	0.276	-0.364
		26:2. 1.2DL+1.(	-8.913	-0.003	0.117	-0.041	0.322	-0.021
		27:2. 1.2DL+1.(	-10.158	-0.005	0.131	-0.041	0.362	-0.015
		28:6A. 1.2D+1.	-18.508	-0.528	0.257	-1.212	0.680	-0.560
		29:6A. 1.2D+1.	-16.465	-0.311	0.400	-0.614	0.729	-0.376
		30:6B. 0.9D+1.	-7.231	-0.309	0.116	-0.856	0.291	-0.275

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-5.189	-0.092	0.258	-0.259	0.340	-0.091
55	29	21:1. 1.4DL	9.388	0.175	0.120	0.044	-0.289	-0.009
		22:2. 1.2DL+1.(	17.773	0.232	0.220	0.016	-0.537	-0.072
		23:4. 1.2DL+1.(	15.902	1.201	0.263	0.110	-0.502	0.070
		24:5. 1.2DL+1.(	14.126	0.201	0.176	0.024	-0.428	-0.048
		25:6. 0.9DL+1.(	7.812	1.112	0.164	0.114	-0.260	0.112
		26:2. 1.2DL+1.(	10.824	0.295	0.126	0.059	-0.303	-0.095
		27:2. 1.2DL+1.(	9.567	0.164	0.125	0.045	-0.300	-0.007
		28:6A. 1.2D+1.	18.280	4.355	0.936	0.371	-0.955	0.402
		29:6A. 1.2D+1.	16.693	1.308	2.164	0.171	-1.768	0.078
		30:6B. 0.9D+1.	7.253	4.212	0.799	0.361	-0.622	0.447
		31:6B. 0.9D+1.	5.666	1.165	2.027	0.161	-1.435	0.122
	47	21:1. 1.4DL	-9.380	-0.175	-0.120	-0.044	0.205	0.130
		22:2. 1.2DL+1.(	-17.766	-0.232	-0.220	-0.016	0.383	0.234
		23:4. 1.2DL+1.(	-15.895	-1.191	-0.263	-0.110	0.319	0.764
		24:5. 1.2DL+1.(	-14.119	-0.201	-0.176	-0.024	0.305	0.188
		25:6. 0.9DL+1.(	-7.806	-1.102	-0.164	-0.114	0.145	0.660
		26:2. 1.2DL+1.(	-10.817	-0.295	-0.126	-0.059	0.215	0.300
		27:2. 1.2DL+1.(	-9.560	-0.164	-0.125	-0.045	0.213	0.122
		28:6A. 1.2D+1.	-18.272	-4.348	-0.933	-0.371	0.304	2.631
		29:6A. 1.2D+1.	-16.685	-1.306	-2.156	-0.171	0.263	0.833
		30:6B. 0.9D+1.	-7.249	-4.204	-0.797	-0.361	0.066	2.486
		31:6B. 0.9D+1.	-5.662	-1.162	-2.019	-0.161	0.025	0.688
56	47	21:1. 1.4DL	7.184	0.014	0.102	-0.013	-0.204	0.045
		22:2. 1.2DL+1.(	13.055	0.363	0.192	-0.130	-0.383	1.536
		23:4. 1.2DL+1.(	11.825	0.605	0.160	-0.259	-0.315	2.032
		24:5. 1.2DL+1.(	10.469	0.231	0.153	-0.085	-0.305	0.974
		25:6. 0.9DL+1.(	5.975	0.383	0.074	-0.181	-0.141	1.086
		26:2. 1.2DL+1.(	6.507	0.056	0.107	-0.006	-0.214	0.212
		27:2. 1.2DL+1.(	7.678	0.013	0.107	-0.011	-0.213	0.037
		28:6A. 1.2D+1.	13.583	0.270	0.108	-0.324	-0.108	1.088
		29:6A. 1.2D+1.	12.499	0.229	-0.021	-0.167	0.363	0.968
		30:6B. 0.9D+1.	5.485	0.043	-0.011	-0.242	0.129	0.129
		31:6B. 0.9D+1.	4.401	0.002	-0.140	-0.085	0.600	0.009
	38	21:1. 1.4DL	-7.130	-0.014	-0.102	0.013	-0.279	0.022
		22:2. 1.2DL+1.(	-13.008	-0.363	-0.192	0.130	-0.521	0.176
		23:4. 1.2DL+1.(	-11.778	-0.355	-0.160	0.259	-0.442	0.167
		24:5. 1.2DL+1.(	-10.422	-0.231	-0.153	0.085	-0.416	0.117
		25:6. 0.9DL+1.(	-5.940	-0.133	-0.074	0.181	-0.206	0.064
		26:2. 1.2DL+1.(	-6.460	-0.056	-0.107	0.006	-0.289	0.052
		27:2. 1.2DL+1.(	-7.631	-0.013	-0.107	0.011	-0.292	0.024
		28:6A. 1.2D+1.	-13.528	-0.216	-0.092	0.324	-0.365	0.058
		29:6A. 1.2D+1.	-12.443	-0.213	0.074	0.167	-0.139	0.073
		30:6B. 0.9D+1.	-5.459	0.011	0.027	0.242	-0.042	-0.052

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-4.374	0.014	0.193	0.085	0.185	-0.037
57	30	21:1. 1.4DL	6.719	0.234	0.065	-0.022	-0.185	0.006
		22:2. 1.2DL+1.(	12.735	0.416	0.116	-0.072	-0.341	0.005
		23:4. 1.2DL+1.(	11.493	0.157	0.147	0.008	-0.311	-0.051
		24:5. 1.2DL+1.(	10.119	0.335	0.093	-0.052	-0.273	0.005
		25:6. 0.9DL+1.(	5.693	-0.028	0.095	0.046	-0.157	-0.052
		26:2. 1.2DL+1.(	6.146	0.275	0.057	-0.020	-0.152	0.008
		27:2. 1.2DL+1.(	7.286	0.253	0.072	-0.030	-0.209	0.014
		28:6A. 1.2D+1.	13.204	0.412	0.775	0.137	-0.719	-0.232
		29:6A. 1.2D+1.	12.115	0.237	2.052	0.032	-1.592	-0.065
		30:6B. 0.9D+1.	5.302	0.154	0.703	0.182	-0.507	-0.235
		31:6B. 0.9D+1.	4.213	-0.020	1.979	0.077	-1.380	-0.068
	48	21:1. 1.4DL	-6.711	-0.234	-0.065	0.022	0.140	0.157
		22:2. 1.2DL+1.(	-12.728	-0.416	-0.116	0.072	0.261	0.285
		23:4. 1.2DL+1.(	-11.486	-0.147	-0.147	-0.008	0.209	0.158
		24:5. 1.2DL+1.(	-10.112	-0.335	-0.093	0.052	0.208	0.228
		25:6. 0.9DL+1.(	-5.688	0.038	-0.095	-0.046	0.091	0.031
		26:2. 1.2DL+1.(	-6.139	-0.275	-0.057	0.020	0.113	0.184
		27:2. 1.2DL+1.(	-7.279	-0.253	-0.072	0.030	0.158	0.162
		28:6A. 1.2D+1.	-13.196	-0.404	-0.773	-0.137	0.179	0.516
		29:6A. 1.2D+1.	-12.107	-0.235	-2.044	-0.032	0.165	0.230
		30:6B. 0.9D+1.	-5.298	-0.147	-0.701	-0.182	0.018	0.340
		31:6B. 0.9D+1.	-4.209	0.023	-1.972	-0.077	0.003	0.053
58	48	21:1. 1.4DL	4.552	-0.024	0.067	-0.014	-0.139	-0.074
		22:2. 1.2DL+1.(	8.077	0.412	0.125	-0.072	-0.260	1.862
		23:4. 1.2DL+1.(	7.348	0.735	0.101	-0.155	-0.206	2.607
		24:5. 1.2DL+1.(	6.511	0.250	0.099	-0.050	-0.207	1.140
		25:6. 0.9DL+1.(	3.763	0.470	0.044	-0.115	-0.088	1.420
		26:2. 1.2DL+1.(	3.394	-0.032	0.054	-0.021	-0.112	-0.087
		27:2. 1.2DL+1.(	5.431	-0.025	0.076	-0.011	-0.158	-0.087
		28:6A. 1.2D+1.	8.505	0.396	0.038	-0.227	0.014	1.572
		29:6A. 1.2D+1.	7.930	0.304	-0.081	-0.111	0.460	1.296
		30:6B. 0.9D+1.	3.496	0.138	-0.039	-0.182	0.175	0.408
		31:6B. 0.9D+1.	2.920	0.046	-0.158	-0.066	0.621	0.132
	39	21:1. 1.4DL	-4.497	0.024	-0.067	0.014	-0.176	-0.037
		22:2. 1.2DL+1.(	-8.030	-0.412	-0.125	0.072	-0.328	0.085
		23:4. 1.2DL+1.(	-7.301	-0.480	-0.101	0.155	-0.269	0.193
		24:5. 1.2DL+1.(	-6.464	-0.250	-0.099	0.050	-0.262	0.041
		25:6. 0.9DL+1.(	-3.728	-0.214	-0.044	0.115	-0.120	0.127
		26:2. 1.2DL+1.(	-3.347	0.032	-0.054	0.021	-0.141	-0.065
		27:2. 1.2DL+1.(	-5.384	0.025	-0.076	0.011	-0.202	-0.030
		28:6A. 1.2D+1.	-8.450	-0.343	-0.022	0.227	-0.158	0.171
		29:6A. 1.2D+1.	-7.874	-0.288	0.134	0.111	0.048	0.102
		30:6B. 0.9D+1.	-3.469	-0.085	0.055	0.182	0.046	0.118

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Client	File 855412-10.std	Date/Time 12-Aug-2025 10:52

Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-2.894	-0.030	0.212	0.066	0.252	0.048
59	31	21:1. 1.4DL	3.938	0.339	0.041	0.016	-0.097	0.023
		22:2. 1.2DL+1.(	7.582	0.607	0.072	0.017	-0.178	0.032
		23:4. 1.2DL+1.(	6.857	1.668	0.073	0.053	-0.138	0.214
		24:5. 1.2DL+1.(	6.005	0.488	0.058	0.015	-0.142	0.028
		25:6. 0.9DL+1.(	3.384	1.398	0.042	0.048	-0.058	0.202
		26:2. 1.2DL+1.(	2.867	0.356	0.025	-0.004	-0.064	0.047
		27:2. 1.2DL+1.(	4.896	0.364	0.062	0.052	-0.143	0.070
		28:6A. 1.2D+1.	7.933	4.809	0.663	0.132	-0.488	0.536
		29:6A. 1.2D+1.	7.328	1.680	1.993	0.097	-1.417	0.180
		30:6B. 0.9D+1.	3.228	4.433	0.618	0.122	-0.377	0.516
		31:6B. 0.9D+1.	2.623	1.304	1.948	0.087	-1.306	0.160
	49	21:1. 1.4DL	-3.930	-0.339	-0.041	-0.016	0.069	0.213
		22:2. 1.2DL+1.(	-7.575	-0.607	-0.072	-0.017	0.128	0.391
		23:4. 1.2DL+1.(	-6.850	-1.658	-0.073	-0.053	0.087	0.946
		24:5. 1.2DL+1.(	-5.998	-0.488	-0.058	-0.015	0.102	0.313
		25:6. 0.9DL+1.(	-3.379	-1.388	-0.042	-0.048	0.029	0.770
		26:2. 1.2DL+1.(	-2.860	-0.356	-0.025	0.004	0.047	0.201
		27:2. 1.2DL+1.(	-4.889	-0.364	-0.062	-0.052	0.099	0.184
		28:6A. 1.2D+1.	-7.925	-4.802	-0.660	-0.132	0.027	2.814
		29:6A. 1.2D+1.	-7.320	-1.678	-1.985	-0.097	0.031	0.990
		30:6B. 0.9D+1.	-3.224	-4.425	-0.616	-0.122	-0.053	2.571
		31:6B. 0.9D+1.	-2.619	-1.301	-1.940	-0.087	-0.049	0.748
60	49	21:1. 1.4DL	1.727	0.021	0.033	-0.008	-0.069	0.043
		22:2. 1.2DL+1.(	2.843	0.522	0.061	-0.026	-0.127	2.265
		23:4. 1.2DL+1.(	2.620	0.816	0.041	-0.056	-0.085	2.929
		24:5. 1.2DL+1.(	2.332	0.333	0.049	-0.019	-0.102	1.430
		25:6. 0.9DL+1.(	1.398	0.496	0.014	-0.042	-0.028	1.527
		26:2. 1.2DL+1.(	0.969	0.013	0.022	-0.013	-0.046	0.009
		27:2. 1.2DL+1.(	2.995	0.008	0.048	0.002	-0.099	-0.009
		28:6A. 1.2D+1.	3.151	0.451	-0.036	-0.101	0.163	1.750
		29:6A. 1.2D+1.	3.090	0.361	-0.144	-0.050	0.593	1.504
		30:6B. 0.9D+1.	1.388	0.125	-0.074	-0.085	0.243	0.334
		31:6B. 0.9D+1.	1.328	0.035	-0.182	-0.034	0.672	0.089
	40	21:1. 1.4DL	-1.673	-0.021	-0.033	0.008	-0.087	0.058
		22:2. 1.2DL+1.(	-2.796	-0.522	-0.061	0.026	-0.161	0.198
		23:4. 1.2DL+1.(	-2.573	-0.560	-0.041	0.056	-0.110	0.252
		24:5. 1.2DL+1.(	-2.285	-0.333	-0.049	0.019	-0.129	0.142
		25:6. 0.9DL+1.(	-1.363	-0.241	-0.014	0.042	-0.037	0.147
		26:2. 1.2DL+1.(	-0.922	-0.013	-0.022	0.013	-0.058	0.053
		27:2. 1.2DL+1.(	-2.948	-0.008	-0.048	-0.002	-0.128	0.046
		28:6A. 1.2D+1.	-3.095	-0.397	0.052	0.101	0.043	0.250
		29:6A. 1.2D+1.	-3.035	-0.345	0.198	0.050	0.214	0.162
		30:6B. 0.9D+1.	-1.362	-0.071	0.090	0.085	0.143	0.127

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-1.301	-0.019	0.236	0.034	0.314	0.039
61	32	21:1. 1.4DL	2.518	0.316	0.000	-0.000	-0.000	0.012
		22:2. 1.2DL+1.(	4.938	0.562	0.000	-0.000	-0.000	0.011
		23:4. 1.2DL+1.(	4.480	0.173	0.000	0.000	-0.000	-0.073
		24:5. 1.2DL+1.(	3.896	0.453	0.000	-0.000	-0.000	0.011
		25:6. 0.9DL+1.(	2.203	-0.077	0.000	0.000	-0.000	-0.076
		26:2. 1.2DL+1.(	2.156	0.305	-0.004	0.005	0.016	0.014
		27:2. 1.2DL+1.(	4.539	0.430	0.002	-0.002	-0.012	-0.077
		28:6A. 1.2D+1.	5.176	0.562	0.571	0.009	-0.372	-0.278
		29:6A. 1.2D+1.	4.546	0.422	1.904	0.030	-1.239	-0.073
		30:6B. 0.9D+1.	2.111	0.214	0.571	0.009	-0.372	-0.285
		31:6B. 0.9D+1.	1.481	0.073	1.903	0.030	-1.239	-0.079
	50	21:1. 1.4DL	-2.510	-0.316	-0.000	0.000	0.000	0.208
		22:2. 1.2DL+1.(	-4.931	-0.562	-0.000	0.000	0.000	0.381
		23:4. 1.2DL+1.(	-4.473	-0.166	-0.000	-0.000	-0.000	0.192
		24:5. 1.2DL+1.(	-3.889	-0.453	-0.000	0.000	0.000	0.305
		25:6. 0.9DL+1.(	-2.197	0.084	-0.000	-0.000	-0.000	0.021
		26:2. 1.2DL+1.(	-2.149	-0.305	0.004	-0.005	-0.013	0.198
		27:2. 1.2DL+1.(	-4.533	-0.430	-0.002	0.002	0.010	0.377
		28:6A. 1.2D+1.	-5.168	-0.555	-0.569	-0.009	-0.025	0.667
		29:6A. 1.2D+1.	-4.538	-0.419	-1.896	-0.030	-0.085	0.366
		30:6B. 0.9D+1.	-2.107	-0.206	-0.569	-0.009	-0.025	0.431
		31:6B. 0.9D+1.	-1.477	-0.071	-1.896	-0.030	-0.085	0.130
62	50	21:1. 1.4DL	0.359	-0.030	0.000	-0.000	-0.000	-0.102
		22:2. 1.2DL+1.(	0.292	0.432	0.000	-0.000	-0.000	2.047
		23:4. 1.2DL+1.(	0.319	0.734	-0.000	-0.000	0.000	2.797
		24:5. 1.2DL+1.(	0.298	0.261	0.000	-0.000	-0.000	1.247
		25:6. 0.9DL+1.(	0.252	0.454	-0.000	-0.000	0.000	1.485
		26:2. 1.2DL+1.(	0.307	-0.028	-0.006	-0.002	0.013	-0.101
		27:2. 1.2DL+1.(	0.285	-0.010	0.005	0.003	-0.010	-0.001
		28:6A. 1.2D+1.	0.418	0.447	-0.060	-0.002	0.212	1.833
		29:6A. 1.2D+1.	0.355	0.321	-0.201	-0.007	0.707	1.434
		30:6B. 0.9D+1.	0.238	0.176	-0.060	-0.002	0.212	0.553
		31:6B. 0.9D+1.	0.176	0.051	-0.201	-0.007	0.707	0.153
	41	21:1. 1.4DL	-0.304	0.030	-0.000	0.000	-0.000	-0.040
		22:2. 1.2DL+1.(	-0.245	-0.432	-0.000	0.000	-0.000	-0.006
		23:4. 1.2DL+1.(	-0.272	-0.475	0.000	0.000	-0.000	0.060
		24:5. 1.2DL+1.(	-0.251	-0.261	-0.000	0.000	-0.000	-0.017
		25:6. 0.9DL+1.(	-0.216	-0.195	0.000	0.000	0.000	0.051
		26:2. 1.2DL+1.(	-0.260	0.028	0.006	0.002	0.015	-0.032
		27:2. 1.2DL+1.(	-0.238	0.010	-0.005	-0.003	-0.012	-0.046
		28:6A. 1.2D+1.	-0.362	-0.393	0.076	0.002	0.110	0.150
		29:6A. 1.2D+1.	-0.300	-0.305	0.254	0.007	0.366	0.044
		30:6B. 0.9D+1.	-0.212	-0.123	0.076	0.002	0.110	0.154

Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-0.149	-0.034	0.254	0.007	0.366	0.048
63	33	21:1. 1.4DL	3.938	0.339	-0.041	-0.016	0.097	0.023
		22:2. 1.2DL+1.(	7.582	0.607	-0.072	-0.017	0.178	0.032
		23:4. 1.2DL+1.(	6.857	1.668	-0.073	-0.053	0.138	0.214
		24:5. 1.2DL+1.(	6.005	0.488	-0.058	-0.015	0.142	0.028
		25:6. 0.9DL+1.(	3.384	1.398	-0.042	-0.048	0.058	0.202
		26:2. 1.2DL+1.(	3.887	0.310	-0.042	-0.017	0.100	0.021
		27:2. 1.2DL+1.(	5.130	0.405	-0.059	-0.051	0.135	0.029
		28:6A. 1.2D+1.	7.715	4.829	0.483	-0.102	-0.259	0.536
		29:6A. 1.2D+1.	6.604	1.744	1.828	0.001	-1.072	0.182
		30:6B. 0.9D+1.	3.010	4.452	0.528	-0.092	-0.369	0.516
		31:6B. 0.9D+1.	1.899	1.368	1.873	0.011	-1.182	0.162
	51	21:1. 1.4DL	-3.930	-0.339	0.041	0.016	-0.069	0.213
		22:2. 1.2DL+1.(	-7.575	-0.607	0.072	0.017	-0.128	0.391
		23:4. 1.2DL+1.(	-6.850	-1.658	0.073	0.053	-0.087	0.946
		24:5. 1.2DL+1.(	-5.998	-0.488	0.058	0.015	-0.102	0.313
		25:6. 0.9DL+1.(	-3.379	-1.388	0.042	0.048	-0.029	0.770
		26:2. 1.2DL+1.(	-3.880	-0.310	0.042	0.017	-0.071	0.195
		27:2. 1.2DL+1.(	-5.123	-0.405	0.059	0.051	-0.094	0.253
		28:6A. 1.2D+1.	-7.707	-4.821	-0.481	0.102	-0.077	2.827
		29:6A. 1.2D+1.	-6.596	-1.742	-1.820	-0.001	-0.200	1.033
		30:6B. 0.9D+1.	-3.006	-4.444	-0.526	0.092	0.002	2.584
		31:6B. 0.9D+1.	-1.895	-1.366	-1.865	-0.011	-0.121	0.791
64	51	21:1. 1.4DL	1.727	0.021	-0.033	0.008	0.069	0.043
		22:2. 1.2DL+1.(	2.843	0.522	-0.061	0.026	0.127	2.265
		23:4. 1.2DL+1.(	2.620	0.816	-0.041	0.056	0.085	2.929
		24:5. 1.2DL+1.(	2.332	0.333	-0.049	0.019	0.102	1.430
		25:6. 0.9DL+1.(	1.398	0.496	-0.014	0.042	0.028	1.527
		26:2. 1.2DL+1.(	1.991	0.020	-0.034	0.006	0.071	0.039
		27:2. 1.2DL+1.(	2.320	0.025	-0.045	-0.001	0.094	0.062
		28:6A. 1.2D+1.	2.932	0.452	-0.084	0.097	0.261	1.753
		29:6A. 1.2D+1.	2.361	0.365	-0.255	0.037	0.821	1.516
		30:6B. 0.9D+1.	1.170	0.126	-0.046	0.081	0.182	0.338
		31:6B. 0.9D+1.	0.599	0.040	-0.217	0.021	0.742	0.101
	42	21:1. 1.4DL	-1.673	-0.021	0.033	-0.008	0.087	0.058
		22:2. 1.2DL+1.(	-2.796	-0.522	0.061	-0.026	0.161	0.198
		23:4. 1.2DL+1.(	-2.573	-0.560	0.041	-0.056	0.110	0.252
		24:5. 1.2DL+1.(	-2.285	-0.333	0.049	-0.019	0.129	0.142
		25:6. 0.9DL+1.(	-1.363	-0.241	0.014	-0.042	0.037	0.147
		26:2. 1.2DL+1.(	-1.944	-0.020	0.034	-0.006	0.091	0.056
		27:2. 1.2DL+1.(	-2.273	-0.025	0.045	0.001	0.121	0.058
		28:6A. 1.2D+1.	-2.877	-0.398	0.100	-0.097	0.174	0.253
		29:6A. 1.2D+1.	-2.306	-0.349	0.309	-0.037	0.509	0.171
		30:6B. 0.9D+1.	-1.143	-0.072	0.062	-0.081	0.074	0.130

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-0.573	-0.023	0.270	-0.021	0.408	0.048
65	34	21:1. 1.4DL	6.719	0.234	-0.065	0.022	0.185	0.006
		22:2. 1.2DL+1.(	12.735	0.416	-0.116	0.072	0.341	0.005
		23:4. 1.2DL+1.(	11.493	0.157	-0.147	-0.008	0.311	-0.051
		24:5. 1.2DL+1.(	10.119	0.335	-0.093	0.052	0.273	0.005
		25:6. 0.9DL+1.(	5.693	-0.028	-0.095	-0.046	0.157	-0.052
		26:2. 1.2DL+1.(	6.270	0.210	-0.062	0.021	0.176	0.005
		27:2. 1.2DL+1.(	7.508	0.259	-0.074	0.031	0.217	0.030
		28:6A. 1.2D+1.	12.982	0.445	0.370	-0.118	-0.034	-0.231
		29:6A. 1.2D+1.	11.374	0.347	1.767	0.031	-0.918	-0.063
		30:6B. 0.9D+1.	5.080	0.187	0.442	-0.163	-0.246	-0.234
		31:6B. 0.9D+1.	3.473	0.090	1.839	-0.013	-1.129	-0.067
	52	21:1. 1.4DL	-6.711	-0.234	0.065	-0.022	-0.140	0.157
		22:2. 1.2DL+1.(	-12.728	-0.416	0.116	-0.072	-0.261	0.285
		23:4. 1.2DL+1.(	-11.486	-0.147	0.147	0.008	-0.209	0.158
		24:5. 1.2DL+1.(	-10.112	-0.335	0.093	-0.052	-0.208	0.228
		25:6. 0.9DL+1.(	-5.688	0.038	0.095	0.046	-0.091	0.031
		26:2. 1.2DL+1.(	-6.263	-0.210	0.062	-0.021	-0.133	0.141
		27:2. 1.2DL+1.(	-7.501	-0.259	0.074	-0.031	-0.166	0.150
		28:6A. 1.2D+1.	-12.974	-0.437	-0.368	0.118	-0.223	0.539
		29:6A. 1.2D+1.	-11.366	-0.345	-1.760	-0.031	-0.311	0.305
		30:6B. 0.9D+1.	-5.076	-0.180	-0.440	0.163	-0.062	0.362
		31:6B. 0.9D+1.	-3.469	-0.087	-1.831	0.013	-0.150	0.128
66	52	21:1. 1.4DL	4.552	-0.024	-0.067	0.014	0.139	-0.074
		22:2. 1.2DL+1.(	8.077	0.412	-0.125	0.072	0.260	1.862
		23:4. 1.2DL+1.(	7.348	0.735	-0.101	0.155	0.206	2.607
		24:5. 1.2DL+1.(	6.511	0.250	-0.099	0.050	0.207	1.140
		25:6. 0.9DL+1.(	3.763	0.470	-0.044	0.115	0.088	1.420
		26:2. 1.2DL+1.(	4.413	-0.021	-0.064	0.013	0.132	-0.065
		27:2. 1.2DL+1.(	5.655	-0.033	-0.080	0.008	0.165	-0.113
		28:6A. 1.2D+1.	8.286	0.393	-0.156	0.222	0.403	1.564
		29:6A. 1.2D+1.	7.199	0.294	-0.310	0.096	0.931	1.270
		30:6B. 0.9D+1.	3.277	0.135	-0.078	0.177	0.242	0.400
		31:6B. 0.9D+1.	2.190	0.037	-0.232	0.052	0.770	0.106
	43	21:1. 1.4DL	-4.497	0.024	0.067	-0.014	0.176	-0.037
		22:2. 1.2DL+1.(	-8.030	-0.412	0.125	-0.072	0.328	0.085
		23:4. 1.2DL+1.(	-7.301	-0.480	0.101	-0.155	0.269	0.193
		24:5. 1.2DL+1.(	-6.464	-0.250	0.099	-0.050	0.262	0.041
		25:6. 0.9DL+1.(	-3.728	-0.214	0.044	-0.115	0.120	0.127
		26:2. 1.2DL+1.(	-4.367	0.021	0.064	-0.013	0.168	-0.032
		27:2. 1.2DL+1.(	-5.608	0.033	0.080	-0.008	0.210	-0.044
		28:6A. 1.2D+1.	-8.231	-0.340	0.172	-0.222	0.369	0.165
		29:6A. 1.2D+1.	-7.144	-0.278	0.363	-0.096	0.657	0.082
		30:6B. 0.9D+1.	-3.250	-0.082	0.094	-0.177	0.166	0.112

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-2.163	-0.020	0.286	-0.052	0.454	0.028
67	35	21:1. 1.4DL	9.388	0.175	-0.120	-0.044	0.289	-0.009
		22:2. 1.2DL+1.(	17.773	0.232	-0.220	-0.016	0.537	-0.072
		23:4. 1.2DL+1.(	15.902	1.201	-0.263	-0.110	0.502	0.070
		24:5. 1.2DL+1.(	14.126	0.201	-0.176	-0.024	0.428	-0.048
		25:6. 0.9DL+1.(	7.812	1.112	-0.164	-0.114	0.260	0.112
		26:2. 1.2DL+1.(	8.556	0.154	-0.110	-0.040	0.265	-0.008
		27:2. 1.2DL+1.(	9.792	0.175	-0.128	-0.047	0.308	-0.004
		28:6A. 1.2D+1.	18.077	4.396	0.210	-0.344	0.214	0.405
		29:6A. 1.2D+1.	16.017	1.443	1.655	-0.080	-0.702	0.086
		30:6B. 0.9D+1.	7.050	4.252	0.346	-0.334	-0.118	0.450
		31:6B. 0.9D+1.	4.989	1.299	1.791	-0.070	-1.034	0.131
	53	21:1. 1.4DL	-9.380	-0.175	0.120	0.044	-0.205	0.130
		22:2. 1.2DL+1.(	-17.766	-0.232	0.220	0.016	-0.383	0.234
		23:4. 1.2DL+1.(	-15.895	-1.191	0.263	0.110	-0.319	0.764
		24:5. 1.2DL+1.(	-14.119	-0.201	0.176	0.024	-0.305	0.188
		25:6. 0.9DL+1.(	-7.806	-1.102	0.164	0.114	-0.145	0.660
		26:2. 1.2DL+1.(	-8.549	-0.154	0.110	0.040	-0.188	0.115
		27:2. 1.2DL+1.(	-9.785	-0.175	0.128	0.047	-0.218	0.126
		28:6A. 1.2D+1.	-18.069	-4.388	-0.207	0.344	-0.360	2.656
		29:6A. 1.2D+1.	-16.009	-1.441	-1.647	0.080	-0.449	0.919
		30:6B. 0.9D+1.	-7.046	-4.244	-0.344	0.334	-0.122	2.511
		31:6B. 0.9D+1.	-4.986	-1.297	-1.783	0.070	-0.212	0.774
68	53	21:1. 1.4DL	7.184	0.014	-0.102	0.013	0.204	0.045
		22:2. 1.2DL+1.(	13.055	0.363	-0.192	0.130	0.383	1.536
		23:4. 1.2DL+1.(	11.825	0.605	-0.160	0.259	0.315	2.032
		24:5. 1.2DL+1.(	10.469	0.231	-0.153	0.085	0.305	0.974
		25:6. 0.9DL+1.(	5.975	0.383	-0.074	0.181	0.141	1.086
		26:2. 1.2DL+1.(	6.667	0.012	-0.094	0.012	0.188	0.039
		27:2. 1.2DL+1.(	7.903	0.012	-0.110	0.010	0.218	0.030
		28:6A. 1.2D+1.	13.376	0.274	-0.228	0.319	0.537	1.102
		29:6A. 1.2D+1.	11.807	0.245	-0.378	0.151	1.068	1.016
		30:6B. 0.9D+1.	5.278	0.048	-0.109	0.238	0.300	0.143
		31:6B. 0.9D+1.	3.709	0.018	-0.259	0.070	0.831	0.056
	44	21:1. 1.4DL	-7.130	-0.014	0.102	-0.013	0.279	0.022
		22:2. 1.2DL+1.(	-13.008	-0.363	0.192	-0.130	0.521	0.176
		23:4. 1.2DL+1.(	-11.778	-0.355	0.160	-0.259	0.442	0.167
		24:5. 1.2DL+1.(	-10.422	-0.231	0.153	-0.085	0.416	0.117
		25:6. 0.9DL+1.(	-5.940	-0.133	0.074	-0.181	0.206	0.064
		26:2. 1.2DL+1.(	-6.620	-0.012	0.094	-0.012	0.257	0.019
		27:2. 1.2DL+1.(	-7.856	-0.012	0.110	-0.010	0.299	0.025
		28:6A. 1.2D+1.	-13.320	-0.221	0.244	-0.319	0.575	0.067
		29:6A. 1.2D+1.	-11.751	-0.229	0.431	-0.151	0.840	0.103
		30:6B. 0.9D+1.	-5.251	0.006	0.125	-0.238	0.252	-0.043

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-3.682	-0.002	0.312	-0.070	0.516	-0.007
69	10	21:1. 1.4DL	-11.478	0	-0.033	0	0	0
		22:2. 1.2DL+1.(	-23.841	0	-0.028	0	0	0
		23:4. 1.2DL+1.(	-16.030	0.128	-0.028	0	0	0
		24:5. 1.2DL+1.(	-18.590	0	-0.028	0	0	0
		25:6. 0.9DL+1.(	-4.818	0.128	-0.021	0	0	0
		26:2. 1.2DL+1.(	-13.509	0	-0.028	0	0	0
		27:2. 1.2DL+1.(	-11.878	0	-0.028	0	0	0
		28:6A. 1.2D+1.	-16.794	0.044	-0.043	0	0	0
		29:6A. 1.2D+1.	-19.780	0.013	-0.064	0	0	0
		30:6B. 0.9D+1.	-1.992	0.044	-0.025	0	0	0
		31:6B. 0.9D+1.	-4.977	0.013	-0.047	0	0	0
	2	21:1. 1.4DL	11.415	0	-0.033	0	0	0
		22:2. 1.2DL+1.(	23.787	0	-0.028	0	0	0
		23:4. 1.2DL+1.(	15.976	0.128	-0.028	0	0	0
		24:5. 1.2DL+1.(	18.536	0	-0.028	0	0	0
		25:6. 0.9DL+1.(	4.778	0.128	-0.021	0	0	0
		26:2. 1.2DL+1.(	13.455	0	-0.028	0	0	0
		27:2. 1.2DL+1.(	11.824	0	-0.028	0	0	0
		28:6A. 1.2D+1.	16.750	0.044	-0.043	0	0	0
		29:6A. 1.2D+1.	19.780	0.013	-0.064	0	0	0
		30:6B. 0.9D+1.	1.981	0.044	-0.025	0	0	0
		31:6B. 0.9D+1.	5.011	0.013	-0.047	0	0	0
70	11	21:1. 1.4DL	-8.500	0	-0.028	0	0	0
		22:2. 1.2DL+1.(	-17.574	0	-0.024	0	0	0
		23:4. 1.2DL+1.(	-11.708	0.133	-0.024	0	0	0
		24:5. 1.2DL+1.(	-13.716	0	-0.024	0	0	0
		25:6. 0.9DL+1.(	-3.456	0.133	-0.018	0	0	0
		26:2. 1.2DL+1.(	-7.834	0	-0.024	0	0	0
		27:2. 1.2DL+1.(	-9.376	0	-0.024	0	0	0
		28:6A. 1.2D+1.	-12.395	0.037	-0.035	0	0	0
		29:6A. 1.2D+1.	-14.677	0.011	-0.053	0	0	0
		30:6B. 0.9D+1.	-1.484	0.037	-0.021	0	0	0
		31:6B. 0.9D+1.	-3.766	0.011	-0.038	0	0	0
	3	21:1. 1.4DL	8.449	0	-0.028	0	0	0
		22:2. 1.2DL+1.(	17.531	0	-0.024	0	0	0
		23:4. 1.2DL+1.(	11.665	0.133	-0.024	0	0	0
		24:5. 1.2DL+1.(	13.673	0	-0.024	0	0	0
		25:6. 0.9DL+1.(	3.424	0.133	-0.018	0	0	0
		26:2. 1.2DL+1.(	7.790	0	-0.024	0	0	0
		27:2. 1.2DL+1.(	9.333	0	-0.024	0	0	0
		28:6A. 1.2D+1.	12.360	0.037	-0.035	0	0	0
		29:6A. 1.2D+1.	14.680	0.011	-0.053	0	0	0
		30:6B. 0.9D+1.	1.475	0.037	-0.021	0	0	0

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	3.795	0.011	-0.038	0	0	0
71	12	21:1. 1.4DL	-5.029	0	-0.028	0	0	0
		22:2. 1.2DL+1.(	-10.459	0	-0.024	0	0	0
		23:4. 1.2DL+1.(	-6.910	0.133	-0.024	0	0	0
		24:5. 1.2DL+1.(	-8.153	0	-0.024	0	0	0
		25:6. 0.9DL+1.(	-1.990	0.133	-0.018	0	0	0
		26:2. 1.2DL+1.(	-3.613	0	-0.024	0	0	0
		27:2. 1.2DL+1.(	-6.400	0	-0.024	0	0	0
		28:6A. 1.2D+1.	-7.339	0.037	-0.035	0	0	0
		29:6A. 1.2D+1.	-8.917	0.011	-0.053	0	0	0
		30:6B. 0.9D+1.	-0.845	0.037	-0.021	0	0	0
		31:6B. 0.9D+1.	-2.424	0.011	-0.038	0	0	0
	4	21:1. 1.4DL	4.978	0	-0.028	0	0	0
		22:2. 1.2DL+1.(	10.415	0	-0.024	0	0	0
		23:4. 1.2DL+1.(	6.867	0.133	-0.024	0	0	0
		24:5. 1.2DL+1.(	8.110	0	-0.024	0	0	0
		25:6. 0.9DL+1.(	1.957	0.133	-0.018	0	0	0
		26:2. 1.2DL+1.(	3.570	0	-0.024	0	0	0
		27:2. 1.2DL+1.(	6.356	0	-0.024	0	0	0
		28:6A. 1.2D+1.	7.303	0.037	-0.035	0	0	0
		29:6A. 1.2D+1.	8.920	0.011	-0.053	0	0	0
		30:6B. 0.9D+1.	0.837	0.037	-0.021	0	0	0
		31:6B. 0.9D+1.	2.453	0.011	-0.038	0	0	0
72	13	21:1. 1.4DL	-1.764	0	-0.028	0	0	0
		22:2. 1.2DL+1.(	-3.584	0	-0.024	0	0	0
		23:4. 1.2DL+1.(	-2.367	0.133	-0.024	0	0	0
		24:5. 1.2DL+1.(	-2.807	0	-0.024	0	0	0
		25:6. 0.9DL+1.(	-0.694	0.133	-0.018	0	0	0
		26:2. 1.2DL+1.(	-0.812	0	-0.024	0	0	0
		27:2. 1.2DL+1.(	-3.591	0	-0.024	0	0	0
		28:6A. 1.2D+1.	-2.535	0.037	-0.035	0	0	0
		29:6A. 1.2D+1.	-3.350	0.011	-0.053	0	0	0
		30:6B. 0.9D+1.	-0.310	0.037	-0.021	0	0	0
		31:6B. 0.9D+1.	-1.125	0.011	-0.038	0	0	0
	5	21:1. 1.4DL	1.713	0	-0.028	0	0	0
		22:2. 1.2DL+1.(	3.540	0	-0.024	0	0	0
		23:4. 1.2DL+1.(	2.323	0.133	-0.024	0	0	0
		24:5. 1.2DL+1.(	2.763	0	-0.024	0	0	0
		25:6. 0.9DL+1.(	0.661	0.133	-0.018	0	0	0
		26:2. 1.2DL+1.(	0.768	0	-0.024	0	0	0
		27:2. 1.2DL+1.(	3.547	0	-0.024	0	0	0
		28:6A. 1.2D+1.	2.499	0.037	-0.035	0	0	0
		29:6A. 1.2D+1.	3.353	0.011	-0.053	0	0	0
		30:6B. 0.9D+1.	0.301	0.037	-0.021	0	0	0

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	1.155	0.011	-0.038	0	0	0
73	5	21:1. 1.4DL	-1.713	0	-0.028	0	0	0
		22:2. 1.2DL+1.(	-3.540	0	-0.024	0	0	0
		23:4. 1.2DL+1.(	-2.323	0.133	-0.024	0	0	0
		24:5. 1.2DL+1.(	-2.763	0	-0.024	0	0	0
		25:6. 0.9DL+1.(	-0.661	0.133	-0.018	0	0	0
		26:2. 1.2DL+1.(	-2.170	0	-0.024	0	0	0
		27:2. 1.2DL+1.(	-2.642	0	-0.024	0	0	0
		28:6A. 1.2D+1.	-2.161	0.037	-0.020	0	0	0
		29:6A. 1.2D+1.	-2.224	0.011	-0.003	0	0	0
		30:6B. 0.9D+1.	0.037	0.037	-0.006	0	0	0
		31:6B. 0.9D+1.	-0.026	0.011	0.011	0	0	0
	15	21:1. 1.4DL	1.764	0	-0.028	0	0	0
		22:2. 1.2DL+1.(	3.584	0	-0.024	0	0	0
		23:4. 1.2DL+1.(	2.367	0.133	-0.024	0	0	0
		24:5. 1.2DL+1.(	2.807	0	-0.024	0	0	0
		25:6. 0.9DL+1.(	0.694	0.133	-0.018	0	0	0
		26:2. 1.2DL+1.(	2.213	0	-0.024	0	0	0
		27:2. 1.2DL+1.(	2.686	0	-0.024	0	0	0
		28:6A. 1.2D+1.	2.228	0.037	-0.020	0	0	0
		29:6A. 1.2D+1.	2.329	0.011	-0.003	0	0	0
		30:6B. 0.9D+1.	0.004	0.037	-0.006	0	0	0
		31:6B. 0.9D+1.	0.104	0.011	0.011	0	0	0
74	6	21:1. 1.4DL	-4.978	0	-0.028	0	0	0
		22:2. 1.2DL+1.(	-10.415	0	-0.024	0	0	0
		23:4. 1.2DL+1.(	-6.867	0.133	-0.024	0	0	0
		24:5. 1.2DL+1.(	-8.110	0	-0.024	0	0	0
		25:6. 0.9DL+1.(	-1.957	0.133	-0.018	0	0	0
		26:2. 1.2DL+1.(	-4.966	0	-0.024	0	0	0
		27:2. 1.2DL+1.(	-6.656	0	-0.024	0	0	0
		28:6A. 1.2D+1.	-6.966	0.037	-0.020	0	0	0
		29:6A. 1.2D+1.	-7.794	0.011	-0.003	0	0	0
		30:6B. 0.9D+1.	-0.499	0.037	-0.006	0	0	0
		31:6B. 0.9D+1.	-1.327	0.011	0.011	0	0	0
	16	21:1. 1.4DL	5.029	0	-0.028	0	0	0
		22:2. 1.2DL+1.(	10.459	0	-0.024	0	0	0
		23:4. 1.2DL+1.(	6.910	0.133	-0.024	0	0	0
		24:5. 1.2DL+1.(	8.153	0	-0.024	0	0	0
		25:6. 0.9DL+1.(	1.990	0.133	-0.018	0	0	0
		26:2. 1.2DL+1.(	5.009	0	-0.024	0	0	0
		27:2. 1.2DL+1.(	6.700	0	-0.024	0	0	0
		28:6A. 1.2D+1.	7.033	0.037	-0.020	0	0	0
		29:6A. 1.2D+1.	7.899	0.011	-0.003	0	0	0
		30:6B. 0.9D+1.	0.540	0.037	-0.006	0	0	0

Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	1.406	0.011	0.011	0	0	0
75	7	21:1. 1.4DL	-8.449	0	-0.028	0	0	0
		22:2. 1.2DL+1.(	-17.531	0	-0.024	0	0	0
		23:4. 1.2DL+1.(	-11.665	0.133	-0.024	0	0	0
		24:5. 1.2DL+1.(	-13.673	0	-0.024	0	0	0
		25:6. 0.9DL+1.(	-3.424	0.133	-0.018	0	0	0
		26:2. 1.2DL+1.(	-7.943	0	-0.024	0	0	0
		27:2. 1.2DL+1.(	-9.641	0	-0.024	0	0	0
		28:6A. 1.2D+1.	-12.034	0.037	-0.020	0	0	0
		29:6A. 1.2D+1.	-13.593	0.011	-0.003	0	0	0
		30:6B. 0.9D+1.	-1.149	0.037	-0.006	0	0	0
		31:6B. 0.9D+1.	-2.709	0.011	0.011	0	0	0
	17	21:1. 1.4DL	8.500	0	-0.028	0	0	0
		22:2. 1.2DL+1.(	17.574	0	-0.024	0	0	0
		23:4. 1.2DL+1.(	11.708	0.133	-0.024	0	0	0
		24:5. 1.2DL+1.(	13.716	0	-0.024	0	0	0
		25:6. 0.9DL+1.(	3.456	0.133	-0.018	0	0	0
		26:2. 1.2DL+1.(	7.987	0	-0.024	0	0	0
		27:2. 1.2DL+1.(	9.685	0	-0.024	0	0	0
		28:6A. 1.2D+1.	12.101	0.037	-0.020	0	0	0
		29:6A. 1.2D+1.	13.698	0.011	-0.003	0	0	0
		30:6B. 0.9D+1.	1.190	0.037	-0.006	0	0	0
		31:6B. 0.9D+1.	2.788	0.011	0.011	0	0	0
76	8	21:1. 1.4DL	-11.415	0	-0.033	0	0	0
		22:2. 1.2DL+1.(	-23.787	0	-0.028	0	0	0
		23:4. 1.2DL+1.(	-15.976	0.128	-0.028	0	0	0
		24:5. 1.2DL+1.(	-18.536	0	-0.028	0	0	0
		25:6. 0.9DL+1.(	-4.778	0.128	-0.021	0	0	0
		26:2. 1.2DL+1.(	-10.468	0	-0.028	0	0	0
		27:2. 1.2DL+1.(	-12.124	0	-0.028	0	0	0
		28:6A. 1.2D+1.	-16.390	0.044	-0.024	0	0	0
		29:6A. 1.2D+1.	-18.581	0.013	-0.003	0	0	0
		30:6B. 0.9D+1.	-1.621	0.044	-0.007	0	0	0
		31:6B. 0.9D+1.	-3.811	0.013	0.015	0	0	0
	18	21:1. 1.4DL	11.478	0	-0.033	0	0	0
		22:2. 1.2DL+1.(	23.841	0	-0.028	0	0	0
		23:4. 1.2DL+1.(	16.030	0.128	-0.028	0	0	0
		24:5. 1.2DL+1.(	18.590	0	-0.028	0	0	0
		25:6. 0.9DL+1.(	4.818	0.128	-0.021	0	0	0
		26:2. 1.2DL+1.(	10.522	0	-0.028	0	0	0
		27:2. 1.2DL+1.(	12.178	0	-0.028	0	0	0
		28:6A. 1.2D+1.	16.473	0.044	-0.024	0	0	0
		29:6A. 1.2D+1.	18.709	0.013	-0.003	0	0	0
		30:6B. 0.9D+1.	1.671	0.044	-0.007	0	0	0

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	3.906	0.013	0.015	0	0	0
77	37	21:1. 1.4DL	-13.892	0	-0.033	0	0	0
		22:2. 1.2DL+1.(	-25.910	0	-0.028	0	0	0
		23:4. 1.2DL+1.(	-23.196	0.128	-0.028	0	0	0
		24:5. 1.2DL+1.(	-20.659	0	-0.028	0	0	0
		25:6. 0.9DL+1.(	-11.468	0.128	-0.021	0	0	0
		26:2. 1.2DL+1.(	-15.878	0	-0.028	0	0	0
		27:2. 1.2DL+1.(	-14.102	0	-0.028	0	0	0
		28:6A. 1.2D+1.	-26.654	0.044	-0.043	0	0	0
		29:6A. 1.2D+1.	-24.429	0.013	-0.064	0	0	0
		30:6B. 0.9D+1.	-10.579	0.044	-0.025	0	0	0
		31:6B. 0.9D+1.	-8.355	0.013	-0.047	0	0	0
	29	21:1. 1.4DL	13.829	0	-0.033	0	0	0
		22:2. 1.2DL+1.(	25.856	0	-0.028	0	0	0
		23:4. 1.2DL+1.(	23.142	0.128	-0.028	0	0	0
		24:5. 1.2DL+1.(	20.605	0	-0.028	0	0	0
		25:6. 0.9DL+1.(	11.428	0.128	-0.021	0	0	0
		26:2. 1.2DL+1.(	15.825	0	-0.028	0	0	0
		27:2. 1.2DL+1.(	14.048	0	-0.028	0	0	0
		28:6A. 1.2D+1.	26.609	0.044	-0.043	0	0	0
		29:6A. 1.2D+1.	24.430	0.013	-0.064	0	0	0
		30:6B. 0.9D+1.	10.568	0.044	-0.025	0	0	0
		31:6B. 0.9D+1.	8.388	0.013	-0.047	0	0	0
78	38	21:1. 1.4DL	-10.106	0	-0.028	0	0	0
		22:2. 1.2DL+1.(	-18.925	0	-0.024	0	0	0
		23:4. 1.2DL+1.(	-17.101	0.133	-0.024	0	0	0
		24:5. 1.2DL+1.(	-15.077	0	-0.024	0	0	0
		25:6. 0.9DL+1.(	-8.521	0.133	-0.018	0	0	0
		26:2. 1.2DL+1.(	-9.227	0	-0.024	0	0	0
		27:2. 1.2DL+1.(	-10.911	0	-0.024	0	0	0
		28:6A. 1.2D+1.	-19.650	0.037	-0.035	0	0	0
		29:6A. 1.2D+1.	-18.009	0.011	-0.053	0	0	0
		30:6B. 0.9D+1.	-7.908	0.037	-0.021	0	0	0
		31:6B. 0.9D+1.	-6.267	0.011	-0.038	0	0	0
	30	21:1. 1.4DL	10.055	0	-0.028	0	0	0
		22:2. 1.2DL+1.(	18.882	0	-0.024	0	0	0
		23:4. 1.2DL+1.(	17.057	0.133	-0.024	0	0	0
		24:5. 1.2DL+1.(	15.033	0	-0.024	0	0	0
		25:6. 0.9DL+1.(	8.488	0.133	-0.018	0	0	0
		26:2. 1.2DL+1.(	9.184	0	-0.024	0	0	0
		27:2. 1.2DL+1.(	10.868	0	-0.024	0	0	0
		28:6A. 1.2D+1.	19.614	0.037	-0.035	0	0	0
		29:6A. 1.2D+1.	18.011	0.011	-0.053	0	0	0
		30:6B. 0.9D+1.	7.899	0.037	-0.021	0	0	0

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	6.296	0.011	-0.038	0	0	0
79	39	21:1. 1.4DL	-6.153	0	-0.028	0	0	0
		22:2. 1.2DL+1.(	-11.455	0	-0.024	0	0	0
		23:4. 1.2DL+1.(	-10.370	0.133	-0.024	0	0	0
		24:5. 1.2DL+1.(	-9.137	0	-0.024	0	0	0
		25:6. 0.9DL+1.(	-5.189	0.133	-0.018	0	0	0
		26:2. 1.2DL+1.(	-4.527	0	-0.024	0	0	0
		27:2. 1.2DL+1.(	-7.529	0	-0.024	0	0	0
		28:6A. 1.2D+1.	-11.969	0.037	-0.035	0	0	0
		29:6A. 1.2D+1.	-11.108	0.011	-0.053	0	0	0
		30:6B. 0.9D+1.	-4.863	0.037	-0.021	0	0	0
		31:6B. 0.9D+1.	-4.001	0.011	-0.038	0	0	0
	31	21:1. 1.4DL	6.102	0	-0.028	0	0	0
		22:2. 1.2DL+1.(	11.411	0	-0.024	0	0	0
		23:4. 1.2DL+1.(	10.327	0.133	-0.024	0	0	0
		24:5. 1.2DL+1.(	9.094	0	-0.024	0	0	0
		25:6. 0.9DL+1.(	5.156	0.133	-0.018	0	0	0
		26:2. 1.2DL+1.(	4.483	0	-0.024	0	0	0
		27:2. 1.2DL+1.(	7.486	0	-0.024	0	0	0
		28:6A. 1.2D+1.	11.934	0.037	-0.035	0	0	0
		29:6A. 1.2D+1.	11.110	0.011	-0.053	0	0	0
		30:6B. 0.9D+1.	4.854	0.037	-0.021	0	0	0
		31:6B. 0.9D+1.	4.030	0.011	-0.038	0	0	0
80	40	21:1. 1.4DL	-1.993	0	-0.028	0	0	0
		22:2. 1.2DL+1.(	-3.744	0	-0.024	0	0	0
		23:4. 1.2DL+1.(	-3.425	0.133	-0.024	0	0	0
		24:5. 1.2DL+1.(	-2.981	0	-0.024	0	0	0
		25:6. 0.9DL+1.(	-1.725	0.133	-0.018	0	0	0
		26:2. 1.2DL+1.(	-0.950	0	-0.024	0	0	0
		27:2. 1.2DL+1.(	-3.935	0	-0.024	0	0	0
		28:6A. 1.2D+1.	-4.144	0.037	-0.035	0	0	0
		29:6A. 1.2D+1.	-3.996	0.011	-0.053	0	0	0
		30:6B. 0.9D+1.	-1.820	0.037	-0.021	0	0	0
		31:6B. 0.9D+1.	-1.673	0.011	-0.038	0	0	0
	32	21:1. 1.4DL	1.942	0	-0.028	0	0	0
		22:2. 1.2DL+1.(	3.701	0	-0.024	0	0	0
		23:4. 1.2DL+1.(	3.381	0.133	-0.024	0	0	0
		24:5. 1.2DL+1.(	2.937	0	-0.024	0	0	0
		25:6. 0.9DL+1.(	1.693	0.133	-0.018	0	0	0
		26:2. 1.2DL+1.(	0.907	0	-0.024	0	0	0
		27:2. 1.2DL+1.(	3.891	0	-0.024	0	0	0
		28:6A. 1.2D+1.	4.108	0.037	-0.035	0	0	0
		29:6A. 1.2D+1.	3.999	0.011	-0.053	0	0	0
		30:6B. 0.9D+1.	1.812	0.037	-0.021	0	0	0

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	1.702	0.011	-0.038	0	0	0
81	32	21:1. 1.4DL	-1.942	0	-0.028	0	0	0
		22:2. 1.2DL+1.(	-3.701	0	-0.024	0	0	0
		23:4. 1.2DL+1.(	-3.381	0.133	-0.024	0	0	0
		24:5. 1.2DL+1.(	-2.937	0	-0.024	0	0	0
		25:6. 0.9DL+1.(	-1.693	0.133	-0.018	0	0	0
		26:2. 1.2DL+1.(	-2.419	0	-0.024	0	0	0
		27:2. 1.2DL+1.(	-2.908	0	-0.024	0	0	0
		28:6A. 1.2D+1.	-3.767	0.037	-0.020	0	0	0
		29:6A. 1.2D+1.	-2.860	0.011	-0.003	0	0	0
		30:6B. 0.9D+1.	-1.470	0.037	-0.006	0	0	0
		31:6B. 0.9D+1.	-0.564	0.011	0.011	0	0	0
	42	21:1. 1.4DL	1.993	0	-0.028	0	0	0
		22:2. 1.2DL+1.(	3.744	0	-0.024	0	0	0
		23:4. 1.2DL+1.(	3.425	0.133	-0.024	0	0	0
		24:5. 1.2DL+1.(	2.981	0	-0.024	0	0	0
		25:6. 0.9DL+1.(	1.725	0.133	-0.018	0	0	0
		26:2. 1.2DL+1.(	2.463	0	-0.024	0	0	0
		27:2. 1.2DL+1.(	2.951	0	-0.024	0	0	0
		28:6A. 1.2D+1.	3.834	0.037	-0.020	0	0	0
		29:6A. 1.2D+1.	2.965	0.011	-0.003	0	0	0
		30:6B. 0.9D+1.	1.511	0.037	-0.006	0	0	0
		31:6B. 0.9D+1.	0.642	0.011	0.011	0	0	0
82	33	21:1. 1.4DL	-6.102	0	-0.028	0	0	0
		22:2. 1.2DL+1.(	-11.411	0	-0.024	0	0	0
		23:4. 1.2DL+1.(	-10.327	0.133	-0.024	0	0	0
		24:5. 1.2DL+1.(	-9.094	0	-0.024	0	0	0
		25:6. 0.9DL+1.(	-5.156	0.133	-0.018	0	0	0
		26:2. 1.2DL+1.(	-5.985	0	-0.024	0	0	0
		27:2. 1.2DL+1.(	-7.816	0	-0.024	0	0	0
		28:6A. 1.2D+1.	-11.597	0.037	-0.020	0	0	0
		29:6A. 1.2D+1.	-9.987	0.011	-0.003	0	0	0
		30:6B. 0.9D+1.	-4.517	0.037	-0.006	0	0	0
		31:6B. 0.9D+1.	-2.907	0.011	0.011	0	0	0
	43	21:1. 1.4DL	6.153	0	-0.028	0	0	0
		22:2. 1.2DL+1.(	11.455	0	-0.024	0	0	0
		23:4. 1.2DL+1.(	10.370	0.133	-0.024	0	0	0
		24:5. 1.2DL+1.(	9.137	0	-0.024	0	0	0
		25:6. 0.9DL+1.(	5.189	0.133	-0.018	0	0	0
		26:2. 1.2DL+1.(	6.028	0	-0.024	0	0	0
		27:2. 1.2DL+1.(	7.859	0	-0.024	0	0	0
		28:6A. 1.2D+1.	11.665	0.037	-0.020	0	0	0
		29:6A. 1.2D+1.	10.092	0.011	-0.003	0	0	0
		30:6B. 0.9D+1.	4.558	0.037	-0.006	0	0	0

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	2.986	0.011	0.011	0	0	0
83	34	21:1. 1.4DL	-10.055	0	-0.028	0	0	0
		22:2. 1.2DL+1.(	-18.882	0	-0.024	0	0	0
		23:4. 1.2DL+1.(	-17.057	0.133	-0.024	0	0	0
		24:5. 1.2DL+1.(	-15.033	0	-0.024	0	0	0
		25:6. 0.9DL+1.(	-8.488	0.133	-0.018	0	0	0
		26:2. 1.2DL+1.(	-9.372	0	-0.024	0	0	0
		27:2. 1.2DL+1.(	-11.201	0	-0.024	0	0	0
		28:6A. 1.2D+1.	-19.280	0.037	-0.020	0	0	0
		29:6A. 1.2D+1.	-16.897	0.011	-0.003	0	0	0
		30:6B. 0.9D+1.	-7.565	0.037	-0.006	0	0	0
		31:6B. 0.9D+1.	-5.182	0.011	0.011	0	0	0
	44	21:1. 1.4DL	10.106	0	-0.028	0	0	0
		22:2. 1.2DL+1.(	18.925	0	-0.024	0	0	0
		23:4. 1.2DL+1.(	17.101	0.133	-0.024	0	0	0
		24:5. 1.2DL+1.(	15.077	0	-0.024	0	0	0
		25:6. 0.9DL+1.(	8.521	0.133	-0.018	0	0	0
		26:2. 1.2DL+1.(	9.415	0	-0.024	0	0	0
		27:2. 1.2DL+1.(	11.244	0	-0.024	0	0	0
		28:6A. 1.2D+1.	19.348	0.037	-0.020	0	0	0
		29:6A. 1.2D+1.	17.003	0.011	-0.003	0	0	0
		30:6B. 0.9D+1.	7.606	0.037	-0.006	0	0	0
		31:6B. 0.9D+1.	5.261	0.011	0.011	0	0	0
84	35	21:1. 1.4DL	-13.829	0	-0.033	0	0	0
		22:2. 1.2DL+1.(	-25.856	0	-0.028	0	0	0
		23:4. 1.2DL+1.(	-23.142	0.128	-0.028	0	0	0
		24:5. 1.2DL+1.(	-20.605	0	-0.028	0	0	0
		25:6. 0.9DL+1.(	-11.428	0.128	-0.021	0	0	0
		26:2. 1.2DL+1.(	-12.589	0	-0.028	0	0	0
		27:2. 1.2DL+1.(	-14.372	0	-0.028	0	0	0
		28:6A. 1.2D+1.	-26.256	0.044	-0.024	0	0	0
		29:6A. 1.2D+1.	-23.251	0.013	-0.003	0	0	0
		30:6B. 0.9D+1.	-10.214	0.044	-0.007	0	0	0
		31:6B. 0.9D+1.	-7.210	0.013	0.015	0	0	0
	45	21:1. 1.4DL	13.892	0	-0.033	0	0	0
		22:2. 1.2DL+1.(	25.910	0	-0.028	0	0	0
		23:4. 1.2DL+1.(	23.196	0.128	-0.028	0	0	0
		24:5. 1.2DL+1.(	20.659	0	-0.028	0	0	0
		25:6. 0.9DL+1.(	11.468	0.128	-0.021	0	0	0
		26:2. 1.2DL+1.(	12.642	0	-0.028	0	0	0
		27:2. 1.2DL+1.(	14.426	0	-0.028	0	0	0
		28:6A. 1.2D+1.	26.339	0.044	-0.024	0	0	0
		29:6A. 1.2D+1.	23.379	0.013	-0.003	0	0	0
		30:6B. 0.9D+1.	10.264	0.044	-0.007	0	0	0

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	7.305	0.013	0.015	0	0	0
600	46	21:1. 1.4DL	0.042	0.904	0.007	-0.001	-0.025	0.096
		22:2. 1.2DL+1.(	-0.213	2.135	0.019	-0.001	0.169	2.175
		23:4. 1.2DL+1.(	-0.669	2.486	-0.201	-0.004	0.770	3.842
		24:5. 1.2DL+1.(	-0.120	1.625	0.014	-0.001	0.098	1.390
		25:6. 0.9DL+1.(	-0.522	1.442	-0.211	-0.004	0.656	2.513
		26:2. 1.2DL+1.(	0.075	0.774	0.025	-0.001	-0.074	-0.076
		27:2. 1.2DL+1.(	0.037	0.778	0.005	-0.001	-0.020	0.097
		28:6A. 1.2D+1.	-0.683	2.887	-0.405	-0.010	1.309	3.820
		29:6A. 1.2D+1.	-0.370	2.111	-0.235	-0.004	0.652	2.097
		30:6B. 0.9D+1.	-0.550	1.561	-0.417	-0.009	1.203	2.461
		31:6B. 0.9D+1.	-0.237	0.784	-0.247	-0.003	0.546	0.738
	19	21:1. 1.4DL	-0.042	0.831	-0.007	0.001	-0.021	0.140
		22:2. 1.2DL+1.(	0.213	2.072	-0.019	0.001	-0.293	-1.973
		23:4. 1.2DL+1.(	0.669	0.701	0.201	0.004	0.523	1.883
		24:5. 1.2DL+1.(	0.120	1.562	-0.014	0.001	-0.190	-1.188
		25:6. 0.9DL+1.(	0.522	-0.327	0.211	0.004	0.699	3.161
		26:2. 1.2DL+1.(	-0.075	0.713	-0.025	0.001	-0.088	0.272
		27:2. 1.2DL+1.(	-0.037	0.709	-0.005	0.001	-0.015	0.127
		28:6A. 1.2D+1.	0.867	0.571	0.350	0.010	1.114	3.070
		29:6A. 1.2D+1.	0.426	1.347	0.051	0.004	0.268	0.190
		30:6B. 0.9D+1.	0.734	-0.717	0.362	0.009	1.297	4.304
		31:6B. 0.9D+1.	0.292	0.060	0.063	0.003	0.451	1.425
601	54	21:1. 1.4DL	0.042	0.904	-0.007	0.001	0.025	0.096
		22:2. 1.2DL+1.(	-0.213	2.135	-0.019	0.001	-0.169	2.175
		23:4. 1.2DL+1.(	-0.669	2.486	0.201	0.004	-0.770	3.842
		24:5. 1.2DL+1.(	-0.120	1.625	-0.014	0.001	-0.098	1.390
		25:6. 0.9DL+1.(	-0.522	1.442	0.211	0.004	-0.656	2.513
		26:2. 1.2DL+1.(	0.036	0.776	-0.006	0.001	0.020	0.087
		27:2. 1.2DL+1.(	0.037	0.779	-0.006	0.001	0.022	0.097
		28:6A. 1.2D+1.	-0.652	2.885	0.338	0.010	-1.229	3.829
		29:6A. 1.2D+1.	-0.268	2.103	0.010	0.004	-0.386	2.126
		30:6B. 0.9D+1.	-0.519	1.558	0.350	0.009	-1.123	2.470
		31:6B. 0.9D+1.	-0.135	0.776	0.022	0.003	-0.280	0.767
	27	21:1. 1.4DL	-0.042	0.831	0.007	-0.001	0.021	0.140
		22:2. 1.2DL+1.(	0.213	2.072	0.019	-0.001	0.293	-1.973
		23:4. 1.2DL+1.(	0.669	0.701	-0.201	-0.004	-0.523	1.883
		24:5. 1.2DL+1.(	0.120	1.562	0.014	-0.001	0.190	-1.188
		25:6. 0.9DL+1.(	0.522	-0.327	-0.211	-0.004	-0.699	3.161
		26:2. 1.2DL+1.(	-0.036	0.711	0.006	-0.001	0.017	0.123
		27:2. 1.2DL+1.(	-0.037	0.708	0.006	-0.001	0.015	0.129
		28:6A. 1.2D+1.	0.836	0.574	-0.393	-0.010	-1.115	3.045
		29:6A. 1.2D+1.	0.323	1.356	-0.194	-0.004	-0.271	0.109
		30:6B. 0.9D+1.	0.703	-0.714	-0.405	-0.009	-1.298	4.280

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	0.190	0.068	-0.206	-0.003	-0.453	1.344
602	47	21:1. 1.4DL	0.160	1.702	-0.018	-0.001	0.057	0.175
		22:2. 1.2DL+1.(	-0.130	4.288	-0.028	-0.001	0.147	1.769
		23:4. 1.2DL+1.(	0.586	3.647	-0.102	-0.004	0.369	2.796
		24:5. 1.2DL+1.(	-0.030	3.227	-0.024	-0.001	0.110	1.162
		25:6. 0.9DL+1.(	0.719	1.514	-0.090	-0.004	0.295	1.747
		26:2. 1.2DL+1.(	0.239	3.888	-0.020	-0.001	0.065	0.512
		27:2. 1.2DL+1.(	0.151	1.459	-0.018	-0.001	0.056	0.158
		28:6A. 1.2D+1.	4.078	4.189	-0.223	-0.009	0.695	3.719
		29:6A. 1.2D+1.	1.077	3.686	-0.169	-0.003	0.337	1.802
		30:6B. 0.9D+1.	4.161	1.523	-0.205	-0.009	0.604	2.614
		31:6B. 0.9D+1.	1.160	1.021	-0.151	-0.003	0.246	0.698
	20	21:1. 1.4DL	-0.160	1.694	0.018	0.001	0.058	-0.147
		22:2. 1.2DL+1.(	0.130	4.263	0.028	0.001	0.036	-1.691
		23:4. 1.2DL+1.(	-0.586	2.789	0.102	0.004	0.288	-0.046
		24:5. 1.2DL+1.(	0.030	3.209	0.024	0.001	0.041	-1.104
		25:6. 0.9DL+1.(	-0.719	0.669	0.090	0.004	0.284	0.964
		26:2. 1.2DL+1.(	-0.239	3.680	0.020	0.001	0.062	-0.427
		27:2. 1.2DL+1.(	-0.151	1.452	0.018	0.001	0.058	-0.134
		28:6A. 1.2D+1.	-3.894	2.778	0.168	0.009	0.559	-0.439
		29:6A. 1.2D+1.	-1.022	3.281	-0.015	0.003	0.157	-0.876
		30:6B. 0.9D+1.	-3.977	0.128	0.150	0.009	0.537	0.617
		31:6B. 0.9D+1.	-1.105	0.631	-0.032	0.003	0.135	0.180
603	48	21:1. 1.4DL	0.258	1.665	0.002	-0.001	-0.008	0.083
		22:2. 1.2DL+1.(	0.003	4.228	0.009	-0.001	0.000	2.146
		23:4. 1.2DL+1.(	-0.588	3.715	-0.046	-0.003	0.163	2.765
		24:5. 1.2DL+1.(	0.085	3.178	0.006	-0.001	-0.002	1.368
		25:6. 0.9DL+1.(	-0.507	1.608	-0.051	-0.003	0.161	1.451
		26:2. 1.2DL+1.(	0.308	2.322	-0.003	-0.001	0.001	0.097
		27:2. 1.2DL+1.(	0.278	1.425	0.004	-0.001	-0.019	0.075
		28:6A. 1.2D+1.	0.008	4.190	-0.132	-0.007	0.364	2.088
		29:6A. 1.2D+1.	-0.069	3.677	-0.117	-0.003	0.143	1.526
		30:6B. 0.9D+1.	0.008	1.562	-0.138	-0.007	0.364	0.747
		31:6B. 0.9D+1.	-0.069	1.048	-0.122	-0.002	0.143	0.185
	21	21:1. 1.4DL	-0.258	1.730	-0.002	0.001	-0.003	-0.292
		22:2. 1.2DL+1.(	-0.003	4.323	-0.009	0.001	-0.056	-2.450
		23:4. 1.2DL+1.(	0.588	2.721	0.046	0.003	0.133	0.423
		24:5. 1.2DL+1.(	-0.085	3.258	-0.006	0.001	-0.036	-1.625
		25:6. 0.9DL+1.(	0.507	0.576	0.051	0.003	0.167	1.861
		26:2. 1.2DL+1.(	-0.308	2.332	0.003	0.001	0.021	-0.345
		27:2. 1.2DL+1.(	-0.278	1.486	-0.004	0.001	-0.007	-0.269
		28:6A. 1.2D+1.	0.176	2.777	0.077	0.007	0.309	1.203
		29:6A. 1.2D+1.	0.124	3.290	-0.067	0.003	0.018	-0.659
		30:6B. 0.9D+1.	0.175	0.090	0.083	0.007	0.343	2.732

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	0.124	0.603	-0.061	0.002	0.052	0.869
604	49	21:1. 1.4DL	0.318	1.709	-0.008	-0.000	0.023	0.256
		22:2. 1.2DL+1.(	0.085	4.309	-0.011	-0.000	0.043	2.656
		23:4. 1.2DL+1.(	0.842	3.807	-0.032	-0.002	0.109	3.875
		24:5. 1.2DL+1.(	0.155	3.243	-0.009	-0.000	0.034	1.742
		25:6. 0.9DL+1.(	0.891	1.663	-0.028	-0.002	0.090	2.297
		26:2. 1.2DL+1.(	0.343	1.468	-0.003	-0.000	0.009	0.210
		27:2. 1.2DL+1.(	0.356	1.471	-0.014	-0.000	0.050	0.175
		28:6A. 1.2D+1.	4.351	4.274	-0.094	-0.003	0.233	4.564
		29:6A. 1.2D+1.	1.317	3.730	-0.121	-0.001	0.147	2.494
		30:6B. 0.9D+1.	4.301	1.595	-0.087	-0.003	0.207	2.906
		31:6B. 0.9D+1.	1.266	1.051	-0.115	-0.001	0.121	0.837
	22	21:1. 1.4DL	-0.318	1.686	0.008	0.000	0.025	-0.182
		22:2. 1.2DL+1.(	-0.085	4.242	0.011	0.000	0.025	-2.441
		23:4. 1.2DL+1.(	-0.842	2.629	0.032	0.002	0.096	-0.098
		24:5. 1.2DL+1.(	-0.155	3.193	0.009	0.000	0.024	-1.584
		25:6. 0.9DL+1.(	-0.891	0.520	0.028	0.002	0.088	1.370
		26:2. 1.2DL+1.(	-0.343	1.443	0.003	0.000	0.009	-0.128
		27:2. 1.2DL+1.(	-0.356	1.440	0.014	0.000	0.040	-0.075
		28:6A. 1.2D+1.	-4.167	2.693	0.039	0.003	0.191	-0.738
		29:6A. 1.2D+1.	-1.261	3.237	-0.063	0.001	0.041	-1.288
		30:6B. 0.9D+1.	-4.117	0.057	0.032	0.003	0.175	0.787
		31:6B. 0.9D+1.	-1.211	0.601	-0.069	0.001	0.025	0.236
605	50	21:1. 1.4DL	0.346	1.658	0.000	-0.000	-0.000	0.106
		22:2. 1.2DL+1.(	0.130	4.216	0.000	-0.000	-0.000	2.428
		23:4. 1.2DL+1.(	-0.568	3.731	-0.000	0.000	0.000	2.989
		24:5. 1.2DL+1.(	0.192	3.168	0.000	-0.000	-0.000	1.552
		25:6. 0.9DL+1.(	-0.537	1.628	-0.000	0.000	0.000	1.506
		26:2. 1.2DL+1.(	0.333	1.419	-0.002	0.000	0.007	0.097
		27:2. 1.2DL+1.(	0.440	3.825	0.002	-0.000	-0.005	0.376
		28:6A. 1.2D+1.	0.108	4.250	-0.027	-0.000	0.011	2.500
		29:6A. 1.2D+1.	0.098	3.682	-0.089	-0.000	0.037	1.799
		30:6B. 0.9D+1.	0.029	1.629	-0.027	-0.000	0.011	0.983
		31:6B. 0.9D+1.	0.020	1.061	-0.089	-0.000	0.037	0.283
	23	21:1. 1.4DL	-0.346	1.738	-0.000	0.000	-0.000	-0.365
		22:2. 1.2DL+1.(	-0.130	4.335	-0.000	0.000	-0.000	-2.810
		23:4. 1.2DL+1.(	0.568	2.705	0.000	-0.000	0.000	0.301
		24:5. 1.2DL+1.(	-0.192	3.268	-0.000	0.000	-0.000	-1.873
		25:6. 0.9DL+1.(	0.537	0.555	0.000	-0.000	0.000	1.940
		26:2. 1.2DL+1.(	-0.333	1.492	0.002	-0.000	0.004	-0.332
		27:2. 1.2DL+1.(	-0.440	3.743	-0.002	0.000	-0.011	-0.694
		28:6A. 1.2D+1.	0.076	2.717	-0.029	0.000	-0.017	1.173
		29:6A. 1.2D+1.	-0.043	3.285	-0.095	0.000	-0.058	-0.899
		30:6B. 0.9D+1.	0.154	0.023	-0.029	0.000	-0.017	2.926

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	0.035	0.591	-0.095	0.000	-0.058	0.854
606	51	21:1. 1.4DL	0.318	1.709	0.008	0.000	-0.023	0.256
		22:2. 1.2DL+1.(	0.085	4.309	0.011	0.000	-0.043	2.656
		23:4. 1.2DL+1.(	0.842	3.807	0.032	0.002	-0.109	3.875
		24:5. 1.2DL+1.(	0.155	3.243	0.009	0.000	-0.034	1.742
		25:6. 0.9DL+1.(	0.891	1.663	0.028	0.002	-0.090	2.297
		26:2. 1.2DL+1.(	0.290	1.466	0.007	0.000	-0.023	0.234
		27:2. 1.2DL+1.(	0.379	2.380	0.014	0.000	-0.050	0.315
		28:6A. 1.2D+1.	4.369	4.275	0.037	0.003	-0.200	4.580
		29:6A. 1.2D+1.	1.376	3.734	-0.068	0.001	-0.036	2.550
		30:6B. 0.9D+1.	4.319	1.597	0.030	0.003	-0.173	2.922
		31:6B. 0.9D+1.	1.326	1.056	-0.074	0.001	-0.009	0.892
	24	21:1. 1.4DL	-0.318	1.686	-0.008	-0.000	-0.025	-0.182
		22:2. 1.2DL+1.(	-0.085	4.242	-0.011	-0.000	-0.025	-2.441
		23:4. 1.2DL+1.(	-0.842	2.629	-0.032	-0.002	-0.096	-0.098
		24:5. 1.2DL+1.(	-0.155	3.193	-0.009	-0.000	-0.024	-1.584
		25:6. 0.9DL+1.(	-0.891	0.520	-0.028	-0.002	-0.088	1.370
		26:2. 1.2DL+1.(	-0.290	1.445	-0.007	-0.000	-0.025	-0.165
		27:2. 1.2DL+1.(	-0.379	2.274	-0.014	-0.000	-0.037	-0.193
		28:6A. 1.2D+1.	-4.185	2.692	-0.092	-0.003	-0.215	-0.746
		29:6A. 1.2D+1.	-1.321	3.233	-0.116	-0.001	-0.120	-1.316
		30:6B. 0.9D+1.	-4.135	0.055	-0.086	-0.003	-0.199	0.778
		31:6B. 0.9D+1.	-1.271	0.596	-0.110	-0.001	-0.104	0.208
607	52	21:1. 1.4DL	0.258	1.665	-0.002	0.001	0.008	0.083
		22:2. 1.2DL+1.(	0.003	4.228	-0.009	0.001	-0.000	2.146
		23:4. 1.2DL+1.(	-0.588	3.715	0.046	0.003	-0.163	2.765
		24:5. 1.2DL+1.(	0.085	3.178	-0.006	0.001	0.002	1.368
		25:6. 0.9DL+1.(	-0.507	1.608	0.051	0.003	-0.161	1.451
		26:2. 1.2DL+1.(	0.231	1.427	-0.002	0.001	0.008	0.076
		27:2. 1.2DL+1.(	0.292	1.423	-0.006	0.001	0.023	0.037
		28:6A. 1.2D+1.	0.044	4.187	0.079	0.007	-0.341	2.103
		29:6A. 1.2D+1.	0.050	3.667	-0.062	0.003	-0.065	1.575
		30:6B. 0.9D+1.	0.044	1.559	0.084	0.007	-0.340	0.762
		31:6B. 0.9D+1.	0.051	1.039	-0.056	0.002	-0.065	0.234
	25	21:1. 1.4DL	-0.258	1.730	0.002	-0.001	0.003	-0.292
		22:2. 1.2DL+1.(	-0.003	4.323	0.009	-0.001	0.056	-2.450
		23:4. 1.2DL+1.(	0.588	2.721	-0.046	-0.003	-0.133	0.423
		24:5. 1.2DL+1.(	-0.085	3.258	0.006	-0.001	0.036	-1.625
		25:6. 0.9DL+1.(	0.507	0.576	-0.051	-0.003	-0.167	1.861
		26:2. 1.2DL+1.(	-0.231	1.484	0.002	-0.001	0.004	-0.260
		27:2. 1.2DL+1.(	-0.292	1.488	0.006	-0.001	0.016	-0.245
		28:6A. 1.2D+1.	0.140	2.780	-0.134	-0.007	-0.342	1.169
		29:6A. 1.2D+1.	0.005	3.300	-0.122	-0.003	-0.129	-0.772
		30:6B. 0.9D+1.	0.139	0.093	-0.139	-0.007	-0.377	2.698

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	By ATT	Date 8/1/2025 12:00:00 A	
Client	File 855412-10.std	Date/Time 12-Aug-2025 10:52	

Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	0.005	0.613	-0.127	-0.002	-0.164	0.757
608	53	21:1. 1.4DL	0.160	1.702	0.018	0.001	-0.057	0.175
		22:2. 1.2DL+1.(	-0.130	4.288	0.028	0.001	-0.147	1.769
		23:4. 1.2DL+1.(	0.586	3.647	0.102	0.004	-0.369	2.796
		24:5. 1.2DL+1.(	-0.030	3.227	0.024	0.001	-0.110	1.162
		25:6. 0.9DL+1.(	0.719	1.514	0.090	0.004	-0.295	1.747
		26:2. 1.2DL+1.(	0.141	1.459	0.016	0.001	-0.051	0.154
		27:2. 1.2DL+1.(	0.163	1.459	0.019	0.001	-0.057	0.156
		28:6A. 1.2D+1.	4.114	4.193	0.167	0.009	-0.663	3.758
		29:6A. 1.2D+1.	1.196	3.702	-0.017	0.003	-0.231	1.935
		30:6B. 0.9D+1.	4.196	1.528	0.149	0.009	-0.572	2.654
		31:6B. 0.9D+1.	1.279	1.037	-0.035	0.003	-0.140	0.830
	26	21:1. 1.4DL	-0.160	1.694	-0.018	-0.001	-0.058	-0.147
		22:2. 1.2DL+1.(	0.130	4.263	-0.028	-0.001	-0.036	-1.691
		23:4. 1.2DL+1.(	-0.586	2.789	-0.102	-0.004	-0.288	-0.046
		24:5. 1.2DL+1.(	0.030	3.209	-0.024	-0.001	-0.041	-1.104
		25:6. 0.9DL+1.(	-0.719	0.669	-0.090	-0.004	-0.284	0.964
		26:2. 1.2DL+1.(	-0.141	1.452	-0.016	-0.001	-0.052	-0.129
		27:2. 1.2DL+1.(	-0.163	1.452	-0.019	-0.001	-0.062	-0.133
		28:6A. 1.2D+1.	-3.930	2.774	-0.222	-0.009	-0.586	-0.448
		29:6A. 1.2D+1.	-1.141	3.265	-0.167	-0.003	-0.250	-0.907
		30:6B. 0.9D+1.	-4.013	0.124	-0.205	-0.009	-0.564	0.608
		31:6B. 0.9D+1.	-1.223	0.615	-0.149	-0.003	-0.227	0.148
700	29	21:1. 1.4DL	-0.109	0.050	0	0	0	0
		22:2. 1.2DL+1.(	-0.194	0.043	0	0	0	0
		23:4. 1.2DL+1.(	-7.062	0.043	0	0	0	0
		24:5. 1.2DL+1.(	-0.157	0.043	0	0	0	0
		25:6. 0.9DL+1.(	-6.976	0.032	0	0	0	0
		26:2. 1.2DL+1.(	-0.197	0.043	0	0	0	0
		27:2. 1.2DL+1.(	-0.100	0.043	0	0	0	0
		28:6A. 1.2D+1.	-22.182	0.050	-0.043	0	0	0
		29:6A. 1.2D+1.	-6.590	0.050	-0.046	0	0	0
		30:6B. 0.9D+1.	-22.062	0.024	-0.043	0	0	0
		31:6B. 0.9D+1.	-6.469	0.024	-0.046	0	0	0
	1	21:1. 1.4DL	0.109	0.050	0	0	0	0
		22:2. 1.2DL+1.(	0.194	0.043	0	0	0	0
		23:4. 1.2DL+1.(	7.062	0.043	0	0	0	0
		24:5. 1.2DL+1.(	0.157	0.043	0	0	0	0
		25:6. 0.9DL+1.(	6.976	0.032	0	0	0	0
		26:2. 1.2DL+1.(	0.197	0.043	0	0	0	0
		27:2. 1.2DL+1.(	0.100	0.043	0	0	0	0
		28:6A. 1.2D+1.	22.236	0.050	-0.043	0	0	0
		29:6A. 1.2D+1.	6.547	0.050	-0.046	0	0	0
		30:6B. 0.9D+1.	22.115	0.024	-0.043	0	0	0

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	6.427	0.024	-0.046	0	0	0
701	29	21:1. 1.4DL	-0.320	0.050	0	0	0	0
		22:2. 1.2DL+1.(	-0.533	0.043	0	0	0	0
		23:4. 1.2DL+1.(	4.781	0.043	0	0	0	0
		24:5. 1.2DL+1.(	-0.436	0.043	0	0	0	0
		25:6. 0.9DL+1.(	5.011	0.032	0	0	0	0
		26:2. 1.2DL+1.(	-0.432	0.043	0	0	0	0
		27:2. 1.2DL+1.(	-0.310	0.043	0	0	0	0
		28:6A. 1.2D+1.	16.029	0.051	0.022	0	0	0
		29:6A. 1.2D+1.	4.697	0.051	-0.026	0	0	0
		30:6B. 0.9D+1.	16.359	0.025	0.022	0	0	0
		31:6B. 0.9D+1.	5.027	0.025	-0.026	0	0	0
	3	21:1. 1.4DL	0.320	0.050	0	0	0	0
		22:2. 1.2DL+1.(	0.533	0.043	0	0	0	0
		23:4. 1.2DL+1.(	-4.781	0.043	0	0	0	0
		24:5. 1.2DL+1.(	0.436	0.043	0	0	0	0
		25:6. 0.9DL+1.(	-5.011	0.032	0	0	0	0
		26:2. 1.2DL+1.(	0.432	0.043	0	0	0	0
		27:2. 1.2DL+1.(	0.310	0.043	0	0	0	0
		28:6A. 1.2D+1.	-15.936	0.051	0.022	0	0	0
		29:6A. 1.2D+1.	-4.608	0.051	-0.026	0	0	0
		30:6B. 0.9D+1.	-16.266	0.025	0.022	0	0	0
		31:6B. 0.9D+1.	-4.938	0.025	-0.026	0	0	0
702	31	21:1. 1.4DL	-0.389	0.050	0	0	0	0
		22:2. 1.2DL+1.(	-0.706	0.043	0	0	0	0
		23:4. 1.2DL+1.(	-3.771	0.043	0	0	0	0
		24:5. 1.2DL+1.(	-0.566	0.043	0	0	0	0
		25:6. 0.9DL+1.(	-3.455	0.032	0	0	0	0
		26:2. 1.2DL+1.(	-0.446	0.043	0	0	0	0
		27:2. 1.2DL+1.(	-0.418	0.043	0	0	0	0
		28:6A. 1.2D+1.	-10.335	0.051	-0.044	0	0	0
		29:6A. 1.2D+1.	-3.340	0.051	-0.046	0	0	0
		30:6B. 0.9D+1.	-9.897	0.025	-0.044	0	0	0
		31:6B. 0.9D+1.	-2.902	0.025	-0.046	0	0	0
	3	21:1. 1.4DL	0.389	0.050	0	0	0	0
		22:2. 1.2DL+1.(	0.706	0.043	0	0	0	0
		23:4. 1.2DL+1.(	3.771	0.043	0	0	0	0
		24:5. 1.2DL+1.(	0.566	0.043	0	0	0	0
		25:6. 0.9DL+1.(	3.455	0.032	0	0	0	0
		26:2. 1.2DL+1.(	0.446	0.043	0	0	0	0
		27:2. 1.2DL+1.(	0.418	0.043	0	0	0	0
		28:6A. 1.2D+1.	10.388	0.051	-0.044	0	0	0
		29:6A. 1.2D+1.	3.295	0.051	-0.046	0	0	0
		30:6B. 0.9D+1.	9.950	0.025	-0.044	0	0	0

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	2.857	0.025	-0.046	0	0	0
703	31	21:1. 1.4DL	-0.469	0.050	0	0	0	0
		22:2. 1.2DL+1.(	-0.832	0.043	0	0	0	0
		23:4. 1.2DL+1.(	0.465	0.043	0	0	0	0
		24:5. 1.2DL+1.(	-0.671	0.043	0	0	0	0
		25:6. 0.9DL+1.(	0.834	0.032	0	0	0	0
		26:2. 1.2DL+1.(	-0.461	0.043	0	0	0	0
		27:2. 1.2DL+1.(	-0.575	0.043	0	0	0	0
		28:6A. 1.2D+1.	2.720	0.051	0.022	0	0	0
		29:6A. 1.2D+1.	0.456	0.051	-0.026	0	0	0
		30:6B. 0.9D+1.	3.235	0.025	0.022	0	0	0
		31:6B. 0.9D+1.	0.972	0.025	-0.026	0	0	0
	5	21:1. 1.4DL	0.469	0.050	0	0	0	0
		22:2. 1.2DL+1.(	0.832	0.043	0	0	0	0
		23:4. 1.2DL+1.(	-0.465	0.043	0	0	0	0
		24:5. 1.2DL+1.(	0.671	0.043	0	0	0	0
		25:6. 0.9DL+1.(	-0.834	0.032	0	0	0	0
		26:2. 1.2DL+1.(	0.461	0.043	0	0	0	0
		27:2. 1.2DL+1.(	0.575	0.043	0	0	0	0
		28:6A. 1.2D+1.	-2.627	0.051	0.022	0	0	0
		29:6A. 1.2D+1.	-0.367	0.051	-0.026	0	0	0
		30:6B. 0.9D+1.	-3.143	0.025	0.022	0	0	0
		31:6B. 0.9D+1.	-0.883	0.025	-0.026	0	0	0
704	33	21:1. 1.4DL	-0.469	0.050	0	0	0	0
		22:2. 1.2DL+1.(	-0.832	0.043	0	0	0	0
		23:4. 1.2DL+1.(	0.465	0.043	0	0	0	0
		24:5. 1.2DL+1.(	-0.671	0.043	0	0	0	0
		25:6. 0.9DL+1.(	0.834	0.032	0	0	0	0
		26:2. 1.2DL+1.(	-0.435	0.043	0	0	0	0
		27:2. 1.2DL+1.(	-0.600	0.043	0	0	0	0
		28:6A. 1.2D+1.	2.709	0.051	-0.044	0	0	0
		29:6A. 1.2D+1.	0.421	0.051	-0.046	0	0	0
		30:6B. 0.9D+1.	3.225	0.025	-0.044	0	0	0
		31:6B. 0.9D+1.	0.937	0.025	-0.046	0	0	0
	5	21:1. 1.4DL	0.469	0.050	0	0	0	0
		22:2. 1.2DL+1.(	0.832	0.043	0	0	0	0
		23:4. 1.2DL+1.(	-0.465	0.043	0	0	0	0
		24:5. 1.2DL+1.(	0.671	0.043	0	0	0	0
		25:6. 0.9DL+1.(	-0.834	0.032	0	0	0	0
		26:2. 1.2DL+1.(	0.435	0.043	0	0	0	0
		27:2. 1.2DL+1.(	0.600	0.043	0	0	0	0
		28:6A. 1.2D+1.	-2.656	0.051	-0.044	0	0	0
		29:6A. 1.2D+1.	-0.466	0.051	-0.046	0	0	0
		30:6B. 0.9D+1.	-3.172	0.025	-0.044	0	0	0

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-0.982	0.025	-0.046	0	0	0
705	33	21:1. 1.4DL	-0.389	0.050	0	0	0	0
		22:2. 1.2DL+1.(	-0.706	0.043	0	0	0	0
		23:4. 1.2DL+1.(	-3.771	0.043	0	0	0	0
		24:5. 1.2DL+1.(	-0.566	0.043	0	0	0	0
		25:6. 0.9DL+1.(	-3.455	0.032	0	0	0	0
		26:2. 1.2DL+1.(	-0.351	0.043	0	0	0	0
		27:2. 1.2DL+1.(	-0.456	0.043	0	0	0	0
		28:6A. 1.2D+1.	-10.374	0.051	0.022	0	0	0
		29:6A. 1.2D+1.	-3.470	0.051	-0.026	0	0	0
		30:6B. 0.9D+1.	-9.936	0.025	0.022	0	0	0
		31:6B. 0.9D+1.	-3.032	0.025	-0.026	0	0	0
	7	21:1. 1.4DL	0.389	0.050	0	0	0	0
		22:2. 1.2DL+1.(	0.706	0.043	0	0	0	0
		23:4. 1.2DL+1.(	3.771	0.043	0	0	0	0
		24:5. 1.2DL+1.(	0.566	0.043	0	0	0	0
		25:6. 0.9DL+1.(	3.455	0.032	0	0	0	0
		26:2. 1.2DL+1.(	0.351	0.043	0	0	0	0
		27:2. 1.2DL+1.(	0.456	0.043	0	0	0	0
		28:6A. 1.2D+1.	10.467	0.051	0.022	0	0	0
		29:6A. 1.2D+1.	3.558	0.051	-0.026	0	0	0
		30:6B. 0.9D+1.	10.029	0.025	0.022	0	0	0
		31:6B. 0.9D+1.	3.120	0.025	-0.026	0	0	0
706	35	21:1. 1.4DL	-0.320	0.050	0	0	0	0
		22:2. 1.2DL+1.(	-0.533	0.043	0	0	0	0
		23:4. 1.2DL+1.(	4.781	0.043	0	0	0	0
		24:5. 1.2DL+1.(	-0.436	0.043	0	0	0	0
		25:6. 0.9DL+1.(	5.011	0.032	0	0	0	0
		26:2. 1.2DL+1.(	-0.284	0.043	0	0	0	0
		27:2. 1.2DL+1.(	-0.326	0.043	0	0	0	0
		28:6A. 1.2D+1.	15.973	0.051	-0.044	0	0	0
		29:6A. 1.2D+1.	4.511	0.051	-0.046	0	0	0
		30:6B. 0.9D+1.	16.303	0.025	-0.044	0	0	0
		31:6B. 0.9D+1.	4.842	0.025	-0.046	0	0	0
	7	21:1. 1.4DL	0.320	0.050	0	0	0	0
		22:2. 1.2DL+1.(	0.533	0.043	0	0	0	0
		23:4. 1.2DL+1.(	-4.781	0.043	0	0	0	0
		24:5. 1.2DL+1.(	0.436	0.043	0	0	0	0
		25:6. 0.9DL+1.(	-5.011	0.032	0	0	0	0
		26:2. 1.2DL+1.(	0.284	0.043	0	0	0	0
		27:2. 1.2DL+1.(	0.326	0.043	0	0	0	0
		28:6A. 1.2D+1.	-15.920	0.051	-0.044	0	0	0
		29:6A. 1.2D+1.	-4.556	0.051	-0.046	0	0	0
		30:6B. 0.9D+1.	-16.251	0.025	-0.044	0	0	0

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Beam End Forces Cont...

Beam	Node	L/C	Axial Fx (kip)	Shear Fy (kip)	Shear Fz (kip)	Torsion Mx (kip-ft)	Bending My (kip-ft)	Bending Mz (kip-ft)
		31:6B. 0.9D+1.	-4.887	0.025	-0.046	0	0	0
707	35	21:1. 1.4DL	-0.109	0.050	0	0	0	0
		22:2. 1.2DL+1.(	-0.194	0.043	0	0	0	0
		23:4. 1.2DL+1.(	-7.062	0.043	0	0	0	0
		24:5. 1.2DL+1.(	-0.157	0.043	0	0	0	0
		25:6. 0.9DL+1.(	-6.976	0.032	0	0	0	0
		26:2. 1.2DL+1.(	-0.095	0.043	0	0	0	0
		27:2. 1.2DL+1.(	-0.103	0.043	0	0	0	0
		28:6A. 1.2D+1.	-22.240	0.050	0.021	0	0	0
		29:6A. 1.2D+1.	-6.782	0.050	-0.027	0	0	0
		30:6B. 0.9D+1.	-22.119	0.024	0.021	0	0	0
		31:6B. 0.9D+1.	-6.661	0.024	-0.027	0	0	0
	9	21:1. 1.4DL	0.109	0.050	0	0	0	0
		22:2. 1.2DL+1.(	0.194	0.043	0	0	0	0
		23:4. 1.2DL+1.(	7.062	0.043	0	0	0	0
		24:5. 1.2DL+1.(	0.157	0.043	0	0	0	0
		25:6. 0.9DL+1.(	6.976	0.032	0	0	0	0
		26:2. 1.2DL+1.(	0.095	0.043	0	0	0	0
		27:2. 1.2DL+1.(	0.103	0.043	0	0	0	0
		28:6A. 1.2D+1.	22.332	0.050	0.021	0	0	0
		29:6A. 1.2D+1.	6.868	0.050	-0.027	0	0	0
		30:6B. 0.9D+1.	22.211	0.024	0.021	0	0	0
		31:6B. 0.9D+1.	6.747	0.024	-0.027	0	0	0

ZFA STRUCTURAL ENGINEERS

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Brookside ES Bridge
Structural Calculations

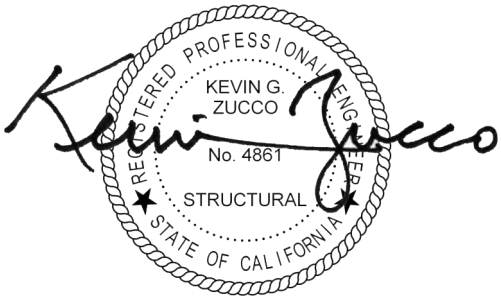
San Anselmo, California
ZFA Project Number: 24549

V1

August 18, 2025

Volume 1 = Bridge Superstructure Calculations
Volume 2 = Bridge Substructure Calculations

Prepared For:
AXIA
Santa Rosa, CA



08/18/2025

Prepared By:
Kristian Schoen, Designer
Nik Blanchette, SE, Senior Engineer
Kevin Zucco, SE, Principal-in-Charge
Santa Rosa, California

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STRUCTURAL NARRATIVE

This project consists of a steel-framed prefabricated pedestrian bridge. The bridge reactions were provided for abutment and anchorage design.

Seismic design is conservatively based on R = 1 & Ω0 = 1.

Conduit is mounted to south side of bridge; weight of conduit = 60 plf. Conduit is mounted to unistrut that is connected to vertical members of bridge - ok by observation.

Design Criteria

Wind

Results:

Wind Speed	99 Vmph
10-year MRI	64 Vmph
25-year MRI	70 Vmph
50-year MRI	74 Vmph
100-year MRI	79 Vmph
Data Source:	ASCE/SEI 7-16, Fig. 26.5-1C and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed:	Fri Jul 11 2025

Excerpt from ASCE Hazard tool

RECOMMENDATIONS

Seismic Design

Based on the results of the site specific seismic analysis described above, we developed the seismic design criteria presented in the table below.

Site Class	D
S_s (0.2 second period)	1.500
S_1 (1 second period)	0.600
S_{MS} (0.2 second period)	1.643
S_{M1} (1 second period)	1.467
S_{DS} (0.2 second period)	1.095
S_{D1} (1 second period)	0.978
Seismic Design Category	D

Excerpt from Geohazard report

DETAILED DESIGN CRITERIA

BUILDING CODE

Governing Code:	2022 California Building Code
Authority Having Jurisdiction:	DSA
Local Codes or Amendments:	2022 California Building Code Amendments

GEOTECHNICAL REPORT INFORMATION

Report Author:	RGH Consultants
Report Title:	Geotechnical/Geologic Hazard Study Report
Report Number:	2892.011.PW.1
Report Date:	12/11/2024
Soil Type:	Sandy Clay
Recommended Foundation System(s):	Shallow Foundations

Passive Soil Pressure =	375 pcf	
Active Soil Pressure =	39 pcf	
At-Rest Soil Pressure =	59 pcf	
Allowable Bearing Pressure, D+L =	3000 psf	
owable Bearing Pressure, D+L+(E or W) =	4000 psf	
Pier Skin Friction =	750 psf	
Coefficient of Friction =	0.35	

BUILDING SYSTEM DESCRIPTION

Building Use:	Education
Gravity System:	Steel Superstructure
Diaphragm System:	Concrete over Metal Deck
Foundation System:	Concrete Footings

GENERAL DESIGN CRITERIA

Latitude =	37.9907 deg		
Longitude =	122.5766 deg		
Building Risk Category:	III	Education	*Table 1.5-1*
Diaphragm =	Rigid Diaphragm	Concrete over Metal Deck	

SEISMIC DESIGN PARAMETERS

ASCE 7-16 Reference UNO:

Analysis Procedure Used:	Equivalent Lateral Force (ELF) Procedure §12.8		*Section 12.6*
I_E =	1.25	Importance Factor, Seismic	*Table 1.5-2*
I_P =	1.00	Importance Factor, Nonstructural Components	*13.1.3*
Soil Site Class =	D	Per Geotech Report, Site Class D otherwise	*Table 20.3-1*
S_S =	1.500 g	Mapped spectral response acceleration parameter	*USGS*
S_1 =	0.600 g	Mapped spectral response acceleration parameter	*USGS*
F_a =	1.0	Site coefficient	*Table 11.4-1*
F_v =	1.7	Site coefficient	*Table 11.4-2*
S_{DS} =	1.095 g	Design spectral response acceleration parameter	*11.4-3*
S_{D1} =	0.978 g	Design spectral response acceleration parameter	*11.4-4*
Seismic Design Category:	D		*Section 11.6*
Diaphragm=	Rigid Diaphragm	Concrete over Metal Deck	

DETAILED DESIGN CRITERIA

$R_{(N-S)}$ =	1.00	Response modification coefficient, N-S	*Table 12.2-1*
$R_{(E-W)}$ =	1.00	Response modification coefficient, E-W	*Table 12.2-1*

WIND DESIGN PARAMETERS

Wind Method Used:	Directional Procedure		*Chapter 27*
Basic Wind Speed =	99 MPH		*Figure 26.5-1A,B or C*
Exposure Category:	C	Open Terrain	*26.7.3*
K_{zt} =	1.00	Topographic Factor	*26.8*
K_d =	0.85 Buildings	Directionality Factor	*Table 26.6-1*
Elevation of Site =	94 ft	Above Sea Level	
K_e =	1.00	Elevation Factor	*Table 26.9-1*

MATERIAL STRENGTH AND SPECIFICATIONS

CONCRETE:

Foundations, f'_c =	3000 psi	
Structural Walls, f'_c =	4000 psi	
Fill Over Metal Deck, f'_c =	3000 psi	
Weight of Normalweight Concrete =	150 pcf	

CONCRETE REINFORCING:

Reinforcing Steel, f_y =	60 ksi	ASTM A615, Grade 60

Abutment Design

Bridge Seismic

Narrative: This calculation shows the determination of the total weight of the pedestrian bridge superstructure and concrete deck.

Bridge Seismic Mass 29200 lbs

R = 1 Per Table 15.4-2 from ASCE 7-22
Ie = 1.25

Cs = Sds/(R/I) = 1.369

V = 1.369 W = 39968 lbs ULT

Longitudinal Loading

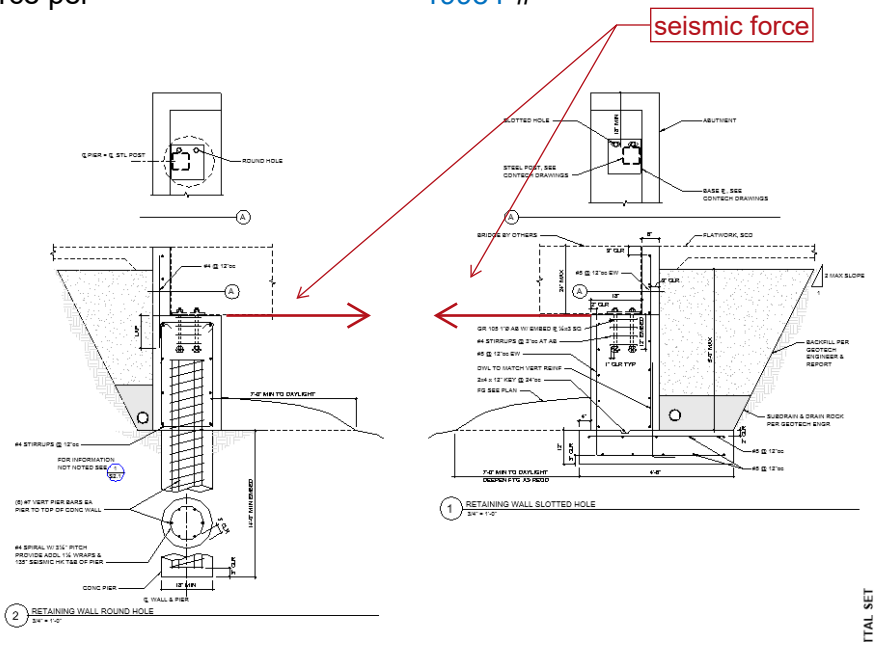
bridge is fixed to west side
# of supports 2
force per 19984 #

Transverse Loading

bridge is supported at both ends

# of base plates 4
force per 9992 #

only one pier each end is effective
# of piers 2
force per 19984 #



ITAL SET

Location: Bridge Abutment

ASD Load combination CBC 2022 Section 1605.2 and ASCE 7-16 Section 2.4.1
Vertical Loads (kips)

	transverse pier	transverse base plate	longitudinal pier
D	7.1	7.1	7.1
Vehicle L	2.6	2.6	2.6
L	7.0	7.0	7.0
W Uplift 1	-2.4	-2.4	-2.4
W Uplift 2	-0.8	-0.8	-0.8
W	3.1	3.1	
E	2.7	2.7	
D	7.1	7.1	9.7
D+L	16.7	16.7	16.7
D+.75L	14.3	14.3	14.9
D+.6W	8.9	8.9	9.2
D-.6W	5.6	5.6	8.2
D+.7E	9.0	9.0	9.7
D-.7E	5.1	5.1	9.7
D+.75(.6W)+.75L	15.7	15.7	14.6
D-.75(.6W)+.75L	13.2	13.2	13.8
D+.525E+0.75L	15.7	15.7	9.7
D-.525E+0.75L	6.1	6.1	9.7
.6D+.6W	6.1	6.1	5.3
.6D-.6W	2.8	2.8	4.4
.6D+.7E	6.1	6.1	5.8
.6D-.7E	2.3	2.3	5.8
Overall Max	**16.7**	**16.7**	**16.7**
Overall Min	**2.3**	**2.3**	**4.4**

t/c couple

LRFD Load combination CBC 2022 Section 1605 and ASCE 7-16 Section 2.3.1
Vertical Loads (kips)

	transverse pier	transverse base plate	longitudinal pier
D	7.1	7.1	7.1
Vehicle	2.6	2.6	2.6
L	7.0	7.0	7.0
W Uplift 1	-2.4	-2.4	-2.4
W Uplift 2	-0.8	-0.8	-0.8
W	3.1	3.1	0.0
E	2.7	2.7	0.0
1.4D	9.9	9.9	13.5
1.2D+1.6L	23.9	23.9	15.1
1.2D+1.0L	18.1	18.1	18.1
1.2D+0.5W	10.0	10.0	22.8
1.2D-0.5W	7.3	7.3	21.6

1.2D+1.0W+1.0L	21.2	21.2	15.1
1.2D-1.0W+1.0L	15.7	15.7	12.7
1.2D+E+L	20.8	20.8	11.6
1.2D-E+L	15.4	15.4	11.6
0.9D+1.0W	9.4	9.4	8.7
0.9D-1.0W	3.9	3.9	6.3
0.9D+E	9.1	9.1	8.7
0.9D-E	3.6	3.6	8.7
Overall Max	**23.9**	**23.9**	**22.8**
Overall Min	**3.6**	**3.6**	**6.3**

Horiz Loads (kips)

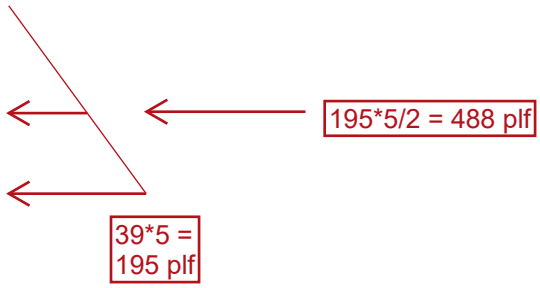
	transverse pier	transverse base plate	longitudinal pier
W	1.5	1.5	1.5
E	20.0	10.0	20.0
0.6W	0.9	0.9	0.9
0.7E	14.0	7.0	14.0

Narrative: This calculation is to determine the soil load caused by the retaining abutment that is transferred to the piers on one side of the prefabricated bridge.

Active Soil Pressure = 39 psf/ft

Height of Retaining Wall = h = 5 ft

F_{soil} = 488 lbs/ft



Longitudinal Loading:

Width of Abutment = 10.5 ft

Two piers resisitng longitudinal soil load

Longitudinal Loading = F_{soil}*(Width/2) = 2559 lbs

moment arm 1.67 ft

moment 4266 #-ft

consider additional overturning due to following pier spreadsheet applying load at 3 feet

moment arm 3 ft

moment 4266 #-ft

force 1422 #

Rigid Concrete Pier Design Calculation

2022 CBC

Required Pier Depth (Unconstrained surface condition)

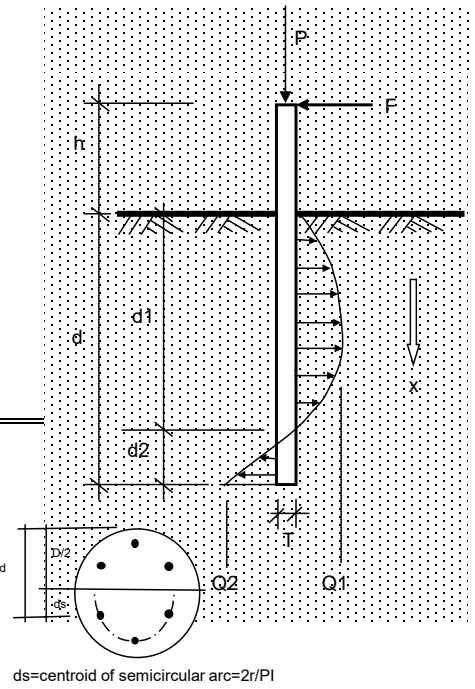
Input:					
	Seismic	Load Control			
h =	3	ft			
F_E =	13989	lbs (ASD)	**Req. d=**	**13.03**	**ft**
F_{soil} =	1422	lbs	d1=	9.21	ft
w =	375	lbs/ft^3	a=	0.7070	(a = d1/d)
D =	18	in	Vmax=	16392	lbs
Effective Width T =	2	D	X_{Vmax}=	-9.21	ft
P_{DL} =	7055	lbs	Mmax=	89735	lb-ft
P_{LL} =	7019	lbs	X_{Mmax}=	-4.6	ft
P_E =		lbs	*Vertical Direction required d*		
Soil Skin Friction =	750	psf	*d=*	*4.31*	*ft*

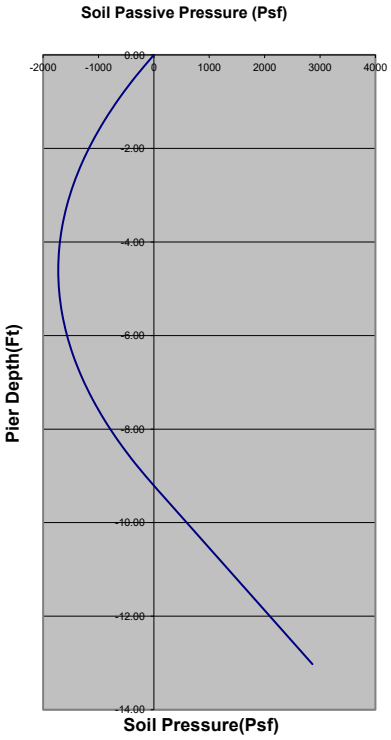
Required Pier Reinforcing

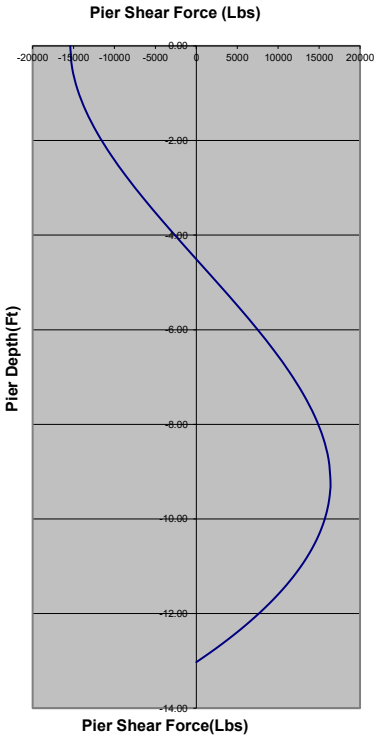
Input:					
F_y =	60	ksi	f'$_c$ =	3	ksi
Longitudinal Rebar Size #:	7		Tie Rebar Size #:	4	
Number of bars in TENSION:	5		Tie Rebar Spacing:	3	in
pmin =	0.005		pb =	0.0361	
Smin =	3	in	Smax =	18	in
Equivalent Square B =	15.95	in	d =	12.82	in
M_{As} =	143197	lb-ft	ϕ(Vc+Vs) =	93720	lbs
p =	0.024				

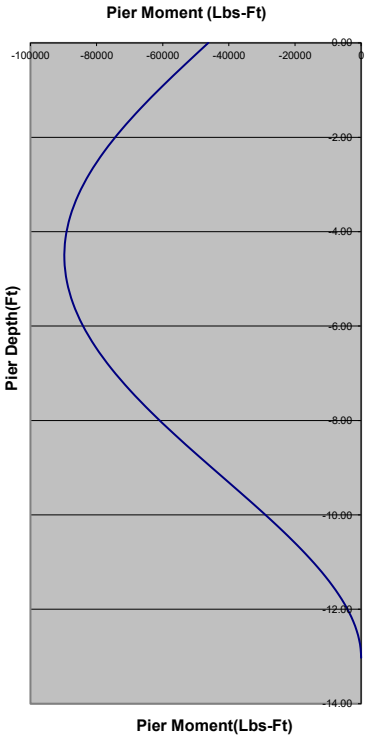
Stress Check:

Tie Reinforcing Strength Ratio: **0.25**









max moment	0.0	k-ft
min moment	-89.7	k-ft
pier compression	5.793	k

Rigid Concrete Pier Design Calculation

2022 CBC

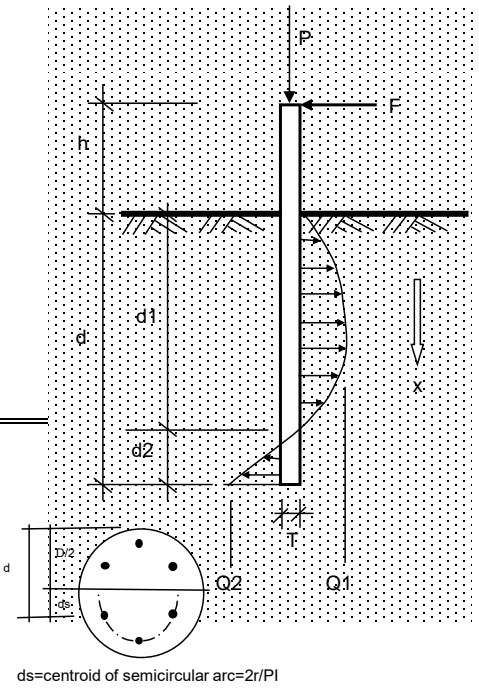
Required Pier Depth (Unconstrained surface condition)

Input:		Seismic	Load Control			
h =		3	ft			
F_E =		13989	lbs (ASD)	**Req. d=**	**12.48**	**ft**
F_{soil} =		0	lbs	d1=	8.81	ft
w =		375	lbs/ft^3	a=	0.7061	(a = d1/d)
D =		18	in	Vmax=	15124	lbs
Effective Width T =		2	D	X_{Vmax}=	-8.81	ft
P_{DL} =		7055	lbs	Mmax=	79542	lb-ft
P_{LL} =		7019	lbs	X_{Mmax}=	-4.41	ft
P_E =		1914.5	lbs	*Vertical Direction required d*		
Soil Skin Friction =		1000	psf	*d=*	*3.60*	*ft*

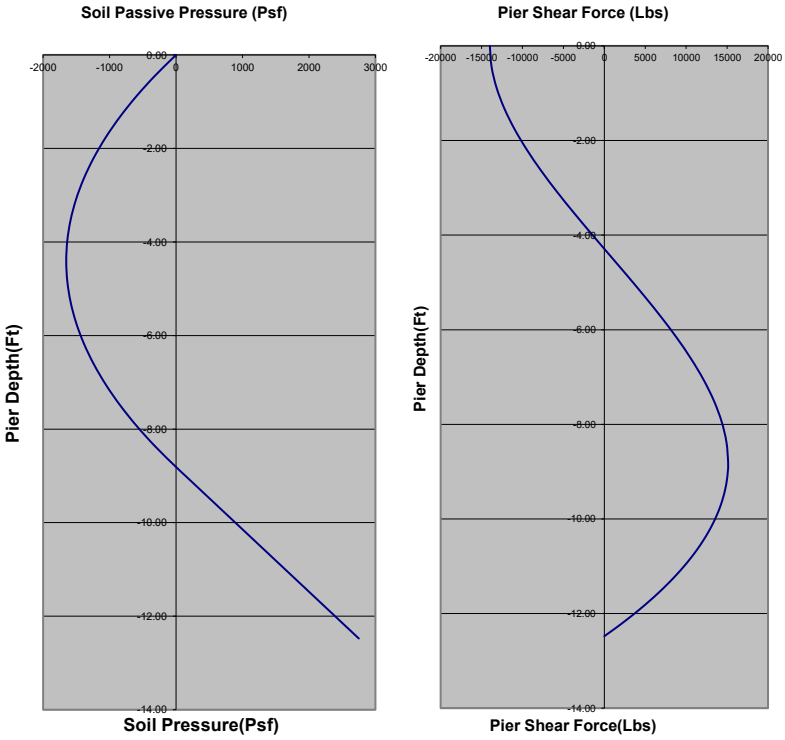
Required Pier Reinforcing

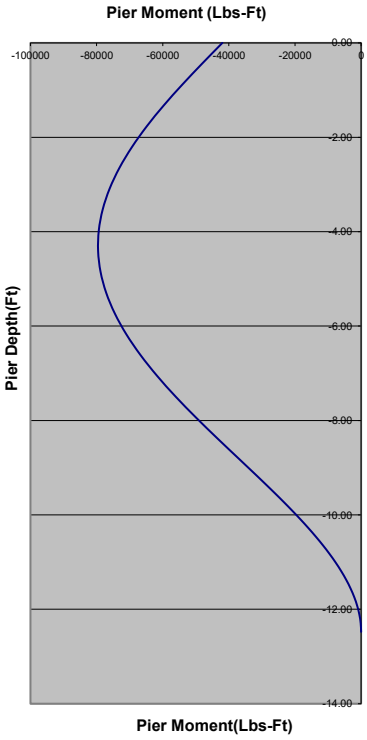
Input:	F_y =	60	ksi	f'_c =	3	ksi
Longitudinal Rebar Size #:		6	Tie Rebar Size #:		4	
Number of bars in TENSION:		5	Tie Rebar Spacing:		3	in
pmin =		0.005		pb =	0.0361	
Smin =		3	in	Smax =	18	in
Equivalent Square B =		15.95	in	d =	12.82	in
M_{As} =		110852	lb-ft	ϕ(Vc+Vs) =	93720	lbs
p =		0.018				

Tie Reinforcing Strength Ratio: **0.23**



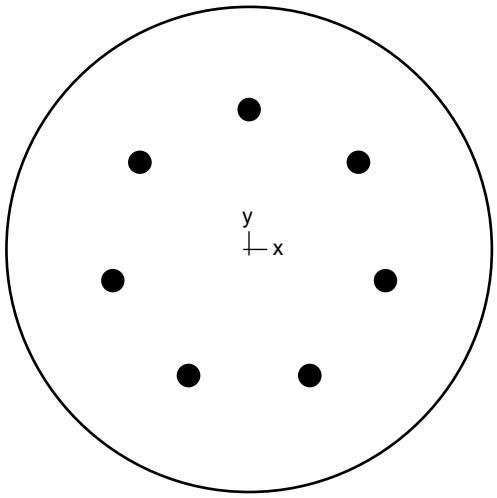
ds=centroid of semicircular arc=2r/Pl





max moment	0.0	k-ft
min moment	-79.5	k-ft
pier tension	2.3	k

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List of Figures

Figure 1: Column section 4

1. General Information

File Name	\\zfa.com\SR\Projects\2024\...\pier strength.colx
Project	---
Column	---
Engineer	---
Code	ACI 318-19
Bar Set	ASTM A615
Units	English
Run Option	Investigation
Run Axis	X - axis
Slenderness	Not Considered
Column Type	Structural
Capacity Method	Critical capacity

2. Material Properties

2.1. Concrete

Type	Standard	
f'_c	3	ksi
E_c	3122.02	ksi
f_c	2.55	ksi
ε_u	0.003	in/in
β_1	0.85	

2.2. Steel

Type	Standard	
f_y	60	ksi
E_s	29000	ksi
ε_{ty}	0.00206897	in/in

3. Section

3.1. Shape and Properties

Type	Circular	
Diameter	18	in
A_g	254.469	in^2
I_x	5153	in^4
I_y	5153	in^4
r_x	4.5	in
r_y	4.5	in
X_o	0	in
Y_o	0	in

3.2. Section Figure

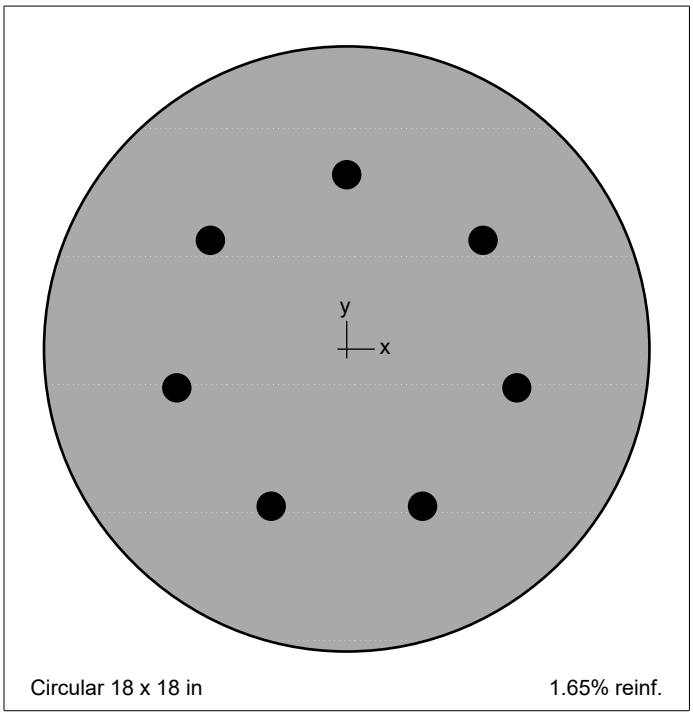


Figure 1: Column section

4. Reinforcement

4.1. Bar Set: ASTM A615

Bar	Diameter in	Area in²	Bar	Diameter in	Area in²	Bar	Diameter in	Area in²
#3	0.38	0.11	#4	0.50	0.20	#5	0.63	0.31
#6	0.75	0.44	#7	0.88	0.60	#8	1.00	0.79
#9	1.13	1.00	#10	1.27	1.27	#11	1.41	1.56
#14	1.69	2.25	#18	2.26	4.00			

4.2. Confinement and Factors

Confinement type	Tied
For #10 bars or less	#3 ties
For larger bars	#4 ties
Capacity Reduction Factors	
Axial compression, (a)	0.8
Tension controlled ϕ, (b)	0.9
Compression controlled ϕ, (c)	0.65

4.3. Arrangement

Pattern	All sides equal
Bar layout	Circular
Cover to	Transverse bars
Clear cover	3 in
Bars	7 #7

Total steel area, A_s	4.20 in^2
Rho	1.65 %
Minimum clear spacing	3.63 in

5. Control Points

About	Point	P	X-Moment	Y-Moment	NA Depth	d_t Depth	ε_t	ϕ
		kip	k-ft	k-ft	in	in		
X	@ Max compression	578.6	0.00	0.00	45.72	14.19	-0.00207	0.65000
X	@ Allowable comp.	462.9	48.43	0.00	16.96	14.19	-0.00049	0.65000
X	@ f_s = 0.0	382.9	73.50	0.00	14.19	14.19	0.00000	0.65000
X	@ f_s = 0.5 f_y	240.8	91.40	0.00	10.55	14.19	0.00103	0.65000
X	@ Balanced point	136.7	93.80	0.00	8.40	14.19	0.00207	0.65000
X	@ Pure bending	0.0	94.03	0.00	5.49	14.19	0.00475	0.87332
X	@ Tension control	-15.3	92.73	0.00	5.27	14.19	0.00507	0.90000
X	@ Max tension	-226.8	0.00	0.00	0.00	14.19	9.99999	0.90000
-X	@ Max compression	578.6	0.00	0.00	44.06	13.67	-0.00207	0.65000
-X	@ Allowable comp.	462.9	-48.94	0.00	16.93	13.67	-0.00058	0.65000
-X	@ f_s = 0.0	363.2	-77.00	0.00	13.67	13.67	0.00000	0.65000
-X	@ f_s = 0.5 f_y	224.5	-92.20	0.00	10.17	13.67	0.00103	0.65000
-X	@ Balanced point	118.6	-93.56	0.00	8.09	13.67	0.00207	0.65000
-X	@ Pure bending	0.0	-93.06	0.00	5.51	13.67	0.00444	0.84783
-X	@ Tension control	-24.0	-90.50	0.00	5.08	13.67	0.00507	0.90000
-X	@ Max tension	-226.8	0.00	0.00	0.00	13.67	9.99999	0.90000

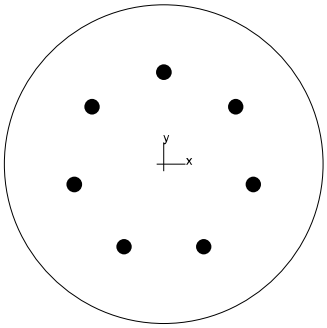
6. Factored Loads and Moments with Corresponding Capacity Ratios

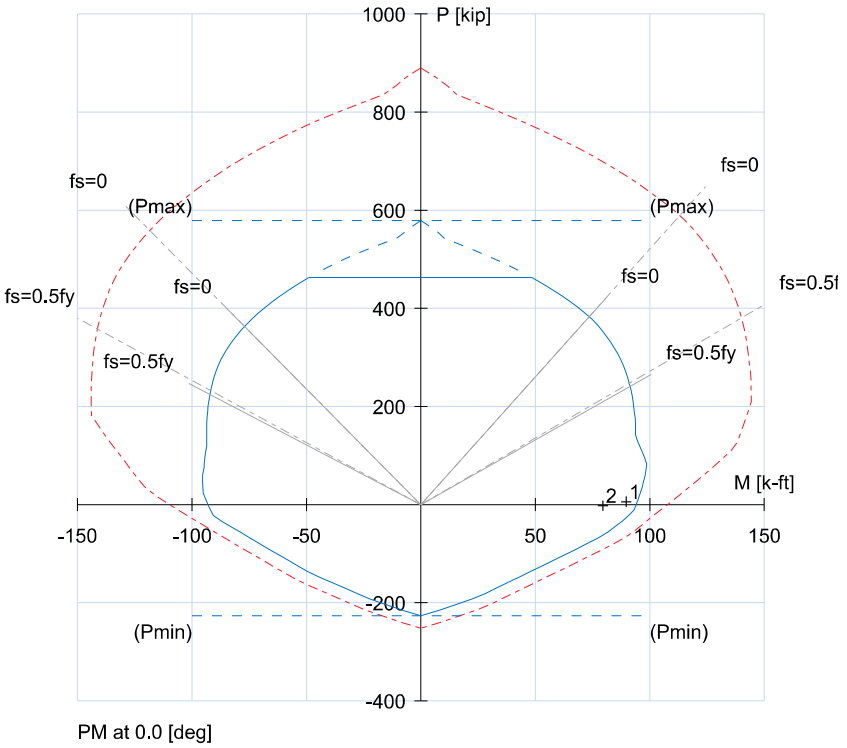
NOTE: Calculations are based on "Critical Capacity" Method.

No.	Demand		Capacity		Parameters at Capacity			Capacity
	P_u	M_{ux}	ϕP_n	ϕM_{nx}	NA Depth	ε_t	ϕ	Ratio
	kip	k-ft	kip	k-ft	in			
1	5.80	89.70	0.00	94.03	5.49	0.00475	0.873	0.95
2	-2.30	79.50	-16.23	92.04	5.26	0.00509	0.900	0.86

7. Diagrams

7.1. PM at θ=0 [deg]





PM at 0.0 [deg]

General Information	
Project	---
Column	---
Engineer	---
Code	ACI 318-19
Bar Set	ASTM A615
Units	English
Run Option	Investigation
Run Axis	X - axis
Slenderness	Not Considered
Column Type	Structural
Capacity Method	Critical capacity

Materials	
f'_c	3 ksi
E_c	3122.02 ksi
f_y	60 ksi
E_s	29000 ksi

Section	
Type	Circular
Diameter	18 in
A_g	254.469 in²
I_x	5153 in⁴
I_y	5153 in⁴

Reinforcement	
Pattern	All sides equal
Bar layout	Circular
Cover to	Transverse bars
Clear cover	3 in
Bars	7 #7
Confinement type	Tied
Total steel area, A_s	4.20 in²
Rho	1.65 %
Min. clear spacing	3.63 in

No.	P_u kip	M_{ux} k-ft	ϕP_n kip	ϕM_{nx} k-ft	Capacity Ratio
1	5.8	89.7	0.00	94.03	0.95
2	-2.3	79.5	-16.23	92.04	0.86

Max. Capacity Ratio: 0.95

less than 1, ok

2022 CBC 1810 & 1810A - Uncased Drilled Pier
Minimum Reinforcement Requirements (S.D.C. C-F)

Seismic Design Category: D
Site Class: D

f'_c =	3000	psi	OK	[Conc. compressive stress]
f_{yl} =	60	ksi		[Long. reinf. yield stress]
f_{yt} =	60	ksi		[Transv. reinf. yield stress]
P_u =	19.774	k	OK	[Ultimate axial demand]
d_{pier} =	18	in	OK	[CBC 1810.3.5.2.2]
Clear cover =	3	in		[3.0 to 4.0 inches]
L_{pier} =	13.03	ft		[CBC 1810.3.5.2.2]
L_{pier}/d_{pier} =	8.68		OK	[CBC 1810.3.5.2.2]
Longitudinal bar size:	#6			[CBC 1810.3.9.4.1 & .2]
# of long. Bars:	6		OK	[CBC 1810.3.9.4.2]
Transverse bar size:	#4		OK	
k_f =	1.00			[ACI 318-19 18.7.5.4a: Conc. Strength Factor]

Longitudinal Reinforcing

rho,l min reqd = 0.0050 [CBC 1810.3.9.4.1 & .2]

rho,l = 0.0104 OK

Transverse Reinforcing: Confinement Zone

Max closed hoop spacing =	**2.3 in**	[governs from below requirement(s)]
Max spiral spacing =	**3.5 in**	[governs from below requirement(s)]
	N/A	
	N/A	
4.5 in		[CBC 1810.3.9.4.2.1 & .2 -> ACI 318-19 18.7.5.3(a): dpier / 4]
4.5 in		[CBC 1810.3.9.4.2.1 & .2 -> ACI 318-19 18.7.5.3(b): 6 x db,long]
4.0 in		[CBC 1810.3.9.4.2.1 & .2 -> ACI 319-19 18.7.5.3(d): So]
4.5 in		[CBC 1810.3.9.4.2.1 & .2 -> ACI 318-19 Table 18.7.5.4 greater of (d) & (e) - spiral
2.3 in		[CBC 1810.3.9.4.2.1 & .2 -> ACI 318-19 Table 18.7.5.4 greater of (d) & (e) - hoop
20.9 in		[CBC 1810.3.9.4.2.1 & .2 -> ACI 318-19 18.7.5.4(e) / 2]
	N/A	
3.50 in		[ACI 318-19 25.7.3.1(b): max 3in clear spacing for spirals]

Min Allow. Spacing = 1.50 in [ACI 318-19 25.7.3.1(a): min 1in, min 4/3 x aggregate size]

Confinement Zone: Within three (3) pier diameters from the bottom of the pile cap

Transverse Reinforcing: Non-Confinement Zone(s)

Max spacing =	**9.0 in**	[governs from below requirement(s)]
9.0 in		[CBC 1810.3.9.4.2: 12 x db,long]
9.0 in		[CBC 1810.3.9.4.2: dpier / 2]
12.0 in		[CBC 1810.3.9.4.2: 12in min]

Anchorage

Narrative: bridge is designed for R = 1, so no overstrength factor is necessary

Transverse Loading

shear	10.0	k
tension	2.3	k

Longitudinal Loading

shear	20	k
tension	0	k

See hilti anchorage, (2) 1"ø GR 105 AB ok with 12" embed

Narrative: This calculation is to determine the required shear reinforcement for the bridge anchorage to the abutment.

Factored Shear Force = Vu = 20 kips
Nominal Shear Strength provided by Shear Reinforcement = Vs
Φ = 0.75

Use #4 stirrups with 2 legs
qty stirrups 4

Av = Area of reinforcement of all legs in spacing = 2*(Area of #4) = 1.6 in2
fyt = specified yield strength of transverse reinforcement = 60 ksi

φVn = 72 k
d/c **0.28**

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Anchor Designer™ for Concrete Software
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Address:			
Phone:			
E-mail:			

1.Project information

Project description:
Location:
Design name: Transverse Seismic

Comment:

transverse seismic loading

2. Input Data & Anchor Parameters

General
Design method:ACI 318-19
Units: Imperial units

Anchor Information:
Anchor type: Cast-in-place
Material: F1554 Grade 105
Diameter (inch): 1.000
Effective Embedment depth, h_{ef} (inch): 12.000
Anchor category: -
Anchor ductility: Yes
h_{min} (inch): 13.75
C_{min} (inch): 1.44
S_{min} (inch): 4.00

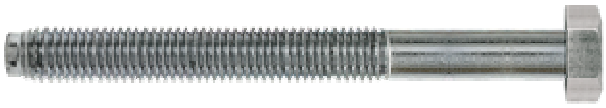
Base Material
Concrete: Normal-weight
Concrete thickness, h (inch): 36.00
State: Cracked
Compressive strength, f'_c (psi): 4000
$\Psi_{c,V}$: 1.0
Reinforcement condition: B tension, B shear
Supplemental edge reinforcement: Not applicable
Reinforcement provided at corners: No
Ignore concrete breakout in tension: No
Ignore concrete breakout in shear: Yes
Ignore 6do requirement: Yes
Build-up grout pad: Yes

Provide Shear Reinforcement

Base Plate
Length x Width x Thickness (inch): 11.50 x 12.00 x 0.75
Yield stress: 36000 psi

Profile type/size: 6X6X1/8

Recommended Anchor
Anchor Name: Heavy Hex Bolt - 1"Ø Heavy Hex Bolt, F1554 Gr. 105



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Anchor Designer™ for Concrete Software
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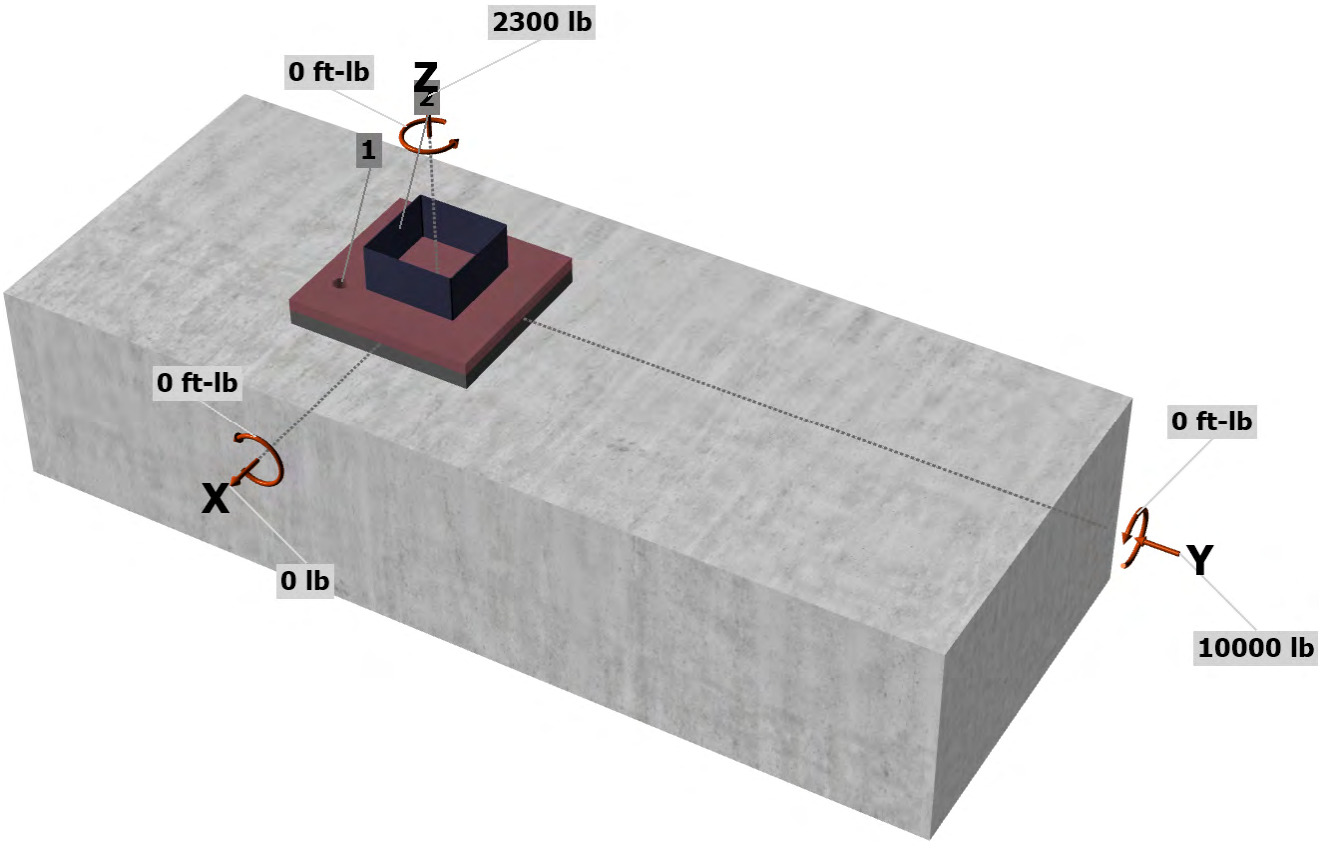
Company:		Date:	8/13/2025
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Address:			
Phone:			
E-mail:			

Load and Geometry
Load factor source: ACI 318 Section 5.3
Load combination: not set
Seismic design: Yes
Anchors subjected to sustained tension: Not applicable
Ductility section for tension: 17.10.5.2 not applicable
Ductility section for shear: 17.10.6.2 not applicable
Ω_0 factor: not set
Apply entire shear load at front row: No
Anchors only resisting wind and/or seismic loads: No

Strength level loads:

N_{ua} [lb]:	2300
V_{uax} [lb]:	0
V_{uay} [lb]:	-10000
M_{ux} [ft-lb]:	0
M_{uy} [ft-lb]:	0
M_{uz} [ft-lb]:	0

<Figure 1>

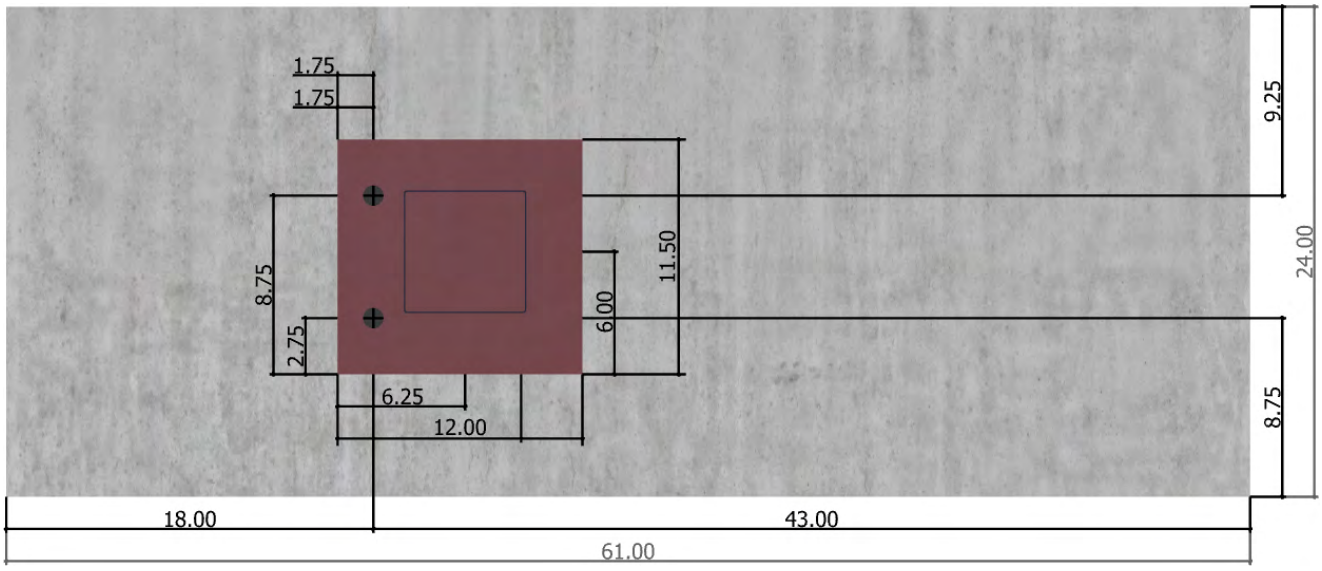


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<Figure 2>

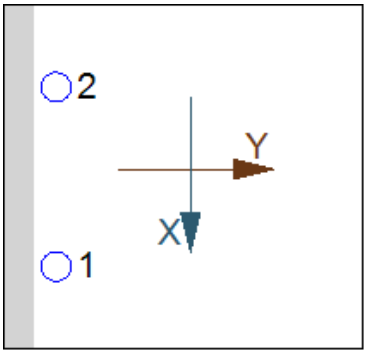


3. Resulting Anchor Forces

Anchor	Tension load, N_{ua} (lb)	Shear load x, V_{uax} (lb)	Shear load y, V_{uay} (lb)	Shear load combined, $\sqrt{(V_{uax})^2+(V_{uay})^2}$ (lb)
1	4756.6	0.0	-4583.3	4583.3
2	4835.6	0.0	-5416.7	5416.7
Sum	9592.2	0.0	-10000.0	10000.0

Maximum concrete compression strain (‰): 0.30
Maximum concrete compression stress (psi): 1297
Resultant tension force (lb): 9592
Resultant compression force (lb): 7292
Eccentricity of resultant tension forces in x-axis, e'_{Nx} (inch): 0.00
Eccentricity of resultant tension forces in y-axis, e'_{Ny} (inch): 0.02
Eccentricity of resultant shear forces in x-axis, e'_{Vx} (inch): 0.00
Eccentricity of resultant shear forces in y-axis, e'_{Vy} (inch): 0.25

<Figure 3>



SIMPSON Strong-Tie Anchor Designer™ for Concrete Software
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E-mail:			

4. Steel Strength of Anchor in Tension (Sec. 17.6.1)

N_{sa} (lb)	ϕ	ϕN_{sa} (lb)
75750	0.75	56813

5. Concrete Breakout Strength of Anchor in Tension (Sec. 17.6.2)

$N_b = 16\lambda_a\sqrt{f'_c}h_{ef}^{5/3}$ (Eq. 17.6.2.2.1)

λ_a	f'_c (psi)	h_{ef} (in)	N_b (lb)
1.00	4000	12.000	63648

$0.75\phi N_{cbg} = 0.75\phi\,(A_{Nc}/A_{Nco})\,\Psi_{ec,N}\Psi_{ed,N}\Psi_{c,N}\Psi_{cp,N}N_b$ (Sec. 17.5.1.2 & Eq. 17.6.2.1a)

A_{Nc} (in^2)	A_{Nco} (in^2)	$c_{a,min}$ (in)	$\Psi_{ec,N}$	$\Psi_{ed,N}$	$\Psi_{c,N}$	$\Psi_{cp,N}$	N_b (lb)	ϕ	$0.75\phi N_{cbg}$ (lb)
864.00	1296.00	8.75	0.999	0.846	1.00	1.000	63648	0.70	18817

6. Pullout Strength of Anchor in Tension (Sec. 17.6.3)

$0.75\phi N_{pn} = 0.75\phi\Psi_{c,P}N_p = 0.75\phi\Psi_{c,P}8A_{brg}f'_c$ (Sec. 17.5.1.2, Eq. 17.6.3.1 & 17.6.3.2.2a)

$\Psi_{c,P}$	A_{brg} (in^2)	f'_c (psi)	ϕ	$0.75\phi N_{pn}$ (lb)
1.0	1.50	4000	0.70	25217

7. Steel Strength of Anchor in Shear (Sec. 17.7.1)

V_{sa} (lb)	ϕ_{grout}	ϕ	$\phi_{grout}\phi V_{sa}$ (lb)
45450	0.8	0.65	23634

8. Concrete Pryout Strength of Anchor in Shear (Sec. 17.7.3)

$\phi V_{cpg} = \phi k_{cp}N_{cbg} = \phi k_{cp}(A_{Nc}/A_{Nco})\,\Psi_{ec,N}\Psi_{ed,N}\Psi_{c,N}\Psi_{cp,N}N_b$ (Sec. 17.5.1.2 & Eq. 17.7.3.1b)

k_{cp}	A_{Nc} (in^2)	A_{Nco} (in^2)	$\Psi_{ec,N}$	$\Psi_{ed,N}$	$\Psi_{c,N}$	$\Psi_{cp,N}$	N_b (lb)	ϕ	ϕV_{cpg} (lb)
2.0	864.00	1296.00	0.986	0.846	1.000	1.000	63648	0.70	49558

9. Results

Interaction of Tensile and Shear Forces (Sec. R17.8)

Tension	Factored Load, N_{ua} (lb)	Design Strength, øN_n (lb)	Ratio	Status
Steel	4836	56813	0.09	Pass
Concrete breakout	**9592**	**18817**	**0.51**	**Pass (Governs)**
Pullout	4836	25217	0.19	Pass

Shear	Factored Load, V_{ua} (lb)	Design Strength, øV_n (lb)	Ratio	Status
Steel	**5417**	**23634**	**0.23**	**Pass (Governs)**
Pryout	10000	49558	0.20	Pass

Interaction check	$(N_{ua}/\phi N_{ua})^{5/3}$	$(V_{ua}/\phi V_{ua})^{5/3}$	Utilization Ratio	Permissible	Status
Sec. R17.8	0.33	0.09	41.1%	1.0	Pass

1"Ø Heavy Hex Bolt, F1554 Gr. 105 with hef = 12.000 inch meets the selected design criteria.

10. Warnings

- Minimum spacing and edge distance requirement of 6da per ACI 318 Table 17.9.2(a) for torqued cast-in-place anchor is waived per designer option.\n
- Concrete breakout strength in shear has not been evaluated against applied shear load(s) per designer option. Refer to ACI 318 Section 17.5.2.1 for conditions where calculations of the concrete breakout strength may not be required.

- Per designer input, the tensile component of the strength-level earthquake force applied to anchors does not exceed 20 percent of the total factored anchor tensile force associated with the same load combination. Therefore the ductility requirements of ACI 318 17.10.5.2 for tension need not be satisfied – designer to verify.

- Per designer input, the shear component of the strength-level earthquake force applied to anchors does not exceed 20 percent of the total factored anchor shear force associated with the same load combination. Therefore the ductility requirements of ACI 318 17.10.6.2 for shear need not be satisfied – designer to verify.

- Designer must exercise own judgement to determine if this design is suitable.

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1.Project information

Project description:
Location:
Design name: Longitudinal Seismic

Comment:

longitudinal seismic loading

2. Input Data & Anchor Parameters

General
Design method:ACI 318-19
Units: Imperial units

Anchor Information:
Anchor type: Cast-in-place
Material: F1554 Grade 105
Diameter (inch): 1.000
Effective Embedment depth, h_{ef} (inch): 12.000
Anchor category: -
Anchor ductility: Yes
h_{min} (inch): 13.75
C_{min} (inch): 1.44
S_{min} (inch): 4.00

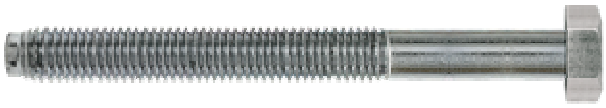
Base Material
Concrete: Normal-weight
Concrete thickness, h (inch): 36.00
State: Cracked
Compressive strength, f'_c (psi): 4000
$\Psi_{c,V}$: 1.0
Reinforcement condition: B tension, B shear
Supplemental edge reinforcement: Not applicable
Reinforcement provided at corners: No
Ignore concrete breakout in tension: No
Ignore concrete breakout in shear: Yes
Ignore 6do requirement: Yes
Build-up grout pad: Yes

Provide Shear Reinforcement

Base Plate
Length x Width x Thickness (inch): 11.50 x 12.00 x 0.75
Yield stress: 36000 psi

Profile type/size: 6X6X1/8

Recommended Anchor
Anchor Name: Heavy Hex Bolt - 1"Ø Heavy Hex Bolt, F1554 Gr. 105



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Anchor Designer™ for Concrete Software
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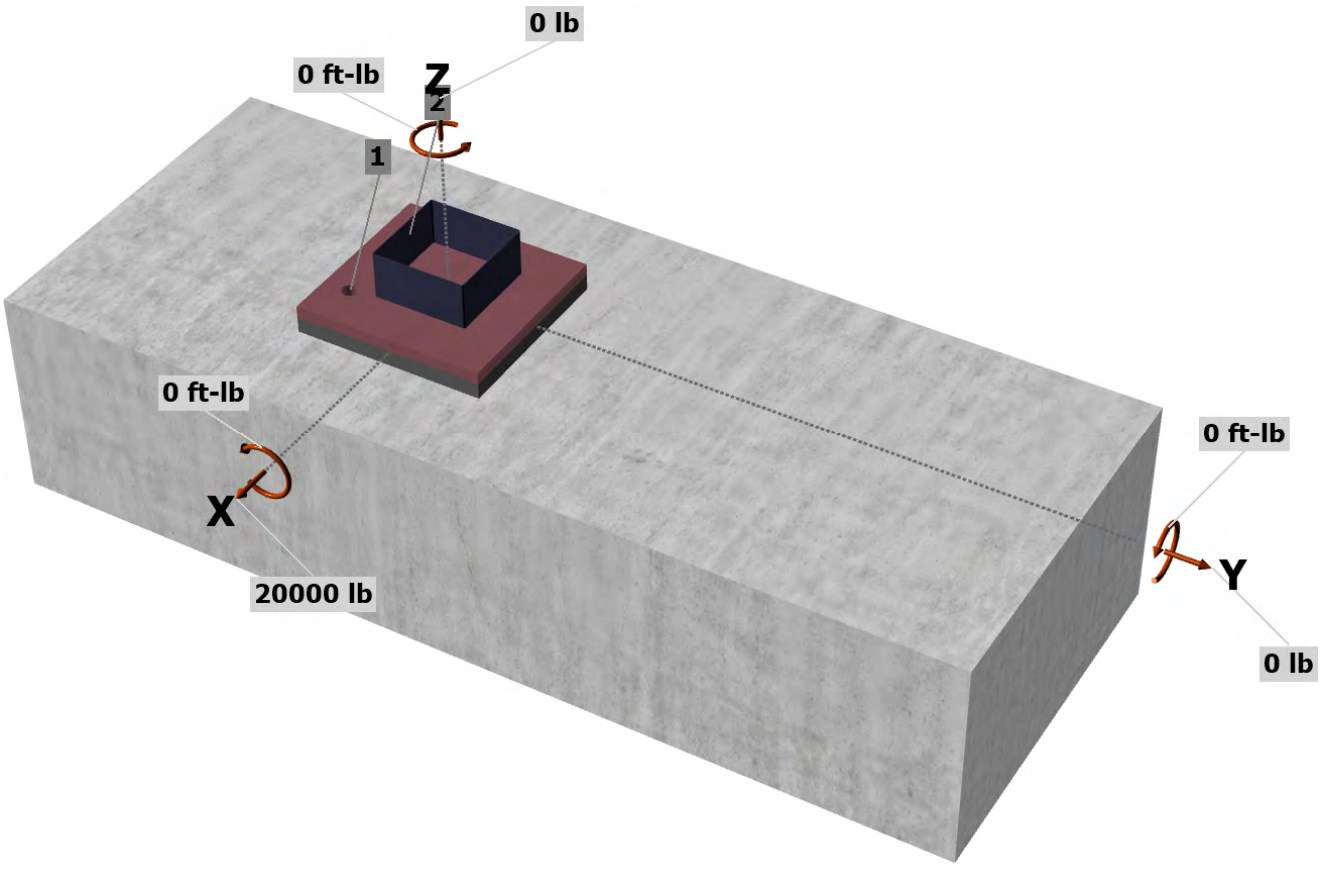
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Address:			
Phone:			
E-mail:			

Load and Geometry
Load factor source: ACI 318 Section 5.3
Load combination: not set
Seismic design: Yes
Anchors subjected to sustained tension: Not applicable
Ductility section for tension: 17.10.5.2 not applicable
Ductility section for shear: 17.10.6.2 not applicable
Ω_0 factor: not set
Apply entire shear load at front row: No
Anchors only resisting wind and/or seismic loads: No

Strength level loads:

N_{ua} [lb]:	0
V_{uax} [lb]:	20000
V_{uay} [lb]:	0
M_{ux} [ft-lb]:	0
M_{uy} [ft-lb]:	0
M_{uz} [ft-lb]:	0

<Figure 1>

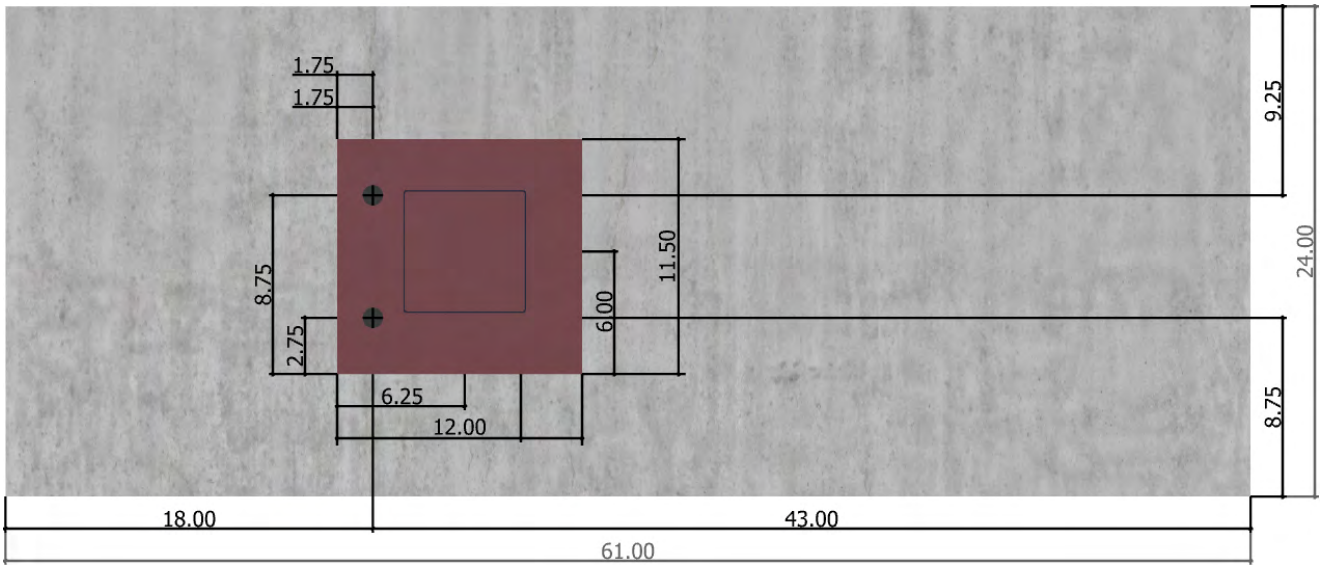


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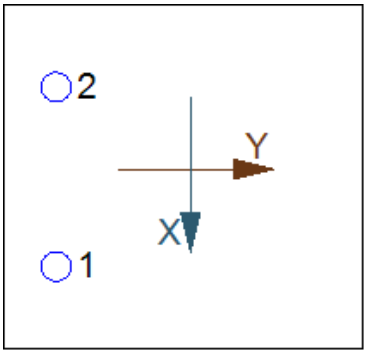


3. Resulting Anchor Forces

Anchor	Tension load, N_{ua} (lb)	Shear load x, V_{uax} (lb)	Shear load y, V_{uay} (lb)	Shear load combined, $\sqrt{(V_{uax})^2+(V_{uay})^2}$ (lb)
1	0.0	10000.0	-15000.0	18027.8
2	0.0	10000.0	15000.0	18027.8
Sum	0.0	20000.0	0.0	36055.5

Maximum concrete compression strain (‰): 0.00
Maximum concrete compression stress (psi): 0
Resultant tension force (lb): 0
Resultant compression force (lb): 0
Eccentricity of resultant tension forces in x-axis, e'_{Nx} (inch): 0.00
Eccentricity of resultant tension forces in y-axis, e'_{Ny} (inch): 0.00
Eccentricity of resultant shear forces in x-axis, e'_{Vx} (inch): 0.00
Eccentricity of resultant shear forces in y-axis, e'_{Vy} (inch): 0.00

<Figure 3>



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Anchor Designer™ for Concrete Software
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4. Steel Strength of Anchor in Shear (Sec. 17.7.1)

V_{sa} (lb)	ϕ_{grout}	ϕ	$\phi_{grout}\phi V_{sa}$ (lb)
45450	0.8	0.65	23634

5. Concrete Pryout Strength of Anchor in Shear (Sec. 17.7.3)

$\phi V_{cp} = \phi k_{cp} N_{cb} = \phi k_{cp}(A_{Nc} / A_{Nco}) \Psi_{ed,N} \Psi_{c,N} \Psi_{cp,N} N_b$ (Sec. 17.5.1.2 & Eq. 17.7.3.1a)

k_{cp}	A_{Nc} (in^2)	A_{Nco} (in^2)	$\Psi_{ed,N}$	$\Psi_{c,N}$	$\Psi_{cp,N}$	N_b (lb)	ϕ	ϕV_{cp} (lb)
2.0	423.00	1296.00	0.846	1.000	1.000	63648	0.70	24600

6. Results

Interaction of Tensile and Shear Forces (Sec. 17.8)

Shear	Factored Load, V_{ua} (lb)	Design Strength, øV_n (lb)	Ratio	Status
Steel	**18028**	**23634**	**0.76**	**Pass (Governs)**
Pryout	18028	24600	0.73	Pass

1"Ø Heavy Hex Bolt, F1554 Gr. 105 with hef = 12.000 inch meets the selected design criteria.

7. Warnings

- Minimum spacing and edge distance requirement of 6da per ACI 318 Table 17.9.2(a) for torqued cast-in-place anchor is waived per designer option.\n
- Concrete breakout strength in shear has not been evaluated against applied shear load(s) per designer option. Refer to ACI 318 Section 17.5.2.1 for conditions where calculations of the concrete breakout strength may not be required.

- Per designer input, the tensile component of the strength-level earthquake force applied to anchors does not exceed 20 percent of the total factored anchor tensile force associated with the same load combination. Therefore the ductility requirements of ACI 318 17.10.5.2 for tension need not be satisfied – designer to verify.

- Per designer input, the shear component of the strength-level earthquake force applied to anchors does not exceed 20 percent of the total factored anchor shear force associated with the same load combination. Therefore the ductility requirements of ACI 318 17.10.6.2 for shear need not be satisfied – designer to verify.

- Designer must exercise own judgement to determine if this design is suitable.

Narrative: This calcualtion is to determine loading for a 1ft design section of the abutment for use in the Enercalc calculations.

Axial Load:

Dead Load per Baseplate =	7055	lbs
Live Load per Baseplate =	7019	lbs

Dead Load to Abutment = 2 * Baseplate Load =	14110	lbs
Live Load to Abutment = 2 * Baseplate Load =	14038	lbs

Width of Shallow Footing = 10.4 ft = B (6'-5" between peirs + 24" each end)

plf Dead = Dead Load/Footing Width =	1355	plf
plf Live = Live Load/Footing Width =	1348	plf

Cantilevered Retaining Wall

Project File: Brookside ES Bridge.ec6

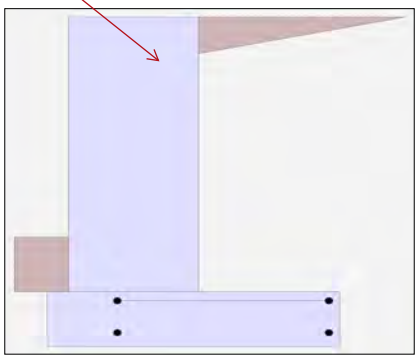
LIC# : KW-06015331, Build:20.25.06.16 ZFA STRUCTURAL ENGINEERS (c) ENERCALC, LLC 1982-2025

DESCRIPTION: Bridge Retaining Wall

Code Reference

Calculations per IBC 2021, ACI 318-19, TMS 402-16

6" stem is ok by observation



Criteria

Retained Height	=	5.00 ft
Wall height above soil	=	0.00 ft
Slope Behind Wall	=	0.00
Height of Soil over Toe	=	12.00 in
Water table above bottom of footing	=	0.0 ft

Soil Data

Allow Soil Bearing	=	3,000.0 psf
Equivalent Fluid Pressure Method		
Active Heel Pressure	=	39.0 psf/ft
	=	
Passive Pressure	=	350.0 psf/ft
Soil Density, Heel	=	110.00 pcf
Soil Density, Toe	=	110.00 pcf
Footing||Soil Friction	=	0.350
Soil height to ignore for passive pressure	=	12.00 in

Surcharge Loads

Surcharge Over Heel	=	0.0 psf
Used To Resist Sliding & Overturning		
Surcharge Over Toe	=	0.0
Used for Sliding & Overturning		

Axial Load Applied to Stem

Axial Dead Load	=	1,355.0 lbs
Axial Live Load	=	1,348.0 lbs
Axial Load Eccentricity	=	2.5 in

Lateral Load Applied to Stem

Lateral Load	=	0.0 #/ft
...Height to Top	=	3.00 ft
...Height to Bottom	=	2.00 ft
Load Type	=	Seismic (E) (Service Level)
Wind on Exposed Stem (Strength Level)	=	0.0 psf

Adjacent Footing Load

Adjacent Footing Load	=	0.0 lbs
Footing Width	=	0.00 ft
Eccentricity	=	0.00 in
Wall to Ftg CL Dist	=	0.00 ft
Footing Type		Line Load
Base Above/Below Soil at Back of Wall	=	0.0 ft
Poisson's Ratio	=	0.300

Cantilevered Retaining Wall

Project File: Brookside ES Bridge.ec6

LIC# : KW-06015331, Build:20.25.06.16 ZFA STRUCTURAL ENGINEERS (c) ENERCALC, LLC 1982-2025

DESCRIPTION: Bridge Retaining Wall

Design Summary

Wall Stability Ratios

Overturning	=	6.82	OK
Sliding	=	3.08	OK
Global Stability	=	3.02	

Total Bearing Load	=	4,975	lbs
...resultant ecc.	=	6.63	in

Eccentricity within middle third

Soil Pressure @ Toe	=	2,329 psf	OK
Soil Pressure @ Heel	=	353 psf	OK
Allowable	=	3,000 psf	

Soil Pressure Less Than Allowable

ACI Factored @ Toe	=	3,260 psf	
ACI Factored @ Heel	=	494 psf	
Footing Shear @ Toe	=	1.3 psi	OK
Footing Shear @ Heel	=	6.2 psi	OK
Allowable	=	94.9 psi	

Sliding Calcs

Lateral Sliding Force	=	702.0 lbs

Vertical component of active lateral soil pressure IS NOT considered in the calculation of soil bearing pressures.

Load Factors

Building Code	
Dead Load	1.200
Live Load	1.600
Earth, H	1.600
Wind, W	1.600
Seismic, E	1.000

Stem Construction

		Bottom		
		Stem OK		
Design Height Above Ftg	ft =	0.00		
Wall Material Above "Ht"	=	Concrete		
Design Method	=	SD	SD	SD
Thickness	=	24.00		
Rebar Size	=	# 5		
Rebar Spacing	=	12.00		
Rebar Placed at	=	Edge		
Design Data				
fb/FB + fa/Fa	=	**0.016**		
Total Force @ Section				
Service Level	lbs =			
Strength Level	lbs =	780.0		
Moment....Actual				
Service Level	ft-# =			
Strength Level	ft-# =	511.9		
Moment.....Allowable	=	30,632.6		
Shear.....Actual				
Service Level	psi =			
Strength Level	psi =	2.9		
Shear.....Allowable	psi =	31.5		
Anet (Masonry)	in2 =			
Wall Weight	psf =	290.0		
Rebar Depth 'd'	in =	22.19		

Masonry Data

f'm	psi =	
Fs	psi =	
Solid Grouting	=	
Modular Ratio 'n'	=	
Equiv. Solid Thick.	=	
Masonry Block Type	=	
Masonry Design Method	=	ASD

Concrete Data

f'c	psi =	4,000.0
Fy	psi =	60,000.0

Summary of Sliding Forces

	FS = 1.0	FS = 1.5
Lateral Force @ Base of Footing	702.00 lbs	1,053.00 lbs
less 100% Passive Force	- 525.0 lbs	- 525.0 lbs
less 100% Friction Force	- 1,640.12 lbs	- 1,640.12 lbs
Added Resisting Force Required	0.0 lbs	
Added Resisting Force Required for 1.5 Factor of Safety		0.00 lbs

Sliding Factor of Safety = 3.084: 1.00

Cantilevered Retaining Wall

Project File: Brookside ES Bridge.ec6

LIC# : KW-06015331, Build:20.25.06.16 ZFA STRUCTURAL ENGINEERS (c) ENERCALC, LLC 1982-2025

DESCRIPTION: Bridge Retaining Wall

Concrete Stem Rebar Area Details

Bottom Stem	Vertical Reinforcing	Horizontal Reinforcing	
As (based on applied moment) :	0.0052 in2/ft		
0.0018bh : 0.0018(12)(24) :	0.5184 in2/ft	Horizontal Reinforcing Options :	
	==========	One layer of :	Two layers of :
Required Area :	0.5184 in2/ft	#4@ 4.63 in	#4@ 9.26 in
Provided Area :	0.31 in2/ft	#5@ 7.18 in	#5@ 14.35 in
Maximum Area :	4.8091 in2/ft	#6@ 10.19 in	#6@ 20.37 in

Footing Data

Toe Width	=	0.33 ft
Heel Width	=	4.17
Total Footing Width	=	4.50
Footing Thickness	=	12.00 in

f'c = 4,000 psi Fy = 60,000 psi
Footing Concrete Density = 145.00 pcf
Min. As % = 0.0018
Cover @ Top 2.00 @ Btm.= 3.00 in

Footing Design Results

		Toe	Heel	
Factored Pressure	=	3,260	494	psf
Mu' : Upward	=	177	2,203	ft-#
Mu' : Downward	=	17	1,958	ft-#
Mu: Design	=	160	-244	ft-#
φ Mn	=	11,801	13,196	ft-#
Actual 1-Way Shear	=	1.29	6.20	psi
Allow 1-Way Shear	=	54.57	52.62	psi

Toe Reinforcing = # 5 @ 12.00 in
Heel Reinforcing = Hand Calculation required for tension on the bottom
Key Reinforcing = # 5 @ 12.00 in
Footing Torsion, Tu = 0.00 ft-lbs
Footing Allow. Torsion, φ Tn = 0.00 ft-lbs

If torsion exceeds allowable, provide supplemental design for footing torsion.

Other Acceptable Sizes & Spacings

Toe: #4@ 9.25 in, #5@ 14.35 in, #6@ 18 in, #7@ 18 in, #8@ 18 in, #9@ 18 in, #10@ 18 in

Heel: #4@ 9.25 in, #5@ 14.35 in, #6@ 18 in, #7@ 18 in, #8@ 18 in, #9@ 18 in, #10@ 18 in

Key: No key defined

Min footing T&S reinf Area 1.17 in2
Min footing T&S reinf Area per foot 0.26 in2 /ft

If one layer of horizontal bars:	If two layers of horizontal bars:
#4@ 9.26 in	#4@ 18.52 in
#5@ 14.35 in	#5@ 28.70 in
#6@ 20.37 in	#6@ 40.74 in

Cantilevered Retaining Wall

Project File: Brookside ES Bridge.ec6

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DESCRIPTION: Bridge Retaining Wall

Summary of Overturning & Resisting Forces & Moments

Item	.....OVERTURNING..... Force lbs	Distance ft	Moment ft-#	.....RESISTING..... Force lbs	Distance ft	Moment ft-#
HL Act Pres (ab water tbl)	702.0	2.00	1,404.0	Soil Over HL (ab. water tbl)	1,191.9	3.42	4,072.3
HL Act Pres (be water tbl)				Soil Over HL (bel. water tbl)		3.42	4,072.3
Hydrostatic Force				Water Table			
Buoyant Force =				Sloped Soil Over Heel =			
Surcharge over Heel =				Surcharge Over Heel =			
Surcharge Over Toe =				Adjacent Footing Load =			
Adjacent Footing Load =				Axial Dead Load on Stem =	1,355.0	1.54	2,088.9
Added Lateral Load =				* Axial Live Load on Stem =	1,348.0	1.54	2,078.1
Load @ Stem Above Soil =				Soil Over Toe =	36.7	0.17	6.1
=				Surcharge Over Toe =			
				Stem Weight(s) =	1,450.0	1.33	1,933.3
				Earth @ Stem Transitions =			
				Footing Weight =	652.5	2.25	1,468.3
				Key Weight =			
				Vert. Component =			
Total =	702.0	**O.T.M.** =	1,404.0	**Total =**	4,686.1 lbs	**R.M.=**	9,568.9

Resisting/Overturning Ratio = **6.82**

Vertical Loads used for Soil Pressure = 4,975.4 lbs

* Axial live load NOT included in total displayed, or used for overturning resistance, but is included for soil pressure calculation.

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Sliding Resistance.

Vertical component of active lateral soil pressure IS NOT considered in the calculation of Overturning Resistance.

Tilt

Horizontal Deflection at Top of Wall due to settlement of soil

(Deflection due to wall bending not considered)

Soil Spring Reaction Modulus	250.0	pci
Horizontal Defl @ Top of Wall (approximate only)	0.072	in

The above calculation is not valid if the heel soil bearing pressure exceeds that of the toe, because the wall would then tend to rotate into the retained soil.

Cantilevered Retaining Wall

DESCRIPTION: Bridge Retaining Wall

Rebar Lap & Embedment Lengths Information

Stem Design Segment: Bottom

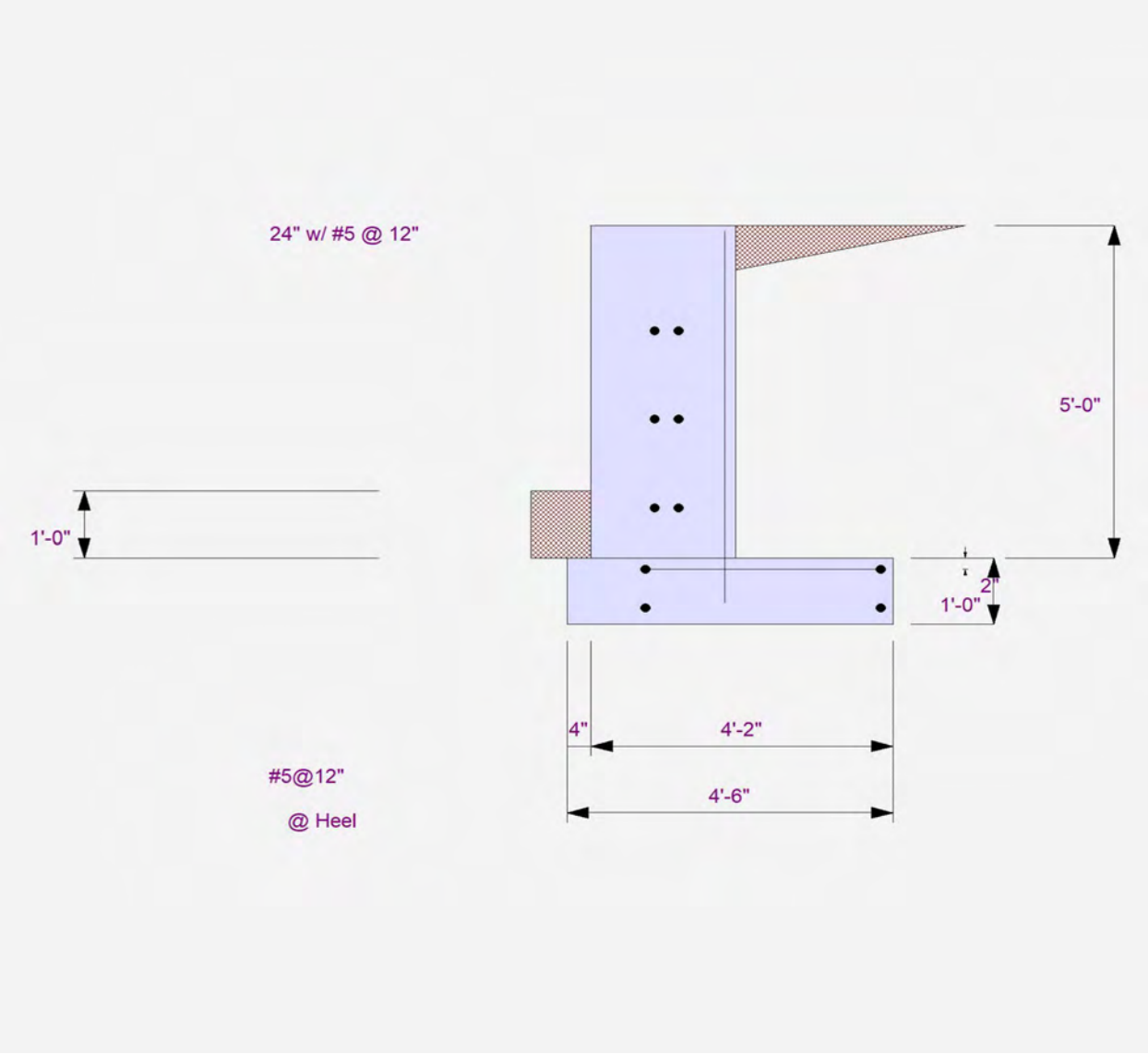
Stem Design Height: 0.00 ft above top of footing

Lap Splice length for #5 bar specified in this stem design segment (25.4.2.4a) =	18.50 in
Development length for #5 bar specified in this stem design segment =	14.23 in
Hooked embedment length into footing for #5 bar specified in this stem design segment =	7.39 in
As Provided =	0.3100 in2/ft
As Required =	0.5184 in2/ft

Cantilevered Retaining Wall

LIC# : KW-06015331, Build:20.25.06.16 ZFA STRUCTURAL ENGINEERS (c) ENERCALC, LLC 1982-2025

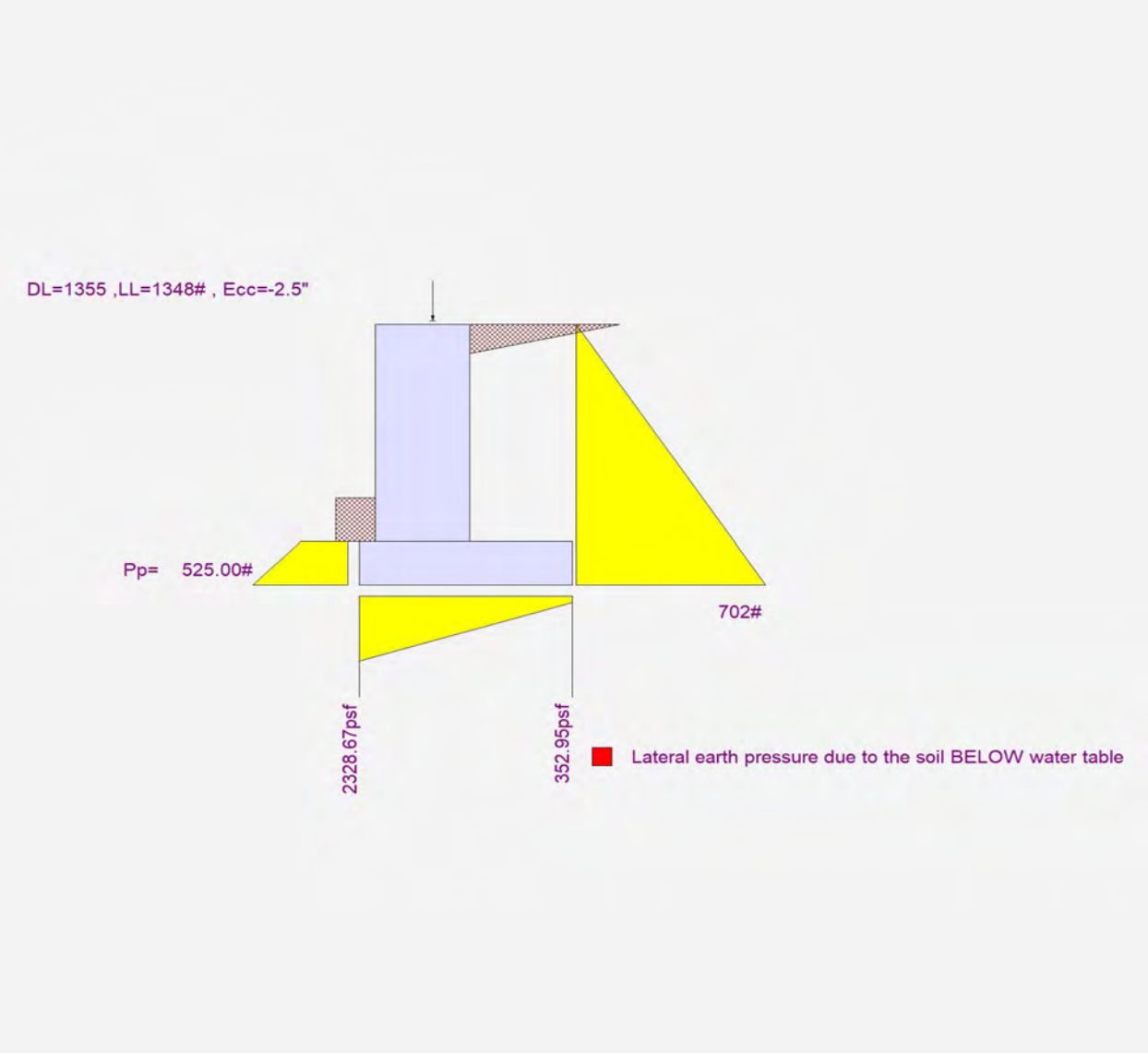
DESCRIPTION: Bridge Retaining Wall



Cantilevered Retaining Wall

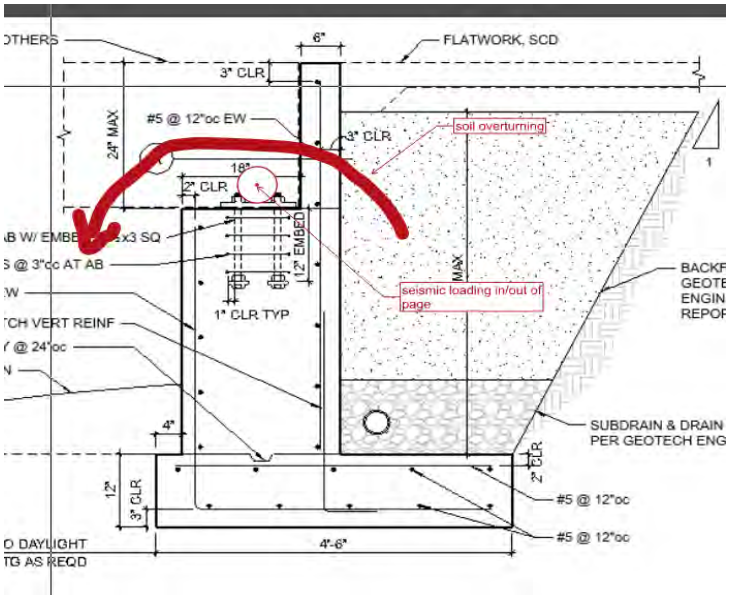
LIC# : KW-06015331, Build:20.25.06.16 ZFA STRUCTURAL ENGINEERS (c) ENERCALC, LLC 1982-2025

DESCRIPTION: Bridge Retaining Wall



Retaining Wall Combined Loading

Narrative: This calculation is to determine the bearing pressure due to Tranverse Seismic loading with soil loading in the longitudinal direction to ensure that the bearing capcity of the soil is sufficient.



Soil loading from previous calculation =	488	#/ft
wall height	5	ft
moment arm	h/3	
moment arm	1.67	ft
soil overturning moment	813	#-ft/ft
unit Width of Shallow footing =	1	ft = B
Length of Footing =	4.5	ft = L
longitudinal footing property:		
Section modulus, S, = BL^2/6	3.38	ft^3
M/S	241	psf/ft

Dead + Live Loading

Dead Load to Abutment = 2 * Baseplate Load =	14110	lbs
self weight of concrete stem	9375	lbs
Live Load to Abutment = 2 * Baseplate Load =	14038	lbs
Load Combo 1 = D =	23485	lbs
Load Combo 2 = D + 0.75L =	34014	lbs

Transverse Loading

Tranverse Load from Seismic, 1.0E per baseplate =	9992	lbs
Total Tranverse Load = 2*Tranverse Load =	19984	lbs
Moment Arm for Tranverse Load = (dist to top of footing)	3	ft = a
Tranverse Moment = Tranverse Load * a =	59951	lb-ft = Ms
Load Combo 1 = 0.7E =	41966	lb-ft
Load Combo 2 = 0.525E =	31474	lb-ft
Width of Shallow footing =	10.4	ft = B
Length of Footing =	4.5	ft = L
Section Modulus = S = L*B^2/6 =	81.4	ft^3
Bearing Area = Af = B*L =	46.9	sqft

Axial Stress:

Load Combo 1 = D =	501	psf	(D/Af)
Load Combo 2 = D + 0.75L =	726	psf	(D+0.75L/Af)

Flexural Stress:

Load Combo 1 = 0.7E =	516	psf	(0.7E/S)
Load Combo 2 = 0.525E =	387	psf	(0.525E/S)
Load Combo 1 =	1017	psf	(D + 0.7E)
Load Combo 2 =	1112	psf	(D + 0.75L + 0.525E)

Maximum Bearing Pressure = 1112 psf

Total Bearing Pressure =Max brg seismic loading + soil o/t = 1353 psf

Allowable Bearing Pressue with Seismic = 4000 psf > 1353 psf Sufficient