

PROJECT MANUAL



Downey Unified
SCHOOL DISTRICT

**Bid No. 23/24-36
Lewis Elementary School
Campus-Wide Fire Alarm Upgrade
April 4, 2024**

DOCUMENT 00 01 10

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END OF DOCUMENT

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DRAWINGS

See attached

WORK HOURS

SUMMER SCHOOL HOURS

Monday through Friday – 12:00-8:30 PM

Saturday – 7:00 AM to 4:00 PM

REGULAR SCHOOL HOURS

Monday through Friday – 3:30 PM-12:00 AM

Saturday – 7:00 AM to 4:00 PM

END OF DOCUMENT

NOTICE TO BIDDERS / INVITATION TO BID

1. Notice is hereby given that the governing board ("Board") of the **Downey Unified School District** ("District") will receive sealed bids to construct the following project:

Bid No. 23/24-36: Lewis Elementary School Campus-Wide Fire Alarm Upgrade ("Project" or "Contract") located at locations below:

Lewis Elementary School, 13220 Bellflower Blvd, Downey, CA 90242

2. Contractors must submit sealed bids on or before 10 AM on April 29, 2024 at the District Office Facilities Department, located at T-4, 11627 Brookshire Ave., Downey, CA 90241 at or after which time the District will open the bids and publicly read them aloud. Any claim by a Bidder of error in its bid must be made in compliance with Public Contract Code § 5100, et seq. Any bid that is submitted after this time shall be non-responsive and returned to the Bidder. The District is not responsible for Bids that are received after the deadline noted above.
3. The Project consists of:
Complete campus-wide fire alarm system replacement with voice evacuation.
4. 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.
5. To bid on this Project, the Bidder is required to possess one or more of the following State of California Contractor Licenses: B, C7, C10, or C16

The Bidder's license(s) must be active and in good standing at the time of the bid opening and must remain so throughout the term of the Contract.

6. As security for its Bid, each Bidder shall provide with its Bid form
 - a bid bond issued by an admitted surety insurer on the form provided by the District,
 - cash, or
 - a cashier's check or a certified check, drawn to the order of the **Downey Unified School District** in the amount of ten percent (10%) of the total bid price. This bid security shall be a guarantee that the Bidder shall, 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.
7. 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 Project.
8. 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 Public Contract Code § 22300.
9. The successful Bidder and its subcontractors shall pay all workers on the Project 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 Labor Code § 1770 et seq. Prevailing wage rates are on file with the District and are available to any interested party on request or at www.dir.ca.gov/oprl/statistics_and_databases.html. Bidders and Bidders' subcontractors shall comply with the registration and qualification requirements pursuant to Labor Code §§ 1725.5 & 1771.1

10. A mandatory pre-bid conference and site visit will be held on April 15, 2024 at 10 AM, at Lewis Elementary School, 13220 Bellflower Blvd, Downey, CA 90242. All prospective Bidders are required to sign in at each school site. The Site Visit is expected to take approximately an hour. Failure to attend or tardiness will render bid ineligible.
11. Contract Documents are available on or after April 4, 2024.
12. All questions about the meaning or intent of the Contract Documents are to be directed in writing to the District no later than April 18, 2024 at 4 PM. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
13. The District's 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.
14. The District shall award the Contract, if it awards it at all, to the lowest responsive responsible Bidder based on: The base bid amount only.

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.

Downey Unified 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. **Project.** Bids are requested for a general construction contract, or work described in general, for the following project:

Lewis Elementary School Campus-Wide Fire Alarm ("Project" or "Contract")

2. **Submittal of Bids.** District will receive sealed Bids from Bidders as indicated in the Invitation to Bid and each Bidder shall ensure that its Bid contains all documents as required herein and is submitted by date and time shown in the Invitation to Bid.

- a. Contractors must ensure the District receives its bid, sealed and marked with name and address of the Bidder, the Project name and number, the bid number and bid package (if applicable), and the date for opening bids.

3. **Bid Opening.** Bids will be opened at or after the time indicated for receipt of bids.

4. **Complete Bids.** Bidders must supply all information required by each Bid Document. Bids must be full and complete. District reserves the right in its sole discretion to reject any Bid as non-responsive as a result of any error or omission in the Bid. Each Bidder must complete and submit all of the following documents as its Bid:

- Bid Form
- Bid Bond or other security
- Designated Subcontractors List
- Noncollusion Declaration
- Iran Contracting Act Certification

- a. **Bid Form.** Bidders must submit Bids on the Bid Form and all other required District forms. Bids not submitted on the District's required forms shall be deemed non-responsive and shall not be considered. Additional sheets required to fully respond to requested information are permissible. Bidders shall not modify the Bid Form or qualify their Bids. Bidders shall not submit scanned, re-typed, word-processed, or otherwise recreated versions of the Bid Form or other District-provided documents.
- b. **Bid Bond or Other Security.** Bidders must submit their Bid Form with cash, a cashier's check or a certified check payable to District, or a bid bond by an admitted surety insurer of not less than ten percent (10%) of their base Bid amount, including all additive alternates. Required form of corporate surety, Bid Bond, is provided by District and must be used and fully completed by Bidders choosing to provide a Bid Bond as security. The Surety on Bidders' Bid Bond must be an insurer admitted in the State of California and authorized to issue surety bonds in the State of California. Bids submitted without necessary bid security will be deemed non-responsive and will not be considered.
- c. **Designated Subcontractors List.** 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 the Bidder's total Bid. Failure to fully complete and submit this list when required by law shall result in Bid being deemed

non-responsive and the Bid will not be considered.

- d. **Noncollusion Declaration.** Bidders shall submit the Noncollusion Declaration with their Bids. Bids submitted without the Noncollusion Declaration shall be deemed non-responsive and will not be considered.
 - e. **Iran Contracting Act Certification.** Bidders shall submit the Iran Contracting Act Certification with their Bids. Bids submitted without the Iran Contracting Act Certification shall be deemed non-responsive and will not be considered.
5. **Erasures.** Bids shall be clearly written without erasure or deletions. District reserves the right to reject any Bid containing erasures or deletions.
 6. **Prevailing Wages.** Pursuant to sections 1770 et seq. of the California Labor Code, Bidder and all Subcontractors under the Bidder 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 State of California Department of Industrial Relations (DIR) for the type of work performed and the locality in which the work is to be performed within the boundaries of the District. 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 the DIR are on file with the District and are available to any interested party on request or at www.dir.ca.gov/oprl/statistics_and_databases.html.
 7. **Contractor Registration.** Bidder shall ensure that it and its Subcontractors comply with the registration and compliance monitoring provisions of Labor Code section 1771.4, including furnishing its CPRs to the Labor Commissioner, and are registered pursuant to Labor Code section 1725.5. Bidder and its subcontractors shall comply with Labor Code section 1725.5 to be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of the Contract.
 8. **Bidder Diligence.** Submission of Bid signifies careful examination of the Contract Documents and a 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 Bid shall constitute the Bidder's express representation to District that Bidder has fully completed the following:
 - a. Bidder has visited the Project 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 Price, within the Contract Time, and in accordance with the other terms and conditions of Contract Documents, including specifically the provisions of the General Conditions. Bidder has notified the District if it contends that it requires additional examinations, investigations, explorations, tests, reports, studies, or similar information or data prior to submitting its bid;
 - c. Bidder has correlated its knowledge and the results of all observations, examinations, investigations, explorations, tests, reports, and studies with the terms and conditions of the Contract Documents;
 - d. Bidder has given the District prompt written notice of all conflicts, errors, ambiguities, or discrepancies

that it has discovered in or among the Contract Documents and the actual conditions, and the written resolution thereof by the District is acceptable to Bidder;

- e. Bidder has made a complete disclosure in writing to the District of all facts bearing upon any possible interest, direct or indirect, that Bidder believes any representative of the District or other officer or employee of the District presently has or will have in this Contract or in the performance thereof or in any portion of the profits thereof;
- f. Bidder must, prior to bidding, perform the work, investigations, research, and analysis required by the Instructions to Bidders and that Bidder represented in its Bid Form and the Agreement that it performed prior to bidding. Bidder 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 this information is correctly shown or indicated. This information is verifiable by independent investigation and Bidder is required to make that 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 this information for bidding or construction; nor is District responsible in any way for any conclusions or opinions of Bidder drawn from that information; nor is District responsible for subsurface conditions that are not specifically shown if those subsurface conditions are reasonably determinable by above-ground conditions and observation or as-built conditions (e.g., subsurface soil conditions in areas contiguous to areas where an above-ground condition is shown; utility pipes between a manhole and a water source, etc.).
- h. **Conditions Shown in Reports and Drawings Supplied for Informational Purposes:** Reference is made to the document entitled Existing Information and Documentation Regarding Project Site, for identification of:
 - (1) Subsurface Conditions: Those reports of explorations and tests of subsurface conditions at or contiguous to the Project 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 Project 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 Existing Information and Documentation Regarding Project Site, and underground facilities data, Bidder may not in any manner rely on the information in these reports and drawings.

9. **As-Builts.** 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 Information and Documentation Regarding Project Site applies to all supplied “as-built” drawings.
10. **Questions.** All questions about the meaning or intent of the Contract Documents are to be directed in writing to the District. Interpretations or clarifications considered necessary by the District in response to those questions will be issued in writing by Addenda faxed, mailed, or delivered to all parties recorded by the District as having received the Contract Documents. Questions received less than **SEVEN (7)** calendar days prior to the date for opening Bids may not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
11. **Addenda.** Addenda may also be issued to modify parts of the Contract Documents as deemed advisable by the District. Bidder must acknowledge each Addendum in its Bid Form by number or its Bid may be considered non-responsive. Each Addenda shall be part of the Contract Documents. A complete listing of Addenda may be obtained from the District.
12. **Substitution for Specified Items.** Bids shall be based on products and systems specified in the Contract Documents or listed by name in Addenda. All requests must comply with the requirements specified in the General Conditions, the Specifications and the following:
 - a. **Request for Substitution Prior to Bid.**
 - (1) District must receive any request for substitution a minimum of **FOURTEEN (14)** calendar days prior to the date of bid opening.
 - (2) **Information with Request.** Requests for substitutions shall contain sufficient information to assess acceptability of the product or system and impact to Project, including, without limitation, the requirements specified in the General Conditions and the Specifications. Insufficient information shall be grounds for rejection of substitution.
 - (3) The District’s denial of a substitution request prior to the date of bid opening shall be conclusive, requiring Bidders to list only approved items. The District is not responsible and/or liable in any way for a Bidder’s damages and/or claims related, in any way, to that Bidder’s basing its bid on any requested substitution that the District has not approved. Bidder’s Bid shall be deemed non-responsive if it identifies a product or manufacturer of a non-approved substitution.
 - (4) Approved substitutions shall be listed in Addenda.
 - (5) District reserves the right not to act upon submittals of substitutions until after the date of bid opening. If the District does not act on a substitution request prior to the date of bid opening, Bidders must bid based on products and systems specified in Contract Documents or listed by name in Addenda.
 - b. **Request for Substitution after Bid Award.** Substitutions may be requested after the Contract has been awarded only if indicated in and in accordance with requirements specified in the General Conditions, as may be modified in the Special Conditions.
13. **Alternates.** The 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. The District shall award the Contract, if it awards it at all, to the lowest responsive bidder based on the criteria as indicated in the Invitation to Bid.

14. **Notice of Award.** The Bidder awarded the Contract 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, among other remedies, make a claim against Bidder's Bid Bond or deposit Bidder's cash, cashier's check, or certified check. The proceeds thereof may be retained by District as liquidated damages, in District's sole discretion.
- a. Agreement: To be executed by successful Bidder. Submit one (1) copy, bearing an original signature.
 - b. Performance Bond (100%): On the form provided in the Contract Documents and fully executed as indicated on the form.
 - c. Payment Bond (100%) (Contractor's Labor and Material Bond): On the form provided in the Contract Documents and fully executed as indicated on the form.
 - d. Insurance Certificates and Endorsements as required.
 - e. Certifications to be Completed by Contractor
 - f. Criminal Background Investigation/Fingerprinting Certification.
15. **Notice to Proceed.** District may issue a Notice to Proceed within **THREE (3)** months from the date of the Notice of Award. Upon receipt of the Notice to Proceed, Contractor shall complete the Work within the period of time indicated in the Contract Documents. It is further expressly understood by Contractor that Contractor shall not be entitled to any claim of additional compensation or additional time when the Notice to Proceed is issued within the 3-month period.
- a. The District may postpone issuing the Notice to Proceed beyond the 3-month period, upon reasonable notice to Contractor.
 - b. If the Contractor believes that a postponement of issuance of the Notice to Proceed will cause a hardship to Contractor, the Contractor may, by written notice to District within **SEVEN (7)** calendar days after receipt by Contractor of District's notice of postponement, take one of the following actions:
 - (1) **Agree with the postponement.** This would be at no additional cost to the District.
 - (2) **Terminate the Contract.** District shall only be obligated to pay Contractor for any Work that Contractor had performed at the time of notification of postponement and that the District had in writing authorized Contractor to perform, if any, prior to issuing a Notice to Proceed.
 - (3) **Request additional compensation.** Contractor must submit detailed documentation demonstrating the need for that additional compensation, compared to the calculations and amounts that Contractor used to prepare its bid. If the Parties do not agree on an amount for the requested additional compensation, the Contractor can agree to the postponement without any additional compensation, or either Party may terminate the Contract.
 - c. If the Contract is terminated as a result of a notice of postponement, District shall have the authority to award the Contract to the next lowest responsive responsible Bidder.
16. **Bid Protests.** Any bid protest by any Bidder regarding any other bid on this Project must be submitted in writing to the District, before 5:00 p.m. of the **THIRD (3rd)** Business Day following the date of bid opening.
- a. The protest must contain a complete statement of any and all bases for the protest.

- b. The protest must refer to the specific portions of all documents that form the bases for the protest, including the specific portion(s) of the bid(s) that the Bidder is protesting.
 - c. The protest must include the name, address and telephone number of the person representing the protesting party.
 - d. 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, which must include all other Bidders or proposers who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest.
 - e. 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.
17. **Rejection of Bids.** District reserves the right to reject any or all bids, including without limitation the right to reject any or all nonconforming, non-responsive, unbalanced, or conditional bids, to re-bid, and to reject the bid of any Bidder if District believes that it would not be in the best interest of the District to make an award to that Bidder, whether because the bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by District. District also reserves the right to waive inconsequential deviations not involving price, time, or changes in the Work. For purposes of this paragraph, an "unbalanced bid" is one having nominal prices for work item(s) that represent substantive work and/or overly-enhanced prices for nominal work item(s).
18. **Bidder's Representative's Authority.** Each bid must be executed by an authorized representative of the Bidder. Bidders may be asked to provide documentation of that authority (e.g., an authenticated resolution of its Board of Directors, a power of attorney evidencing the capacity of the person signing the Bid Form to bind the Bidder to its bid, etc.).
19. **Bidder Responsibility.** 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 Contract Time.

END OF DOCUMENT

DOCUMENT 00 31 19

EXISTING INFORMATION AND DOCUMENTATION REGARDING PROJECT SITE

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. Contractor is required to request from the District a copy of any reports that it believes are necessary to perform Contractor's Work in a safe, efficient and workman-like manner.

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 District, its consultants, contractors, and tenants. These documents may include previous contracts, contract specifications, tenant improvement contracts, as-built drawings, utility drawings, and information regarding underground facilities.
- b. Information regarding existing conditions may be inspected at the District offices or the Construction Manager's offices, if any, and copies may be obtained at cost of reproduction and handling upon Bidder's agreement to pay for such copies. These reports, documents, and other information are **not** part of the Contract Documents.
- c. Information regarding existing conditions may also be included in the Project Manual, but shall **not** be considered part of the Contract Documents.
- d. The reports and other data or information regarding existing conditions and underground facilities at or contiguous to the Project are the following:
 - (1) **Geotechnical Data.** Geotechnical data at or near the Project that is in the District's possession available for Contractor's review.
 - (2) **Hazardous Material Reports**
 - (3) **Asbestos and/or AHERA Reports.** Asbestos survey report, prepared for this Project and/or this Project site is attached in the supplementary conditions section of the Project Manual.

3. Use of Information

- a. Information regarding existing conditions was obtained only for use of District and its consultants, contractors, and tenants for planning and design and is **not** part of the Contract Documents.
- b. District does not warrant, and makes no representation regarding, the accuracy or thoroughness of any information regarding existing conditions. Bidder represents and agrees that in submitting a bid it is not relying on any information regarding existing conditions supplied by District.
- c. Under no circumstances shall District be deemed to warrant or represent existing above-ground conditions, as-built conditions, or other actual conditions, verifiable by independent investigation. These conditions are verifiable by Contractor by the performance of its own independent investigation that Contractor must perform as a condition to bidding, and Contractor should not and shall not rely on this information or any other information supplied by District regarding existing conditions.
- d. Any information shown or indicated in the reports and other data supplied herein with respect to existing underground facilities at or contiguous to the Project may be based upon information and data furnished to District by the District's employees and/or consultants or builders of such underground facilities or

others. District does not assume responsibility for the completeness of this information, and Bidder is solely responsible for any interpretation or conclusion drawn from this information.

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

4. Limited Reliance on Certain Information

- a. Reference is made herein for identification of:
 - (1) 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.
 - (2) 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 Invitation to Bid 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

To: Governing Board of **Downey Unified School District** ("District")

From: _____
(Proper Name of Bidder)

1. **Total Bid.** The undersigned declares that the Contract Documents including, without limitation, the Invitation to Bid, the Instructions to Bidders, and the Special Conditions have been read, and agrees and proposes to furnish all necessary labor, materials, and equipment to perform and furnish all work in accordance with the terms and conditions of the Contract Documents, including, without limitation, the Drawings and Specifications for the following project:

Lewis Elementary School Campus-Wide Fire Alarm ("Project" or "Contract")

and will accept in full payment for that Work the following total lump sum amount, all taxes included:

Total Base Bid

Campus-Wide Fire Alarm Upgrade

\$ _____ Dollars

NOTE: IF THERE ARE ALLOWANCES IDENTIFIED IN THIS BID FORM, DO NOT INCLUDE ANY ALLOWANCE(S) AMOUNTS IN THESE BID AMOUNTS.

2. **Allowance(s).** The Bidder's Base Bid shall **NOT** include the following potential Allowance(s). The District will add some or all of the following Allowance(s) amount(s) to the successful bidder's Contract, at the District's discretion. Contractor shall be permitted to invoice for Work under an Allowance in the identical structure as a Change Order.
3. **Contract Review.** The undersigned has reviewed the Work outlined in the Contract Documents and fully understands the scope of Work required in this bid, 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 bid, 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.
4. **Requests for Clarification.** 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.
5. **Contract Time.** 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.
6. **Contractual Provisions.** The undersigned hereby acknowledges and agrees to be bound by following provisions and all provisions in the Contract Documents:

- The liquidated damages clause of the General Conditions and Agreement.
- The “Changes in the Work” provisions in the General Conditions that limit the permitted charges and mark-ups on change orders and on the amount of home office overhead that the successful bidder can receive from the District.
- The “Claims” provisions in the General Conditions that delineate the required process to submit and process disputes and claims.
- The “COVID-19” provisions in the Contract Documents related to the Contractor’s staffing requirements and its compliance with all applicable and existing federal, state, and/or local statutes, orders, rules, regulations, ordinances, and/or directives relating to construction site safety in connection with COVID-19, and/or any similar virus or derivative strain.

7. **Bid Open for 90 Days.** 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.

8. **Attachments.** The following documents are attached hereto:

- The Bid Bond on the District's form or other security
- The Designated Subcontractors List
- The Noncollusion Declaration
- Iran Contracting Act Certification

9. **Addenda Acknowledgement.** Receipt and acceptance of the following addenda is hereby acknowledged:

No.____, Dated _____	No.____, Dated _____
No.____, Dated _____	No.____, Dated _____
No.____, Dated _____	No.____, Dated _____
No.____, Dated _____	No.____, Dated _____
<input type="checkbox"/> Or check here if <u>no</u> addenda were issued.	

10. **Bidder’s License.** Bidder acknowledges that the license required for performance of the Work is as stated in the Invitation to Bid. 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. Bidder further certifies that it is regularly engaged in the general class and type of work called for in the Contract Documents.

11. **Labor Harmony.** The undersigned hereby certifies that Bidder is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the Work.

12. **DIR Registration.** Bidder shall ensure that it and its Subcontractors comply with the registration and compliance monitoring provisions of Labor Code section 1771.4, including furnishing its CPRs to the Labor Commissioner, and are registered pursuant to Labor Code section 1725.5.

13. **General Acknowledgement.** The Bidder represents that it is competent, knowledgeable, and has special skills with respect to the nature, extent, and inherent conditions of the Work to be performed. Bidder further acknowledges that there are certain peculiar and inherent conditions existent in the construction of the Work that may create, during the Work, unusual or peculiar unsafe conditions hazardous to persons and property.

Bidder expressly acknowledges that it is aware of such peculiar risks and that it has the skill and experience to foresee and to adopt protective measures to adequately and safely perform the Work with respect to such hazards.

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

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

Dated this _____ day of _____ 20 _____

Signature _____

Signed by (Print Name) _____

Title of Person Signing _____

Name of Bidder _____

Type of Organization _____

Address of Bidder _____

Taxpayer's Identification No. of Bidder _____

Telephone Number _____

Fax Number _____

E-mail _____ Web page _____

Bidder's DIR Registration No.: No.: _____

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

No.: _____ Class: _____ Expiration Date: _____

No.: _____ Class: _____ Expiration Date: _____

If Bidder is a corporation, provide the following:

Name of Corporation: _____

President: _____

Secretary: _____

Treasurer: _____

END OF DOCUMENT

DOCUMENT 00 43 13

BID BOND (SECURITY)

**(Note: If Bidder is providing a bid bond as its bid security,
Bidder must use this form, NOT a surety company form.)**

The undersigned, _____ as Principal ("Principal");

and _____ as Surety ("Surety"; a corporation organized and existing under and by virtue of the laws of the State of _____ and authorized to do business as a surety in the State of California) are held and firmly bound unto the **Downey Unified School District** ("District") as Obligee, in the sum of \$ _____ Dollars, lawful money of the United States, for the payment to the District will and truly to be made pursuant to the provisions herein. Principal and Surety each of us, bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally.

THE CONDITION OF THIS OBLIGATION IS SUCH that whereas the Principal has submitted a bid to the District for all Work specifically described in the accompanying bid and if the District awards the contract to the Principal and, within the time and manner required under the Contract Documents, after the prescribed forms are presented to Principal for signature, the Principal enters into a written contract, in the prescribed form in accordance with the bid, and files two bonds (one guaranteeing faithful performance and the other guaranteeing payment for labor and materials as required by law), and meets all other conditions to the contract between the Principal and the Obligee becoming effective, or if the Principal shall fully reimburse and save harmless the Obligee from any damage sustained by the Obligee through failure of the Principal to enter into the written contract and to file the required performance and labor and material bonds, and to meet all other conditions to the Contract between the Principal and the Obligee becoming effective, then this obligation shall be null and void; otherwise, it shall be and remain in full force and effect and the Surety shall immediately issue full payment of the sum stated above to the Obligee upon notification from the Obligee that the Principal has not taken all steps to nullify or void this obligation.

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

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

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

IN WITNESS WHEREOF, this instrument has been duly executed by the Principal and Surety above named, on

_____, 20_____.

Principal

By

Surety

By

Name of California Agent of Surety

Address of California Agent of Surety

Telephone Number of California Agent of Surety

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

END OF DOCUMENT

DOCUMENT 00 43 36

DESIGNATED SUBCONTRACTORS LIST

TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

Lewis Elementary School Campus-Wide Fire Alarm (“Project” or “Contract”)

1. **Listed.** Bidder must list hereinafter the name and location of each subcontractor who will be employed, and the scope of Work that each will perform if the Contract is awarded to the Bidder. Bidder acknowledges and agrees that under Public Contract Code section 4100, et seq., it must clearly identify the name and location of each subcontractor who will perform work or labor or render service to the Bidder in or about the construction of the Work in an amount in excess of one-half of one percent (1/2 of 1%) of Bidder’s total Bid.
2. **CSLB Number.** Bidder must provide the Contactor State License Board number (“**CSLB No.**”) for all listed subcontractors.
3. **DIR Number.** Bidder must provide the Department of Industrial Relations registration number (“**DIR No.**”) for all listed subcontractors.
4. **Same Scope.** If more than one subcontractor is named for the same scope of Work, state with specificity the particular scope or portion that each subcontractor will perform.
5. **No Vendors or Suppliers.** Bidder need not list entities that are only vendors or suppliers of materials.
6. **Not Listed.** As to any Work that Bidder fails to list that is in excess of one-half of one percent (1/2 of 1%) of Bidder’s total Bid, Bidder agrees that it is qualified to perform that scope of Work and will perform that scope of Work, or be subjected to penalty under applicable law.
7. **Alternate Work.** If alternate bids are called for and Bidder intends to use Subcontractors different from or in addition to those Subcontractors listed for work under the base Bid, Bidder must list Subcontractors that will perform Work in an amount in excess of one half of one percent (1/2 of 1%) of Bidder’s total Bid, including alternates.
8. **Bidders may correct inadvertent error(s) in listing subcontractors’ CSLB Nos. or DIR Nos. within twenty-four (24) hours after bid opening.**
9. **Additional Sheets.** If further space is required for the list of proposed subcontractors, additional sheets showing the required information, as indicated below, shall be attached hereto and made a part of this document and submitted with this form.

I certify and declare under penalty of perjury under the laws of the State of California that all the information listed on the following page(s) is complete, true, and correct.

Date: _____

Proper Name of Bidder: _____

Signature: _____

Print Name: _____

Title: _____

Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:

Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:

Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:
Subcontractor Name	Portion of Work (Scope)	Location of Business	CSLB No.:
			DIR No.:
			If DVBE, % of Work:

END OF DOCUMENT

DOCUMENT 00 43 40

NONCOLLUSION DECLARATION
Public Contract Code § 7106

TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID

The undersigned declares:

I am the _____ **[PRINT YOUR TITLE]**

of _____ **[PRINT FIRM NAME]**,

the party making the foregoing bid.

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

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

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on the following date:

Date: _____

Proper Name of Bidder: _____

City, State: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

DOCUMENT 00 43 50

IRAN CONTRACTING ACT CERTIFICATION (Public Contract Code § 2204)

Lewis Elementary School Campus-Wide Fire Alarm (“Project” or “Contract”)

Pursuant to Public Contract Code (PCC) section 2204, an Iran Contracting Act certification is required for solicitations of goods or services of one million dollars (\$1,000,000) or more.

Bidder shall complete **ONLY ONE** of the following three paragraphs.

1. Bidder’s Total Base Bid is less than one million dollars (\$1,000,000).

OR

2. Bidder’s Total Base Bid is one million dollars (\$1,000,000) or more, but Bidder is **not** on the current list of persons engaged in investment activities in Iran created by the California Department of General Services (“DGS”) pursuant to Public Contract Code § 2203(b), and Bidder is not a financial institution extending twenty million dollars (\$20,000,000) or more in credit to another person, for 45 days or more, if that other person will use the credit to provide goods or services in the energy sector in Iran and is identified on the current list of persons engaged in investment activities in Iran created by DGS.

OR

3. Bidder’s Total Base Bid is one million dollars (\$1,000,000) or more, but the District has given prior written permission to Bidder to submit a proposal pursuant to PCC 2203(c) or (d). **A copy of the written permission from the District is included with Bid.**

I certify that I am duly authorized to legally bind the Bidder to this certification, that the contents of this certification are true, and that this certification is made under the laws of the State of California.

Date: _____

Proper Name of Bidder: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

DOCUMENT 00 45 00

NOTICE OF AWARD

Dated: _____, 20__

To: _____
("Contractor")

(Address)

From: Governing Board ("Board") of **Downey Unified School District** ("District")

Re: **Lewis Elementary School Campus-Wide Fire Alarm** ("Project" or "Contract")

Contractor was awarded the Contract 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 the 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.

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

Contractor shall execute and submit the following Contract 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 the following Contract Documents entitles District to foreclose on Contractor's bid bond and award the contract to the next responsive, responsible bidder.

- a. Agreement: Submit four (4) copies, each bearing an original signature. **If Contractor is a corporation, Contractor must attach a certified copy of the corporation's by-laws, or the resolution of the Board of Directors of the corporation, authorizing the signatory to execute the Agreement and the bonds required by the Contract Documents.**
- b. Performance Bond (100%): Fully executed form provided in the Contract Documents.
- c. Payment Bond (100%) (Contractor's Labor and Material Bond): Fully executed form provided in the Contract Documents.
- d. Insurance Certificates and Endorsements as required.
- e. Certifications to be Completed by Contractor
- f. Criminal Background Investigation/Fingerprinting Certification.

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

District will return to Contractor one fully signed counterpart of the Agreement.

Downey Unified School District

SIGNATURE: _____

NAME: _____

TITLE: _____

END OF DOCUMENT

DOCUMENT 00 45 10

AGREEMENT

This agreement is made and entered into on _____, 202_____, by and between the **Downey Unified School District** ("District") and _____ ("**Contractor**") ("**Agreement**"). The District and the Contractor agree as follows:

1. **The Work:** Contractor shall 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:

Lewis Elementary School Campus-Wide Fire Alarm ("Project" or "Contract" or "Work")

The Work shall be performed and completed as required in the Contract Documents as defined in the General Conditions including, without limitation, the Drawings and Specifications, under the direction and supervision of, and subject to, the approval of the District or its authorized representative.

2. **The Contract Documents:**

- a. The complete Contract consists of all Contract Documents as defined in the General Conditions and incorporated herein by this reference. All obligations of the District and Contractor are fully set forth and described in the Contract Documents. The Contract Documents are intended to cooperate so that Work called for in one and not mentioned in the other or vice versa is to be performed the same as if mentioned in all Contract Documents.
- b. **Interpretation of Contract Documents/Order of Precedence:** Questions concerning the intent, precedence, or meaning of the Contract Documents, including the Drawings or Specifications, shall be submitted to the District for interpretation. Inconsistencies in the Contract Documents shall be resolved by giving precedence in the following order:
- (i) District-approved modifications (e.g., Change Orders, Force Account Directives, etc.), beginning with the most recent (if any);
 - (ii) Agreement;
 - (iii) Special Conditions (if any);
 - (iv) Supplemental Conditions (if any);
 - (v) General Conditions;
 - (vi) Remaining Division 0 documents (Documents beginning with "00");
 - (vii) Division 1 Documents (Documents beginning with "01");
 - (viii) Division 2 through Division 49 documents (Technical Specifications);
 - (ix) Figured dimensions;
 - (x) Large-scale drawings;
 - (xi) Small-scale drawings.

In case of conflict, the greater quantity and/or higher standard of workmanship shall apply unless the District expressly in writing (e.g., via a Change Order) accepts a lesser quantity or lower quality of workmanship and the Contract Price is adjusted accordingly. The decision of the District in the matter shall be final.

3. **Integration / Modification.** The Contract Documents and any documents specifically incorporated by reference are completely integrated as the complete and exclusive statement of the terms of the Agreement. This Agreement supersedes all previous contracts, agreements, and / or communications, both oral and written, and constitutes the entire understanding of the District and Contractor. No extrinsic evidence whatsoever shall be admissible or used to explain or supplement the terms of the Contract, Contract

Documents, or any items incorporated by reference. No changes, amendments or alterations shall be effective unless in writing, signed by both Parties, and unless provided otherwise by the Contract Documents.

4. **Classification of Contractor's License:** Contractor hereby acknowledges that it currently holds valid Type C-39 issued by the State of California and Audio Enhancement and Extron certified and authorized dealer, Contractor's State Licensing Board, in accordance with division 3, chapter 9, of the Business and Professions Code and in the classification called for in the Contract Documents.
5. **Time for Completion:** It is hereby understood and agreed that the Contractor shall complete the Work within one hundred twenty (120) consecutive calendar days ("**Contract Time**") from the date specified in the District's Notice to Proceed. The District shall not approve an early completion schedule by Contractor. A schedule showing the Work completed in less than the Contract Time indicated in the Contract, shall be considered to have Project Float.
6. **Completion-Extension of Time:** If Contractor fails to complete the Work within the Contract Time, due allowance being made for the contingencies provided for herein, Contractor shall become liable to District for all loss and damage that District may suffer on account thereof. 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 allows for 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.
7. **Liquidated Damages:** Time is of the essence for all Work to be performed. It is hereby understood and agreed that it is and will be difficult and/or impossible to ascertain and determine the actual damage that District will sustain in the event of and by reason of Contractor's delay; therefore, pursuant to Government Code section 53069.85 and Public Contract Code section 7203, Contractor shall forfeit and pay to District the following sum(s) as liquidated damages ("**Liquidated Damages**"):
 - **Project Completion: \$1,200.00 dollars** per day as Liquidated Damages for each and every day's delay beyond the Contract Time to complete all the Work.
 - a. Each portion of the Liquidated Damages shall be calculated cumulatively. For example, if Contractor is late in completing two milestones and the entire Project, Contractor will forfeit and pay three separate Liquidated Damages amounts. It is hereby understood and agreed that neither the total cumulative Liquidate Damages amount nor any portion of the Liquidated Damage amount are penalties.
 - b. District may deduct Liquidated Damages from money due or that may become due Contractor under this Agreement. Contractor's forfeiture of Liquidated Damages to District, and District's right to retain Liquidated Damages, are as indicated in Government Code section 53069.85 and as indicated herein and in the General Conditions. Liquidated Damages are automatically and without notice of any kind forfeited and payable by Contractor upon the accrual of each day of delay. Neither District's failure or delay in deducting Liquidated Damages from payments otherwise due the Contractor, nor District's failure or delay in notifying Contractor of the forfeiture and payment of Liquidated Damages, shall be deemed a waiver of District's right to Liquidated Damages and/or the District's right to withhold Liquidated Damages from any amounts that would otherwise be payable to the Contractor.
 - c. Contractor and Surety shall be liable for and pay to District the entire amount of Liquidated Damages including any portion that exceeds the amount of the Contract Price then held, retained or controlled by District.
 - d. Liquidated Damages shall be in addition, and not in lieu of, District's right to charge Contractor for the District's cost of completing or correcting items of the Work.

8. **Contract Price:** In consideration of the foregoing covenants, promises, and agreements, Contractor offers, in the amounts stated below, to perform the Work according to the Contract Documents. District covenants, promises, and agrees that it will pay and cause to be paid to Contractor in full, and as the Contract Price the following amount(s):

\$ _____ Dollars
(“Contract Price”)

- a. The Contract Price shall be paid in lawful money of the United States pursuant to the payment provisions in the General Conditions.
 - b. The District may, at its sole discretion, increase or decrease the Contract Price by unit prices or alternates contained in Contractor’s original bid. If the Bid for the Work included proposal(s) for Alternate Bid Item(s), during Contractor’s performance of the Work, the District may elect to add any such Alternate Bid Item(s) if the item did not form a basis for award of the Agreement or delete any such Alternate Bid Item(s) if that item formed a basis for award of the Agreement. If the District elects to add or delete an Alternate Bid Item(s) pursuant to the foregoing, the cost or credit for that Alternate Bid Item(s) shall be as set forth in the Contractor’s Bid, at the District’s discretion. If any Alternate Bid Item is added or deleted from the Work pursuant to the foregoing, the Contract Time shall be adjusted by the number of days allocated for the added or deleted Alternate Bid Item in the Contract Documents; if days are not allocated for any Alternate Bid Item added or deleted pursuant to the foregoing, the Contract Time shall be equitably adjusted.
9. **Insurance and Bonds:** Contractor shall provide all required certificates of insurance, and payment and performance bonds.
10. **Performance of Work:** If Contractor fails to perform the Work properly or fails 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, cure the deficiencies and deduct the cost thereof from the payment then or thereafter due Contractor.
11. **COVID-19.** Contractor is responsible for complying with all applicable and existing federal, state, and/or local statutes, orders, rules, regulations, ordinances, and/or directives relating to construction site safety in connection with COVID-19, and/or any similar virus or derivative strain. Contractor shall ensure it has supervisor employees onsite that are trained and knowledgeable of all of these requirements to ensure full compliance on Project Site(s).
12. **Authority of Architect, Project Inspector, and DSA:** Contractor hereby acknowledges that the Architect(s), the Project Inspector(s), and the Division of the State Architect have authority to approve and/or stop Work if 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. Contractor shall be liable for any delay caused by its non-compliant Work.
13. **Assignment of Contract:** Neither the Contract, nor any part thereof, nor any moneys due or to become due thereunder, may be assigned by Contractor without the written approval of District, nor without the written consent of the Surety on Contractor’s Performance Bond (the “Surety”), unless the Surety has waived in writing its right to notice of assignment.
14. **Payment of Prevailing Wages:** Contractor and all Subcontractors under Contractor shall pay all workers on Work performed pursuant to this Contract not less than the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work as determined by the Director of the Department of Industrial Relations, State of California, for the type of work performed and the locality in which the work is to be performed within the boundaries of the District, pursuant to sections 1770 et seq. of the California Labor Code.

15. Contractor & Subcontractor Registration: Contractor shall comply with the registration and compliance monitoring provisions of Labor Code section 1771.4, including complying with any applicable enforcement by the Department of Industrial Relations.

16. Authority of Contractor's Representatives: Contractor hereby certifies that the person who executes this Agreement has the authority and power to legally bind the Contractor. Contractor also certifies that each person(s) it employees on the Project at or above the level of project superintendent, has the authority to legally bind the Contractor.

17. Severability: If any term, covenant, condition, or provision 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.

18. Notice: Any notice required by the Agreement shall be in writing, dated and signed by the party giving notice or by a duly authorized representative of that party. Notice shall be served and considered effective if given in one of the following manners and to the following persons and addresses:

- a. By personal delivery; considered delivered on the day of delivery.
- b. By overnight delivery service; considered delivered one (1) day after date deposited, as indicated by the delivery service.
- c. By depositing same in United States mail, enclosed in a sealed envelope; considered delivered three (3) days after date deposited, as indicated by the postmarked date.
- d. By registered or certified mail with postage prepaid, return receipt requested; considered delivered on the day the notice is signed for.

If to District
Downey Unified School District
11627 Brookshire Ave.
Downey, CA 90241
ATTN: Annie Aung

If to Contractor:

_____, CA _____
ATTN: _____

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

Dated: _____, 20_____

Dated: _____, 20_____

Downey Unified School District

_____ **Contractor**

Signature: _____

Signature: _____

Print Name: _____

Print Name: _____

Print Title: _____

Print Title: _____

NOTE: If the Contractor is a corporation, Contractor must attach a certified copy of the corporation's by-laws, or of the resolution of the Board of Directors of the corporation, authorizing the above person to execute this Agreement and the bonds required by the Contract Documents.

END OF DOCUMENT

DOCUMENT 00 45 40

CERTIFICATIONS TO BE COMPLETED BY CONTRACTOR

THE UNDERSIGNED MUST CHECK EACH BOX AND EXECUTE THIS FORM AND HEREBY CERTIFIES TO THE GOVERNING BOARD OF THE DISTRICT THAT:

- The undersigned is a representative of the Contractor,
- The undersigned is familiar with the facts herein certified and acknowledged,
- The undersigned is authorized and qualified to execute this Agreement and these certifications on behalf of Contractor and that by executing this Agreement undersigned is certifying the following items.

Labor Code Sections 1860-1861 (Workers' Compensation). In accordance with Labor Code section 3700, every contractor will be required to secure the payment of compensation to his or her employees. I acknowledge and certify under penalty of perjury that 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.

Government Code Sections 8355-8357 (Drug-Free Workplace). I acknowledge and certify under penalty of perjury that I will provide a drug-free workplace by doing all of the following:

- (1) 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 the actions that will be taken against employees for violations of the prohibition.
- (2) Establishing a drug-free awareness program to inform employees about all of the following:
 - (A) The dangers of drug abuse in the workplace.
 - (B) The person's or organization's policy of maintaining a drug-free workplace.
 - (C) Any available drug counseling, rehabilitation, and employee assistance programs.
 - (D) The penalties that may be imposed upon employees for drug abuse violations.
- (3) Requiring that each employee engaged in the performance of the contract or grant be given a copy of the statement required by subdivision (a) and that, as a condition of employment on the contract or grant, the employee agrees to abide by the terms of the statement.

I also acknowledge that this Contract may be subject to suspension of payments under the contract or grant or termination of the contract or grant, or both, and the contractor or grantee thereunder may be subject to debarment, in accordance with the requirements of the above-referenced statute, if the contracting or granting agency determines that any of the following has occurred:

- (1) The contractor or grantee has made a false certification under Section 8355.
- (2) The contractor or grantee violates the certification by failing to carry out the requirements of subdivisions (a) to (c), inclusive, of Section 8355.

I also acknowledge that the Department of General Services shall establish and maintain a list of individuals and organizations whose contracts or grants have been canceled due to failure to comply with the above-referenced statute. This list shall be updated monthly and published each month. No state agency shall award a contract or grant to a person or organization on the published list until that person or organization has complied with the above-referenced statute.

Tobacco-Free Environment. Pursuant to, without limitation, 20 U.S.C. section 6083, Labor Code section 6400 et seq., Health & Safety Code section 104350 et seq. and District Board Policies, all District sites, including the Project site, are tobacco-free environments. Smoking and the use of tobacco products by all persons is prohibited on or in District property. District property includes school buildings, school grounds, school owned vehicles and vehicles owned by others while on District property.

I acknowledge and certify under penalty of perjury that I am aware of the District's policy regarding tobacco-free environments at District sites, including the Project site and acknowledge and 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. The District also prohibits electronic cigarettes, "vaping" or similar product uses on District sites.

No Hazardous Materials. I acknowledge and certify under penalty of perjury 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. I have instructed our employees with respect to the above-mentioned standards, hazards, risks, and liabilities.

- (i) 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 (.1%) asbestos shall be defined as asbestos-containing material. 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.
- (ii) 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.

The Contractor must immediately notify the District within two (2) Business Days, if the Contractor finds and before it disturbs, any material that the Contractor believes may be hazardous waste, as defined in section 25117 of the Health and Safety Code, and requires removal to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law.

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

1993 are presumed to contain some lead-based paint until sampling proves otherwise.

(i) **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 ("DHS") is to conduct a sample survey of schools in the State of California for the purpose of developing risk factors to predict lead contamination in public schools. (Ed. Code, § 32241.)

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

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

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

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

Because it is assumed by the District that all painted surfaces (interior as well as exterior) within the District contain some level of lead, it is imperative that the Contractor, its workers and subcontractors fully and adequately comply with all applicable laws, rules and regulations governing lead-based materials (including title 8, California Code of Regulations, section 1532. 1).

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

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

In 2008, the U.S. Environmental Protection Agency, issued a rule pursuant to the authority of Section 402(c)(3)

of the Toxic Substances Control Act, requiring lead safe work practices to reduce exposure to lead hazards created by renovation, repair and painting activities that disturb lead-based paint (Renovation, Repair and Painting Rule). Renovations in homes, childcare facilities, and schools built prior to 1978 must be conducted by certified renovations firms, using renovators with accredited training, and following the work practice requirements to reduce human exposures to lead.

Contractor, its workers and subcontractors must fully and adequately comply 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 requirements apply to all contractors who disturb lead-based paint in a six-square-foot area or greater indoors or a 20-square-foot 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.

(iii) **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.

I acknowledge and certify under penalty of perjury, that:

1. I have received notification of potential lead-based materials on the District's property;
 2. I am knowledgeable regarding and will comply with all applicable laws, rules, and regulations governing work with, and disposal of, lead.
-

Imported Materials. All soils, aggregate, or related materials ("Fill") that Contractor, a Subcontractor, agent or supplier, in any way, provides or delivers and/or supplies to the Project Site shall be free of any and all hazardous material as defined in section 25260 of the Health and Safety Code, shall satisfy the requirements of any environmental review of the Project performed pursuant to the statutes and guidelines of the California Environmental Quality Act, sections 21000 et seq. of the Public Resources Code ("CEQA"), and shall comply with the requirements of sections 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. I acknowledge that, to the furthest extent permitted by California law, the indemnification provisions in the Contract Documents apply to, without limitation, any claim(s) connected with providing, delivering, and/or supplying Fill.

Roofing Contract Financial Interest Certification (Public Contract Code § 3006)

I, _____ **[Your Name]**, _____ **[Firm Name]**
certify that I have not offered, given, or agreed to give, received, accepted, or agreed to accept, any gift, contribution, or any financial incentive whatsoever to or from any person in connection with a roof project contract or subcontract on the Project. As used in this certification, "person" means any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.

I, _____ **[Your Name]**, _____ **[Firm Name]**
certify that I do not have, and throughout the duration of the Contract, I will not have, any financial relationship in connection with the performance of the Contract with any architect, engineer, roofing consultant, materials manufacturer, distributor, or vendor that is not disclosed below.

I, _____ **[Your Name]**, _____ **[Firm Name]**
have the following financial relationships with an architect, engineer, roofing consultant, materials manufacturer, distributor, or vendor, or other person in connection with the following roof project contract:

Name of firm ("Firm"): _____
Mailing address: _____
Address of branch office used for this Project: _____
If subsidiary, name and address of parent company: _____

For Projects without substantive roofing components, check the following box and execute this certification:

The Work on the Contract (1) does not include the replacement or repair of a roof or (2) is a repair of twenty five percent (25%) or less of the roof, (3) or is a repair project that has a total cost of twenty one thousand dollars (\$21,000) or less.

Russian Sanctions Certification

On February 21, 2022, President Biden issued Executive Order 14065 (<https://www.whitehouse.gov/briefing-room/presidential-actions/2022/02/21/executive-order-on-blocking-property-of-certain-persons-and-prohibiting-certain-transactions-with-respect-to-continued-russian-efforts-to-undermine-the-sovereignty-and-territorial-integrity-of-ukraine/>; "Federal Order") imposing economic sanctions and prohibiting many activities including, but not limited to, investing in, importing to, exporting from, and contracting with, areas of Ukraine and in Russia. On March 4, 2022, California Governor Newsom issued Executive Order N-6-22 requiring state agencies to take steps to ensure any agency and entity under contract with state agencies comply with the Federal Order (<https://www.gov.ca.gov/wp-content/uploads/2022/03/3.4.22-Russia-Ukraine-Executive-Order.pdf>; "State Order").

The District requires the Contractor, as a vendor with the District, to comply with the economic sanctions imposed in response to Russia's actions in Ukraine, including the orders and sanctions identified on the U.S. Department of the Treasury website (<https://home.treasury.gov/policy-issues/financial-sanctions/sanctions-programs-and-country-information/ukraine-russia-related-sanctions>).

If your Firm's contract with the District has a cumulative value of \$5 million or more, your certification here constitutes your written response to the District, indicating:

- (1) that your Firm is in compliance with the required economic sanctions of the Federal and State Orders;
- (2) the steps your Firm has taken in response to Russia's actions in Ukraine, including, but not limited to, desisting from making new investments in, or engaging in financial transactions with, Russian entities, not

transferring technology to Russia or Russian entities, and directly providing support to the government and people of Ukraine.

I ACKNOWLEDGE AND CERTIFY UNDER PENALTY OF PERJURY THAT I AM DULY AUTHORIZED TO LEGALLY BIND THE CONTRACTOR TO ALL PROVISIONS AND ITEMS INCLUDED IN THESE CERTIFICATIONS, THAT THE CONTENTS OF THESE CERTIFICATIONS ARE TRUE, AND THAT THESE CERTIFICATIONS ARE MADE UNDER THE LAWS OF THE STATE OF CALIFORNIA.

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

DOCUMENT 00 45 85

CRIMINAL BACKGROUND INVESTIGATION / FINGERPRINTING CERTIFICATION

The undersigned does hereby certify to the governing board of the District that undersigned is a representative of the Contractor, is familiar with the facts herein certified, is authorized and qualified to execute this certificate on behalf of Contractor; and that the information in this Criminal Background Investigation / Fingerprinting Certification is true and correct.

1. **Education Code.** Contractor has taken at least one of the following actions (check all that apply):

All Workers Fingerprinted. The Contractor 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 interact with pupils, outside of the immediate supervision and control of the pupil's parent or guardian or a school employee, has a valid criminal records summary as described in Education Code Section 44237 (Contractor shall "require each applicant for employment in a position requiring contact with minor pupils to submit two sets of fingerprints prepared for submittal by the employer to the Department of Justice for the purpose of obtaining criminal record summary information from the Department of Justice and the Federal Bureau of Investigation."). A complete and accurate list of Contractor's employees and of all of its subcontractors' employees who may interact with District pupils during the course and scope of the Contract is attached hereto; and/or

Physical Barrier. Pursuant to Education Code section 45125.2, Contractor has installed or will install, prior to commencement of work, a physical barrier at the Project site, that will limit contact between Contractor's employees and District pupils at all times; and/or

Continual Supervision by Fingerprinted Employee. Pursuant to Education Code section 45125.2, 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 has ascertained has not been convicted of a violent or serious felony. The name and title of the employee who will be supervising Contractor's employees and its subcontractors' employees is:

Name: _____ **Title:** _____

Unoccupied Site. The Work on the Contract is at an unoccupied school site and no employee and/or subcontractor or supplier of any tier of Contract shall come in contact with the District pupils.

2. **Megan's Law (Sex Offenders).** I have verified and will continue to verify that the employees of Contractor that will be on the Project site and the employees of the Subcontractor(s) that will be on the Project site are **not** listed on California's "Megan's Law" Website (<http://www.meganslaw.ca.gov/>).

Contractor's responsibility for background clearance extends to all of its employees, subcontractors, and employees of subcontractors 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: _____

END OF DOCUMENT

DOCUMENT 00 61 14

PERFORMANCE BOND (100% of Contract Price)

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

WHEREAS, the governing board ("Board") of the **Downey Unified 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:

Lewis Elementary School Campus-Wide Fire Alarm ("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, the 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 District in the penal sum of:

\$ _____ DOLLARS,

lawful money of the United States, for payment to the District and will and truly be made pursuant to the provisions herein. Principal and Surety, each of us, bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally to:

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

In the event the Principal is declared by the District to be in breach or default in the performance of the Contract, then, after written notice from the District to the Surety, as provided for herein, the Surety shall either remedy the default or breach of the Principal or shall take charge of the Work of the Contract and complete the Contract with a Contractor other than the Principal at its own expense; provided, however, that the procedure by which the Surety undertakes to discharge its obligations under this Bond shall be subject to the advance written approval of the District.

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

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, replace, 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's 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 shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the Contract Documents or to the Work.

Any claims under this bond may be addressed to the Surety at the following address. This cannot be the Contractor's broker for this bond, but must be an employee of the Surety or the Surety's legal counsel:

Attention: _____

Telephone No.: (_____) _____ - _____

Fax No.: (_____) _____ - _____

E-mail Address: _____

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

(Name of Principal)

(Name of Surety)

(Signature of Person with Authority)

(Signature of Person with Authority)

(Print Name)

(Print Name)

(Name of California Agent of Surety)

(Address of California Agent of Surety)

(Telephone Number 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 15

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

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

WHEREAS, the governing board ("Board") of the **Downey Unified 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:

Lewis Elementary School Campus-Wide Fire Alarm ("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 100 percent (100%) of the Contract price, to secure the claims to which reference is made in the Civil Code of California, including section 9100, and the Labor Code of California, including section 1741.

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 penal 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 pursuant to all applicable statutes and laws applicable to the provisions herein. Principal and Surety, each of us, bind ourselves, our heirs, executors, administrators, successors, or assigns, jointly and severally, to those applicable statutes and laws, and to the provisions herein.

The condition of this obligation is that if the Principal or any of his or its subcontractors, of the heirs, executors, administrators, successors, or assigns of any, all, or either of them shall fail to pay for any labor, materials, provisions, equipment, 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 due under the Unemployment Insurance Act with respect to that 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 sections 9000 through 9566 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.

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 shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the Contract Documents or to the Work.

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

(Name of Principal)

(Name of Surety)

(Signature of Person with Authority)

(Signature of Person with Authority)

(Print Name)

(Print Name)

(Name of California Agent of Surety)

(Address of California Agent of Surety)

(Telephone Number 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

PROPOSED CHANGE ORDER FORM

Downey Unified School District
 11627 Brookshire Avenue
 Downey, CA 90241

PCO NO.:

Project: _____

Date: _____

Bid No.: _____

DSA File No.: _____

RFI #: _____

DSA Appl. No.: _____

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

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

	<u>WORK PERFORMED OTHER THAN BY CONTRACTOR</u>	<u>ADD</u>	<u>DEDUCT</u>
(a)	<u>Material</u> (attach suppliers’ invoice or itemized quantity and unit cost plus sales tax)		
(b)	<u>Add Labor</u> (attach itemized hours and rates, fully encumbered)		
(c)	<u>Add Equipment</u> (attach suppliers’ invoice)		
(d)	<u>Subtotal</u>		
(e)	<u>Add overhead and profit for any and all tiers of Subcontractor</u> , the total not to exceed ten percent (10%) of Item (d)		
(f)	<u>Subtotal</u>		
(g)	<u>Add Overhead and Profit for Contractor</u> , not to exceed five percent (5%) of Item (f)		
(h)	<u>Subtotal</u>		

(i)	Add Bond and Insurance , not to exceed one and a half percent (1.5%) of Item (h)		
(j)	TOTAL		
(k)	Time (zero unless indicated; "TBD" not permitted)	____ Calendar Days	

[REMAINDER OF PAGE LEFT BLANK INTENTIONALLY]

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

Downey Unified School District
11627 Brookshire Avenue
Downey, CA 90241

CHANGE ORDER NO.:

CHANGE ORDER

Project: _____

Date: _____

Bid No.: _____

DSA File No.: _____

DSA Appl. No.: _____

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

Owner: _____

Contractor: _____

[Name / Address]

[Name / Address]

Architect: _____

Project Inspector: _____

[Name / Address]

[Name / Address]

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

Reason:	[Reason]		
PCO #	[Description of change]	\$	
Requested by:	[Requester]		
Performed by:	[Performer]		
Reason:	[Reason]		
Contract time will be adjusted as follows:		Original Contract Amount:	\$
Previous Completion Date: <u> [Date] </u>		Amount of Previously Approved Change Order(s):	\$
<u> [#] </u> Calendar Days Extension (zero unless otherwise indicated)		Amount of this Change Order:	\$
Current Completion Date: <u> [Date] </u>		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:

_____ Date _____
[Name]

_____ Date _____
[Name]

Architect:

Project Inspector:

_____ Date _____
[Name]

_____ Date _____
[Name]

END OF DOCUMENT

DOCUMENT 00 65 10

NOTICE TO PROCEED

Dated: _____, 20__

To: _____
("Contractor")

(Address)

From: Governing Board ("Board") of **Downey Unified School District** ("District")

Re: **Lewis Elementary School Campus-Wide Fire Alarm** ("Project" or "Contract")

Contractor is hereby notified that the Contract Time under the Contract will commence to run on _____
_____, 20__. By that date, Contractor shall start performing its obligations under the Contract
Documents. In accordance with the Agreement executed by Contractor, the Contract Time and Project Completion
is _____, 20__.

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

1. Contractor's preliminary schedule of construction.
2. Contractor's preliminary schedule of submittals, including Shop Drawings, Product Data, and Samples submittals.
3. Contractor's preliminary schedule of values for all of the Work.
4. Contractor's preliminary Contractor's Safety Plan specifically adapted for the Project.
5. A complete subcontractors list, including the name, address, telephone number, facsimile number, California State Contractor's License number, classification, and monetary value of all Subcontracts.

Thank you. We look forward to a successful Project.

Downey Unified School District

SIGNATURE: _____

NAME: _____

TITLE: _____

END OF DOCUMENT

DOCUMENT 00 65 36

WARRANTY AND GUARANTEE FORM

1. _____ ("Contractor")
hereby agrees that the _____ ("Work" of Contractor)

which Contractor has installed for the **Downey Unified School District** ("District") for the following project:

Lewis Elementary School Campus-Wide Fire Alarm ("Project" or "Contract")

was performed in accordance with the requirements of the Contract Documents and that the Work as installed fulfills the requirements of the Contract Documents.

2. Contractor agrees to repair or replace all of the Work that may prove to be defective in workmanship or material and any other adjacent Work that may be displaced in connection with such replacement within a period of _____ **YEAR(S)** from the date of Completion as defined in the Contract, ordinary wear and tear and unusual abuse or neglect excepted. The date of completion is _____, 20__.
3. In the event Contractor fails to comply with the above-mentioned conditions within a reasonable period of time, as determined by District, but not later than **SEVEN (7)** calendar days after being notified in writing by District, Contractor authorizes District to proceed to repair or replace the defective Work at the expense of Contractor. Contractor shall pay the costs and charges therefor upon demand.

4. **Representatives to be contacted for service subject to the terms of Contract:**

NAME: _____

ADDRESS: _____

PHONE NO.: _____

EMAIL: _____

Date: _____

Proper Name of Contractor: _____

Signature: _____

Print Name: _____

Title: _____

END OF DOCUMENT

DOCUMENT 00 70 00

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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: Weather that satisfies all of the following conditions: (1) unusually severe precipitation, sleet, snow, hail, heat, or cold conditions in excess of the norm for the location and time of year it occurred, (2) unanticipated, and (3) occurring at the Project Site.

1.1.2. Allowance(s): Amount(s) stated in the Agreement for specific scopes of work for which Contractor may, upon District's written approval, bill its time, materials, and other items in the identical structure as a Change Order.

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

1.1.4. Architect: The individual, partnership, corporation, joint venture, or any combination thereof, named as Architect that has the rights and authority assigned to the Architect in the Contract Documents. The term Architect means the District's Architect on this Project or the Architect's authorized representative. If no Architect is used on the Project, then all references in the Contract Documents to Architect shall be read to refer to District.

1.1.5. As-Built Drawings: A reproducible full-size sets of drawings to be prepared on a monthly basis, and upon Project Completion, 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.

1.1.6. Bidder: A contractor who provides a bid to the District to perform the Work of the Contract.

1.1.7. 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. If a Change Order is required to be approved by DSA, the District may call it a Construction Change Document.

1.1.8. Completion: When the entire Work shall have been completed, including all punch list items, as further detailed in the "Completion of the Project" Section herein. Final DSA approval of the Project is not required for Completion. There is no "Substantial Completion" or "Beneficial Occupancy" for this Project, although the District may occupy the Project prior to completion as permitted herein.

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

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

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

1.1.11.1. Notice to Bidders / Invitation to Bid

- 1.1.11.2. Instructions to Bidders
- 1.1.11.3. Bid Form
- 1.1.11.4. Bid Bond
- 1.1.11.5. Designated Subcontractors List
- 1.1.11.6. Noncollusion Declaration
- 1.1.11.7. Iran Contracting Act Certification
- 1.1.11.8. Certifications to be Completed by Contractor
- 1.1.11.9. Disabled Veteran’s Business Enterprise Participation Certification
- 1.1.11.10. Criminal Background Investigation/Fingerprinting Certification
- 1.1.11.11. Notice of Award
- 1.1.11.12. Agreement
- 1.1.11.13. Storm Water Pollution Prevention Plan (if applicable)
- 1.1.11.14. Notice to Proceed
- 1.1.11.15. Performance Bond
- 1.1.11.16. Payment Bond (Contractor’s Labor and Material Bond)
- 1.1.11.17. District Contract Forms (if applicable)
- 1.1.11.18. District Closeout Forms (if applicable)
- 1.1.11.19. Warranty and Guarantee Form
- 1.1.11.20. General Conditions
- 1.1.11.21. Special Conditions
- 1.1.11.22. Project Plans, Specifications, Technical Specifications, and Drawings
- 1.1.11.23. Addenda to any of the above documents
- 1.1.11.24. Schedules if approved in writing by the District
- 1.1.11.25. Change Orders or written modifications to the above documents if approved in writing by the District

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

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

1.1.14. Contractor: The licensed person, entity, or entities identified in the Agreement as contracting to

perform the Work.

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

1.1.16. Day(s): Unless otherwise designated, day(s) means calendar day(s). “**Business Day(s)**” shall mean days except Saturday, Sunday, a day that is federally-recognized holiday, or a day that is a California-recognized holiday.

1.1.17. Defective or Nonconforming Work. Defective or nonconforming Work is any Work which is unsatisfactory, faulty or deficient by: (a) not conforming to the requirements of the Contract Documents; (b) not conforming to the standards of workmanship of the applicable trade; (c) not being in compliance with the requirements of any inspection, reference, standard, test, or approval required by the Contract Documents; or (d) damage to Work occurring prior to Completion.

1.1.18. District: The public agency or the school district for which the Work is performed.

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

1.1.20. DSA: Division of the State Architect.

1.1.21. Force Account Directive: A process that may be used when the District and the Contractor cannot agree on a price for a specific scope of work or before Contractor prepares a price for the scope of work and Contractor is directed in writing by the District to perform on a time and materials basis.

1.1.22. Premises: The real property owned by the District on which the Project Site is located. For example, if the Project is only being performed on a portion of a school, the Site is only the area where the Project is located (the Project Site), and the Premises is the entire school site.

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

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

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

1.1.26. Project Inspector: (or “Inspector”) Individual(s) retained by the District in accordance with title 24 of the California Code of Regulations to monitor and inspect the Project. If no Project Inspector is used on the Project, then all references in the Contract Documents to Project Inspector shall be read to refer to District.

1.1.27. Program Manager: The individual, partnership, corporation, joint venture, or any combination thereof, or its authorized representative, named as such by the District. If no Program Manager is designated for the Project then all references to Program Manager shall refer to District.

1.1.28. Proposed Change Order: 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.

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

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

1.1.31. Request for Substitution: 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.

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

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

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

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

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

1.1.37. Specifications: That portion of the Contract Documents, Division 1 through Division 17, and all technical sections, and addenda to all of these, if any, consisting of written descriptions and requirements of a technical nature of materials, equipment, construction methods and systems, standards, and workmanship.

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

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

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

1.1.41. SWPPP: The District's Storm Water Pollution Prevention Plan.

1.1.42. Terms. The term "provide" means "provide complete in place" or to "furnish and install" such item. Unless otherwise provided in the Contract Documents, the terms "approved;" "directed;" "satisfactory;" "accepted;" "acceptable;" "proper;" "required;" "necessary" and "equal" shall mean as approved, directed, satisfactory, accepted, acceptable, proper, required, necessary and equal, in the opinion of the District. The term "typical" as used in the Drawings shall require the installation or furnishing of such item(s) of the Work designated as "typical" in all other areas similarly marked as "typical"; Work in such other areas shall conform to that shown as "typical" or as reasonably inferable therefrom.

1.1.43. Unilateral Change Order: 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. **A Unilateral Change Order is NOT a Construction Change Document (which is defined above as a Change Order that DSA must approve).**

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

1.2. Laws Concerning the Contract

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

1.3. No Oral Agreements

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

1.4. No Assignment

Contractor shall not assign the Contract or any part thereof including, without limitation, any services or money to become due without the prior written consent of the District. Assignment without District's prior written consent shall be null and void. Any assignment of money due or to be come due under the Contract shall be subject to a prior lien for services rendered or material supplied for Work performed 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 the Contract. Contractor shall not assign or transfer in any manner to a Subcontractor or supplier the right to prosecute or maintain an action against the District.

1.5. Confidentiality

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

1.6. Notice and Service Thereof

Any notice required by the Contract shall be in writing, dated and signed by the party giving notice or by a duly authorized representative of that party and pursuant to the provisions in the Agreement.

1.7. No Waiver

The failure of District in any one or more instances to insist upon strict performance of any term of the Contract or to exercise any District option shall not be construed as a waiver or relinquishment of the right to assert or rely upon any such term or option on a 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 hereunder, except as may be specifically agreed in writing.

1.8. Substitutions for Specified Items

1.8.1. Requests for substitutions prior to award of the Contract shall be submitted within the time period indicated in the Instructions to Bidders.

1.8.2. Requests for substitutions after award of the Contract shall be submitted within **THIRTY-FIVE (35)** days of the date of the Notice of Award. This time period may be extended by the District only, in its sole discretion.

1.8.3. 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.

1.8.3.1. 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.

1.8.3.2. 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(b); therefore, Contractor shall not be entitled to request a substitution with respect to those materials, products or services.

1.8.4. A request for a substitution shall be in writing and shall include:

1.8.4.1. 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;

1.8.4.2. Available maintenance, repair or replacement services;

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

1.8.4.4. 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

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

1.8.5. 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:

1.8.5.1. 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;

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

1.8.5.3. 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;

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

1.8.5.5. 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.

1.8.6. 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.

1.8.7. 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.

1.8.8. If the District approves a substitution after the award of the Contract, the District shall memorialize that approval in a Change Order or other applicable Contract modification process.

1.9. Materials and Work

1.9.1. Except as otherwise stated in the 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 the Contract within the Contract Time.

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

1.9.3. Materials shall be furnished in sufficient quantities and at such times as to ensure uninterrupted progress of Work and shall be stored properly and protected as required.

1.9.4. 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.

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

1.9.6. District reserves the right but has no obligation, for any neglect in complying with the above instructions, to place orders for such materials and/or equipment as it may deem advisable in order that the Work may be completed at the date specified in the Agreement, and all expenses incidental to the

procuring of said materials and/or equipment shall be paid for by Contractor or withheld from payment(s) to Contractor.

1.9.7. 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 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.

1.9.8. 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 law permitting such protection or any rights under law permitting such persons to look to funds due Contractor in hands of District (e.g., stop payment notices). 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.

1.9.9. Title to new materials and/or equipment for the Work 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. 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.

1.9.10. Contractor certifies that it shall comply with the recycled product requirements of Public Contract Code section 22150, et seq., including, without limitation, section 22154 which states, "All businesses shall certify in writing to the contracting officer, or his or her representative, the minimum, if not exact, percentage of postconsumer material in the products, materials, goods, or supplies being offered or sold to any local public entity."

2. DISTRICT

2.1. The governing board of the District or its designees will act for the District in all matters pertaining to the Contract.

2.2. The District may, at any time,

2.2.1. 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

2.2.2. 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.

2.3. District's Rights if Contractor Fails to Perform. If the District at any time believes that the Contractor is behind schedule, is failing to construct the Project pursuant to the Contract Documents or is otherwise failing to perform any provisions of this Contract, the District, after **FORTY-EIGHT (48)** hours written notice to the Contractor, may take any action necessary or beneficial to the District to complete the Project, takeover the Work of the Contract, terminate or suspend the Contract as indicated herein, or any combination or portion of those actions. The Contractor and the Surety shall be liable to the District for

any cost incurred by the District in those actions and the District has the right to deduct the cost thereof from any payment then or thereafter due the Contractor.

3. ARCHITECT

- 3.1.** 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 to, among other things, observe the progress and quality of the Work on behalf of the District.
- 3.2.** Architect shall have authority to reject materials, workmanship, and/or the Work whenever rejection may be necessary, in Architect's reasonable opinion, to insure the proper execution of the Contract and if Work is defective or does not conform to the requirements of the Contract Documents. Whenever the Architect considers it necessary or advisable, for implementation of the intent of the Contract Documents, the Architect will have authority to require additional inspections or testing of the Work, whether or not such Work is fabricated, installed or completed. Neither this authority of the Architect nor a decision made in good faith by the Architect to exercise or not to exercise that authority shall give rise to a duty or responsibility to the Contractor, Subcontractors, material suppliers, their agents or employees, or other persons performing portions of the Work.
- 3.3.** Architect shall, with the District and on behalf of the District, determine the amount, quality, acceptability, and fitness of all parts of the Work, and interpret the Specifications, Drawings, and shall, with the District, interpret all other Contract Documents.
- 3.4.** Architect shall have all authority and responsibility established by law, including title 24 of the California Code of Regulations.
- 3.5.** Contractor shall provide District and the Construction Manager with a copy of all written communication between Contractor and Architect at the same time as that communication is made to Architect, including, without limitation, all RFIs, correspondence, submittals, claims, and proposed change orders.

4. CONSTRUCTION MANAGER

- 4.1.** If a Construction Manager is used on this Project, the Construction Manager will provide administration of the Contract on the District's behalf. After execution of the Contract and Notice to Proceed, all correspondence and/or instructions from Contractor and/or District shall be forwarded through the Construction Manager. The Construction Manager will not be responsible for and will not have control or charge of construction means, methods, techniques, sequences, or procedures or for safety precautions in connection with the Work, which shall all remain the Contractor's responsibility.
- 4.2.** 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. 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 Construction Manager, in good faith, shall not give rise to any duty or responsibility of the Construction Manager to the Contractor, any Subcontractor, their agents, employees, or other persons performing any of the Work. Construction Manager shall have free access to all parts of Work at any time.
- 4.3.** If the District does not use a Construction Manager on this Project, all references to Construction Manager or CM shall be read as District.

5. INSPECTOR, INSPECTIONS AND TESTS

5.1. Project Inspector

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

5.1.2. No Work shall be carried on except with the knowledge and under the inspection of the Project Inspector(s). The Project Inspector(s) shall have free access to 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. Inspection of Work shall not relieve Contractor from the obligation to fulfill the Contract. Project Inspector(s) and the DSA are authorized to stop work whenever the Contractor and/or its Subcontractor(s) are not complying with the Contract Documents. Any work stoppage by the Project Inspector(s) and/or DSA shall be without liability to the District. Contractor shall instruct its Subcontractors and employees accordingly.

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

5.1.4. Limitations on Project Inspector Authority. The Project Inspector does not have authority to interpret the Contract Documents or to modify the Work depicted in the Contract Documents. No Work inconsistent with the Contract Documents shall be performed solely on the basis of the direction of the Project Inspector, and the Contractor shall be liable to the District for the consequences of all Work performed on such basis.

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. If the Contract Documents, laws, ordinances or any public authority with jurisdiction over the Work requires the Work, or any portion thereof, to be specially tested, inspected or approved, the Contractor shall give the Architect, the Construction Manager and the Project Inspector written notice of the readiness of such Work for observation, testing or inspection at least seventy-two (72) hours prior to the time for the conducting of such test, inspection or observation. If inspection, testing or observation is by authority other than the District, the Contractor shall inform the Project Inspector and the Construction Manager not less than seventy-two (72) hours prior to the date fixed for such inspection, test or observation. The Contractor shall not cover up any portion of the Work subject to tests, inspections or observations prior to the completion and satisfaction of the requirements of such test, inspection or observation. In the event that any portion of the Work subject to tests, inspection or approval shall be covered up by Contractor prior to completion and satisfaction of the requirements of such tests, inspection or approval, Contractor shall be responsible for the uncovering of such portion of the Work as is necessary for performing such tests, inspection or approval without adjustment of the Contract Price or the Contract Time on account thereof.

5.2.3. 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.

5.2.4. 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, that must by terms of the Contract Documents be tested, in order that the District may arrange for the testing of same at the source

of supply. This notice shall be, at a minimum, seventy-two (72) hours prior to the manufacture of the material that must be tested.

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

5.2.6. The District will select and pay testing laboratory costs for all tests and inspections. Costs of tests of any materials found to be not in compliance with the Contract Documents shall be paid for by the District and reimbursed by the Contractor or deducted from the Contract Price.

5.3. Costs for After Hours and/or Off Site Inspections

5.3.1. If the Contractor performs Work outside the Inspector's regular working hours, over a period of more than eight (8) hours per day by any single person, on weekends/holidays or requests the Inspector to perform inspections off Site, then the costs of any inspections required outside regular working hours, over a period of more than eight (8) hours per day by any single person, on weekends/holidays or off Site, shall be borne by the Contractor and may be invoiced to the Contractor by the District or the District may deduct those expenses from the next Progress Payment.

6. CONTRACTOR

Contractor shall construct the Work for the Contract price including any adjustment(s) to the Contract Price pursuant to provisions herein regarding changes to the Contract Price. Except as otherwise noted, Contractor shall provide and pay for all labor, materials, equipment, permits, fees, licenses, facilities, transportation, taxes, and services necessary for the proper execution and Completion of the Work, except as indicated herein.

6.1. Status of Contractor

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

6.1.2. As required by law, Contractor and all Subcontractors shall be properly licensed and regulated by the Contractor's State License Board, located at 9821 Business Park Drive, , Sacramento, California 95827, with a mailing address of Post Office Box 26000, Sacramento, California, and with a website at <http://www.cslb.ca.gov>.

6.2. Contractor's Supervision

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

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

6.2.3. Before commencing the Work, Contractor shall give written notice to District of the name of its project manager and construction superintendent. Neither the Contractor's project manager nor construction superintendent shall be changed except with prior written notice to District, unless the Contractor's project manager and/or construction superintendent proves to be unsatisfactory to Contractor, District, any of the District's employees, agents, the Construction Manager, or the Architect, in which case, Contractor shall notify District in writing. District retains the right to reasonably refuse Contractor's replacement personnel. 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.

6.2.4. 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.

6.2.5. The Contractor's project manager shall devote sufficient time to the Project on site, and in the Contractor's home office to pre-plan activities to meet the Construction Schedule and fulfill all Contract obligations. This includes making timely submittals, issuing and disseminating necessary RFI's, promptly processing and distributing bulletins, change orders and payments, keeping required logs current etc. If any of these activities fall behind contract requirements or dates necessary to complete the Project on time, the Contractor must provide a full time project manager on the Project Site dedicated solely to the Project, until the deficiencies are corrected.

6.2.6. The Contractor shall verify all indicated dimensions before ordering materials or equipment, or before performing Work. The Contractor shall take field measurements, verify field conditions, and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Project Documents before commencing work. Errors, inconsistencies or omissions discovered shall be immediately reported to the District. Upon commencement of any item of Work, the Contractor shall be responsible for dimensions related to the Work and shall make any corrections necessary to make Work properly fit at no additional cost to District. This responsibility for verification of dimensions is a non-delegable duty and may not be delegated to subcontractors or agents.

6.2.7. Omissions from the Drawings or Specifications, or the misdescription of details of Work which are manifestly necessary to carry out the intent of the Drawings and Specifications, or which are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed Work, but they shall be performed as if fully and correctly set forth and described in the Drawings and Specifications.

6.2.8. The Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. The Contractor shall be responsible to see that the finished Work complies accurately with the Contract Documents.

6.3. Duty to Provide Fit Workers

6.3.1. 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.

6.3.2. COVID-19. Contractor shall ensure that all its employees and employees of its subcontractors shall comply with all applicable and existing federal, state, and/or local statutes, orders, rules, regulations, ordinances, and/or directives relating to construction site safety in connection with COVID-19, and/or any

similar virus or derivative strain.

6.3.3. 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.

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

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

6.3.6. Compliance with Immigration Reform and Control Act of 1986. As required by law, Contractor and all Subcontractors shall employ individuals for the Work in conformity with the Immigration Reform and Control Act of 1986, 8 USC §§1101 et seq.

6.4. Personnel

6.4.1. 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. The District will not permit any (1) verbal or physical contact with neighbors, students, and faculty; (2) profanity, or inappropriate attire or behavior; (3) photographing, videoing, or audio recording of any neighbors, students, and faculty or any posting of any photographs, videos, or audio recordings of any neighbors, students, and faculty on any internet site, social media platform of any kind, regardless of source of any photograph, video, or audio recording. District may require Contractor to permanently remove noncomplying persons from Project Site.

6.4.2. The Contractor shall employ a full-time superintendent and necessary assistants who shall have complete authority to represent and act on behalf on the Contractor on all matters pertaining to the Work. The superintendent shall be competent and have a minimum of five (5) years' experience in construction supervision on projects of similar scale and complexity. The superintendent shall be satisfactory to the District and, if not satisfactory, shall be replaced by the Contractor with one that is acceptable to the District. The superintendent shall not be changed without the written consent of the District unless the superintendent ceases to be employed by the Contractor.

6.4.3. The Contractor shall employ a competent estimator and necessary assistants, or contract for sufficient services of an estimating consultant and to process proposed change orders. The estimator shall have a minimum of five (5) years' experience in estimating. The estimator shall be satisfactory to the District and, if not satisfactory, shall be replaced by the Contractor with one that is acceptable. The Contractor shall submit PCO's requested by the District within fourteen (14) calendar days.

6.4.4. The Contractor shall employ a competent scheduler and necessary assistants, or contract for sufficient services of a scheduling consultant. The scheduler shall have a minimum of five (5) years' experience in scheduling. The scheduler shall be satisfactory to the District and, if not satisfactory, shall be replaced by the Contractor with one that is acceptable.

6.4.5. Contractor shall at all times enforce strict discipline and good order among Contractor's employees, and shall not employ on the Project any unfit person or anyone not skilled in the task assigned.

6.4.6. If Contractor or any Subcontractor on the Project site fails to comply with any provision herein, the District may have the offending person(s) immediately removed from the Site, and the person(s) shall be replaced within three (3) days, at no additional expense to the District. Contractor, on behalf of it and

its Subcontractors, hereby waives any claim that the provisions of this paragraph or the enforcement thereof interferes, or has the potential to interfere, with its right to control the means and methods of its performance and duties under this Contract.

6.5. Prohibition on Harassment

6.5.1. In addition to the non-discrimination requirements in the Contract Documents, the Contractor and all Subcontractors must comply with these provisions prohibiting harassment at the Site. The District is committed to providing a campus and workplace free of sexual harassment and harassment based on factors such as race, color religion, national origin, ancestry, age, medical condition, marital status, disability or veteran status. Harassment includes without limitation, verbal, physical or visual conduct which creates an intimidating, offensive or hostile environment such as racial slurs; ethnic jokes; posting of offensive statements, posters or cartoons or similar conduct. Sexual harassment includes without limitation the solicitation of sexual favors, unwelcome sexual advances, or other verbal, visual or physical conduct of a sexual nature.

6.5.2. Contractor shall take all reasonable steps to prevent harassment from occurring, including without limitation affirmatively raising the subject of harassment among its employees, expressing strong disapproval of any form of harassment, developing appropriate sanctions, informing employees of their right to raise and how to raise the issue of harassment and informing complainants of the outcome of an investigation into a harassment claim.

6.5.3. Contractor shall not permit any person, whether employed by Contractor or a Subcontractor or any other person or entity, performing any Work at or about the Site to engage in any prohibited form of harassment. Any person performing or providing Work on or about the Site engaging in a prohibited form of harassment directed to any student, faculty member or staff of the District or directed to any other person on or about the Site shall be subject to immediate removal and shall be prohibited thereafter from providing or performing any portion of the Work. Upon the District's receipt of any notice or complaint that any person employed directly or indirectly by Contractor on any Subcontractor in performing or providing the Work has engaged in a prohibited form of harassment, the District will promptly undertake an investigation of such notice or complaint. In the event that the District, after such investigation, reasonably determines that a prohibited form of harassment has occurred, the District shall promptly notify the Contractor of the same and direct that the person engaging in such conduct be immediately removed from the Site. Unless the District's determination that a prohibited form of harassment has occurred is grossly negligent or without reasonable cause, District shall have no liability for directing the removal of any person determined to have engaged in a prohibited form of harassment nor shall the Contract Price or the Contract Time be adjusted on account thereof. The indemnity provisions of the Contract Documents apply to any assertion by any person dismissed from performing or providing work at the direction of the District pursuant to this provision; or (ii) the assertion by any person that any person directly or indirectly under the employment or direction of the Contractor has engaged in a prohibited form of harassment directed to or affecting such person. The obligations of the Contractor and the Surety under the preceding sentence are in addition to, and not in lieu of, any other obligation of defense, indemnity and hold harmless whether arising under the Contract Documents, at law or otherwise; these obligations survive completion of the Work or the termination of the Contract.

6.6. Conferences and Meetings.

6.6.1. In addition to the conference and meeting requirements in the Specifications, Contractor's supervisory personnel for the Work and the Contractor's management personnel shall attend all required meetings as required by the Contract Documents or as requested by the District. The Contractor's personnel participating in conferences and meetings relating to the Work shall be authorized to act on behalf of the Contractor and to bind the Contractor. The Contractor is solely responsible for arranging for the attendance by Subcontractors and Material Suppliers at meetings and conferences relating to the Work as necessary, appropriate or as requested by the District.

6.6.2. Preconstruction Conference. The Contractor’s representatives (and representatives of Subcontractors as requested by the District) shall attend a preconstruction conference at such time and place as designated by the District. The preconstruction conference will generally address the requirements of the Work and Contract Documents, and to establish construction procedures. Subject matters of the preconstruction conference will include as appropriate: (a) administrative matters, including an overview of the respective responsibilities of the District, Architect, Construction Manager, Contractor, Subcontractors, Project Inspector, and others performing any part of the Work or services relating to the Work; (b) Submittals; (c) Changes; (d) employment practices, including Certified Payroll preparation and submission and prevailing wage rate responsibilities of the Contractor and Subcontractors; (e) Progress Schedule development and maintenance; (f) development of Schedule of Values and payment procedures; (g) implementation of BIM, if applicable; (h) communication procedures, including the handling of Requests for Information; (i) emergency and safety procedures; (j) Site visitor policies; (k) conduct of Contractor/Subcontractor personnel at the Site; and (l) Completion, Punchlist and closeout procedures.

6.6.3. Progress Meetings. Progress meetings will be conducted on regular intervals (weekly unless otherwise expressly indicated elsewhere in the Contract Documents). The Contractor’s representatives and representatives of Subcontractors (as requested by the District) shall attend progress meetings. Progress Meetings will be chaired by the District or the Construction Manager and will generally include as agenda items: Site safety, field issues, coordination of Work, construction progress and impacts to timely Completion, if any. The purposes of the progress meetings include: a formal and regular forum for discussion of the status and progress of the Work by all Project participants, a review of progress or resolution of previously raised issues and action items assigned to the Project participants, and reviews of the Progress schedule and submittals. Contractor shall prepare and submit at each progress meeting a three (3) week look-ahead schedule identifying all planned activities for the next three (3) weeks and any deviations from activities in the current Construction Schedule.

6.6.4. Special Meetings. As deemed necessary or appropriate by the District, special meetings will be conducted with the participation of the Contractor, Subcontractors and other Project participants as requested by the District.

6.6.5. Minutes of Meetings. following conclusion of the preconstruction conference, progress meetings and special meetings, the Architect or the Construction Manager will prepare and distribute minutes reflecting the items addressed and actions taken at a meeting or conference. Unless the Contractor notifies the Architect and the Construction Manager in writing of objections or corrections to minutes prepared hereunder within five (5) days of the date of distribution of the minutes, the minutes as distributed shall constitute the official record of the meeting or conference. No objections or corrections of any Subcontractor or Material Supplier shall be submitted directly to the Architect or the Construction Manager; such objections or corrections shall be submitted to the Architect and the Construction Manager through the Contractor. If the Contractor timely interposes objections or notes corrections, the resolution of such matters shall be addressed at the next scheduled progress meeting.

6.7. Purchase of Materials and Equipment

6.7.1. The Contractor is required to order and obtain materials and equipment sufficiently in advance of its Work at no additional cost or advance payment from District to ensure against price escalations or delays. All materials and equipment shall be stored on-Site and secured by Contractor unless otherwise approved in writing by the District.

6.7.2. Off-Site Storage of Materials and Equipment Only Upon District’s Written Consent. If Contractor intends to store materials and/or equipment off site after District has paid for those materials and/or equipment, Contractor must first obtain the District’s express, written consent. If Contractor receives District’s consent to store materials and/or equipment off site (“Stored Materials”), Contractor shall comply with all of the following:

6.7.2.1. Property of Others Insurance. Contractor shall procure and maintain, during the entire time Stored Materials are in off-site storage, insurance coverage acceptable to the District that shall protect Contractor and District from all claims for Stored Materials that are lost, stolen, or damaged. The District shall be named as a loss payee for this insurance coverage. The insurance coverage shall include a “loss payable endorsement” stating that all amounts payable will be paid as a joint-check to the Contractor and District. If approved in advance by District, this required insurance may be obtained by an “Employee Theft Protection Insurance Policy” or an “Employee Theft Protection Bond.”

6.7.2.2. Payment for Stored Materials. District shall only make payment to Contractor for Stored Materials if agreed upon in advance, in writing, by the District and provided that Contractor submits an itemized list of all Stored Materials with Contractor’s Application for Payment. Contractor’s itemized list of all Stored Materials shall be supported by all of the following:

6.7.2.2.1. Itemized breakdown of the Stored Materials for the purpose of requesting partial payment, identifying the serial numbers and exact storage location of each piece of equipment and material; and

6.7.2.2.2. Verified invoices for the Stored Materials; and

6.7.2.2.3. Original copy of Property of Others Insurance, Employee Theft Protection Insurance Policy, or an Employee Theft Protection Bond based on the type of insurance required by the District. These documents shall include certificates and endorsements stating the coverage and that the District is a loss payee or obligee, as appropriate.

6.7.2.2.4. An express, signed document from Contractor indicating that the District may, at any time and at its sole discretion, have unhindered and unqualified access to all Stored Materials and to remove the Stored Materials.

6.8. Documents on Work

6.8.1. Contractor shall at all times keep on the Work Site, or at another location as the District may authorize in writing, one legible copy of all Contract Documents, including Addenda and Change Orders, and current titles 19 and 24 of the California Code of Regulations, the specified edition(s) of the California Building Standards Code (electronic versions are acceptable), 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.

6.8.2. Daily Job Reports.

6.8.2.1. 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:

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

- 6.8.2.1.2. A summary of all other pertinent events and/or occurrences on that day.
- 6.8.2.1.3. The weather conditions on that day.
- 6.8.2.1.4. A list of all Subcontractor(s) working on that day,
- 6.8.2.1.5. A list of each Contractor employee working on that day and the total hours worked for each employee.
- 6.8.2.1.6. A complete list of all equipment on Site that day, whether in use or not.
- 6.8.2.1.7. A complete list of all materials, supplies, and equipment delivered on that day.
- 6.8.2.1.8. A complete list of all inspections and tests performed on that day.

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

6.9. Preservation of Records

District shall have the right to examine and audit all Daily Job Reports or other Project records of Contractor's project manager(s), project superintendent(s), and/or project foreperson(s), all certified payroll records and/or related documents including, without limitation, payroll, payment, timekeeping and tracking documents; all books, estimates, records, contracts, documents, bid documents, bid cost data, subcontract job cost reports, and other data of the Contractor, any Subcontractor, and/or supplier, including computations and projections related to bidding, negotiating, pricing, or performing the Work or Contract modification, in order to evaluate the accuracy, completeness, and currency of the cost, manpower, coordination, supervision, or pricing data at no additional cost to the District. These documents may be duplicative and/or be in addition to any Bid Documents held in escrow by the District. 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.

6.10. Integration of Work

6.10.1. 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.

6.10.2. All cost caused by defective or ill-timed Work shall be borne by Contractor, inclusive of repair work.

6.10.3. 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 written consent of District.

6.11. Obtaining of Permits and Licenses

6.11.1. Contractor shall secure and pay for all permits, licenses, and certificates. Contractor must review the Special Conditions for any changes or exceptions to this provision.

6.12. Work to Comply with Applicable Laws and Regulations

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

- 6.12.1.1.** National Electrical Safety Code, U. S. Department of Commerce
- 6.12.1.2.** National Board of Fire Underwriters’ Regulations
- 6.12.1.3.** California Building Standards Code , latest addition, and the California Code of Regulations, Title 24, including amendments
- 6.12.1.4.** Manual of Accident Prevention in Construction, latest edition, published by A.G.C. of America
- 6.12.1.5.** Industrial Accident Commission’s Safety Orders, State of California
- 6.12.1.6.** Regulations of the State Fire Marshall (title 19, California Code of Regulations) and Pertinent Local Fire Safety Codes
- 6.12.1.7.** Americans with Disabilities Act
- 6.12.1.8.** Education Code of the State of California
- 6.12.1.9.** Government Code of the State of California
- 6.12.1.10.** Labor Code of the State of California, division 2, part 7, Public Works and Public Agencies
- 6.12.1.11.** Public Contract Code of the State of California
- 6.12.1.12.** California Art Preservation Act
- 6.12.1.13.** U. S. Copyright Act
- 6.12.1.14.** U. S. Visual Artists Rights Act

6.12.2. Contractor shall comply will all applicable mitigation measures, if any, adopted by any public agency with respect to this Project pursuant to the California Environmental Quality Act (“CEQA”) (Public Resources Code sections 21000 et. seq.) (Also see the Special Conditions.)

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

6.12.4. Where Specifications or Drawings state that materials, processes, or procedures must be approved by the DSA, State Fire Marshall, or other body or agency, Contractor shall be responsible for satisfying requirements of such bodies or agencies.

6.13. Safety/Protection of Persons and Property

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

6.13.2. COVID-19. Contractor is responsible for complying with all applicable and existing federal, state, and/or local statutes, orders, rules, regulations, ordinances, and/or directives relating to construction site safety in connection with COVID-19, and/or any similar virus or derivative strain. Contractor shall ensure it has supervisor employees onsite that are trained and knowledgeable of all of these requirements to ensure full compliance on Project Site(s).

6.13.3. 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.

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

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

6.13.6. 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.

6.13.7. 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 performance of the 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.

6.13.8. 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.

6.13.9. 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.

6.13.10. 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.

6.13.11. 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.

6.13.12. Storm Water. Contractor shall comply with the District's Storm Water Pollution Prevention Plan

(SWPPP) and, if indicated in the Special Conditions, shall be the District's Qualified SWPPP Practitioner, at no additional cost to the District.

6.13.13. 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.

6.13.14. 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. The District reserves the right to designate certain items of value that shall be turned over to the District.

6.13.15. All connections to public utilities and/or existing on-site services shall be made and maintained in such a manner as to not interfere with the continuing use of same by the District during the entire progress of the Work.

6.13.16. 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.

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

6.13.18. 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.

6.13.19. Contractor shall confine apparatus, the storage of materials, and the operations of workers to limits indicated by law, ordinances, permits, or directions of the District, 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 require that all workers comply with all regulations while on Project Site.

6.13.20. 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.

6.13.21. 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 entering 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.

6.13.22. Infectious Disease Compliance Provisions

6.13.22.1. Compliance with Orders. Contractor and its Subcontractors, agents and employees thereof, are responsible for complying with all applicable and existing federal, State, and/or local statutes, orders, rules, regulations, ordinances, and/or directives in any way relating to construction site safety, the Work, the Project, and Site, in connection with any infectious and communicable disease in any form, whether bacterial or viral, including, without limitation, MSRA, influenza, COVID-19, and/or any similar virus or derivative strain (“**Infectious Disease(s)**”). Contractor shall ensure it has supervisor employees onsite that are trained and knowledgeable of all these requirements to ensure full compliance on Site and the Work. Contractor’s obligations hereunder shall include, without limitation providing personal protective equipment (“PPE”) to its employees and to ensure that its subcontractors provide PPE equipment to its employees to prevent the spread of an Infectious Disease at the Project Site(s).

6.13.22.2. Infectious Disease and Contract Time. Contractor agrees that the Contract Time is based on Contractor’s full compliance with all applicable and existing federal, State, and/or local statutes, orders, rules, regulations, ordinances, and/or directives relating to construction site safety, the Work, the Project, and the Site in connection with an Infectious Disease. Any dispute concerning the Contract Time in connection with any delay associated with an Infectious Disease shall be resolved pursuant to the Claims procedures in these General Conditions.

6.13.22.3. Infectious Disease Release. Contractor acknowledges that it is voluntarily and freely entering into the Contract for this Project and deciding to perform the Work which will require Contractor to enter upon and into the Site and that Contractor use of the Site includes the possible exposure to and illness from an Infectious Disease. Contractor further acknowledges the dangers involved and with full knowledge of these dangers, voluntarily agrees to assume all risks of bodily injury, death, or property damage, whether those risks are known or unknown. Contractor hereby releases District, its agents, representatives, officers, consultants, employees, trustees, and volunteers from any and all liabilities, causes of action, lawsuits, claims, demands, or damages of any kind whatsoever that Contractor, its staff, participants, relatives, children, spouse, partner, household members, family members, employees, guests, invitees, volunteers, agents, consultants, Subcontractors, and any other person tracing exposure or illness to Contractor, now have, or may have in the future, for injury, trauma, illness, loss, unwanted contact, harassment, disability, death or property damages related to being exposed to or contracting an Infectious Disease while using the Site for the performance of the Work. Contractor shall include this paragraph in all subcontracts with Subcontractors.

6.13.22.4. Contractor shall ensure it has supervisor employees onsite that are trained and knowledgeable of all of these requirements to ensure full compliance on Project Site(s).

6.13.22.5. Any cost to comply with these “Infectious Disease Compliance Provisions” shall be at Contractor’s sole expense and expense, but may be included in the Contract Price.

6.13.23. Photos, Videos and Use of Drones.

6.13.23.1. Contractor may photograph or video the progress of the Work and shall provide all of those photos and videos to the District at the District’s request. Contractor may utilize drones or similar aerial equipment to photograph, video or monitor the progress of the Work and for security purposes, but Contractor must comply with all legal requirements of the federal government, the State of California, and the County and City in which the Project is located, applicable to the use of drones or similar aerial equipment. In addition, Contractor shall ensure that no photographs, videos or digital recordings of any kind are taken of District students or staff.

6.13.23.2. If Contractor utilizes drones or any other unmanned aircraft during construction operations, Contractor must either ensure its insurance coverage includes

unmanned aircraft operations or procure and maintain a separate aircraft liability policy to cover unmanned aircraft operations.

6.14. Working Evenings and Weekends

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

6.15. Noise and Dust Control

6.15.1. In addition to the noise control, dust control and related requirements in the Specifications, Contractor shall control the noise and dust at the Site as indicated here.

6.15.2. Noise Control. The Contractor shall install noise reducing devices on construction equipment. Contractor shall comply with the requirements of the city and county having jurisdiction with regard to noise ordinances governing construction sites and activities. Construction equipment noise at the Site shall be limited as required by applicable law, rule or regulation. If classes are in session at any point during the progress of the Work, and, in the District's reasonable discretion, the noise from any Work disrupts or disturbs the students or faculty or the normal operation of the school at the Site, at the District's request, the Contractor shall schedule the performance of that Work around normal school hours or make other arrangements so that the Work does not cause disruption or disturbance. In no event shall those arrangements result in adjustment of the Contract Price or the Contract Time.

6.15.3. Dust Control. The Contractor shall be fully and solely responsible for maintaining and upkeeping all areas of the Site and adjoining areas, outdoors and indoors, free from flying debris, grinding powder, sawdust, dirt and dust as well as any other product, product waste or work waste, that by becoming airborne may cause respiratory inconveniences to persons, particularly to students and District personnel. Additionally, the Contractor shall take specific care to avoid deposits of airborne dust or airborne elements. Those protection devices, systems or methods shall be in accordance with the regulations set forth by the EPA and OSHA, and other applicable law, rule or regulation. Additionally, the Contractor shall be responsible to regularly and routinely clean up and remove any and all deposits of dust and other elements. Damage and/or any liability derived from the Contractor's failure to comply with these requirements shall be exclusively at the cost of the Contractor, including, without limitation, any and all penalties that may be incurred for violations of applicable law, rule or regulation, and any amounts expended by the District to pay such damages shall be due and payable to the District on demand. Contractor shall replace any damages property or part thereof and professionally clean any and all items that become covered or partially covered to any degree by dust or other airborne elements. If classes are in session at any point during the progress of Work, and, in the District's reasonable discretion, flying debris, grinding powder, sawdust, dirt or dust from any Work disrupts or disturbs the students or faculty or the normal operation of the school, at the District's request, the Contractor shall schedule the performance of all that Work around normal school hours and make other arrangements so that the Work does not cause disruption or disturbance. In no event shall those arrangements result in adjustment of the Contract Price or the Contract Time.

6.15.4. Contractor Failure to Comply. If the Contractor fails to comply with the requirements for dust control, noise control, or any other maintenance or clean up requirement of the Contract Documents, the District, Architect, Project Inspector, or Construction Manager shall notify the Contractor in writing and the Contractor shall take immediate action. Should the Contractor fail to respond with immediate and responsive action and not later than twenty-four (24) hours from that notification, the District shall have the absolute right to proceed as it may deem necessary to remedy such matter. Any and all costs incurred

by the District in connection with those actions shall be the sole responsibility of, and be borne by, the Contractor; the District may deduct those amounts from the Contract Price then or thereafter due the Contractor.

6.16. Cleaning Up

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

6.16.2. Contractor at all times shall keep Premises free from debris such as waste, rubbish, and excess materials and equipment caused by the Work. Contractor shall not leave debris under, in, or about the Premises, but shall promptly remove same from the Premises on a daily basis. If Contractor fails to clean up, District may do so and the cost thereof shall be charged to Contractor. If Contract is for work on an existing facility, Contractor shall also perform specific clean-up on or about the Premises upon request by the District as it deems necessary for the continuing education process. Contractor shall comply with all related provisions of the Specifications.

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

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

7. SUBCONTRACTORS

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

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

7.3. Contractor agrees to bind every Subcontractor by terms of the Contract as far as those terms are applicable to Subcontractor's work. If Contractor shall subcontract any part of the Contract, Contractor shall be as fully responsible to District for acts and omissions of any Subcontractor and of persons either directly or indirectly employed by any Subcontractor, as it is for acts and omissions of persons directly employed by Contractor. The divisions or sections of the Specifications are not intended to control the Contractor in dividing the Work among Subcontractors or limit the work performed by any trade.

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

7.5. Contractor acknowledges sections 4100 through 4114 of the Public Contract Code of the State of California, as regards subletting and subcontracting, and shall comply with all applicable requirements

therein. In addition, Contractor acknowledges sections 1720 through 1861 of the Labor Code of the State of California, as regards the payment of prevailing wages and related issues, and shall comply with all applicable requirements therein all including, without limitation, section 1775 and the Contractor's and Subcontractors' obligations and liability for violations of prevailing wage law and other applicable laws.

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

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

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

7.6.3. Sublet or subcontract any portion of the Work in excess of one-half of one percent (1/2 of 1%) of the Contractor's total bid as to which his original bid did not designate a Subcontractor.

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

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

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

8. OTHER CONTRACTS/CONTRACTORS

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

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

8.3. If any part of Contractor's Work depends for proper execution or results upon work of District or any other contractor, Contractor shall inspect and promptly report to the District in writing before proceeding with its Work any defects in District's or any other contractor's work that render Contractor's Work unsuitable for proper execution and results. Contractor shall be held accountable for damages to District for District's or any other contractor's work that Contractor failed to inspect or should have inspected. Contractor's failure to inspect and report shall constitute Contractor's acceptance of all District's or any other contractor's work as fit and proper for reception of Contractor's Work, except as to defects that may develop in District's or any other contractor's work after execution of Contractor's Work.

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

8.5. Contractor shall ascertain to its own satisfaction the scope of the Project and nature of District's or any other contracts that have been or may be awarded by District in completion of the Project to the end that

Contractor may perform this Contract in light of the other contracts, if any.

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

9. DRAWINGS AND SPECIFICATIONS

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

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

9.3. Trade Name or Trade Term. It is not the intention of the 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 sufficient notice to Contractor that it will be required to complete the work so named, complete, finished, and operable, with all its appurtenances, according to the best practices of the trade.

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

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

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

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

9.8. Ownership of Drawings

9.8.1. All copies of the 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. No submittal, unless approved in writing by the District as acceptable and complete, shall be a Contract Document.

10.1. Schedules, Safety Plan and Complete Subcontractor List

10.1.1. Within **TEN (10)** calendar days after the date of the Notice to Proceed (unless otherwise specified in the Notice to Proceed or in the Special Conditions), 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. Schedule of Work. Contractor shall provide 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, all contract milestones and each milestone's completion date(s) as may be required by the District, and the date of Project Completion.

10.1.1.1.1. Proposed Advanced Schedule. The District is not required to accept an early completion ("advanced") schedule; i.e., one that shows early completion dates for the Contract completion or milestones. Contractor shall not be entitled to extra compensation if the District allows the Contractor to proceed performing the Contract on an earlier ("advanced") schedule and Contractor completes the Project, for whatever reason, beyond the date shown in that earlier ("advanced") schedule, but within the Time for Completion indicated in the Contract. A schedule showing the work completed in less than the Time for Completion indicated in the Contract, shall be considered to have Project Float.

10.1.1.1.2. 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.

10.1.1.2. Schedule of Submittals. The Contractor shall provide 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.

10.1.1.3. Schedule of Values. The Contractor shall provide a preliminary schedule of values for all component parts of the Work for which progress payments may be requested. The schedule of values must include quantities and prices of items totaling the Contract Price and must subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. The preliminary schedule of values should include, at a minimum, the following information and the following structure:

10.1.1.3.1. Divided into at least the following categories:

- 10.1.1.3.1.1.** Overhead and profit;
- 10.1.1.3.1.2.** Supervision;
- 10.1.1.3.1.3.** General conditions;
- 10.1.1.3.1.4.** Layout;
- 10.1.1.3.1.5.** Mobilization;
- 10.1.1.3.1.6.** Submittals;
- 10.1.1.3.1.7.** Bonds and insurance;
- 10.1.1.3.1.8.** Closeout documentation;
- 10.1.1.3.1.9.** Demolition;
- 10.1.1.3.1.10.** Installation;
- 10.1.1.3.1.11.** Rough-in;
- 10.1.1.3.1.12.** Finishes;
- 10.1.1.3.1.13.** Testing;
- 10.1.1.3.1.14.** Punch List and acceptance.

10.1.1.3.2. Divided by each of the following areas:

- 10.1.1.3.2.1.** Site work;
- 10.1.1.3.2.2.** By each building;
- 10.1.1.3.2.3.** By each floor.

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

- 10.1.1.3.3.1.** Mobilization and layout combined to equal not more than 1%;
- 10.1.1.3.3.2.** Submittals, samples and shop drawings combined to equal not more than 3%;
- 10.1.1.3.3.3.** Bonds and insurance combined to equal not more than 2%.

10.1.1.3.4. Closeout Documentation. Closeout Documentation shall have a value in the preliminary schedule of not less than 5%. The value for Closeout Documentation shall be in addition to and shall not be a part of the Contract retention.

10.1.1.3.5. All items on the Schedule of Values must have a specific completion date on the Construction Schedule, or District has approved the Construction Schedule and the Construction Schedule is fully cost-loaded and resource-loaded, unless waived by the District in writing, and detailed as required by the Contract Documents

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

10.1.1.3.7. 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 written consent and approval of the District,

which may be granted or withheld in the sole discretion of the District.

10.1.1.3.8. 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 Schedule of Values, shall be paid by the District in installments, based on percentage complete, with the disbursement of Progress Payments and the Final Payment.

10.1.1.3.9. The Contractor shall not "front-load" the Schedule of Values with false dollar amounts for activities to be performed in the early stages of the Project. The District may, in its sole discretion, utilize the costs listed in the Schedule of Values as the true cost of items to be deducted from the Contract Price through credit or deductive Change Order. The values for each line item shall include the amount of overhead and profit applicable to each item of work and shall include, at a minimum, a breakdown between rough and finish Work for the basic trades as well as individual dollar figures for large dollar equipment and materials to be installed or furnished for the Project. No individual line item or scope of work in the Schedule of Values shall exceed \$50,000, except with the express, written consent of the District. Exceptions will be given by the District for a single item of Equipment for which the true cost exceeds \$50,000. The Schedule of Values shall be subject to the District's review and approval of the form and content thereof. Upon request, Contractor shall provide District with data and documentation substantiating the accuracy of the proposed line items. In the event that the District shall reasonably object to any portion of the Schedule of Values, within ten (10) days of the District's receipt of the Schedule of Values, the District shall notify the Contractor, in writing of the District's objection(s) to the Schedule of Values together with any request for substantiating data or documentation. Within five (5) days of the date of the District's written objection(s) and request for substantiating data and documentation, Contractor shall submit a revised Schedule of Values to the District for review and approval together with the requested data and documentation. The foregoing procedure for the preparation, review and approval of the Schedule of Values shall continue until the District has approved of the entirety of the Schedule of Values. Once the Schedule of Values is approved by the District, 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 reasonable discretion of the District. Notwithstanding any provision of the Contract Documents to the contrary, payment of the Contractor's overhead, supervision and general conditions costs and profit, as such items are reflected in the Schedule of Values, shall be made incrementally as included in the activities included in the Approved Construction Schedule.

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

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

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

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

10.1.1.5. **Complete Subcontractor List.** Contractor shall provide a preliminary Subcontractor List stating the name, address, telephone number, facsimile number, email address, California State Contractors License number, Department of Industrial Relations

registration number, classification, and monetary value of all Subcontracts for parties furnishing labor, material, or equipment for the Project.

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

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

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

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

10.2. Monthly Progress Schedule(s)

10.2.1. Contractor shall provide Monthly Progress Schedule(s) to the District. A Monthly Progress Schedule shall update the approved Construction Schedule or the last Monthly Progress Schedule, showing all work completed and to be completed. The Monthly Progress Schedule shall be sent to 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 also submit Monthly Progress Schedule(s) with all payment applications.

10.3. Material Safety Data Sheets (MSDS)

Contractor is required to ensure Material Safety Data Sheets are available in a readily accessible place at the Work Site for any material requiring a Material Safety Data Sheet per the Federal "Hazard Communication" standard, or employees right to know law. The Contractor is also required to ensure proper labeling on substances brought onto the Project 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. Logistic Plan

Contractor shall provide a staging and logistics plan identifying laydown areas, loading and unloading areas, crane locations, fence locations, temporary utility connections, trailer locations, and emergency evacuation meeting area. This Logistics Plan must be approved by the District prior to the Contractor mobilizing on the Site.

10.5. Information Included in Submittals.

All Submittals shall be accompanied by a written transmittal and each set of plans shall carry a "wet stamp" or other writing by the Contractor providing an identification of the portion of the Drawings or the Specifications pertaining to the Submittal, with each Submittal numbered consecutively for ease of reference along with the following information: (i) date of submission; (ii) Project name; (iii) name of submitting Subcontractor; and (iv) if applicable, the revision number. The foregoing information is in addition to, and not in lieu of, any other information required for the District's review, evaluation and approval of the Contractor's Submittals. Each Submittal shall be complete with its required number of

copies, no piecemeal documentation is allowed. Any Submittal not bearing the required wet stamp as stated herein, shall be rejected until the appropriate wet stamp information is provided on each submittal.

10.6. Verification of Submittal Information.

By approving and submission of Submittals, the Contractor represents to the District and Architect that the Contractor has determined and verified materials, field measurements, field construction criteria, catalog numbers and similar data related thereto and has checked and coordinated the information contained within such Submittals with the requirements of the Work and of the Contract Documents. Each Submittal shall include the following certification duly executed by the Contractor's superintendent or project manager for the Work: "The Contractor has reviewed and approved the field dimensions and construction criteria of the attached Submittal. The Contractor has verified that the Submittal is complete and includes notations of any portion of the Work depicted in the Submittal which is not in strict conformity with the Contract Documents. The information in the attached Submittal has been reviewed and coordinated by the Contractor with information included in other Submittals."

10.7. Contractor Responsibility for Deviations.

The Contractor shall not be relieved of responsibility for correcting deviations from the requirements of the Contract Documents by the District's and Architect's review of Submittals unless the Contractor has specifically informed the District in writing of such deviation at the time of submission of the Submittal and the District has given written approval to the specific deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Submittals by the District's and Architect's review or comments thereon.

10.8. No Performance of Work Without Architect Review.

The Contractor shall perform no portion of the Work requiring the District's and Architect's review of Submittals until the District and Architect have completed their review and returned the Submittal to the Contractor indicating "No Exception Taken" to that Submittal. The Contractor shall not perform any portion of the Work forming a part of a Submittal or which is affected by a related Submittal until the entirety of the Submittal or other related Submittal has been fully processed. All Work shall be in accordance with the final action taken by the District and the Architect review in review of Submittals and other applicable portions of the Contract Documents.

10.9. District and Architect Review of Submittals.

The purpose of the District's and Architect's review of Submittals and the time for the District's and Architect's return of Submittals to the Contractor shall be as set forth elsewhere in the Contract Documents. If the District and/or Architect return a Submittal as rejected or requiring correction(s) with re-submission, the Contractor, so as not to delay the progress of the Work, shall promptly thereafter resubmit a Submittal conforming to the requirements of the Contract Documents; the resubmitted Submittal shall indicate the portions thereof modified in accordance with the District's and Architect's direction. When professional certification of performance criteria of materials, systems or equipment is required by the Contract Documents, the District shall be entitled to rely upon the accuracy and completeness of the Contractor's calculations and certifications accompanying Submittals. The District's and Architect's review of the Submittals is for the limited purposes described in the Contract Documents. The District and Architect will review each Submittal twice. Should additional Submittals be required as a result of failure of the Contractor to address comments, the Contractor will pay for the Architect's services on a time and material basis for each subsequent review.

10.10. Deferred Approval Items.

In the event that any portion of the Work is designated in the Contract Documents as a "Deferred Approval" item from DSA, Contractor shall be solely and exclusively responsible for the preparation of Submittals for such item(s) in a timely manner so as not to delay or hinder the completion of the Work within the Contract Time. All work, labor, materials, equipment or services necessary to complete the design, engineering and permitting/approval of the Deferred Approval items shall be provided by the Contractor without adjustment of the Contract Price or the Contract Time.

10.11. Contractor Responsibility for Deviations

The Contractor shall not be relieved of responsibility for correcting deviations from the requirements of the Contract Documents by the District's or Architect's review of Submittals unless the Contractor has specifically informed the District and the Architect in writing of such deviation at the time of submission of the Submittal and the District and the Architect have given written approval to the specific deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Submittals by the District's or the Architect's review or comments thereon.

11. SITE ACCESS, CONDITIONS AND REQUIREMENTS

11.1. Site Investigation

Before bidding on the 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 the 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.

11.2. Soils Investigation Report

11.2.1. When a soils investigation report obtained from test holes at Site is available, that report shall be available to the Contractor but shall not be a part of the Contract. Any information obtained from that report or any information given on Drawings as to subsurface soil condition or to elevations of existing grades or elevations of underlying rock is approximate only, is not guaranteed, does not form a part of the Contract, and Contractor may not rely thereon. By submitting its bid, Contractor acknowledges that it made visual examination of Site and made whatever tests Contractor deems appropriate to determine underground condition of soil.

11.2.2. If a soils report is identified in the Contract Documents, it is not a Contract Document. Further, no representation is made by District that information provided is adequate for purposes of construction of the Project. District disclaims responsibility for any and all interpretations made by the Contractor of any soil or subsurface condition for information, such as soil-bearing values, rock profiles, presence and scope of boulders and cobbles, soil stability and the presence or level and extent of underground water.

11.2.3. The Contractor shall determine the means, methods, techniques and sequences necessary to achieve required soil contours and characteristics of all completed Work.

11.2.4. If after execution of the Contract, the Contractor encounters conditions at the Site than are materially different from those customarily encountered at or near the Premises, any request by the Contractor for additional funds or additional time, shall be governed by provisions of the Contract Documents for Changes in the Work related to unforeseen conditions.

11.2.5. 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 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. 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. District shall not be liable for any claim for allowances because of Contractor's error 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 for Construction

Utilities necessary to complete the Work and to completely perform all of the Contractors' obligations shall be obtained by the Contractor without adjustment of the Contract Price. The Contractor shall furnish and install necessary or appropriate temporary distributions of utilities, including utilities furnished by the District. Any such temporary distributions shall be removed by the Contractor upon completion of the Work. The costs of all such utility services, including the installation and removal of temporary distributions thereof, shall be borne by the Contractor and included in the Contract Price. Also refer to other utility requirements as indicated in the Specifications.

11.6. Sanitary Facilities

At all times during Work at the Site, the Contractor shall obtain and maintain temporary sanitary facilities in conformity with applicable law, rule or regulation. The Contractor shall maintain temporary sanitary facilities in a neat and clean manner with sufficient toilet room supplies. Personnel engaged in the Work are not permitted to use toilet facilities at the Site. Also refer to other Sanitary facility requirements 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

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 the Contract with respect to any such utility facilities that are not identified in the Plans and Specifications. Contractor shall not be assessed for liquidated damages for delay in completion of the Project caused by failure of District or the owner of a utility to provide for removal or relocation of such utility facilities.

11.9.2. Locations of existing utilities provided by District shall not be considered exact, but approximate within reasonable margin and shall not relieve Contractor of responsibilities to exercise reasonable care nor costs of repair due to Contractor's failure to do so. District shall compensate Contractor for the costs of locating, repairing damage not due to the failure of Contractor to exercise reasonable care, and removing or relocating such utility facilities not indicated in the Plans and Specifications with reasonable accuracy, and for equipment necessarily idle during such work.

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

11.9.4. If Contractor, while performing Work, discovers utility facilities not identified by District in Contract Plans and Specifications, Contractor shall immediately, but in no case longer than two (2) Business Days, notify the District and the utility in writing. The cost of repair for damage to above-mentioned visible facilities without prior written notification to the District shall be borne by the Contractor.

11.10. Notification

Contractor understands, acknowledges and agrees that the purpose for prompt notification to the District pursuant to these provisions is to allow the District to investigate the condition(s) so that the District shall have the opportunity to decide how the District desires to proceed as a result of the condition(s). Accordingly, failure of Contractor to promptly notify the District in writing, pursuant to the applicable provisions of these General Conditions, 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, certifications related to hazardous materials in the document entitled Certifications to be Completed by Contractor.

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 showing the design of shoring for protection from the hazard of caving ground during the excavation of such trench or trenches.

12.2. Excavation Safety

If such plan varies from the Shoring System Standards established by the Construction Safety Orders, the plan shall be prepared by a registered civil or structural engineer, but in no case shall such plan be less effective than that required by the Construction Safety Orders. No excavation of such trench or trenches shall be commenced until said plan has been accepted by the District or by the person to whom authority to accept has been delegated by the District.

12.3. No Tort Liability of District

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

12.4. No Excavation without Permits

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

12.5. Discovery of Hazardous Waste, Unusual Conditions and/or Unforeseen 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 (4) feet below the surface, the Contractor shall immediately, but in no case longer than two (2) Business Days, 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, and requires removal 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 by the Contract or by law that pertain to the resolution of disputes and protests, which include the requirement that Contractor complies with the notice and PCO provisions of the Contract Documents. Contractor's failure to submit a proposed change order pursuant to the terms of the Contract Documents shall be deemed a waiver of Contractor's right to an adjustment of the Contract Price of Contract Time.

13. INSURANCE AND BONDS

13.1. Insurance

Unless different provisions and/or limits are indicated in the Special Conditions, all insurance required of Contractor and/or its Subcontractor(s) shall be in the amounts indicated herein 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 the Contract, Commercial General Liability Insurance and Automobile Liability Insurance that shall protect Contractor, District, State, Construction Manager(s), Project Inspector(s), and Architect(s) from all claims for bodily injury, property damage, personal injury, death, advertising injury, and medical payments arising from operations under the Contract. This coverage shall be provided in a form at least as broad as the Insurance Services Office (ISO) standard form. Contractor shall ensure that Products Liability and Completed Operations coverage, Fire Damage Liability, and any Auto including owned, non-owned, and hired, are included within the above policies and at the required limits, or Contractor shall procure and maintain these coverages separately.

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

13.1.2. Umbrella Liability Insurance

13.1.2.1. Contractor shall procure and maintain, during the life of the Contract, an Excess Liability and/or Umbrella Liability Insurance Policy. Any Umbrella Liability Insurance Policy shall protect Contractor, District, State, Construction Manager(s), Program Manager(s), and Architect(s) in the amounts indicated herein, and shall comply with all requirements for Commercial General Liability and Automobile Liability, Employers' Liability Insurance, and Sexual Molestation and Abuse Liability. This coverage shall be provided in a form at least as broad as the Insurance Services Office (ISO) standard form.

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 Umbrella Liability Insurance Policy.

13.1.2.3. Whether this Excess Liability and/or Umbrella Liability Insurance Policy is written on a "follow form" or "stand alone" form, the coverages shall equal or greater than the Contractor's Commercial General Liability and Automobile Liability, Employers' Liability Insurance, and Sexual Molestation and Abuse Liability with no exclusions that reduce or eliminate coverage items.

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 Umbrella Liability Insurance with minimum limits equal to at least fifty percent (50%) of the amounts required of the Contractor.

13.1.4. Workers' Compensation and Employers' Liability Insurance

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

13.1.4.2. Contractor shall procure and maintain, during the life of this Contract, Workers' Compensation Insurance and Employers' Liability Insurance for all of its employees engaged in Work under the 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 employees engaged in Work under the Contract, on or at the Site of the Project, are not protected under the Workers' Compensation Insurance, Contractor shall provide, or shall cause a Subcontractor to provide, adequate insurance coverage for the protection of any employee(s) not otherwise protected before any of those employee(s) commence work.

13.1.5. Sexual Molestation and Abuse Liability Insurance. Contractor shall procure and maintain, during the life of this Contract, sexual molestation and abuse insurance. Contractor shall require its Subcontractor(s), if any, to procure and maintain sexual molestation and abuse 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 employees engaged in Work under the Contract, on or at the Site of the Project, are not covered under the sexual molestation and abuse insurance, Contractor shall provide, or shall cause a Subcontractor to provide, adequate insurance coverage to cover any employee(s) not otherwise covered before any of those employee(s) commence work.

13.1.6. Builder's Risk Insurance: Builder's Risk "All Risk" Insurance (NO Earthquake or Flood).

13.1.6.1. Contractor (Builder) shall procure and maintain, during the life of this Contract, Builder's Risk (Course of Construction), or similar first party property coverage acceptable to the District, issued on a replacement cost value basis. The cost shall be consistent with the total replacement cost of all insurable Work included within the Contract Documents.

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

13.1.6.3. Coverage shall be maintained until final payment has been made as provided under the Contract or until no person or entity other than the District has an insurable interest in the property to be covered, whichever is later. This insurance shall cover as insureds the District, Contractor, all Subcontractors of every tier on the Project, and all vendors and suppliers. Coverage must also be maintained for any materials stored offsite that will be incorporated into the Project.

13.1.6.4. The deductible for this insurance shall be paid by Contractor.

13.1.6.5. Contractor must review the Special Conditions to confirm the scope of this requirement and if the District has modified this provision.

13.1.7. Proof of Carriage of Insurance and Other Requirements: Endorsements and Certificates

13.1.7.1. Contractor shall not commence Work nor shall it allow any Subcontractor to commence Work under the 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:

13.1.7.2.1.1. “This policy shall not be amended, canceled or modified and the coverage amounts shall not be reduced until notice has been mailed to District, Architect, and Construction Manager stating date of amendment, modification, cancellation or reduction. Date of amendment, modification, cancellation or reduction may not be less than thirty (30) days after date of mailing notice.”

13.1.7.2.1.2. In lieu of receiving an endorsement with this clause, the District may, at its sole discretion, accept written notification from Contractor and its insurer to the District of any amendments, modifications, cancellations or reduction in coverage, not less than thirty (30) days prior to such coverage changes occur.

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

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

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

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

13.1.7.6. All policies shall be written on an occurrence form.

13.1.7.7. Unless otherwise stated in the Special Conditions, all of Contractor’s insurance shall be placed with insurers **ADMITTED** in California with a current A.M. Best’s rating of no less than **A-** or **A:VII**.

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

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

13.1.8. Insurance Policy Limits

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

Commercial General Liability	Includes: Bodily Injury, Property Damage, Personal & Advertising Injury, Product Liability and Completed Operations	\$2,000,000 each occurrence; \$4,000,000 general aggregate
Automobile Liability – Any Auto	Combined Single Limit	\$1,000,000 per occurrence
Excess Liability (Umbrella)		\$1,000,000 per occurrence; \$6,000,000 aggregate
Workers Compensation		Statutory limits pursuant to State law
Employers' Liability		\$2,000,000 each incident, each disease; \$2,000,000 policy limit
Sexual Abuse / Molestation		\$1,000,000 each incident; \$2,000,000 policy limit
Builder's Risk (Course of Construction)		Issued for the value and scope of Work indicated herein.
Property of Others	Combined Single Limit General Aggregate	Issued for the value and scope of Work stored off-site.

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 the Contract.

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

13.2.3. All bonds related to the Project shall be in the forms set forth in the 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. Contractor shall obtain and preserve for the benefit of the District, manufacturer's warranties on materials, fixtures, and equipment incorporated into the Work. All manufacturer, material, and fixture warranties shall commence at Project Completion. Contractor shall ensure that all warranties are maintained for the benefit of the District, regardless of the who the manufacturer is, who the installing Subcontractor was, if any, etc. While the District will fully expect the Contractor to manage all warranty

work through all applicable warranty periods, the District must have that same ability if the Contractor fails to perform its warranty obligations as required.

14.1.2. In addition to guarantees required elsewhere, Contractor shall, and hereby does guarantee and warrant all Work against all defects for a period of **ONE (1)** year after the later of the following dates:

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

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

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

14.1.4. If, in the opinion of District, defective work creates a dangerous condition or requires immediate correction or attention to prevent further loss to District or to prevent interruption of operations of District, District will attempt to give the notice required above. If Contractor or Surety cannot be contacted or neither complies with District's request for correction within a reasonable time as determined by District, District may, notwithstanding the above provision, proceed to make 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 the Contract Documents.

14.1.5. 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.

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

14.2. Indemnity

14.2.1. To the furthest extent permitted by California law, Contractor shall indemnify, defend with legal counsel reasonably acceptable to the District, keep and hold harmless the District and its consultants, the Architect and its consultants, the Construction Manager and its consultants, separate contractors, and their respective board members, officers, representatives, contractors, agents, and employees, in both individual and official capacities ("Indemnitees"), against all suits, claims, damages, losses, and expenses, including but not limited to attorney's fees, caused by, arising out of, resulting from, or incidental to, the performance of the Work by Contractor, its Subcontractors, vendors, or suppliers, including, without limitation, any such suit, claim, damage, loss, or expense attributable to, without limitation, bodily injury, sickness, disease, death, alleged patent violation or copyright infringement, or to injury to or destruction of tangible property (including damage to the Work itself) including the loss of use resulting therefrom, except to the extent caused by the sole negligence, active negligence, or willful misconduct of the Indemnitees, and/or to any extent that would render these provisions void or unenforceable. This agreement and obligation of Contractor shall not be construed to negate, abridge, or otherwise reduce any right or obligation of indemnity that would otherwise exist as to any party or person described herein. This indemnification, defense, and hold harmless obligation includes, without limitation:

14.2.1.1. Any failure or alleged failure by Contractor to comply with any provision of law, any failure or alleged failure to timely and properly fulfill all of its obligations under the Contract Documents in strict accordance with their terms, and without limitation, any stop payment notice actions or liens, including liens by the California Department of Labor Standards Enforcement.

14.2.1.2. Any claim arising (including bid protests) from any errors or mistakes in Contractor's bid documents provided to Subcontractors.

14.2.2. Contractor shall give prompt notice to the District in the event of any injury (including death), loss, or damage included herein. Without limitation of the provisions herein, if Contractor's agreement to indemnify, defend, and hold harmless the Indemnitees as provided herein against liability for damage arising out of bodily injury to persons or damage to property caused by or resulting from the negligence of any of the Indemnitees shall to any extent be or be determined to be void or unenforceable, it is the intention of the parties that these circumstances shall not otherwise affect the validity or enforceability of Contractor's agreement to indemnify, defend, and hold harmless the rest of the Indemnitees, as provided herein, and in the case of any such suits, claims, damages, losses, or expenses caused in part by the default, negligence, or act or omission of Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, and in part by any of the Indemnitees, Contractor shall be and remain fully liable on its agreements and obligations herein to the full extent permitted by law.

14.2.3. In any and all claims against any of the Indemnitees by any employee of Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, 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 Contractor or any Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

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

15. TIME

15.1. Notice to Proceed

District may issue a Notice to Proceed as indicated in the Instructions to Bidders or will otherwise instruct the Contractor to begin performing the Work of the Project.

15.2. Hours of Work

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. Contractor and Subcontractors shall continuously furnish sufficient forces to ensure the performance of the Work in accordance with the Construction Schedule. In no event will the District be responsible for the costs of Work performed outside of regular working hours, including, without limitation, overtime or weekend Work, unless expressly agreed to by the District in writing and approved in a Change Order.

15.3. Progress and Completion

15.3.1. Time of the Essence

Time limits stated in the Contract Documents are of the essence to the Contract. By executing the Agreement, Contractor confirms that the Contract Time is a reasonable period for performing the Work.

15.3.2. No Commencement Without Insurance

15.3.2.1. 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. 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's claim for damages.

15.4. 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.

15.5. 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. Contractor's Notice of Delay

16.1.1. In addition to the requirements indicated in this subsection, Contractor shall submit any request for an adjustment of the Contract Price or the Contract Time through the Change Order provisions in these General Conditions.

16.1.2. Contractor shall, within **FIVE (5)** calendar days of any delay impacting the critical path in completing the Work, notify District in writing of the causes of the delay including documentation and facts explaining the delay.

16.1.3. Any request by Contractor for an adjustment of the Contract Price or the Contract Time for a delay 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. 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.

16.1.4. Any claim for delay must include the following information as support, without limitation:

16.1.4.1. Duration. 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.

16.1.4.2. Schedule Analysis. A detailed schedule analysis articulating the cause of any delay and explaining the delay's impact to critical path and each activity of the Project. This analysis may be in the form of a time impact analysis. The time impact analysis shall provide all documentation and justification necessary to substantiate the requested extension. All supporting documentation shall be based on the then current Monthly Progress Schedule.

16.1.4.3. Logical Ties / Fragnets. Specific logical ties to the Contract Schedule for the proposed changes and/or delay showing the activity/activities in the Construction Schedule that are affected by the change and/or delay. (A portion of any delay of seven (7) days or more must be provided.) Include a “fragnet” analysis for the portion of the schedule and the activities the Contractor contends are impacted by the delay.

16.1.4.4. Updated Construction Schedule. A recovery or updated Construction Schedule must be submitted.

16.1.5. District shall review the facts and extent of any noticed delay and may grant Contract Time extension(s) of time for completing Work when, in the District’s judgment, the findings of fact justify an extension.

16.1.6. 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.

16.1.7. An extension of time may only be granted if Contractor has timely submitted the updated Construction Schedule as required herein.

16.1.8. Following submission of a notice of delay, the District may determine whether the delay is to be considered:

16.1.8.1. Excusable and Compensable, Excusable and Non-Compensable, or Unexcused;

16.1.8.2. How long the delay continues; and

16.1.8.3. To what extent the prosecution and Completion of the Work might be delayed thereby.

16.1.9. Contractor’s failure to request adjustment(s) of the Contract Time in strict conformity with applicable provisions of the Contract Documents shall be deemed Contractor’s waiver of its right to assert a claim for a delay.

16.1.10. Limitations Upon Adjustment of Contract Time on Account of Delays. Any adjustment of the Contract Time on account of an Excusable Delay or a Compensable Delay shall be limited as set forth herein. No adjustment of the Contract Time shall be made on account of any Excusable Delays or Compensable Delays unless those delay(s) actually and directly impact Work or Work activities on the critical path of the then current and updated approved Construction Schedule as of the date on which a delay first occurs. The District shall not be deemed in breach of, or otherwise in default of any obligation hereunder, if the District shall deny a request by the Contractor for an adjustment of the Contract Time for any delay that does not actually and directly impact Work on the then current and updated approved Construction Schedule. In submitting a request for an adjustment of Contract Time, and as a condition precedent to the District’s review of that request, Contractor shall insert into the then current and updated approved Construction Schedule a “fragnet” analysis representing the event that Contractor claims to result in delay to the critical path as depicted in the updated approved Construction Schedule. If an Excusable Delay and a Compensable Delay occur concurrently, the maximum extension of the Contract Time shall be the number of days from the commencement of the first delay to the cessation of the delay that ends last. If an Unexcused Delay occurs concurrently with either an Excusable Delay or a Compensable Delay, the maximum extension of the Contract Time shall be the number of days, if any, which the Excusable Delay or the Compensable Delay exceeds the period of time of the Unexcused Delay.

16.2. Excusable and Compensable Delay(s)

16.2.1. Contractor is not entitled to additional compensation for any delay, even a delay caused by

Adverse Weather or an Excusable Delay, unless all of the following conditions are met (“**Excusable and Compensable Delay**”):

- 16.2.1.1. The District is responsible for the delay;
- 16.2.1.2. The delay is unreasonable under the circumstances involved and impacts the critical path of the Work and extends the most current Contract Completion date;
- 16.2.1.3. The delay was not within the contemplation of District and Contractor;
- 16.2.1.4. Contractor complies with the Change Order procedures, and if necessary, the Claims procedures of the Contract Documents;
- 16.2.1.5. The delay could not have been avoided or mitigated by the Contractor's care, prudence, foresight, and diligence;
- 16.2.1.6. The delay extends the most current Contract Completion date; and
- 16.2.1.7. The delay is not concurrent with a Contractor-caused delay or other type of Excusable Delay.

16.2.2. In accordance with California Public Contract Code section 7102, if the Contractor’s progress is delayed by the events described in the preceding subsection, Contractor shall not be precluded from the recovery of damages directly and proximately resulting therefrom. In that event, Contractor’s damages, if any, shall be limited to direct, actual and unavoidable additional costs of labor, materials or construction equipment directly resulting from that delay, and shall exclude special, indirect or consequential damages. In no event shall Contractor seek costs or damages for delays, interruptions, hindrances or disruptions to the Work for on-Site or off-Site costs or damages based upon formulas, e.g. Eichleay or other formula. Except as expressly provided for herein, Contractor shall not have any other claim, demand or right to adjustment of the Contract Price arising out of delay, interruption, hindrance or disruption to the progress of the Work. Adjustments to the Contract Price and the Contract Time, if any, on account of Changes to the Work or Suspension of the Work shall be governed by the applicable provisions of the Contract Documents, including without limitation, the “Changes in the Work” section and the percentages in the “Format for Proposed Change” section of these General Conditions.

16.3. Excusable and Non-Compensable Delay(s)

16.3.1. An "Excusable Delay" shall mean an interruption of the Work beyond the reasonable control of the Contractor and that:

- 16.3.1.1. Could have not been avoided by the Contractor exercising care, prudence, foresight, and diligence, and
- 16.3.1.2. Actually extended the most current Project Completion date.

16.3.2. The Contractor may be entitled to an extension of the Project Completion date if there is an Excusable Delay, but the Contractor shall not be entitled to additional compensation for an Excusable Delay.

16.3.3. Force Majeure.

- 16.3.3.1. Excusable Delays are limited to interruptions that satisfy the above requirements and that are acts of God; acts of a public enemy; fires; floods; windstorms; tornadoes; earthquakes; wars; riots; insurrections; epidemics; pandemics; quarantine

restrictions; strikes; lockouts; fuel shortages; freight embargoes; and Adverse Weather that satisfies the requirements herein (“**Force Majeure Events**”).

16.3.3.2. If an Infectious Disease impacts the progress of the Work and Contractor demonstrates that the event satisfies the conditions of the Contract Documents for an adjustment to the Contract Time, it will be considered a Force Majeure Event.

16.3.3.3. In addition to any other requirement of the Contract Documents, Contractor shall not be entitled to any adjustment to the Contract Time unless Contractor submits a PCO and the District has issued a Change Order pursuant to the “Changes in the Work” provisions herein. If the Parties cannot in good faith and reasonably agree to an increase in the Contract Time, the Parties agree that dispute will be resolved pursuant to the Claims Resolution Process herein.

16.3.4. Contractor is aware that governmental agencies and utilities, 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. 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. Contractor is not entitled to make a claim for damages or delays or an Excusable Delay arising from the review of Contractor’s drawings or other approvals from the Division of the State Architect, the Department of General Services, gas companies, electrical utility companies, water districts, and other agencies.

16.3.5. Neither the financial resources of the Contractor or any person or entity directly or indirectly engaged by the Contractor in performance of any portion of the Work shall be deemed conditions beyond the control of the Contractor. If an event of Excusable Delay occurs, the Contract Time shall be subject to adjustment hereunder only if the Contractor establishes: (i) full compliance with all applicable provisions of the Contract Documents relative to the method, manner and time for Contractor’s notice and request for adjustment of the Contract Time; (ii) that the event(s) forming the basis for Contractor’s request to adjust the Contract Time are outside the reasonable control and without any fault or neglect of the Contractor or any person or entity directly or indirectly engaged by Contractor in performance of any portion of the Work; and (iii) that the event(s) forming the basis for Contractor’s request to adjust the Contract Time directly and adversely impacted the critical path of the Work as indicated in the approved Construction Schedule or the most recent updated approved Construction Schedule relative to the date(s) of the claimed event(s) of Excusable Delay.

16.3.6. Computation of Time / Adverse Weather

16.3.6.1. The Contractor will only be allowed a time extension for Adverse Weather conditions if requested by Contractor within five (5) calendar days of the Adverse Weather event, and only if **all** of the following conditions are met – thereby making the resulting delay an Excusable Delay.

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

16.3.6.1.2. 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;

16.3.6.1.3. The Contractor’s crew is dismissed as a result of the Adverse Weather; and

16.3.6.1.4. The number of days of delay exceed those indicated in the Special Conditions.

16.3.6.2. A day-for-day extension will only be allowed for those days in excess of those indicated in the Special Conditions and only if the tasks of Work on the day affected by the Adverse Weather were tasks required to be performed on that day to maintain the critical path of the Construction Schedule.

16.3.6.3. 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.

16.3.6.4. 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.

16.4. Unexcused Delay(s) – Liquidated Damages

16.4.1. Unexcused delays refer to any delay to the progress of the Work caused by events or factors other than those specifically identified in the “Excusable and Compensable Delay(s)” or the “Excusable and Non-Compensable Delay(s)” sections above (“**Unexcused Delays**”). Neither the Contract Price nor the Contract Time shall be adjusted on account of Unexcused Delays.

16.4.2. 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 forfeit and 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.

16.4.3. Contractor shall not forfeit or pay liquidated damages for an Excusable Delay or an Excusable and Compensable Delay.

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, a written Unilateral Change Order, or a written Force Account Directive authorized by the District as herein provided. District shall not be liable for the cost of any extra work, any changes to the Contract Time, 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 an executed Change Order, a written Unilateral Change Order, or a written Force Account Directive.

17.1.2. Verbal Order of Change in the Work. Any verbal order, direction, instruction, interpretation, or determination from the District, the Project Inspector or the Architect which in the opinion of the Contractor causes any change to the scope of the Work, or otherwise requires an adjustment to the Contract Price or the Contract Time, shall be treated as a Change only if the Contractor gives the Architect written notice within three (3) Business Days of the order, directions, instructions, interpretation or determination and prior to acting in accordance therewith. Time is of the essence in Contractor's written notice pursuant to the preceding sentence so that the District can promptly investigate and consider alternative measures to address the order, direction, instruction, interpretation or determination giving rise to Contractor's notice. Accordingly, Contractor acknowledges that its failure, for any reason, to give written notice within three (3) Business Days of any verbal order, direction, instruction, interpretation or determination shall be deemed Contractor's waiver of any right to assert or claim any entitlement to an adjustment of the Contract Time or the Contract Price on account of that verbal order, direction,

instruction, interpretation or determination. The written notice shall state the date, circumstances, extent of adjustment to the Contract Price or the Contract Time, if any, requested, and the source of the verbal order, directions, instructions, interpretation or determination that the Contractor regards as a Change. Unless the Contractor acts in strict accordance with this procedure, any verbal order, direction, instruction, interpretation or determination shall not be treated as a Change and the Contractor hereby waives any claim for any adjustment to the Contract Price or the Contract Time on account thereof.

17.1.3. The Surety, in executing and providing the Performance Bond and the Payment Bond, shall be deemed to have expressly agreed to any change to the Contract and to any extension of time made by reason thereof.

17.1.4. 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, Unilateral Change Order, or Force Account Directive. 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.

17.1.5. Contractor shall perform immediately all work that has been authorized by a fully executed Change Order, Unilateral Change Order, or Force Account Directive. Contractor shall be fully responsible for any and all delays and/or expenses caused by Contractor's failure to expeditiously perform this Work and Contractor's failure or refusal to so proceed with that Work may be deemed to be Contractor's default of a material obligation of the Contractor under the Contract Documents.

17.1.6. Should any Change Order result in an increase in the Contract Price, the cost of that Change Order shall be agreed to, in writing, in advance by Contractor and District and be subject to the monetary limitations set forth in Public Contract Code section 20118.4. In the event that Contractor proceeds with any change in Work without a Change Order executed by the District, Unilateral Change Order, or Force Account Directive, Contractor waives any claim of additional compensation or time for that additional work.

17.1.7. 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.

17.1.8. 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 all threatened loss or injury. Any compensation or time claimed by Contractor on account of emergency work shall be determined as indicated herein as a PCO.

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, Unilateral Change Order, or by Architect's response(s) to RFI(s).

17.3. Change Orders

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

17.3.1.1. A description of a change in the Work;

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

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

17.3.2. If a Change Order is required to be approved by DSA, the District may call it a Construction Change Document.

17.3.3. If the District approves a Change, the District or the Architect shall provide a written Change Order to the Contractor describing the Change and setting forth the adjustment to the Contract Time and the Contract Price, if any, on account of that Change. All Change Orders shall be full payment and final settlement of all rights for direct, indirect and consequential costs, including without limitation, costs of delays or impacts related to, or arising out of, items covered and affected by the Change Order, as well as any adjustments to the Contract Time. Any demand or request for an adjustment to the Contract Time or the Contract Price relating to any Change incorporated into a Change Order not presented by the Contractor for inclusion in the Change Order shall be deemed waived. The Contractor shall execute the Change Order prepared pursuant to the foregoing. After the Change Order has been prepared and forwarded to the Contractor for execution, the Contractor shall not modify or amend the form or content of such Change Order, or any portion thereof.

17.4. Unilateral Change Orders

17.4.1. A Unilateral Change Order is a written order prepared and issued by the District, the Construction Manager, and/or the Architect and signed by the District, directing a change in the Work. The District may as provided by law, by Unilateral Change Order and without invalidating the Contract, order changes in the Work consisting of additions, deletions, or other revisions. Any dispute as to the sum of the Unilateral Change Order or timing of payment shall be resolved pursuant to the Payment provisions and the Claims provisions herein. **A Unilateral Change Order is NOT a Construction Change Document (which is defined above as a Change Order that DSA must approve).**

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

17.5. Force Account Directives

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

17.5.2. 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 District.

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

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

17.5.5. Contractor shall notify 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. Contractor will not be compensated for force account work in the event that Contractor fails to timely notify the District regarding the commencement of force account work, or exceeding the force account budget.

17.5.6. Contractor shall diligently proceed with the work, and on a daily basis, submit a daily force account report on a form supplied by the District no later than 5:00 p.m. each day. The report shall contain a detailed itemization of the daily labor, material, and equipment used on the force account work only. The names of the individuals performing the force account work shall be included on the daily force account reports. The type and model of equipment shall be identified and listed. 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 Contractor for its records. District will not sign, nor will Contractor receive compensation for work District cannot verify. Contractor will provide a weekly force account summary indicating the status of each Force Account Directive in terms of percent complete of the not-to-exceed budget and the estimated percent complete of the work.

17.5.7. In the event Contractor and District reach a written agreement on a set cost for the work while the work is proceeding based on a Force Account Directive, the Contractor's signed daily force account reports shall be discontinued and all previously signed reports shall be invalid.

17.6. Price Request

17.6.1. Definition of Price Request. A Price Request ("PR") is a written request prepared by the Architect or the District, requesting the Contractor to submit to the District and the Architect an estimate of the effect of a proposed change in the Work on the Contract Price and the Contract Time.

17.6.2. Scope of Price Request. A Price Request shall contain adequate information, including any necessary Drawings and Specifications, to enable Contractor to provide the cost breakdowns required herein. Contractor shall not be entitled to any additional compensation for preparing a response to a Price Request, whether ultimately accepted or not.

17.6.3. Contractor shall not consider Price Requests to be instructions either to stop work in progress or to execute the proposed change.

17.6.4. Within the time specified in Price Request after receipt of Price Request, Contractor shall submit a quotation estimating cost adjustments to the Contract Price and the Contract Time necessary to execute the change, with the following documentation and information:

17.6.4.1. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.

17.6.4.2. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

17.6.4.3. Include costs of labor and supervision directly attributable to the change.

17.6.4.4. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

17.7. Proposed Change Order

17.7.1. Proposed Change Order. The Contractor may issue a Proposed Change Order ("PCO"), only as a

written request prepared by it to the District and the Architect, requesting that the District issue a Change Order based upon a proposed change to the Work.

17.7.2. Changes in Contract Price. A PCO shall include breakdowns pursuant to the provisions herein to validate any change in Contract Price and include all reasonable documentation as required herein.

17.7.3. Changes in Time. A PCO shall also include any changes in time required to complete the Project. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationships. Use available total float before requesting an extension of the Contract Time. Any additional time requested shall not be the number of days to make the proposed change, but must be based upon the impact to the Construction Schedule as defined in the Contract Documents. If Contractor fails to request a time extension in a PCO, then the Contractor is thereafter precluded from requesting time and/or claiming a delay. If the Contractor is requesting additional time and believes that time is both Excusable and Compensable, then the Contractor must provide detailed documentation that supports its position and that addresses all the components of the "Excusable and Compensable Delay(s)" section above.

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

17.7.5. Time to Submit PCO. Contractor shall submit its PCO within five (5) days of the date Contractor discovers, or reasonably should discover, the circumstances giving rise to the proposed change order, unless additional time to submit a proposed change order is granted in writing by the District. Time is of the essence in Contractor's written notice pursuant to the preceding sentence so that the District can promptly investigate and consider alternative measures to address the basis for the PCI. Accordingly, Contractor acknowledges that its failure, for any reason, to give written notice (with Supporting Documentation to permit the District's review and evaluation) within this time frame shall be deemed Contractor's waiver, release, discharge and relinquishment of any right to assert or claim any entitlement to an adjustment of the Contract Time or the Contract Price on account of the circumstances giving rise to the PCO.

17.7.6. COVID-19 and other Infectious Disease(s).

17.7.6.1. Contractor agrees that its bid, the Contract Price and the Contract Time are based on the Contractor's full compliance with all applicable and existing federal, state, and/or local statutes, orders, rules, regulations, ordinances, and/or directives relating to construction site safety in connection with Infectious Disease(s) (as defined herein) including COVID-19, and/or any similar virus or derivative strain at the time of Contract award. Therefore, any cost or delay associated with Infectious Disease(s), or any derivative or similar strain thereof, or any federal, state, or local order relating thereto, shall not be considered compensable unless:

17.7.6.1.1. It occurred after the date of the award of the Contract to Contractor;

17.7.6.1.2. It materially increases the Contract Price or the Contract Time; and

17.7.6.1.3. Contractor notifies the District within 10 days of notice of any a new derivative, strain, or new public health order(s), including the anticipated increase to the Contract Price or Contract Time due to the new derivative, strain, or new public health order(s), and

Contractor substantiates those costs with detailed supporting documentation as required for a PCO.

17.7.6.2. If, during the construction of the Project, the applicable and existing federal, state, and/or local statutes, orders, rules, regulations, ordinances, and/or directives relating to construction site safety in connection with Infectious Disease(s), and/or any similar virus or derivative strain, are changed or rescinded (e.g., by the reduction of potential exposure or risk due to vaccinations), the Parties agree to reduce the Contract Price and the Contract Time due to the removal of the required efforts. If the Parties cannot mutually agree on the appropriate reduction, the District may issue a Unilateral Change Order for an amount of time and money it determines to be both reasonable and appropriate. The Parties agree that any dispute related to this provision will be resolved pursuant to the Claims Resolution Process herein.

17.8. Format for Proposed Change Order

17.8.1. The following “Format For Proposed Change For Subcontractor Performed Work” and “Format For Proposed Change For Contractor Performed Work” 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.

FORMAT FOR PROPOSED CHANGE FOR SUBCONTRACTOR PERFORMED WORK

	<u>SUBCONTRACTOR PERFORMED WORK</u>	<u>ADD</u>	<u>DEDUCT</u>
(A)	<p><u>Labor Charge</u></p> <p>1. Hours. Attach total itemized hours, by each Subcontractor at each tier.</p> <p>2. Rate. This shall be no more than the Straight-Time Total Hourly Rate as determined by the Department of Industrial Relations (“DIR”) for the applicable labor category.</p>		
(B)	<p><u>Labor Burden & Worker’s Compensation Charge</u></p> <p>1. This shall be no more than <u>twenty percent (20%)</u> of item (A), the Labor Charge.</p> <p>2. This shall be the total cumulative charge permitted for all Subcontractors or all labor performed by the Subcontractor or Subcontractor’s Subcontractor(s) (i.e., all “lower-tier” Subcontractor(s)).</p>		
(C)	<u>Subtotal (A+B)</u>		
(D)	<p><u>Material Charge</u></p> <p>Attach itemized quantity and unit cost plus sales tax and invoice(s) from vendor(s).</p>		
(E)	<p><u>Equipment Charge</u></p> <p>Attach invoice(s) from supplier(s).</p>		
(F)	<u>Subtotal (C+D+E)</u>		
(G)	<p><u>Subcontractor’s Overhead and Profit Charge</u></p> <p>1. This shall be no more than <u>eight percent (8%)</u> of item (F).</p> <p>2. This shall be the total cumulative mark-up permitted for the Subcontractor and Subcontractor’s Subcontractor(s) (i.e., all “lower-tier” Subcontractor(s)).</p>		
(H)	<u>Subtotal (F+G)</u>		
(I)	<p><u>Contractor’s Overhead, Profit, Bond and Insurance</u></p> <p>1. This shall be no more than <u>six percent (6%)</u> of Item (F).</p> <p>2. This shall be the total mark-up permitted for Contractor.</p>		
(J)	<u>TOTAL (H+I)</u>		
(K)	<u>Time</u>	_____ Days	

FORMAT FOR PROPOSED CHANGE FOR CONTRACTOR PERFORMED WORK

	<u>CONTRACTOR PERFORMED WORK</u>	<u>ADD</u>	<u>DEDUCT</u>
(A)	<u>Labor Charge</u> 1. Hours. Attach total itemized hours. 2. Rate. This shall be no more than the Straight-Time Total Hourly Rate as determined by the Department of Industrial Relations (“DIR”) for the applicable labor category.		
(B)	<u>Labor Burden & Worker’s Compensation Charge</u> 1. This shall be no more than twenty percent (20%) of item (A) , the Labor Charge. 2. This shall be the total cumulative charge permitted for all labor performed by Contractor.		
(C)	<u>Subtotal (A+B)</u>		
(D)	<u>Material Charge</u> Attach itemized quantity and unit cost plus sales tax and invoice(s) from vendor(s).		
(E)	<u>Equipment Charge</u> Attach invoice(s) from supplier(s).		
(F)	<u>Subtotal (C+D+E)</u>		
(G)	<u>Contractor’s Overhead, Profit, Bond and Insurance</u> 1. This shall be no more than six percent (6%) of Item (F) . 2. This shall be the total mark-up permitted for Contractor.		
(H)	<u>TOTAL (F+G)</u>		
(I)	<u>Time</u>	_____ Days	

17.8.2. All Proposed Change Order requests by Contractor for a change shall include a complete itemized breakdown with the following detail:

17.8.2.1. Labor. Labor breakdown by trade classification, wage rates, and estimated hours. Labor costs shall only include fringe benefits indicated by governing trade organizations. Wages shall not exceed current prevailing wages in the locality for performance of the changes.

17.8.2.1.1. The Contractor's or Subcontractors' labor burden and Workers' Compensation premium shall only be charged as indicated herein. In no event shall Contractor include any other charges than as indicated herein without the prior written approval of the District.

17.8.2.2. Material. Material quantities, and types of products, and transportation costs, if applicable.

17.8.2.3. Equipment. Equipment breakdown by make, type, size, rental rates (if not owned), equipment hours and transportation costs, if applicable.

17.8.2.3.1. The equipment costs shall not exceed one hundred percent (100%) of the Association of Equipment Distributors (AED) rental rates and delay factors or Caltrans rates and delay factors, whichever is less. Hourly, daily, weekly, or monthly rates shall be used, whichever is lower. Hourly rates including operator shall not be used.

17.8.2.3.2. The time to be paid for equipment shall be the actual time that the equipment is in (1) productive operation on the Work or (2) idled because of the event or circumstance giving rise to the Proposed Change Order.

17.8.2.3.2.1. To calculate the costs of idle equipment, the Contractor must use the applicable idle equipment rate. For example, and clarification purposes only, if the rate for "X" piece of equipment is \$100 and the applicable delay factor is .20 for that piece of equipment, then the hourly rate for idle equipment shall be \$20 (\$100 x .20), which shall be applied against the number of hours idle. In no event shall Contractor charge an amount greater than 50% of the applicable equipment rate for idle equipment.

17.8.2.3.2.2. In computing the hourly rental of equipment, any time less than thirty (30) minutes shall be considered one-half (1/2) hour.

17.8.2.3.2.3. No payment will be made for time while equipment is inoperative due to breakdown, or for non-workdays.

17.8.2.3.2.4. The rental time shall not include the time required to move the equipment to and from the project site. No mobilization or demobilization will be allowed for equipment already on site. If equipment is not moved by its own power, then loading and transportation costs will be paid in lieu of rental time thereof. However, neither moving time nor loading and transportation costs will be paid if the equipment is used on the Project Site in any other way than upon the work directly related to the event or circumstance giving rise to the Proposed Change Order.

17.8.2.3.3. Individual pieces of equipment having a replacement value of one thousand dollars (\$1,000) or less shall be considered to be small tools or small equipment, and no payment will be made since the costs of these tools and equipment is included as part of the markup for overhead and profit defined herein.

17.8.2.3.4. Payment to the Contractor for the use of equipment as set forth above shall constitute full compensation to the Contractor for the cost of fuel, power, oil, lubricants,

supplies, small equipment, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, labor (except for equipment operators), and any and all costs to the Contractor incidental to the use of the equipment.

17.8.2.3.5. Should Contractor, or any of its owners, officers, directors or agents, hold any ownership interest in any company, organization, association or corporation from whom rental equipment is secured. Contractor shall immediately notify District of such and the price set for any such rental shall be agreed upon in advance by the Contractor and the District.

17.8.2.4. Overhead, Profit, Bond and Insurance Costs. Markup for overhead and profit, which shall be used to compensate Contractor for all costs for all administration, general conditions, and supervision, including, without limitation:

17.8.2.4.1. All home office overhead, field office overhead, field office personnel including, but not limited to, principals, project managers, superintendents, supervisory foremen, estimators, project engineers, detailers, draftsmen, schedulers, consultants, watchmen, payroll clerks, administrative assistants, labor compliance costs and secretaries.

17.8.2.4.2. All field and field office expenses including, but not limited to, field trailers, parking, storage sheds, office equipment and supplies, telephone service and long distance telephone calls, computers, fax machines, temporary utilities, sanitary facilities and services, janitorial services, small tools and equipment with a cost under \$1000 each, portable scaffolding, blocking, shores, appliances, job vehicles, security and fencing, conformance to regulatory requirements including compliance to safety regulations, safety programs and meetings, cartage, warranties, As-Built Drawings, as well as any related maintenance costs.

17.8.2.4.3. Administrative functions such as, but not limited to, reviewing, coordinating, distributing, processing, posting, recording, estimating, negotiating, expediting, engineering, drawing, detailing, revising shop drawings, carting, cleaning, protecting the work, and other incidental Work related to the change.

17.8.2.4.4. All other costs and taxes required to be paid, but not included under direct costs as defined above including, without limitation, payroll taxes, social security, etc.

17.8.2.4.5. All costs for Contractor's bonds and insurance.

17.8.2.4.6. Taxes: Federal excise tax shall not be included. District will issue an exemption on request.

17.8.2.5. Contract Time. Justification for any adjustment in Contract Time including a schedule analysis identifying critical schedule activities delayed by the request. Contract Time shall be extended or reduced by Change Orders, Unilateral Change Orders, or Force Account Directives for a period of time commensurate with the time reasonably necessary to perform a Change. This time must be requested in writing by the Contractor with the Price Request, PCO, or expressly in writing as part of its documentation for Unilateral Change Orders, or Force Account Directives. The Contractor shall justify any Contract Time extension by submittal of a schedule analysis as required in this Changes section of these General Conditions accurately portraying the impact of the change on the critical path of the Construction Schedule. Changes performed within available float shall not justify an extension to the Contract Time. The District shall make the final determination of the amount of Contract Time to allocate to any Change.

17.8.2.6. Supporting Documentation. Contractor shall include with each PCO, along with the itemized breakdown as required herein, reasonable documentation substantiating the

requested change in the Contract Price and Contract Time. If the District deems Contractor's supporting documentation incomplete or inadequate to substantiate the requested change to the Contract Price and Contract Time, the District may request that Contractor supplement the PCO with additional, reasonable supporting documentation.

17.9. Change Order Certification

17.9.1. All Change Orders and PCOs shall include the following certification by the Contractor. The Parties acknowledged that if a Change Order is approved that does not include this language, that Change Order shall be deemed to include this certification language:

The Contractor approves the foregoing as to the changes, if any, and the price specified for each item and 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 all additional work specified for the consideration stated herein. Submission of sums that 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 includes all of the Contractor's costs, expenses, field overhead, home office overhead, profit, 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 are deemed waived.

17.10. Determination of Change Order Cost

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

17.10.1.1. District acceptance of a PCO;

17.10.1.2. By agreement between District and Contractor.

17.10.1.3. By unit prices or alternates contained in Contractor's original bid. If the Bid for the Work included proposal(s) for Alternate Bid Item(s), during Contractor's performance of the Work, the District may elect to add any such Alternate Bid Item(s) if the that item did not form a basis for award of the Contract or delete any such Alternate Bid Item(s) if that item formed a basis for award of the Contract. If the District elects to add or delete an Alternate Bid Item(s) pursuant to the foregoing, the cost or credit for that Alternate Bid Item(s) shall be as set forth in the Contractor's Bid, at the District's discretion. If any Alternate Bid Item is added or deleted from the Work pursuant to the foregoing, the Contract Time shall be adjusted by the number of days allocated for the added or deleted Alternate Bid Item in the Contract Documents; if days are not allocated for any Alternate Bid Item added or deleted pursuant to the foregoing, the Contract Time shall be equitably adjusted.

17.10.1.4. By the District, based upon actual and necessary costs incurred by the Contractor as determined by the District on the basis of the Contractor's records. Promptly upon determining the extent of adjustment to the Contract Price, the District shall notify the Contractor in writing of the same; the Contractor shall be deemed to have accepted the District's determination of the amount of adjustment to the Contract Price on account of a Change to the

Work unless Contractor shall notify the District, in writing, not more than fifteen (15) days from the date of the District's written notice, of any objection to the District's determination. Failure of the Contractor to timely notify the District of Contractor's objections to the District's determination of the extent of adjustment to the Contract Price shall be deemed Contractor's acceptance of the District's determination and a waiver of any right or basis of the Contractor to thereafter protest or otherwise object to the District's determination. Notwithstanding any objection of the Contractor to the District's determination of the extent of any adjustment to the Contract Price pursuant to this provision, Contractor shall diligently proceed to perform and complete any such Change.

17.11. Deductive Change Orders

If Contractor offers a proposed amount for a deductive Change Order(s), Contractor shall include a minimum of five percent (5%) total overhead and profit to be deducted with the amount of the work of the Change Order(s). If Subcontractor work is involved, Subcontractors shall also include a minimum of five percent (5%) overhead and profit to be deducted with the amount of its deducted work, for a total minimum of ten percent (10%) total overhead and profit to be deducted. Any deviation from this provision shall not be allowed.

17.12. 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.

17.13. Accounting Records

With respect to portions of the Work performed by Change Orders, Unilateral Change Orders, or Force Account Directives, Contractor shall keep and maintain cost-accounting records satisfactory to the District, which shall be available to the District on the same terms as any other books and records Contractor is required to maintain pursuant to the Contract Documents.

17.14. Notice Required

If Contractor is seeking an adjustment in the Contract Price, or any extension in the Contract Time for Completion, it shall notify District pursuant to the provisions of the Contract Documents. No adjustment in the Contract Price or Contract Time shall be considered unless made in accordance with the Contract Documents. 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 contract adjustment shall only be authorized by a Change Order.

17.15. Applicability to Subcontractors

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

17.16. Alteration to Change Order Language

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

17.17. Failure of Contractor to Execute Change Order

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

18. REQUEST FOR INFORMATION

18.1. Any Request for Information (“RFI”) shall reference all applicable Contract Document(s), including Specification section(s), detail(s), page number(s), drawing number(s), and sheet number(s), etc. Contractor shall make suggestions and interpretations of the issue raised by each RFI. An RFI cannot modify the Contract Price, Contract Time, or the Contract Documents.

18.2. Contractor shall be liable to the District for all costs incurred by the District associated with the processing, reviewing, evaluating and responding to any RFI, including without limitation, fees of the Architect and any other design consultant to the Architect or the District, that District reasonably determines:

18.2.1. Does not reflect adequate or competent supervision or coordination by the Contractor or any Subcontractor; or

18.2.2. Does not reflect the Contractor's adequate or competent knowledge of the requirements of the Work or the Contract; or

18.2.3. Requests an interpretation or decision of a matter where the information sought is equally available to the Contractor; or

18.2.4. Is not justified for any other reason.

18.3. Prior to submitting the RFI, Contractor shall diligently review the Contract Documents for information responsive to the RFI, including information incorporated by reference. Contractor should not issue an RFI regarding information contained in or inferable from the Contract Documents, including information incorporated by reference. An RFI is invalid if the RFI response is contained in or inferable from the Contract Documents.

18.4. Contractor shall be responsible for preparing and submitting each RFI so as to not cause delay to the progress of the Work nor to cause any impact to the Contractor’s labor productivity. An RFI may be considered untimely if not submitted within **Forty Eight (48) hours** of receipt from a Contractor’s subcontractor. Untimely submission of any RFI will preclude Contractor from asserting any claims for delay or for labor impact against the District.

18.5. If the Contractor fails to timely notify the Architect in writing of any Conditions encountered and the Contractor proceeds to perform any portion of the Work containing or affected by such Conditions the Contractor shall bear all costs associated with or required to correct, remove, or otherwise remedy any portion of the Work affected thereby without adjustment of the Contract Time or the Contract Price. In requesting information of the District to address and resolve any conditions, the Contractor shall act with promptness in submitting any written request so as to allow the District a reasonable period of time to review, evaluate and respond to any request, taking into account the then current status of the progress and completion of the Work and the actual or potential impact of any conditions upon the completion of the Work within the Contract Time. The Contract Time shall not be subject to adjustment in the event that the Contractor shall fail to timely request information from the District.

19. PAYMENTS

19.1. Contract Price

19.1.1. 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 pursuant to the Contract Documents. If all or a portion of the Project is being funded by funds requiring approval by the State Allocation Board (SAB), payment may be subject to that approval being received, funding by the SAB, and funds being released by the Office of Public School Construction (OPSC).

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 Work completed in accordance with the Schedule of Values. The Application for Payment shall be notarized, if required, and supported by the following or each portion thereof unless waived by the District in writing:

19.2.1.1.1.1. The amount paid to the date of the Application for Payment 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 by 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 the entities after 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. An Itemized breakdown of Work performed;

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 retention held;

19.2.1.1.1.9. The 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. The 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 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 each subcontractor of any tier and supplier that was paid from the previous progress payment; 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. The Contractor further warrants that all Work performed as of the date of this payment application is free and clear of liens, claims, security interests, or encumbrances in favor of the Contractor, Subcontractors, material and equipment suppliers, workers, or other persons or entities making a claim by reason of having provided labor, materials, and equipment relating to the Work, except those of which the District has been informed.

19.2.1.1.1.15. If requested by the District, a third party, or as required by the California Department of Industrial Relations, all requested or required certified payroll record ("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.

19.2.1.1.2. Except as expressly provided for herein, no payments shall be made by the District on account of any item of the Work, including without limitation, materials or equipment that, at the time of the Contractor's submittal of an Application for Progress Payment, has/have not been incorporated into and made a part of the Work.

19.2.1.1.3. Contractor shall be subject to the False Claims Act set forth under Government Code section 12650 et seq., for information provided with any Application for Progress Payment.

19.2.2. Prerequisites for Progress Payments

19.2.2.1. First Payment Request: The following items, if applicable, must be completed before District will accept and/or process 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: 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 payment made to Contractor where criteria set forth herein have not been met shall not constitute a waiver of said criteria by District. The approval of any Application for Progress Payment or the disbursement of any Progress Payment to the Contractor shall not be deemed nor constitute acceptance of defective Work or Work not in conformity with the Contract Documents. 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 material breach of the 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, District shall act in accordance with 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 being subject to any applicable statute regarding prompt payment or interest accrual, shall be reduced by the number of days by which the District exceeds this seven-day return requirement.

19.3.1.1.3. An approved Application for Payment shall be considered payable if funds are available for payment after the deduction of amounts allowed by law and/or pursuant to the section herein entitled "Decisions to Withhold Payment,"

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 each Application for Payment shall be based on Contractor complying with all requirements for a fully complete and valid Application for Payment.

19.3.2. Payments to Contractor

19.3.2.1. Within thirty (30) days after District's receipt of each undisputed and properly submitted 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 Contractor's 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. District shall withhold five percent (5%) retention from all Progress Payments.

19.3.2.3. District may withhold ten percent (10%) retention from all Progress Payments pursuant to Public Contract Code section 7201, if the Project is determined to be "substantially complex."

19.3.2.4. 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.

19.3.2.5. In accordance with Public Contract Code §20104.50, in the event that the District shall fail to make any Progress Payment within thirty (30) days after receipt of an undisputed and properly submitted Application for Progress Payment, the District shall pay the Contractor interest on the undisputed amount of such Application for Progress Payment equal to the legal rate of interest set forth in California Code of Civil Procedure §685.010(a).

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.

19.3.4. Warranty of Title

19.3.4.1. If a lien or a claim based on a stop notice or 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 notice or stop payment notice to be released or discharged immediately therefrom.

19.3.4.2. 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 notice or stop payment notice has been so released, discharged, or secured, the District may discharge such indebtedness and deduct the amount required therefore, 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 pursuant to the Contract.

19.4. Decisions to Withhold Payment

19.4.1. Reasons to Withhold Payment

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. District may withhold payment, in whole, or in part, to such extent as may be necessary to protect the District from loss because of, but not limited to:

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

19.4.1.2. Stop notices, stop payment notices or other liens served upon the District as a result of the Contract;

19.4.1.3. Liquidated damages assessed against the Contractor;

19.4.1.4. The cost to complete the Work if there exists reasonable doubt that the Work can be completed for the unpaid balance of the Contract Price or by the Completion Date;

19.4.1.5. Damage to the District or other contractor(s);

19.4.1.6. Unsatisfactory performance of the Work by Contractor;

19.4.1.7. Failure to store and properly secure materials;

19.4.1.8. Failure of the Contractor to submit, on a timely basis, proper, sufficient, and acceptable documentation required by the Contract Documents, including, without limitation, a Construction Schedule, Schedule of Submittals, Schedule of Values, Monthly Progress Schedules, Shop Drawings, Product Data and samples, Proposed product lists, executed Change Orders, and/or verified reports;

19.4.1.9. Failure of the Contractor to maintain As-Built Drawings;

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

19.4.1.11. Unauthorized deviations from the Contract Documents;

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

19.4.1.13. If requested by the District, or the failure to provide to the DIR, certified payroll records acceptable to the District and the DIR 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;

19.4.1.14. Failure to properly pay prevailing wages as defined in Labor Code sections 1720 et seq. and/or failure to comply with any other Labor Code requirements;

19.4.1.15. Failure to properly maintain or clean up the Site;

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

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

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

19.4.1.19. Failure to pay any royalty, license or similar fees;

19.4.1.20. Failure of the Contractor to submit on a timely basis all Closeout Documentation in a manner and form that is proper, sufficient, and reasonably acceptable to the District, and to not cause a delay in the Completion or approval of the Project; or

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

19.4.1.22. Payment is delayed due to an audit inquiry by the State, the County Office of Education, the County, or any entity with jurisdiction related to the Project.

19.4.1.23. Contractor is otherwise in breach, default or in substantial violation of any provision of the Contract;

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 pursuant to the Contract 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 perform 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. 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 twenty-five percent (125%) of the estimated reasonable value of the nonconforming Work) shall be made therefor.

19.4.3. Payment After Cure

When Contractor cures the grounds for declining approval, payment shall be made for amounts so withheld. No interest shall be paid on any retention 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. 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. 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 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, any obligation from the District to such Subcontractor, or rights in such Subcontractor against the District.

20. COMPLETION OF THE WORK

20.1. Completion

20.1.1. The Project may only be accepted by action of the governing board of the District.

20.1.2. District shall accept the Project and may have a Notice of Completion recorded when Project Completion has been achieved in accordance with the Contract Documents and to the satisfaction of District. For purposes of the payment of Retention, Completion is defined in Public Contract Code section 7107. For purposes of the timely filing of Stop Payment Notices, Completion is defined in California Civil Code section 9200, et seq.

20.1.3. There is no "*substantial completion*" for this Project. Even so, the District, at its sole option, may accept the Project and record a Notice of Completion when Project Completion has 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 thirty-five (35) days after the date of the District's acceptance of the Project, 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 thirty-five (35) 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. Closeout Procedures

20.2.1. Punch List

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”). 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. Closeout 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. As-Built Drawings

20.2.2.2.1. In addition to its requirement to provide monthly As-Built Drawings to the District, the Contractor shall provide a final set of As-Built Drawings, sometimes referred to as “Record Drawings,” showing all of the Work as actually constructed upon Completion of the Project as indicated in the Specifications.

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

20.2.2.2.3. Upon Completion of the Work and as a condition precedent to approval of final payment, Contractor shall obtain the Inspector’s approval of the final set of As-Built Drawings.

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

20.2.2.4. Closeout Documentation: Contractor shall provide all Closeout Documentation, which shall include the following, without limitation:

20.2.2.4.1. A full set of final As-Built Drawings, as further defined herein.

20.2.2.4.2. All Operations & Maintenance Manuals and information, as further defined herein.

20.2.2.4.3. All Warranties, as further defined herein.

20.2.2.4.4. Verified report(s) for all scope(s) of work (DSA 6-C, Rev 03/22/13, or more recent revision if available).

20.3. Final Inspection

20.3.1. Contractor shall comply with Punch List procedures as provided herein, and maintain the presence of Contractor’s superintendent and project manager until the Punch List is complete to ensure proper and timely completion of the Punch List. Under no circumstances shall Contractor demobilize its forces prior to completion of the Punch List. Upon receipt of Contractor’s written notice that all of the Punch List items have been fully completed and the Work is ready for final inspection and acceptance, Architect and Project Inspector will inspect the Work and shall submit to Contractor and District a final inspection report noting the Work, if any, required in order to complete in accordance with the Contract

Documents. Absent unusual circumstances, this report shall consist of the Punch List items not yet satisfactorily completed.

20.3.2. Upon Contractor's completion of all items on the Punch List and any other uncompleted portions of the Work, the Contractor shall notify the District and Architect, who shall again inspect such Work. If the Architect finds the Work complete and acceptable under the Contract Documents, the Architect will notify Contractor, who shall then jointly submit to the Architect and the District its final Application for Payment.

20.3.3. Final Inspection Requirements

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

20.3.3.1.1. The Work has been completed.

20.3.3.1.2. All life safety items are completed and in working order.

20.3.3.1.3. Mechanical and electrical Work are complete and tested, fixtures are in place, connected, and ready for tryout.

20.3.3.1.4. Electrical circuits scheduled in panels and disconnect switches labeled.

20.3.3.1.5. Painting and special finishes complete.

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

20.3.3.1.7. Tops and bottoms of doors sealed.

20.3.3.1.8. Floors waxed and polished as specified.

20.3.3.1.9. Broken glass replaced and glass cleaned.

20.3.3.1.10. Grounds cleared of Contractor's equipment, raked clean of debris, and trash removed from Site.

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

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

20.3.3.1.13. Final cleanup, as provided herein.

20.4. Costs of Multiple Inspections

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

20.5. Partial Occupancy or Use Prior to Completion

20.5.1. District's Rights to Occupancy. The District may occupy or use any completed or partially completed portion of the Work at any stage. 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. The District and the Contractor shall agree in writing to the responsibilities assigned to each of them 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. Any dispute as to responsibilities shall be resolved pursuant to the Claims provisions herein, with the added provision that during the dispute process, the District shall have the right to occupy or use any portion of the Work that it needs or desires to use.

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

20.5.3. No Waiver. Unless otherwise agreed upon, partial or entire occupancy or use of a portion or portions of the Work shall not constitute beneficial occupancy or acceptance of the Work not complying with the requirements of the Contract Documents.

21. FINAL PAYMENT AND RETENTION

21.1. Final Payment

21.1.1. Upon receipt and approval of a valid and final Application for Payment, the Architect will issue a final Certificate of Payment or similar document indicating Architect's agreement that the Project has reached Completion. 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 has not reached Completion to the satisfaction of the District.

21.1.2. Upon acceptance of the Work of the Contractor as having reached Completion to the satisfaction of the District (that, absent unusual circumstances, will occur when the Punch List items have been satisfactorily completed), the District may record a Notice of Completion with the County Recorder, and the Contractor shall, upon receipt of final payment from the District, pay all the amount(s) due to its Subcontractors.

21.2. Prerequisites for Final Payment

The following conditions must be fulfilled prior to Final Payment:

21.2.1. A full and final waiver or release of all stop notices and stop payment notices in connection with the Work shall be submitted by Contractor, including a release of stop notice or stop payment notice in recordable form, together with (to the extent permitted by law) a copy of the full and final release of all stop notice or stop payment notice rights.

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

21.2.3. A duly completed and executed unconditional waiver and release upon final payment compliant with Civil Code section 8138 from each subcontractor of any tier and supplier that was paid from the previous progress payment.

21.2.4. 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.

21.2.5. 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.

21.2.6. Contractor must have completed all requirements set forth under "Closeout Procedures," including, without limitation, submission of an approved set of complete As-Built Drawings.

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

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

21.2.9. Contractor shall have completed final clean up as provided herein.

21.3. Retention

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

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

21.3.1.2. After the satisfaction of the conditions set forth herein;

21.3.1.3. Within sixty (60) days after Completion;

21.3.1.4. No earlier than thirty-five (35) days of the recording of the Notice of Completion by District, if a Notice of Completion is recorded by the District.

21.4. Substitution of Securities

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

21.5. Claims Asserted After Final Payment

Any lien, stop payment notice or other claim filed or asserted after the Contractor's acceptance of the Final Payment by any Subcontractor, of any tier, laborer, Material Supplier or others in connection with or for Work performed under the Contract Documents shall be the sole and exclusive responsibility of the Contractor pursuant to the indemnification obligations of the Contract Documents. In the event any lien, stop payment notice or other claim of any Subcontractor, Laborer, Material Supplier or others performing Work under the Contract Documents remain unsatisfied after Final Payment is made, Contractor shall refund to District all monies that the District may pay or be compelled to pay in discharging any lien, stop payment notice or other claim, including, without limitation all costs and reasonable attorneys' fees incurred by District in connection therewith.

22. UNCOVERING WORK, CORRECTION OF WORK AND RIGHT TO TAKEOVER WORK

22.1. Uncovering of Work

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

22.2. Rejection of Work

Prior to the District's Acceptance of the Work, any Work or materials or equipment forming a part of the Work or incorporated into the Work that is defective or not in conformity with the Contract Documents may be rejected by the District, the Architect or the Project Inspector and the Contractor shall correct all rejected Work without any adjustment to the Contract Price or the Contract Time, even if the Work, materials or equipment have been previously inspected by the Architect or the Project Inspector or even if they failed to observe the defective or non-conforming Work, materials or equipment.

22.3. Nonconforming Work

22.3.1. 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.

22.3.2. 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.

22.4. Correction of Work

22.4.1. Correction of Rejected Work. Pursuant to the notice provisions herein, the Contractor shall promptly 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.

22.4.2. One-Year Warranty Corrections. If, within one (1) year after the date of Completion of the Work or a designated portion thereof, or after the date for commencement of warranties established hereunder, or by the terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the District to do so. This period of one (1) year shall be extended with respect to portions of the Work first performed after Completion by the period of time between Completion and the actual performance of the Work. This obligation hereunder shall survive acceptance of the Work under the Contract and termination of the Contract. The District shall give such notice promptly after discovery of the condition.

22.5. District's Right to Takeover Work

22.5.1. 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.

22.5.2. 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:

22.5.2.1. 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;

22.5.2.2. 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

22.5.2.3. 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 Unilateral Change Order, 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.

22.5.3. Acceptance of Defective or Non-Conforming Work. The District may, in its sole and exclusive discretion, elect to accept Work that is defective or that is not in accordance with the requirements of the Contract Documents, instead of requiring its removal and correction, in which case the Contract Price shall be reduced as appropriate and equitable.

23. TERMINATION AND SUSPENSION

23.1. District's Right to Terminate Contractor for Cause

23.1.1. Grounds for Termination. The District, in its sole discretion, may terminate the Contract and/or terminate the Contractor's right to perform the work of the Contract based upon the following:

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

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

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

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

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

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

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

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

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

23.1.1.10. Contractor or its Subcontractor(s) is/are otherwise in breach, default, or in substantial violation of any provision of this Contract.

23.1.2. Notification of Termination

23.1.2.1. Upon the occurrence at District's sole determination of any of the above conditions, District may, without prejudice to any other right or remedy, serve written notice upon Contractor and its Surety of District's termination of this Contract and/or the Contractor's right to perform the work of the Contract. This notice will contain the reasons for termination. Unless, within three (3) days after the service of the notice, any and all condition(s) shall cease, and any and all violation(s) shall cease, or arrangement satisfactory to District for the correction of the condition(s) and/or violation(s) be made, this Contract and/or the Contractor's right to perform the Work shall cease and terminate. Upon termination, Contractor shall not be entitled to receive any further payment until the entire Work is finished.

23.1.2.2. Upon termination, District may immediately serve written notice of tender upon Surety whereby Surety shall have the right to takeover and perform this Contract only if Surety:

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

23.1.2.2.2. Commences performance of the Contract within seven (7) days from date of serving of its notice to District.

23.1.2.3. If Surety fails to notify District or begin performance as indicated herein, District may takeover 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 the 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.

23.1.2.4. Conversion to Termination for Convenience. In the event the Contract is terminated under this "District's Right to Terminate Contractor for Cause" section and it is finally determined by an arbitrator, court, jury or other tribunal having jurisdiction, for any reason, that the Contractor was not in default under the provisions hereof or that the District's exercise of its rights under this section was defective, deficient, ineffective, invalid or improper for any reason, the termination shall be deemed a termination for convenience of the District under the "Termination of Contractor for Convenience" section herein and thereupon, the rights and obligations of the District and the Contractor shall be determined in accordance with the "Termination of Contractor for Convenience" section herein.

23.1.3. Effect of Termination

23.1.3.1. Contractor shall, only if ordered to do so by the District, immediately remove from the Site all or any materials and personal property belonging to Contractor that have not been incorporated in the construction of the Work, or which are not in place in the Work. 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. Contractor and its Surety shall be liable upon the performance bond for all damages caused the District by reason of the Contractor's failure to complete the Contract.

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

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

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

23.1.3.5. Assignment and Assumption of Subcontracts. District shall have the right (but shall have no obligation) to assume and/or assign to a general contractor or construction manager or other third party who is qualified and has sufficient resources to complete the Work, the rights of the Contractor under its subcontracts with any or all Subcontractors. In the event of an assumption or assignment by the District, no Subcontractor shall have any claim against the District or third party for Work performed by Subcontractor or other matters arising prior to termination of the Contract. The District or any third party, as the case may be, shall be liable only for obligations to the Subcontractor arising after assumption or assignment. Should the District so elect, the Contractor shall execute and deliver all documents and take all steps, including the legal assignment of its contractual rights, as the District may require, for the purpose of fully vesting in the District the rights and benefits of its Subcontractor under Subcontracts or other obligations or commitments. All payments due the Contractor hereunder shall be subject to a right of offset by the District for expenses and damages suffered by the District as a result of any default, acts, or omissions of the Contractor. Contractor must include this assignment provision in all of its contracts with its Subcontractors.

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

23.2. Emergency Termination of Public Contracts Act of 1949

23.2.1. The 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.

23.2.1.1. 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.

23.2.1.2. 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.

23.2.2. 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. District, in its sole discretion, may adopt the Contract Price as the reasonable value of the Work performed or any portion thereof.

23.3. Termination of Contractor for Convenience

23.3.1. District in its sole discretion may terminate the Contract upon three (3) days written notice to the Contractor. Under a termination for convenience, the District retains the right to all the options available to the District if there is a termination for cause. In case of a termination for convenience, Contractor shall have no claims against the District except:

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

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

23.4. Suspension of Work

23.4.1. District may, without cause, order Contractor in writing to suspend, delay or interrupt the Project in whole or in part for such period of time as District may determine. When the District resumes the Project, the Parties will attempt to negotiate an adjustment in the Contract Price for increases or decreases in the cost of performance of the Project caused by suspense, delay or interruption. If the Parties cannot agree on an adjusted Contract Price, the District may terminate the Contract as permitted herein.

23.4.2. In the event the District shall order suspension of the Work, an adjustment shall be made to the Contract Price for increases in the direct cost of performance of the Work of the Contract Documents, actually caused by suspension, delay or interruption ordered by the District; provided however that no adjustment of the Contract Price shall be made to the extent: (i) that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible under the Contract Documents; or (ii) that an equitable adjustment is made or denied under another provision of the Contract Documents. The foregoing notwithstanding, any adjustment of the Contract Price shall not include any adjustment to increase the Contractor's overhead, general administrative costs or profit, all of which will remain as reflected in the Schedule of Values submitted by the Contractor pursuant to the Contract Documents. In the event of the District's suspension of the Work, the Contract Time shall be equitably adjusted.

23.5. Scope Reduction

In cases of suspension, partial or complete termination, or at the discretion of the District, the District reserves the right to unilaterally approve a deductive Change Order to reduce scope of work or perform work with other forces or its own forces.

24. CLAIMS RESOLUTION

24.1. Exclusive Remedy.

24.1.1. Compliance with the claim resolution process and timelines described in this Claims Resolution section as well as the notice provisions of the Contract are express conditions precedent to Contractor's right to commence litigation or arbitration, file a claim under the California Government Code, or commence any other legal action related to the Project ("Claims Resolution Process").

24.1.2. Contractor acknowledges that its failure, for any reason, to provide written notice and all required supporting documentation to permit the District's review and evaluation within the time frame required by this Claims Resolution Process, shall be deemed Contractor's waiver, release, discharge and relinquishment of any right to assert, request, or demand any entitlement to an adjustment of the Contract Time or the contract Price on account of any instruction, request, drawings, specifications, action, condition, omission, default or other situation.

24.1.3. To the extent any provision(s) of this Claims Resolution Process conflict with or otherwise impair the timeframes and procedures of Public Contract Code section 9204, the provisions of Section 9204 shall control. If provisions of this Claims Resolution Process are supplementary and/or in addition to the requirements of Section 9204, but do not conflict with or otherwise impair the timeframes and procedures of Section 9204, the provisions of this Claims Resolution Process and the Contract shall control.

24.2. Performance during Claim Resolution Process.

The Contractor shall diligently proceed with Work on the Project at the same time that Claims are addressed under the Claims Resolution Process. It is the intent of District to resolve Claims with the Contractor as close to the events giving rise to the Claims as possible, and to avoid stale or late Claims and the late documenting of Claims. Contractor's failure to diligently proceed in accordance with the District's instructions or the Contract terms will be considered a material breach of the Contract and a waiver of Contractor's rights under this Contract.

24.3. Waiver.

If Contractor fails to timely submit any written notices required under the terms of the Contract or in this Claims Resolution section, Contractor waives and releases its rights regarding further review of its Claim, unless Contractor and District mutually agree in writing to other time limits.

24.4. Intention.

The Claims Resolution Process required herein is intended to provide a concise mechanism for resolving Claims as they arise during the Project, while requiring accurate documentation related to contested issues as to those Claims that are not contemporaneously resolved.

24.5. Other Provisions.

If portions of the Contract, other than this Claims Resolution Process, establish a specific process regarding a specific subject, then that process shall govern and control the resolutions of any disagreements thereunder. Otherwise, the provisions in this Claims Resolution Process shall control the resolution of all Claims.

24.6. Claim Presentation

24.6.1. Claim: A claim is a written demand by Contractor (or by Contractor on behalf of a Subcontractor) that the Contractor must submit by **registered mail or certified mail return receipt requested** for:

24.6.1.1. An extension to the Contract Time, including relief from damages or penalties assessed by the District for delay;

24.6.1.2. Payment of money or damages arising from work done by, or on behalf of, the Contractor pursuant to the Contract and payment that is not otherwise expressly provided for in the Contract Documents or the Contractor is not otherwise entitled; or

24.6.1.3. Payment that is disputed by the District.

(“Claim”)

24.6.2. A PCO may be a Claim, but the Parties agree that a PCO shall only be a Claim if:

24.6.2.1. The District states in writing that it disagrees with the terms of a PCO and directs the Contractor to utilize the Claim Resolution Process, or

24.6.2.2. The District rejects in whole or in part a PCO and the Contractor states in writing that it is utilizing the Claim Resolution Process for the portion of the PCO that the District rejected.

24.6.3. Subcontractor Claims.

24.6.3.1. Public Contract Code section 9204(d)(5) states that 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 the 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. Within 45 days of receipt of this written request, the Contractor shall notify the Subcontractor in writing as to whether the Contractor presented the claim to the District and, if the Contractor did not present the Claim, provide the Subcontractor with a statement of the reasons for not having done so.

24.6.3.2. Contractor is responsible for providing this Claims Resolution Process to its Subcontractors and for ensuring that all Subcontractors or others who may assert Claims by and through Subcontractors and/or the Contractor are informed of this Claims Resolution Process. No Claim submitted by any party that fails to follow the provisions of this Claims Resolution Process will be considered. Contractor shall indemnify, keep and hold harmless the District and its consultants, against all suits, claims, damages, losses, and expenses, including but not limited to attorney’s fees, caused by, arising out of, resulting from, or incidental to, the failure to provide this Claims Resolution Process to its Subcontractors or others who may assert Claims by and through Subcontractors and/or the Contractor.

24.6.4. Contractor Must Timely Identify, Present and Document Any Claim

24.6.4.1. Every Claim shall be stated with specificity in writing and signed by Contractor under penalty of perjury and presented to the District within ten (10) calendar days from the date Contractor discovers or reasonably should discover, that an act, error or omission of District, its agents or employees, or action, condition or other situation has occurred that may entitle Contractor to make a Claim. This shall include the Contractor’s actual or constructive knowledge of any instruction, request, drawings, specifications, action, condition, omission, default or other situation for which the contractor believes there should an adjustment of the Contract Price or Contract Time. Contractor shall provide this writing even if Contractor has not yet been damaged, delayed, or incurred extra cost when Contractor discovers, or reasonably should

discover, the act, error, omission, action, condition or situation giving rise to the incidents giving rise to the Claim. The writing shall:

24.6.4.1.1. Identify all of the issues, events, conditions, circumstances and/or causes giving rise to the Claim;

24.6.4.1.2. Identify all pertinent dates and/or durations and all actual and/or anticipated effects on the Contract Price, milestones and/or Contract Time adjustments; and

24.6.4.1.3. Identify in detail line-item costs if the Claim seeks money.

24.6.4.1.4. If the Claim involves extra work, a detailed cost breakdown of the amounts the Contractor is seeking, including actual cost records (including without limitation, payroll records, material and rental invoices and the like) demonstrating that those costs have actually been incurred. To the extent costs have not yet been incurred at the time the Claim is submitted, actual cost records must be submitted on a current basis not less than once a week during any periods costs are incurred. A cost record will be considered current if submitted within seven (7) days of the date the cost reflected in the record is incurred. At the request of District, extra costs may be subject to further verification procedures (such as having an inspector verify the performance of alleged extra work on a daily basis).

24.6.4.1.5. If the Claim involves an error or omission in the Contract Documents:

24.6.4.1.5.1. An affirmative representation under penalty of perjury by Contractor and any affected Subcontractors and suppliers that the error or omission was not discovered prior to submitting a proposal for the Work, and

24.6.4.1.5.2. A detailed statement demonstrating that the error or omission reasonably should not have been discovered, by Contractor, its Subcontractors and suppliers, prior to submitting a proposal for the Work.

24.6.4.1.6. If the Claim involves a request for additional compensation for escalation of materials costs, then this provision exclusively governs those request(s) by Contractor and the following are **all** conditions precedent to Contractor's submission of a Change Order Request or Claim for additional compensation for escalation of materials costs.

24.6.4.1.6.1. Contractor shall not be entitled to submit a request for compensation for escalation of materials unless the actual increase in the cost of the materials in question exceeds ten percent (10%) of the **total** material costs on the Project at the time of bid.

24.6.4.1.6.2. The cost escalation is the result of unusual and unforeseeable market conditions not reasonably foreseeable at the time of award of the Contract and was not an escalated cost resulting from any action or inaction of the Contractor.

24.6.4.1.6.3. Contractor timely ordered and/or purchased the materials at issue, based on (1) Contractor's constructive knowledge of the supply chain for required materials and (2) Contractor's request to utilize the provisions in the Contract Documents related to the District's payment for materials and equipment purchased and stored on Site or offsite.

24.6.4.1.6.4. Contractor's material costs were reasonable at the time of Contractor's bid for the Project.

24.6.4.1.6.5. Contractor demonstrates an actual increase in the cost of materials in its Contract Price at the time of award of the Contract and/or as reflected in Contractor's escrowed bid documents compared to Contractor's actual material payment cost paid either at time of purchase or delivery, whichever is earlier.

24.6.4.1.6.6. An actual year-to-date price increase has occurred and can be substantiated by the E.N.R. 20-City Average Material Cost Index for the material at issue that demonstrates the claim for an increase in price of the material at the time of delivery of the higher priced material to the Project.

24.6.4.2. The writing shall be accompanied by all documents substantiating Contractor's position regarding the Claim.

24.6.4.3. A Claim that asserts an effect on any schedule milestones and/or Contract Time shall include all pertinent scheduling data demonstrating the impact(s) on the critical path(s), milestone(s) and/or Contract Time.

24.6.4.4. Contractor agrees that it shall not base its damages, its calculations or its Claim on a "total cost" approach, a "modified total cost" approach or a "jury verdict method" approach.

24.6.5. Certification. Each copy of the Claim Documentation shall be certified by a responsible officer of the Contractor in accordance with the requirements of the Contract Documents. This certification shall be under penalty of perjury and must include the following language immediately above or before the Contractor's signature: ***"I declare under penalty of perjury under the laws of the State of California that the information provided and statements made in this Claim are true and correct, substantiated and of merit."*** The Contractor acknowledges that this requirement is not a mere formality but is intended to ensure that the Contractor only submits Claims that it believes are true and correct, substantiated and have merit. Should Contractor fail to submit the foregoing written statement signed under penalty of perjury, Contractor waives and releases its Claim, including all rights and remedies in connection therewith. This certification must include a certification of any portion of the Claim from Subcontractor(s) or others who are asserting Claims by and through Subcontractors and/or the Contractor

24.6.6. District's Written Statement/Decision on Claim. The District shall issue a written statement/decision regarding the Claim to the Contractor within forty-five (45) days of receipt of the written Claim from the Contractor, or three (3) days after the District's first regular governing board meeting after that 45-day period if the District's governing board does not meet within that first 45-day period. If the District fails to timely provide a written statement/decision regarding the Claim, the Claim shall be deemed rejected in its entirety.

24.6.7. Contractor Must Demand an Informal Meet and Confer Conference if Contractor Pursues Any Claim

24.6.7.1. FAILURE OF A CONTRACTOR TO TIMELY DEMAND A MEET AND CONFER CONFERENCE IS A WAIVER OF ITS RIGHT TO PURSUE ALL OR A PORTION OF ITS CLAIM.

24.6.7.2. Where There Is No Agreement: If there is no agreement between Contractor and the District on a Claim, then within ten (10) calendar days of the date of the District's written statement/decision in response to a Claim or PCO, if Contractor pursues that Claim, then Contractor must demand, by **registered mail or certified mail return receipt requested**, a meet and confer conference with District staff. A meet and confer conference with District staff shall be a condition precedent to Contractor seeking any further relief, including a mediation as indicated below.

24.6.7.3. Where There Is Partial Agreement: If Contractor and the District partially agree on a Claim but do not reach complete agreement, then the Parties shall complete a Change Order, if applicable, for the issues and/or amounts agreed to. For those issues not agreed to, if Contractor pursues those issues from that Claim, then Contractor must demand, by **registered mail or certified mail return receipt requested**, a meet and confer conference with District staff regarding those issues. A meet and confer conference with District staff shall be a condition precedent to Contractor seeking any further relief, including a mediation as indicated below, in connection with the District's rejection.

24.6.7.4. Meet and Confer Conference. District and Contractor shall schedule the meet and confer conference as soon as reasonably possible after Contractor's written demand for a meet and confer conference, but in no case later than thirty (30) days after Contractor's demand.

24.6.7.5. District's Written Decision. Within ten (10) **business** days of the meet and confer conference, the District shall issue a written decision. If the District fails to timely provide a written statement/decision after the meet and confer conference, all Claim issues that were part of the meet and confer conference shall be deemed rejected in their entirety.

24.6.7.5.1. If the District's decision completely resolves the Claim, then the Parties shall complete a Change Order, if applicable, for the issues and/or amounts agreed to.

24.6.7.5.2. If the District rejects the Contractor's Claim in whole or in part or does not issue a timely written response, then the parties shall mediate the remaining issues of the Claim.

24.6.7.5.3. Contractor's costs incurred in seeking relief for Claims are not recoverable from District.

24.6.8. Mediation.

24.6.8.1. At the District's sole discretion, this mediation may be a multiple-party mediation with the Architect, the Construction Manager, the Inspector, and/or other District consultants.

24.6.8.2. 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.

24.6.9. Contractor's Obligation to File a Government Code Claim. Nothing in this Contract, including this Claims Resolution Process, waives, modifies or tolls the Contractor's obligation to present a timely claim under Government Code section 910, et seq. Therefore, in addition to complying with this Claims Resolution Process, the Contractor is required to present claims to the District pursuant to Government Code section 910, et seq. If after the requirements of this Claims Resolution Process are satisfied, and all or a portion of the Claim remains unresolved, and if the Government Code claim is rejected by the District, the Contractor may proceed under the post-mediation provisions of this Claims Resolution Process.

24.6.10. Post Mediation Provisions

24.6.10.1. Claims of \$375,000 or Less: The provisions of Public Contract Code § 20104.4 shall apply. Pursuant to Public Contract Code § 20104.4(a), 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. Pursuant to Public Contract Code § 9204(d)(2)(D), a mediation conducted pursuant to this Claims Resolution Process shall excuse the obligation under Public Contract Code § 20104.4(a) to mediate after litigation has been commenced unless otherwise agreed to by the parties in writing.

24.6.10.2. Litigation of Claims in Excess of \$375,000. If, after a mediation as indicated above, the Parties have not resolved the Claim, either Party may commence an action in a court of competent jurisdiction to contest that decision within ninety (90) days following the conclusion of that mediation or one (1) year following the accrual of the cause of action, whichever is later. By mutual agreement, the Parties can agree to instead resolve the Claim through arbitration.

24.6.11. The District shall be entitled to remedy any false claims, as defined in California Government Code section 12650 *et seq.*, made to the District by the Contractor or any Subcontractor under the standards set forth in Government Code section 12650 *et seq.* Any Contractor or Subcontractor who submits a false claim shall be liable to the District for three times the amount of damages that the District sustains because of the false claim. A Contractor or Subcontractor who submits a false claim shall also be liable to the District for (a) the costs, including attorney fees, of a civil action brought to recover any of those penalties or damages, and (b) a civil penalty of up to \$11,000 for each false claim. In addition, Contractor may be subject to criminal prosecution under California Penal Code §72 and/or civil liability under False Claims Act. If so, the District may be entitled to recover its costs incurred to investigate any False Claim, including but not limited to attorneys' fees and expert fees incurred in connection with that investigation.

24.7. Documentation of Resolution.

If a Claim is resolved, the District shall determine if that resolution shall be documented in an Agreement and Release of Any and All Claims form or other document, as appropriate.

24.8. Claim Resolution Process – Non-Applicability.

The procedures and provisions in this Claims Resolution section shall **not** apply to:

24.8.1. District's determination of what Work is or will be constructed, or whether the Work complies with the Contract Documents for purposes of accepting the Work;

24.8.2. District's rights and obligations as a public entity, such as, but without limitation, the revocation of prequalified or qualified status, barring a contractor from District contracts, the imposition of penalties or forfeitures prescribed by statute or regulation; provided, however, that penalties imposed against a public entity by statutes such as Public Contract Code section 7107, shall be subject to the mandatory dispute resolution provisions of this Claims Resolution section and the Contract;

24.8.3. Personal injury, wrongful death or property damage claims;

24.8.4. Latent defect or breach of warranty or guarantee to repair;

24.8.5. Stop notices or stop payment notices; or

24.8.6. Any other District rights as set forth herein.

24.9. The District's failure to respond to a Claim from the Contractor within the time periods described herein or to otherwise meet the time requirements of Public Contract Code section 9204 shall

automatically result in the Claim being deemed rejected in its entirety, with no admission by the District as to the merits of the Claim.

- 24.10.** If District fails to timely issue payment for any Claim or portion of a Claim as required pursuant to these Claim Resolution Procedures, the Contractor is permitted to assess interest indicated in Public Contract Code section 9204. Notwithstanding this provision, and in accordance with Public Contract Code section 7107, the District is entitled to withhold up to 150% of disputed amounts and the District shall not be liable for payment of interest on such disputed amounts pending final adjudication of such disputes.

25. LABOR, WAGE & HOUR, APPRENTICE AND RELATED PROVISIONS

25.1. Contractor & Subcontractor Registration

25.1.1. Contractor shall comply with the registration and compliance monitoring provisions of Labor Code section 1771.4, including furnishing its CPRs to the Labor Commissioner of California and complying with any applicable enforcement by the Department of Industrial Relations. Labor Code section 1771.1(a) states the following:

“A contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, as defined in this chapter, unless currently registered and qualified to perform public work pursuant to Section 1725.5. It is not a violation of this section for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Section 1725.5 at the time the contract is awarded.”

25.1.2. Contractor acknowledges that, for purposes of Labor Code section 1725.5, all or some of the Work is a public work to which Labor Code section 1771 applies. Contractor shall comply with Labor Code section 1725.5, including without limitation the registration requirements. Additionally, all Contractor’s Subcontractors shall comply with Labor Code section 1725.5 to be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of the Contract. Contractor represents that all of its Subcontractors are registered pursuant to Labor Code section 1725.5.

25.1.3. The Project is subject to compliance monitoring and enforcement by the Department of Industrial Relations. Contractor shall post job site notices, as prescribed by regulation. Contractor shall comply with all requirements of Labor Code section 1771.4, except the requirements that are exempted by the Labor Commissioner for the Project.

25.2. Wage Rates, Travel and Subsistence

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

25.2.2. Holiday and overtime work, when permitted by law, shall be paid for at a rate of at least one and one-half times the above specified rate of per diem wages, 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.

25.2.3. Contractor shall pay and shall cause to be paid each worker engaged in Work on the Project not less than the general prevailing rate of per diem wages determined by the Director of the Department of Industrial Relations (“DIR”) (“Director”), regardless of any contractual relationship which may be alleged to exist between Contractor or any Subcontractor and such workers.

25.2.4. If during the period this bid is required to remain open, the Director 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 Invitation to Bid or the Contract subsequently awarded.

25.2.5. Pursuant to Labor Code section 1775, Contractor shall, as a penalty to District, forfeit the statutory amount, (currently not to exceed two hundred dollars (\$200) for each calendar day, or portion thereof), for each worker paid less than the prevailing rates, as 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.

25.2.5.1. The amount of the penalty shall not be less than forty dollars (\$40) for each calendar day, or portion thereof, unless the failure of Contractor was a good faith mistake and, if so, the error was promptly and voluntarily corrected when brought to the attention of Contractor.

25.2.5.2. The amount of the penalty shall not be less than eighty dollars (\$80) for each calendar day or portion thereof, if Contractor has been assessed penalties within the previous three (3) years for failing to meet Contractor’s prevailing wage obligations on a separate contract, unless those penalties were subsequently withdrawn or overturned.

25.2.5.3. The amount of the penalty may not be less than one hundred twenty dollars (\$120) for each calendar day, or portion thereof, if the Labor Commissioner determines the Contractor willfully violated Labor Code section 1775.

25.2.5.4. 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.

25.2.6. 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.

25.2.7. 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 section 3093, and similar purposes.

25.2.8. 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).

25.3. Hours of Work

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

25.3.2. 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.

25.3.3. 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.

25.3.4. 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.

25.4. Payroll Records

25.4.1. Contractor and all Subcontractors must comply with the compliance monitoring provisions of Labor Code section 1771.4, including furnishing its certified payroll records (“CPR(s)”) to the Labor Commissioner of California and complying with any applicable enforcement by DIR. Labor Code section 1771.4 requires Contractor and Subcontractors to provide electronic copies of CPRs to the Labor Commissioner of California at least once every thirty (30) days, and within thirty (30) days of Project Completion. The failure to timely provide the CPRs could result in penalties as determined by Labor Code section 1771.4, applicable laws, and regulations

25.4.2. If requested by the District, Contractor shall provide to the District and shall cause each Subcontractor performing any portion of the Work to provide the District and an accurate CPR(s), 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.

25.4.3. In addition to any other requirements pursuant to Labor Code sections 1770, et seq., the CPRs enumerated hereunder shall be certified and shall be provided to the District on a weekly basis. 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 shall not make any payment to Contractor until:

25.4.3.1. Contractor and/or its Subcontractor(s) provide CPRs acceptable to the District, and

25.4.3.2. The District is given sufficient time to review and/or audit the CPRs to determine their acceptability. Any delay in Contractor and/or its Subcontractor(s) providing CPRs to the District in a timely manner will directly delay the District’s review and/or audit of the CPRs

and Contractor's payment.

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

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

25.4.4.2. 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 Department of Industrial Relations.

25.4.4.3. 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 either 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.

25.4.5. The form of certification for the CPRs shall be as follows:

I, _____ (Name-Print), the undersigned, am the _____
_____ (Position in business) with the authority to act for and on behalf of _____
_____ (Name of business and/or Contractor), certify under penalty of perjury that the records or copies thereof submitted and consisting of _____
(Description, number of pages) are the originals or true, full, and correct copies of the originals which depict the payroll record(s) of actual disbursements by way of cash, check, or whatever form to the individual or individual named, and (b) we have complied with the requirements of sections 1771, 1811, and 1815 of the Labor Code for any work performed by our employees on the Project.

Date: _____ Signature: _____
(Section 16401 of Title 8 of the California Code of Regulations)

25.4.6. Each Contractor shall file a certified copy of the CPRs with the entity that requested the records within ten (10) days after receipt of a written request.

25.4.7. 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.

25.4.8. Contractor shall inform District of the location of the records enumerated hereunder, including the street address, city, and county, and shall, within five (5) Business Days, provide a notice of change of location and address.

25.4.9. 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 one hundred dollars (\$100) for each calendar day, or portion thereof, for each worker, until strict compliance is effectuated. Upon the request of Division of Apprenticeship Standards or Division of Labor Standards Enforcement, these penalties shall be withheld

from progress payments then due.

25.4.10. It shall be the responsibility of Contractor to ensure compliance with the provisions of Labor Code section 1776.

25.5. Apprentices

25.5.1. 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.

25.5.2. 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.

25.5.3. Every apprentice shall be paid the standard wage paid to apprentices under the regulations of the craft or trade at which the apprentice is employed, and shall be employed only at the work of the craft or trade to which the apprentice is registered.

25.5.4. 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 the apprentice is training.

25.5.5. 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.

25.5.6. 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.

25.5.7. 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:

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

25.5.7.2. 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.

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

25.5.9. Contractor shall become fully acquainted with the law regarding apprentices prior to commencement of the Work. Special attention is directed to sections 1777.5, 1777.6, and 1777.7 of the Labor Code, and title 8, California Code of Regulations, section 200 et seq. Questions may be directed to the State Division of Apprenticeship Standards, 455 Golden Gate Avenue, San Francisco, California 94102.

25.5.10. Contractor shall ensure compliance with all certification requirements for all workers on the Project including, without limitation, the requirements for electrician certification in Labor Code sections 108, et seq.

25.6. Non-Discrimination

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

25.6.2. 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.

25.7. 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.) the California Occupational Safety and Health Act of 1973, and all related regulations, including without limitation section 330 et seq. of Title 8 of the California Code of Regulations.

26. MISCELLANEOUS

26.1. Assignment of Antitrust Actions

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

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

26.1.2. 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.

26.1.3. 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.

26.1.4. 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.

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

26.2. 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.

26.3. Taxes

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

26.4. Shipments

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

26.5. 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 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 71 00

SPECIAL CONDITIONS

1. **Project Description**

The information provided here is a summary only. All bidders must thoroughly review the Plans and Specifications and the other Contract Documents for a full understanding of the scope of the Work of the Project.

a. **Scope.**

Campus-wide fire alarm upgrade.

b. **Preliminary (Tentative) Schedule.** These dates are subject to change, at the District's discretion.

- (1) The District anticipates awarding the Project, if it awards it at all, at its Board meeting in May 14, 2024.
- (2) The District anticipates issuing a Notice to Proceed to the successful Contractor on June 6, 2024.
- (3) Based on this, the District expects Project Completion on September 30, 2024.

2. **Mitigation Measures**

Contractor shall comply will 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.) The District's Mitigation Monitoring Plan is not a Contract Document, but is referenced and available as indicated in the Existing Information and Documentation Regarding Project Site (Document 00 31 19).

3. **Site Specific Conditions**

- a. **Access.** Access to the school buildings and entry to buildings, classrooms, restrooms, mechanical rooms, electrical rooms, or other rooms, for construction purposes, must be coordinated with District and onsite District personnel before Contractor commences Work. Unless agreed to otherwise in writing, only a school custodian will be allowed to unlock and lock doors in existing building(s). The custodian will be available only while school is in session. If a custodian is required to arrive before 7:00 a.m. or leave after 3:30 p.m. to accommodate Contractor's Work, the overtime wages for the custodian will be paid by Contractor, unless, at the discretion of District, other arrangements are made in advance.
- b. **Master Key.** Upon request, District may, at its own discretion, provide a master key to the school site for the convenience of Contractor. Contractor agrees to pay all expenses to re-key the entire school site and all other affected District buildings if the master key is lost or stolen or if any unauthorized party obtains a copy of the key or access to the school.
- c. **Maintaining Services.** Contractor is advised that Work is to be performed in spaces regularly scheduled for instruction. Interruption and/or periods of shutdown of public access, electrical service, water service, lighting, or other utilities shall be only as arranged in advance with District. Contractor shall provide temporary services to all facilities interrupted by Contractor's Work.
- d. **Maintaining Utilities.** Contractor shall maintain in operation during term of Contract, drainage lines, storm drains, sewers, water, gas, electrical, steam, and other utility service lines within working area.
- e. **Work During Instructional Time.** By submitting its bid, Contractor affirms that Work may be performed

during ongoing instruction in existing facilities. If so, Contractor agrees to cooperate to the best of its ability to minimize any disruption to the school up to, and including, rescheduling specific work activities, at no additional cost to District.

- f. **No Work During Student Testing.** Contractor shall, at no additional cost to District and at District's request, coordinate its Work to not disturb District students including, without limitation, not performing any Work when students at the Site are taking State-required tests.
- g. **Badge and Vest Policy for Contractors.** Contractor shall provide their workers and all of Subcontractors' workers, and delivery personnel or others entering the Site, with identification badges and a brightly colored construction vest. These badges and vests shall be worn by all persons who are working on the Project Site.
 - (1) Badges must be filled out in full and contain the following information:
 - a) Name of Contractor
 - b) Name of Employee
 - c) Contractor's address and phone number
 - (2) Badges must be worn by all these persons when on Site and must be visible at all times. Contractors must inform these persons that they are required to allow District employees, the Architect, the Construction Manager, the Program Manager, or the Project Inspector to review the information on the badges upon request to, without limitation, confirm a person's identity and a person's right to be on Site, and in any particular area on the Site, at any time.
 - (3) Failure to display an identification badge and/or to wear a vest as required by this policy may result in the assessment of fines against the Contractor.

4. **Fingerprinting**

The Contractor must comply with the Criminal Background Investigation / Fingerprinting Certification (Doc. 00 45 85) by utilizing only the following method indicated (checked) and not any other method.

All Workers Fingerprinted. The Contractor 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 interact with pupils, outside of the immediate supervision and control of the pupil's parent or guardian or a school employee, has a valid criminal records summary as described in Education Code Section 44237 (Contractor shall "require each applicant for employment in a position requiring contact with minor pupils to submit two sets of fingerprints prepared for submittal by the employer to the Department of Justice for the purpose of obtaining criminal record summary information from the Department of Justice and the Federal Bureau of Investigation."). A complete and accurate list of Contractor's employees and of all of its subcontractors' employees who may interact with District pupils during the course and scope of the Contract is attached hereto; and/or

Physical Barrier. Pursuant to Education Code section 45125.2, Contractor has installed or will install, prior to commencement of work, a physical barrier at the Project site, that will limit contact between Contractor's employees and District pupils at all times; and/or

Continual Supervision by Fingerprinted Employee. Pursuant to Education Code section 45125.2, 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 has ascertained has not been convicted of a violent or serious felony. The name and title of the employee who will be supervising Contractor's employees and its subcontractors' employees is:

Name: _____ Title: _____

Unoccupied Site. The Work on the Contract is at an unoccupied school site and no employee and/or subcontractor or supplier of any tier of Contract shall come in contact with the District pupils.

5. **Substitutions for Specified Items**

Requests for substitutions after award of the Contract shall be submitted within **THIRTY-FIVE (35)** days of the date of the Notice of Award. This time period may be extended by the District only, in its sole discretion.

6. **Weather Days**

Delays due to Adverse Weather conditions will only be permitted in compliance with the provisions in the General Conditions and only if the number of days of Adverse Weather exceeds the following parameters:

SOUTHERN CALIFORNIA: 16 Days

7. **Insurance Policy Limits.** Contractor’s insurance shall be with insurance companies with an A.M. Best rating of no less than A-VII. The limits of insurance shall not be less than:

Commercial General Liability	Includes: Bodily Injury, Property Damage, Personal & Advertising Injury, Product Liability and Completed Operations	\$2,000,000 each occurrence; \$4,000,000 general aggregate
Automobile Liability – <u>Any Auto</u>	Combined Single Limit	\$1,000,000 per occurrence
Excess Liability (Umbrella)		\$1,000,000 per occurrence; \$6,000,000 aggregate
Workers Compensation		Statutory limits pursuant to State law
Employers’ Liability		\$2,000,000 each incident, each disease; \$2,000,000 policy limit
Sexual Abuse / Molestation		\$1,000,000 each incident; \$2,000,000 policy limit
Builder’s Risk (Course of Construction)		Issued for the value and scope of Work indicated herein.
Property of Others	Combined Single Limit General Aggregate	Issued for the value and scope of Work stored off-site.

a. **Contractor’s Pollution Liability Coverage:** The Contractor will procure and maintain contractor’s pollution liability insurance, providing limits of \$1,000,000 per occurrence and \$5,000,000 the aggregate, on an occurrence form. The policy shall cover all activities and operations during construction at the Project Site. The policy must cover mold during the period of construction and throughout the statute of repose.

8. **Permits, Certificates, Licenses, Fees, Approval**

a. **Approvals, Certificates, Fees, Inspections, Licenses, Permits, Etc.**

(1) **Permits in Bid Price.** Contractor shall include in its Bid the cost of any approvals, certificates, fees, excavations, licenses, permits or similar requirements necessary for the performance of the Work ("Permits").

a) "Permits" includes, without limitation, any of the following if required: temporary or permanent building, mechanical, electrical or plumbing permits; certificates of occupancy; curb-breaking permits, highway entrance permits; water permits; etc.

b) "Permits" does not include Project Inspector fees (which will be paid by the District unless otherwise indicated herein), professional licensing, or contractors' licensing.

c) The Contractor shall be required to obtain all Permits. The Contractor shall ensure sufficient time in its Construction Schedule to secure and obtain all permits and shall not be permitted to claim a delay in the Project due to a delay in obtaining a Permit.

b. **Storm Water Permits**

(1) Contractor shall perform the Work of the Project related to being District's Qualified SWPPP (Storm Water Pollution Prevention Plan) Practitioner ("QSP").

(2) As District's QSP, Contractor shall be responsible for storm water and non-storm water visual observations, sampling, and analysis per the District's SWPPP.

(3) Contractor shall strictly follow the requirements to implement all the provisions of the SWPPP including, without limitation, preparation of monitoring and recording reports and providing those to District.

(4) Contractor's indemnity obligations are applicable to any damages, penalties, fees, charges, or related expenses assessed or charged to the District by any water boards or agencies with jurisdiction related to compliance with the Storm Water Permits.

9. **Project Inspection**

In addition to the requirements in the Contract Documents related to cooperation with and authority of the DSA Project Inspector(s) for the Project, Contractor must comply with the requirements of the most recent versions of DSA document PR 13-01. Below are provisions of this document from PR 13-01 (rev 08/21/17).

(1) The contractor shall carefully study the DSA-approved documents and shall plan a schedule of operations well ahead of time.

(2) If at any time it is discovered that work is being done which is not in accordance with the DSA-approved construction documents, the contractor shall correct the work immediately.

(3) Verify that DSA 152 and, when applicable, DSA 152-IPI forms were issued for the project prior to the commencement of construction.

(4) Meet with the design team, the Laboratory of Record and the project inspector to mutually communicate and understand the structural/material and fire/life safety testing and inspection program, and the methods of communication appropriate for the project.

- (5) Notify the project inspector and, when applicable, in-plant inspector, in writing, of the commencement of construction of each and every aspect of the work at least 48 hours in advance by submitting Commencement/Completion of Work Notification (form DSA 156), or other agreed-upon written documents, to the project inspector.
 - (6) Notify the project inspector and, when applicable, the in-plant inspector, of the completion of construction of each and every aspect of the work by submitting form DSA 156 (or other agreed-upon written documents) to the project inspector.
 - (7) Consider the relationship of the signed-off blocks and sections of the form DSA 152 and the commencement of subsequent work. Until the project inspector has signed off applicable blocks and sections of the form DSA 152, the contractor may be prohibited from proceeding with subsequent construction activities that cover up the unapproved work. Any subsequent construction activities that cover up the unapproved work will be subject to a "Stop Work Order" from DSA or the school district (see IR A-13 for additional information), and are subject to removal and remediation if found to be in noncompliance with the DSA-approved construction documents.
 - (8) Submit the final verified report. All prime contractors are required to submit final Contractor Verified Reports (form DSA 6-C).
10. **Health & Safety.** This provision includes additional requirements related to the Contractor's responsibility related to the health of its workers and to the procedures it must follow related to COVID-19, and is in addition to the requirements already indicated in the Contract Documents including, without limitation, in the Agreement and the General Conditions.

END OF DOCUMENT

**DOWNEY UNIFIED SCHOOL DISTRICT
LEWIS ELEMENTARY SCHOOL**

13220 Bellflower Blvd.
Downey, CA 90242



**MODULAR CLASSROOMS &
FIRE ALARM RENOVATIONS**

**SPECIFICATIONS
MANUAL**

App No: 03-123849
File 19-29

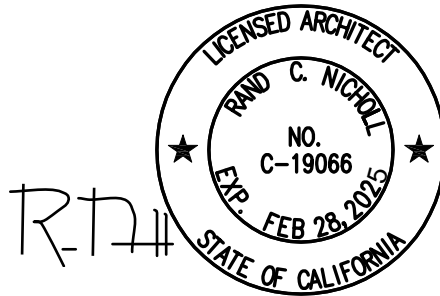
March 28, 2024

DOCUMENT 00 0100 - SEALS PAGE

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END OF SECTION 00 0110

SECTION 01 0450 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. This Section specifies administrative and procedural requirements for cutting and patching.

PART 2 - PRODUCTS (Not applicable)

PART 3 - EXECUTION

3.1 SUBMITTALS

- A. The word "cutting" as used in the Contract Documents includes, but is not limited to, cutting, drilling, chopping, and other similar operations and the word "patching" includes, but is not limited to, patching, rebuilding, reinforcing, repairing, refurbishing, restoring, replacing, or other similar operations.
- B. Cutting and Patching Proposal: Contractor shall submit a proposal describing procedures well in advance of the time cutting and patching will be performed if the Contract Documents requires approval of these procedures before proceeding. Include the following information, as applicable, in the proposal:
1. Describe the extent of cutting and patching required. Denote how it will be performed and indicate why it cannot be avoided.
 2. Describe anticipated results in terms of changes to existing construction. Include changes to structural elements and operating components as well as changes in the building's appearance or other significant visual elements.
 3. List products to be used and firms or entities that will perform this Work.
 4. Indicate dates when cutting and patching will be performed.
 5. Utilities: List utilities that cutting and patching operations will disturb or affect. List utilities to be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted.
 6. Where cutting and patching involves adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with the original structure.
 7. Review by Architect and/or DSA prior to proceeding with cutting and patching does not waive Architect right to later require complete removal and replacement of defective Work.

3.2 QUALITY ASSURANCE

- A. Requirements for structural Work: Do not cut and patch structural elements in a manner that would change their load-carrying capacity or load-deflection ratio.
1. Obtain approval from Owner and/or Architect and the Division of the State Architect of the cutting and patching proposal before cutting and patching the following structural elements unless specifically detailed on the approved plans:
 - a. Foundation construction
 - b. Bearing and retaining walls
 - c. Structural concrete
 - d. Structural steel

- e. Lintels
 - f. Timber and primary wood framing
 - g. Structural decking
 - h. Stair systems
 - i. Miscellaneous structural metals
 - j. Exterior curtain-wall construction
 - k. Equipment supports
 - l. Piping, ductwork, vessels, and equipment
- B. Operational Limitations: Do not cut and patch operating elements or related components in a manner that would result in reducing their capacity to perform as intended. Do not cut and patch operating elements or related components in a manner that would result in increased maintenance or decreased operational life or safety.
- 1. Obtain review of the cutting and patching proposal before cutting and patching the following operating elements or safety related systems:
 - a. Primary operational systems and equipment
 - b. Air or smoke barriers
 - c. Water, moisture, or vapor barriers
 - d. Membranes and flashings
 - e. Fire protection systems
 - f. Noise and vibration control elements and systems
 - g. Control systems
 - h. Communication and/or data systems
 - i. Conveying systems
 - j. Electrical wiring systems
- C. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in the opinion of Architect, reduce the building's aesthetic qualities. Do not cut and patch construction in a manner that would result in visual evidence of cutting and patching. Remove and replace Work cut and patched in a visually unsatisfactory manner.
- 1. If possible, retain the original installer or fabricator to cut and patch the exposed Work listed below. If it is impossible to engage the original installer or fabricator, engage another recognized experienced and specialized firm.
 - a. Acoustical ceilings
 - b. Acoustical panels
 - c. HVAC enclosures, cabinets, or covers
 - d. Gypsum board

3.3 WARRANTY

- A. Existing Warranties: Replace, patch, and repair material and surfaces cut or damaged by methods and with materials in such a manner as not to void any warranties required or existing.

3.4 INSPECTION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed before cutting. If unsafe or unsatisfactory conditions are encountered, take corrective action before proceeding.

1. Before proceeding, meet at the Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

3.5 PREPARATION

- A. Temporary support: Provide adequate temporary support of existing improvements or Work to be cut.
- B. Protection: Protect existing improvements and Work during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of existing improvements or Work that might be exposed during cutting and patching operations.
- C. Avoid interference with operation of adjoining areas or interruption of free passage to adjoining areas.

3.6 PERFORMANCE

- A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay. Carefully remove existing Work to be salvaged and/or reinstalled. Protect and store for reuse into the Work. Verify compatibility and suitability of existing substrates before starting the Work.
- B. Cutting: Cut existing construction using methods least likely to damage elements retained or adjoining Work. Where possible, review proposed procedures with the original installer; comply with the original installer's recommendations.
 1. In general, where cutting, provide hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
 3. Cut through concrete and masonry using a cutting machine, such as a carborundum saw or a diamond-core drill. Saw cut reinforcing bars and paint ends with bituminous paint except where bonded into new concrete or masonry. Cut and remove concrete paving from control joint to control joint.
 4. Comply with requirements of applicable Division 2 Sections where cutting and patching requires excavating, backfill, or re-compaction.
 5. Sheet Metal: Remove back to joint, lap, or connection. Secure loose or unfastened ends or edges and seal watertight.
 6. Plaster: Cut back to sound plaster on straight lines, and back bevel edges of remaining plaster. Trim existing lath and prepare for new lath.
- C. Patching: Patch with durable seams that are as invisible as possible. Comply with required tolerances.
 1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation. Verify conditions of existing substrates prior to executing Work.
 2. Restore exposed finishes of patched areas and extend finish restoration into retaining adjoining construction in a manner that will eliminate all evidence of patching and refinishing.
 3. Concrete: Maintain cut edges in a moist condition for twenty four (24) hours prior to the placement of new concrete. In lieu of this an epoxy adhesive may be provided. Finish placed concrete to match existing unless noted otherwise. Concrete shall provide a compressive strength 3,000 psi where installed to repair and/or match existing improvements, unless noted otherwise.
 4. Metal Fabrications: Items to remain exposed shall have their edges cut and ground smooth and rounded.

5. Lath and Plaster: Install new lath materials to match existing and fasten to supports at 6" centers. Provide a 6" lap where new lath to adjoins existing lath. Fasten new lath as required for new Work. Restore paper backings as required. Apply a bonding agent on cut edges of existing plaster. Apply three coat plaster of the type, thickness, finish, texture, and color to match existing.
6. Gypsum Wallboard: Fasten cut edges of wallboard. Install patches with at least two opposite edges centered on supports and secure at 6" centers. Tape and finish joints and fastener heads. Patching shall be non-apparent when painted and/or finished.
7. Painting: Prepare areas to be patched, patch and paint as specified under related sections of the Contract Documents.

3.7 CLEANING

- A. Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar items. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged coverings to their original condition.

END OF SECTION 01 04 50

SECTION 02 0700 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Related Documents: Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications, apply to this section.
- B. Related Sections:
 - 1. 01 0450 Cutting and Patching
- C. Definitions: As follows:
 - 1. Remove: Remove and legally dispose of items except those indicated to be reinstalled, salvaged, or to remain the District's property.
 - 2. Remove and Salvage: Items indicated to be removed and salvaged remain the District's property. Remove, clean, and pack or crate items to protect against damage. Identify contents of containers and deliver to District's designated storage area.
 - 3. Salvage and Reuse In New Work: Remove items indicated; clean, service, and otherwise prepare them for reuse; store and protect against damage. Reinstall items in locations indicated.
 - 4. Existing to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by the Architect, items may be removed to a suitable, protected storage location during selective demolition and then cleaned and reinstalled in their original locations.
 - 5. Replace: Remove and legally dispose of existing item(s) indicated and install new like item(s) that conform(s) to project specifications.
- D. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain the District's property, demolished materials shall become the Contractor's property and shall be removed from the site with further disposition at the Contractor's option.
- E. Record drawings at Project closeout according to Division 1 Section "Contract Closeout."
 - 1. Identify and accurately locate capped utilities and other subsurface structural, electrical, or mechanical conditions.
- F. Regulatory Requirements: Comply with local governing EPA notification regulations before starting selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction. Comply with California Fire Code Article 87.
- G. District will occupy the building immediately adjacent to selective demolition area. Conduct selective demolition so that District's operations will not be disrupted. Provide not less than 72 hours' notice to District of activities that will affect District's operations.
- H. District assumes no responsibility for actual condition of buildings to be selectively demolished.
- I. Storage or sale of removed items or materials on-site will not be permitted.

PART 2 - PRODUCTS (Not applicable)

PART 3 - EXECUTION

3.1 GENERAL

- A. Survey the condition of the building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of the structure or adjacent structures during selective demolition.
- B. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.
- C. Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
- D. Utility Requirements: Locate, identify, shut off, disconnect, and seal or cap off indicated utility services serving building to be selectively demolished.
 - 1. Where utility services are required to be removed, relocated, or abandoned, provide bypass connections to maintain continuity of service to other parts of the building before proceeding with selective demolition.
- E. Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with selective demolition operations.
- F. Conduct demolition operations and remove debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.
- G. Conduct demolition operations to prevent injury to people and damage to adjacent buildings, facilities, and site improvements to remain. Ensure safe passage of people around selective demolition area.
 - 1. Provide temporary weather protection, during interval between demolition and removal of existing construction, on exterior surfaces and new construction to ensure that no water leakage or damage occurs to structure or interior areas.
 - 2. Protect walls, ceilings, floors, and other existing finish work that are to remain and are exposed during selective demolition operations.
 - 3. Cover and protect furniture, furnishings, and equipment that have not been removed.
- H. Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent movement, settlement, or collapse of building to be selectively demolished.
- I. Use water mist, temporary enclosures, and other suitable methods to limit the spread of dust and dirt. Comply with governing environmental protection regulations.
- J. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- K. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before start of selective demolition.
- L. Remove structural framing members and lower to ground by method suitable to avoid free fall.

- M. Promptly patch and repair holes and damaged surfaces caused to adjacent construction by selective demolition operations.
- N. Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.
- O. Restore exposed finishes of patched areas and extend finish restoration into adjoining construction to remain in a manner that eliminates evidence of patching and refinishing.
- P. Patch and repair floor and wall surfaces in the new space where demolished walls or partitions extend one finished area into another. Provide a flush and even surface of uniform color and appearance.
- Q. Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.
- R. Disposal: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
 - 1. Do not burn demolished materials.
 - 2. Dispose of demolished materials at designated spoil areas on District's property.
 - 3. Transport demolished materials off District's property and legally dispose of them.
- S. Sweep the building broom clean on completion of selective demolition operation.

END OF SECTION 02 0700

MODULAR CLASSROOMS & FIRE ALARMS
LEWIS ELEMENTARY SCHOOL
DOWNEY UNIFIED SCHOOL DISTRICT

SECTION 03 1000 - CONCRETE FORMWORK

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Formwork for cast-in-place concrete, with shoring, bracing, and anchorage.
- B. Openings for other affected work.
- C. Form accessories.
- D. Stripping forms.

1.2 REFERENCES

- A. CBC - California Building Code, (CCR) California Code of Regulations, Title 24, Part 2, Chapter 19A. Throughout this volume, any reference to the CBC means the 2022 edition of the California Building Code.
- B. ACI 301 - Specifications for Structural Concrete for Buildings.
- C. PS-1 - Construction and Industrial Plywood.

1.3 SYSTEM DESCRIPTION

- A. Design, engineer, and construct formwork, shoring, and bracing to meet design and code requirements, so that resultant concrete conforms to required shapes, lines, and dimensions.

1.4 QUALITY ASSURANCE

- A. Construct and erect concrete formwork in accordance with ACI 301.

1.5 REGULATORY REQUIREMENTS

- A. Conform to CBC - California Building Code, (CCR) California Code of Regulations, Title 24, Part 2.

PART 2 - PRODUCTS

2.1 FORM MATERIALS

- A. Plywood: PS-1, BB Plyform grade, Class I, Exterior classification.
- B. Lumber: Douglas Fir species; construction grade; with grade stamp clearly visible.
- C. Tubular Column: Round, of spirally wound laminated fiber; surface treated with release agent; of

2.2 FORMWORK ACCESSORIES

- A. Form Ties: Snap-off metal of adjustable length; cone type; 1 inch break back dimension; free of defects that will leave holes no larger than one inch diameter in concrete surface.

- B. Form Release Agent: Colorless material which will not stain concrete, absorb moisture, or impair natural bonding or color characteristics of coating intended for use on concrete.
- C. Fillets for Chamfered Corners: Wood strips type; 3/4 x 3/4 inch size; maximum possible lengths.
- D. Dovetail Anchor Slots: Minimum 22 gage galvanized steel; foam filled; release tape sealed slots; bent tab anchors; securable to concrete formwork; manufactured by Heckmann Building Products Co., www.heckmannbuildingprods.com.
- E. Flashing Reglets: 26 gage thick galvanized steel; longest possible lengths; release tape sealed slots; with alignment splines for joints; securable to concrete formwork; Type CO reglet manufactured by Fry Reglet www.fryreglet.com.
- F. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Sized as required; of strength and character to maintain formwork in place while placing concrete.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Verify lines, levels, and measurements before proceeding with formwork.

3.2 PREPARATION

- A. Obtain Architect's approval for use of earth forms for footings.
- B. Minimize form joints. Symmetrically align joints and make watertight to prevent leakage of mortar.
- C. Arrange and assemble formwork to permit stripping, so that concrete is not damaged during its removal.
- D. Arrange forms to allow stripping without removal of principal shores, where required to remain in place.

3.3 ERECTION

- A. Erect formwork, shoring and bracing to achieve design requirements, in accordance with requirements of ACI 301.
- B. Provide bracing to ensure stability of formwork. Strengthen formwork liable to be overstressed by construction loads.
- C. Provide chamfer strips on external corners of walls.
- D. Obtain approval before framing openings in structural members which are not indicated on Drawings.
- E. Do not displace or damage vapor barrier placed by Section 033000.
- F. Construct formwork to maintain tolerances in accordance with ACI 301.

3.4 APPLICATION OF FORM RELEASE AGENT

- A. Apply form release agent on formwork in accordance with manufacturer's instructions. Apply prior to placing reinforcing steel, anchoring devices, and embedded items.

- B. Do not apply form release agent where concrete surfaces are scheduled to receive applied coverings which may be affected by agent. Soak contact surfaces of untreated forms with clean water. Keep surfaces wet prior to placing concrete.
- 3.5 INSERTS, EMBEDDED PARTS, AND OPENINGS
- A. Provide formed openings where required for work embedded in or passing through concrete.
 - B. Coordinate work of other Sections in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors, and other inserts.
 - C. Install accessories in accordance with manufacturer's instructions, level and plumb. Ensure items are not disturbed during concrete placement.
- 3.6 FORM REMOVAL
- A. Do not remove forms and bracing until concrete has sufficient strength to support its own weight and imposed loads.
 - B. Do not damage concrete surfaces during form removal.
 - C. Store reusable forms for exposed architectural concrete to prevent damage to contact surfaces.
- 3.7 CLEANING
- A. Clean forms to remove foreign matter as erection proceeds.
 - B. Ensure that water and debris drain to exterior through clean-out ports.
- 3.8 EARTH FORMS
- A. Construct wood edge strips at top sides of excavations as indicated on drawings.
 - B. Provide forms for footings and foundation walls wherever concrete cannot be placed against solid earth.
 - C. Remove loose dirt and debris from form area prior to concrete placement.
 - D. Concrete for foundations may be placed directly into neat excavations provided the foundation trench walls are stable as determined by the Architect (Structural Engineer) subject to the approval of the Division of the State Architect.
 - E. When earth formed foundations are used, the minimum formwork shown on the drawings is mandatory to insure clean excavations prior to and during concrete placement.
 - F. Provide 3-1/2 inch high starter wall for all concrete and masonry walls below grade.

END OF SECTION 03 10 00

SECTION 03 2000 - CONCRETE REINFORCEMENT

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Reinforcing steel bars, welded steel wire fabric fabricated steel bar or rod mats for cast-in-place concrete.
- B. Support chairs, bolsters, bar supports, and spacers, for supporting reinforcement.

1.2 REFERENCES

- A. CBC - California Building Code, (CCR) California Code of Regulations, Title 24, Part 2, Chapter 19A (ACI 318-14).
- B. ACI 301 - Specifications for Structural Concrete for Buildings.
- C. ACI 315 (SP-66) - Details and Detailing of Concrete Reinforcement.
- D. ACI 318-14 - Building Code Requirements for Reinforced Concrete.
- E. ASTM A82 - Cold Drawn Steel Wire for Concrete Reinforcement.
- F. ASTM A185 - Welded Steel Wire Fabric for Concrete Reinforcement.
- G. ASTM A615 - Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
- H. ASTM A706 - Standard Specification for Low Alloy Steel Deformed Bars for Concrete Reinforcement.
- I. AWS D1.4 - Structural Welding Code Reinforcing Steel.
- J. CRSI - Manual of Practice.
- K. CRSI - Placing Reinforcing Bars.

1.3 QUALITY ASSURANCE

- A. Perform concrete reinforcement work in accordance with CRSI Manual of Standard Practice.
- B. Conform to ACI 301 and ACI 315 (SP-66).
- C. Conform to CBC California Building Code, (CCR) California Code of Regulations, Title 24, Part 2.

1.4 CERTIFICATES

- A. Submit mill test certificates of supplied concrete reinforcing, indicating physical and chemical analysis.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Reinforcing Steel: ASTM A615, Grade 60. Billet-steel deformed bars, uncoated finish.
- B. Welded Reinforcement: ASTM A706, Grade 60, deformed bars, unfinished.
- C. Welded Steel Wire Fabric: ASTM A185 plain type; coiled rolls; uncoated finish.
- D. Steel Wire: ASTM A82, plain, cold drawn steel.

2.2 ACCESSORY MATERIALS

- A. Tie Wire: Minimum 16 gage annealed type.
- B. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for strength and support of reinforcement during installation and placement of concrete including load bearing pad on bottom to prevent vapor barrier puncture.

2.3 FABRICATION

- A. Fabricate in accordance with ACI 315 (SP-66), providing concrete cover specified in Section 03 3000.
- B. Locate reinforcing splices not indicated on Drawings at points of minimum stress. Indicate location of splices on shop drawings.
- C. Weld reinforcing bars in accordance with AWS D1.4.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Before placing concrete, clean reinforcement of foreign particles or coatings.
- B. Place, support, and secure reinforcement against displacement. Do not deviate from alignment or measurement.
- C. Mix fibrous reinforcement into concrete material according to Section 03 3000.
- D. Do not displace or damage vapor barrier required by Section 033000.

3.2 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed under provisions of Section 01 4000 and as required by the Division of the State Architect and District Inspector.

END OF SECTION 03 20 00

SECTION 03 3000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Cast-in-place concrete foundation walls and footings.
- B. Floors and slabs.
- C. Control, expansion, and contraction joint devices associated with concrete work.
- D. Curing and sealing compound.

1.2 REFERENCES

- A. CBC - California Building Code, (CCR) California Code of Regulations Title 24, Part 2, Chapter 19A
- B. CBC - California Building Code, (CCR) California Code of Regulations, Title 24, Part 2, California State Accessibility Standards.
- C. ADAAG - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities.
- D. ACI 301 - Specifications for Structural Concrete for Buildings.

1.3 QUALITY ASSURANCE

- A. Perform work in accordance with ACI 301.
- B. Obtain materials from same source throughout the Work.

1.4 QUALIFICATIONS

- A. Manufacturer: Manufacturer of ready-mix concrete products complying with ASTM C94 requirements for production facilities and equipment. Certified according to National Ready Mix Concrete Associates Plant Certification Program.

1.5 DESIGN MIX

- A. Submit design mix for each class of concrete, prepared by a California Registered Civil Engineer, to Testing Laboratory and Architect for review.

1.6 REGULATORY REQUIREMENTS

- A. Conform CBC - California Building Code, (CCR) California Code of Regulations, Title 24, Part 2.
- B. Conform to CBC - California Building Code, (CCR) California Code of Regulations, Title 24, Part 2, and ADAAG for access requirements for individuals with disabilities.

PART 2 - PRODUCTS

2.1 FORMWORK

- A. As specified in Section 03 1000.

2.2 REINFORCEMENT

- A. Reinforcing steel as specified in Section 03 2000.

2.3 CONCRETE MATERIALS

- A. Cement: ASTM C150, Type II/V Portland type; low alkali; grey color.
- B. Fine and Coarse Aggregates Normal Weight Concrete: ASTM C33, non reactive when tested in accordance with ASTM C289 and Appendix X-1 of ASTM C33.
- C. Water: Clean and not detrimental to concrete.

2.4 ADMIXTURES

- A. Air Entrainment: ASTM C260.
- B. Fly Ash: ASTM C618, Class F.
- C. Water Reducing Admixture: ASTM C494, Type A.
- D. Calcium chloride, or any other admixtures not allowable.

2.5 ACCESSORIES

- A. Underlayment: ASTM D226, Type I (No. 15) asphalt saturated roofing felt.
- B. Bonding Agent: ASTM C932; Weld-Crete as manufactured by Larsen Products Corp., www.larsenproducts.com.
- C. Non-shrink Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents; capable of developing minimum compressive strength of 7000 psi in 28 days.
- D. Joint Filler: ASTM D1751, 1/2 inch thick.
- E. Sand Fill: Manufactured "crusher run" sand free of silt, clay, loam, friable or soluble materials or organic matters, all passing the No. 4 sieve and only 5 percent passing the No. 200 sieve.
- F. Slip Resistant Aggregate: 95 percent minimum fused homogeneous aluminum oxide.
- G. Substitutions: Under provisions of Section 01 63 00.

2.6 CONCRETE MIX

- A. Mix concrete in accordance with ASTM C94 and CBC, California Building Code, (CCR) California Code of Regulations, Title 24, Part 2, Section 1905A.3.

- B. All Concrete: Proportion normal-weight concrete mixture as follows:
1. Minimum Compressive Strength: 4,500 psi at 28 days or as noted on the plans.
 2. Maximum Water-Cement Materials Ratio: 0.45
 3. Aggregate Size: 1 inch maximum.
 4. Slump Limit: 4 inch maximum.
 5. Fly Ash: Maximum 15 percent by weight.
 6. Air Content: 1.5 percent, plus or minus 0.5 percent.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Verify anchors, seats, plates, reinforcement, and other items to be cast into concrete are accurately placed, held securely, and will not cause difficulty in placing concrete.

3.2 PREPARATION

- A. At locations where new concrete is dowelled to existing work, drill holes in existing concrete, insert steel dowels, and pack solid with non-shrink grout.
- B. Place 2 inch thick sand fill over subgrade.

3.3 BASE

- A. Place 2 inch thick sand fill base over vapor barrier.
- B. Compact base materials in accordance with provisions of Section 025000.
- C. Ensure vapor barrier is not damaged or disturbed during base installation.

3.4 PLACING CONCRETE

- A. Notify Architect minimum 24 hours prior to commencement of concreting operations.
- B. Place concrete in accordance with ACI 301.
- C. Hot and Cold Weather Placement: ACI 301.
1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
 2. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water.

3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete in hot weather. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.
 - D. Ensure reinforcement, inserts, embedded parts and formed joints are not disturbed during concrete placement.
 - E. Do not disturb or damage vapor barrier while placing concrete. Repair damage as required to maintain integrity of barrier.
 - F. Place concrete continuously between predetermined construction and control joints. Do not break or interrupt successive pours such that cold joints occur.
 - G. Excessive honeycomb or embedded debris in concrete is not acceptable.
- 3.5 JOINTS
- A. Saw cut control joints at an optimum time after finishing. Use 3/16 inch thick blade, cutting 1/3 into depth of slab thickness.
 - B. Provide control joints at 15 feet on center unless otherwise indicated.
 - C. Separate slabs from vertical surfaces with joint filler. Extend joint filler from bottom of slab to within 1/4 inch of finished slab surface.
- 3.6 FINISHING OF FORMED SURFACES
- A. Rough form finish:
 1. Leave surfaces with the texture imparted by forms, except patch tie holes and defects.
 2. Remove fins exceeding 1/4 inch in height.
 3. Use for below grade foundation walls and concealed spaces.
 - B. Smooth form finish:
 1. Coordinate as necessary to secure form construction using smooth, hard, uniform surfaces, with number of seams kept to a practical minimum and in a uniform and orderly pattern.
 2. Patch tie holes and defects.
 3. Remove fins completely.
 4. Use for exposed finish surfaces to receive paint.
- 3.7 PATCHING
- A. Notify Architect immediately upon removal of forms to determine areas that will require patching.
 - B. Surface defects shall include color and texture irregularities, stains, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections and discolorations in the surface that cannot be removed by cleaning.

- C. Patch imperfections in accordance with ACI 301.

3.8 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed under provisions of Section 014000 and as required by the Division of the State Architect and District Inspector.
- B. Owner's Inspector will take cylinders and perform slump and air entrainment tests in accordance with ACI 301 and will arrange for pick-up by Testing Laboratory.
- C. Samples for strength test of each class of concrete placed each day shall be taken not less than once a day, or not less than once for each 50 cubic yards of concrete, or not less than once for each 2,000 square feet or surface area for slabs or walls. Additional samples for seven-day compressive strength test shall be taken for each class of concrete at the beginning of the concrete work or whenever the mix or aggregate is changed – CBC 1905A.1.15.
- D. Tests of cement and aggregates will be performed by Testing Laboratory to ensure conformance with requirements stated herein.
- E. Maintain records of placed concrete items. Record date, location of pour, quantity, air temperature, and test samples taken.

3.9 PROTECTION

- A. Protect finished work under provisions of Section 01 40 00.
- B. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- C. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

END OF SECTION 03 30 00

SECTION 01 4000 - TESTING AND INSPECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Testing and inspection services to meet requirements of the California Building Code (CBC), Title 24, Parts 1 and 2, as indicated on the Drawings.
- C. Tests of materials are required by a DSA certified testing AGENCY as set forth in Section 4-335 of the California Building Standards Administrative Code.

1.02 RELATED SECTIONS

Provisions of the General Conditions, Supplemental Conditions and Division 01 apply to this Specification. Specifications that are referenced or related may include:

- A. Section 01 04 50: Cutting and Patching
- B. Section 01 30 00: Submittals

PART 2 – PRODUCTS (Not used)

PART 3 – EXECUTION

3.01 TESTS

- A. OWNER will select and provide an independent DSA approved certified testing agency (AGENCY) to conduct tests, sampling, and testing of materials. AGENCY shall have DSA Laboratory Evaluation and Acceptance (LEA) Program acceptance. Selection of material to be tested shall be by the AGENCY and not by CONTRACTOR. Lab to be approved by Architect of record/Structural Engineer (where applicable) DSA.
- B. Any material shipped from the source of supply prior to having satisfactorily passed such testing and inspection, or prior to the receipt of notice from IOR such testing and inspection is not required, shall not be incorporated into the Work.
- C. OWNER will select, and directly reimburse, the AGENCY for costs of all DSA required tests and inspections; however, the OWNER may be reimbursed by CONTRACTOR for such costs for re-testing of deficient Work.
- D. The independent testing AGENCY is not authorized to release, revoke, alter, or enlarge requirements of the Contract Documents or approve or accept any portion of the Work.
- E. The AGENCY shall not perform any duties of CONTRACTOR.
- F. CONTRACTOR shall provide an insulated curing box with the capacity for twenty (20) concrete cylinders and will relocate said box and cylinders as rapidly as required in order to provide for progress of the Work.

3.02 TEST REPORTS

- A. Test reports shall include all tests performed, regardless of whether such tests indicate the material is satisfactory or unsatisfactory. Samples taken but not tested shall also be reported. Records of special sampling operations, when and as required, shall also be reported. Reports

shall indicate the material (or materials) was sampled and tested in accordance with requirements of CBC, Title 24, Parts 1 and 2, as indicated on the Drawings. Test reports shall indicate specified design strength and specifically state whether or not the material (or materials) tested comply with the specified requirements.

3.03 VERIFICATION OF TEST REPORTS

- A. Each testing AGENCY shall submit to the Division of the State Architect, in duplicate, a verified report covering all tests required to be performed by that AGENCY during the progress of the Work. Such report, covering all required tests, shall be furnished prior to Substantial Completion and/or, when construction on the Work is suspended, covering all tests up to the time of Work suspension.

3.04 INSPECTION BY OWNER

- A. OWNER, and its representatives, shall have access, for purposes of inspection, at all times to all parts of the Work and to all shops wherein the Work is in preparation. CONTRACTOR shall, at all times, maintain proper facilities and provide safe access for such inspection.
- B. OWNER, and its representatives, shall have the right to reject materials and/or workmanship deemed defective Work and to require correction. Defective workmanship shall be corrected in a satisfactory manner and defective materials shall be removed from the premises and legally disposed of without charge to OWNER. If CONTRACTOR does not correct such defective Work within a reasonable time, fixed by written notice and in accordance with the terms and conditions of the Contract Documents, OWNER may correct such defective Work and proceed in accordance with related Articles of the Contract Documents.
- C. CONTRACTOR is responsible for compliance to all applicable local, state, and federal regulations regarding codes, regulations, ordinances, restrictions, and requirements.

3.05 INSPECTOR OF RECORD

- A. An Inspector of Record (IOR) shall be employed by OWNER, and approved by ARCHITECT, STRUCTURAL ENGINEER and DSA in accordance with requirements of Title 24 of the California Code of Regulations with their duties specifically defined therein. Additional DSA certified inspectors may be employed and assigned to the Work by OWNER in accordance with the requirements of California Building Standards Administrative Code with their duties as specifically defined in Section 4-333(b).
- B. Inspection of Work shall not relieve CONTRACTOR from any obligation to fulfill all terms and conditions of the Contract Documents.
- C. CONTRACTOR shall be responsible for scheduling times of inspection, tests, sample taking, and similar activities of the Work.

3.06 TESTS AND INSPECTIONS

The following tests and inspections do not limit inspection of the Work but are required by DSA, other agencies, or are required in related Sections of the Contract Documents.

1. Concrete - CBC, Chapter 19A:
 - a. Materials:

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- 1) Test of Materials: 1705A.3, ACI 318-14 Sections 26.12 & 26.13
 - 2) Portland Cement Tests: ACI 318, ASTM C 150.
 - 3) Concrete Aggregate: 1903A.5, ACI 318 Section 26.4.1.2, ASTM C 33.
 - 4) Reinforcing Bars: 1910A.2, ACI 318-14 Section 26.6.1.2
 - 5) Mix Designs: Table 1705A.3 Item 5, 1910A.1
 - 6) Admixtures: 1903A.6 ACI 318 Section 26.4.2.2 (b) and Table 26.4.2.2 (b)
- b. Quality:
- 1) Proportions of Concrete: 1910A.1
 - 2) Mixing and Placing: Table 1705A.3 Item 5, 1910A.1
 - 3) Concrete Testing: 1905A.1.16, ACI 318-14 Section 26.12
- c. Inspection:
- 1) Project Site Inspection: 1905A.7, 1705A.3.5
 - 2) Batch Plant: 1705A.3.3
 - 3) Weigh-Master Inspection: 1705A.3.3.1
 - 4) Reinforcing Bar Welding Inspection: 1705A.3.1 1903A.4.
2. Steel - CBC, Chapters 17A and 22A:
- a. Materials:
- 1) Structural Steel: 2205A.1.
 - 2) Material Identification: 2203.A.1.
- b. Inspection and Tests:
- 1) Test of Structural Steel: 1705A.2.
 - 2) Shop Fabrication Inspection: 1704A.2.5.
 - 3) Welding Inspection: 1705A.2.5.

END OF SECTION 01 40 50

SECTION 26 0000 - GENERAL ELECTRICAL

PART 1 – GENERAL

1.1 WORK INCLUDED

- A. This specification shall apply to all phases of Work hereinafter specified, shown on Drawings, or as required to provide a complete installation of electrical systems for this Project. Work required under this specification is not limited to just the Electrical Drawings - refer to Architectural, Structural, Landscape, and Mechanical/Plumbing Drawings, as well as all other drawings applicable to this project, which designate the scope of work to be accomplished. The intent of the Drawings and Specifications is to provide a complete and operable electrical system that includes all documents that are a part of the Contract.
1. Work Included: Furnish labor, material, services and skilled supervision necessary for the construction, erection, installation, connections, testing, and adjustment of all circuits and electrical equipment specified herein, or shown or noted on Drawings, and its delivery to the Owner complete in all respects ready for use.
 2. The electrical Work includes installation or connection of certain materials and equipment furnished by others. Verify installation details, installation and rough-in locations from the actual equipment or from the equipment shop drawings.
- B. Electrical Drawings: Electrical Drawings are diagrammatic, and are intended to convey the scope of work, indicating intended general arrangement of equipment, conduit and outlets. Follow Drawings in laying out Work and verify spaces for installation of materials and equipment based on actual dimensions of equipment furnished.

1.2 QUALITY ASSURANCE

- A. Design, manufacture, testing and method of installation of all apparatus and materials furnished under requirements of these specifications shall conform to latest publications or standard rules of the following:
1. Institute of Electrical and Electronic Engineers - IEEE
 2. National Electrical Manufacturers' Association - NEMA
 3. Underwriters' Laboratories, Inc. - UL
 4. National Fire Protection Association - NFPA
 5. Federal Specifications - Fed. Spec.
 6. American Society for Testing and Materials - ASTM
 7. American National Standards Institute - ANSI
 8. National Electrical Code - NEC
 9. National Electrical Safety Code - NESC
 10. Insulated Cable Engineers Association - ICEA

11. American Institute of Steel Construction - AISC
12. State and Municipal Codes In Force In The Specific Project Area
13. Occupational Safety and Health Administration (OSHA)
14. Electronics Industries Association/Telecommunications Industry Association (EIA/TIA)
15. California Electrical Code (where adopted)
16. Local Authority Having Jurisdiction (AHJ) Published Electrical Standards and Codes

B. Perform Work in accordance with the National Electrical Code, applicable building ordinances, and other applicable codes, hereinafter referred to as the "Code." The Contractor shall comply with the Code including local amendments and interpretations without added cost to the Owner. Where Contract Documents exceed minimum requirements, the Contract Documents take precedence. Where code conflicts occur, the most stringent shall apply unless variance is approved.

1. Comply with all requirements for permits, licenses, fees and codes. The Contractor, at Contractor's expense, shall obtain all permits, licenses, fees, special service costs, inspections and arrangements required for Work under this contract, unless otherwise specified.
2. Comply with requirements of the applicable utility companies serving this Project. Make all arrangements with utility companies for proper coordination of Work.

1.3 GENERAL REQUIREMENTS

A. Guarantee: Furnish a written guarantee for a period of (1) one-year from date of acceptance.

B. Wherever a discrepancy in quantity or size of conduit, wire, equipment, devices, circuit breakers, etc., (all materials), arises on the Drawing and/or Specifications, the Contractor shall be responsible for providing and installing all material and services required by the strictest condition noted on Drawings and/or in Specifications to ensure complete and operable systems as required by the Owner and Engineer.

C. All Core Cutting, Drilling, and Patching:

1. For the installation of work under this Section, the aforementioned shall be performed under this Section of the Specifications and the Concrete section of the Specifications.
2. No holes will be allowed in any structural members without the written approval of the Project's Structural Engineer and DSA Approval.
3. For penetrations of concrete slabs or concrete footings, the work shall be as directed in the Concrete Section of Specifications.
4. The Contractor shall be responsible for patching and repairing surfaces where he is required to penetrate for work under this contract.
5. Penetrations shall be sealed to meet the rated integrity of the surface required to be patched and repaired. The patched surface shall be painted or finished to match the existing surface.

D. Verifying Drawings and Job Conditions:

1. The Contractor shall examine all Drawings and Specifications in a manner to be fully cognizant of all work required under this Section.
2. The Contractor shall visit the site and verify existing conditions. Where existing conditions differ from Drawings, adjustment(s) shall be made and allowances included for all necessary equipment to complete all parts of the Drawings and Specifications.

1.4 WORK IN COOPERATION WITH OTHER TRADES

- A. Examine the Drawings and Specifications and determine the work to be performed by the electrical, mechanical and other trades. Provide the type and amount of electrical materials and equipment necessary to place this work in proper operation, completely wired, tested and ready for use. This shall include all conduit, wire, disconnects, relays, and other devices for the required operation sequence of all electrical, mechanical and other systems or equipment.
- B. Provide a conduit-only system for low voltage wiring required for control of mechanical and plumbing equipment described in this or other parts of the Contract Documents. Install all control housings, conduits, and backboxes required for installing conductors to the controls.
- C. Install separate conduits between each heating, ventilating and air conditioning sensing device and its control panel and/or control motor. Before installing any conduit for heating, ventilating and air conditioning control wiring, verify the exact requirements from the control diagrams provided with the equipment manufacturer's shop drawings.

1.5 TESTING AND ADJUSTMENT

- A. Upon completion of all electrical work, the Contractor shall test all circuits, switches, light fixtures, lighting control and dimming systems including distributed systems, UPSs, generators, SPDs, lighting inverters, transfer switches, motors, circuit breakers, motor starters and their auxiliary circuits and any other electrical items to ensure perfect operation of all electrical equipment.
- B. Equipment and parts in need of correction and discovered during such testing, shall be immediately repaired or replaced with all new equipment and that part of the system shall then be retested. All such replacement or repair shall be done at no additional cost to the Owner.
- C. All circuit(s) shall be tested for continuity and circuit integrity. Adjustments shall be made for circuits not complying with testing criteria.
- D. All test reports, including copies of any required Energy Code Acceptance Forms (e.g. CA Title 24 Acceptance for Code Compliance Forms) should be submitted to the Engineer at completion of project.

1.6 IDENTIFICATION

- A. Nameplates shall be provided for unit substations, switchgear, switchboards, distribution boards, distribution panels, panel boards, motor control centers, transformers, transfer switches, contactors, starters, disconnect switches, enclosed circuit breakers/switches, inverters, UPSs, PDUs, RDCs, SPDs, lighting control panels, dimming panels, door releasing system panels, fire alarm/central monitoring terminal cabinets/power supplies/control panels, and all low voltage system terminal and control cabinets.
 1. Nameplate inscriptions shall be identical to the equipment designations indicated in plans and specifications. Nameplates shall be engraved with the device designation/identification on the

top line, source identification for the device on the 2nd line per NEC, or CEC where adopted, Art 408.4 and load designation for the device on the bottom line. Where load designation consists of a branch circuit, omit bottom line. Where device designation is not indicated on plans/specifications, Contractor shall submit a written clarification request to the Engineer.

- a. Example: Transformer 1TA
 - 1) Source Disconnecting Location: Switchboard MSA located in Rm 110
 - 2) Load: Panels 1LA and 1 LB
2. All circuit breakers/fuses in switchgear, switchboards, distribution boards, distribution panels, UPS output circuit breakers, PDU sub-feed circuit breakers and motor control centers shall have individual nameplates located immediately adjacent to the respective device. Nameplate inscription shall identify the downstream equipment or device served by the circuit breaker or fuse.
- B. Identification nameplates, UON, shall be laminated/extruded modified acrylic that is 3/32" thick, UV-stabilized, matte finish, suitable for use in 180 deg. F ambient, with beveled edges and engraved white letters 3/8" high, minimum, on 1-1/2" high black background (utility/normal and optional standby power systems) for single line of text. Where two lines of text are required, provide minimum 2" high nameplate. Where three lines of text are required, provide minimum 2.5" high nameplate. Provide white letters on red background for all NEC, or CEC where adopted, Article 517 essential power systems, Article 700 Emergency Systems, Article 701 Legally required standby systems and Article 708 COPS.
- C. Identification nameplates for new switchgear, switchboards, distribution boards, distribution panels, panel boards and motor control centers shall be attached with switchgear manufacturer-provided screws via switchgear manufacturer factory pre-drilled holes. A factory option to rivet identification nameplates to the equipment is only acceptable if screw-fastened nameplates are not an available option from the switchgear manufacturer. Field drilling or other mechanical attachment methods that change/void the NEMA or NTRL rating of the enclosure are strictly forbidden.
- D. Identification nameplates for transformers, transfer switches, disconnect switches, enclosed circuit breakers/switches, inverters, UPSs, PDUs, RDCs, SPDs, lighting control panels, dimming panels, door releasing system panels, terminal cabinets and all circuit breakers/fuses in switchgear, switchboards, distribution boards, distribution panels, UPS output circuit breakers, PDUs, PDU sub-feed circuit breakers, and motor control centers shall be attached to the equipment by self-adhesive backing integral to the nameplates. When equipment is located outdoors, provide nameplates without self-adhesive backing and attach to equipment using weather-rated, UV-resistant epoxy. In all cases, clean surfaces before applying identification nameplates parallel to equipment lines.
- E. Warning Placards, as required by General Single Line Diagram Notes for multiple power sources, or instruction placards, as required for all kirk-key interlock schemes, all UPS bypass procedures or as required elsewhere in the plans/specifications shall be engraved 1/2" high white lettering on a red background using the same material specified for identification nameplates with a self-adhesive backing. Warning/instruction placards shall be attached to the face of the equipment directly related to the placards. Provide a formal placard submittal for review by the Engineer prior to ordering any warning/instruction placards. In all cases, clean surfaces before applying warning/instruction placards parallel to equipment lines.
- F. Receptacles that are part of a UL-listed under floor computer room whip assembly, ceiling and/or cable/ladder tray-mounted receptacles used in lab, manufacturing, commercial kitchen environments

or that are serving telecom/data/AV racks and cabinets shall have identification nameplates located on the wiring device plate cover. Nameplates shall be self-adhesive, 3/32" thick Micarta with beveled edges, engraved 1/4" high white lettering on black background with serving power source, circuit identification and NEMA/IEC receptacle type. Use of two (2) separate nameplates per device plate cover is acceptable. Affix nameplates to be visible when plugs are occupying receptacles.

- G. See wiring device section of this specification for wiring device plate cover labeling requirements.
- H. See drawings for panel board schedule directory installation requirements.
- I. See conduit installation section of this specification for conduit labeling requirements.

1.7 FINAL INSPECTION AND ACCEPTANCE

- A. After all requirements of the Specifications and/or the Drawings have been fully completed; representatives of the Owner will inspect the work. Contractor shall provide competent personnel to demonstrate the operation of any item or system to the full satisfaction of each representative.
- B. Final acceptance of the work will be made by the Owner after receipt of approval and recommendation of acceptance from each representative.

1.8 RECORD DRAWINGS

- A. Drawings of Record: The Contractor shall provide and keep up-to-date, a complete record set of drawings. These shall be corrected daily and show every change from the original Drawings. This set of prints shall be kept on the job site and shall be used only as a record set. This shall not be construed as authorization for the Contractor to make changes in the layout without definite instruction in each case. Upon completion of the work, the contractor shall provide a complete set of As-Built drawings. As-Built drawings shall be generated with the latest version of AutoCad and drawn to scale. Submit (1) electronic copy to the Architect with other close out documentation upon completion of project. Refer to the Supplementary General Conditions for complete requirements.

1.9 APPROVALS, EQUALS, SUBSTITUTIONS, ALTERNATIVES, NO KNOW EQUAL

- A. Approvals: Where the words (or similar terms) "approved", "approval", "acceptable", and "acceptance" are used, it shall be understood that acceptance by the Owner, Architect and Engineer are required.
- B. Equal: Where the words (or similar terms) "equal", "approved equal", "equal to", "or equal by", "or equal" and "equivalent" are used, it shall be understood that these words are followed by the expression "in the opinion of the Owner, Architect, and Engineer." For the purposes of specifying products, the above words shall indicate the same size, made of the same construction materials, manufactured with equivalent life expectancy, having the same aesthetic appearance/style (includes craftsmanship, physical attributes, color and finish), and the same performance.
- C. Substitution: For the purposes of specifying products, "substitution" shall refer to the submittal of a product not explicitly approved by the construction documents/ specifications.
 - 1. Substitutions of specified equipment shall be submitted and received by the Engineer ten (10) days prior to the bid date for review and written approval. Regulatory Agency approval for all substitutions will be the sole responsibility of the Contractor. To receive consideration, requests for substitutions must be accompanied by documentary proof of its equality with the specified material. Documentary proof shall be in letterform and identify the specified values/materials

alongside proposed equal values/materials. In addition, catalog brochures and samples, if requested, must be included in the submittal. ONLY PRE-BID APPROVED PRODUCTS, ISSUED VIA A FORMAL BID ADDENDUM TO ALL BIDDERS, WILL BE ALLOWED ON THE PROJECT. REGARDLESS OF THE APPROVAL ON ANY SUBSTITUTION, ALL BIDS SHALL BE BASED ON THE PRODUCTS EXACTLY AS SPECIFIED. PRICING FOR EACH APPROVED SUBSTITUTION SHALL BE INCLUDED IN THE BID SUBMITTAL AS A SEPARATE LINE ITEM.

2. In the event that written authorization is given for a substitution, after award of contract, the Contractor shall submit to the Engineer quotations from suppliers/distributors of both the specified and proposed equal material for price comparison, as well as a verification of delivery dates that conform to the project schedule.
 3. In the event of cost reduction, the Owner will be credited with 100 percent of the reduction, arranged by Change Order.
 4. The Contractor warrants that substitutions proposed for specified items will fully perform the functions required.
- D. Alternates/Alternatives: For the purposes of specifying products, "alternatives/ alternates" may be established to enable the Owner/Architect/Engineer to compare costs where alternative materials or methods might be used. An alternate price shall be submitted in addition to the base bid for consideration. If the alternate is deemed acceptable, written authorization will be issued.
- E. No Known Equal: For the purposes of specifying products, "No Known Equal" shall mean that the Owner/Architect/Engineer is not aware of an equivalent product. The Contractor will need to submit a "Substitution" item, per the requirements listed above, if a different product is proposed to be utilized.

1.10 SHOP DRAWINGS/SUBMITTALS

- A. Shop Drawings/Submittals, unless required otherwise by general project specifications or instructions to bidders, shall be submitted in electronic format (PDF) to include a Letter of Transmittal (PDF), which shall give a list of the drawings submitted with dates and/or system(s) components contained within the submittal. Drawings and material cut sheets shall be complete in every respect and edited/marked to indicate specific items being provided. Printed/Hard copies are not acceptable.
- B. The Shop Drawings/Submittals shall be marked with the name of the project, numbered consecutively, and bear the approval of the Contractor as evidence that the Contractor has checked the Drawings. Any Drawings submitted without this approval will be returned to the Contractor for resubmission.
- C. If the shop drawings show variations from the requirements of the Contract because of standard shop practice or other reasons, the Contractor shall make specific mention of such variations in the Contractor's letter of transmittal. If the substitution is accepted, the Contractor shall be responsible for proper adjustment that may be caused by the substitution. Samples shall be submitted when requested.
- D. Only products listed as "Equal" within the contract documents, along with formally approved "Substitutions" will be reviewed. Products not conforming to these items will not be reviewed and will be returned to the Contractor for re-submittal.
- E. Review comments used in response to shop drawings/submittals are:
 1. "No Exception Taken" - Product approved as submitted.

2. "Furnish as Corrected" - Re-submittal not required, although the Contractor shall provide the submitted product with corrections as noted.
 3. "Revise and Resubmit" - Re-submittal required with corrections as noted.
 4. "Rejected" - Re-submittal required based upon the originally specified product.
- F. Shop drawings shall be submitted on the following but not limited to:
1. Lighting Fixtures, Lamps, and Ballasts.
 2. Fire Alarm System/Central Monitoring System.
 3. Wiring Devices.
 4. Lighting Control System/Dimming System Products.
 5. Terminal Cabinets
 6. Arc Flash, Short-Circuit and Coordination studies.
 7. All other products called out on drawings that call for shop drawing submittal.

1.11 MAINTENANCE, SERVICING, INSTRUCTION MANUALS AND WIRING DIAGRAMS

- A. Prior to final acceptance of the job, the Electrical Contractor shall furnish to the Owner at least four (4) copies of operating, maintenance, and servicing instructions, as well as four (4) complete wiring diagrams for the following, but not limited to, items or equipment:
1. Lighting Control System/Dimming Systems.
 2. Fire Alarm System.
- B. All wiring diagrams shall specifically cover the system supplied. Typical drawings will not be accepted. Four (4) copies shall be presented to the Owner.

1.12 INTERRUPTION OF SERVICE/SERVICE SHUTDOWN

- A. Any interruption of electrical services, electrical circuits, electrical feeders, signal systems, communication systems, fire alarm systems, etc. required to perform work, shall meet the specific prior-approval requirements of the Owner. Such work shall be scheduled with the Owner to be performed at the Owner's convenience.
- B. Interruptions/outages of any of the Owner's systems and services mentioned above shall be scheduled to occur during other than the Owner's normal business hours. Any overtime costs shall be borne by the Contractor.
- C. See drawings for any additional requirements regarding outages, interruption and any temporary services required.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Materials and Equipment: All electrical materials and equipment, including custom-made equipment, shall be new and shall be listed by Underwriter's Laboratories (UL) and bear their label or be listed and certified by a Nationally Recognized Testing Lab (NRTL) that is also recognized by the local Authority-Having-Jurisdiction (AHJ)
- B. Switchgear/Switchboards/Distribution Boards/Motor Control Centers:
 - 1. See general single line notes on single line drawing for more information.
- C. Panel boards – Branch Circuit:
 - 1. See drawings for panel board schedules and specifications.
- D. Lighting Fixtures:
 - 1. See drawings for lighting fixture and lamp schedules and additional specifications. Furnish, install and connect a lighting fixture at each outlet where a lighting fixture type symbol (designated on plans) is shown as being installed. Each fixture shall be complete with all required accessories including sockets, glassware, boxes, spacers, mounting devices, fire rating enclosure and lamps.
 - 2. Ballasts: See lighting fixture schedule notes. All noisy ballasts shall be replaced at no cost to the Owner.
 - 3. Lamps: See lamp/fixture schedule and lamp/lighting fixture schedule notes.
- E. Wiring Devices:
 - 1. Provide wiring devices indicated per plan. Devices shall be specification grade. Acceptable manufacturers are Leviton, Pass and Seymour and Hubbell. Provide all similar devices of same manufacturer, unless indicated otherwise. All device colors shall be from the full range of manufacturer standard color options as selected by the Architect. This selection will be made during the shop drawing review process
 - a. Wiring Devices (Decora)

1) Convenience Receptacle	#16252- ???
2) Dedicated Receptacle	#16352-???
3) Convenience I.G. Receptacle	#16262-IG-???
4) Dedicated I.G. Receptacle	#16362-IG-???
5) Convenience G.F.C.I. Receptacle	#GFT1-???
6) Dedicated G.F.C.I. Receptacle	#GFNT2-???
7) Convenience Hospital Grade Receptacle	#16252-HG?-???
8) Dedicated Hospital Grade Receptacle	#16352-HG?-???

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9) Convenience G.F.C.I. Hospital Grade	#GFNT1-HG?
10) Dedicated G.F.C.I. Hospital Grade	#GFNT2-HG?
11) Tamper Resistant Convenience Receptacle	#TDR15-???
12) Tamper Resistant Dedicated Receptacle	#TDR20-???
13) Tamper Resistant GFCI Receptacle	#GFTR2-???
14) Tamper Resistant. Convenience. G.F.C.I. Hospital Grade Receptacle	#GFTR1-HG?
15) Tamper Resistant. Dedicated. G.F.C.I. Hospital Grade Receptacle	#GFTR2-HG?
16) Weather/Tamper Resistant GFCI Receptacle	#GFWT2-???
17) Convenience Simplex Receptacle	#16251-???
18) Dedicated Simplex Receptacle	#16351-???
19) Recessed Clock Receptacle	#5361-CH-?? (Non-Decora)
20) Single Pole Switch	#5621-2-???
21) Double Pole Switch	#5622-2-???
22) Three Way Switch	#5623-2-???
23) Four Way Switch	#5624-2-???
24) Pilot Light Switch "On"	#5628-2-???
25) Pilot Light Switch "Off"	#5631-2-???
26) Projection Screen Switch	#5657-2-???
27) Low Voltage Momentary Switch	#5657-2-???
28) Keyed Switch	#1221-2L-?? (Non-Decora)
29) Door Jam Switch	#1865-???

- b. Use of dedicated receptacles is required where plans depict a branch circuit supplying only a single simplex or duplex receptacle. Use of controlled receptacles is required where depicted on plans - see controlled receptacle specifications for additional information.
2. I.G. (isolated ground) receptacle bodies shall be of a basic color specified above with an orange triangle to symbolize isolated ground.

3. In addition to other device requirements listed elsewhere in this specification and NEC, or CEC where adopted, Articles 406.12 & 517.18, all 125V & 250V, 15A and 20A, non-locking receptacles shall be Tamper-Resistant when located in the following locations:
 - a. In dwelling units per NEC, or CEC where adopted, Article 210.52.
 - b. In guest rooms and guest suites of hotels and motels.
 - c. In child care or daycare facilities.
 - d. In preschool and elementary education facilities.
 - e. In business offices, corridors, waiting rooms, and the like in clinics, medical and dental offices and outpatient facilities.
 - f. In a subset of Assembly Areas outlined in NEC, or CEC where adopted, Article 518.2 including transportation waiting areas, gymnasiums, skating rinks, and auditoriums.
 - g. In dormitories.
 - h. In pediatric care areas per NEC, or CEC where adopted, Article 517.18(C).
4. Wiring devices shall be listed "hospital grade", and so identified, in the following locations:
5. Wiring device cover plates located on recessed boxes shall be commercial grade nylon. Plate color shall match wiring device color UON on plans. Cover plates utilized on surface mounted boxes shall be metal. Plastic cover plates are unacceptable.
6. Except as otherwise noted, all wiring device plates on the project shall be labeled with panel and circuit number(s) utilizing a Brother P-Touch labeling system with 1/2" tape (yellow on black) or equal by Herman-Tellerman or Panduit. Locate label on the concealed side of the wiring device plate. Handwritten labels are unacceptable.
7. The Contractor shall provide duplex receptacle outlets in the appropriate configurations necessary to comply with applicable energy code requirements for controlled receptacles and as shown on plans. All wiring devices indicated to be controlled receptacles shall be NEMA-approved, electrical code-compliant with factory markings on the face of the receptacle(s) with the word "Controlled" or utilize further markings and symbols to indicate which receptacles on each outlet is/are controlled. Stickers, field-applied markings or other non-permanent markings are not acceptable. Where a GFCI receptacle outlet is required to be controlled, provide an adjacent controlled duplex receptacle outlet connected on the load side of the GFCI outlet. Generally, one receptacle in a duplex receptacle outlet is required to be controlled. It may be the lower receptacle or upper receptacle based on manufacturer offering. However, the controlled receptacle location within a controlled receptacle outlet shall remain consistent throughout the project. Where an existing duplex receptacle outlet is required to be controlled, provide a new wiring device with the appropriate control configuration necessary to comply with plans. All controlled receptacles shall be connected to a branch circuit controlled by an occupancy sensor-based or relay panel lighting control system. Acceptable manufacturers are Leviton, Pass and Seymour and Hubbell.
8. The following wiring device plates shall have custom engraving:

- a. Key operated switches, switches with pilot lights, and switches for the control of motors, heaters and ventilators. Engraving shall be black and occur on the exposed side of the plate indicating the motor, heater, or ventilator controlled.
 - b. All stainless steel and nylon device plates shall be engraved using a rotary engraving process except for black lettering on stainless steel device plates which may be accomplished via laser etching process. All lettering shall be 3/16" high. Provide a dimensioned submittal drawing detailing a typical device faceplate with engraving.
- F. Weatherproof Outlet Covers/Assemblies: All Receptacles identified as weatherproof on the drawings shall be weather-resistant, tamper-resistant, GFCI type and equipped as follows:
1. Type WP-A: Recessed wall box with a hinged, lockable, cast aluminum, self-closing, gasket-equipped door that is wet location-listed rain tight while "in use". Unit shall comply with NEC, or CEC where adopted, Article 406.9(A) and (B). UON on drawings, provide a minimum of 2 separate compartments suitable for installation of power receptacles, AV or communications outlets. Additionally, unless otherwise noted on drawings, provide the following:
 - a. A 20A weather-resistant, tamper-resistant, GFCI duplex receptacle in the first compartment. Provide branch circuiting per plans.
 - b. A blank metal plate suitable for field installation of power, AV or communications devices in the second compartment.
 - c. Where indicated on plans as requiring data, AV, or other low voltage service outlet, provide minimum 3/4" C.O. with pull string routed from the second compartment to nearest low voltage pull box. Where shown mounted in a building wall, any blank/unused compartment shall be equipped min. 3/4" C.O. with pull string routed to the nearest accessible ceiling space.
 - d. See wiring device section of this specification for additional wiring device plate cover labeling requirements.
 - e. 1 key minimum per device (minimum of 2 per project) to the Owner's project manager upon completion of project.
 - f. Custom color powder coat finish as selected by Architect - Include all costs in base bid for same.
 - g. In locations with sufficient wall depth, provide 6" wide x 6" tall x 5-1/2" deep recessed wall box (C.W. Cole #TL310-WCS-K1-CUSTOM COLOR).
 - h. In locations utilizing shallow stud walls construction or other walls of insufficient depth, provide 10-3/4" wide x 7-3/8" tall x 3-7/8" deep recessed wall box (C.W. Cole #TL310-WCS-SH-K1 -CUSTOM COLOR).
 - i. See drawings for additional details.
 2. Type/Subscript WP-B: Wet location-listed raintight while "in use" cast copper-free aluminum, extra-duty, lockable cover with baked aluminum lacquer finish and one gang, weather-resistant, tamper-resistant GFCI receptacle. Hubbell WP26E series. Polycarbonate covers are unacceptable. Unit shall comply with NEC, or CEC where adopted, Article 406.9(A) and (B). Contractor shall powder coat cover assembly to a custom color where receptacle locations are

deemed by the Architect to be in aesthetically sensitive or public spaces. Custom color as selected by Architect.

3. Type WP-C: (C.W. Cole #TL310-WCS-PED-ADA-K1-CUSTOM COLOR or #TL310-WCS-PED-K1-CUSTOM COLOR) pedestal device box with a hinged, lockable, cast aluminum, self-closing, gasket-equipped door that is wet location-listed raintight while "in use". Unit shall comply with NEC, or CEC where adopted, Article 406.9(A) and (B). UON on drawings, provide a minimum of 2 separate compartments suitable for installation power receptacles, AV or communications outlets. Additionally, unless otherwise noted on drawings, provide the following:
 - a. A 20A weather-resistant, tamper-resistant, GFCI duplex receptacle in the first compartment. Provide branch circuiting per plans.
 - b. A blank metal plate suitable for field installation of power, AV or communications devices in the second compartment.
 - c. Where indicated on plans as requiring data, AV, or other low voltage service outlet, provide minimum 3/4" C.O. with pull string routed from the second compartment to nearest low voltage pull box.
 - d. See wiring device section of this specification for additional wiring device plate cover labeling requirements.
 - e. 1 key minimum per device (minimum of 2 per project) to the Owner's project manager upon completion of project.
 - f. Include all costs in base bid for ADA version (22.5" tall) of pedestal box. Prior to ordering material, contractor shall coordinate with Architect and/or AHJ to determine which pedestal box locations do not require ADA compliance and may be changed to the standard (11.5" tall) version of the pedestal box.
 - g. Custom color powder coat finish as selected by Architect. Include all costs in base bid for same.
 - h. See drawings for additional details.
 4. Type/Subscript WP-D: Damp location-listed (not-Raintite-in-use) cast copper-free, pad lockable, die-cast aluminum cover with baked aluminum lacquer finish and one gang GFCI receptacle. Hubbell/Rayco 502?/503? Series. Polycarbonate covers are unacceptable. Unit shall comply with NEC, or CEC where adopted, article 406.9(A) and (B). Custom color powder coat finish as selected by Architect. Include all costs in base bid for same.
- G. Motor Controllers/Starters: See drawings for motorized equipment schedules and specifications.
- H. Circuit Breakers:
1. Service entrance circuit breakers smaller than 400A (Amp) frame shall be thermal-magnetic trip with inverse time current characteristics unless otherwise indicated below. Service entrance main circuit breakers and main circuit breakers, 400A frame and larger, shall be 100% rated, solid-state type as outlined in this specification. All other service entrance circuit breakers, 400A frame and larger, shall be 100% rated, solid-state type as outlined in this specification.

2. All non-service entrance circuit breakers 225A and larger shall be thermal magnetic type and have continuously adjustable instantaneous pick-ups of approximately 5 to 10 times trip rating. Breakers shall have either tamper-resistant rating dials or easily changed trip rating plugs with trip ratings as indicated on the Drawings. Rating plugs shall be interlocked so they are not interchangeable between frames. Additionally, all non-service entrance circuit breakers, 600A frame and larger, located in 480V, 3-phase, 3-wire or 277/480V, 3-phase, 4-wire switchgear, distribution boards, panel boards or busway plugs shall be solid state, 100% rated. Breaker shall have built-in test points for testing long delay, short delay and instantaneous, and ground fault (where shown) functions of the breaker by means of a 120V operated test kit. Contractor shall utilize a test kit capable of testing all breakers 400A and above - at the Engineer's request.
3. All non-service entrance circuit breakers less than 225A shall be molded plastic case, air circuit breakers conforming to UL 489. Provide breakers with thermal magnetic trip units, and a common trip bar for two- or three-pole breakers, connected internally to each pole so tripping of one pole will automatically trip all poles of each breaker. Provide breakers of trip-free and trip-indicating bolt-on type, with quick-make, quick-break contacts. Provide single two- or three-pole breaker interchangeability. Provide padlocking device for circuit breakers as shown on the Drawings.
4. Where a Current Limiting Circuit Breaker (CLCB) is indicated on drawings or as required elsewhere in this specification, provide a UL listed current limiting thermal magnetic circuit breaker(s) UON. An independently operating limiter section within a molded case is not allowed. Coordinate CLCB ratings as required to protect electrical system components on the load side of the CLCB to include, but not limited to, protecting automatic transfer switches, panel boards and lighting control panels.
5. Where a solid-state circuit breaker is indicated on drawings or as required elsewhere in this specification, provide a solid-state circuit breaker with minimum five function complete with built-in current transformers. The five functions shall be independently adjustable and consist of Overload/Long Time Amp Rating, Long Time Delay, Short Time Delay, Short Circuit/Instantaneous Pickup, but may also include Shunt Trip and/or Ground Fault if so indicated on the Drawings. Rating plugs shall be interlocked so they are not interchangeable between frames. Breaker shall have built-in test points for testing long delay and instantaneous, and ground fault (where shown) functions of the breaker by means of a 120V operated test kit. Contractor shall utilize a test kit capable of testing all breakers 400A and above, at the Engineer's request.
6. Circuit breakers, 1200A Frame or larger, or circuit breakers with sensors or adjustable trip settings, 1200A or larger, shall be equipped with an Energy Reducing Maintenance Switch that complies with NEC, or CEC where adopted, 240.87 (B) (3) unless specified elsewhere with an alternate arc energy reduction method allowed by this same code section.
7. Tandem or half-sized circuit breakers are not permitted.
8. Series-Rated Breakers: UL listed series-rated combinations of breakers can be used to obtain panelboard-interrupting ratings shown on Drawings. If series-rated breakers are used, switchboards, distribution boards, and panel boards shall be appropriately labeled to indicate the use of series-rated breakers. Shop drawing submittal shall include chart of UL listed devices, which coordinate to provide series rating.
9. Circuit breakers shall be standard interrupting construction. Panelboard shall accept standard circuit breakers up to 100A.

10. Circuit breaker handle accessories shall provide provisions for locking handle in the on or off position.
 11. Shunt-trip equipped circuit breakers shall be provided on all elevator feeders.
 12. Temperature compensating circuit breaker(s) shall be provided when located in outdoor enclosure(s) or when located in an enclosure subject to high ambient heat due to due nearby industrial processes, etc.
 13. Provide 75 degree Celsius-rated conductor lugs/lug kits as required on all circuit breakers to accept conductor quantities and sizes shown on drawings.
 14. All circuit breaker terminations shall be suitable for use with 75-degree Celsius ampacity conductors. Listed, dual-rated pin terminals, straight or offset, are acceptable for use to in accommodating oversized or parallel conductor installations.
 15. Circuit breakers serving Fire Alarm or Central Monitoring panels and power supplies shall be red in color and lockable in the "ON" position.
- I. Disconnect Switches:
1. Non-fusible or fusible, heavy-duty, externally-operated horsepower-rated, 600V A.C: Provide NEMA 3R, lockable enclosures for all switches located on rooftops, in wet or damp areas and in any area exposed to the elements.
 2. Fusible switches shall be Class "R" when 600A or less or Class "L" when greater than 600A.
 3. Amperage, Horsepower, Voltage and number of poles per drawings: All shall be clearly marked on the switch nameplate.
 4. Provide the Owner's project manager with one (1) spare set of fuses and two (2) sets of fuse clips/fuses for every set of fuses on the project.
- J. Fuses:
1. Provide fuses at all locations shown on the Drawings and as required for supplemental protection:
 - a. Fuses shall be manufactured by Bussman, Shawmut, or equal.
 - b. All fuses shall be the product of a single manufacturer.
 2. Main and Feeder Protection:
 - a. Protective devices rated greater than 600A: Provide Bussman Hi-Cap fuses, Class L, current limiting, having an interrupting rating of 200,000A RMS.
 - b. Protective devices rated 600A or less: Provide Bussman Class R fuses, Class RK series current limiting fuses, having an interrupting rating of 200,000A RMS.
 3. Motor Protection:

- a. Where rating of protective device is greater than 600A, provide Bussman Hi-Cap fuses, Class L, current limiting, having an interrupting rating of 200,000A RMS.
 - b. Where rating of protective device is 600A or less, provide Bussman Class RK series current limiting fuses, having an interrupting rating of 200,000A RMS.
 - c. Where fuses feeding motors are indicated, but not sized, it shall be the responsibility of the Contractor to coordinate the fuse size with the motor to provide proper motor running protection.
 - d. When rejection type fuses are specified (Class RK series) the fuse holder of all switches (specified in other Sections) shall be suitable for the fuses provided.
- K. Lighting Control/Dimming Systems:
1. See drawings for Lighting Control and/or Dimming Systems schedules and specifications.
- L. Fire Alarm System/Central Monitoring System:
1. See drawings for Fire Alarm System - Voice specifications.
- M. Conduit:
1. Galvanized Rigid Conduit (GRC) shall be full weight threaded type steel. Steel conduit shall be protected by overall zinc coating to inside and outside surfaces, applied by the hot dip, metalizing, or sherardizing process.
 2. Intermediate Metal Conduit (IMC), shall be hot-dipped galvanized in accordance with UL 1242, and meet Federal Specification WWC-581 (latest revision).
 3. Electrical Metallic Tubing (EMT) shall be zinc-coated steel with baked enamel or plastic finish on inside surfaces. EMT shall be dipped in a chromic acid bath to chemically form a corrosion-resistant protective coating of zinc chromate over galvanized surface.
 4. Flexible metal conduit shall be constructed of aluminum or hot-dipped galvanized steel strips wound spirally with interlocking edges to provide greatest flexibility with maximum strength. Interior surfaces shall be smooth and offer minimum drag to pulling in conductors. Use only as directed in writing by the Engineer with the exception of 400 Hz feeders and 400 Hz branch circuits which shall be run in flexible aluminum conduit.
 5. Liquid-tight conduit (Seal-Tite) shall be galvanized steel flexible conduit as above except with moisture and oil-proof jacket, pre-cut lengths and factory-installed fittings. For outdoor installations and motor connections only unless otherwise noted on drawings.
 6. Factory assembled, or off-site assembled wiring systems (such as Metal Clad (MC) Cable, Type AC Cable, Type NM Cable, Type BX Cable, etc.) shall not be used unless otherwise indicated in the Allowed Specification Deviations Section or Deductive/Additive Alternate Pricing Section generally located on the symbols list drawing.
 7. When approved for use in the Allowed Specification Deviations Section, generally located on the symbols list drawing, MC cables shall be allowed for lighting branch circuits (homeruns shall be EMT), receptacle branch circuits (homeruns shall be EMT) and poke-thru fed systems furniture homeruns. MC shall not be used where exposed, except for a maximum 6' length for final

connections to light fixtures, or terminate in electrical panelboards or distribution boards. Equipment ground conductor shall be green. Isolated ground conductor shall be green with yellow stripe. Provide 600V rated aluminum or lightweight steel interlocking armor Metal Clad (MC) cable with copper conductors, THHN (90-degree C) insulation, and integral equipment grounding conductor and isolated grounding conductor as required. Type AC cable listed for use in patient care areas for non-essential electrical system branch circuits per NEC or CEC where adopted, Article 517.13 shall be required in such areas in lieu of MC cable. Type AC and MC cable shall not be used for essential electrical system branch circuits. MC cable shall be manufactured to Underwriter Laboratory Standard 1569. See PART 3 - EXECUTION section of this specification for additional installation requirements.

8. Nonmetallic Flexible Tubing (ENT) shall not be used unless otherwise indicated in the Allowed Specification Deviations Section or Deductive/Additive Alternate Pricing Section generally located on the symbols list drawing. Use of ENT, if allowed, is strictly limited to use in CMU walls and parking structures decks or as directed in writing by the Engineer. See PART 3 - EXECUTION section in this specification for additional installation requirements.
9. Non-Metallic Conduit:
 - a. Polyvinyl chloride (PVC) rigid conduit, Schedule 40, Type II for underground installation only with solvent welded joints, conforming to Underwriters Laboratories, Inc. (UL) requirements, listed for exposed and direct burial application.
 - b. Conduit and fittings shall be produced by the same manufacturer.
10. Fire-rated MC Cable:
 - a. 2-hour fire-rated, polymer insulated 600V MC cable listed and conforming to Underwriters Laboratories, Inc. (UL) 2196 and UL 1569 requirements for installation as an Electrical Circuit Protective System for use in complying with NEC, or CEC where adopted, Articles 695 and 700. Where adopted, cable sheath shall be suitable for use as a NEC or CEC equipment grounding conductor, and shall be listed for use in wet locations to 90 degrees C (Raychem or equal).
 - b. Cable connectors shall be brass MC connectors.

N. Fittings:

1. Condulet type fittings shall be smooth inside and out, taper threaded with integral insulating bushing and of the shapes, sizes and types required to facilitate installation or removal of wires and cables from the conduit and tubing system. These fittings shall be of metal, smooth inside and out, thoroughly galvanized, and sherardized cadmium plated.
2. Metallic condulet covers shall have the same finish as the fitting and shall be provided for the opening of each fitting where conductors do not pass through the cover.
3. Connector, coupling, locknut, bushings and caps used with rigid conduit shall be steel, threaded and thoroughly galvanized. Bushings shall be insulated.
4. UON all EMT fittings, connectors and couplings installed in concealed locations, areas not considered to be wet or damp locations by the AHJ, or areas not subject to physical damage, shall be steel, zinc or cadmium plated, threadless, compression, steel locking ring type with insulated throat. Where suitable for use, steel set screw fittings are allowed for trades sizes of 2"

and smaller. Insulated throat is not required for fittings, connectors and couplings 1" and smaller.

5. All interior and exterior EMT fittings, connectors and couplings, 2" and smaller, installed in exposed or concealed locations that are considered by the AHJ to be wet or damp locations, shall be Raintite-listed, steel, zinc or cadmium plated, threadless, compression, steel locking ring type with insulated throat. If Raintite-listed, EMT fittings, connectors and couplings are unavailable for a given trade size or if conduit is installed in an area subject to damage – provide rigid metallic or intermediate metallic conduits, fittings, connectors and couplings as required.
 6. Flexible steel conduit connectors shall be a malleable iron clamp or squeeze type or steel twist-in type with insulated throat. The finish shall be zinc or cadmium plating.
 7. Conduit unions shall be "Erickson" couplings, or approved equal. The use of running threads will not be permitted.
- O. 600 Volt Conductors - Wire and Cable:
1. All conductors shall be copper. Provide stranded conductor for #10 AWG and larger or when making flexible connections to vibrating machinery. Use compression "fork" type connectors or transition to solid conductors when connecting to switches, receptacles, etc.
 2. Type THHN/THWN-2 thermoplastic, 600 volt, UL approved, dry and wet locations rated at 90 degrees Celsius, for conductors of all sizes from #12 AWG up to and including 1000 kcmil. RHH/RHW insulation is allowed only to provide an Electrical Circuit Protective System to comply with NEC, or CEC where adopted, Articles 695 and 700.
 3. Wire and cable shall be new, manufactured not more than six (6) months prior to installation, shall have size, type of insulation, voltage rating and manufacturer's name permanently marked on outer covering at regular intervals.
 4. Wire and cable shall be factory color-coded by integral pigmentation with a separate color for each phase and neutral. Each system shall be color-coded and it shall be maintained throughout.
 5. Systems Conductor Color Coding:
 - a. Power 208/120V, 3PH, 4W:
 - 1) Phase A = Black
 - 2) Phase B = Red
 - 3) Phase C = Blue
 - 4) Neutral = White or White with Phase Color Tracer
 - 5) Switch legs = Purple (Switch legs shall also be identified separately by numerical tags).
 - 6) Travelers = Purple with Black stripe or Pink.
 - b. Power 480/277V, 3PH, 4W:
 - 1) Phase A = Brown

- 2) Phase B = Orange
 - 3) Phase C = Yellow
 - 4) Neutral = Grey or Grey with Phase Color Tracer
 - 5) Switch legs = Purple (Switch legs shall also be identified separately by numerical tags).
 - 6) Travelers = Purple with black stripe or Pink..
- c. Ground Conductors: Green
 - d. Isolated Ground Conductors: Green with continuous yellow stripe.
 - e. Fire Alarm System: As recommended by the manufacturer.
6. All color-coding for #12 through #6 AWG conductor shall be as identified above. Conductors #4 AWG and larger shall be identified with utilizing phase tape at each termination.
 7. No conductors carrying 120V or more shall be smaller than #12 AWG.
 8. Aluminum conductors shall not be used.
 9. Wire-pulling compounds used as lubricants in installing conductors in raceways shall only be "Polywater J". No oil, grease, graphite, or similar substances may be used. Pulling of #1/0 or larger conductors shall be done with an approved cable pull machine. Other methods; e.g. using vehicles and block and tackle to install conductors are not acceptable.
- P. Junction and Pullboxes:
1. For interior dry locations, boxes shall be NEMA 1 galvanized one-piece drawn steel, knockout type, with removable, machine screw secured covers.
 2. For outside, damp or surface locations, boxes shall be NEMA 3R heavy cast aluminum or cast iron with removable, gasketed, non-ferrous machine screw secured covers.
 3. For in-grade applications, junction and pull boxes shall be pre-cast concrete or molded fiberglass manufactured by Christy, Brooks-Jensen, or Utility Vault Co. Fiberglass boxes shall:
 - a. Be used only in landscape planter areas that are not subject to damage from lawnmowers, tractors and other machinery.
 - b. Not be used in lawn or turf areas.
 - c. Not exceed 11" W x 17" L in size unless required to be larger to meet code requirements.
 4. All boxes shall be sized for the number and sizes of conductors and conduits entering the box and equipped with plaster rings where required.
 5. All boxes located in traffic areas shall be traffic rated.
- Q. Outlet Boxes:

1. For fixtures, boxes shall be galvanized, one-piece drawn steel, knockout type equipped with 3/8" fixture studs and plaster rings where required.
 2. For convenience outlets, wall switches, or other devices, outlet boxes shall be galvanized one-piece drawn steel, knockout type 4" x 4" x 2-1/8" minimum size with plaster rings as required.
 3. For locations where standard boxes are not suitable due to number and size of conduit to be terminated, special boxes shall be designed to fit space or meet other requirements, and submitted for approval.
 4. For exposure to weather, damp locations, or surface mounting, outlet boxes shall be heavy cast aluminum or cast iron with threaded hubs; covers shall be watertight with gaskets and non-ferrous screws.
 5. Outlet boxes used for support of ceiling fans shall be galvanized, one-piece drawn steel, knockout type equipped with bracing bars and plaster rings where required and listed for ceiling fan support use. Such boxes shall be labeled and capable of supporting ceiling fan weights up to 70 pounds.
 6. See drawings for floor box installation notes and specifications.
- R. Plywood Backboards: Where indicated for telephone or communications system terminals or other equipment assemblies, provide backboards of size indicated. Use 3/4" thick x 8' all (length per plans), Douglas Fir, void-free, kiln-dried, fire-rated plywood finished on one side and prime coat painted on all surfaces with finish coat of enamel paint, color by Architect. Leave one (1) fire-rating stamp/sheet exposed for inspection.
- S. Terminal Cabinets:
1. Terminal cabinets shall be fabricated of hot dipped galvanized code gauge sheet metal for flush or surface mounting, complete with barriered sections, a door for each vertically barriered section and sizes as indicated on plan. Doors shall be hinged and lockable. Locks shall be keyed to match the branch circuit panelboards. Terminal cabinet trims shall match the branch circuit panels.
 2. Provide each terminal cabinet with a full size mounting backplate.
 3. Terminal cabinets shall be installed complete with full-length skirts of the same construction and finish as the terminal cabinet.
 4. Where mounted outdoors, terminal cabinets shall be NEMA 3R, weatherproof complete with gaskets and required sealant to prevent moisture from entering the terminal cabinet.
 5. All terminal cabinets and terminal cabinet barriered sections shall be labeled by the cabinet or cabinet section use (i.e. CATV, Security, etc.). Labels shall be Micarta type as specified elsewhere in these specifications. Unless otherwise noted, all termination blocks and cables shall be labeled per ANSI/EIA 606 standard.
- T. Painting: Terminal cabinets, panels, junction boxes, pull boxes, etc., and conduit installed in public view shall be painted with colors selected by the Architect to match the subject surfaces. Refer to painting section of the specifications for additional requirements.
- U. Seismic Design, Certification and Anchoring of Electrical Equipment:

1. Contractor shall include all costs in the base bid for labor, materials, all special inspections and structural engineering design necessary to meet the Seismic Design Requirements for Non-structural Components (Chapter 13, ACE SEI 7-05 Minimum Design loads for Buildings and Other Structures) as required by IBC, or CBC where adopted, Section 1708 and as related to the installation all electrical equipment furnished under this contract. See Specific Project Site Seismic Criteria on architectural and/or structural plans which include Building Occupancy Category, Seismic Design Category, Design Spectral Response Acceleration (S_{DS}), Height factor ratio (z/h) and Site Class. Non-structural Component Importance Factor (I_p) for a particular component shall be determined based on the following criteria:
 - a. $I_p = 1.0$: Non-life safety, Non-structural Components in an Occupancy Category IV Facility not required for continued operations of the facility or in any other Occupancy Category Facility where component failure will not impair continued operation of the facility.
 - b. $I_p=1.5$: Designated Seismic Systems are those non-structural components in any Occupancy Category IV facility (except as noted above) or that are a part of any code-defined Critical, Life Safety, Emergency and Legally Required Standby Electrical System. Additionally, those non-structural components containing hazardous materials shall be classified as Designated Seismic Systems. While Designated Seismic Systems are generally identified on the plans, they may include items such as generators, automatic transfer switches, UPS units and all associated electrical distribution equipment and components necessary for the designated seismic system to form a complete and operable system. The Contractor shall ultimately be responsible for identifying Designated Seismic Systems. For any electrical component either identified on the plans or determined by the contractor to be a Designated Seismic System, all line and load side electrical distribution systems supporting that Designated Seismic System (including, but not limited to, feeders, panel boards switchboards, transformers, all related component supports and attachments etc.) shall be considered a part of the designated seismic system for the purposes of code-compliance and seismic certification.
 - c. z/h - Height factor ratio: See plans for respective equipment locations.
2. Provide a delegated-design submittal for each of the following seismic-restraint systems to be used as required:
 - a. Restraint Channel Bracings consisting of MFMA-4, shop-or field-fabricated bracing assembly made of slotted steel channels with accessories for attachment to braced component at one end and to building structure at the other end, with other matching components, and with corrosion-resistant coating; rated in tension, compression, and torsion forces.
 - b. Restraint Cables consisting of ASTM A 603 galvanized-steel cables. End connections made of steel assemblies with thimbles, brackets, swivel, and bolts designed for restraining cable service, with a minimum of two clamping bolts for cable engagement.
 - c. Seismic-Restraint Accessories consisting of hanger rod/hanger rod stiffener assemblies, multifunctional steel connectors for attaching hangers to rigid channel bracings and/or restraint cables, bushings for floor and wall-mounted equipment anchor bolts and resilient isolation washers and bushings.
 - d. Mechanical Anchor Bolts consisting of drilled-in and stud-wedge or female-wedge type in zinc-coated steel for interior applications and stainless steel for exterior applications. Select anchor bolts with strength required for anchor and as tested according to ASTM E 488.

- e. Adhesive Anchor Bolts consisting of drilled-in and capsule anchor system containing resin and accelerator, or injected polymer or hybrid mortar adhesive. Provide specific LEED-compatible environmentally-friendly resins and adhesives on all LEED projects. Provide anchor bolts and hardware with zinc-coated steel for interior applications and stainless steel for exterior applications. Select anchor bolts with strength required for anchor and as tested according to ASTM E 488.
3. Submittal shall include design calculations and details for selecting seismic restraints complying with performance requirements, design criteria, and analysis data signed and sealed by the contractor's structural engineer responsible for their preparation. Calculations shall include, but not be limited to, static and dynamic loading caused by equipment weight, operation, and seismic and, if applicable, wind forces required to select seismic and, if applicable, wind restraints and for designing vibration isolation bases. Provide seismic and wind-restraint detailing to support system selection, arrangement of restraints, attachment locations, methods, and spacings with all components identified to include their strengths, directions and values of forces transmitted to the structure during seismic events and association with vibration isolation devices. Sizes of components shall be selected so strength will be adequate to carry present static and seismic loads to accommodate 25% spare future capacity within specified loading limits.
4. Any pre-approval and evaluation documentation shall have a California Office of Statewide Health Planning and Development (OSHPD) Special Seismic Certification Preapproval (OSP) demonstrating horizontal and vertical load testing and analysis showing maximum seismic-restraint ratings, by ICC-ES or another agency acceptable to authorities having jurisdiction. Ratings based on independent testing are preferred to ratings based on calculations. If preapproved ratings are not available, submittals based on independent testing are preferred. Calculations (including combining shear and tensile loads) that support seismic-restraint designs must be signed and sealed by a qualified professional engineer.
5. Coordinate the location of embedded connection hardware with supported equipment attachment and mounting points and with requirements for concrete reinforcement and formwork specified elsewhere in the project specifications.
6. Install flexible connections in runs of raceways, cables, wireways, cable trays, and busways where they cross seismic joints, where adjacent sections or branches are supported by different structural elements, and where connection is terminated to equipment that is anchored to a different structural element from the one supporting them as they approach equipment. Flexible connection limitations of the NEC, or CEC where adopted, shall apply.
7. Install seismic-restraint devices using methods approved by OSHPD or an agency acceptable to authorities having jurisdiction providing required submittals for component.
8. Multiple Raceways or Cables: Secure raceways and cables to trapeze member with clamps approved for application by OSHPD or an agency acceptable to authorities having jurisdiction.
9. The contractor shall engage a qualified testing agency to perform tests and inspections as listed in other Project Specifications, but as a minimum shall include at least four of each type and size of installed anchors and fasteners selected by Architect. Schedule tests with Owner, through Architect, before connecting anchorage device to restrained component (unless post connection testing has been approved), and with at least seven days' advance notice. Obtain Architect's approval before transmitting test loads to structure. Provide temporary load-spreading members as required. Test to 90 percent of rated proof load of device. Prepare and submit test and inspections reports.

- V. Trenching and Backfilling: Contractor shall be responsible for trenching and backfilling. Refer to Trenching and Backfilling section of the specifications for complete requirements.

PART 3 - EXECUTION

3.1 PREPARATION AND INSTALLATION

A. Installation of Conduit and Outlet Boxes:

1. All conduit installed in the dry walls or ceilings of a building shall be steel tube (EMT), aluminum tube (EMT), or Intermediate Metal Conduit (IMC). Flexible conduit shall not be used in lieu of EMT, IMC or rigid conduit except as noted herein.
2. Galvanized rigid conduit (GRC) or intermediate metal conduit (IMC) shall be used as follows:
 - a. When noted on the drawings.
 - b. When considered exposed to damage by the local AHJ.
 - c. When installed in wet or damp locations and of a trade size where listed-Raintite fittings, connectors, couplings etc. are unavailable.
 - d. When required by NEC or CEC Article 517.13.
 - e. When installed in concrete and masonry. The use of ENT in CMU walls and parking structures may be allowed only as directed in writing by the Engineer. Request for ENT substitution must be made prior to bid and in accordance with pre-bid substitution requests requirements of these specifications.
3. Intermediate metal conduit (IMC), is approved for use in all locations as approved for GRC or steel-tube EMT and in accordance with NEC, or CEC where adopted, Article 342.
4. Flexible steel conduit shall only be permitted to be used at light fixture outlets and connections to vibrating electrical equipment. Except when concealed in walls or other structural elements, all flexible steel conduit runs shall be less than 6'-0". All outdoor installation shall be made using liquid-tight flex with approved fittings. Include a separate insulated green ground conductor sized per NEC in each conduit. Other uses of flexible conduit shall be allowed only as approved in writing by the Engineer.
5. Flexible liquidtight conduit shall be installed in lieu of the flexible steel; where required by the NEC, or CEC where adopted, in damp and wet location, where exposed to weather, in refrigerated area (65°F or less), and/or between seismic joints. All rotating electrical equipment shall be supplied with flexible, liquid-tight conduit with appropriate slack and shall not exceed thirty-six (36) inches. Include a separate insulated green ground conductor sized per NEC in each conduit. Other uses of liquidtight flexible conduit shall be allowed as approved in writing by the Engineer on a case by case basis.
6. Rigid metallic conduit installed underground or embedded in concrete shall be 1" trade size minimum and shall be wrapped with 20 mil. Polyvinylchloride plastic tape, PVC conduit installed underground or embedded in concrete shall be 3/4" minimum trade size.

7. Where required for providing an electrical circuit protective system to comply with NEC, or CEC where adopted, Articles 695 and 700 utilize UL Listed 2-hour fire-rated, MC cable or UL Listed 2-hour fire-rated RHH/RHW conductors in conduit.
8. Conduit shall be run so as not to interfere with other piping fixtures or equipment.
9. The ends of all conduit shall be cut square, carefully reamed out to full size and shall be shouldered in fitting.
10. No running threads will be permitted in locations exposed to the weather, in concrete or underground. Special union fittings shall be used in these locations.
11. Where conduit is underground, under slabs or grade, exposed to the weather, or in wet locations, make joints liquid tight and gas tight.
12. All metal conduit in masonry and concrete and where concealed under floor slabs shall have joints painted with thread compound prior to makeup.
13. PVC conduit shall not be run in walls except where approved by the Engineer prior to bid in limited instances that may include concrete or CMU walls used in site retaining, parking structures, or exterior equipment yard or enclosure walls, etc.
14. Where conductors enter a raceway or a raceway in a cabinet, pull box, junction box, or auxiliary gutter, the conductors shall be protected by a plastic bushing type fitting providing a smoothly rounded insulating surface.
15. Where conduit extends through roof to equipment on roof area, the Contractor shall provide flashing material compatible with the roofing system as required by the roofing specifications or as required by the Owner's roof warranty. This flashing shall be delivered to the roofing Contractor for installation. The actual location of all such roof penetrations and outlets shall be verified by the Architect/Owner. Contractor to verify type of flashing prior to bid and include all costs.
16. All conduit shall be supported at intervals not less than 6'-0" and within 12" from any outlet and at each side of bends and elbows. Conduit supports shall be galvanized, heavy stamped, two-hole conduit clamp properly secured.
17. Where conduit racks are used the rack shall consist of two-piece conduit clamps attached to galvanized steel slotted channels, properly secured via threaded rods attached directly to the building structure.
18. Nail-in conduit supports, one-piece set screw type conduit clamps or perforated iron for supporting conduit shall not be used.
19. Seismic Conduit Support:
 - a. All conduit shall be supported in such a manner that it is securely attached to the structure of the building. Attachment is to be capable of supporting the tributary weight of conduit and contents in any direction. Maximum spacing of support and braces are to be as follows:

<u>CONDUIT SIZE</u>	<u>MAXIMUM SPACING</u>
1/2" to 3"	6'-0"

3-1/2" to 4" 8'-0"

20. All conduit runs shall be installed parallel or perpendicular to walls, structural members, or intersection of vertical planes and ceilings. Field made bends and offset shall be avoided where possible. Crushed or deformed raceway shall not be installed.
21. Open knockouts in outlet boxes only where required for inserting conduit.
22. Locate wall outlet of the same type at same level in all rooms, except where otherwise noted.
23. Outlet boxes on metal studs shall be attached to metal hangers, tack welded or screwed to studs; on wood studs attachment shall be with wood screws, nails are not acceptable.
24. Recessed boxes shall not be mounted back-to-back in any wall; minimum offset shall be 24 inches.
25. Junction Boxes that do not contain any device(s) shall be located in storage rooms, electrical closets, or above accessible ceilings, not in hard lid ceilings or other forms of inaccessible ceilings. Place boxes which must be exposed to public view in a location approved by the Owner's Project Manager. Provide covers or plates to match adjacent surfaces as approved by the Owner's Project manager.
26. Surface mounted pull boxes, terminal cabinets, junction boxes, panel boards etc., shall be attached to walls using appropriate screws, fasteners, backing plates, stud blocking etc., as detailed on architectural and/or structural drawings. If architectural and/or structural drawings are not provided on the project, Contractor shall provide all necessary mounting hardware and backing support to comply with local building code requirements and any additional requirements imposed by the local Authority-Having-Jurisdiction.
27. Sleeves shall be installed where conduit passes through masonry or concrete walls and shall be 24-gauge galvanized steel no more than 1/2" greater in diameter than the outside diameter of the conduit. When located in non-rated structures, caulk conduit sleeve with stone wool and waterproof below grade. When located in fire rated structures, provide UL listed fire stopping system. See fire stopping section of this specification for additional requirements.
28. All boxes shall be covered with outlet box protector, Appleton SB-CK, or similar device/method to keep dirt/debris from entering box, conduit or panels. If dirt/debris does get in, it shall be removed prior to pulling wires.
29. All boxes installed outdoors shall be suitable for outdoor installations, gasketed, screw cover, and painted as directed by the Architect with weatherproof paint to match building.
30. All conduit entries to outdoor mounted panels, cabinets, boxes, etc., shall be made using Myers "SCRU-TITE" hubs Series ST.
31. Provide nylon or a 1/8-inch O.D. polyethylene rope, rated at 250 pounds tensile strength, in all conduits more than 5 feet in length left empty for future use. Not less than 5 feet of rope shall be left at each end of the conduit. Tag all lines with a plastic tag at each end indicating the termination/stub location of the opposite end of the conduit.
32. All multiple conduit runs within suspended ceilings shall be suspended from building structure by means of unistrut hangers/racks, Conduit shall not be allowed to lay on ceiling or be supported from ceiling suspension wires or other suspension system. Support conduit to structure above

suspended ceilings 8" minimum above ceiling to allow removal of ceiling tile. Maintain two-inch clearance above recessed light fixtures

33. All exposed conduits and support hardware shall be painted to match the finish of the wall or ceiling to which it is supported.
34. Where conduits or wireways cross seismic joints, provide approved flexible conduit connection or approved expansion/deflection fitting to allow for displacement of conduit in all three axes. Connection shall allow for movement in accordance with design of seismic joint. Non-flexible raceways crossing expansion joints or other areas of possible structural movement shall make provision for 3-way movement at such points by means of expansion/deflection fittings. Fittings shall be installed in the center of their axes of movement and shall not be deflected to make part of a conduit bend, or compressed or extended to compensate for incorrect conduit expansion/deflection fittings(s) complete with ground jumpers. Where necessary, provide approved expansion joints to allow for thermal expansion and contraction of conduit(s). Install expansion joints complete with ground jumpers.
35. Seal all conduits where termination is subject to moisture or where conduit penetrates exterior wall, floor or roof, in refrigerated areas, classified (hazardous areas) and as indicated on the drawings.
36. Except as otherwise indicated on the Drawings or elsewhere in these specifications, bends in feeder and branch circuit conduit 2 inches or larger shall have a radius or curvature of the inner edge, equal to not less than ten (10) times the internal diameter of the conduit. Except where sweeping vertically into a building, and where sweep radius equals ten (10) times conduit diameter, underground communications and building interconnect conduits 3 inches or larger shall have a minimum 12'-6" radius or curvature of the inner edge. For the serving utilities, radius bends shall be made per their respective specifications.
37. Tag all empty conduits at each accessible end with a permanent tag identifying the purpose of the conduit, footage end-to-end, and the location of the other end. In wet, corrosive outdoor or underground locations, use brass, bronze, or copper 16-gauge tags secured to conduit ends with #16 or larger galvanized wire. Inscribe on the tags, with steel punch dies, clear and complete identifying information.
38. The following additional requirements shall apply to underground conduits:
 - a. Underground conduit shall be Schedule 40 PVC (polyvinyl chloride) unless otherwise indicated elsewhere in these specifications or as required per NEC, or CEC where adopted Article 517.13.
 - b. For all communications conduits 2" and larger and feeders 100A or greater, provide with a minimum 3" inch, (2,000 LB) concrete envelope, 2-inch minimum separation between conduits, installed at depth of not less than 24" below grade. (Provide concrete encasement and/or greater minimum conduit depth as required by the Utility Companies.) Conduit separation within a duct bank shall be maintained using plastic spacers located at 5'-0" intervals. Where power and communication conduits are run in a common trench, a 12-inch minimum separation shall be maintained between power and communication conduits or as required by Utility Companies. Where concrete encasement is not required by serving utilities for a utility-only duct bank, provide free draining sand bedding suitable to achieve 95% relative compaction based on ASTM D1557 using 6" lifts or directed by Utility Company Standards.

- c. In all cases, where any conduit(s) pass under a building slab or footing, the electrical Contractor will provide a Bentonite clay or concrete barrier that conforms to the height and width of the trench excavation extending a minimum of 24" on either side of the foundation. In all cases, where conduit(s) pass through a sleeve in a footing or other foundation element, the electrical Contractor will provide a Bentonite clay or concrete barrier between the sleeve and the conduit(s) surrounding the conduit(s) for the entire depth of the sleeve. The barrier is required to prevent passage of moisture under or through the slab or footing via the trench or sleeve.
- d. Where underground conduit passes under a building slab, concrete encasement may not be required, except as required above, contact the Engineer for written direction prior to omitting any encasement.
- e. Underground conduits, which terminate inside building(s) below grade, such as in a basement level, or which slope so that water might flow into interior building spaces, shall be sealed at the point of penetration with a modular conduit seal (Link-Seal or equal by Rox Systems). Conduit/conduit sealing system penetrations of waterproofing membranes/systems on existing structures shall be completely restored as required to maintain membrane/system manufacturer and installer warranty for the installation. All conduits shall be provided with a 4% slope away from buildings. All conduits shall be installed such that the water cannot accumulate in the conduit and such that water drains into the nearest manhole, pull box or vault – not into the facility. In instances where grade changes or elevation differences prevent sloping of conduit away from a building into the nearest manhole, pull box or vault or where accumulation of water in a manhole, pull box or vault may result in water traveling into the facility, conduits shall be sealed internally at each end of each conduit using conduit sealing bushing, sized as required for the conductors contained within the conduit (O-Z Gedney #CSBG 100psig withstand or equal). In all cases, install plugs or caps in spare (empty) conduits at both ends of each conduit (Jackmoon or equal) preventing both water and gas from entering the facility via the conduits.
- f. Include a separate insulated green ground conductor sized per NEC, or CEC where adopted, in each underground electrical feeder/branch circuit.
- g. All underground conduits with circuits rated at 40As or greater and all underground communications conduits shall be provided with a metallic marker tape located 12 inches below the finished grade.
- h. Where underground conduits sweep into/through slabs, utilize PVC 90 degree sweeps that transition, via female PVC adapter to GRC coupling mounted flush in slab. GRC couplings shall be 1/2 lap taped with 20-mil tape. If the distance of the conduit run between a sweep and the next connecting sweep, pullbox, vault or manhole exceeds 150 ft then the sweep shall be concrete encased. Exceptions:
 - 1) Communications conduits shown terminating at a finished floor shall have an additional 4" high GRC nipple equipped with a bushing, removable conduit plug, labeling tag and pull rope. Tie off pull rope to conduit plug.
 - 2) Utility conduit sweeps shall be installed per the requirements of the respective utility company.
- i. All PVC conduit shall be glued for a water and gas tight installation. The Contractor shall use appropriate solvent on all joints prior to gluing conduit and fittings together.

- j. All underground conduit work shall conform to the Federal, State and Local Safety Orders or Rules regarding excavations, trenches and related earthwork. For projects in California, refer to the California Code of Regulations, Title 8, Construction Code Sections 1540 and 1541 for additional requirements.
39. Installation of Metal Clad (MC) Cable (when use is permitted in the Allowed Specification Deviations Section or Deductive/Additive Alternate Pricing Section, generally located on the symbols list drawing).
- a. Provide J-box above accessible ceiling prior to running MC cable within partitions or walls. J-box shall be permanently labeled with panel identification and circuit numbers contained within.
 - b. Overhead MC cable runs shall generally follow building lines to provide a neat and workmanlike installation.
 - c. Provide code-sized J-boxes to accommodate MC cable splicing in general. For systems furniture poke-through feeds utilizing MC cable, transition from MC cables to conduit and wire near the panelboard in the TI accessible ceiling space on the floor below the panel board via code-sized gutter(s). Utilize UL listed, insulated barrier strips with recessed screw heads (Ideal #89-6?? Series or equal) fastened within the gutter(s), terminate MC conductors on one side of the strips(s) and individual conductors in conduit from the panelboard(s) on the other side of the strip(s). Label each terminal strip(s) with panel designation. Label each phase conductor with circuit number using wire markers (Ideal or equal). Wire nuts are not an acceptable alternative to the terminal strips in these underfloor transition locations. Provide (1) spare 3/4" conduit from each gutter to its respective panelboard.
 - d. MC cable shall not run directly into panelboards, distribution boards or electrical rooms.
 - e. MC cabling shall be provided with its own code-approved ceiling support wires, cable hangers, individual spring steel support clips, steel trapeze hangers, threaded rods or dedicated #10 AWG drop wire. Cable supports shall be fastened to concrete slabs, beams, joists or other structural members of the building. In no case shall MC cable rest on ceilings, suspended ceilings or structures. Do not support MC cable using ceiling support wires. The use of nylon cable ties to support MC cable is not allowed.
 - f. Use lock or spring nut MC cable fittings.
 - g. Cable runs shall be continuous from wiring device to wiring device – no intermediate splicing J-boxes allowed.
 - h. When terminating or splicing at a junction, outlet, or switch box, cut the cable with an armored cable rotary cutter such that 6-inches of free conductors remain for connections or splices. Use screw-in or spring lock connector and ensure a proper bonding by firmly tightening the connector to both the box and cable. Insert an anti-short bushing at cable ends to protect conductors from abrasion and use insulated connectors.
 - i. MC cable bend radius shall not be less than seven (7) times the external diameter of the cable.

- j. MC cables passing through fire-rated walls or floors shall be firestopped as required with a UL listed system. See firestopping requirements outlined elsewhere in this specification for additional requirements.
 - k. Installation shall not exceed code requirements for total current carrying conductors in multiple MC Cable runs bundled together into a single MC cable hanger or strap, unless support device is specifically listed for such purpose. Neutrals shall be counted as current carrying conductors.
 - l. Maintain MC Cable clearance of at least 6 inches from hot water and any other high temperature pipes. Maintain at least 12-inches clearance between MC cable(s) and telecommunication conduits and cables. MC cable shall cross telecommunication cables and conduits at right angles.
 - m. MC cabling shall not be run through exposed ceilings, where open grid conditions exist, exposed on walls, or exposed to view. See Power Plan and Lighting Plan General Notes for additional requirements.
40. Installation of Electrical Nonmetallic Tubing (ENT) Cable (when use is permitted in the Allowed Specification Deviations Section or Deductive/Additive Alternate Pricing Section generally located on the symbols list drawing).
- a. When approved for use in the Allowed Specification Deviations Section or Deductive/Additive Alternate Pricing Section, generally located on the symbols list drawing, 1/2" and 3/4" trade size ENT shall be allowed for concealed lighting branch circuits, receptacle branch circuits and miscellaneous signal system circuits within concrete floors, walls and columns within parking structures.
 - b. ENT conduit shall meet the requirements of Underwriters Laboratories Standards 1479 and 1655, NEMA TC-13, and be UL-listed.
 - c. All ENT conduit, ENT fittings, ENT boxes and ENT accessories shall be UL listed and manufactured by the same manufacturer so as to form a complete ENT system. ENT systems shall only be used if they are listed for use in fire resistance rated concrete floors and ceilings with resistance ratings as indicated elsewhere in the project plans. ENT system shall comply with NEC, or CEC where adopted, Article 362.
 - d. All ENT fittings and ENT boxes shall be concrete-tight listed without the use of tape. Additionally, ENT fittings shall be constructed of high impact PVC and able to resist ENT conduit pull out forces of a minimum of 175 lbs. ENT fittings with fewer than 6 locking tabs for ENT connection shall utilize manufacturer approved glue as additional protection from fitting/conduit separation. ENT conduit to rigid conduit transition fittings shall be equipped with set screw fittings on the rigid conduit side of the fitting. ENT to metal box fittings shall be equipped with a threaded end and lock washer.
 - e. Where tubing enters a box, fitting, or other enclosure provide a bushing or adapter to protect conductors from abrasion unless the box, fitting, or enclosure design provides equivalent protection.
 - f. ENT junction boxes shall have brass screw inserts and shall be rated to support lighting fixtures weighing less than 50 lbs.

- g. Concrete tight metal boxes shall be used to support pendant hung fixtures or fixtures over 50 lbs.
 - h. ENT shall be provided in continuous lengths between junction boxes without use of in-line splices or connectors and shall be clearly marked/labeled at least every 10 feet.
 - i. All ENT conduit containing electrical branch circuits shall contain a code-sized equipment ground conductor.
 - j. ENT shall transition to EMT, IMC, RMC, or rigid PVC, as appropriate or as called out elsewhere in this specification, for all exposed conduits within/on/under a parking structure.
 - k. ENT shall transition to appropriately sized PVC expansion joint(s) at all structure expansion or seismic joints.
 - l. ENT shall be securely fastened and supported every 2 – 3 ft. and within 1 ft. of every junction box and fitting to prevent movement and sag.
 - m. ENT shall be routed straight without sags, or excessive bending. Where bends are required, comply with Table 362.24 of the NEC for minimum radius of bends. Number of bends shall not exceed quantity allowed by code where used for power and lighting branch circuit and/or feeder conductors. Where utilized for communications system conductors (phones, data cabling, etc.) number of bends shall not exceed the equivalent of (2) 90-degree bends with conduit length no more than 100 feet without installation of a TIA 569-compliant pull box.
 - n. Separation of ENT from fittings, excessive sags, or deflections in ENT runs that prevent pulling of wire and other ENT system product or system installation failures/errors shall be corrected by saw cutting and patching as necessary at no additional cost to the Owner. Use of surface mounted conduits and junction boxes as a repair method is unacceptable.
 - o. Empty ENT runs shall be provided with a nylon pull string.
 - p. Coordinate installation of raceway with structural steel and other structural members. Do not cut, notch or otherwise alter structural members without obtaining approval in writing from the Structural Engineer of record.
 - q. No more than (2) 3/4" ENT conduits may cross each other within a horizontal concrete slab without obtaining approval in writing from the Structural Engineer of record.
- B. Installation of 600-Volt Conductors:
- 1. All electrical wire, including signal circuits, shall be installed in conduit.
 - 2. All circuits and feeder wires for all systems shall be continuous from over current protective device or switch to terminal or farthest outlet. No joints shall be made except in pull, junction or outlet boxes, or in panel or switchboard gutters.
 - a. Utilize preinsulated "winged" spring type connectors, 3M Company "Performance Plus" #O/B or #R/Y or equal as required for splices and taps in conductors #6 AWG and smaller. When a spring connector is used in an underground environment or when subject to moisture, utilize a 3M Company Scotchcast 3507G epoxy resin connector sealing pack to

seal the spring connector. THE USE OF PUSH-WIRE CONNECTORS (e.g. "WAGO" OR EQUIVALENT) IS STRICTLY PROHIBITED.

- b. Wires #4 AWG and larger AWG shall be joined together as follows:
 - 1) When located in an underground environment or when subject to moisture, the splice shall be made with compression connector and sealed by a 3M, or equal, PST cold shrink connector insulator.
 - 2) When located in an interior environment, the splice shall be made with an IlSCO or equal dual rated, insulated splice-reducer connector or multi-tap connector-listed for use with 75/90-degree Celsius rated conductors.
 - c. Connections to busbar shall be made with dual-rated copper/aluminum one-piece compression lugs. Paralleled conductor connections shall be by mechanical lugs.
3. Thoroughly clean all conduit and wire-ways and see that all parts are perfectly dry before pulling any wires.
 4. Install UL approved fixture wire from all lighting fixture lamp sockets into fixture outlet or junction box.
 5. For 20A branch circuit wiring, increase #12 conductors to #10 for 120-volt circuits longer than 100 feet and for 277V circuits longer than 150 feet.
 6. Conductor Support: Provide conductor supports as required by codes and recommended by cable manufacturer. Where required, provide cable supports in vertical conduits and provide lower end of conduit with a ventilator.
- C. Grounding/Bonding:
1. Provide grounding and bonding for entire electric installation as shown on plans, as listed herein, and as required by applicable codes. Included, but not limited to, are items that require grounding/bonding:
 - a. Conduit, Raceways and Cable Trays.
 - b. Neutral or identified conductors of interior wiring system.
 - c. Panel boards, Distribution Boards, Switchgear and Switchboards.
 - d. Non-current carrying metal parts of fixed equipment.
 - e. Telephone distribution equipment.
 - f. Transformers, Inverters, UPS, PDU, RDC, Transfer Switch and Generator Systems.
 - g. Raised Flooring.
 - h. Exposed metal in maintenance holes, hand holes.
 - i. Lightning Protection Systems and Antennas.
 - j. Metal piping installed in or attached to a building/structure.

- k. Metallically isolated structural steel.
 - l. Metallically isolated underground metal water piping.
 - m. Elevator hydraulic piston/lift case.
2. In multi-occupancy buildings, Contractor shall bond metal water piping systems instated in, under or attached to a building and/or structure serving individual occupancies where the piping system(s) are metallically isolated from each other. Per NEC, or CEC where adopted ART. 250.104(A)(2) and (4), the bonding conductor shall be sized per Table 250.122 and connected to the switchboard/panel board serving that suite/occupancy.
 3. Use of Ground Rods: Furnish and install required number of 3/4" x 10' copper clad ground rods to meet specified resistance, all required grounding wires, conduit and clamps. The size of the grounding conductors shall be not less than that set forth in the latest edition of the California Code of Regulations, Title 24, State of California and NEC (CEC, where adopted), unless otherwise indicated. Rods shall be installed such that at least 10 feet of length is in contact with the soil. Where rock bottom is encountered, the electrode shall be driven at an oblique angle not to exceed 45 degrees from vertical or shall be buried in a trench that is at least 30 inches deep. The upper end of the electrode shall be flush with or below ground level unless the above ground end and the grounding electrode conductor attachments are protected against physical damage. Unless otherwise noted, connection to the grounding electrode conductor may be by compression type or exothermic process connector. Mechanical connectors shall not be used.
 4. Grounding System Connection:
 - a. Compression connectors shall be unplated copper, manufactured by Burndy, or approved equal, designed specifically for the intended connection.
 - b. Exothermic weld-type connectors shall be 'Cadweld' manufactured by Erico Products, or approved equal, designed specifically for the intended connection.
 - c. Mechanical connectors shall not be used.
 5. Isolated Ground Receptacles shall have an insulated ground wire connected between the receptacle and the panelboard isolated ground bus. Unless otherwise noted, this ground wire shall not be grounded at any other point, and shall be distinguished from other ground wires by a continuous yellow stripe.
 6. Provide separate green equipment ground conductor in all electrical raceways to effectively ground all fixtures, panels, controls, motors, disconnect switches, exterior lighting standards, and noncurrent carrying metallic enclosures. Use bonding jumpers, grounding bushings, lugs, busses, etc., for this purpose. Connect the equipment ground to the building system ground. Use the same size equipment ground conductors as phase conductors, up through #10 AWG. Use NEC (or CEC where adopted) Table 250.122 for conductor size with phase conductors #8 and larger, if not shown on the Drawings.
 7. Clean the contact surfaces of all ground connections prior to making connections.
 8. Ductwork: Provide a flexible ground strap, No. 6 AWG equivalent, at each flexible duct connection at each air handler, exhaust fan, and supply fan, and install to preclude vibration.

9. Motors: Connect the ground conductor to the conduit with an approved grounding bushing, and to the metal frame with a bolted solderless lug. Bolts, screws and washers shall be bronze or cadmium plated steel.
 10. Building grounding system resistance to ground shall not exceed 25 ohms unless otherwise noted and should be confirmed by testing.
- D. Line Voltage and Low Voltage Power Supplies to all Mechanical Equipment Including Plumbing, Heating and Air Conditioning Units:
1. An electric power supply, including conduit, any necessary junction and/or outlet boxes and conductors and connection shall be furnished and installed by the Contractor for each item or mechanical equipment.
 2. Power supplies to individual items of equipment shall be terminated in a suitable outlet or junction box adjacent to the respective item of equipment, or a junction box provided by the manufacturer or the equipment and directed by the Mechanical Contractor. Allow sufficient lengths of conductor at each location to permit connection to the individual equipment without breaking the wire run.
 3. The location of all conduit terminations to the equipment is approximate. The exact location of these conduit terminations shall be located and installed as directed by the Mechanical and Plumbing Contractor.
 4. Provide power supplies to all plumbing and mechanical equipment, including but not limited to, equipment furnished and installed by Owner or Contractor such as heating and air conditioning equipment, pumps, boilers, auto valves, water coolers, trap primers etc. The installation shall produce a complete and operable system.
 5. Unless otherwise noted, the Contractor shall furnish and install all conduit, boxes, wires, etc., for line voltage wiring and low voltage wiring.
 6. It is the Contractor's responsibility to verify with the drawings of other trades regarding the extent of his responsibility for mechanical equipment. The bid must include a sum sufficient to cover the cost of the installation.
 7. The location of all power supply connection and/or terminations to the mechanical equipment is approximate. The exact locations of these terminations shall be verified with other trades during construction.
- E. Prefabricated Equipment: Installation of all prefabricated items and equipment shall conform to the requirements of the manufacturer's specifications and installation instruction pamphlets. Where code requirements affect installation of materials and equipment, the more stringent requirements, code or manufacturer's instructions and/or specifications, shall govern the work.
- F. Firestopping:
1. The Contractor shall be responsible for furnishing all material, labor, equipment, and services in conjunction with the selection and installation of a complete, fully functioning, code compliant, UL-listed, fire stop assembly/system(s) as required by project conditions.
 2. Each fire stop assembly/system shall have an "F" and/or "T" rating as required by each condition requiring fire stopping. Each fire stop assembly/system shall have a current UL listing, as

indicated in the latest edition of the UL Fire Resistance Directory. Contractor shall verify acceptability of all fire stopping methods and system selections with the authority having jurisdiction prior to installation. The Contractor shall install each fire stop assembly/system in accordance with the manufacturer's printed instructions.

3. Each fire stop assembly/system shall be labeled with fire stop manufacturer-furnished label on each side of the fire stopping systems depicting UL # etc.

END OF SECTION

SECTION 27 1000 - STRUCTURED CABLING SYSTEM

PART 1 – GENERAL

1.1 SCOPE OF WORK

- A. The work under this section includes all final design, material, equipment, supplies, labor, testing, and accessories required to furnish and install a complete Structured Cabling System (SCS) as indicated on the drawings and as specified herein. These systems shall be defined as all cables, equipment, products, etcetera, as indicated on the drawings, and mentioned in these specifications.
- B. It is the intent of the Drawings and Specifications, which are presented in a "design-build" format, for the Contractor to design, provide and install a complete, fully operational, and tested system.
- C. All miscellaneous system components including, but not limited to, cables, cable supports, termination equipment, punch blocks, patch panels, patch cords, device outlets, ladder runway, backboards, equipment racks, equipment cabinets, enclosures, terminal cabinets, equipment grounding, and any other related items shall be furnished and installed complete under this section, such that the system shall perform all functions listed herein in compliance with all the specified requirements.
- D. Schedule is paramount to the project's success. With this, the SCS Contractor will have to be a team player, continually working with the team to facilitate expeditious design, procurement, and construction processes.
- E. This project will be performed in a phased construction format. Each phase of construction will be completely installed, labeled, and tested, to the greatest extent physically possible, before moving to the next phase.
- F. It is a mandatory requirement that a single Contractor perform the work described in the following specification sections:
 - 1. Section 27 10 00 Structured Cabling System

1.2 RELATED WORK, STANDARDS, DOCUMENTS AND PUBLICATIONS

- A. Each agency's relative codes, standards, and recommended practices apply to the voice/data cabling systems and their components as specified herein:
 - 1. American National Standards Institute (ANSI)
 - a. ANSI T1.404 Network and customer installation interfaces – DS3 and metallic interface specification
 - 2. Building Industry Consulting Service International (BICSI)
 - a. Telecommunications Distribution Methods Manual (TDMM) – latest edition.
 - b. Customer-Owned Outside Plant Design Manual (CO-OSP) – latest edition.

3. Federal Communications Commission (FCC)
 - a. FCC Part 68 Rule
4. American Society for Testing and Materials (ASTM)
 - a. E814-02 Standard Test Method for Fire Tests of Through-Penetration Fire Stops
5. International Electrotechnical Commission (IEC)
 - a. IEC 61935-01 Generic Cabling Systems - Specification for the testing of balanced communication cabling in accordance with ISO/IEC 11801 Part 1: Installed Cabling
 - b. IEC 61935-02 Generic Cabling Systems - Specification for the testing of balanced communication cabling in accordance with ISO/IEC 11801 Part 2: Patch Cords and Work Area Cords
6. Institute of Electrical and Electronics Engineers (IEEE)
 - a. IEEE 802 Specification for Local Area Networks, latest edition.
 - b. IEEE 802.3an Specification for 10GBASE-T Ethernet, latest edition.
 - c. ANSI/IEEE C62.41 – Guide on the Surge Environment in Low-Voltage (1000V or less) AC Power Circuits, latest edition.
7. International Organization for Standardization (ISO)
 - a. ISO/IEC 11801 Information Technology – Generic Cabling for Customer Premises, latest edition.
 - b. ISO TR 24750 Technical Report
8. National Fire Protection Association (NFPA)
 - a. ANSI/NFPA-70 National Electric Code – Current version as adopted by California (CEC)
 - b. ANSI/NFPA-75 Standard for the protection of information technology equipment
9. National Electrical Manufacturers Association (NEMA)
10. Occupational Safety and Health Administration (OSHA)
11. Telecommunications Industry Association (TIA)
 - a. Optical Fibers Suitable for Manufacturing OM4 Cabled Optical Fiber.
 - b. TIA-526-7 Optical Power Loss of Installed Single-Mode Fiber Cable Plant.
 - c. TIA-526-14-B Optical Power Loss Measurements of Installed Multimode Fiber Cable Plant; IEC 61280-4-1 Edition 2, Fiber-Optic Communications Subsystem Test Procedure- Part 4-1: Installed Cable Plant- Multimode Attenuation Measurement.

- d. TIA-568-C.0 Telecommunications Cabling for Customer Premises, latest edition.
 - e. TIA-568-C.1 Commercial Building Telecommunications Cabling Standard
 - f. TIA-568-C.2 Twisted-Pair Telecommunications Cabling and Components Standard, latest edition.
 - g. TIA-568-C.3 Optical Fiber Cabling Components Standard, latest edition.
 - h. TIA-568-C.4 Broadband Coaxial Cabling and Components Standard
 - i. TIA-569-C Telecommunications Pathways and Spaces, latest edition.
 - j. TIA-598-C Optical Fiber Cable Color Coding.
 - k. TIA-606-B Administration Standard for Commercial Telecommunications Infrastructure, latest edition.
 - l. TIA-607-B Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications, latest edition.
 - m. TIA-758-B Customer-Owned Outside Plant Telecommunications Infrastructure Standard, latest edition.
 - n. TIA-862-A Building Automation Systems Cabling Standard, latest edition.
 - o. TIA-942-A Telecommunications Infrastructure Standard for Data Centers
 - p. TIA-1152 Requirements for Field Test Instruments and Measurements for Balanced Twisted-Pair Cabling, latest edition.
12. Underwriters Laboratories Standards (UL)
- a. UL 5 Surface Metal Raceways and Fittings, latest edition.
 - b. UL 5A Nonmetallic Surface Raceways and Fittings, latest edition.
 - c. UL 5B Strut-Type Channel Raceways and Fittings, latest edition.
 - d. UL 5C Surface Raceways and Fittings for Use with Data, Signal, and Control Circuits, latest edition.
 - e. UL 514A Metallic Outlet Boxes, latest edition.
 - f. UL 514B Conduit, Tubing, and Cable Fittings, latest edition.
 - g. UL 514C Nonmetallic Outlet Boxes, Flush-Device Boxes, Covers, latest edition.
 - h. UL 514D Cover Plates for Flush-Mounted Wiring Devices, latest edition.
 - i. UL 1685 Vertical-Tray Fire-Propagation and Smoke-Release Test for Electrical and Optical-Fiber Cables, latest edition.

j. UL 1863 Communications-Circuit Accessories, latest edition.

13. Intetek Testing Services ETL SEMKO (ETL)

B. The Contractor shall be responsible for obtaining and utilizing the latest Structured Cabling, Architectural, Security and Electrical plans.

1.3 GENERAL REQUIREMENTS

A. Manufacturer: The term "manufacturer" shall be defined as the company, or group of companies, that actually produces the products meeting the requirements of Section 2 of this document. The manufacturer shall have a minimum of seven (7) year's experience in manufacturing products of this type and shall be ISO 9001 Certified. The products, summarized in this specification, shall be supplied by a single manufacturer, with the exception of:

1. Data racks and other hardware that is not defined as part of the copper cable channel test configuration by TIA-568-C.
2. Fiber Optic Cable and Outside plant (OSP) fiber optic cable.
3. Channel solutions consisting of cabling and connectivity hardware independently tested as by UL or ETL and that are listed Section 2 of this document.
4. Cables manufactured by another manufacturer specifically called out on the drawings.

B. Contractor: The term "Contractor" shall be defined as the company, or group of companies, that actually provides the products per Section 2 and installs the products per Section 3 of this document. The Contractor selected to provide the installation of this system shall be certified by the manufacturer in all aspects of design, installation and testing of the products described herein.

1. The Contractor shall hold a valid State of California C-7 Low-Voltage license, shall have completed at least ten (10) projects of equal scope, shall have been in business of furnishing and installing systems of this scope and magnitude for at least the past five (5) consecutive years, and capable of being bonded to assure the Owner's Project Manager of performance and satisfactory service during the guarantee period.
2. The Contractor shall have a minimum of one (1) Registered Communications Distribution Designer (BICSI RCDD) and a minimum of one (1) BICSI Technician level installer on staff as full-time employees.
3. All work shall be performed under the supervision of a company accredited and trained by the manufacturer and such accreditation must be presented with the bid submittal. Contractor must be accredited a minimum of 180 days prior to bid submittal date.
4. The Contractor shall be a manufacturer's Authorized Installer and Warranty Station for the equipment offered and shall maintain a fully equipped service organization capable of furnishing adequate repair service to the equipment.
5. All personnel performing work on this project must have successfully completed the manufacturer's training course prior to performance of any work on this project. Accreditation will consist of individual employee certifications issued by the manufacturer. All personnel engaged in the testing of fiber optic and category-6 metallic premise horizontal and distribution

systems must have successfully completed the test equipment manufacturer's training. Certification of such training must be presented with the bid submittal.

6. The Contractor selected for this Project shall adhere to the engineering, installation and testing procedures and utilize the authorized manufacturer components and distribution channels in provisioning this Project.
7. The Contractor shall own and maintain tools and equipment necessary for successful installation and testing of fiber optic cable, and Categories 6 and 6A metallic premise horizontal and distribution systems and have personnel who are manufacturer- trained in the use of such testing tools and equipment.
8. The Contractor shall hold all other licenses required by the legally constituted authorities having jurisdiction (AHJ) over the work.
9. The Contractor shall maintain and provide appropriate liability and worker's compensation insurance coverage.
10. For additional Contractor requirements, see Section 1.06.A.1 (b) of this document in its entirety.

1.4 QUALITY ASSURANCE

- A. It is the intent of these specifications to establish an installation standard of quality for labor and materials. For any proposed product substitution, or when the Contractor intends to include a "Substitution/or-equal" product in the bid pricing, the Contractor shall provide a "Substitution/Or-Equal Request" submittal to the Owner's Project Manager for review no later than ten (10) calendar days prior to Bid submittal. This report shall include *all* the following items:
 1. Description of how the proposed product(s) will impact meeting the project completion date, indicate all item(s) with lead times and expected delivery date(s).
 2. Itemized cost comparisons between the proposed product(s) and the listed product(s).
 3. Detailed technical analysis of the electrical and mechanical specification differences between the proposed product(s) and the listed product(s).
 4. Provide either ETL "Verified" or UL "Verified" test lab documentation for the proposed product(s) and assemblies proposed.
 5. Proposed product identification, manufacturer literature (specifications and cut sheets).
 6. Name, address and contact information of several (minimum of two) similar projects where the substituted product(s) have been used.
 7. Name, address and contact information of the proposed product(s) manufacturer's local representative.
 8. Sample proposed product(s) manufacturer's component and application extended warranty. Detailed warranty requirements are described in Section 1.10 General System Product Warranty of this document.

- B. Failure to provide *all* items listed in Section 1.4.A.1 through 8 for review by the Owner's Design Team shall result in rejection of the substitution/or-equal request.
- C. The Contractor's bid shall include pricing for all specified products called out in the bid documents. The Contractor's bid shall also include alternate pricing for the proposed Substitution/Or-Equal products.
- D. The Owner's Design Team/Project Manager must approve any proposed product(s) substitution/or-equal item in writing. The Owner's Design Team/Project Manager reserves the right to require a complete sample of any proposed product(s) and may request a sample tested by an independent testing consultant to prove equality. The decision of the Owner's Design Team/Project Manager regarding equality of proposed product(s) items will be final.
- E. If a proposed product(s) is given final acceptance by the Owner's Project Manager, the Contractor shall reimburse the Owner's Design Team/Project Manager for the costs to review the proposed product(s) substitution(s), and for any additional engineering charges, and shall pay all charges of other trades resulting from this product's use, at no cost to the Owner.

1.5 GENERAL SUBMITTAL REQUIREMENT

- A. Submittals shall be presented and formatted per the guidelines in the Division 1 section of this bid package.
- B. All cut sheets shall represent the latest version, part number, and revision of the product. Where multiple products or part numbers appear on a page, a **bold arrow or circle** shall indicate which product or part numbers are to be used as part of the installation. The submittal shall include all descriptive pages associated with the product, not just the page showing the part number. Contractor submittal shall include a materials list. Cut sheets shall be numbered by and match page numbers of each item included on the material list.

1.6 PRE-INSTALLATION SUBMITTAL REQUIREMENTS

- A. Within fifteen (15) calendar days after the date of award of the Contract, the Contractor shall submit the following:
 - 1. Submittal Binder: Submit one (1) hard copy and one (1) electronic copy of the complete Submittal Binder to the Project Engineer for review. The binder shall consist of five (5) major sections with each section separated by Index Tabs. Each page in the binder shall be numbered sequentially and shall be summarized in the Index.
 - a. The FIRST section shall include the following items:
 - 1) The TITLE SHEET which shall include the Submittal Date, Project Title and Address, Contractor's Name and contact information, and name of the Owner.
 - 2) The INDEX sheet which shall list each item included in the binder along with the page number where it may be found.
 - b. The SECOND section shall include the following items:
 - 1) CONTRACTOR'S LICENSE: A copy of the low voltage Contractor's valid State of California C-7 Low-Voltage license.
 - 2) PROOF OF EXPERIENCE: Proof (written documentation) that the low voltage Contractor has been regularly engaged in the business of low voltage contracting consisting of, but not limited to, engineering, fabrication, installation, and servicing of communication systems of the type specified herein for at least the past five (5) consecutive years.
 - 3) PENDING LITIGATION: Provide a statement summarizing any pending litigation involving any officer or principal of/or the company, the nature of the litigation and what effect the litigation may carry as it relates to this work in the worst-case scenario. Non-disclosure of this item, if later discovered, may result, at the Owner's discretion, in the Contractor bearing all costs and any cost related to the associated delays in the progress of the work.
 - 4) INSURANCE CERTIFICATES: Copy of low voltage Contractor's current liability insurance, workers compensation, and state industrial insurance certificates in conformance with the contract documents.

- 5) PROJECT LIST: A List containing at least ten (10) California installations completed within the last five (5) years by the low voltage Contractor that are comparable in scope and nature to that specified in the contract document. Provide up to date contact information for each project listed including contact name, title, email address and phone number.
 - 6) SERVICE CAPABILITY: Documentation indicating in detail that the low voltage Contractor has competent engineering, installation, service personnel and facilities with reasonable stock of service parts within 75 air miles of the job site. Do not submit a sales brochure as documentation.
 - 7) AUTHORIZATION LETTERS: Letters from the low voltage equipment manufacturer stating that the low voltage bidding Contractor is a Factory Authorized Distributor/Installer and is trained and certified for the equipment he proposes to use on this project and is licensed to purchase and install software required to provide the specified functions.
 - 8) CERTIFICATION: Copy of the following current BICSI certifications. Provide proof that the certificate holders are full time employees of the low voltage Contractor's local facility servicing this project and will be actively involved on site for the duration of this project.
 - a) BICSI RCDD, minimum of (1). Mandatory requirement: Shall be on site a minimum of one (1) day per workweek.
 - b) BICSI TECHNICIAN, minimum of (1). Mandatory requirement: Shall be on site a minimum of five (5) full 8-hour days per workweek.
 - 9) PROOF OF TRAINED PERSONNEL: Documentation that the Contractor has full time on-staff personnel, manufacturer trained and BICSI certified, for the equipment proposed for this project, and on-staff manufacturer trained and certified by the Test Equipment manufacturer in the proper use of the test equipment required on this project. Provide copies of all manufacturers' training/certification documentation, and Test Equipment manufacturer's training certification documentation. Provide a statement that personnel meeting these qualifications are in the local facility and will be maintained at that facility throughout the project and the warranty period.
 - 10) DOJ FINGERPRINTING: A fingerprint check must be provided for all personnel working on school sites, performed by the Department of Justice, pursuant to California Education Code Section 45125.1. Fingerprinting shall be performed prior to start of project. All costs associated with DOJ fingerprinting/background checks shall be the full responsibility of the Contractor.
- c. The THIRD section shall contain a detailed bill of materials including the quantity, product Manufacturer, product part number, product description, and corresponding specification section number or drawing sheet number where that product is referenced. Also listed in the Contractor's bill of materials shall be each item of test equipment to be used to test the optical fiber, copper and coax components. Include all patch cords and other specialized components. See example format below:

Description	Part #	Quantity	UoM	Spec	Test Equip.
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CAT6 Station cable	BerkTek #12345	100 boxes	1000ft/box	2.03	Fluke DTX-1800
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This information may be used by the Owner to evaluate the Contractor's general understanding of the project scope during the bid evaluation. Errors or omissions from this bill of material do not relieve the Contractor from providing all material, components, labor, etcetera, as outlined in this specification and on the drawings to provide a complete and useable structured cabling system.

- d. The FOURTH section shall contain original manufacturer cut sheets for all the materials that meet the requirements listed in Section 2 of this specification and all materials described on the construction drawings. Also include manufacturer's cut sheets for all testing equipment to be used for completion of the project. All pages shall be numbered sequentially corresponding to the bill of materials. On each cut-sheet, provide an indicating arrow next to each part number of proposed material.
- e. The FIFTH section shall contain a designation schedule for each system component location and complete full size 30" x 48" (unless otherwise specified) bond drawings (shop drawings), showing system wiring plans. The professionally drafted drawings shall be generated on AutoDesk AutoCAD 2010 (or later) computer design software. These drawings shall also include:
 - 1) MDF and IDF Diagrams - Including:
 - a) Cable routing
 - b) Position of all devices, components and apparatus
 - c) Detailed elevation layout of the wall field(s)
 - d) Labeling plan (see District labeling requirements)
 - 2) Site Plan – Including:
 - a) Conduit routing of all site conduits including size and quantity
 - b) Building designations
 - c) MDF and IDF locations
 - d) Campus cabling and conduit between MDF and IDF racks including cable type and quantity
 - 3) Work Area Floor Plans - Including:
 - a) Detailed cable routes including cable type and quantity
 - b) Device locations and quantities with labeling
 - c) Work area labeling plan (see District labeling requirements)
 - 4) Cross Connect Documentation - Including:

- a) Cross-connect records for all voice and data devices
 - b) Cross-connect records may be in either Excel or Word format
 - 5) Riser Distribution Plan
 - 6) Rack elevations of all MDF and IDF equipment
 - 7) ¼-inch scale floor plans of all data rooms (MDF, IDF, MPOE, etc.)
 - a) Identify all equipment racks, cabinets, terminals, cross connect locations, ground bus bar, and all other components in room(s).
 - 8) Cable Tray, Conduit, and Raceway Plans (if applicable)
 - a) Provide ¼-inch scale ladder runway plan for all data rooms.
 - b) Provide scaled plans for all in-building conduit and raceway.
- B. Failure to comply with any of the requirements listed above may result in the rejection of the entire submittal package.

1.7 PROJECT DIRECTION

- A. Single Point of Contact: Contractor shall provide an English-proficient, single point of contact, i.e., Project Manager, to speak for the Contractor and shall provide the following functions:
1. Initiate and coordinate tasks with Owner's Project Manager, and others as specified by Owner's Project Manager.
 2. Provide day-to-day direction and on-site supervision of Contractor personnel.
 3. Shall be readily available to the Owner/Owner's Project Manager 24 hours a day / 7 days a week throughout the duration of the Project.
 4. Shall have full time cellular phone capability, and the ability to send/receive email correspondence, accessible by the Owner's Project Manager.
 5. Ensure conformance with all Contract provisions.
 6. Participate in weekly site project meetings and construction meetings.
 7. Provide detailed and written weekly status reports to Owner's Project Manager. The content shall be substantive enough to bring about a full understanding of all situations current and situations future. Weekly reports shall include but are not limited to detailed progress report, RFI status log (Request for Information), Change Order Log (pending and approved), Project Addendum log, and a two-week look ahead work calendar. Each of the above must show assigned responsibilities and event history. Weekly reports shall include milestone information, resource updates (staff and materials), and any conditions or incidents that may impact the Project Schedule.
 8. This individual shall remain as Project Manager for the duration of the project. The Contractor may change Project Managers only with the Owner's Project Manager's written approval.

1.8 PLANNING

- A. Planning meetings and schedule: Within fifteen (15) calendar days after the date of award of the Contract, an initial planning meeting will be held with the successful bidder to clarify all requirements (systems, services, distribution methods, etc.), identify responsibilities, and schedule the events that will transpire during the implementation of the project. Within seven (7) calendar days of this initial meeting, the Contractor shall provide a written report and project schedule to clearly document the events and responsibilities associated with the project. Contractor's project schedule shall conform to the overall Project Construction Schedule issued by the Construction Management Company or the Owner. Contractor is required to attend all planning and other construction meetings as requested by the Owner, Architect, or Engineer.

1.9 POST INSTALLATION SUBMITTAL REQUIREMENTS

- A. Within fifteen (15) calendar days after the completion of work, the Contractor shall submit the following:
1. Record Documentation:

- a. Final Test Results – Test results for each cable indicating tests performed, results obtained, and values measured. Test results shall be provided in electronic format with the associated application (if required) for viewing. Contractor shall provide individual test results for each cable tested, and a summary sheet listing all cables, test summary, lengths, and the total cable count. Provide test reports for all copper cables and fiber optic cables. Testing shall be conducted in accordance with Section 3.06 of this document.
 - b. As-Built records – Contractor shall create and provide all backgrounds and floor plans in AutoCAD or Revit file format. Sheet borders shall be either provided by, or approved by, the Architect. Contractor’s as-built records shall include all the items described and listed in section 1.6.A.1.e of this document.
- B. After as-built submittal is approved by Owner, the Contractor shall provide two (2) sets of CDs or portable thumb drives containing all post-installation submittals and close out documentation in AutoCAD (or Revit) format; and in PDF, Word, or Excel formats as required elsewhere in this document.
- C. As-Built Documentation Display in Each MDF and IDF: Within fifteen (15) days after the completion of work, the Contractor shall install a complete Contractor-provided, professionally drafted as-built floor plan in color in each MDF and IDF mounting frame. Each floor plan, generated on AutoDesk AutoCAD computer design software and printed in color, shall depict all jack locations in each modular furniture cubicle and all other areas. Also depicted shall be speaker, clock, wireless access point, terminal cabinets, MDF, IDF, pull boxes, vaults, CCTV cameras, television jack locations, or any other communications outlet cables by the SCS Contractor. All jack locations shall be color coordinated with the Owner’s labeling scheme as described elsewhere in this specification. Contractor’s device symbols shall match the device symbols utilized on the bid documents. The Contractor will provide to Owner two (2) sets of CDs or portable thumb drives containing all as-built records in AutoCAD (.dwg) or Revit (.rvt) format, and full-size PDF format.
- D. Warranty Documentation:
 1. Contractor shall apply for all Manufacturers’ Extended Warranties on behalf of the Owner. Contractor shall present to Owner all product Warranty documents per General System Product Warranty Section of this document. Warranty shall commence after final acceptance of System and Project Close Out by the Owner.

1.10 GENERAL SYSTEM PRODUCT WARRANTY

- A. The horizontal communications cabling system installed shall be eligible for coverage by a Limited Lifetime Warranty to the District.
 - 1. Horizontal channels shall be completed with Leviton and Leviton Bertek Solution factory-terminated copper and/or fiber optic patch cords to be eligible for the applicable Superior Essex or Leviton Warranty with Channel Performance guarantees.
 - 2. Approved product shall be listed on the most recent version of the applicable Leviton Bertek Solution data sheets for each Leviton Bertek Solution.
- B. Optimized Installer/Optimized Integrator shall provide labor, materials, and documentation in accordance with Superior Essex and Leviton Network Solutions requirements necessary to ensure that the Owner will be furnished with a Limited Lifetime Warranty.
- C. The installed structured cabling system shall provide a warranty guaranteeing installed channel performance above the ANSI/TIA 568-C requirements for Category 6, and/or Category 6A cabling systems or ISO 11801 requirements for Class D, Class E, and/or Class Ea. Standards-compliant channel performance tests shall be performed in the field with a Superior Essex Leviton Technologies approved certification tester in the appropriate channel test configuration.
- D. Necessary documentation for warranty registration shall be provided to the manufacturer by the installer (within 10 days) following 100 percent testing of cables. Contractor shall submit test results to Leviton Network Solution, in the certification test analyzer's original software files. Installer shall ensure that the warranty registration is properly submitted, with all required documentation within ten (10) days of project completion. Optimized Contractor / Optimized Integrator must adhere to the terms and conditions of the respective manufacturer's warranty programs.
- E. Installer shall ensure that the Owner receives the manufacturer issued project warranty certificate within sixty (60) calendar days of warranty registration.
- F. The first usage date shall be agreed to be in writing by the District and Contractor within five (5) working days of first usage. During this time, the entire system must be kept in proper operating condition at no additional cost to the District.
- G. Cable Manufacturer "site certifications" are prohibited.

1.11 GENERAL ENGINEERING AND DESIGN GUIDELINES

- A. Cabling System Installation Practices
 - 1. Plastic cable tie (tie wrap) devices shall *not* be utilized at any time. Only Velcro-type hook-and-loop strap devices are permitted. In the MDF and IDF rooms, all vertically run cables and conductors shall be secured with Velcro at a maximum interval of eighteen (18) inches. All horizontally run cables and conductors shall be secured with Velcro at a maximum interval of eighteen (18) inches.
 - 2. All vertically run innerduct shall be secured with Velcro at a maximum interval of twelve (12) inch intervals. Innerduct installed on ladder runway shall be supported horizontally and vertically at a maximum of eighteen (18) inch intervals.

3. All horizontally run innerduct shall be secured with Velcro at a maximum interval of forty-eight (48) inches when installed horizontal above accessible ceiling spaces or open ceiling spaces to prevent movement.
4. All cables installed above accessible ceiling spaces shall be independently supported.
5. All pull ropes are to be installed and/or replaced in all pathways for future use.
6. All intra-building cabling shall be routed either parallel or at right angles to the building structure and/or walls.
7. No cabling is to be pulled through electrical Condulet bodies (L-bend) devices. If Condulet devices are pre-existing and it is determined, at the review of the Owner's representative, that sufficient space in the conduit is available and the Owner provides written approval to utilize the Condulet, the Contractor shall remove the Condulet cap, pull the cable to and beyond the cap then carefully reinstall the cap.
8. Communications cabling shall never be tied or attached to the exterior of electrical conduits, power cables or devices, lighting systems, or co-exist inside any pathway with power cabling.
9. Any visible damage to a cable such as kinks or bends in violation of the minimum bend radius shall render the cable segment defective and shall be removed and replaced by the Contractor at no additional cost to the Owner.
10. Cabling installed above accessible ceiling spaces shall either be installed in conduit or supported above the accessible ceiling tiles by Contractor-provided Contractor-installed j-hooks. The J-hooks shall be installed on their own independent support wires or rods and spaced at intervals not to exceed 5 feet.
11. All materials shall be new, unused, and delivered to job site in original manufacturer or distributor cartons or packages. No previously installed material shall be used at any time.
12. Reference Part 3 of this document for additional installation guidelines and requirements.

1.12 SPECIFIC SYSTEM REQUIREMENTS

A. Backbone Infrastructure Cabling

1. Backbone Fiber Optic Cabling
 - a. Contractor shall provide (1) 12-strand single mode OS2 fiber optic cable for backbone connectivity between the Main Distribution Frame (MDF) location and each Intermediate Distribution Frame (IDF) location, where indicated on the plan drawings.
 - b. At the MDF, provide a 20-foot slack loop neatly coiled and secured. At each IDF, provide a 10-foot slack loop neatly coiled and secured.
 - c. Splicing of fiber optic cable shall not be permitted unless specifically called out on the bid documents and authorized in writing by the District's engineer.
 - d. All exposed fiber optic cable shall be enclosed in innerduct. Innerduct is not required within inter-building conduits.

- e. Provide 2-meter LC-to-SC duplex single mode fiber optic patch cords at each MDF and IDF. A minimum of two (2) per 6-strands of fiber optic cable installed.
 - f. Refer to Part 2 of this document for fiber optic cable specifications.
2. Backbone Multipair Copper Cabling
- a. Contractor shall provide (1) 25-pair category-5E multipair cable for backbone connectivity between the PBX telephone system head end, and each building IDF room on campus, where indicated on the plan drawings.
 - b. Provide a 10-foot slack loop neatly coiled and secured at both ends of the cable.
 - c. Splicing of multipair copper backbone cable shall not be permitted unless specifically called out on the bid documents.
 - d. The multipair backbone cable shall be outdoor-rated and installed in conduit.
 - e. When specifically noted on the plan drawings, provide building entrance protectors at both ends of the backbone multipair cable. Terminate all pairs on the protectors and properly bond the protectors to ground. Refer to section 2.12 PROTECTORS in this document for additional requirements.
 - f. Contractor shall label backbone cable sheath with a machine generated weatherproof label identifying the cable number, total pair count, and origination/destination locations. Refer to Labeling Requirements section of this document for additional labeling requirements.
 - g. Refer to Part 2 of this document for multipair copper cable specifications.
3. MDF/IDF UTP Termination Equipment
- a. The horizontal cross-connect for data circuits shall consist of Category-6 patch cords from the horizontal Category-6 termination panels to the network equipment within the same or adjacent racks.
 - b. The MDF and IDF horizontal data cross-connects shall be contained in 19"x 7' rack(s) or free-standing lockable cabinet(s) as described in Part 2 of this document, and as detailed on the bid documents/plan drawings.
 - c. Seven foot high 4-post open racks shall be installed with seven-foot-high vertical wire management on each side. Patch panels shall be 48 ports, wired to T568B wiring scheme, and include 1RU (1.75" high) horizontal wire management immediately above and below each patch panel.
 - d. Category-6 patch cords shall be provided by the Contractor. See Part 2 of this document for additional patch cord requirements.
 - e. See Part 2 of this document for category-6 copper cable specifications.

PART 2 – PRODUCTS

2.1 STRUCTURED CABLING SYSTEM

- A. Acceptable Manufacturers - all equipment listed herein will be by:
 - 1. SCS components: Leviton, Bertek Solution.
 - 2. Racks, Ladder tray: Southwest Data Products.
 - 3. Outside Plant (OSP) Fiber Optic Cable: Optical Cable Corporation
 - 4. Riser and OSP Copper Cable: General Cable Corporation
- B. It is the responsibility of the bidder to ensure that the proposed product meets or exceeds every standard set forth in these specifications and the equipment's technical data sheets.
- C. The functions and features specified are vital to the operation of this facility; therefore, inclusion of a component's manufacturer in the list of acceptable manufacturers does not release the Contractor from strict compliance with the requirements of this specification.

2.2 OUTLETS

- A. Telecommunications outlets (TO) shall consist of one-gang or two-gang utility outlet boxes equipped with 8-pin modular (RJ-45) jacks utilizing the T568B wiring scheme and a faceplate. All outlet cabling shall terminate on patch panels at their associated Main Distribution Frame (MDF) room, Intermediate Distribution Frame (IDF) Rooms, or as otherwise indicated on the drawings.
- B. Faceplates
 - 1. All Faceplates shall be available in single, duplex, quad, or six-plex configuration in a single-gang form.
 - 2. Surface mount boxes shall be available in single, dual, quad, and six-plex configuration.
 - 3. Modular furniture faceplates shall be available in dual and quad configuration for the Owner's modular existing and/or new modular furniture. Faceplates shall be flush mounted in the modular furniture. Surface mounted boxes and faceplates are unacceptable. The Contractor is responsible for coordinating with the Owner's modular furniture Contractor to determine faceplate requirements. The Contractor shall provide and install all parts/fittings necessary to meet the requirements of this section.
 - 4. Wall mounted phone jack faceplates shall be single gang configuration, constructed of stainless steel and have two standard phone mounting posts located above and below the jack opening. Wall mounted phone faceplates shall be installed +44" above finished floor.
 - 5. Faceplates shall have two (2) designation windows, one located at top, and one located at bottom. Designation windows shall be equipped with clear plastic covers.
 - 6. Color of faceplates shall be stainless steel, unless otherwise noted.
 - 7. Provide blank faceplate inserts for all unused outlet locations within the faceplate.
 - 8. Product Specifications:

- a. Leviton 1-port #43080-1S1
- b. Leviton 2-port #43080-1S2
- c. Leviton 4-port #43080-1S4
- d. Leviton 6-port #43080-1S6

C. Category-6 Gigabit jacks

- 1. All voice and data jacks shall be 8-position/8-conductor (8p8c) modular RJ-45 jacks incorporating 110-style rear termination lugs for termination of Category-6 cable, utilize a T568B wiring scheme, and be constructed of high impact thermoplastic housing rated for Category-6 service.
- 2. All Category-6 jacks shall meet or exceed Category-6 transmission requirements for connecting hardware, as specified in TIA-568-C Commercial Building Telecommunications Cabling Standard.
- 3. Category-6 jacks shall be channel-rated.
- 4. Category-6 jacks shall be capable of being in a modular patching situation or as a modular telecommunication outlet (TO) supporting current 10Base-T, Token Ring, 100 Mbps TP-PMD, 155 Mbps ATM, 622 Mbps ATM using parallel transmission schemes and evolving high-speed, high-bandwidth applications, including Ethernet, 1000BASE-T and 1.2 Gbps ATM.
- 5. Category-6 jack colors shall be Green for LAN, WAP, CCTV and AV applications, and White for Telecom/Voice applications.
- 6. The jacks shall accommodate UTP cable and work in concert with non-metallic Wiremold 400 or 5400 series raceway.
- 7. Product Specification: Leviton eXtreme Cat 6+ quick port connector #61110-RV6 (green), and Leviton voice grade QuickPort connector, 6P6C, #41106-RW6 (white), unless otherwise noted.

2.3 STATION CABLE

- A. Station cables shall extend between the station outlet location (TO) and its associated MDF/IDF room.
- B. Category-6 station cable:
 - 1. The Category-6 cable shall consist of 4-pair, 23-AWG bare copper twisted pairs, unshielded, UTP, and shall be of the traditional round design.
 - 2. The cable jacket shall be rated for the environment in which it is installed. Install CMP cable in plenum-rated spaces, CMR cable in riser-rated spaces, and OSP cable in outdoor and underground conduit spaces.
 - 3. Color of cables shall be Green for LAN, WAP, CCTV and AV applications, and White for Telecom/Voice applications, unless otherwise noted.
 - 4. Category-6 cable shall be utilized at all voice and data designated outlets.

5. Product Specification: Berbeck or Leviton category-6+ DataGain cable #66-240-5A (green), and Superior Essex category-6+ DataGain cable #66-240-4A (white).

2.4 MODULAR PATCH PANEL SYSTEM

- A. The termination block shall support the appropriate emerging high-bandwidth applications, including 1 Gbps Ethernet, potentially 1.2 Gbps ATM and 2.4 Gbps ATM, Multi-Tasked Split Screen Computing, Virtual Holographic Video Conferencing, Instant Access Telemedicine, 3D CAD/CAM Engineering, and Internet-Intranet Communications / Commerce, as well as all 77 channels (550 MHz) of analog broad band video, including 1000 Mbps Ethernet and potentially 1.2 Gbps ATM, and facilitate cross connection and inter connection using modular patch cords.
- B. All Modular jack panels shall be wired to ANSI/TIA/EIA 568-C using the T568B wiring scheme.
- C. The wiring block shall be able to accommodate 23 AWG cable conductors.
- D. The Category-6 modular jack panels shall meet or exceed the Category 6 standards requirements in ISO/IEC 11801 and ANSI/TIA/EIA. They shall also be UL Listed.
- E. Contractor shall provide Category-6 modular patch panels in sufficient quantities to terminate all category-6 cables.
- F. Contractor shall provide and install a 1RU horizontal cable manager above and below each category-6 patch panel.
- G. Product Specification: Leviton Category-6 universal patch panel, 48-port, 2RU, #69586-C48.
- H. Product Specification: Leviton horizontal cable management, 1RU, front and rear, #491RU-HFR.

2.5 PATCH CORDS

- A. Provide Category-6+ Modular Patch Cords for each assigned port on the patch panel and for each outlet in the station locations. Cords shall be equipped with an 8-pin 8-conductor modular connector on each end and shall conform to the length(s) specified. All cords shall be wired to T568B wiring scheme. All cords shall be factory-built by the cable manufacturer. Fabrication of cords in the field is prohibited.
- B. All category-6 patch cords shall exceed ANSI/TIA/EIA and ISO/IEC Category-6/Class E specifications.
- C. Quantity: At the MDF and each IDF, provide one (1) 5-foot cat-6 patch cord for each cat-6 cable terminated in the patch panels. At the workstations, provide one (1) 10-foot cat-6 patch cord for each cat-6 cable terminated at a cat-6 outlet. In instances where longer cords are required, the Contractor shall clarify the requirement with the Owner before installing any longer cords. Where the specifications and the plan drawings conflict, the more stringent requirement will apply.
- D. Category-6 patch cords shall be available in both Green and White colors.
- E. All patch cords shall be channel-rated and include a snagless boot.
- F. Category-6 patch cords shall be UL Verified for ANSI/TIA/EIA 568-C Electrical Performance.
- G. Product Specification:

1. Leviton Cat-6, #62460-5? (5ft), #62460-10? (10ft).

2.6 FIBER OPTIC CABLING

- A. 12-strand, OS2, single mode fibers with 8.3-micron cores only.
- B. Fiber optic cable shall meet or exceed ANSI/EIA/TIA-492 specifications and ISO/IEC 11801 standards.
- C. All fibers shall be color coded to facilitate individual fiber identification.
- D. Fibers will have dual wavelength capability, transmitting at 1310 and 1550nm ranges.
- E. Single mode fiber maximum attenuation 0.40 dB/km @ 1310 nm: 0.30 dB/km @ 1550 nm.
- F. All fiber in a cable run shall be from the same manufacturer and shall be the same type. A mix of fibers from different manufacturers is prohibited.
- G. All fiber optic cable installed inside buildings shall be installed within Contractor provided innerduct. Innerduct shall be rated for the environment in which it is installed. Innerduct shall be orange in color, unless otherwise noted in the bid documents/plan drawings.
- H. Loose tube cables shall be gel free and indoor/outdoor rated.
- I. The use of "indoor-outdoor-plenum-rated" cable is acceptable for backbone cable runs between buildings, if it meets the cable specifications listed in section 2.6.A through H of this document.
- J. Tight buffered cables shall be gel free, riser rated, and plenum rated when installed in a plenum rated environment.
- K. Provide buffer tube fan out kits as required.
- L. Product Specification: Optical Cable Corporation, 12-strand, single mode, Mil-Tac Distribution Series, Ultra-Fox Plus Rodent Deterrent #D-012CSLA5KMF9.

2.7 FIBER OPTIC PATCH CORDS

- A. Fiber patch Cords shall be available in Single mode.
- B. Construction shall be either 3.0 mm cordage or 1.6 mm cordage.
- C. Connectors shall be available in Duplex LC to SC. Contractor shall verify connector type with District staff in the field prior to ordering product.
- D. The single mode fiber optic solution shall utilize factory- made patch cords.
- E. At the MDF and at each IDF room, provide a minimum of two (2) 2-meter LC to SC duplex single mode fiber optic patch cords for every 6-strands of single mode fiber installed. Verify patch cord length with District prior to ordering product.

2.8 FIBER DISTRIBUTION PATCH PANEL

- A. Fiber Patch Panels / Enclosures: A rack mount or wall mount enclosure that terminates, provides cross connection, interconnection, splicing and fiber identification from 18 to 360 fiber strands. The shelf will provide protection from mechanical stress on the cable and fibers and from macro-bending losses.
1. The shelf shall be wall or rack mountable depending on the location requirement. The units must fit into a 19" wide frame arrangement and have an integrated jumper routing trough.
 2. The unit shall have integrated sliding tray to allow bulkhead to glide forward or backward after installation.
 3. The rack mounted enclosure shall have a transparent hinged front cover to allow visibility of interior after install.
 4. Rack mount enclosures shall be available in 1U, 2U and 4U sizes for 19" wide racks, and made of 16-gauge steel power coated.
 5. The adapter/connector plates shall snap into the front of the enclosure and accommodate LC connectors as required. Adapter plates shall utilize ceramic sleeves. Single mode adapter plates shall be blue in color.
 6. Provide one (1) 6-port LC duplex aqua adapter panel for every 12-strands of multimode fiber optic cable installed. Provide (1) 6-port LC duplex blue adapter panel for every 6-strands of single mode fiber optic cable installed.
 7. Fiber patch panel shall be labeled according to the District's specific requirements.
 8. Provide quantity of enclosures and adapter panels as required to terminate all strands.
 9. Contractor shall verify connector type with District prior to ordering materials.
 10. Include all buffer tube fan out kits as required.
 11. Product Specification:
 - a. Leviton Opt-X 1000i, 2RU, #5R2UM-S06
 - b. Opt-X precision molded plate, single mode, aqua, duplex SC Leviton #5F100-2LC

2.9 FIBER OPTIC CONNECTORS

- A. Fiber Optic Connectors: Provide a field installable single mode or multimode type connectors to terminate fiber optic cables from cable-to-cable, cable-to-equipment or equipment-to-equipment, and to make jumpers.
1. The connector must:
 - a. Be pre-polished and field installable.
 - b. Have a ceramic zirconia ferrule.
 - c. Be capable of mounting on either 250 um or 900 um buffered fiber.

- d. Single mode shall be rated OS2.
 - e. Average connector insertion loss: multimode 0.1dB, single mode 0.2dB. Maximum insertion loss: multimode 0.5dB. single mode 0.5dB.
 - f. Be available in SC and LC style for single-mode and multimode. Contractor shall verify connector type with District prior to ordering materials.
 - g. Have a locking feature to the coupler and assure non-optical disconnect.
2. Product Specification:
 - a. Single mode blue LC, Leviton #49991-SLC
 - b. Multimode aqua LC, Leviton #49991-LLC

2.10 COPPER CABLING

A. Outside Plant Multipair Copper Cables

1. All outside plant multipair copper cables shall support analog voice circuits (fire alarm, intrusion alarm, elevator phone, etcetera) and building energy management systems.
2. All copper cable placed in the outside environment shall be 24 AWG, solid annealed copper, twisted pair, and multi-conductor (minimum 25 pairs).
3. The outside plant cable shall be resistant to mechanical damage, lightning or damage from wildlife.
4. The outside plant cable shall have a corrugated aluminum armor, conductors surrounded by gel filling compound (or other water-blocking compound) and have a black UV resistant flame retardant LSZH outer jacket.
5. All outside plant cable shall be installed in conduit. Direct-bury cable is prohibited.
6. Multi-pair voice grade copper cables installed in underground conduit shall be minimum category-5E rated.
7. Product Specification: Belden #2139A, or equal.

B. MPOE / MDF / IDF Rooms, or as otherwise indicated on drawings, shall be equipped with wall mounted 66M-type split termination blocks on 89B stand-off brackets for termination of analog station cables. These termination blocks shall consist of a minimum 50-pair. All blocks shall be securely fastened to the room backboards – refer to bid documents/plan drawings. Provide all required D-rings or other approved cable guides as required to provide a neat installation. All cables shall be terminated in numerical sequence. Include clear plastic covers on each block and machine generated labels.

1. Product Specification: Leviton #40066-M50

2.11 PROTECTORS

- A. All outside plant underground backbone multipair copper cables shall be provided with protection between each building with an entrance cable protector panel(s). All building-to-building multipair copper cables shall be routed through this protector(s). The protector(s) shall be connected with a #6 AWG copper bonding conductor between the protector's ground lug and the MDF / IDF telecommunications ground busbar (TMGB/TBG).
- B. Plug in Surge Protection Modules shall be provided for each pair terminated on the protector chassis. Protector module shall be solid-state type unless otherwise noted.
 - 1. 240VDC/300VDC solid-state protector modules shall provide transient and power fault protection for standard telephone line applications. The modules shall be fast acting, self-resetting current limiters to protect against sneak current type faults. These modules shall be UL Listed with integrated test points and Black in color.
 - 2. 30VDC/75VDC solid-state protector modules shall provide transient and power fault protection for digital and data line applications. The modules shall be fast acting, self-resetting current limiters to protect against sneak current type faults. These modules shall be UL Listed with integrated test points and Red in color.
 - 3. In the event that protector modules are not called out in the drawings, SCS Contractor shall include all costs in base bid to provide the 75v solid-state modules w/sneak current protection. Confirm module color with Owner's Engineer prior to ordering. In all cases, Contractor is responsible to coordinate appropriate module with District prior to ordering material.
- C. Product Specification: Circa, Emerson or Marconi.

2.12 GROUNDING SYSTEM AND CONDUCTORS

- A. The SCS Contractor shall utilize a Telecommunications Bonding Backbone (TBB) as provided by the Electrical Contractor. The SCS Contractor shall terminate TBB cable(s) on SCS Contractor provided ground bus bars located at each MDF/IDF Room, or as otherwise indicated on the drawings. Ground bus bars shall be ANSI-J-STD-607-B compliant and UL Listed. MDF telecom main ground bus bar (TMGB) shall be Chatsworth #40153-020. IDF telecom ground bus bars (TGB) shall be Chatsworth # 40153-012, or as noted on the drawings. Wall mounted cabinets require a horizontal rack bus bar (Chatsworth #10610-XXX) (equal by Harger). All communication system bonding and grounding shall be in accordance with the ANSI-J-STD-607-B (current edition), the NEC/CEC, and NFPA.
- B. Horizontal cables shall be grounded in compliance with ANSI/NFPA 70 and local requirements and practices.
- C. Horizontal equipment including cross connect frames, patch panels, cable trays, equipment racks, ladder trays, conduits, active telecommunication equipment, test apparatus and equipment shall be bonded to the ground bus bars utilizing a #6-AWG solid copper green insulated conductor and 2-hole crimp type grounding lugs. All connections shall be bare metal to bare metal using appropriate antioxidant compound. Burndy mechanical-type grounding lugs and terminals are prohibited. Minimize the length and number of bends of the grounding conductors to the busbar. Attachment to every rack and cabinet shall be made by one of the following methods:
 - 1. Wall mounted IDF cabinets- Attach ground conductor's 2-hole compression lug to the rear rail's top holes of the rack, or front rail's top hole of the cabinet, using either two (2) tri-lobular thread-forming screws (not self-tapping or sheet metal screws) or by using two (2) standard bolts with two (2) "Type B" internal-external tooth lock washers per bolt. If thread-forming screws are

not used, remove paint at the connection point and use an approved antioxidant prior to attaching the ground conductor.

2. Floor Mounted Cabinet/Racks - Install a dedicated copper horizontal ground busbar strip at the top of the rear rail of each rack and cabinet. Attach ground conductor's 2-hole compression lug to this ground strip using either tri-lobular thread-forming screws (not self-tapping or sheet metal screws) or by using two (2) standard bolts with two (2) "Type B" internal-external tooth lock washers per bolt.
- D. The Contractor shall be responsible for providing an approved ground at all newly installed distribution frames, and/or insuring proper bonding to any existing facilities. The Contractor shall also be responsible for ensuring ground continuity by properly bonding all appropriate cabling, cable sheaths, circuit protectors, closures, cabinets, service boxes, and framework.
- E. Contractor shall label both ends of each grounding conductor as close as practical to the point of termination in a readable position. Ground tag must indicate the location of both ends of the ground conductor (e.g., Rack#1 to TMGB) and tag must include the warning "If this connector or cable is loose or must be removed, please call the Owner's Telecommunications Manager".

2.13 EQUIPMENT RACKS

- A. When shown on drawings, communication closets shall be equipped with floor mounted equipment racks provided by the Contractor to house shelves, patch panels, power strips, LAN electronics, UPS, etcetera. The racks shall be made of aluminum and include mounting hardware for mounting specified termination equipment to the frame.
- B. Dimensions shall be: open frame 4-post rack 7' H x 19", 45RU; open frame 2-post rack 7' H x 19", 45RU.
- C. Contractor shall provide vertical and horizontal wire managers for patch and equipment cords.
- D. Equipment racks and rack mount accessories shall be Black in color, unless otherwise noted.
- E. Floor mounted open racks shall be secured from the base to the structural floor to prevent movement and secured to ladder tray sections installed above. Contractor shall provide and install a minimum of four (4) fasteners / anchors per floor mounted rack. Fasteners installed to the structural floor shall be torqued to the "fastener manufacturer's" recommendation.
- F. Racks mounted on raised floors shall be seismically braced to the structural floor below the raised floor to the satisfaction of DSA, and all local, state and federal requirements.
- G. Floor mounted open racks shall be secured to the overhead ladder tray / runway.
- H. All racks shall be individually grounded to the dedicated telecommunications ground busbar (TMGB, TGB) within the equipment room using a 2-hole compression ground lugs and #6 AWG stranded green jacketed conductor. This ground conductor shall be run as straight as possible, with the length kept as short as possible. Ground wire shall be neatly secured to the rack and ladder runway. Daisy chaining a ground conductor between racks or to other components is not allowed.
- I. Product Specification:
 - a. 4-Post Rack, Southwest Data Products #SWE04-842126BLK

b. 2-Post Rack, Southwest Data Products #SWE570BLK

2.14 WALL MOUNT EQUIPMENT CABINETS

- A. When shown on drawings, cabinets shall be provided by the Contractor to house shelves, patch panels, power strips, LAN electronics, UPS, etcetera. The cabinets shall be made of lightweight aluminum, UL Listed, and include mounting hardware for mounting specified termination equipment to the frame. In addition, the mounting hardware must provide horizontal wire managers for patch cords and equipment cords.
- B. Dimensions shall be 24”H x 23”W x 24”D.
- C. Contractor shall provide horizontal wire managers for patch and equipment cords.
- D. Equipment cabinets and accessories shall be White in color unless otherwise noted.
- E. Wall mounted cabinets shall be secured to plywood backboard at locations indicated on the plan drawings. Contractor shall provide and install fasteners and anchors that are designed and rated for the determined mounting surface and building construction type. Contractor shall provide and install fasteners and anchors that are designed and rated for the combined weight of the equipment support cabinet and its contents. Contractor shall be responsible for determining correct cabinet mounting and anchoring methods that will safely support the combined weight of the cabinet and its contents. Contractor shall install cabinet in such a manner that a minimum of four (4) fasteners and/or anchors are attached directly into wall framing studs, or if applicable, masonry or concrete wall. Anchoring methods shall comply with DSA requirements and all local, state and federal safety codes.
- F. Cabinets shall be configured per the District’s Project Manager’s direction.
- G. All floor and wall mounted cabinets shall be individually grounded to the isolated ground busbar (TMGB, TGB) within the equipment room using a 2-hole compression ground lug and #6 jacketed green cable. Wall mounted cabinets require a horizontal rack bus bar (Chatsworth #10610-XXX, equal by Harger) installed at the top position of the front rails. Attach ground lug to this horizontal busbar. Ground wire shall be run as straight as possible, with the length kept as short as possible. Ground wire shall be neatly bundled and secured to the cabinet and ladder tray. Daisy chaining of ground wire between cabinets or to other components is not allowed.
- H. Cabinets shall come equipped with a locking solid steel front door.
- I. Product Specification: Southwest Data Products #SWE458-W

2.15 BACKBOARDS

- A. Where indicated on plan drawings, electrical Contractor shall provide new plywood terminal backboards. Use Douglas Fir plywood, A/C grade, finished A-side facing out, with prime coat painted on all surfaces (front, back and sides), and a finish coat of white enamel paint. On each plywood sheet leave one (1) Fire Marshal Stamp unpainted for inspection. Unless otherwise indicated, use 8’-0” high x 3/4” thick plywood x length as shown on the plan drawings.

2.16 UNSPECIFIED EQUIPMENT AND MATERIAL

- A. Any item of equipment or material not specifically addressed on the drawings or in this document and required to provide a complete and functional SCS installation shall be provided in a level of quality consistent with other specified items.

2.17 FIRE RATED PATHWAY

- A. The firewall through-penetration shall be a manufactured, UL Classified, firestop device/ system designed to allow cables to penetrate fire-rated walls with a built-in fire sealing system that automatically adjusts to the number of cables installed.
- B. The firestopping device shall be capable of installation in new construction or retrofit in existing structures.
- C. The device shall be UL Tested and Classified in accordance with ASTM E814 (UL 1479) and with ratings up to and including 2 hours.
- D. Manufacturer: Specified Technologies Inc., EZ-Path (#EZDP33FW) or equal by Wiremold.

PART 3 – EXECUTION

3.1 GENERAL INSTALLATION REQUIREMENTS

- A. The wiring of the system shall be executed in accordance with the drawings and the equipment manufacturer's wiring diagrams. Should any variations in these requirements occur, the Contractor shall notify the District's Project Manager before making any changes. It shall be the responsibility of the manufacturer-authorized distributor of the approved equipment to install the equipment and guarantee the system to operate as per plans and specifications.
- B. Furnish all conductors, outlets, panels, terminal strips, etcetera, and labor to install a complete and operable system.
- C. The cables within the rack or cabinets shall be numbered for identification using machine generated labels wrapped around the cable jacket within 6 inches of termination point. Refer to Labeling Requirements section of this document for additional requirements. Handwritten labels are prohibited.
- D. Splicing of any cable is prohibited.
- E. The labor employed by the Contractor shall be regularly employed in the installation and repair of communication systems and shall be acceptable to the District's Project Manager to engage in the installation and service of this system.
- F. The system must meet all local and other prevailing codes.
- G. All cabling installations shall be performed by qualified and manufacturer-trained technicians.
- H. Cable lubricants (i.e., Polywater) shall be used to reduce the cable pull tension stated by the cable manufacturer during cable installation in conduits and innerduct. Contractor shall verify the acceptability of the lubricant to be used with the cable manufacturer, prior to using such a lubricant. Lubricants that harden after installation are not allowed. Submit all proposed lubricants for approval

PRIOR to use on low voltage, A/V, coax, fiber, and data cable installation. Cable lubricants shall be allowed to dry a minimum of 15 days PRIOR TO performing cable certification tests.

- I. Cables may be run exposed above accessible ceilings, provided the cabling is supported independent of other utilities such as conduits, pipes, and the ceiling support systems. The Contractor shall include all costs in base bid for any additional supports and seismic bracing required by the Local Authority having Jurisdiction. The cables shall not be laid directly on the ceiling panels or other structures.
- J. The cable jacket composition must meet local and all other prevailing fire and safety codes.
- K. All firewalls penetrated by structured cabling shall be sealed by use of a non-permanent fire blanket or other method in compliance with the current edition of NFPA and the NEC or other prevailing code and must be a system listed by UL. The Contractor must not use concrete or other non-removable substance for fire stopping on cable trays, wireways or conduits. Contractors who use this method will be required to replace all cables affected and provide the original specified access to each effected area. This requirement also applies to maintaining fire ratings of all floors penetrated by conduits or devices designated for use by voice and data cabling.
- L. All equipment racks and cabinets shall be bolted to the structural floor by the Contractor in the location shown on drawings. Wall mounted racks and wall mounted cabinets shall be fastened to structural studs, not drywall or backboard only.
- M. Any cable damaged or exceeding recommended installation parameters during installation shall be replaced by the Contractor before final acceptance at no cost to the Owner.
- N. The cable manufacturer's minimum bend radius and maximum pulling tension shall not be exceeded at any time.
- O. Cable raceways, when required, shall not be filled greater than the NEC maximum fill for the particular raceway type. Innerduct fill shall not exceed 40 percent.
- P. Roof penetrations are prohibited. No conduit shall be installed on top of roofs or routed horizontally on exterior walls.

3.2 SPECIFIC SYSTEM INSTALLATION REQUIREMENTS

- A. All communications cabling used throughout this project shall comply with the requirements as outlined in the NEC Articles 725, 760, 770, and 800 (or related CEC Articles), and the appropriate local codes. All copper cabling shall bear UL listed type CMP (Plenum Rated) and/or CM/G (General Purpose) and/or CMR (Riser Rated). All fiber optic cabling shall bear OFNP (Plenum Rated) and/or OFNR (Riser Rated) and/or OFN/G (General Purpose). The Contractor is responsible for installing appropriately rated cable for the environment in which it is installed.
- B. Cable Pathways:
 - 1. In suspended ceiling and accessible ceiling areas where duct, cable trays or conduit are not available, the Contractor shall bundle cable, in bundles of 48 or less. Cable bundles shall be supported via "J" hooks attached to the existing building structure and framework at a maximum of five (5) foot intervals.
 - 2. Cables or J-hooks shall not be attached to lift out ceiling grid supports or laid directly on the ceiling grid.

3. Cables or J-hooks shall not be attached to or supported by fire sprinkler heads, HVAC ducts, or delivery systems or any environmental sensor located in the ceiling air space.
 4. Where additional conduits or sleeves are required, but not provided by the electrical Contractor, the cabling Contractor shall be responsible to provide such conduits or sleeves. Conduits and sleeves shall be of suitable material, sized, installed and fire stopped as required by the NEC, ANSI/TIA/EIA standards and all other applicable codes and standards. Any conduits and sleeves added by the Contractor shall be approved by the District's Project Manager prior to rough-in.
 5. All J-hooks shall be rated and designed for Category 6 and 6A cabling.
- C. Sealing of openings between floors, into or through rated fire and smoke walls, existing or created by the Contractor for placement of new or removal of old cable into or through shall be the responsibility of the Contractor. Sealing material (Approved UL listed system) and application of this material shall be accomplished in such a manner that is acceptable to the local fire and building authorities having jurisdiction over this work. Creation of such openings as are necessary for cable passage between locations as shown on the drawings shall be the responsibility of the Contractor's work. Any openings created by or for the Contractor and left unused shall also be sealed as part of this work.
1. Fire stopping work shall be performed by a single Contractor to maintain consistency and accountability on the project.
 2. The Contractor shall install penetration firestop seal materials in accordance with design requirements, and manufacturer's instructions.
 3. The Contractor's installer shall be certified, licensed or otherwise qualified by the firestopping manufacturer as having been provided the necessary training to install manufacturer's products per specified requirements.
 4. All installed through penetration firestops shall be identified via label, or stencil. Label shall state that the fill material around the penetrating item is a firestop, and that it shall not be disturbed unless by an authorized Contractor. The label shall include the firestop brand name, and the classified system number for which it was installed.
 - a. Sample Label:

MANUFACTURER'S NAME:
ATTENTION
Fire Rated Assembly
For Any Changes To This System, Please Refer To UL System Listed Below
PRODUCT:
HOUR RATING:
UL SYSTEM:
INSTALLATION DATE:
INSTALLED BY: (Contractor's Company name)
CONTRACTOR LICENSE NUMBER:
BUSINESS PHONE:
EMAIL ADDRESS:
- D. The Contractor shall be responsible for damage to any surfaces or work disrupted as a result of his work. Repair of surfaces, including painting, shall be included as necessary.

- E. Cable bundles within the MDF / IDF shall be dressed into bundles of no more than twenty-four (24) cables. Maintain each bundle with half inch-wide hook and loop strips spaced every twelve (12) inches maximum.
- F. The Contractor shall install all patch cords per direction of the District's project manager in a neat and systematic fashion. Prior to installing all patch cords, the Contractor shall install patch cords in a single rack to demonstrate work practices to the District's project manager. Only after any corrections or modification to the installation as directed by the District's project manager, may the Contractor continue installing the patch cords in the remaining racks.
- G. Each equipment cabinet and rack require its own dedicated grounding connection to the grounding infrastructure. See Section 2.13 Grounding System and Conductors of this document for more information.
- H. In raised-floor environments, the ground conductor shall attach to the lowest holes on the front rail of each rack/cabinet.
- I. Rack/cabinet mounted equipment shall be grounded via the chassis, in accordance with manufacturer's instructions. The equipment chassis shall be bonded to the rack/cabinet using one of the following methods:
 - 1. If the equipment has a separate grounding hole or stud, use a #10-AWG ground wire from the chassis ground hole/stud to the rack grounding bus.
 - 2. If the manufacturer suggests grounding via the chassis mounting flanges, use tri-lobular thread-forming screws (not self-tapping or sheet metal screws) to attach the equipment to the rack/cabinet rails. If the equipment mounting flanges are painted, remove the paint and apply an antioxidant, or use tri-lobular thread-forming screws and two (2) "Type B" internal-external tooth lock washers to safely ground equipment to the rack.
- J. Bonding of ladder tray sections - Attach bonding straps to each ladder tray section by utilizing either two (2) tri-lobular thread-forming screws (not self-tapping or sheet metal screws) or by using two (2) standard bolts with two (2) "Type B" internal-external tooth lock washers per bolt. If thread-forming screws are not used, remove paint at each connection point and use an approved antioxidant prior to attaching the bonding strap.
- K. All installation shall be done in conformance with TIA/EIA 568-C standards, BICSI TDMM guidelines and manufacturer's installation guidelines. Failure to follow the appropriate guidelines will require the Contractor to provide, in a timely fashion, any additional material and labor necessary to properly rectify the situation to the satisfaction and written approval of the District's Project Manager. This shall also apply to any and all damages sustained to the cables by the Contractor during the implementation.
 - 1. Bonding and Grounding: All cable sheaths and splice cases shall be grounded to a Telecommunications Ground Bus. All grounding must be in accordance with the NEC, NFPA, ANSI-J-STD-607-B and all local codes and practices. The Electrical Contractor shall be responsible for providing a properly sized grounding conductor from the main electrical ground to the telecommunications ground bus in each MDF / IDF room. The Contractor shall be responsible to provide the telecommunications busbar, attach the Electrical Contractor-provided ground conductor, and bond all required equipment and components within each MDF / IDF to the busbar.

2. Power Separation: The Contractor shall not place any distribution cabling alongside power lines, or share the same conduit, channel or sleeve with electrical apparatus. Maintain a minimum of 12-inch separation from light fixtures.
3. Miscellaneous Equipment: The Contractor shall provide any necessary screws, anchors, clamps, hook and loop ties, distribution rings, wire molding (MDF & IDF locations), miscellaneous grounding and support hardware, etcetera, necessary to facilitate the installation of the System.
4. Special Equipment and Tools: It shall be the responsibility of the Contractor to furnish any special installation equipment or tools necessary to properly complete the System. This may include, but is not limited to, tools for terminating cables, testing equipment for copper / fiber cables, communication devices, jack stands for cable reels, or cable winches.
5. Labeling: The Contractor shall be responsible for printed labels for all pull boxes, conduits, cables, protectors, racks, cabinets, patch panels, connector panels, cords, distribution frames, and outlet locations, according to the specifications. Handwritten labels are prohibited. See LABELING REQUIREMENTS Section 3.9 of this document for more information.
6. Cable Storage: The Contractor shall not roll or store cable reels without an appropriate underlay and the prior written approval of Owner's Project Manager.
7. Cable Records: The Contractor shall maintain conductor polarity (tip and ring) identification at the MPOE room, MDF / IDF rooms, and station connecting blocks in accordance with industry practices, as required by the Owner's Project Manager. Contractor to provide spreadsheets for all outdoor backbone and indoor riser backbone cables tested.

3.3 STRUCTURED CABLING GENERAL INSTALLATION DESCRIPTION

- A. The structured cabling system shall consist of any or all the following subsystems:
 1. Work Area Subsystem
 2. Horizontal Subsystem
 3. Administration Subsystem
 4. Backbone Subsystem
 5. Equipment Subsystem
- B. Work Area Subsystem: The Work Area Subsystem provides the connection between the telecommunications outlet (TO) and the station equipment in the work area. It consists of cords, adapters, and other transmission electronics.
 1. Contractor shall supply the wiring or cords that connect terminal devices to telecommunications outlets. This includes mounting cords and connectors, as well as extension cords.
- C. Horizontal Subsystem: The Horizontal Subsystem provides connections from the horizontal cross connect to the telecommunications outlets in the work areas. It consists of the horizontal transmission media, the associated connecting hardware terminating this media and outlets in the work area. Each floor of a building is served by its own Horizontal Subsystem(s).

1. Horizontal Cabling
 - a. Contractor shall supply horizontal cables to connect each telecommunications outlet to the backbone subsystem as shown on the drawings.
 - b. Unless otherwise noted on the floor plans or within this document, the type of horizontal cables used for each work location shall be 4-pair unshielded twisted pair (UTP).
 - c. The 4-pair UTP cables shall be run using a star topology format from the administration subsystem to every individual telecommunications outlet. All cable routes, other than those dictated on the drawings, are to be approved by District's Project Manager prior to installation.
 - d. The length of each individual run of horizontal cable from the administration subsystem to the telecommunications outlet shall not exceed 295-ft (90 m).
 - e. Contractor shall observe the bending radius and pulling strength requirements of the 4-pair UTP cable during handling and installation.
 - f. Each run of cable between the termination block and the telecommunications outlet shall be continuous without any joints or splices.
 - g. All station cable shall be placed in the interior of walls unless otherwise noted in the bid documents/plan drawings.
 - h. In the event Contractor is required to remove ceiling tiles, such Work shall not break or disturb the ceiling grid. Removal of the ceiling grid must be coordinated with the Owner's Project Manager. All insulation shall be replaced in its original location. Contractor shall be responsible to replace any ceiling tiles that they damage during the course of their work, at no additional cost to the Owner.
 - i. Avoid electromagnetic interference (EMI) by maintaining adequate physical separation between telecommunications cabling and possible sources such as, but not limited to, electric motors, electric erasers, electric pencil sharpeners, transformers, fluorescent lighting that share distribution space with telecommunications cabling, copiers that share work area space with line cords and terminals, large fax machines and power cords that supports such equipment. Minimum separation shall be twelve (12) inches.
 - j. Contractor shall provide District's Project Manager with detailed cable run diagrams for cable runs within raised floors (if shown on plans) detailing exact locations of cable for review and written approval by Owner's Project Manager.
 - k. Conduit runs installed above grade by the Contractor should not exceed 100 feet or contain more than two 90-degree bends without utilizing appropriately sized pull box. Pull boxes are not to be used in lieu of a bend.
 - l. Station cables and riser cables installed within ceiling spaces shall be routed through these spaces at right angles to electrical power circuits.
 - m. Each station cable shall have 1 meter of service slack configured in an "S" shape via J-hooks at rack or wall field end and 1 foot of service loop at station outlet end. Service slack shall be located within 15 feet of the MDF / IDF as required to maintain a neat and "workmanship like" installation.

- D. Administration Subsystem: The Administration Subsystem links all the subsystems together. It consists of labeling hardware for providing circuit identification and patch cords or jumper wire used for creating circuit connections at the cross connects. All wall field layouts must be approved by Owner's Project Manager prior to rough-in and installation.
1. Separate termination fields shall be created for voice/data, wireless access points, paging, surveillance cameras, clocks, and building energy management system applications.
 2. Termination blocks that require rotation after connection of horizontal/vertical wiring will not be allowed.
 3. Contractor shall supply cross-connect wire, patch cords and fiber optic patch cords for cross-connection and inter-connection of termination blocks and fiber panel units.
- E. Backbone Subsystem:
1. The main cable route between two or more buildings is called the Backbone Subsystem. It links the main distribution frame (MDF) in the equipment room to each intermediate distribution frame (IDF). It consists of the backbone transmission media between these locations and the associated connecting hardware terminating this media. It is normally installed in a star topology, with first-level backbone cables beginning at the main cross connect. If needed, second-level backbone cables begin at intermediate cross connects.
 2. The backbone subsystem shall include vertical runs (riser) of in-building cable between floors of a multi-story building, if applicable.
 3. All backbone fiber optic cable(s) will be run in innerduct and terminated in the MDF / IDF Rooms, or as otherwise indicated on the plan drawings, with connectors, type as specified elsewhere, in rack mounted or wall mounted fiber patch panels equipped with sufficient panels, couplers and jumper storage shelves to terminate and secure all fibers. All innerduct (Carlon or equal) shall be corrugated and a minimum of 3/4" in diameter unless otherwise indicated on plans. Innerduct shall be plenum, riser or general rated as required by the environment in which it is to be installed. Innerduct capacity shall not exceed 40 percent fill.
 4. All backbone multipair copper cable(s) will be terminated in the MDF/MPOE/IDF rooms, or as otherwise indicated on the plan drawings. Backbone multipair cable shall be terminated on building entrance fused protectors as specified elsewhere in this document. The minimum pair count for multipair copper cable between buildings shall be 25-pairs. Refer to bid documents/plan drawings for any additional required pairs.
 5. In multi-story buildings, Contractor shall supply multi-pair copper cables and fiber optic cables as the riser cables between floors. Reference this document and plan drawings for quantities. Contractor shall observe the bending radius and pulling strength requirements of all backbone cables during handling and installation.
- F. Equipment Room Subsystem: The Equipment Subsystem consists of shared (common) electronic communications equipment in the equipment room or telecommunications closet and the transmission media required to terminate this equipment on distribution hardware.

3.4 DAMAGES

- A. The Contractor will be held responsible for any damages to portions of the building caused by it, its employees or sub-Contractors; including but not limited to:
 - 1. Damage to any portion of the building caused by the movement of tools, materials, or equipment.
 - 2. Damage to any component of the construction of spaces.
 - 3. Damage to the electrical distribution system.
 - 4. Damage to the electrical, mechanical and/or life safety or other systems caused by inappropriate operation or connections made by the Contractor or other actions of Contractor.
 - 5. Damage to the materials, tools and/or equipment of the Owner, its consultants, agents, and tenants.

3.5 PENETRATIONS OF WALLS FLOORS AND CEILINGS

- A. Unless specifically shown on the drawings, the Contractor shall make no penetration of floors, walls, or ceiling without the prior written approval of the Owner's Project Manager.
- B. Any penetrations through acoustical walls or other walls for cable pathways / cables shall be sealed by the Contractor in compliance with applicable code requirements and as directed by Owner's Project Manager.
- C. Any penetrations through fire-rated walls for cable pathways/cables shall be sealed by the Contractor as required by code and as directed by Owner's Project Manager. The Contractor shall be required to work together with the General Contractor and the Electrical Contractor to coordinate and develop all fire stopping methods prior to any cable installation. The Contractor shall also, prior to the commencement of on-site activities, submit to Owner's Project Manager, details of any special systems to be used.
- D. Roof penetrations are prohibited. No conduit shall be installed on roofs or route horizontally on exterior walls.

3.6 TESTING AND WARRANTY

- A. Structured Cabling System
 - 1. The Contractor shall provide competent, test equipment manufacturer-trained engineers and/or technicians, authorized by the manufacturer of the cabling system, to technically supervise and participate during all tests for the systems.
 - 2. The Contractor shall test and certify the cabling system to minimum standards as set forth in the TIA/EIA-568-C specifications for 100BaseTX Ethernet and for Category-6 cable, token ring, and 1000baseT signals.
 - 3. All cables and termination hardware shall be 100% tested for defects in installation and to verify cable performance under installed conditions. All conductors of each installed cable shall be verified usable by the Contractor before system acceptance. Any defect in the cable system installation including but not limited to cable, connectors, feed-through couplers, patch panels,

splices, and connector blocks shall be repaired or replaced to ensure 100% useable conductors in all cables installed.

4. Each cable shall be tested for continuity on all pairs and/or conductors. Twisted-pair voice cables shall be tested for length, continuity, pair reversals, opens, shorts, transpositions, presence of AC and DC voltages and opens. Twisted-pair horizontal cables shall be tested for all the above requirements, plus tests that indicate installed cable performance. Category-6 and category-6A cables shall be tested using a TIA-568-C.2-1 Category 6A Level III/IEC 61935 Level III or better, ETL certified cable tester/analyzer.
5. Shielded/screened cables shall be tested with a device that verifies shield continuity in addition to the above stated tests.
6. The test shall be recorded as pass/fail as indicated by the test set in accordance with the manufacturers recommended procedures and referenced to the appropriate cable identification number and circuit or pair number. Any faults in the wiring shall be corrected and the cable re-tested before final acceptance.
7. Each installed cable shall be tested for installed length using a Time Domain Reflectometer (TDR) type device. The cables shall be tested from patch panel to patch panel, block to block, patch panel to outlet or block to outlet as appropriate. The cable length shall conform to the maximum distances set forth in the TIA-568-C Standard. Cable lengths shall be recorded, referencing the cable identification number and circuit or pair number.
8. Multi-pair cables, record the following tests on every cable pair in each multipair cable using a TDR type device: record the shortest pair length, continuity, pair reversals, shorts, opens, transpositions, presence of AC and DC voltage.
9. Enhanced Category-6 and 6A data cable shall be performance verified using an automated test set. This test set shall be capable of testing for the continuity and length parameters defined above, and provide results for the following tests:
 - a. Attenuation (Insertion Loss).
 - b. Return Loss (RL).
 - c. Near End Crosstalk (NEXT) – measured at both ends of each cable pair.
 - d. Attenuation to Crosstalk Ratio (ACR).
 - e. Power Sum Near End Crosstalk (PSNEXT).
 - f. Power Sum Attenuation to Crosstalk Ratio (PSACR).
 - g. Far End Crosstalk (FEXT).
 - h. Equal Level Far End Crosstalk (ELFEXT).
 - i. Power Sum Equal Level Far End Crosstalk (PSELFEXT).
10. Test results shall be automatically evaluated by the equipment, using the most up-to-date criteria from the ANSI/TIA/EIA Standard, and the result shown as pass/fail. Test results shall be printed directly from the test unit or from a download file using an application from the test

equipment manufacturer. The printed test results shall include all tests performed, the expected test result, and the actual test result achieved.

11. Optical Fiber Cable Testing: All fiber testing shall be performed on all fibers in the completed end to end system by test equipment manufacturer-trained engineers and/or technicians. There shall be no splices unless clearly defined in Section 3 of this specification or on the plan drawings. Testing shall consist of a bi-directional end to end OTDR trace performed per ANSI/TIA/EIA 455-61 & ANSI/TIA/EIA 526 and a bi-directional end to end power meter test performed per ANSI/TIA/EIA 455-53A. The system loss measurements shall be provided at 850 and 1300 nanometers for multimode fibers and 1310 and 1550 for single mode fibers.
 - a. Pre-installation cable testing: The Contractor shall test all fiber optic cable prior to the installation of the cable. The Contractor shall assume all liability for the replacement of the cable should it be found defective during the warranty period.
 - b. Loss Budget: Fiber links shall have a maximum loss of: (allowable cable loss per km) x (km of fiber in link) + (.4dB) x (number of connectors) = maximum allowable loss.
 - c. Any link not meeting the requirements of the standard shall be brought into compliance by the Contractor at no additional charge to District.
12. The Contractor shall provide test documentation to the District's Project manager in a three-ring binder(s) and in CD format within three (3) weeks after the completion of a specific project. The binder(s) shall be clearly marked on the outside front cover and spine with the words "Test Results", the project name, and the date of completion (month and year). The binder shall be divided by test type. A paper copy of the test results shall be provided listing all the links that have been tested, and include link name, overall pass/fail evaluation, date and time of test, cable type and NVP value. Detailed test results shall be provided for each link tested and shall include length, propagation delay, delay skew, insertion loss, return loss, NEXT, ELFEXT, ACR, PSNEXT, PSELFEXT, and PSACR. Detailed test results for each link will also include customer site name, name of standard selected to execute the tests, date and time test results were saved in memory of test unit, brand name model and serial number of tester and revision of the tester software and test standards database in the tester. Individual test data within each section shall be presented in the sequence listed in the test summary records. Unless a more frequent calibration cycle is specified by the manufacturer, an annual calibration cycle is anticipated on all test equipment used for this installation.
13. When repairs and re-tests are performed, the problem found and corrective action taken shall be noted, and both the failed and passed test data shall be collocated in the binder.
14. The entire SCS system shall be warranted free of mechanical or electrical defects by the Contractor for a period of one (1) year after final acceptance of the installation.
15. Any equipment that is not installed per the manufacturer's recommendation shall be replaced promptly and at no cost to the Owner.
16. Any material showing mechanical or electrical defects shall be replaced promptly at no expense to the Owner.
17. Provide all labor and material warranties for each system, as described elsewhere in this document.

18. At the District's direction, the Contractor shall perform additional random testing which shall consist of a random sample of up to 10% of each installation distribution system. The Contractor shall assume responsibility for providing the proper test equipment and staff to conduct tests. The District's representative shall witness the tests.
19. Should the initial 10% test not be 100% successful (all drops testing over CAT6 up to 250MHz), the Contractor shall assume responsibility to repair/replace non-passing links, at the direction of the District, and the links to re-verify and resubmitted. A 20% random sample shall then be conducted to ensure proper performance of the system.
20. Should there be failure in this re-test, the Contractor shall be responsible to repeat the re-test procedure until such time as all cabling is verified.

3.7 COMPLETION OF WORK

- A. At the completion of the Systems, the Contractor shall restore to its former condition, all aspects of the project site and daily remove all waste and excess materials, rubbish debris, tools and equipment resulting from or used in the services provided under this Contract. All clean up, restoration, and removal noted above will be by the Contractor and at no cost to Owner. If the Contractor fails in its duties under this paragraph, Owner may upon notice to the Contractor perform the necessary clean up and deduct the costs thereof from any amounts due or to become due to the Contractor. It shall be the Contractor's responsibility to remove trash from the areas it is working in and bring trash and debris to the Contractor provided dumpster.

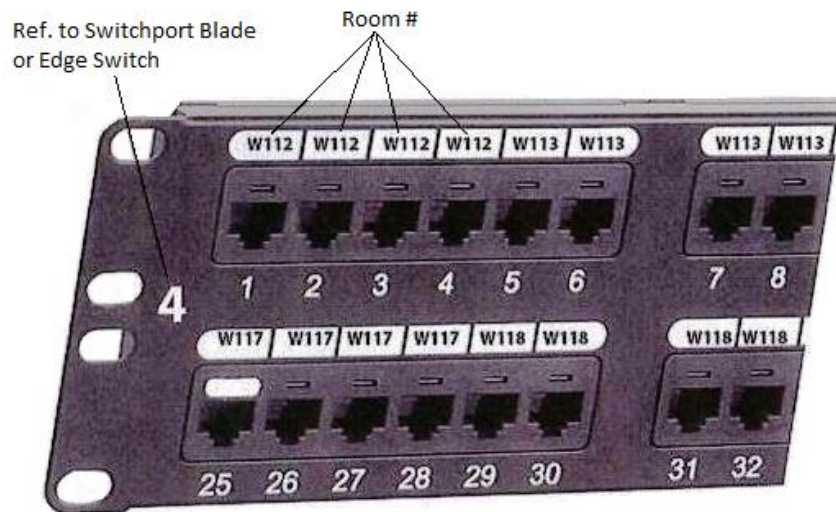
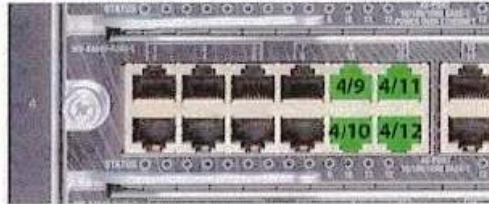
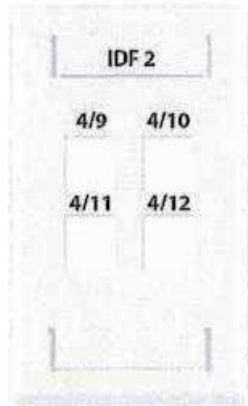
3.8 INSPECTION

- A. On-going inspections shall be performed during construction by the District's representative. All work shall be performed in a high-quality manner and the overall appearance shall be clean, neat and orderly. Any work that does not meet the District's representative's approval shall be removed and reinstalled by the Contractor at no additional cost to the District.

3.9 LABELING REQUIREMENTS

- A. Numbers must be assigned to each outlet location using a logical designation convention. Blueprints with the outlet placement and configuration information have been furnished to the Contractor. Contractor will provide the equipment as necessary to generate Panduit PAN-CODE (or Equal) laser printer generated self-laminating labels using the numbering convention shown below and as specified herein. Before any permanent labels are installed on blocks, face plates or cables, Contractor shall submit a sample label of each various type listed below to District's Project Manager for written approval to ensure compliance with the labeling scheme, legibility, etcetera. Contractor is responsible to provide the labeling scheme as described herein.
- B. Station Faceplate (Telecommunications Outlet) Labeling. The following is illustrative of the number convention to be used:
 1. Top Window: IDF-2. This identifies the IDF location where cable originates within the building (i.e., IDF room "#2").
 2. Bottom Window: blank. For future use.

3. Faceplate jacks shall be numbered sequentially from top to bottom and left to right. Individual jack labels shall indicate Patch Panel number / port number. (i.e., 4/9 represents patch panel #4, patch panel port #9).



- C. Network Switch Labeling. All rack mounted Ethernet edge switches shall be sequentially numbered. Number shall be printed and attached to the left edge and centered. Numbers shall be minimum 1/2" high and printed white on a black background.
- D. Patch Panel Labeling. All copper category-6 and 6A rack mounted patch panels shall be sequentially numbered, beginning with the uppermost panel in the rack. Patch panel number shall be printed and attached to both left and right edges and centered. Numbers shall be minimum 1/2" high and printed white on a black background. Patch panel ports shall be labeled with the corresponding room number where the cable's faceplate is located. Cables shall be terminated sequentially by room number and faceplate order.

- E. Station Cable Jacket Labeling. All Category-6 and Category 6A cables shall be labeled within six (6) inches of each termination end (e.g., at both ends, outlet end and MDF / IDF end) using machine-generated, "P-Touch" type, self-laminating cable markers.
1. Example: IDF2-4/9
 2. IDF location where cable originates (i.e., IDF room "#2").
 3. Patch panel and port numbers where cable terminates (i.e., patch panel #4, port #9)
- F. Backbone and Riser Multipair Cable Labeling. All backbone and riser cables (copper, fiber, coax, etc) will be labeled to reflect the origin and destination abbreviation for the cable and pair counts on large font (16 pitch) self-laminating labels, which shall be located within 6 inches of each end of the cable. Labels shall be placed on the cable to be visible without relocating surrounding cables.
1. Example #1: IDF2/IDF3/CP100/01
 2. IDF2: Cable Origination
 3. IDF3: Cable Destination
 4. CP100: Cable Type & Pair or Strand Count (ex. 100 – pair Copper Cable. Other possibilities include CX for coax, HB for hybrid fiber cable, MM for multimode cable, and SM for singlemode cable.)
 5. 01: Cable identification number (ex. cable 01). There may be more than one backbone or riser cable with the same origin, destination, and pair count.
- G. Multipair Cable Termination Block Labels. All multipair cables will be labeled using appropriate terminal-block label strip with label holders. Termination block covers shall be labeled in such a manner to indicate Termination Block number (ex: W1, W2, etc) and type of cables (ex. Fire Alarm-FA, Security Alarm-SE, Paging-PA, FAX machine, etc.).
1. Termination Block Label:
 2. Example: W1 – Alarm Cables 1st Floor
 3. W1: Wall Field 100-pair 110-block #1
 4. Individual cable numbers on label strip:
 5. Example: 001
 6. Station #1
- H. Multipair Cable Termination Block Labels. All multipair riser blocks shall be labeled using appropriate terminal-block label strip with label holders and shall follow the labeling scheme outlined above. Building interconnect cable termination block labels shall be per ANSI/TIA/EIA-606-B. Final label scheme shall be determined by the District's decision.
- I. Fiber Enclosure Labels. All fiber enclosures and panels will be labeled using self-laminating laser label markers. Fiber labels shall include all information as specified by the District. Contractor is responsible to provide a labeling scheme that meets with the District's satisfaction. At a minimum, the fiber

enclosure label card shall indicate: destination of connected cables, slash (/), origination of connected cables, slash (/), and the fiber enclosure number and port number.

1. Example: MDF/IDF2/1-1
2. MDF: Destination Patch Panel Location Designation
3. IDF2: Origination Patch Panel Location Designation
4. 1-1 Indicates fiber enclosure number and fiber port number on both origin and destination fiber enclosures.

J. Equipment Rack/Cabinet Labeling: All equipment racks/cabinets shall be labeled according to their room identifier and a two-digit number. The labels will be engraved plastic plates, with 1"-high white letters on black background. The labels will be attached to the cross member at the top front of each frame or rack with appropriately sized sheet metal screws. Self-adhesive strips, glues, etc. are unacceptable. Racks and cabinets within the same room shall be numbered sequentially from left to right, when facing the front of the racks/cabinets.

1. Example: MDF-01
2. MDF Room Designation
3. 01 Rack Identifier

K. Innerduct and Fiber Cable Warning Labeling. The Contractor shall provide and install tags of stamped plastic for tube cable and innerduct. The labeling convention described above within Paragraph E shall apply. Additionally, the Contractor will also install fiber optic warning tags (Panduit #PST-FO) every 12 feet on all exposed fiber optic cable and on innerduct containing fiber optic cable installed within the building, also on innerduct and cable visible in each pull box, manhole, and vault.

L. MDF / IDF Floor Plan Mounting Frame: Provide wall mountable floor plan mounting frame with removable Plexiglas front cover in each MDF / IDF. Frame and cover shall be sized to house 30"x42" floor plan drawing. Coordinate location of frame with District's Project Manager prior to installation.

M. Telecommunications Main Grounding Busbars (TMGB, TGB): All telecom grounding busbars shall be labeled using large font (16 pitch) self-laminating labels. Labels shall indicate "TMGB" or "TGB". If more than 1 busbar is in the room, include a numerical indication (ex: TMGB-1).

3.10 MISCELLANEOUS PROJECT REQUIREMENTS

A. Site Cleaning: Throughout the progress of the plant construction, the Contractor shall keep the working area free from debris of all types and remove from the premises all rubbish resulting from any work done by Contractor. Daily and at the completion of its work, the Contractor shall, to the extent possible, leave the premises in a clean and finished condition.

B. Conduits: All backbone cabling will run through dedicated conduits. All new conduits will be supplied with a pull string. Contractor shall supply pull string and pull rope for the installation of all cables in existing conduits. For all conduits left with available capacity, Contractor shall replace pull strings with 1/4-inch pull rope during the course of his work. Contractor must seal all underground low voltage conduits within manholes, underground vaults/pull boxes, and underground conduits that enter a

facility, with an approved mechanical water/gas/airtight plug. Unused conduits shall be sealed with a blank plug.

- C. Seismic Requirements: Contractor will install all equipment racks, equipment cabinet enclosures, cable runways, etcetera, according to DSA and local, state and/or federal code. Contractor will notify District's Project Manager of such requirements and shall provide such bracing as required. Contractor to coordinate all installation with the structural Engineer of Record.
- D. Safety Requirements: Contractor will utilize appropriate personnel and display warning signs, signals, flags and/or barricades at the work site to ensure adherence to safety regulations and as prudence requires.
- E. Specification/Drawing Status: All specifications and drawings related to this project will be "frozen" after shop drawing approval. The District reserves the right to negotiate any future changes with the Contractor at any time.

3.11 MISCELLANEOUS SUPPORT REQUIREMENTS

- A. Upon approval of shop drawings, Contractor shall immediately place orders for all required materials, components, and supplies. In addition, Contractor shall secure and forward written confirmations (including orders and shipping dates) direct from each manufacturer/vendor to the District's Project Manager.
- B. Contractor shall expedite shipment of all materials, components, and supplies, as necessary to ensure the successful completion of the Project by the date required. All costs for expediting shall be included within Contractor's pricing as provided below.
- C. The system cost herein shall include administration/maintenance training for at least five (5) District representatives with a minimum allotment of two (2) eight-hour sessions. All training shall include written and/or video materials that shall remain the property of District. If materials are written, they shall be provided in quantities sufficient for each person trained; if materials are video, one (1) copy of each will be required. The administration/maintenance training shall include, but not be limited to, the following:
 - 1. Review of as-built documentation, including a site demonstration.
 - 2. All warranty information.
- D. Minimum standards for maintenance purposes shall include optional access to service on a 24 hour-a-day, 365 day-a-year basis. In addition, Contractor shall, upon notification, respond as follows:
 - 1. Emergency Response: Contractor must respond by utilizing remote diagnostics capabilities (as applicable) within thirty (30) minutes of notification. If necessary, Contractor must dispatch at least one certified technician for arrival on-site within two (2) hours of notification.
 - 2. Non-Emergency Response: Contractor shall respond by utilizing remote diagnostics capabilities and or cause dispatch of at least one certified technician for arrival on-site within one (1) business day of notification.
 - 3. Definition of "Emergency": For maintenance purposes, "emergency" shall be defined as one or more of the following conditions:

- a. Defects of any riser pairs and/or components involving at least ten percent (10%) of any riser cable's capacity.
- b. Defects of station cable pairs and/or components involving at least ten percent (10%) of any department or group of voice and/or data stations.
- c. Defects significantly impairing any single attendant console.
- d. Defects of any fiber optic cable and/or components involving at least ten percent (10%) of any department or group's fiber-based systems and/or stations.
- e. Any pre-defined failure as submitted by District and agreed to be Contractor.

3.12 FINAL ACCEPTANCE

- A. The District or District's representative may visit the site during the installation of the system to ensure that correct installation practices are being followed.
- B. The District or District's representative will conduct a final job review once the Contractor has finished the job. This review will take place within one (1) week after the Contractor notifies the District.
- C. Two (2) copies of all certification data and drawings for all identifications shall be provided to the District before the District's review.
- D. The District or District's representative will review the installation and certification data prior to the system acceptance.
- E. The District or District's representative may test some of the systems features to ensure that the certification data is correct. If a substantial discrepancy is found, the District reserves the right to have an independent consultant perform a certification of the entire system. If such a procedure is undertaken, the cost of the testing will be billed back to the Contractor.
- F. If repair, or adjustments are necessary, the Contractor shall make these repairs at his own expense. All repairs shall be completed within ten (10) days from the time they are discovered.
- G. The Contractor shall provide two (2) copies of an "operating and servicing manual" for the system within fourteen (14) calendar days of District's final acceptance of the system. The manuals shall be bound in flexible binders. All data shall be printed material or typewritten. Each manual shall include the following: instructions necessary for the proper operation and servicing of the system; complete as-built installation drawings of the system (11"x17"); equipment specification cut sheets, complete performance test data, complete warranty information and replacement parts list with current prices listed, contact information for repair and warranty work requests.
 - 1. The Contractor shall mount a full size 30" x 48" bond copy of each scaled Site Plan within MDF room and each IDF room with removable Plexiglas front cover. Frame and cover shall be sized to house the site plan and floor plan drawings. Coordinate location of frame with District's Project Manager prior to installation.
 - 2. The Contractor shall hand to the District a copy of any applicable installation specific software configurations including all log-in passwords in CD format.

END OF SECTION

SECTION 28 3111 - FIRE ALARM / VOICE EVACUATION SYSTEM

PART 1 – GENERAL

1.1 SCOPE OF WORK

- A. A new intelligent reporting, microprocessor controlled fire detection system shall be installed in accordance to the project specifications and drawings.
- B. The work under this section includes all final design, all labor, material, equipment, supplies, labor, testing, and accessories required to furnish and install a complete Fire Alarm System as indicated on the drawings and as specified herein.
- C. All miscellaneous system components including, but not limited to, cables, termination equipment, punch blocks, patch panels, backboards, and any other related items shall be furnished and installed complete under this section, such that the system shall perform all functions listed herein in compliance with all of the specified requirements.
- D. The Fire Alarm System shall include, but not limited to, the following subsystems / products:
 - 1. See Products Section.
- E. Basic Performance:
 - 1. Alarm, trouble and supervisory signals from all intelligent reporting devices shall be encoded on NFPA Style 4 (Class B) Signaling Line Circuits (SLC).
 - 2. Device Circuits (IDC) shall be wired Class B (NFPA Style D) as part of an addressable device connected by the SLC Circuit.
 - 3. Notification Appliance Circuits (NAC) shall be wired Class A (NFPA Style Z) as part of an addressable device connected by the SLC Circuit.
 - 4. On Style 6 or 7 (Class A) configurations a single ground fault or open circuit on the system Signaling Line Circuit shall not cause system malfunction, loss of operating power or the ability to report an alarm.
 - 5. Alarm signals arriving at the FACP shall not be lost following a primary power failure (or outage) until the alarm signal is processed and recorded.
 - 6. Speaker circuits may be controlled by NAC outputs built into the amplifiers, which shall function as addressable points on the Digital Audio Loop.
 - 7. NAC speaker circuits shall be arranged such that there is a minimum of one speaker circuit per floor of the building or smoke zone whichever is greater.
 - 8. Audio amplifiers and tone generating equipment shall be electrically supervised for normal and abnormal conditions.
 - 9. NAC speaker circuits and control equipment shall be arranged such that loss of any one (1) speaker circuit will not cause the loss of any other speaker circuit in the system.
Two-way emergency telephone communication circuits shall be supervised for open and short circuit conditions.

Speaker circuits shall be arranged such that there is a minimum of one speaker circuit per smoke zone.

Speaker circuits shall be electrically supervised for open and short circuit conditions. If a short circuit exists on a speaker circuit, it shall not be possible to activate that circuit.

10. Audio amplifiers and tone generating equipment shall be electrically supervised for abnormal conditions. Digital amplifiers shall provide built-in speaker circuits, field configurable as four Class B (Style Y), or two Class A (Style Z) circuits.
11. Digital amplifiers shall be capable of storing up to two minutes of digitally recorded audio messages and tones. The digital amplifiers shall also be capable of supervising the connection to the associated digital message generator, and upon loss of that connection shall be capable of one of the following system responses:
 - a. The digital amplifier shall automatically broadcast the stored audio message.
 - b. The digital amplifier shall switch to a mode where a local bus input on the digital amplifier will accept an input to initiate a broadcast of the stored message. This bus input shall be connected to a NAC on a local FACP for the purpose of providing an alternate means of initiating an emergency message during a communication fault condition.
 - c. Speaker circuits shall be either 25 VRMS or 70VRMS. Speaker circuits shall have 20% space capacity for future expansion or increased power output requirements.
 - d. Two-way emergency telephone (Fire Fighter Telephone) communication shall be supported between the Audio Command Center and up to seven (7) remote Fire Fighter's Telephone locations simultaneously on a telephone riser.
 - e. Means shall be provided to connect FFT voice communications to the speaker circuits in order to allow voice paging over the speaker circuit from a telephone handset.
 - f. The digital audio message generator shall be of reliable, non-moving parts, and support the digital storage of up to 32 minutes of tones and emergency messages, shall support programming options to string audio segments together to create up to 1000 messages, or to loop messages and parts of messages to repeat for pre-determined cycles or indefinitely.

1.2 RELATED WORK

- A. Documents affecting work of this section include, but are not necessarily limited to, General Conditions, Supplementary Conditions and sections of Divisions 1 and 28 of these specifications.
- B. All applicable portions of Section 26 00 00 shall apply to this section as though written herein completely.

1.3 GENERAL REQUIREMENTS

- A. The contractor shall hold a valid State of California C-10 Low-Voltage license, shall have completed at least 20 projects of equal scope, shall have been in business of furnishing and installing systems of this scope and magnitude for at least five years, and capable of being bonded to assure the owner of performance and satisfactory service during the guarantee period.
- B. The contractor shall hold all other licenses required by the legally constituted authorities having jurisdiction over the work.

- C. All work shall be performed under the supervision of a company accredited by the basic equipment manufacturer and such accreditation must be presented.
- D. The installing contractor shall be a factory authorized distributor and warrantee station for the brand of equipment offered and shall maintain a fully equipped service organization capable of furnishing adequate repair service to the equipment. The installing contractor shall maintain a spare set of all major parts for the system at all times. All circuit boards, amplifiers and control sub systems shall be 100% backed up with stock at contractors shop.
- E. All of the equipment in this specification shall be furnished and installed by the Authorized Factory Distributor of the equipment. The Contractor shall furnish a letter from the manufacturer of all major equipment, which certifies that the installing contractor is the Authorized Distributor and that the equipment has been installed according to factory intended practices. The Contractor shall also furnish a written guarantee from the manufacturer that they will have a service representative assigned to this area for the life of the equipment.
- F. The fire alarm contractor shall be UL listed company under the UL classification of (UUJS). The installation company shall UL certify this installation.
- G. The fire alarm contractor shall have a NICET Certified and Technicians on staff in their facility directly involved with this project to ensure technical expertise to this project and adherence with these specifications.
- H. The fire alarm contractor shall maintain sufficient stock on hand and have a fully equipped service organization capable of guaranteeing response time within 8 hours of service calls, 24 hours a day, 7 days a week to service completed systems.
- I. Equipment, wire and materials shall only be installed by the fire alarm contractor / manufacture's distributor. A Contractor other than the manufacturer's distributor used to install the system is not acceptable.
- J. The fire alarm contractor/distributor shall provide, install and test all equipment related to this section.

1.4 QUALITY ASSURANCE

- A. In order to maintain a high degree of quality assurance, the contractor shall, without exception, use the parts and supplies as specified in this specification.
- B. No substitution will be accepted, this is a District standard product.
- C. It is the intent of these specifications to establish a standard of quality for labor and material to be installed. The Base Bid shall include materials as specified - without exception. No substitutions will be accepted.
- D. All of the equipment in this specification shall be furnished and installed by the Authorized Factory Distributor of the equipment with the most current software package available at the time of installation. At the time of Owner Acceptance of the installation, all equipment shall include any and all updated software revisions. In addition, when the software is available in disk format, a backup copy of the most up to date revision, in disk format, shall be handed to the Owner at the completion of the project.
- E. Conform to all of the applicable provisions of the following standards.

1. NFPA 72 – National Fire Alarm Code with California Amendments
2. CBC – California Building Code
3. CEC – California Electrical Code
4. CFC – California Fire Code
5. Local and State Building Codes.
6. All requirements of the Authority Having Jurisdiction (AHJ).

1.5 SUBMITTAL AND MANUAL

- A. Comply with all requirements of the General Conditions, Supplementary Conditions and applicable sections of Divisions 1 and 16 of these specifications.
- B. Additional requirements of this section are:
 1. Within thirty-five (35) calendar days after the date of award of the Contract, the Contractor shall submit eight copies of the complete submission to the Architect for review.
 2. The submission shall consist of five major sections with each section separated with index tabs. Each page in the submission shall be numbered chronologically and shall be summarized in the index.
 3. The first section shall be the "index" which shall include the project title and address, name of the firm submitting the proposal and name of the Architect.
 4. The second section shall include the following items:
 - a. Contractor's License: A copy of the electronics contractor's valid State of California License.
 - b. Proof of Experience: Proof that the fire alarm contractor has been regularly engaged in the business of fire alarm contracting consisting of, but not limited to, engineering, fabrication, installation, and servicing of fire alarm systems of the type specified herein for at least the past ten (10) consecutive years. Provide a statement summarizing any pending litigation involving any officer or principal of/or the company, the nature of the litigation and what effect the litigation may carry as it relates to this work in the worst case scenario. Non-disclosure of this item, if later discovered, may result, at the owner's discretion, in the contractor bearing all costs and any cost related to associated delays in the progress of the work.
 - c. Insurance Certificates: Copy of fire alarm contractor's current liability insurance and state industrial insurance certificates in conformance with the contract documents.
 - d. Project List: A List containing at least ten (10) California installations completed within the last five (5) years by the fire alarm contractor that are comparable in scope and nature to that specified in the contract document.
 - e. Service Capability: Documentation indicating in detail that the fire alarm contractor has competent engineering, installation, service personnel and facilities with reasonable stock of service parts within 100 air miles of the job site.

- f. Authorization Letters: Letters from the fire alarm equipment manufacturer stating that the fire alarm contractor is the Factory Authorized Distributor, and is trained and certified for the equipment he proposes to use on this project, and is licensed to purchase and install that software required to provide the specified functions.
 - g. Certification:
 - 1) Proof that the fire alarm contractor is Underwriters Laboratories, Inc. (UL) listed under the classification of "PROTECTIVE SIGNALING SERVICES-LOCAL, AUXILIARY, REMOTE STATION AND PROPRIETARY (UJJS).
 - 2) Copy of the following: (NICET) Certificates. Provide proof that the certificate holders are a part of the fire alarm contractor's local facility servicing this project and will be actively involved in this project.
 - a) Technician Level 2 minimum of (5).
 - b) Technician Level 4 minimum of (1)
 - h. Proof of Trained Personnel:
 - 1) Documentation that the fire alarm contractor has on staff personnel factory-trained and certified for the equipment proposed for this project. Also, provide a statement that personnel meeting these qualifications are in the local facility, and will be maintained at that facility throughout the project and the warranty period.
5. The third section shall contain the comparative specification listing, including a complete listing of the characteristics of the equipment to be furnished next to all of the specified equipment's features and functions as stated in the specifications and data sheets. Include CSFM listing sheet for each component.
6. The fourth section shall contain an original factory data sheet and csfm for every component in the specifications.
7. The fifth section shall contain a designation schedule for each Structured Cabling System location and complete 1/8" = 1'-0" scale drawing showing system wiring plans.
- a. Riser Diagram.
 - b. Typical Device Wiring Diagram.
 - c. Wire Legend, including types for zones and devices and color coding to be utilized.
 - d. Battery Calculation for each control panel, power supply, field power supply and network annunciator.
 - e. Worst Case Voltage drop for each circuit type per building.
 - f. Floor Plans showing all conduits, sizes, quantity of conductors.
 - g. Mounting Height of each devices and back box requirement.
 - h. Zoning and address description legend.

- C. Failure to comply with all of the requirements listed above will result in the rejection of the entire submittal package.
- D. The Contractor shall provide two copies of an "Operating and Servicing Manual" for the system. The manuals shall be bound in flexible binders. All data shall be printed material or typewritten. Each manual shall include the following: Instructions necessary for the proper operation and servicing of the system; complete as-built installation drawings of the system; a wiring destination schedule for each circuit leaving for each piece of equipment; a schematic diagram of major components with all transistor and IC complements and replacement number.

1.6 GENERAL SYSTEM PRODUCT, INSTALLATION AND OVERALL SYSTEM WARRANTY

- A. Prior to Owner acceptance, the contractor shall provide to Owner, a manufacturers product and performance warranty. This will require a submittal of the required pre-job certification registration forms as well as the required project closing information. The Owner will only acknowledge acceptance upon submittal of a valid manufacturer's warranty.
- B. The warranty shall commence from the date of final written acceptance by the Owner.
- C. All conditions for obtaining the manufacturers warranty shall be the sole responsibility of the contractor.
- D. The contractor shall maintain a competent service organization and shall, if requested, submit a service maintenance agreement to the owner after the end of the guarantee period.
- E. A typewritten notice shall be posted at the equipment rack that shall indicate the firm, address and telephone number to call when service is necessary. The notice shall be mounted in a neatly finished metal frame with a clear plastic window and securely attached to the inside of the door.

1.7 SPECIFIC SYSTEM PRODUCT, INSTALLATION AND OVERALL SYSTEM WARRANTY

- A. The entire system shall be warranted free of mechanical or electrical defects for a period of one (1) year after final acceptance of the installation. Any material showing mechanical or electrical defects shall be replaced promptly at no expense to the Owner.

1.8 DESCRIPTION

- A. The fire alarm system shall comply with requirements of NFPA Standard 72 for Protected Premises Signaling Systems except as modified and supplemented by this specification. The system shall be electrically supervised and monitor the integrity of all conductors.
- B. The facility shall have an emergency voice alarm communication system. Digitally stored message sequences shall notify the building occupants that a fire or life safety condition has been reported. Message generator(s) shall be capable of automatically distributing up to eight (8) simultaneous, unique messages to appropriate audio zones within the facility based on the type and location of the initiating event. The Fire Command Center (FCC) shall also support Emergency manual voice announcement capability for both system wide or selected audio zones, and shall include provisions for the system operator to override automatic messages system wide or in selected zones.
- C. The system shall be support additional, alternate Fire Command Centers, which shall be capable of simultaneous monitoring of all system events. Alternate Fire Command Centers shall also support an approved method of transferring the control functions to an alternate Fire Command Center when necessary. All Fire Command Centers shall be individually capable of assuming Audio Command

functions such as Emergency Paging, audio zone control functions, and Firefighter's Telephone communication functions.

- D. Each designated zone shall transmit separate and different alarm, supervisory and trouble signals to the Fire Command Center (FCC) and designated personnel in other buildings at the site via a multiplex communication network.
- E. The fire alarm system shall be manufactured by an ISO 9001:2008 certified company and meet the requirements of BS EN9001: ANSI/ASQC Q9001-1994
- F. The FACP and peripheral devices shall be manufactured 100% by a single U.S. manufacturer (or division thereof). It's acceptable for peripheral devices to be manufactured outside of the U.S. by a division of the U.S. based parent company.
- G. The system and its components shall be Underwriters Laboratories, Inc. listed under the appropriate UL testing standard as listed herein for fire alarm applications and the installation shall be in compliance with the UL listing.
- H. The installing company shall employ NICET (minimum Level II Fire Alarm Technology) technicians on site to guide the final checkout and to ensure the systems integrity.

1.9 POST CONTRACT MAINTENANCE:

- A. Complete maintenance and repair service for the fire and gas detection system shall be available from a factory trained authorized representative of the manufacturer of the major equipment for a period of five (5) years after expiration of the guaranty.
- B. As part of the bid/proposal, include a quote for a maintenance contract to provide all maintenance, required tests, and list pricing for any replacement products included on the bill of materials, along with the list pricing for products not on the bill of materials; if test and inspection rates are different than full service rates the bid/proposal shall include pricing for all levels for a minimum period of five (5) years Rates and costs shall be valid for the period of five (5) years after expiration of the guaranty.
- C. Include also a quote for unscheduled maintenance/repairs, including hourly rates for technicians trained on this equipment, and response travel costs for each year of the maintenance period. Submittals that do not identify all post contract maintenance costs will not be accepted. Rates and costs shall be valid for the period of five (5) years after expiration of the guaranty.
- D. As part of the submittal, include a quotation for all parts and material, and all installation and test labor as needed to increase the number of intelligent or addressable devices by ten percent (10%). This quotation shall include intelligent smoke detectors, intelligent heat detectors, addressable manual stations, addressable monitor modules and addressable modules equal in number to one tenth of the number required to meet this specification (list actual quantity of each type).
- E. The quotation shall include installation, test labor, and labor to reprogram the system for this 10% expansion. If additional FACP hardware is required, include the material and labor necessary to install this hardware.
- F. Do not include cost of conduit or wire or the cost to install conduit or wire except for labor to make final connections at the FACP and at each intelligent addressable device. Do not include the cost of conventional peripherals or the cost of initiating devices or notification appliances connected to the addressable monitor/control modules.

- G. Submittals that do not include this estimate of post contract expansion cost will not be accepted.

PART 2.0 PRODUCTS

2.1 MAIN FIRE ALARM CONTROL PANEL OR NETWORK NODE:

- A. Main FACP or network node shall be by GAMEWELL-FCI and shall contain a microprocessor based Central Processing Unit (CPU) and power supply. The CPU shall communicate with and control the following types of equipment used to make up the system: intelligent addressable smoke and thermal (heat) detectors, addressable modules, printer, annunciators, and other system controlled devices.
- B. In conjunction with intelligent Loop Control Modules and Loop Expander Modules, the main FACP shall perform the following functions:
 - 1. Supervise and monitor all intelligent addressable detectors and monitor modules connected to the system for normal, trouble and alarm conditions.
 - 2. Supervise all initiating signaling and notification circuits throughout the facility by way of connection to addressable monitor and control modules.
 - 3. Detect the activation of any initiating device and the location of the alarm condition. Operate all notification appliances and auxiliary devices as programmed. In the event of CPU failure, all SLC loop modules shall fallback to degrade mode. Such degrade mode shall treat the corresponding SLC loop control modules and associated detection devices as conventional two-wire operation. Any activation of a detector in this mode shall automatically activate associated Notification Appliance Circuits.

2.2 SYSTEM CAPACITY AND GENERAL OPERATION

- A. The FACP shall be capable of communicating on a Local Area Network (LAN) or Wide Area Network (WAN) utilizing a peer-to-peer, inherently regenerative communication format and protocol. The network shall support communication speed up to 100 Mb and support up to 200 panels / nodes per network.
- B. The control panel shall be capable of expansion via up to 10 SLC loops. Each module shall support up to 318 analog/addressable devices for a maximum system capacity of 3180 points. The Fire Alarm Control Panel shall include a full featured operator interface control and annunciation panel that shall include a backlit 640-character liquid crystal display, individual, color coded system status LEDs, and a keypad for the control of the fire alarm system. Said LCD shall also support graphic bit maps.
- C. All programming or editing of the existing program in the system shall be achieved without interrupting the alarm monitoring functions of the fire alarm control panel.
- D. The FACP shall be able to provide the following software and hardware features:
 - 1. Although not required on this project, the system shall have the ability of Pre-signal and Positive Alarm Sequence: The system shall provide means to cause alarm signals to only sound in specific areas with a delay of the alarm from 60 to up to 180 seconds after start of alarm processing. In addition, a Positive Alarm Sequence selection shall be available that allows a 15-second time period for acknowledging an alarm signal from a fire detection/initiating device. If the alarm is not acknowledged within 15 seconds, all local and remote outputs shall automatically activate immediately.

2. Smoke Detector Pre-alarm Indication at Control Panel: To obtain early warning of incipient or potential fire conditions, the system shall support a programmable option to determine system response to real-time detector sensing values above the programmed setting. Two levels of Pre-alarm indication shall be available at the control panel: alert and action.
3. Alert: It shall be possible to set individual smoke detectors for pre-programmed pre-alarm thresholds. If the individual threshold is reached, the pre-alarm condition shall be activated.
4. Action: If programmed for Action and the detector reaches a level exceeding the pre-programmed level, the control panel shall indicate an action condition. Sounder bases installed with either heat or smoke detectors shall automatically activate on action Pre-Alarm level, with general evacuation on Alarm level.
5. The system shall support a detector response time to meet world annunciation requirements of less than 3 seconds.
6. Device Blink Control: Means shall be provided to turn off detector/module LED strobes for special areas.
7. NFPA 72 Smoke Detector Sensitivity Test: The system shall provide an automatic smoke detector test function that meets the sensitivity testing requirements of NFPA 72.
8. Programmable Trouble Reminder: The system shall provide means to automatically initiate a reminder that troubles exist in the system. The remainder will appear on the system display and (if enabled) will sound a piezo alarm.
9. On-line or Off-line programming: The system shall provide means to allow panel programming either through an off-line software utility program away from the panel or while connected and on-line. The system shall also support upload and download of programmed database and panel executive system program to a Personal Computer/laptop. A single change to one CPU database shall not require a database download to other CPUs.
10. History Events: The panel shall maintain a history file of the last 4000 events, each with a time and date stamp. History events shall include all alarms, troubles, operator actions, and programming entries. The control panels shall also maintain a 1000 event Alarm History buffer, which consists of the 1000 most recent alarm events from the 4000 event history file.
11. Smoke Control Modes: The system shall provide means to perform FSCS mode Smoke Control to meet NFPA-92A and 90B and HVAC mode to meet NFPA 90A.
12. The system shall provide means for all SLC devices on any SLC loop to be auto programmed into the system by specific address. The system shall recognize specific device type ID's and associate that ID with the corresponding address of the device.
13. Passwords and Users: The system shall support two password levels, master and user. Up to 9 user passwords shall be available, each of which may be assigned access to the programming change menus, the alter status menus, or both. Only the master password shall allow access to password change screens.
14. Block Acknowledge: The system shall support a block Acknowledge for Trouble Conditions
15. Sensitivity Adjust: The system shall provide Automatic Detector Sensitivity Adjust based on Occupancy schedules including a Holiday list of up to 15 days.

16. Environmental Drift Control: The system shall provide means for setting Environmental Drift Compensation by device. When a detector accumulates dust in the chamber and reaches an unacceptable level but yet still below the allowed limit, the control panel shall indicate a maintenance alert warning. When the detector accumulates dust in the chamber above the allowed limit, the control panel shall indicate a maintenance urgent warning.
17. Custom Action Messages: The system shall provide means to enter up to 100 custom action messages of up to 160 characters each. It shall be possible to assign any of the 100 messages to any point.
18. Local Mode: If communication is lost to the central processor the system shall provide added survivability through the intelligent loop control modules. Inputs from devices connected to the SLC and loop control modules shall activate outputs on the same loop when the inputs and outputs have been set with point programming to participate in local mode or when the type codes are of the same type: that is, an input with a fire alarm type code shall activate an output with a fire alarm type code.
19. Read status preview - enabled and disabled points: Prior to re-enabling points, the system shall inform the user that a disabled device is in the alarm state. This shall provide notice that the device must be reset before the device is enabled thereby avoiding activation of the notification circuits.
20. Custom Graphics: When fitted with an LCD display, the panel shall permit uploading of a custom bit-mapped graphic to the display screen.
21. Multi-Detector and Cooperating Detectors: The system shall provide means to link one detector with up to two detectors at other addresses on the same loop in cooperative multi-detector sensing. There shall be no requirement for sequential addresses on the detectors and the alarm event shall be a result of all cooperating detectors chamber readings.
22. ACTIVE EVENT: The system shall provide a Type ID called FIRE CONTROL for purposes of air-handling shutdown, which shall be intended to override normal operating automatic functions. Activation of a FIRE CONTROL point shall cause the control panel to (1) initiate the monitor module Control-by-Event, (2) send a message to the panel display, history buffer, installed printer and annunciators, (3) shall not light an indicator at the control panel, (4) Shall display ACTIVE on the LCD as well as display a FIRE CONTROL Type Code and other information specific to the device.
23. NON-FIRE Alarm Module Reporting: A point with a type ID of NON-FIRE shall be available for use for energy management or other non-fire situations. NON-FIRE point operation shall not affect control panel operation nor shall it display a message at the panel LDC. Activation of a NON-FIRE point shall activate control by event logic but shall not cause any indication on the control panel.
24. Mass Notification Override: The system shall be UL 2572 listed for Mass Notification and shall be capable, based on the Risk Analysis, of being programmed so that Mass Notification/Emergency Communications events take precedence over fire alarm events.
25. Security Monitor Points: The system shall provide means to monitor any point as a type security.
26. One-Man Walk Test: The system shall provide both a basic and advanced walk test for testing the entire fire alarm system. The basic walk test shall allow a single operator to run audible tests on the panel. All logic equation automation shall be suspended during the test and while annunciators can be enabled for the test, all shall default to the disabled state. During an advanced walk test, field-supplied output point programming will react to input stimuli such as CBE and logic equations. When points are activated in advanced test mode, each initiating event shall latch the input. The

advanced test shall be audible and shall be used for pull station verification, magnet activated tests on input devices, input and output device and wiring operation/verification.

27. Control By Event Functions: CBE software functions shall provide means to program a variety of output responses based on various initiating events. The control panel shall operate CBE through lists of zones. A zone shall become listed when it is added to a point's zone map through point programming. Each input point such as detector, monitor module or panel circuit module shall support listing of up to 10 zones into its programmed zone map.
28. Permitted zone types shall be general zone, releasing zone and special zone. Each output point (control module, panel circuit module) can support a list of up to 10 zones including general zone, logic zone, releasing zone and trouble zone. It shall be possible for output points to be assigned to list general alarm. Non-Alarm or Supervisory points shall not activate the general alarm zone.
29. 1000 General Zones: The system shall support up to 1000 general purpose software zones for linking inputs to outputs. When an input device activates, any general zone programmed into that device's zone map will be active and any output device that has an active general zone in its map will be active. It shall also be possible to use general zone as arguments in logic equations.
30. 1000 Logic Equations: The system shall support up to 1000 logic equations for AND, OR, NOT, ONLY1, ANYX, XZONE or RANGE operators that allow conditional I/O linking. When any logic equation becomes true, all output points mapped to the logic zone shall activate.
31. 100 trouble equations per device: The system shall provide support for up to 100 trouble equations for each device, which shall permit programming parameters to be altered, based on specific fault conditions. If the trouble equation becomes true, all output points mapped to the trouble zone shall activate.
32. Control-By-Time: A time based logic function shall be available to delay an action for a specific period of time based upon a logic input with tracking feature. A latched version shall also be available. Another version of this shall permit activation on specific days of the week or year with ability to set and restore based on a 24 hour time schedule on any day of the week or year.
33. Multiple agent releasing zones: The system shall support up to 10 releasing zones to protect against 10 independent hazards. Releasing zones shall provide up to three cross-zone and four abort options to satisfy any local jurisdiction requirements.
34. Alarm Verification, by device, with timer and tally: The system shall provide a user-defined global software timer function that can be set for a specific detector. The timer function shall delay an alarm signal for a user-specified time period and the control panel shall ignore the alarm verification timer if another alarm is detected during the verification period. It shall also be possible to set a maximum verification count between 0 and 20 with the "0" setting producing no alarm verification. When the counter exceeds the threshold value entered, a trouble shall be generated to the panel.
35. System shall monitor CO thru the Fire/CO detectors and provide supervisory signal at Central Station, FACP and Annunciator, along with providing a ANSI Temporal 4 tone to the affected areas.

E. Network Communication

1. The FACP shall be capable of communicating over a Local Area Network (LAN) or Wide Area Network (WAN) utilizing a peer-to-peer, inherently regenerative communication format and

protocol. The network shall support communication speed up to 100 Mb and support up to 200 panels/nodes per network.

F. FACPCentral Processing Unit

1. The Central Processing Unit shall contain and execute all control-by-event (including Boolean functions including but not limited to AND, OR, NOT, ANYx, and CROSSZONE) programs for specific action to be taken if an alarm condition is detected by the system. Such control-by-event programs shall be held in non-volatile programmable memory, and shall not be lost with system primary and secondary power failure.
2. The Central Processing Unit shall also provide a real-time clock for time annotation, to the second, of all system events. The time-of-day and date shall not be lost if system primary and secondary power supplies fail.
3. The CPU shall be capable of being programmed on site without requiring the use of any external programming equipment. Systems that require the use of external programmers or change of EPROMs are not acceptable.
4. The CPU shall provide an EIA-232 interface between the fire alarm control panel and the UL Listed Electronic Data Processing (EDP) peripherals.
5. The CPU shall provide two EIA-485 ports for the serial connection to annunciation and control subsystem components.
6. The EIA-232 serial output circuit shall be optically isolated to assure protection from earth ground.

G. Display

1. The system display shall provide a 640-character backlit alphanumeric Liquid Crystal Display (LCD). It shall also provide eleven Light-Emitting-Diodes (LEDs) that indicate the status of the following system parameters: AC POWER, FIRE ALARM, PREALARM, SECURITY, SUPERVISORY, SYSTEM TROUBLE, OTHER EVENT, SIGNALS SILENCED, POINT DISABLED, CONTROLS ACTIVE, and CPU FAILURE.
2. The system display shall provide a QWERTY style keypad with control capability to command all system functions, entry of any alphabetic or numeric information, and field programming. Two different password levels with up to ten (one Master and nine User) passwords shall be accessible through the display interface assembly to prevent unauthorized system control or programming.

H. Loop (Signaling Line Circuit) Control Module:

1. The Loop Control Module shall monitor and control a minimum of 318254318 intelligent addressable devices. This includes 159 159127 intelligent detectors (Ionization, Photoelectric, or Thermal) and 159127159monitor or control modules.
2. The Loop Control Module shall contain its own microprocessor and shall be capable of operating in a local/degrade mode (any addressable device input shall be capable of activating any or all addressable device outputs) in the unlikely event of a failure in the main CPU.
3. Each Loop shall be capable of operating as a NFPA Style 4 (Class B) circuit. Fault isolation modules shall be installed between each addressable SLC device per the manufacturers installation

instructions. Systems which cannot provide full loop loading in Style 7 configurations are not acceptable.

4. The SLC interface board shall receive analog or digital information from all intelligent detectors and shall process this information to determine whether normal, alarm, or trouble conditions exist for that particular device. Each SLC Loop shall be isolated and equipped to annunciate an Earth Fault condition. The SLC interface board software shall include software to automatically maintain the detector's desired sensitivity level by adjusting for the effects of environmental factors, including the accumulation of dust in each detector. The analog information may also be used for automatic detector testing and the automatic determination of detector maintenance requirements.
- I. Digital Voice Command Center
 1. The Digital Voice Command Center located with the FACP, shall contain all equipment required for all audio control, emergency telephone system control, signaling and supervisory functions. This shall include speaker zone indication and control, telephone circuit indication and control, digital voice units, microphone and main telephone handset.
 2. Function: The Voice Command Center equipment shall perform the following functions:
 - a. Operate as a supervised multi-channel emergency voice communication system.

Operate as a two-way emergency telephone system control center.
 - b. Audibly and visually annunciate the active or trouble condition of every speaker circuit and emergency telephone circuit.
 - c. Audibly and visually annunciate any trouble condition for digital tone and voice units required for normal operation of the system.
 - d. Provide all-call Emergency Paging activities through activation of a single control switch.
 - e. As required, provide vectored paging control to specific audio zones via dedicated control switches.
 - f. Provide a factory recorded "library" of voice messages and tones in standard WAV. File format, which may be edited and saved on a PC running a current Windows® operating system.
 - g. Provide a software utility capable of off-line programming for the DVC operation and the audio message files. This utility shall support the creation of new programs as well as editing and saving existing program files. Uploading or downloading the DVC shall not inhibit the emergency operation of other nodes on the fire alarm network.
 - h. Support an optional mode of operation with four analog audio outputs capable of being used with UL 864 fire-listed analog audio amplifiers and SLC controlled switching.
 - i. The Digital Voice Command shall be modular in construction, and shall be capable of being field programmable without requiring the return of any components to the manufacturer and without requiring use of any external computers or other programming equipment.
 - j. The Digital Voice Command and associated equipment shall be protected against unusually

high voltage surges or line transients.

J. Power Supply:

1. The Main Power Supply shall operate on 120/240 VAC, 50/60 Hz, and shall provide all necessary power for the FACP.
2. The Main Power Supply shall provide the required power to the CPU using a switching 24 VDC regulator and shall incorporate a battery charger for 24 hours of standby power using dual-rate charging techniques for fast battery recharge.
3. The Main Power Supply shall provide a battery charger for 24 hours of standby using dual-rate charging techniques for fast battery recharge. The supply shall be capable of charging batteries ranging in capacity from 7-200 amp-hours within a 48-hour period.
4. The Main Power Supply shall provide a very low frequency sweep earth detect circuit, capable of detecting earth faults.
5. The Main Power Supply shall be power-limited per UL864 requirements.
6. The Main Power Supply shall communicate power supply, line voltage, battery status and charger status to the local LCD display. Any abnormal condition shall be annunciated and logged to the system alarm history log.
7. Addressable Charger Power Supply: The auxiliary addressable power supply is a remote 24 VDC power supply used to power Notification Devices and field devices that require regulated 24 VDC power.
8. The addressable power supply for the fire and gas detection system shall provide up to a minimum of 6.0 amps of 24 volt DC regulated power for Notification Appliance Circuit (NAC) power or 10.0 amps of 24 volt DC general power. The power supply shall have an additional 0.5 amp of 24 VDC auxiliary power for use within the same cabinet as the power supply. It shall include an integral charger designed to charge 12 - 200 amp hour batteries.
9. The addressable power supply shall provide four individually addressable Notification Appliance Circuits that may be configured as Class "A" or Class "B" circuits. All circuits shall be power-limited per UL 864 requirements.
10. The addressable power supply shall provide built-in synchronization for certain Notification Appliances on each circuit without the need for additional synchronization modules. The power supply's output circuits shall be individually selected for synchronization. A single addressable power supply shall be capable of supporting both synchronized and non-synchronized Notification Devices at the same time.
11. The addressable power supply shall operate on 120 or 240 VAC, 50/60 Hz.
12. The interface to the power supply from the Fire Alarm Control Panel (FACP) shall be via the Signaling Line Circuit (SLC) or other multiplexed means Power supplies that do not use an intelligent interface are not suitable substitutes. The required wiring from the FACP to the addressable power supply shall be a single unshielded twisted pair wire.
13. The addressable power supply shall supervise for battery charging failure, AC power loss, power brownout, battery failure, NAC loss, and optional ground fault detection. In the event of a trouble

condition, the addressable power supply shall report the incident and the applicable address to the FACP via the SLC.

14. The addressable power supply shall have an AC Power Loss Delay option. If this option is utilized and the addressable power supply experiences an AC power loss, reporting of the incident to the FACP will be delayed. A delay time of zero, two, eight or sixteen hours shall be programmable.
15. The addressable power supply shall have an option for Canadian Trouble Reporting and this option shall be programmable.
16. The addressable power supply mounts in either the FACP backbox or its own dedicated surface mounted backbox with cover.
17. Each of the power supply's four output circuits shall be programmed- for Notification Appliance Circuit or General Purpose 24 VDC power. Any output circuit shall be able to provide up to 2.5 amps of 24 VDC power.
18. The addressable power supply's output circuits shall be individually supervised when they are selected to be either a Notification Appliance Circuit when wired Class "A" or by the use of an end-of-line resistor. When the power supply's output circuit is selected as General 24 VDC power, the circuit shall be individually supervised when an end-of-line relay is used.
19. When selected for Notification Appliance Circuits, the output circuits shall be individually programmable for Steady, March Time, Dual Stage or Temporal.
20. When selected as a Notification Appliance Circuit, the output circuits of the addressable power supply shall have the option to be coded by the use of a universal zone coder.
21. The addressable power supply shall interface and synchronize with other power supplies of the same type. The required wiring to interface multiple addressable power supplies shall be a single unshielded, twisted pair wire.
22. An individual or multiple interfaced addressable power supplies shall have the option to use an external charger for battery charging. Interfaced power supplies shall have the option to share backup battery power.

K. Audio Amplifiers

1. The Audio Amplifiers will provide Audio Power (@25 Volts RMS@70 Volts RMS) for distribution to speaker circuits.
2. Multiple audio amplifiers may be mounted in a single enclosure, either to supply incremental audio power, or to function as an automatically switched backup amplifier(s).
3. The audio amplifier shall include an integral power supply, and shall provide built-in LED indicators for the following conditions:
 - a. Earth Fault on DAP A (Digital Audio Port A)
 - b. Earth Fault on DAP B (Digital Audio Port B)
 - c. Audio Amplifier Failure Detected Trouble

- d. Active Alarm Bus input
 - e. Audio Detected on Aux Input A
 - f. Audio Detected on Aux Input B
 - g. Audio Detected on Firefighter's Telephone Riser
 - h. Receiving Audio from digital audio riser
 - i. Short circuit on speaker circuit 1
 - j. Short circuit on speaker circuit 2
 - k. Short circuit on speaker circuit 3
 - l. Short circuit on speaker circuit 4
 - m. Data Transmitted on DAP A
 - n. Data Received on DAP A
 - o. Data Transmitted on DAP B
 - p. Data Received on DAP B
 - q. Board failure
 - r. Active fiber optic media connection on port A (fiber optic media applications)
 - s. Active fiber optic media connection on port B (fiber optic media applications)
 - t. Power supply Earth Fault
 - u. Power supply 5V present
 - v. Power supply conditions - Brownout, High Battery, Low Battery, Charger Trouble
4. The audio amplifier shall provide the following built-in controls:
- a. Amplifier Address Selection Switches
 - b. Signal Silence of communication loss annunciation Reset
 - c. Level adjustment for background music
 - d. Enable/Disable for Earth Fault detection on DAP A
 - e. Enable/Disable for Earth Fault detection on DAP A
 - f. Switch for 2-wire/4-wire FFT riser

5. Adjustment of the correct audio level for the amplifier shall not require any special tools or test equipment.
 6. Includes audio input and amplified output supervision, back up input, and automatic switch over function, (if primary amplifier should fail).
 7. System shall be capable of backing up digital amplifiers.
 8. One-to-one backup shall be provided by either a plug-in amplifier card or a designated backup amplifier of identical model as the primary amplifier.
 9. One designated backup amplifier shall be capable of backing up multiple primary amplifiers mounted in the same or adjacent cabinets.
 10. Multi-channel operation from a single amplifier shall be supported by the addition of an optional plug-in amplifier card.
- L. Audio Message Generator (Prerecorded Voice)/Speaker Control:
1. Each initiating zone or intelligent device shall interface with an emergency voice communication system capable of transmitting a prerecorded voice message to all speakers in the building.
 2. Actuation of any alarm initiating device shall cause a prerecorded message to sound over the speakers. The message shall be repeated four (4) times. Pre- and post-message tones shall be supported.
 3. A built-in microphone shall be provided to allow paging through speaker circuits.
 4. System paging from emergency telephone circuits shall be supported.
 5. The audio message generator shall have the following indicators and controls to allow for proper operator understanding and control:
 - a. Lamp Test
 - b. Trouble
 - c. Off-Line Trouble
 - d. Microphone Trouble
 - e. Phone Trouble
 - f. Busy/Wait
 - g. Page Inhibited
 - h. Pre/Post Announcement Tone
- M. Controls with associated LED Indicators:
1. Speaker Switches/Indicators

- a. The speaker circuit control switches/indicators shall include visual indication of active and trouble status for each speaker circuit in the system.
 - b. The speaker circuit control panel shall include switches to manually activate or deactivate each speaker circuit in the system.\
2. Emergency Two-Way Telephone Control Switches/Indicators
 - a. The emergency telephone circuit control panel shall include visual indication of active and trouble status for each telephone circuit in the system.
 - b. The telephone circuit control panel shall include switches to manually activate or deactivate each telephone circuit in the system.
- N. Remote Transmissions:
1. Provide local energy or polarity reversal or trip circuits as required.
 2. The system shall be capable of operating a polarity reversal or local energy or fire alarm transmitter for automatically transmitting fire information to the fire department.
 3. Provide capability and equipment for transmission of zone alarm and trouble signals to remote operator's terminals, system printers and annunciators.
 4. Transmitters shall be compatible with the systems and equipment they are connected to such as timing, operation and other required features.
- O. Field Programming
1. The system shall be programmable, configurable and expandable in the field without the need for special tools, laptop computers, or other electronic interface equipment. There shall be no firmware changes required to field modify the system time, point information, equations, or annunciator programming/information.
 2. It shall be possible to program through the standard FACP keyboard all system functions.
 3. All field defined programs shall be stored in non-volatile memory. Two levels of password protection shall be provided in addition to a key-lock cabinet. One level shall be used for status level changes such as point/zone disable or manual on/off commands (Building Manager). A second (higher-level) shall be used for actual change of the life safety program (installer). These passwords shall be five (5) digits at a minimum. Upon entry of an invalid password for the third time within a one minute time period an encrypted number shall be displayed. This number can be used as a reference for determining a forgotten password.
 4. The system programming shall be "backed" up via an upload/download program, and stored on compatible removable media. A system back-up disk shall be completed and given in duplicate to the building owner and/or operator upon completion of the final inspection. The program that performs this function shall be "non-proprietary", in that, it shall be possible to forward it to the building owner/operator upon his or her request.
 5. The installer's field programming and hardware shall be functionally tested on a computer against known parameters/norms which are established by the FACP manufacturer. A software program shall test Input-to-Output correlations, device Type ID associations, point associations, time

equations, etc. This test shall be performed on an IBM-compatible PC with a verification software package. A report shall be generated of the test results and two copies turned in to the engineer(s) on record.

P. Specific System Operations

1. Smoke Detector Sensitivity Adjust: A means shall be provided for adjusting the sensitivity of any or all addressable intelligent detectors in the system from the system keypad. Sensitivity range shall be within the allowed UL window and have a minimum of 9 levels.
2. Alarm Verification: Each of the intelligent addressable smoke detectors in the system may be independently selected and enabled to be an alarm verified detector. The alarm verification delay shall be programmable from 0 to 60 seconds and each detector shall be able to be selected for verification. The FACP shall keep a count of the number of times that each detector has entered the verification cycle. These counters may be displayed and reset by the proper operator commands.

Q. System Point Operations:

1. Any addressable device in the system shall have the capability to be enabled or disabled through the system keypad or video terminal.
2. System output points shall be capable of being turned on or off from the system keypad or the video terminal.
3. Point Read: The system shall be able to display the following point status diagnostic functions without the need for peripheral equipment. Each point shall be annunciated for the parameters listed:
 - a. Device Status.
 - b. Device Type.
 - c. Custom Device Label.
 - d. Software Zone Label.
 - e. Device Zone Assignments.
 - f. Analog Detector Sensitivity.
 - g. All Program Parameters.
4. System History Recording and Reporting: The fire alarm control panel shall contain a history buffer that will be capable of storing up to 4000 system events. Each of these events will be stored, with time and date stamp, until an operator requests that the contents be either displayed or printed. The contents of the history buffer may be manually reviewed; one event at a time, and the actual number of activations may also be displayed and or printed. History events shall include all alarms, troubles, operator actions, and programming entries.
5. The history buffer shall use non-volatile memory. Systems which use volatile memory for history storage are not acceptable.

6. Automatic Detector Maintenance Alert: The fire alarm control panel shall automatically interrogate each intelligent system detector and shall analyze the detector responses over a period of time.
7. If any intelligent detector in the system responds with a reading that is below or above normal limits, then the system will enter the trouble mode, and the particular Intelligent Detector will be annunciated on the system display, and printed on the optional system printer. This feature shall in no way inhibit the receipt of alarm conditions in the system, nor shall it require any special hardware, special tools or computer expertise to perform.
8. The system shall include the ability (programmable) to indicate a "pre-alarm" condition. This will be used to alert maintenance personal when a detector is at 80% of its alarm threshold in a 60 second period.

2.3 SYSTEM COMPONENTS:

A. Conventional Aspirating Detection

1. An optional air aspiration detection system shall be available.
2. The aspirating system shall support multiple sensitivity settings.
3. The aspirating system shall operate from 24 VDC.
4. The aspirating system shall provide alarm and trouble relays used to activate a fire alarm control panel.

B. Aspiration System Interface:

1. The system shall be capable of supporting Interface Modules for integrating Vesda Aspiration detectors into SLC loop of the fire alarm control panel. The Interface Module shall support up to 19 detectors, each SLC loop shall support one interface module.

C. High Level Aspiration System Interface:

1. The system shall be capable of supporting a High Level Interface for Vesda Aspirating Detection Systems. The interface shall support up to 100 detectors and allow the fire alarm network to monitor and control events on the aspiration system.

D. Portable Emergency Telephone Handset Jack

1. Portable emergency telephone handset jacks shall be flush mounted on stainless steel plates as indicated on plans. Handset jacks shall be approved for emergency telephone system application.
2. Insertion of a remote handset plug into a jack shall send a signal to the fire command center which shall audibly and visually indicate the on-line condition, and shall sound a ring indication in the handset.
3. The two-way emergency telephone system shall support a minimum of seven (7) handsets on line without degradation of the signal.

E. Fixed Emergency Telephone Handset

1. The telephone cabinet shall be painted red and clearly labeled emergency telephone. The cabinets shall be located where shown on drawings.
 2. The handset cradle shall have a switch connection such that lifting the handset off of the cradle shall send a signal to the fire command center which shall audibly and visually indicate its on-line (off-hook) condition.
 3. The two-way emergency telephone system shall support a maximum of seven (7) handsets on line (off hook) without degradation of the signal.
- F. Universal Digital Alarm Communicator Transmitter (UDACT). The UDACT is an interface for communicating digital information between a fire alarm control panel and an UL-Listed central station.
1. The UDACT shall be compact in size, mounting in a standard module position of the fire alarm control cabinet. Optionally, the UDACT shall have the ability for remote mounting, up to 6,000 feet from the fire alarm control panel. The wire connections between the UDACT and the control panel shall be supervised with one pair for power and one pair for multiplexed communication of overall system status. Systems that utilize relay contact closures are not acceptable.
 2. The UDACT shall include connections for dual telephone lines (with voltage detect), per UL/NFPA/FCC requirements. It shall include the ability for split reporting of panel events up to two different telephone numbers.
 3. The UDACT shall be capable of transmitting events in 4+2, SIA, and Contact ID.
 4. Communication shall include vital system status such as:
 - a. Independent Zone (Alarm, trouble, non-alarm, supervisory)
 - b. Independent Addressable Device Status
 - c. AC (Mains) Power Loss
 - d. Low Battery and Earth Fault
 - e. System Off Normal
 - f. 12 and 24 Hour Test Signal
 - g. Abnormal Test Signal (per UL requirements)
 - h. EIA-485 Communications Failure
 - i. Phone Line Failure
 5. The UDACT shall support independent zone/point reporting when used in the Contact ID format. In this format the UDACT shall support transmission of up to 3,064 points. This enables the central station to have exact details concerning the origin of the fire or response emergency.
 6. The UDACT shall be capable of being programmed with the same programming utility as the host FACP, and saved, edited and uploaded and downloaded using the utility. UDACT shall be capable of being programmed online or offline. The programming utility shall also support upgrading UDACT operating firmware.

7. The UDACT shall be capable of generating Central Station reports providing detailed programming information for each point along with the central station point address.
 8. An IP or IP/GSM Communicator option shall be available to interface to the UDACT and be capable of transmitting signals over the internet/intranet or Cellular (GSM) network to a compatible receiver.
- G. Field Wiring Terminal Blocks
1. For ease of service all panel I/O wiring terminal blocks shall be removable, plug-in types and have sufficient capacity for #18 to #12 AWG wire. Terminal blocks that are permanently fixed are not acceptable.
- H. Printer
1. The printer shall provide hard-copy printout of all changes in status of the system and shall time-stamp such printouts with the current time-of-day and date. The printer shall be standard carriage with 80-characters per line and shall use standard pin-feed paper. The printer shall be enclosed in a separate cabinet suitable for placement on a desktop or table. The printer shall communicate with the control panel using an interface complying with Electrical Industries Association standard EIA-232D. Power to the printer shall be 120 VAC @ 60 Hz.
 2. The system shall have a strip printer capable of being mounted directly in the main FACP enclosure. Alarms shall be printed in easy-to-read RED, other messages, such as a trouble, shall be printed in BLACK. This printer shall receive power from the system power supply and shall operate via battery back-up if AC mains are lost. The strip printer shall be UL 864 listed.
 3. The system shall have a strip printer capable of being mounted directly in the main FACP enclosure. Alarms shall be printed in easy-to-read RED, other messages, such as a trouble, shall be printed in BLACK. This printer shall receive power from the system power supply and shall operate via battery back-up if AC mains are lost. The strip printer shall be UL 864 listed.
- I. Smoke Control Annunciator
1. On/Auto/Off switches and status indicators (LEDS) shall be provided for monitoring and manual control of each fan, damper, HVAC control unit, stairwell pressurization fan, and smoke exhaust fan. To ensure compliance the units supplied shall meet the following UL categories: UUKL, PAZX, UDTZ, QVAX as well as the requirements of NFPA 90A, HVAC, and NFPA 92A & 92B, Smoke Control. The control System shall be field programmable for either 90A operation or 92A/B operation to allow for future use and system expansion.
 2. The OFF LED shall be Yellow, the ON LED shall be green, the Trouble/Fault LED shall be Amber/Orange for each switch. The Trouble/Fault indicator shall indicate a trouble in the control and/or monitor points associated with that switch. In addition, each group of eight switches shall have two LEDs and one momentary switch which allow the following functions: An Amber LED to indicate an OFF-NORMAL switch position, in the ON or OFF position; A Green LED to indicate ALL AUTO switch position; A Local Acknowledge/Lamp Test momentary switch.
 3. Each switch shall have the capability to monitor and control two addressable inputs and two addressable outputs. In all modes, the ON and OFF indicators shall continuously follow the device status not the switch position. Positive feedback shall be employed to verify correct operation of the device being controlled. Systems that indicate on/off/auto by physical switch position only are not acceptable.

4. All HVAC switches (i.e., limit switches, vane switches, etc.) shall be provided and installed by the HVAC contractor.
5. It shall be possible to meet the requirements mentioned above utilizing wall mounted custom graphic.

2.4 GATEWAY & WEBSERVER OPTIONS

- A. Common Alerting Protocol (CAP) Gateway: The system shall support an optional CAP Gateway (Common Alerting Protocol). The CAP Gateway translates fire system messages to industry standard CAP messages for integration with CAP-compliant clients. A CAP gateway shall be available from the fire alarm control panel manufacturer.
- B. LEDSIGN Gateway: The system shall support an optional and proprietary LEDSIGN Gateway to interface to LED signs that will automatically display emergency messages. The signs shall be capable of storing up to 100 messages that can be activated via system programming with the ability to be manually overridden. The Sign Gateway shall support up to 10 independent signs, each sign capable of playing an independent message. Multiple LEDSIGN Gateways can be used in network applications. An LEDSIGN gateway shall be available from the fire alarm control panel manufacturer.
- C. BACnet Interface Gateway: The system shall be capable of being interfaced with BACNet compliant clients. A BACnet interface supporting BACnet/IP communication shall be available from the fire alarm control panel manufacturer.
- D. MODbus Interface Gateway: The system shall be capable of being interfaced with MODbus compliant clients. A MODbus interface supporting MODbus/TCP communication shall be available from the fire alarm control panel manufacturer.
- E. Noti-Fire-Net Gateway: The system shall support an IP based gateway to enable the panel or local Noti-Fire-Net to be connected to an ONYXWorks workstation via the Internet or Intranet. This gateway shall also support the ability to integrate the system to an interactive firefighter's display. The Noti-Fire-Net Gateway shall be available from the fire alarm control manufacturer.
- F. Webserver: The system shall support a webserver allowing remote connection via the Internet or Intranet. Authorized users will have the ability to view panel/network history, event status and device properties. The webserver shall also support sending event information via email or text to up to 50 registered users, the webserver shall be available from the fire alarm control panel manufacturer.
- G. Web Portal Interface: The system shall be capable of being interfaced with a web portal to integrate with Inspection and Service Manager utilities. The web portal and inspection and service manager utilities shall be available from the fire alarm control panel manufacturer.

2.5 SYSTEM COMPONENTS - ADDRESSABLE DEVICES

- A. Addressable Devices – General
 1. Addressable devices shall provide an address-setting means using rotary decimal switches. Addressable devices that require the address be programmed using a programming utility are not an allowable substitute.
 2. Addressable devices shall use simple to install and maintain decade, decimal address switches. Devices shall be capable of being set to an address in a range of 001 to 159.

3. Addressable devices, which use a binary-coded address setting method, such as a DIP-switch, are not an allowable substitute. Addressable devices that require the address be programmed using a special tool or programming utility are not an allowable substitute.
 4. Addressable devices, which use a binary-coded address setting method, such as a DIP-switch, are not an allowable substitute. Addressable devices that require the address be programmed using a special tool or programming utility are not an allowable substitute.
 5. Detectors shall be intelligent (analog) and addressable, and shall connect with two wires to the fire alarm control panel Signaling Line Circuits.
 6. Addressable smoke and thermal detectors shall provide dual alarm and power/polling LEDs. Both LEDs shall flash green under normal conditions, indicating that the detector is operational and in regular communication with the control panel, and both LEDs shall be placed into steady red illumination by the control panel, indicating that an alarm condition has been detected. If required, the LED flash shall have the ability to be removed from the system program. An output connection shall also be provided in the base to connect an external remote alarm LED.
 7. The fire alarm control panel shall permit detector sensitivity adjustment through field programming of the system. The panel on a time-of-day basis shall automatically adjust sensitivity.
 8. Using software in the FACP, detectors shall automatically compensate for dust accumulation and other slow environmental changes that may affect their performance. The detectors shall be listed by UL as meeting the calibrated sensitivity test requirements of NFPA Standard 72.
 9. The detectors shall be ceiling-mount and shall include a separate twist-lock base with tamper proof feature. Base options shall include a sounder base with a built-in (local) sounder rated at 85 DBA minimum, a relay base and an isolator base designed for Style 7 applications. The system shall also support an intelligent programmable sounder base, the programmable sounder base shall be capable of providing multiple tones based on programming and at a minimum be capable of providing a Temp-4 tone for CO (Carbon Monoxide) activation and a Temp-3 tone for fire activations and be capable of being synchronized with other programmable sounder bases and common area notification appliances; 85 DBA minimum.
 10. Detectors shall also store an internal identifying type code that the control panel shall use to identify the type of device (ION, PHOTO, THERMAL).
 11. Detectors will operate in an analog fashion, where the detector simply measures its designed environment variable and transmits an analog value to the FACP based on real-time measured values. The FACP software, not the detector, shall make the alarm/normal decision, thereby allowing the sensitivity of each detector to be set in the FACP program and allowing the system operator to view the current analog value of each detector.
 12. Addressable devices shall store an internal identifying code that the control panel shall use to identify the type of device.
 13. A magnetic test switch shall be provided to test detectors and modules. Detectors shall report an indication of an analog value reaching 100% of the alarm threshold.
 14. Addressable modules shall mount in a 4-inch square (101.6 mm square), 2-1/8 inch (54 mm) deep electrical box. An optional surface mount Lexan enclosure shall be available.
- B. Addressable Manual Fire Alarm Box (manual station)

1. Addressable manual fire alarm boxes shall, on command from the control panel, send data to the panel representing the state of the manual switch and the addressable communication module status. They shall use a key operated test-reset lock, and shall be designed so that after actual emergency operation, they cannot be restored to normal use except by the use of a key.
 2. All operated stations shall have a positive, visual indication of operation and utilize a key type reset.
 3. Manual fire alarm boxes shall be constructed of Lexan with clearly visible operating instructions provided on the cover. The word FIRE shall appear on the front of the stations in raised letters, 1.75 inches (44 mm) or larger.
- C. Intelligent Photoelectric Smoke Detector: The intelligent photoelectric smoke detector shall be GAMEWELL-FCI model and shall use the photoelectric (light-scattering) principal to measure smoke density and shall, on command from the control panel, send data to the panel representing the analog level of smoke density.
- D. Intelligent VIEW® Laser Photo Smoke Detector: The intelligent laser photo smoke detector shall be a spot type detector, GAMEWELL-FCI model, that incorporates an extremely bright laser diode and an integral lens that focuses the light beam to a very small volume near a receiving photo sensor. The scattering of smoke particles shall activate the photo sensor.
1. The laser detector shall have conductive plastic so that dust accumulation is reduced significantly.
 2. The intelligent laser photo detector shall have nine sensitivity levels and be sensitive to a minimum obscuration of 0.02 percent per foot.
 3. The laser detector shall not require expensive conduit, special fittings or PVC pipe.
 4. The intelligent laser photo detector shall support standard, relay, isolator and sounder detector bases.
 5. The laser photo detector shall not require other cleaning requirements than those listed in NFPA 72. Replacement, refurbishment or specialized cleaning of the detector head shall not be required.
 6. The laser photo detector shall include two bicolor LEDs that flash green in normal operation and turn on steady red in alarm.
- E. Intelligent Ionization Smoke Detector: The intelligent ionization smoke detector shall be GAMEWELL-FCI model and shall use the dual-chamber ionization principal to measure products of combustion and shall, on command from the control panel, send data to the panel representing the analog level of products of combustion.
- F. Intelligent Multi Criteria Acclimating Detector: The intelligent multi-criteria Acclimate® Plus™ detector shall be an addressable device, GAMEWELL-FCI model, that is designed to monitor a minimum of photoelectric and thermal technologies in a single sensing device. The design shall include the ability to adapt to its environment by utilizing a built-in microprocessor to determine its environment and choose the appropriate sensing settings. The detector design shall allow a wide sensitivity window, no less than 1 to 4% per foot obscuration. This detector shall utilize advanced electronics that react to slow smoldering fires and thermal properties all within a single sensing device.
1. The microprocessor design shall be capable of selecting the appropriate sensitivity levels based on the environment type it is in (office, manufacturing, kitchen etc.) and then have the ability to automatically change the setting as the environment changes (as walls are moved or as the

occupancy changes).

2. The intelligent multi criteria detection device shall include the ability to combine the signal of the thermal sensor with the signal of the photoelectric signal in an effort to react hastily in the event of a fire situation. It shall also include the inherent ability to distinguish between a fire condition and a false alarm condition by examining the characteristics of the thermal and smoke sensing chambers and comparing them to a database of actual fire and deceptive phenomena.
- G. Intelligent Thermal Detectors: The intelligent thermal detectors shall be GAMEWELL-FCI addressable devices rated at 135 degrees Fahrenheit (58 degrees Celsius) and have a rate-of-rise element rated at 15 degrees F (9.4 degrees C) per minute. A high heat thermal detector rated at 190 degrees Fahrenheit shall also be available. The thermal detectors shall connect via two wires to the fire alarm control panel signaling line circuit.
- H. Intelligent Duct Smoke Detector: The smoke detector housing shall accommodate an intelligent photoelectric detector that provides continuous analog monitoring and alarm verification from the panel. When sufficient smoke is sensed, an alarm signal is initiated at the FACP, and appropriate action taken to change over air handling systems to help prevent the rapid distribution of toxic smoke and fire gases throughout the areas served by the duct system. The Intelligent Duct Smoke Detector shall support the installation of addressable Photoelectric detector capable or being tested remotely. The remote test capable photoelectric smoke detector shall be GAMEWELL-FCI model.
- I. Multi-Criteria Intelligent Detector
1. Intelligent multi-criteria fire detector shall be a GAMEWELL-FCI model. Smoke detector shall be an addressable intelligent multi-criteria smoke detector. The detector shall be comprised of four sensing elements, including a photoelectric (light-scattering) particulate sensor, an electrochemical carbon monoxide (CO) sensor, a daylight-filtered infrared sensor and solid state thermal sensor(s) rated at 135°F (57.2°C). The device shall be able to indicate distinct smoke and heat alarms.
 2. The intelligent multi-criteria detection device shall include the ability to combine the signal of the photoelectric signal with other sensing elements in an effort to react quickly in the event of a fire situation. It shall also include the inherent ability to distinguish between a fire condition and a nuisance alarm condition. The product design shall be capable of selecting the appropriate sensitivity levels based on the environment type chosen by user in which it is installed (office, manufacturing, kitchen etc.) and then have the ability to automatically change the setting as the environment changes.
 3. The detector shall be capable of automatically adjusting its sensitivity by means of drift compensation and smoothing algorithms. The detector shall be capable of automatically adjusting its sensitivity by means of drift compensation and smoothing algorithms. The device shall provide unique signals to indicate when 20% of the drift range is remaining, when 100% of drift range is used, and when there is a chamber fault to show unit requires maintenance.
 4. The detector shall indicate CO trouble conditions including 6 months of sensor life remaining and sensor life has expired. The detector shall indicate a combined signal for any of the following: low chamber trouble, thermistor trouble, CO self test failure, IR self test failure, and freeze warning.
 5. The detectors shall provide address-setting means on the detector head using rotary switches. Because of the possibility of installation error, systems that use binary jumpers or DIP switches to set the detector address are not acceptable. The detectors shall also store an internal identifying code that the control panel shall use to identify the type of detector. Systems that require a special

programmer to set the detector address (including temporary connection at the panel) are labor intensive and not acceptable. Each detector occupies any one of at least 99 possible addresses on the signaling line circuit (SLC) loop. It responds to regular polls from the system and reports its type and status.

6. The detectors shall provide a test means whereby they will simulate an alarm condition and report that condition to the control panel. Such a test may be initiated at the detector itself (by activating a switch) or initiated remotely on command from the control panel. There are three test methods: functional magnet, smoke entry aerosol, or direct heat method.
 7. The detectors shall provide two LEDs to provide 360° visibility. The LEDs are placed into steady red illumination by the control panel indicating that an alarm condition has been detected. An output connection shall also be provided in the base to connect an external remote alarm LED, sounder base, and / or relay base (optional accessories). The external remote alarm can be interconnected to other sounder or relay bases for activating all devices in a space via a single alarming unit.
 8. Two LEDs on the sensor are controlled by the panel to indicate sensor status. Coded signals, transmitted from the panel, can cause the LEDs to blink, latch on, or latch off. Refer to the control panel technical documentation for sensor LED status operation and expected delay to alarm.
 9. The detectors shall be ceiling-mount and shall be plug-in mounted into a twist-lock base. These detectors shall be constructed of off-white UV resistant polymer and shall be detachable from the mounting base to simplify installation, service and maintenance. Mounting base wiring connections shall be made by means of SEMS screws. The detector shall allow pre-wiring of the base and the head shall be a plug-in type. Mounting base shall be mounted on junction box which is at least 1.5 inches (3.81 cm) deep. Mounting base shall be available to mount to standard junction boxes. Suitable boxes include:
 - a. 4.0" (10.16 cm) square box with and without plaster ring.
 - b. 4.0" (10.16 cm) octagonal box.
 - c. 3.5" (8.89 cm) octagonal box.
 - d. Single-gang box.
 10. Meets Agency Standards
 - a. ANSI/UL 268 -Smoke Detectors for Fire Alarm Signaling Systems
 - b. CAN/ULC-S529- Smoke Detectors for Fire Alarm Systems
 - c. FM 3230-3250- Smoke Actuated Detectors for Automatic Fire Alarm Signaling
- J. Multi-Criteria Intelligent Fire/CO Detector
1. Multi-Criteria Fire/CO detector shall be GAMEWELL-FCI model and shall be an addressable advanced multi-criteria smoke detector with a separate signal for carbon monoxide (CO) detection per UL 2075 standards.
 2. The detector shall be comprised of four sensing elements, including a photoelectric (light-scattering) particulate sensor, an electrochemical CO sensor, a daylight-filtered infrared (IR) sensor

and solid state thermal sensor(s) rated at 135°F (57.2°C). The device shall be able to indicate distinct smoke and heat alarms.

3. The advanced multi-criteria detection device shall include the ability to combine the signal of the photoelectric signal with other sensing elements in order to react quickly in the event of a fire situation. It shall also include the inherent ability to distinguish between a fire condition and a nuisance alarm condition. The detector shall be capable of selecting the appropriate sensitivity levels based on the environment type (office, manufacturing, kitchen, etc.) in which it is installed, and then have the ability to automatically change the setting as the environment changes.
4. The CO detector component shall be capable of a functional gas test using a canned test agent to test the functionality of the CO sensing cell.
5. The detector shall be capable of automatically adjusting its sensitivity by means of drift compensation and smoothing algorithms. The device shall provide unique signals to indicate when 20 percent of the drift range is remaining, when 100 percent of drift range is used, and when there is a chamber fault to show the unit requires maintenance.
6. The detector shall indicate CO trouble conditions, including six months of sensor life remaining and sensor life has expired. The detector shall indicate a combined signal for any of the following: low chamber trouble, thermistor trouble, CO self test failure, IR self test failure, and freeze warning.
7. The detector shall provide address-setting means on the detector head using rotary switches. Because of the possibility of installation error, systems that use binary jumpers or DIP switches to set the detector address are not acceptable. The detector shall also store an internal identifying code that the control panel shall use to identify the type of detector. Systems that require a special programmer to set the detector address (including temporary connection at the panel) are labor intensive and not acceptable. Each detector occupies any one of at least 159 possible addresses on the signaling line circuit (SLC) loop. It responds to regular polls from the system and reports its type and status.
8. The detector shall provide a test means whereby it will simulate an alarm condition and report that condition to the control panel. Such a test may be initiated at the detector itself (by activating a switch) or initiated remotely on command from the control panel. There shall be four test methods: functional magnet, smoke entry aerosol, carbon monoxide aerosol or direct heat method.
9. The detector shall provide two LEDs to provide 360° visibility. The LEDs shall be placed into steady red illumination by the control panel indicating that an alarm condition has been detected. An output connection shall also be provided in the base to connect an external remote alarm LED. The detector must be capable of connecting to a sounder base that provides both temporal 3 and temporal 4 patterns for fire and CO alarm.
10. Two LEDs on the sensor shall be controlled by the panel to indicate sensor status. Coded signals, transmitted from the panel, shall cause the LEDs to blink, latch on, or latch off. Refer to the control panel technical documentation for sensor LED status operation and expected delay to alarm.
11. The detector shall be plug-in mounted into a twist-lock base. The detector shall be constructed of off-white, UV-resistant polymer and shall be detachable from the mounting base to simplify installation, service and maintenance. Mounting base wiring connections shall be made by means of SEMS screws. The detector shall allow pre-wiring of the base and the head shall be a plug-in type. The mounting base shall be mounted on a junction box that is at least 1.5 inches (3.81 cm) deep. The mounting base shall be available to mount to standard junction boxes. Suitable boxes

include:

- a. 4.0" (10.16 cm) square box with and without plaster ring.
- b. 4.0" (10.16 cm) octagonal box.
- c. 3.5" (8.89 cm) octagonal box.
- d. Single-gang box.
- e. Double-gang box

12. Meets Agency Standards

- a. ANSI/UL 268 -Smoke Detectors for Fire Alarm Signaling Systems
- b. CAN/ULC-S529- Smoke Detectors for Fire Alarm Systems
- c. FM 3230-3250- Smoke Actuated Detectors for Automatic Fire Alarm Signaling
- d. UL 2075 – Gas and Vapor Detector and Sensors – Systems Connected

K. Intelligent Addressable Aspiration Detector: The intelligent aspiration detector shall be GAMEWELL-FCI model an addressable aspiration detector that communicates directly with the fire alarm control panel via the SLC communication protocol, no modules or high level interfaces shall be required. The fire alarm control panel shall support up to thirty one intelligent aspiration detectors per SLC loop. The aspiration detector shall have dual source (blue LED and infra-red laser) optical smoke detection for a wide range of fire detection with enhanced immunity to nuisance particulates. The FACP shall be capable of monitoring and annunciating up to five smoke event thresholds and eleven trouble conditions. Each event threshold shall be capable of being assigned a discrete type ID at the FACP.

L. Intelligent Addressable Reflected Beam Detector

1. The intelligent single-ended reflected beam smoke detector shall connect with two wires to the fire alarm control panel signaling line circuit (SLC). The detectors shall consist of a transmitter/receiver unit and a reflector and shall send data to the panel representing the analog level of smoke density. The detector shall be capable of being tested remotely via a keyswitch. Model shall be equipped with an integral sensitivity test feature.

M. Addressable Dry Contact Monitor Module

1. Addressable monitor modules shall be provided to connect one supervised IDC zone of conventional alarm initiating devices (any N.O. dry contact device) to one of the fire alarm control panel SLCs. The addressable monitor module shall be GAMEWELL-FCI model Class A or B.
2. The IDC zone shall be suitable for Style D/Class A or Style B/Class B operation. An LED shall be provided that shall flash under normal conditions, indicating that the monitor module is operational and in regular communication with the control panel.
3. For difficult to reach areas, the monitor module shall be available in a miniature package and shall be no larger than 2-3/4 inch (70 mm) x 1-1/4 inch (31.7 mm) x 1/2 inch (12.7 mm). This version need not include Style D or an LED.

4. For multiple dry contact monitoring a module shall be available that provides 10 Style B or 5 Style D input circuits; GAMEWELL-FCI model.

N. Two Wire Detector Monitor Module

1. Addressable monitor modules shall be provided to connect one supervised IDC zone of conventional 2-wire smoke detectors or alarm initiating devices (any N.O. dry contact device); GAMEWELL-FCI model.
2. The IDC zone may be wired for Class A or B (Style D or Style B) operation. An LED shall be provided that shall flash under normal conditions, indicating that the monitor module is operational and in regular communication with the control panel.
3. For multiple 2-wire smoke detector circuit monitoring a module shall be available that provides 6 Style B/Class A or 3 Style D/Class B input circuits; GAMEWELL-FCI model.

O. Addressable Control Module

1. Addressable control modules shall be provided to supervise and control the operation of one conventional circuit of compatible Notification Appliances, 24 VDC powered, polarized audio/visual notification appliances; GAMEWELL-FCI model.
2. The control module NAC may be wired for Style Z or Style Y (Class A/B) with a current rating of 2 Amps for Style Z and 3 Amps for Style Y;
3. Audio/visual power shall be provided by a separate supervised circuit from the main fire alarm control panel or from a supervised UL listed remote supply.
4. For multiple circuit control a module shall be available that provides 6 Style Y (Class B) or 3 Style Z (Class A) control circuits; GAMEWELL-FCI model.

P. Addressable Releasing Control Module

1. An addressable releasing module shall be available to supervise and control compatible releasing agent solenoids; GAMEWELL-FCI model.
2. The module shall operate on a redundant protocol for added protection.
3. The module shall be configurable for Style Z or Style Y (Class A/B) and support one 24 volt or two 12 volt solenoids. Add FMM-4-20

Q. Addressable 4-20 mA module shall be available to monitor industry-standard, linear-scale, 4-20 mA protocol sensors. The module converts the sensor output to communication protocol that can be interpreted by the FACP for monitoring and display; GAMEWELL-FCI model.

1. The module shall support programming of up to five programmable event thresholds.
2. The System shall be Factory Mutual approved as a Gas Detection system when employed with the monitor module and industry standard 4-20 mA gas detectors.

R. Addressable Relay Module:

1. Addressable Relay Modules shall be available for HVAC control and other network building

functions; GAMEWELL-FCI model

2. The module shall provide two form C relays rated at up to 3 Amps resistive and up to 2.0 Amps inductive.
 3. The relay coil shall be magnetically latched to reduce wiring connection requirements, and to insure that 100% of all auxiliary devices energize at the same time on the same pair of wires;
 4. For multiple relay control a module shall be available that provides 6 programmable Form-C relays; GAMEWELL-FCI model.
- S. Addressable Two-In / Two-Out Monitor/Relay Module:
1. An addressable Two-In / Two-Out module shall be available.
 2. The two-in/two-out module shall provide two Class B/Style B dry-contact input circuits and two independent Form-C relays rated at up to 3 Amps resistive and up to 2.0 Amps inductive.
- T. Isolator Module: Isolator modules shall be provided to automatically isolate wire-to-wire short circuits on an SLC Class A or Class B branch. The isolator module shall limit the number of modules or detectors that may be rendered inoperative by a short circuit fault on the SLC loop segment or branch. At least one isolator module shall be provided for each floor or protected zone of the building; GAMEWELL-FCI model.
1. If a wire-to-wire short occurs, the isolator module shall automatically open-circuit (disconnect) the SLC. When the short circuit condition is corrected, the isolator module shall automatically reconnect the isolated section.
 2. The isolator module shall not require address-setting, and its operations shall be totally automatic. It shall not be necessary to replace or reset an isolator module after its normal operation.
 3. The isolator module shall provide a single LED that shall flash to indicate that the isolator is operational and shall illuminate steadily to indicate that a short circuit condition has been detected and isolated.
- U. Serially Connected Annunciator Requirements
1. The annunciator shall communicate to the fire alarm control panel via an EIA 485 (multi-drop) two-wire communications loop. The system shall support two 6,000 ft. EIA-485 wire runs. Up to 32 annunciators, each configured up to 96 points, may be connected to the connection, for a system capacity of 3,072 points of annunciation.
 2. An EIA-485 repeater shall be available to extend the EIA-485 wire distance in 3,000 ft. increments. The repeater shall be UL864 approved.
 3. Each annunciator shall provide up to 96 alarm and 97 trouble indications using a long-life programmable color LED's. Up to 96 control switches shall also be available for the control of Fire Alarm Control Panel functions. The annunciator will also have an "ON-LINE" LED, local piezo sounder, local acknowledge and lamp test switch, and custom zone/function identification labels.
 4. The annunciator may be field configured to operate as a "Fan Control Annunciator". When configured as "Fan Control," the annunciator may be used to manually control fan or damper operation and can be set to override automatic commands to all fans/dampers programmed to

the annunciator.

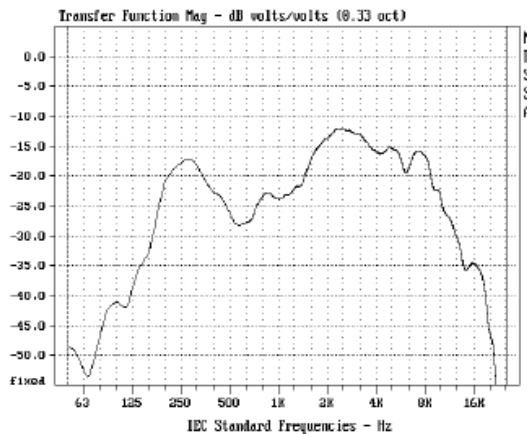
5. Annunciator switches may be programmed for System control such as, Global Acknowledge, Global Signal Silence, Global System Reset, and on/off control of any control point in the system.
6. An optional module shall be available to utilize annunciator points to drive EIA-485 driven relays. This shall extend the system point capacity by 3,072 remote contacts.
7. The LED annunciator shall offer an interface to a graphic style annunciator and provide each of the features listed above.

V. SpectrAlert Advance Speakers

1. The Speaker appliance shall be System Sensor SpectrAlert Advance Speaker. The speaker shall be listed to UL 1480 for Fire Protective Signaling Systems. It shall be a dual-voltage transformer speaker capable of operation at 25.0 or 70.7 nominal Vrms. The speaker shall have a frequency range of 400 to 4,000 Hz and shall have an operating temperature between 32°F and 120°F. It shall mount to a 4 x 4 x 2 1/8-inch back box.
2. A universal mounting plate shall be used for mounting ceiling and wall speaker products. The notification appliance circuit and amplifier wiring shall terminate at the universal mounting plate.
3. Speakers shall be plug-in and shall have the ability to check wiring continuity via a shorting spring on the universal mounting plate. The shorting spring shall also provide tamper resistance via an open circuit if the device is removed. Speaker design shall isolate speaker components to reduce ground fault incidents.
4. The speaker shall have power taps (from ¼ watt to 2 watts) and voltage that are selected by rotary switches. All models shall have a maximum sound output of 86 dB at 10 feet and shall incorporate an open back construction.
5. All notification appliances shall be backward compatible.

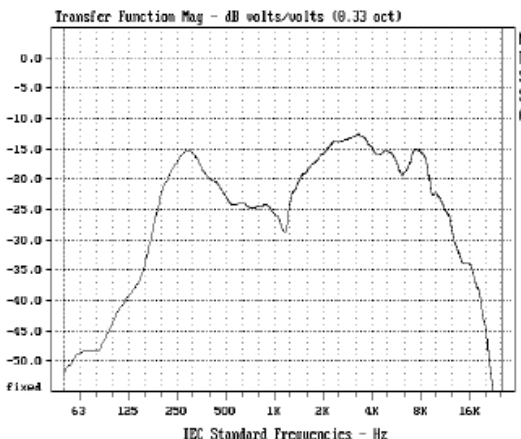
Ceiling Speaker

Wide Band Frequency Response



Wall Speaker

Wide Band Frequency Response



Note: The wide band frequency response is derived using MLS methods

W. SpectrAlert Advance Speaker Strobes

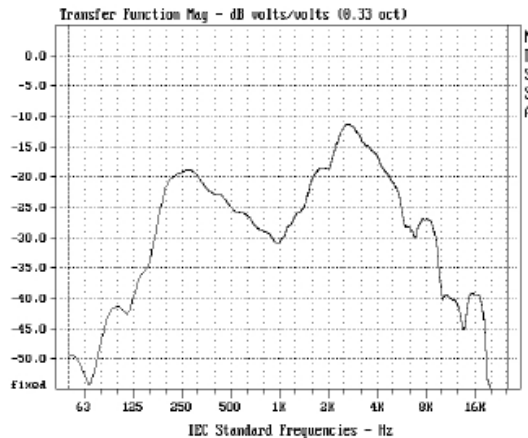
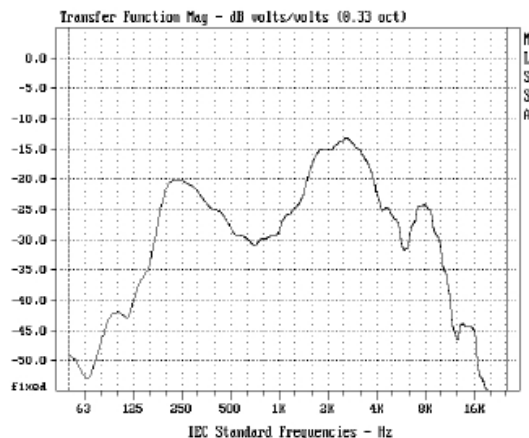
1. The Speaker Strobe appliance shall be System Sensor SpectrAlert Advance Speaker Strobe. The speaker strobe shall be listed to UL 1971 and UL 1480 and be approved for fire protective signaling systems. It shall be a dual-voltage transformer speaker strobe capable of operation at 25.0 or 70.7 nominal Vrms. The speaker shall have a frequency range of 400 to 4,000 Hz and shall have an operating temperature between 32°F and 120°F. It shall mount to a 4 x 4 x 2 1/8-inch back box.
2. A universal mounting plate shall be used for mounting ceiling and wall speaker strobe products. The notification appliance circuit and amplifier wiring shall terminate at the universal mounting plate. Also, SpectrAlert Advance speaker strobes and the Sync•Circuit™ Module MDL3 accessory, if used, shall be powered from a non-coded notification appliance circuit output and shall operate on a nominal 12 or 24 volts (includes fire alarm panels with built in sync). When used with the Sync•Circuit Module MDL3, 12-volt rated notification appliance circuit outputs shall operate between 8.5 and 17.5 volts; 24-volt rated notification appliance circuit outputs shall operate between 16.5 to 33 volts. If the notification appliances are not UL 9th edition listed with the corresponding panel or power supply being used, then refer to the compatibility listing of the panel to determine maximum devices on a circuit.
3. Speaker strobes shall be plug-in and shall have the ability to check wiring continuity via a shorting spring on the universal mounting plate. The shorting spring shall also provide tamper resistance via an open circuit if the device is removed. Speaker strobe design shall isolate speaker components to reduce ground fault incidents.
4. The speaker strobe shall have power taps (from ¼ watt to 2 watts) and voltage that are selected by rotary switches. All models shall have a maximum sound output of 86 dB at 10 feet and shall incorporate an open back construction. The strobe shall consist of a xenon flash tube with associated lens/reflector system and operate on either 12V or 24V. The strobe shall also feature selectable candela output, providing options for 15 or 15/75 candela when operating on 12V and 15, 15/75, 30, 75, 110, or 115 when operating on 24V. The strobe shall comply with NFPA 72 and the Americans with Disabilities Act requirement for visible signaling appliances, flashing at 1 Hz over the strobe’s entire operating voltage range.
5. All notification appliances shall be backward compatible.

Ceiling Speaker Strobe

Wall Speaker Strobe

Wide Band Frequency Response

Wide Band Frequency Response



Note: The wide band frequency response is derived using MLS methods

6. Strobe lights shall meet the requirements of the ADA, UL Standard 1971 and be fully synchronized.

PART 3.0 - EXECUTION

3.1. GENERAL INSTALLATION REQUIREMENTS:

- A. The wiring of the system shall be executed in accordance with the drawings and the equipment manufacturer's wiring diagrams. Should any variations in these requirements occur, the contractor shall notify the architect before making any changes. It shall be the responsibility of the factory-authorized distributor of the approved equipment to install the equipment and guarantee the system to operate as per plans and specifications.
- B. Furnish all conduit, junction boxes, conductors, equipment plugs, terminal strips, etc., and labor to install a complete and operable system.
- C. The cables within the rack or cabinets shall be carefully cabled and neatly dressed with hook-and-loop type fasteners or tie-wraps. All cables shall be numbered for identification.
- D. Splicing of conductors in underground pull boxes is not permitted.
- E. The labor employed by the contractor shall be regularly employed in the installation and repair of communication systems and shall be acceptable to the owner and architect to engage in the installation and service of this system.
- F. The contractor shall thoroughly clean all equipment and materials. All exposed parts of the equipment, cabinets, and other equipment shall be left in a clean condition, unblemished and free of all dirt, dust, smudges, spots, fingerprints, etc., the contractor shall remove all debris and rubbish occasioned by the electronic systems work from the site. The contractor shall thoroughly clean all buildings of any dirt, debris, rubbish, marks, etc., caused by the performance of this work.
- G. The system must meet all local and other prevailing codes.
- H. All cabling installations shall be performed by qualified technicians.
- I. All cabling shall be splice free.
- J. In order to ensure the least amount of cable untwisting, it is required that all cables shall be stripped using a special tool.
- K. Prior to the use of lubricants (i.e. Polywater) to facilitate the installation of cables, the contractor shall verify the acceptability of the lubricant to be used with the cable manufacturer, prior to using such a lubricant.
- L. All firewalls penetrated by structured cabling shall be sealed by use a non-permanent fire blanket or other method in compliance with the current edition of National Fire Protection Association (NFPA) and the National Electrical Code (NEC), California Electrical Code (CEC), or other prevailing code. The contractor must not use concrete or other non-removable substance for fire stopping on cable trays, wireways or conduits. Contractors who use this method will be required to replace all cables affected and provide the original specified access to each effected area.
- M. Installation shall be in accordance with the NEC, NFPA 72, local and state codes, as shown on the drawings, and as recommended by the major equipment manufacturer.

- N. All conduit, junction boxes, conduit supports and hangers shall be concealed in finished areas and may be exposed in unfinished areas. Smoke detectors shall not be installed prior to the system programming and test period. If construction is ongoing during this period, measures shall be taken to protect smoke detectors from contamination and physical damage.
- O. All fire detection and alarm system devices, control panels and remote annunciators shall be flush mounted when located in finished areas and may be surface mounted when located in unfinished areas.
- P. Manual fire alarm boxes shall be suitable for surface mounting or semi-flush mounting as shown on the plans and shall be installed not less than 42 inches (1067 mm), nor more than 48 inches (122 mm) above the finished floor.

3.2 SPECIFIC SYSTEM INSTALLATION REQUIREMENTS

- A. The entire system shall be installed in a workmanlike manner in accordance with approved manufacturers manuals and wiring diagrams. The contractor shall furnish all wiring, conduit, outlet boxes, junction boxes, terminal cabinets and similar devices necessary for the completed installation.
- B. Installation of conduit, outlet boxes, junction boxes, terminal cabinets, special back boxes and similar devices shall comply with the requirements of Section 26 00 00 General Electrical Materials.
- C. All conduit, junction boxes, conduit supports and hangers shall be concealed in finished areas and may be exposed in unfinished areas. Smoke detector heads shall not be installed prior to the system programming and test period. If construction is ongoing during this period, measures shall be taken to protect smoke detectors from contamination and physical damage.
- D. All fire detection and alarm system devices, control panels and remote annunciators shall be flush mounted when located in finished areas and may be surface mounted when located in unfinished areas. Verify with the Project Architect prior to any surface mounted installations.
- E. All penetrations of floor slabs and fire walls, shall be fire stopped in accordance with the electrical specifications.
- F. Duct mounted Smoke Detectors (when permitted for installation in writing by the engineer and District) shall be furnished and wired by this Contractor and installed by the Mechanical Contractor. All shutdown and interface wiring shall be performed by the Electrical Contractor. All air pressure differential testing shall be performed by the Mechanical/Air Balance Contractor.
- G. The sprinkler flow and tamper switches shall be furnished, installed and adjusted by the Sprinkler Contractor, wired and tested by this Contractor.

3.3 GENERAL TESTING REQUIREMENTS

- A. Provide all instruments for testing and demonstrating in the presence of the owner's inspector that the frequency response is as stated in the factory data sheets. Check all circuits and wiring to verify they are free of shorts and grounds.

3.4. SPECIFIC SYSTEM TESTING REQUIREMENTS

The service of a competent, factory-trained engineer or technician authorized by the manufacturer of the fire alarm equipment shall be provided to technically supervise and participate during all of the adjustments and tests for the system. All testing shall be in accordance with NFPA 72.

- A. Before energizing the cables and wires, check for correct connections and test for short circuits, ground faults, continuity, and insulation.
- B. Close each sprinkler system flow valve and verify proper supervisory alarm at the FACP.
- C. Verify activation of all waterflow switches.
- D. Open initiating device circuits and verify that the trouble signal actuates.
- E. Open and short signaling line circuits and verify that the trouble signal actuates.
- F. Open and short notification appliance circuits and verify that trouble signal actuates.
- G. Ground all circuits and verify response of trouble signals.
- H. Check presence and audibility of tone at all alarm notification devices.
- I. Check installation, supervision, and operation of all intelligent smoke detectors using the walk test.
- J. Each of the alarm conditions that the system is required to detect should be introduced on the system. Verify the proper receipt and the proper processing of the signal at the FACP and the correct activation of the control points.
- K. When the system is equipped with optional features, the manufacturer's manual shall be consulted to determine the proper testing procedures. This is intended to address such items as verifying controls performed by individually addressed or grouped devices, sensitivity monitoring, verification functionality and similar.
- L. Contractor shall provide all DSA required testing and certification at no cost to the Owner.
- M. Final Acceptance
 - 1. The Owner or Owner's representative may visit the site during the installation of the system to ensure that correct installation practices are being followed.
 - 2. The Owner or Owner's representative will conduct a final job review once the contractor has finished the job. This review will take place within one week after the contractor notifies the owner.
 - 3. Two copies of all certification data and drawings for all identifications shall be provided to the Owner before the owner's review.
 - 4. The Owner or Owner's representative will review the installation and certification data prior to the system acceptance.
 - 5. The Owner or Owner's representative may test some of the systems features to ensure that the certification data is correct. If a substantial discrepancy is found, the Owner reserves the right to have an independent consultant perform a certification of the entire system. If such a procedure is undertaken, the cost of the testing will be billed back to the contractor.
 - 6. In the event that repairs or adjustments are necessary, the contractor shall make these repairs at his own expense. All repairs shall be completed within ten (10) days from the time they are discovered.

7. The contractor shall provide not less than eight (8) hours for site instruction of personnel in the operation and maintenance of the installed systems. This instruction time shall be divided as directed by the Owner.
8. The contractor shall hand to the owner a copy of any applicable installation specific software configurations in disk format.
9. The contractor shall commission the entire system and all components in accordance with this document, the Construction Documents and Commissioning Plan, and Section 28 08 00 Commissioning of Electronic Safety and Security Systems.

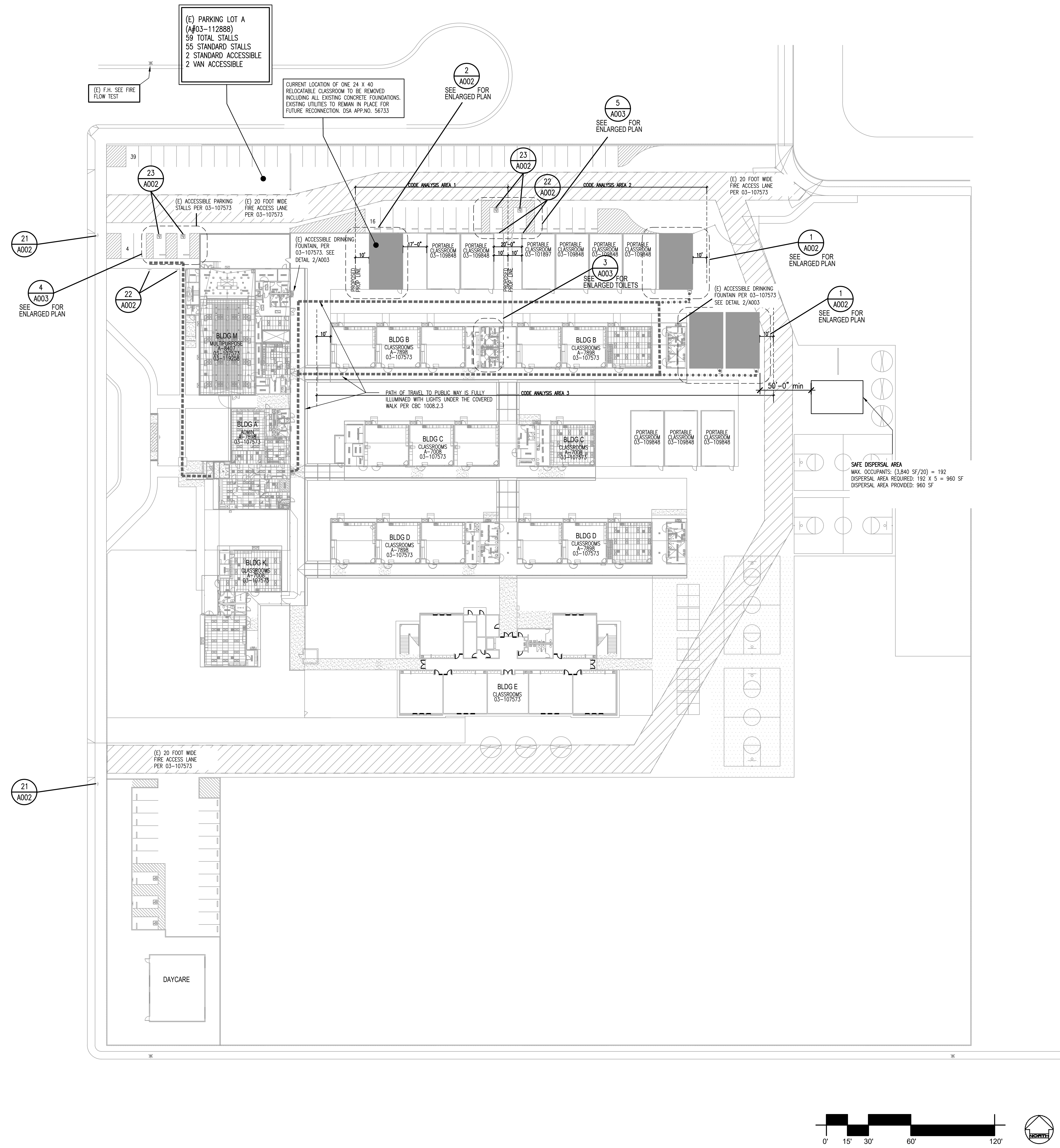
3.5. FINAL INSPECTION:

- A. At the final inspection, a factory-trained representative of the manufacturer of the major equipment shall demonstrate that the system functions properly in every respect.

3.6. INSTRUCTION:

- A. Instruction shall be provided as required for operating the system. Hands-on demonstrations of the operation of all system components and the entire system including program changes and functions shall be provided.
- B. The contractor and/or the systems manufacturer's representatives shall provide a typewritten "Sequence of Operation."

END OF SECTION



SITE PLAN LEGEND

AREA 1 (AT EXISTING RELOS)	ADDING ONE NEW 24'X40' CLASSROOM
OCCUPANCY	E
OCCUPANCY LOAD FACTOR	20
OCCUPANTS PER CLASSROOM	48 (960 S.F.)
CONSTRUCTION TYPE	TYPE V-B, NON-SPRINKLERED
ACTUAL BUILDING AREA	2,880 SF (960 S NEW & 1920 SF EXISTING)
ALLOWABLE BUILDING AREA	9,500 SF

AREA 2 (AT EXISTING RELOS)	ADDING ONE NEW 24'X40' CLASSROOM
OCCUPANCY	E
OCCUPANCY LOAD FACTOR	20
OCCUPANTS PER CLASSROOM	48 (960 S.F.)
CONSTRUCTION TYPE	TYPE V-B, NON-SPRINKLERED
ACTUAL BUILDING AREA	4,800 SF (960 SF NEW & 3,840 SF EXISTING)
ALLOWABLE BUILDING AREA	9,500 SF

AREA 3 (AT BUILDING B)	ADDING TWO NEW 24'X40' CLASSROOMS
OCCUPANCY	E
OCCUPANCY LOAD FACTOR	20
OCCUPANTS PER CLASSROOM	48 (960 S.F.)
CONSTRUCTION TYPE	TYPE V-B, NON-SPRINKLERED
ACTUAL BUILDING AREA	8,972 SF (1,920 SF NEW & 7,052 SF EXISTING)
ALLOWABLE BUILDING AREA	9,500 SF

BUILDING A
CONSTRUCTION TYPE V-B, ONE STORY, NON-SPRINKLERED
OCCUPANCY B (OFFICE)

BUILDINGS B, C, D, K, RELOCATABLES
CONSTRUCTION TYPE V-B, ONE STORY, NON-SPRINKLERED
OCCUPANCY E (CLASSROOMS)

BUILDING E
CONSTRUCTION TYPE V-A, TWO STORY, FULLY-SPRINKLERED
OCCUPANCY E (CLASSROOMS)

BUILDING M
CONSTRUCTION TYPE V-B, ONE STORY, NON-SPRINKLERED
OCCUPANCY A-3 (MULTI-PURPOSE)

CODE BUILDING AREA ANALYSIS

- FOR TYPICAL SYMBOLS AND ABBREVIATIONS, SEE SHEET G001.
- PROTECT AND SAFEGUARD FROM DAMAGES ALL EXISTING CONSTRUCTION AND FINISHES TO REMAIN.
- PROVIDE TEMPORARY 6' HIGH CHAIN LINK FENCE ENCLOSURES WITH LOCKABLE GATES AS REQUIRED FOR CONSTRUCTION ACCESS AT CONTRACTOR'S STAGING AREA AND AROUND ALL CONSTRUCTION SITES.
- WHERE REMOVAL OF CONCRETE WALKS, MONOSTRIPS, CURBS AND GUTTERS IS REQUIRED BY THE EXECUTION OF THIS CONTRACT, REMOVE THE CONCRETE WORK TO THE NEAREST EXISTING EXPANSION OR CONTROL JOINT (SAWCUT IF REQUIRED). CURBS AND GUTTERS MAY BE REMOVED IN MINIMUM LENGTHS OF 6' IF THE DISTANCE BETWEEN EXISTING JOINTS IS 12' OR MORE. REPLACE REMOVED WORK WITH REINFORCED CONCRETE TO MATCH ADJACENT EXISTING WORK IN PROFILE, JOINT LAYOUT AND FINISH. SEE SHEET A003 FOR SIMILAR DETAILS AND REINFORCING REQUIREMENTS. DOWEL NEW CONCRETE WORK INTO EXISTING PER SHEET A002.
- WHERE ASPHALT PAVING IS DAMAGED BY THE EXECUTION OF THIS CONTRACT, PATCH & REPAIR TO ORIGINAL OR BETTER CONDITION. WHERE (E) LAWNS ARE DAMAGED BY THE EXECUTION OF THIS CONTRACT, FILL, COMPACT, AND REPLANT AREA TO MATCH EXISTING TURF AREA.

SITE NOTES

	(E) CAMPUS BUILDINGS
	(N) RELOCATABLE CLASSROOM BUILDINGS IN SCOPE OF WORK
	(E) CHAIN LINK FENCE TO REMAIN
	EXISTING "PATH OF TRAVEL" (P.O.T) PER A#03-107573
	EXISTING 20' WIDE FIRE LANE PER APP 03-107573
	EXISTING FIRE HYDRANT
	NEW "PATH OF TRAVEL" (P.O.T)

ACCESSIBLE PATH OF TRAVEL AS INDICATED ON THE PLAN IS A BARRIER FREE ACCESS ROUTE WITHOUT ABRUPT LEVEL CHANGES EXCEEDING 1/2" IF SLOVED 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 1:20. ACCESSIBLE PATH OF TRAVEL SHALL BE MAINTAINED FREE OF OVERHANGING OBSTRUCTIONS TO 80" MINIMUM AND FREE OF OBJECTS PROTRUDING MORE THAN 4" FROM A WALL, ABOVE 27" AND LESS THAN 80" ABOVE THE FLOOR. ARCHITECT SHALL VERIFY THAT THERE ARE NO BARRIERS IN THE PATH OF TRAVEL.

THE P.O.T IDENTIFIED IN THESE CONSTRUCTION DOCUMENTS IS COMPLIANT WITH THE CURRENT APPLICABLE CALIFORNIA BUILDING CODE ACCESSIBILITY PROVISIONS FOR PATH OF TRAVEL REQUIREMENTS FOR ALTERATIONS, ADDITIONS, AND STRUCTURAL REPAIRS. AS PART OF THE DESIGN OF THIS PROJECT, THE P.O.T WAS EXAMINED AND ANY ELEMENTS, COMPONENTS, OR PORTIONS OF THE POT THAT WERE DETERMINED TO BE NONCOMPLIANT 1) HAVE BEEN IDENTIFIED AND 2) THE DETAILS, DRAWINGS AND SPECIFICATIONS INCORPORATED INTO THESE CONSTRUCTION DOCUMENTS. ANY NONCOMPLIANT 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 HARSHNESS ARE SO INDICATED IN THESE CONSTRUCTION DOCUMENTS.

DURING CONSTRUCTION, IF POT ITEMS WITHIN THE SCOPE OF THE PROJECT REPRESENTED AS CODE COMPLIANT ARE FOUND TO BE NONCONFORMING BEYOND REASONABLE CONSTRUCTION TOLERANCES, THEY SHALL BE BROUGHT INTO COMPLIANCE WITH THE CBC AS A PART OF THIS PROJECT BY MEANS OF A CONSTRUCTION CHANGE DOCUMENT.



CONSULTANT:

PROJECT NAME:

**NEW RELOCATABLE CLASSROOMS
AND FIRE ALARM UPGRADES**
LEWIS ELEMENTARY SCHOOL
13220 BELLFLOWER BLVD.
DOWNEY, CA 90242

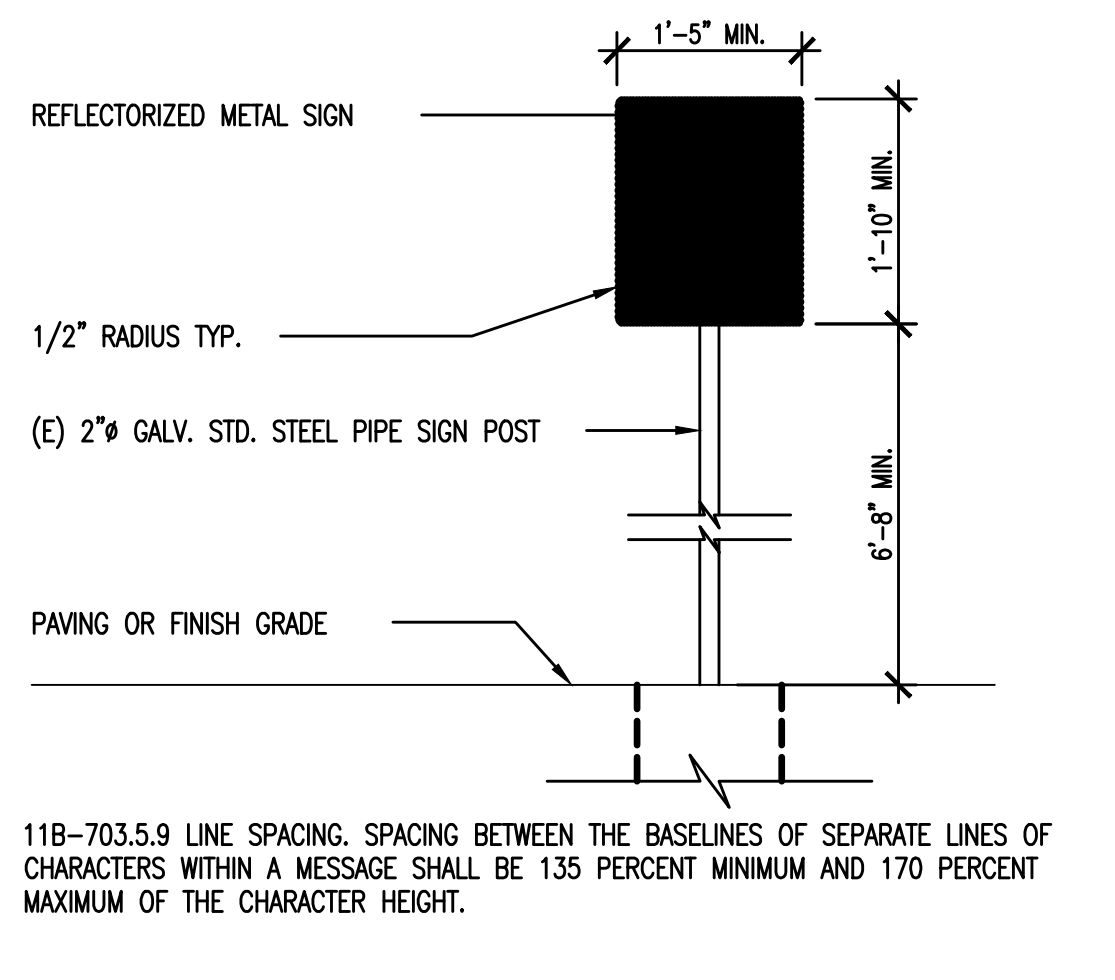
CLIENT:

**DOWNEY UNIFIED
SCHOOL DISTRICT**
11627 BROOKSHIRE AVE.
DOWNEY, CA 90242

Rev. Date	Description

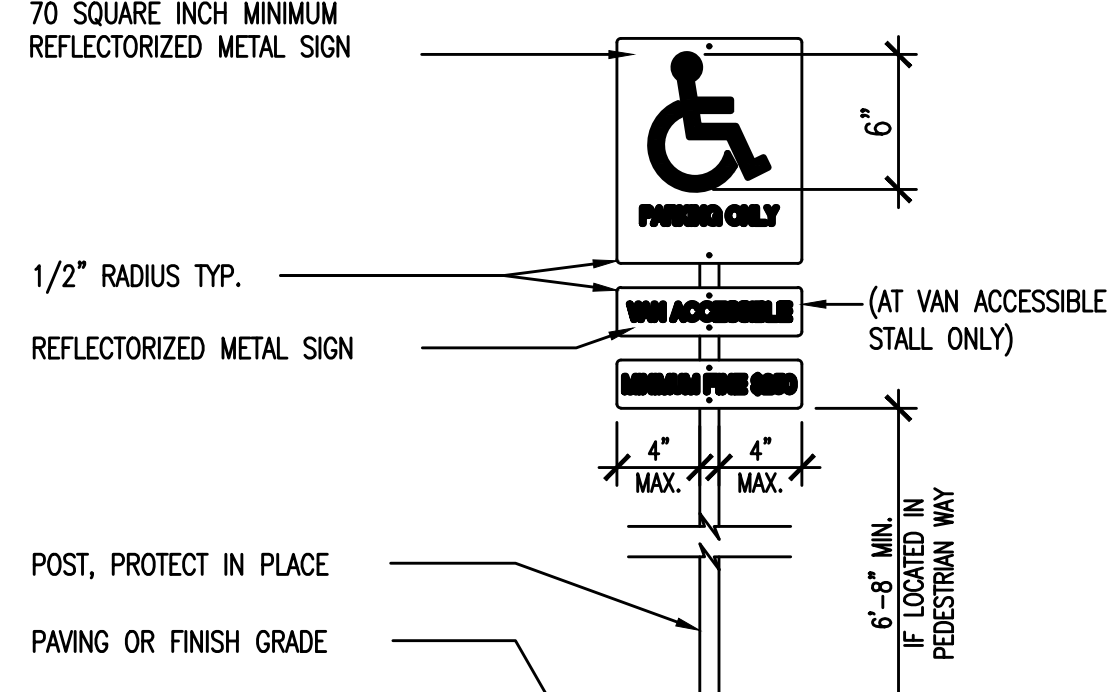
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DATE:	XXX
DRAWN:	XXX
CHECK:	XX
ARCHITECT:	RN
ENGINEER:	
SHEET DESCRIPTION:	
SITE PLAN	
SHEET NO.:	

SIGN NOTES:
A REFLECTORIZED SIGN SHALL BE PERMANENTLY POSTED IN A CONSPICUOUS PLACE AT EACH ENTRANCE TO OFF-STREET PARKING FACILITIES, OR IMMEDIATELY ADJACENT TO AND VISIBLE FROM EACH STALL OR SPACE. THE SIGN SHALL NOT BE LESS THAN 17" BY 22" IN SIZE WITH WHITE LETTERING NOT LESS THAN 1" IN HEIGHT ON A DARK BLUE BACKGROUND, WHICH CLEARLY AND CONSPICUOUSLY STATES THE FOLLOWING:
"UNAUTHORIZED VEHICLES PARKED IN DESIGNATED ACCESSIBLE SPACES NOT DISPLAYING DISTINGUISHING PLACARDS OR SPECIAL LICENSE PLATES ISSUED FOR PERSONS WITH DISABILITIES WILL BE TOWED AWAY AT OWNER'S EXPENSE. TOWED VEHICLES MAY BE RECLAIMED AT KENNY'S TOW OR BY TELEPHONING 562-925-9531"
RECLAMATION ADDRESS AND TELEPHONE NUMBER SHALL BE PROVIDED AS A PERMANENT PART OF THIS SIGN. DARK BLUE BACKGROUND COLOR SHALL BE EQUAL TO COLOR NUMBER 15090 IN FEDERAL STANDARD 595C. SIGN SHALL NOT OBSTRUCT PASSAGE BETWEEN STALL AND ANY ACCESSIBLE WALKWAY. SEE SITE PLAN FOR LOCATIONS.



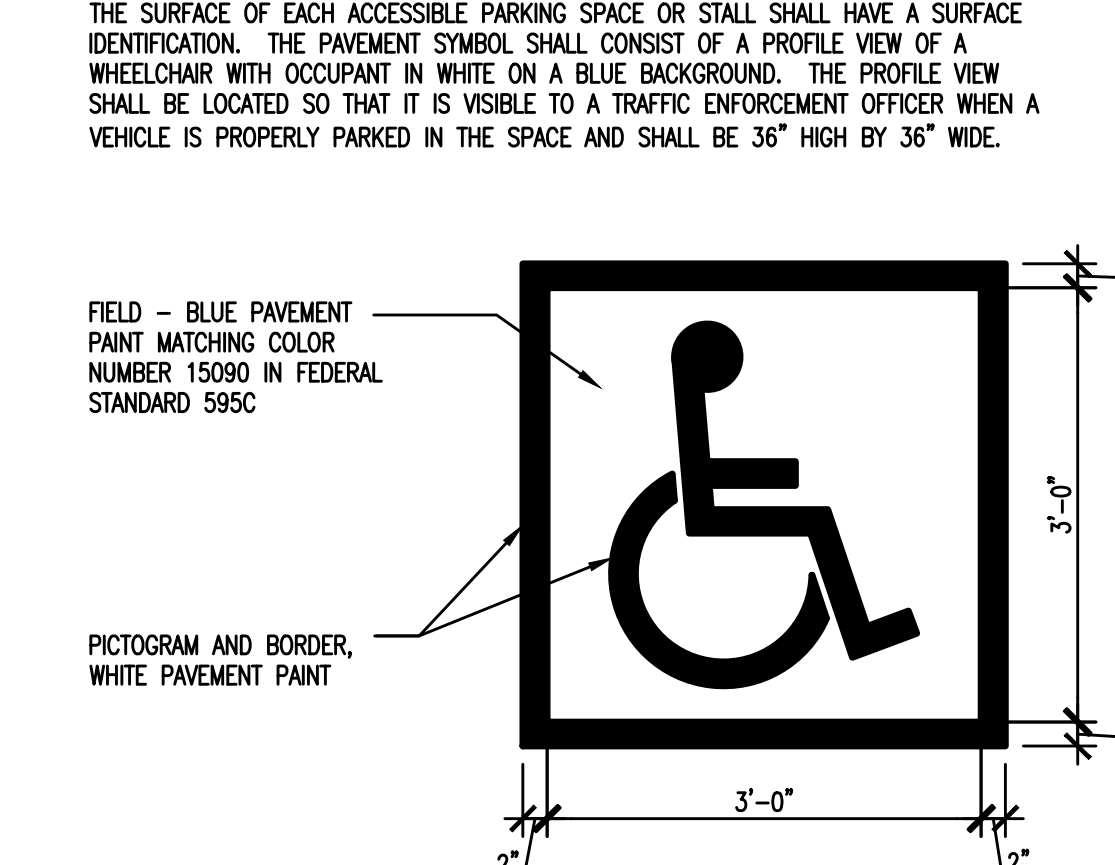
SITE ENTRANCE SIGN (NEW SIGN TO BE PROVIDED) 21 N.T.S.

SIGN NOTES:
EACH PARKING SPACE RESERVED FOR PERSONS WITH DISABILITIES SHALL BE IDENTIFIED BY A REFLECTORIZED SIGN PERMANENTLY POSTED IMMEDIATELY ADJACENT TO AND VISIBLE FROM EACH STALL OR SPACE, CONSISTING OF A PROFILE VIEW OF A WHEELCHAIR WITH OCCUPANT IN WHITE ON A DARK BLUE BACKGROUND. THE SIGN SHALL NOT BE SMALLER THAN 70 SQUARE INCHES IN AREA, AND WHEN IN A PATH OF TRAVEL, SHALL BE POSTED AT A MINIMUM HEIGHT OF 80" FROM THE BOTTOM OF THE SIGN TO THE PARKING SPACE FINISH GRADE. SPACES COMPLYING WITH C.B.C. SECTION 11B-502, ITEM 2 SHALL HAVE AN ADDITIONAL REFLECTORIZED SIGN STATING "VAN ACCESSIBLE" IN WHITE ON A DARK BLUE BACKGROUND MOUNTED BELOW THE SYMBOL OF ACCESSIBILITY. DARK BLUE BACKGROUND COLOR SHALL BE EQUAL TO COLOR NUMBER 15090 IN FEDERAL STANDARD 595C. ALL LETTERING SHALL BE WHITE AND A MINIMUM OF 2" IN HEIGHT. SIGN SHALL NOT OBSTRUCT PASSAGE BETWEEN STALL AND ANY ACCESSIBLE WALKWAY. PROVIDE "MINIMUM FINE #250" SIGN. PROVIDE SIGNS ON BOTH SIDERS OF POST WHERE REQUIRED. SEE SITE PLAN FOR LOCATIONS.

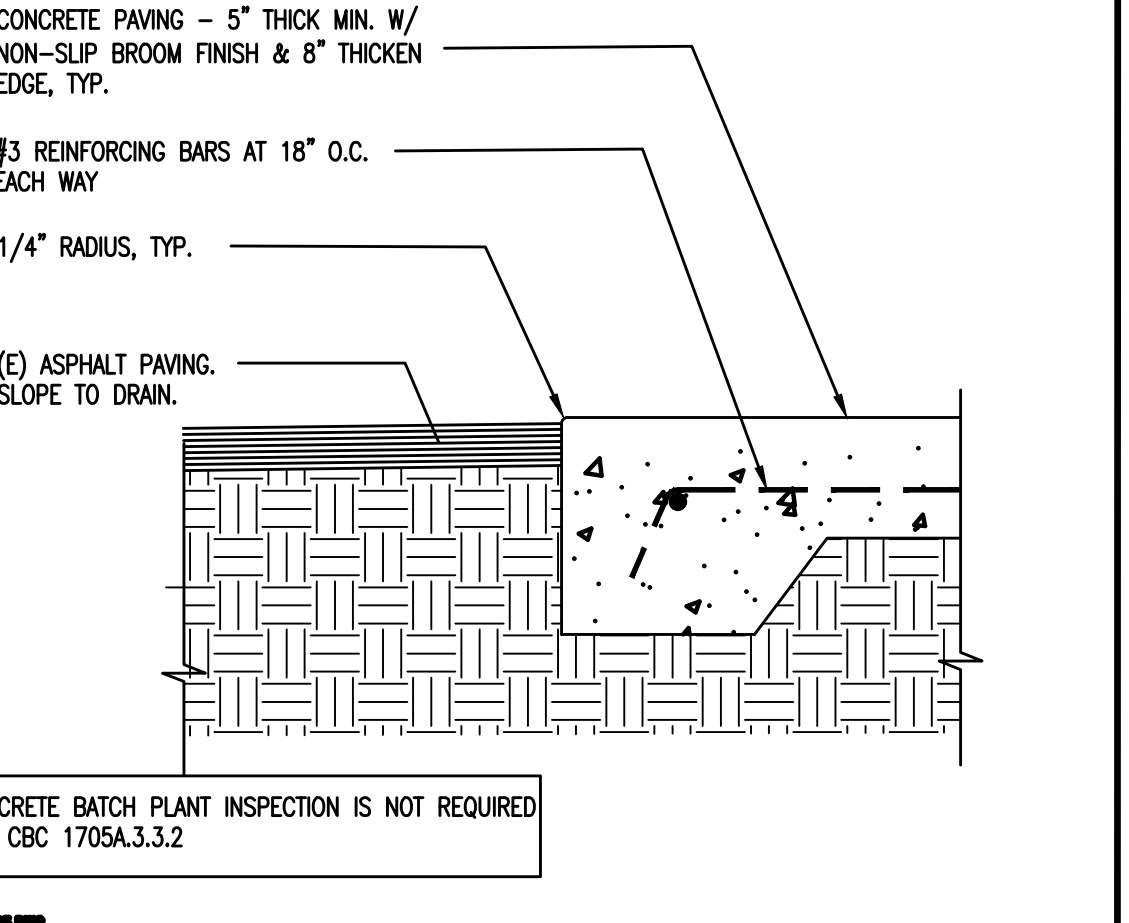


ACCESSIBLE PARKING STALL SIGN (EXISTING TO REMAIN) 22 N.T.S.

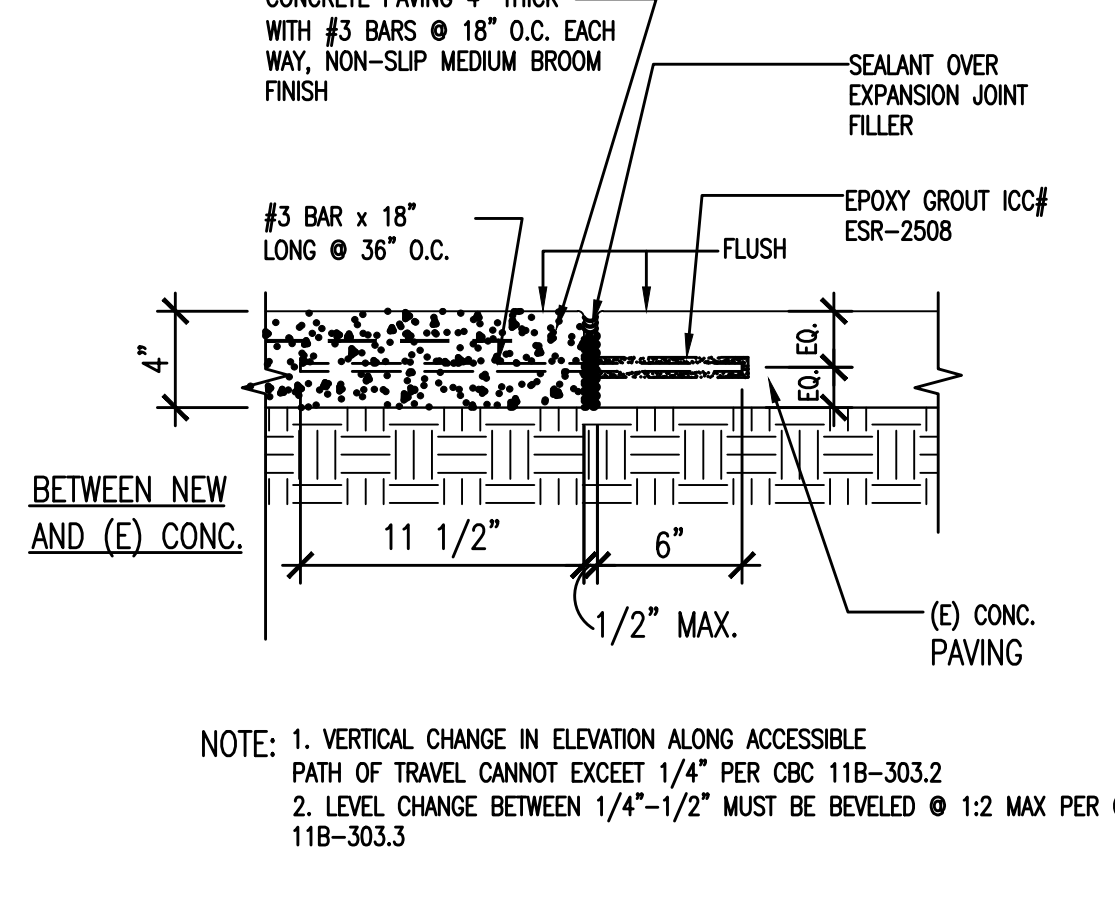
THE SURFACE OF EACH ACCESSIBLE PARKING SPACE OR STALL SHALL HAVE A SURFACE IDENTIFICATION. THE PAVEMENT SYMBOL SHALL CONSIST OF A PROFILE VIEW OF A WHEELCHAIR WITH OCCUPANT IN WHITE ON A BLUE BACKGROUND. THE PROFILE VIEW SHALL BE LOCATED SO THAT IT IS VISIBLE TO A TRAFFIC ENFORCEMENT OFFICER WHEN A VEHICLE IS PROPERLY PARKED IN THE SPACE AND SHALL BE 36" HIGH BY 36" WIDE.



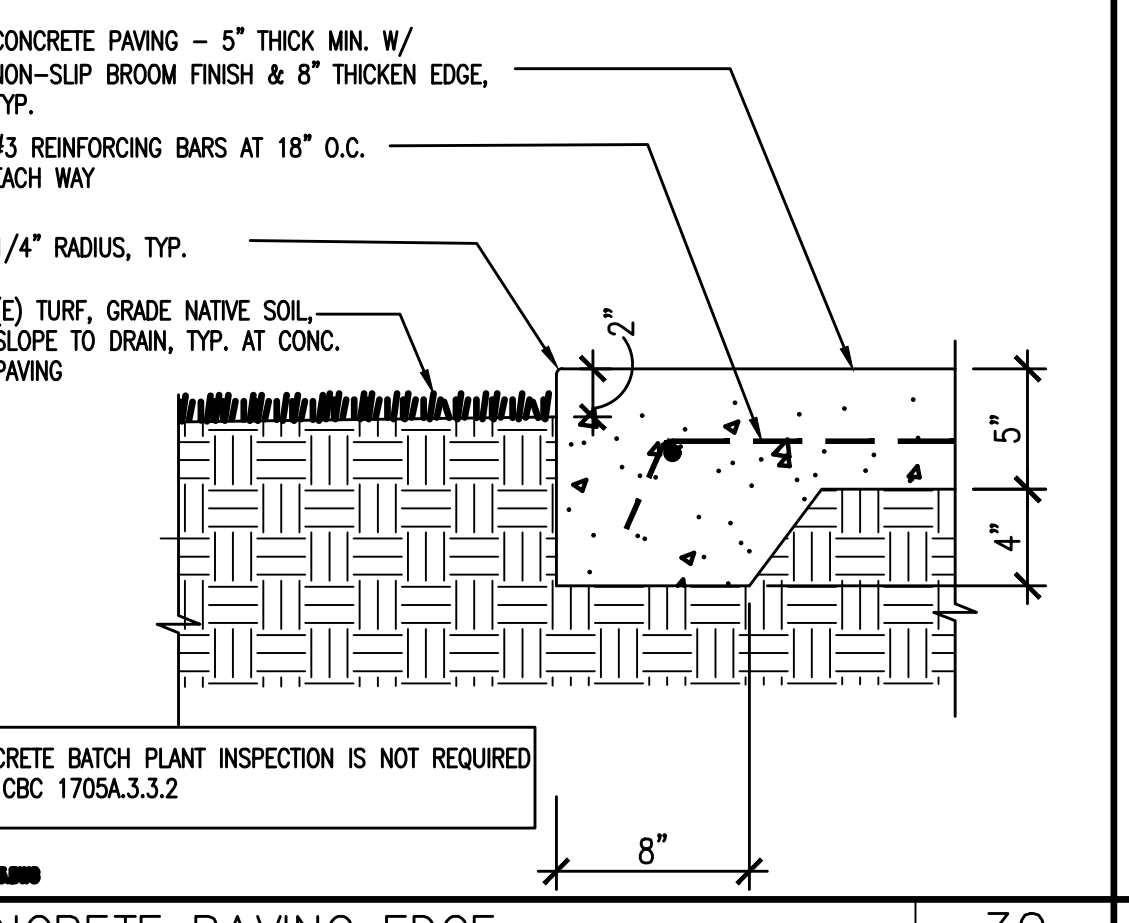
PAVEMENT SYMBOL 23 EXISTING TO REMAIN AS INSTALLED UNDER 03-107573 N.T.S.



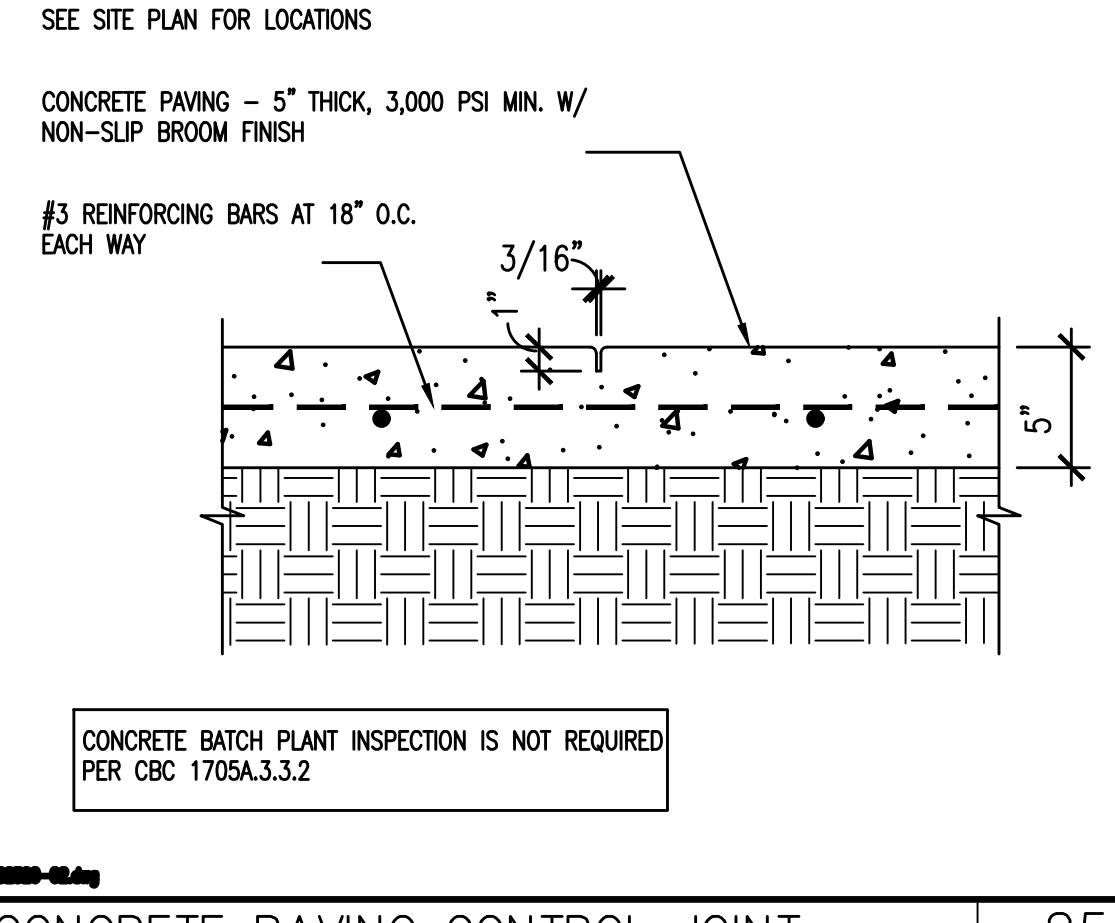
CONCRETE PAVING EDGE 29 1-1/2\"/>



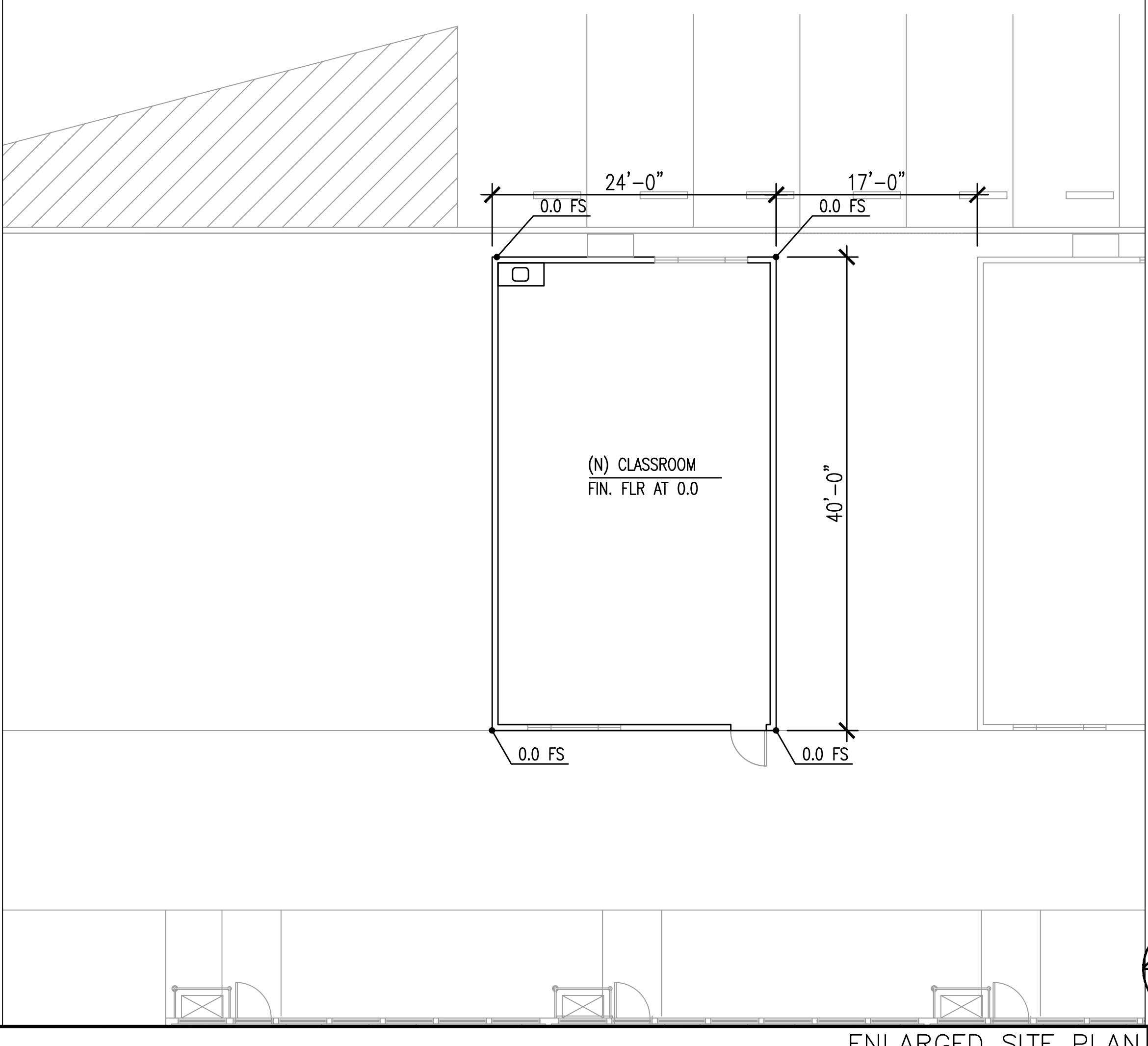
CONCRETE PAVING CONTROL JOINT 24 1-1/2\"/>



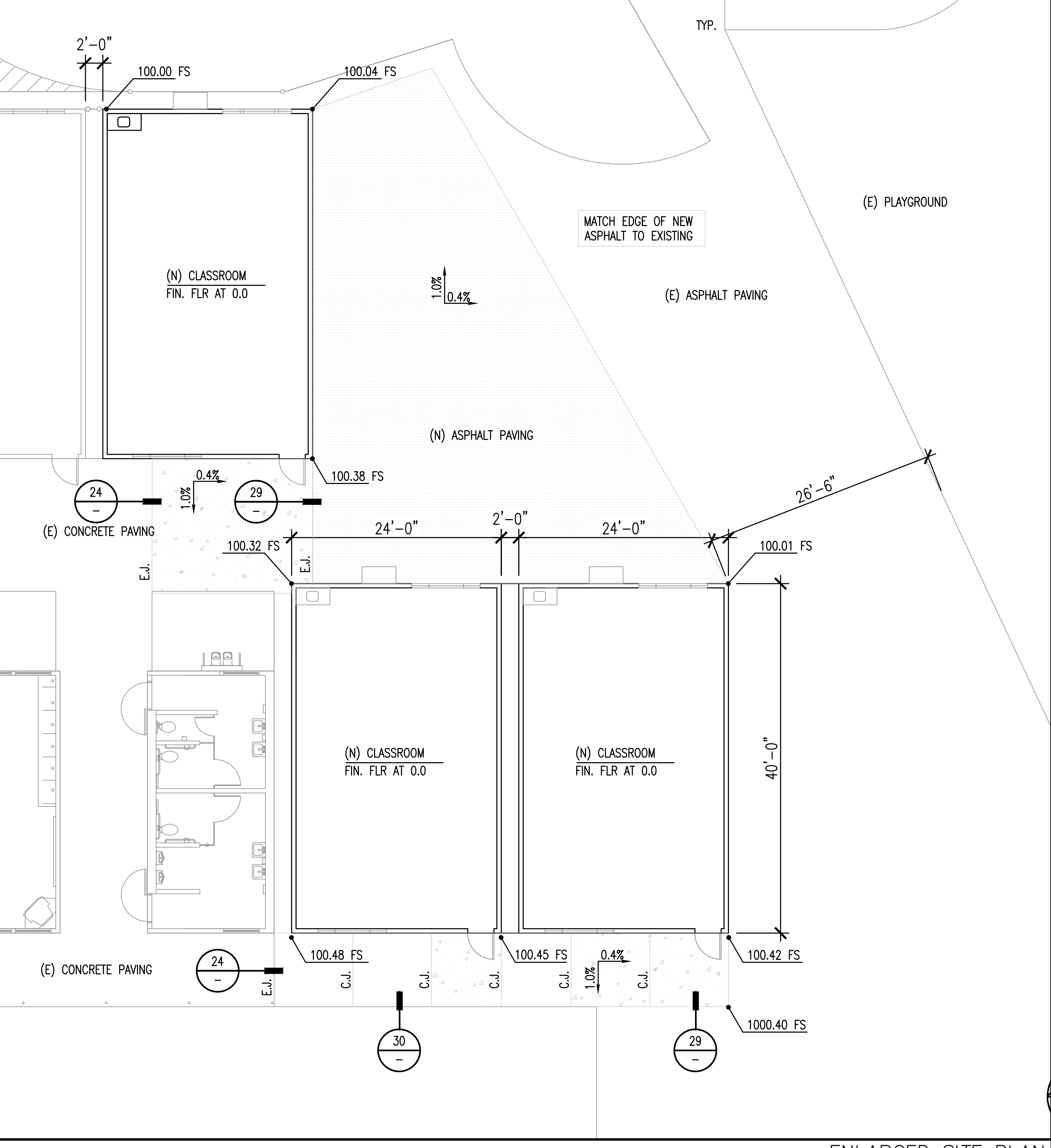
CONCRETE PAVING EDGE 30 1-1/2\"/>



CONCRETE PAVING CONTROL JOINT 25 1-1/2\"/>



ENLARGED SITE PLAN 5 1\"/>



ENLARGED SITE PLAN 5 1\"/>

Division of the State Architect (DSA) documents referenced within this publication are available on the DSA Forms or DSA Publications webpages.

To facilitate the Division of the State Architect's (DSA) fire and life safety plan review of project site conditions, DSA requires the design professional to provide the following information at time of project submittal for projects consisting of construction of a new campus, construction of new building(s), additions to existing buildings, and for site alternate design means for fire department emergency vehicle access, and fire suppression water supply. Information associated with compliance items 1 through 3 below is to be provided for all project types indicated above. Information associated with items 4 through 7 is to be completed when an alternate means is utilized. Acknowledgement by the school district and signature from the Local Fire Authority (LFA) is only required when an alternate design means is being requested.

The Project Information and Fire & Life Safety Information sections are to be completed for all projects and imaged onto the fire access site plan. When an alternate design/means is proposed, all sections on pages 1 and 2 are to be completed and imaged on the fire access site plan.

PROJECT INFORMATION: School District/Owner: DOWNEY UNIFIED SCHOOL DISTRICT; Project Name/School: LEWIS ELEMENTARY SCHOOL; Project Address: 13220 BELLFLOWER BLVD, DOWNEY, CA 90242. FIRE & LIFE SAFETY INFORMATION table with questions about fire hydrant flow test, fire hydrant water flow test, and FHSZ classification.

CONDITION MEANS AND METHODS RESOLUTION table with columns for Condition, Alternates, and Acceptance status. Includes items like 'Emergency vehicle access roadways do not meet CFC requirements'.

School District Acceptance of Acceptable Design Alternates: By signing this form, the school district acknowledges and accepts the proposed design as an alternative to California Building Code (CBC) and California Fire Code (CFC) minimum requirements...

Accepted by: Vince Madsen, Title: Dir. Facilities and Construction. Signature and Date fields.

LOCAL FIRE AUTHORITY (LFA) INFORMATION: LFA Agency Name, LFA Review Official, Title, Work Email, LFA Reviewer's Signature, Date.

DSA 810 FORMS

Downey Fire Department Fire Prevention Bureau logo and address information: 13220 Bellflower Blvd, Downey, CA 90242.

HYDRANT FLOW TEST results: STATIC PSI: 74, RESIDUAL PSI: 68, PITOT PSI: 64, HYDRANT DIAMETER: 2.5, UNDERGROUND MAIN: 6\"/>

HYDRANT FLOW TEST

RNA RAND NICHOLL ARCHITECTURE 4591 SIRODAY AVENUE YORBA LINDA, CA 92886 714.915.4504

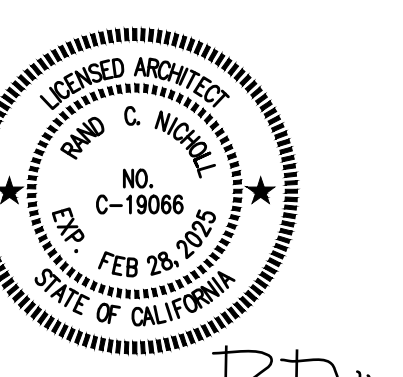
Professional Engineer Seal for Vince Madsen, License No. C-19066, State of California.

PROJECT NAME: NEW RELOCATABLE CLASSROOMS AND FIRE ALARM UPGRADES LEWIS ELEMENTARY SCHOOL 13220 BELLFLOWER BLVD. DOWNEY, CA 90242

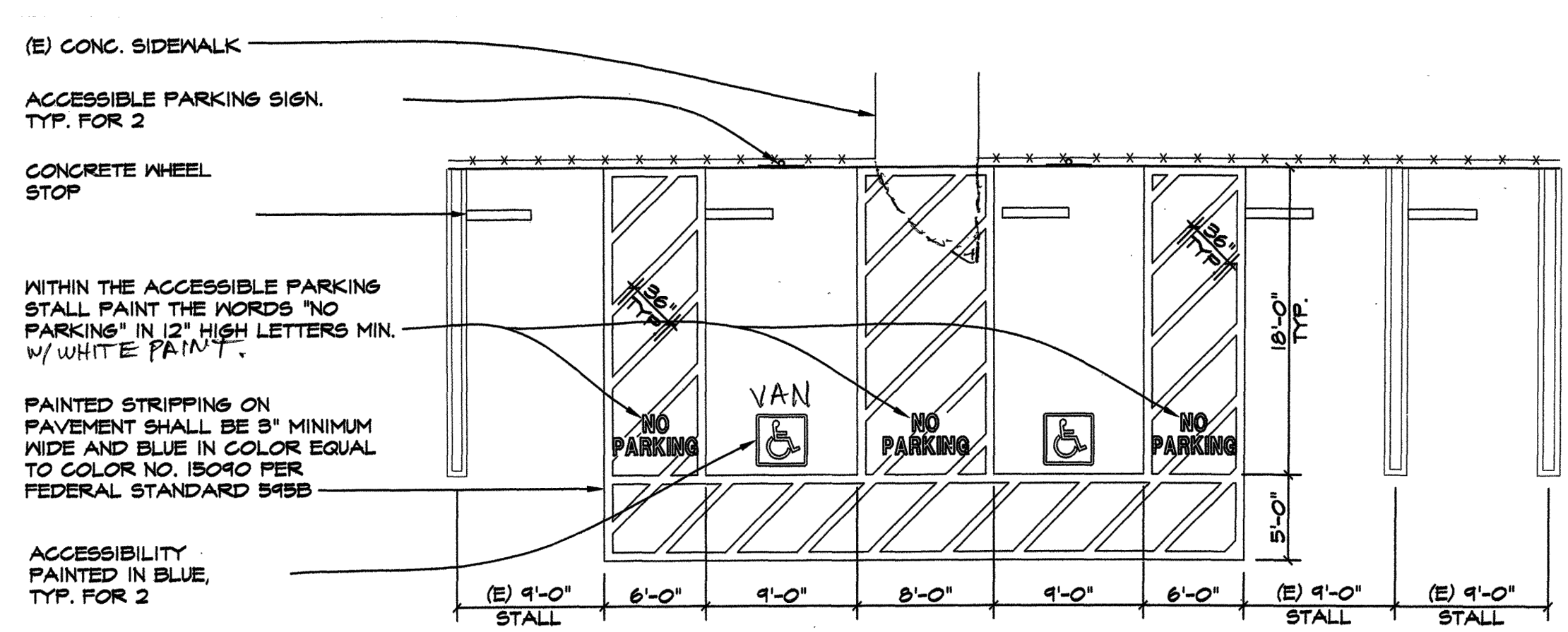
CLIENT: DOWNEY UNIFIED SCHOOL DISTRICT 11627 BROOKSHIRE AVE. DOWNEY, CA 90242

Revision table with columns for Rev, Date, and Description. Includes entries for Job No, Date, Drawn, Check, Architect, Engineer, and Sheet Description.

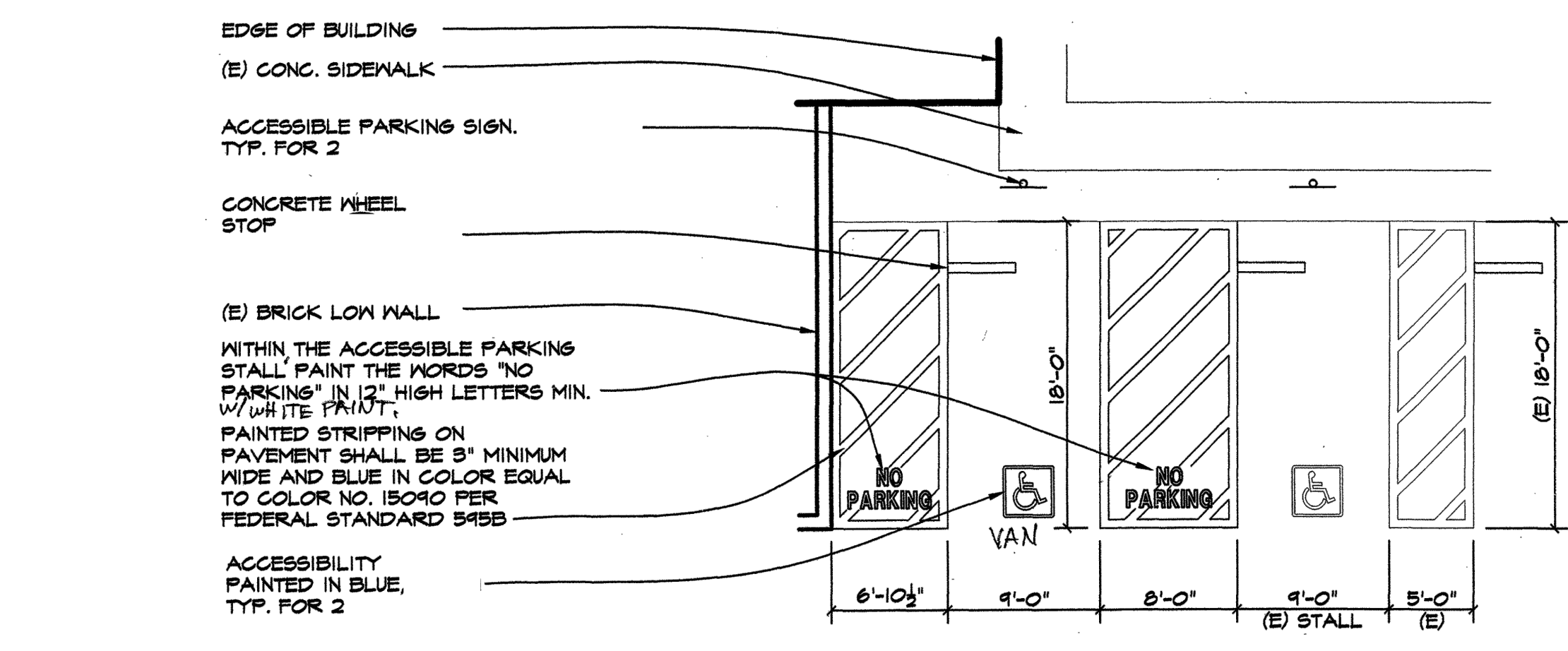
A002



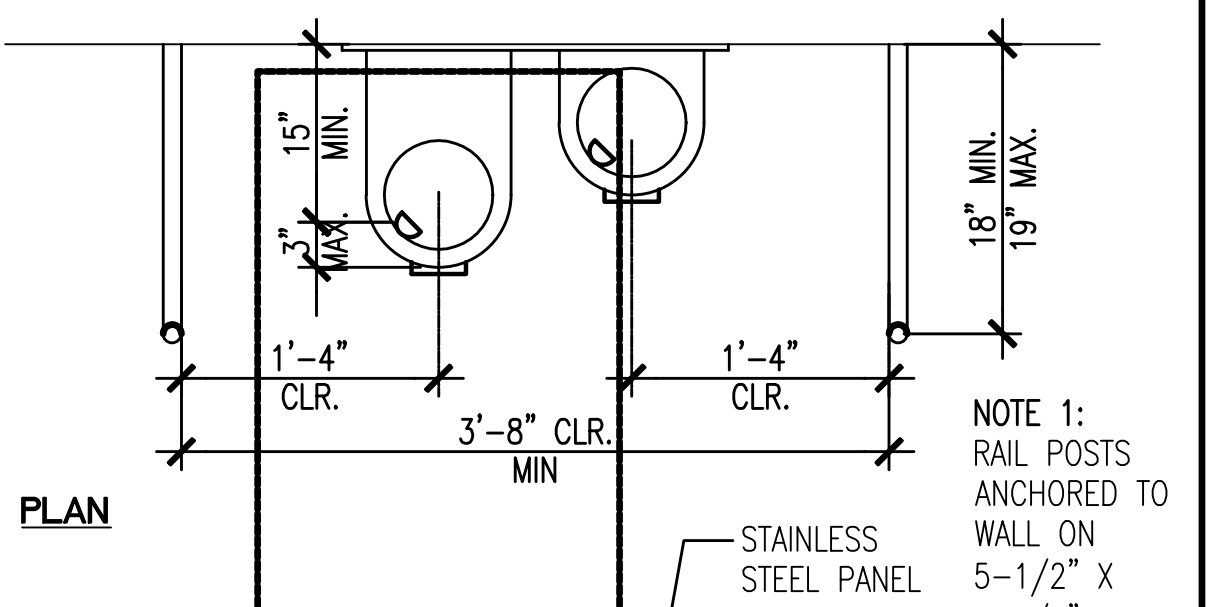
CONSULTANT: RNA



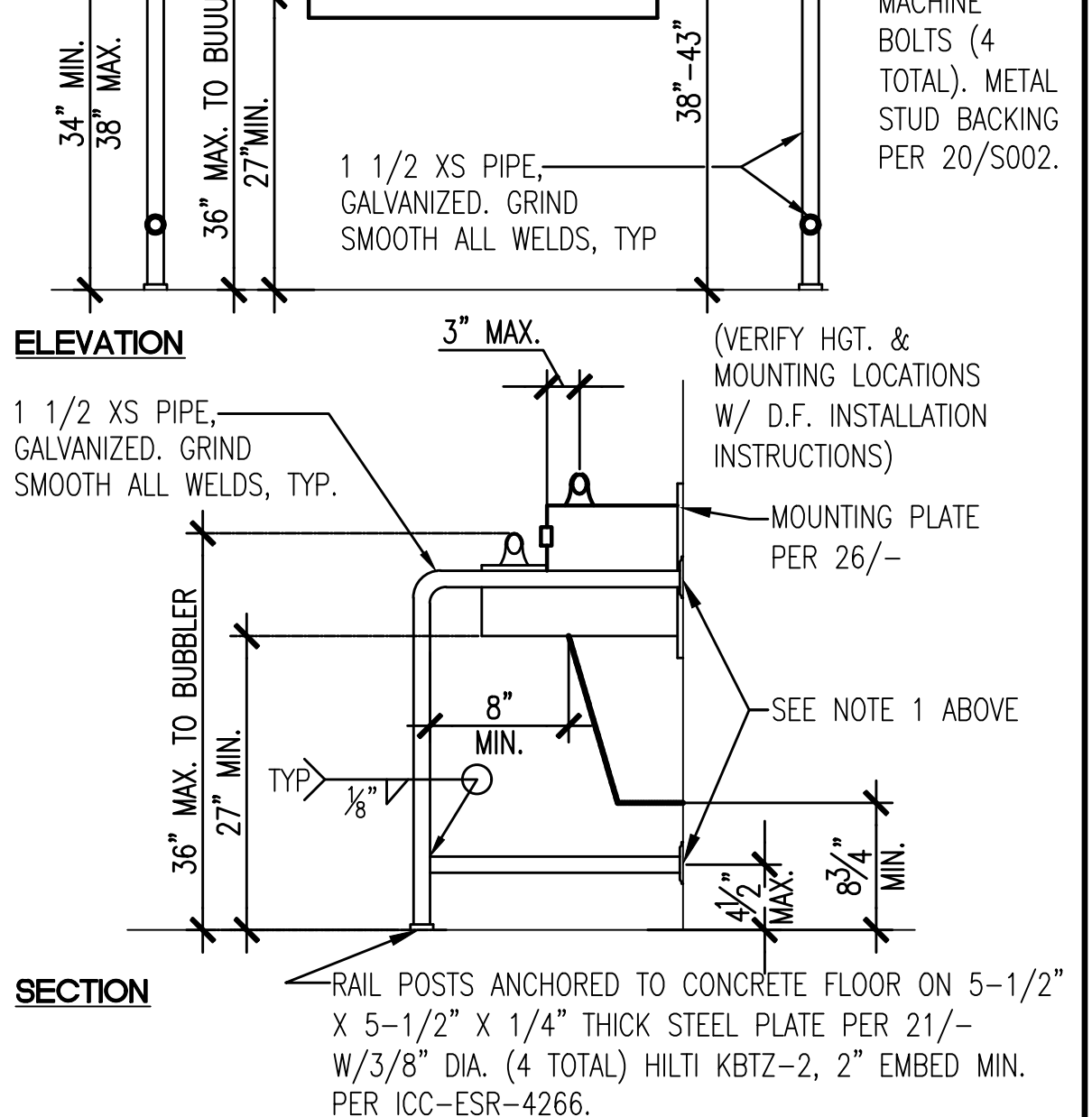
(E) ACCESSIBLE PARKING 5
EXISTING TO REMAIN AS INSTALLED UNDER 03-107573
1/8"=1'-0"



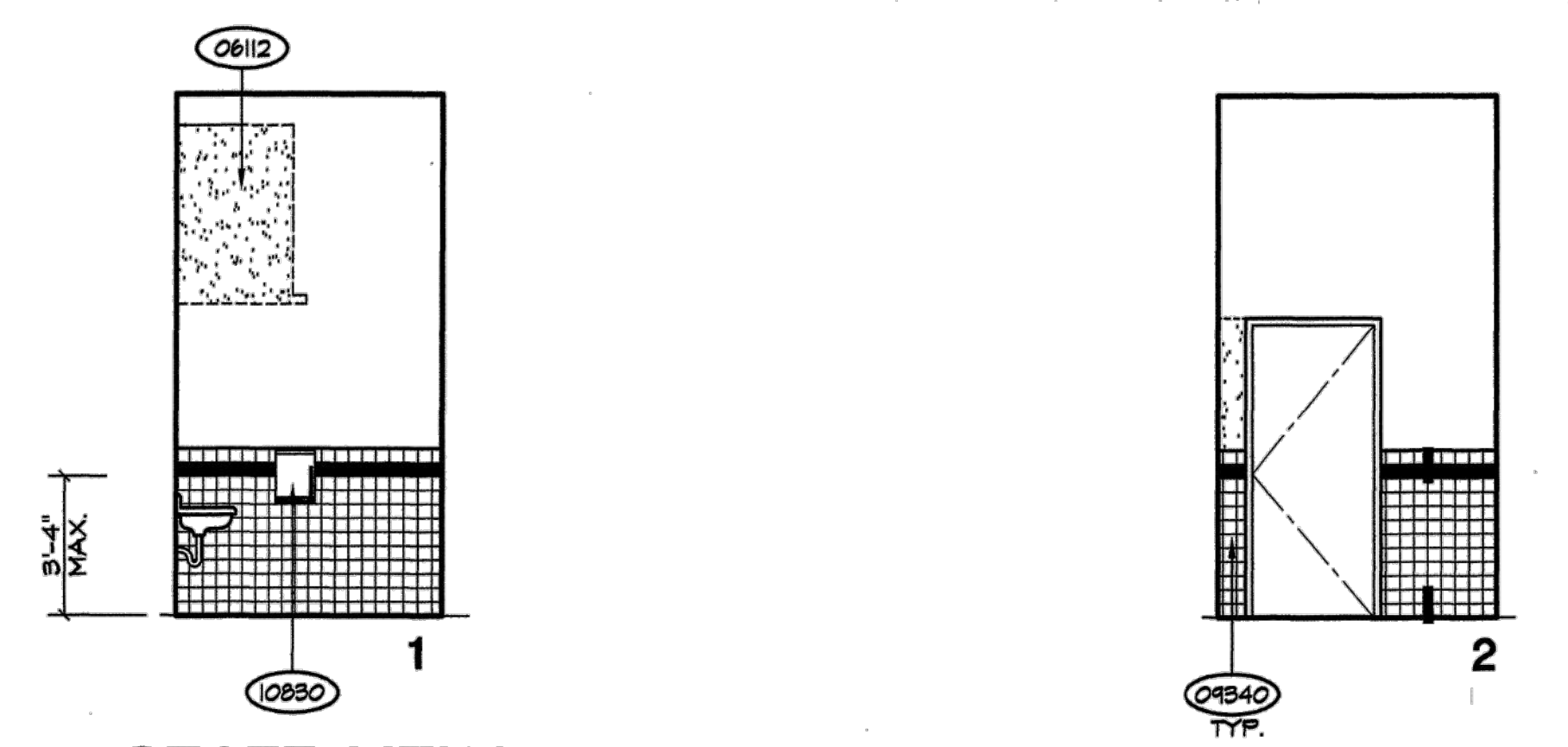
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1/8"=1'-0"



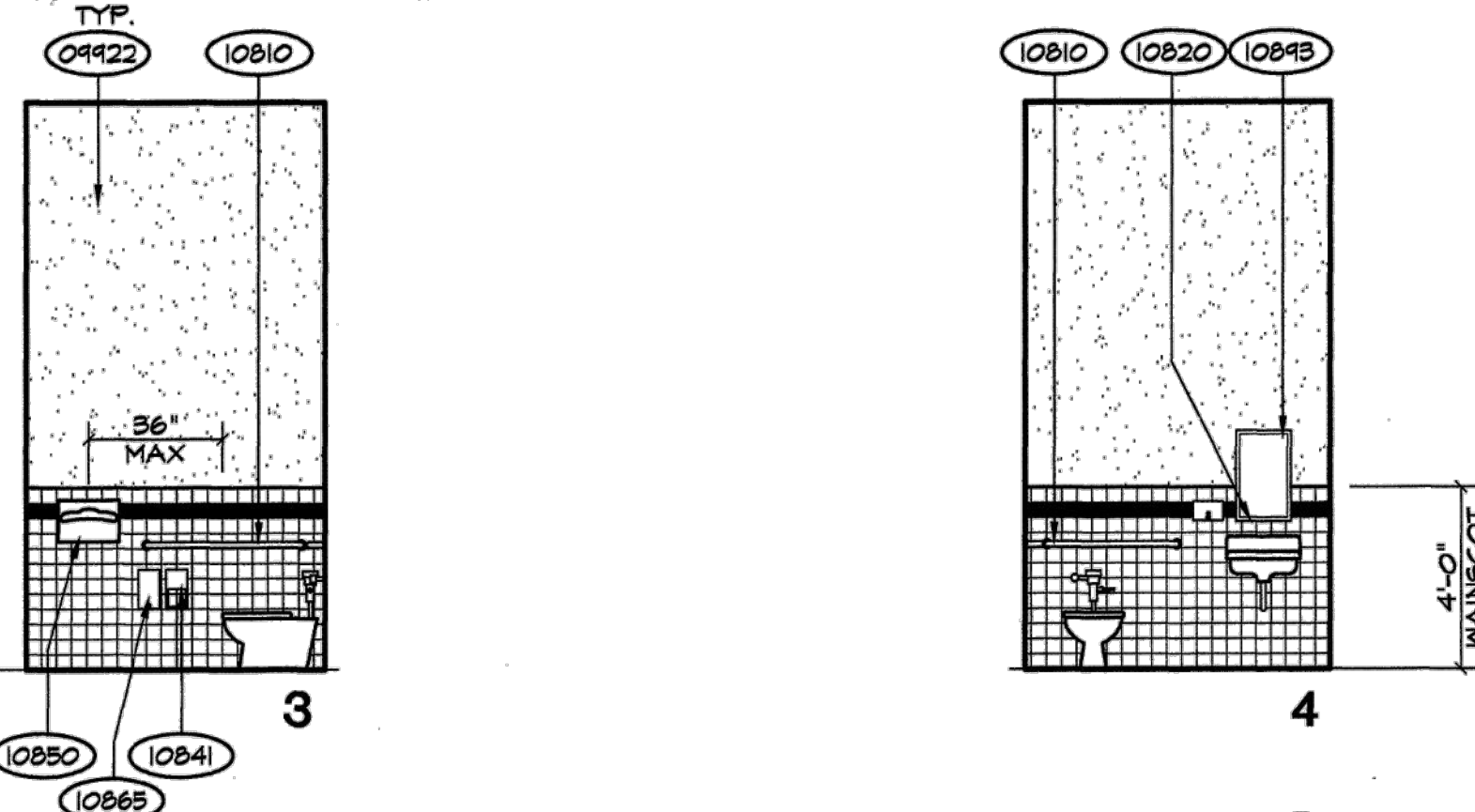
(E) DRINKING FOUNTAIN 2
EXISTING TO REMAIN AS INSTALLED UNDER 03-107573
1/8"=1'-0"



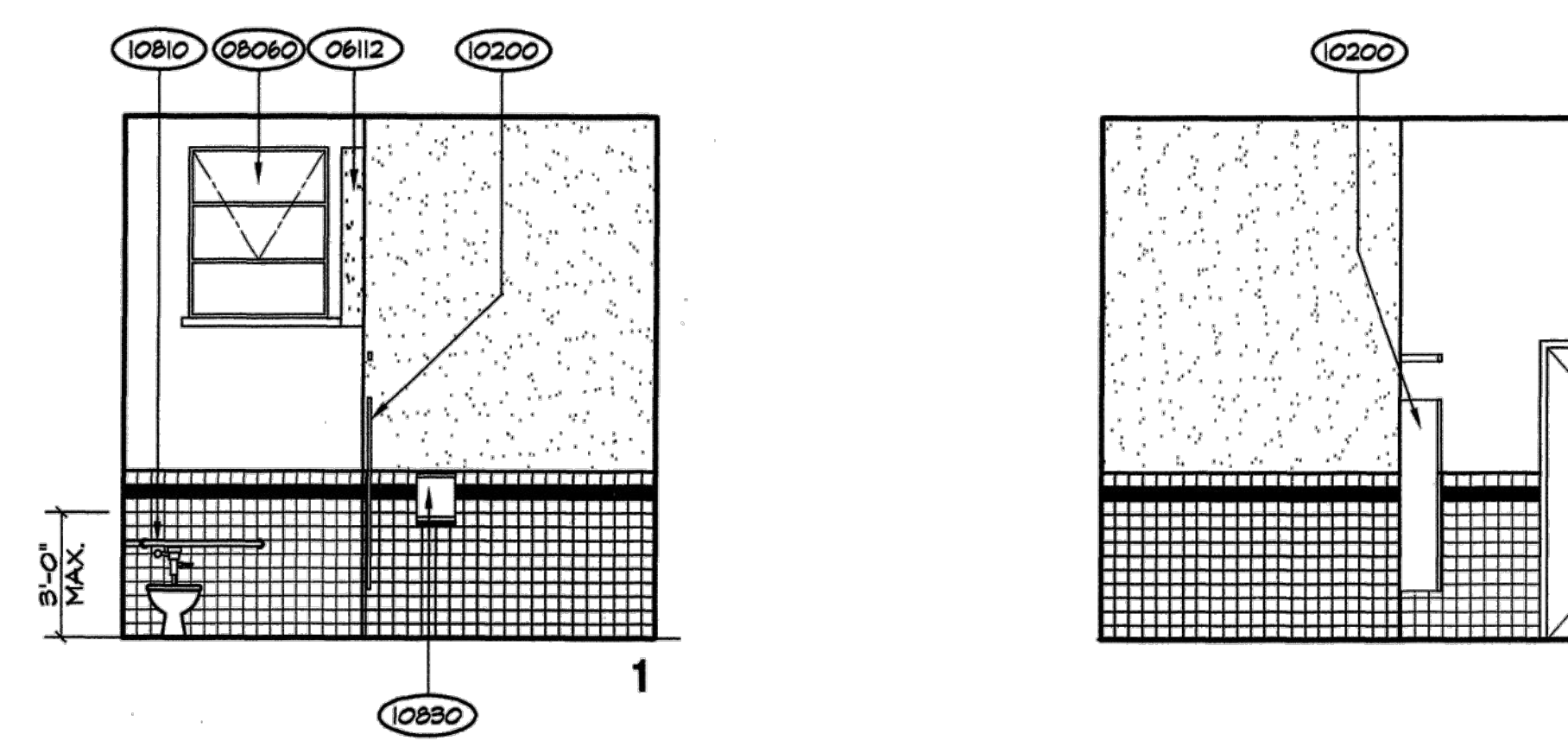
(E) DRINKING FOUNTAIN 2
EXISTING TO REMAIN AS INSTALLED UNDER 03-107573
1/8"=1'-0"



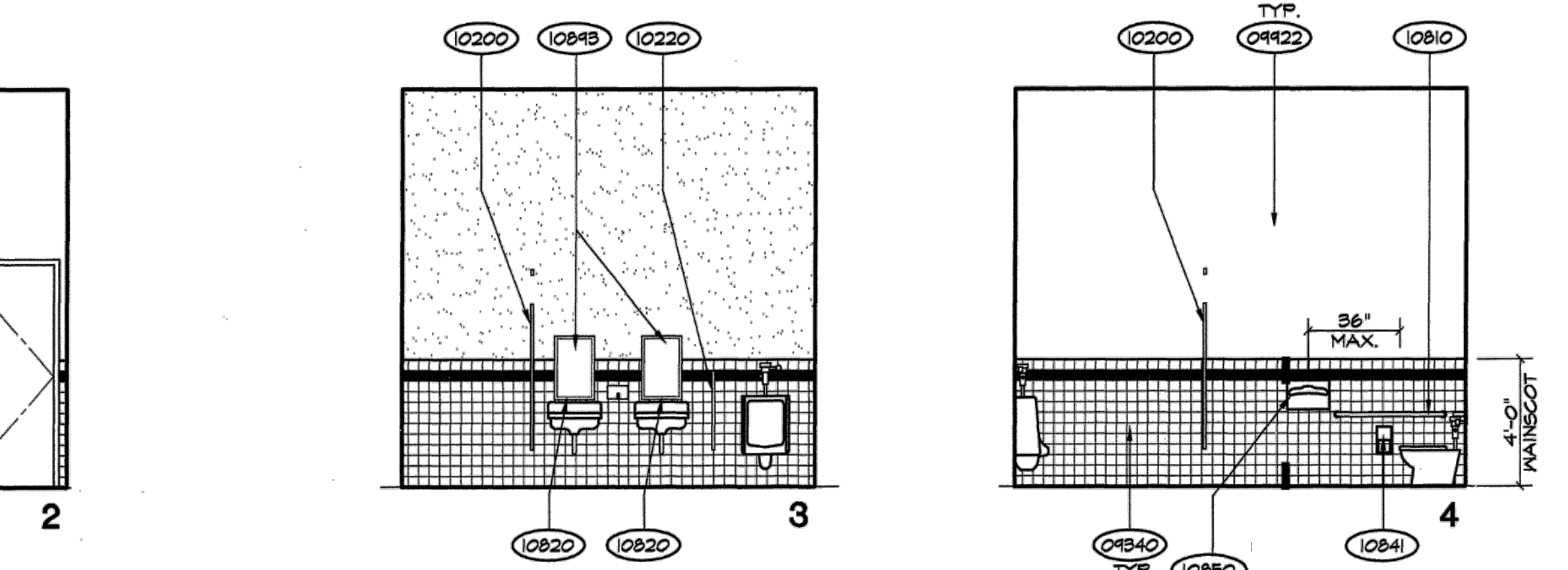
STAFF MENS TOILET - B09 (WOMENS - B10 - SIMILAR, OPPOSITE)



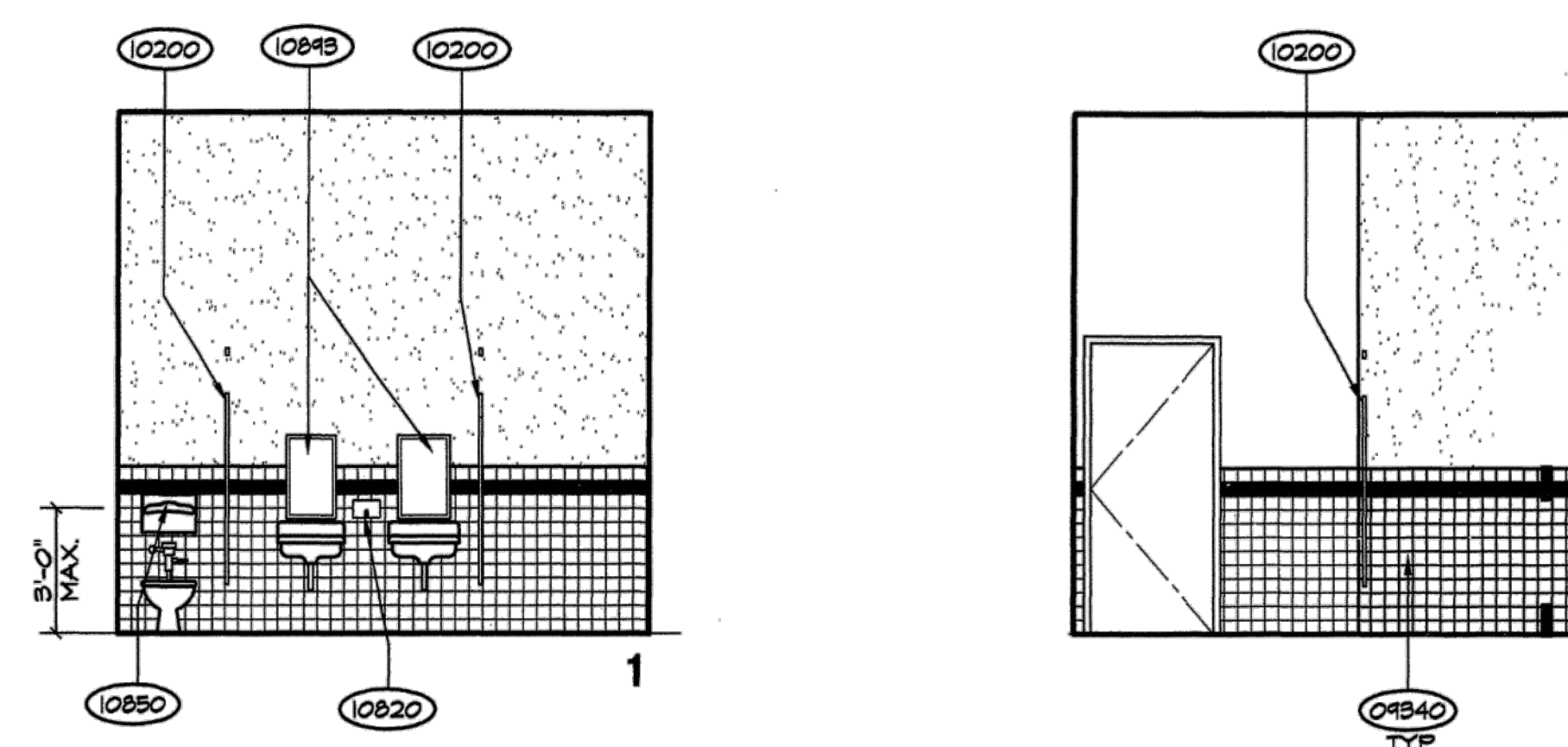
C



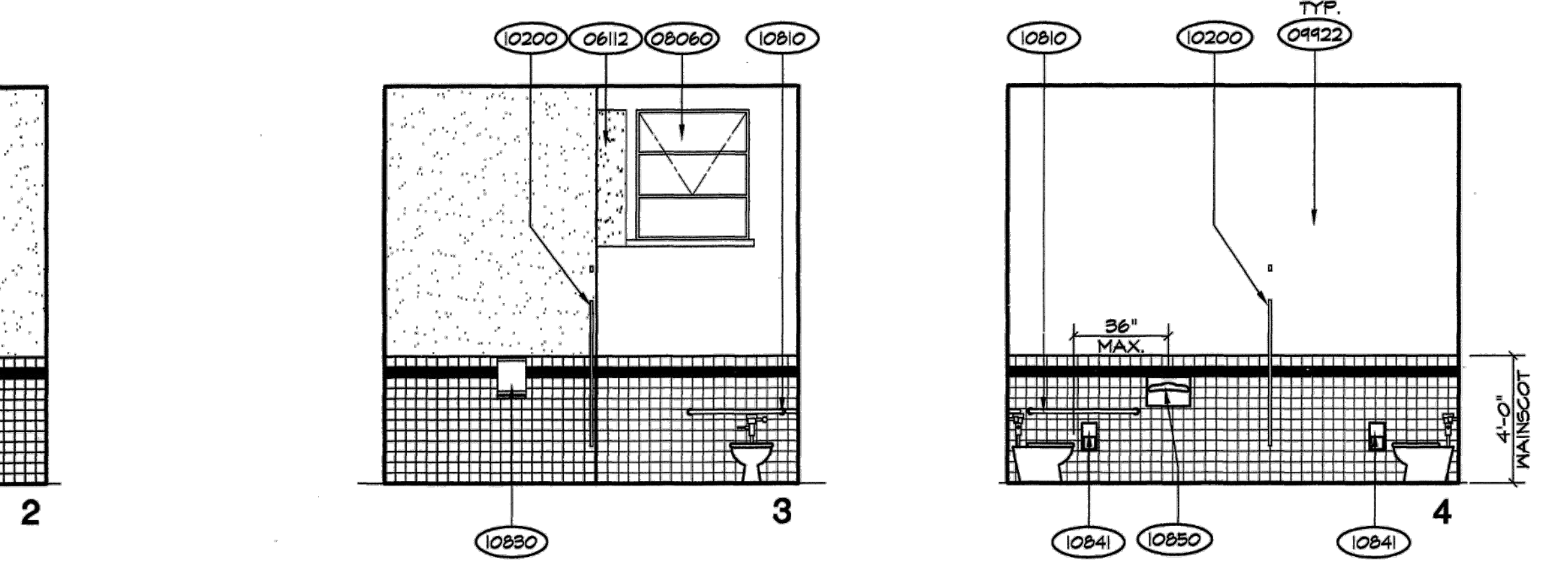
BOYS TOILET - B08



B

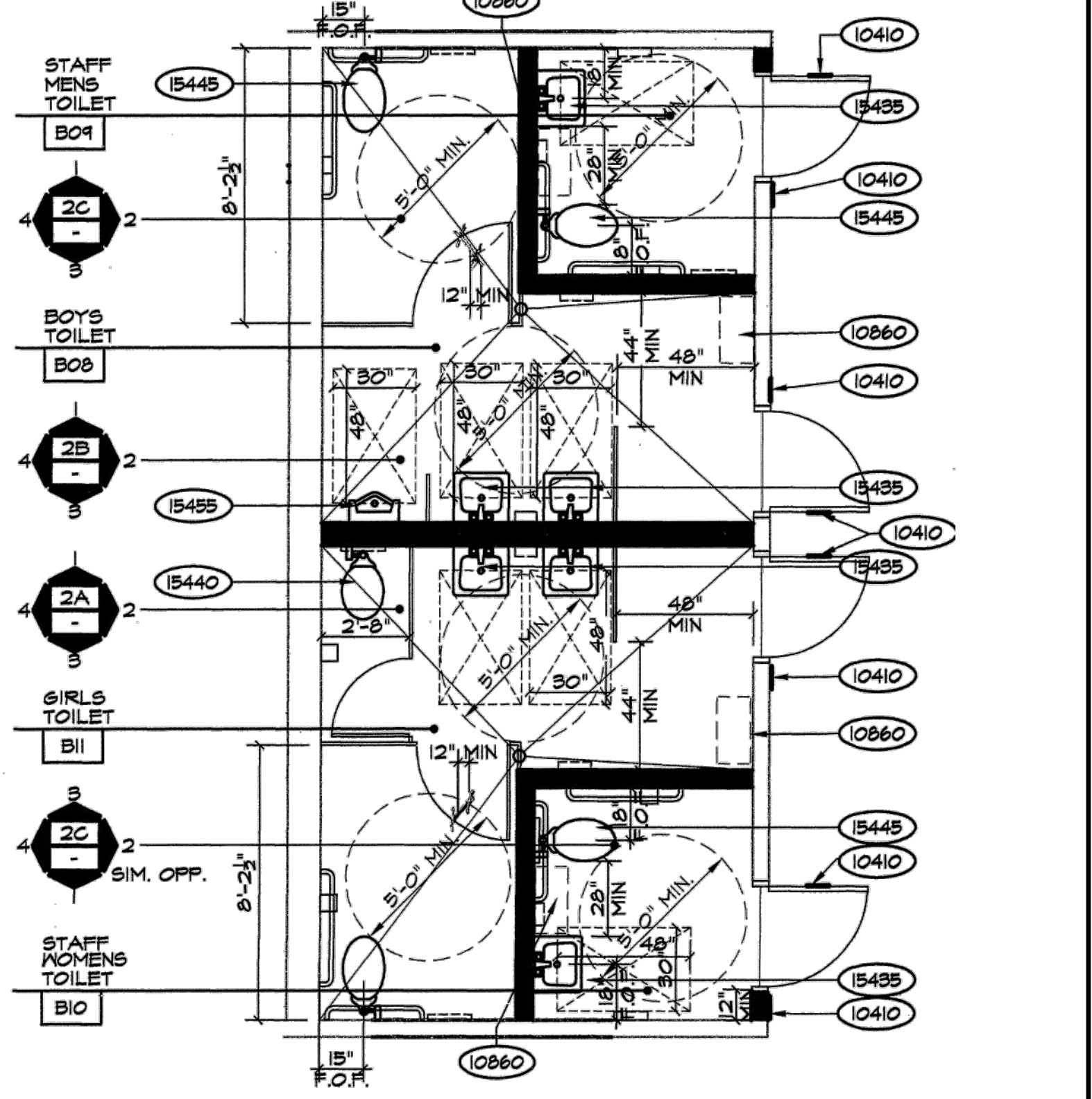


GIRLS TOILET - B11

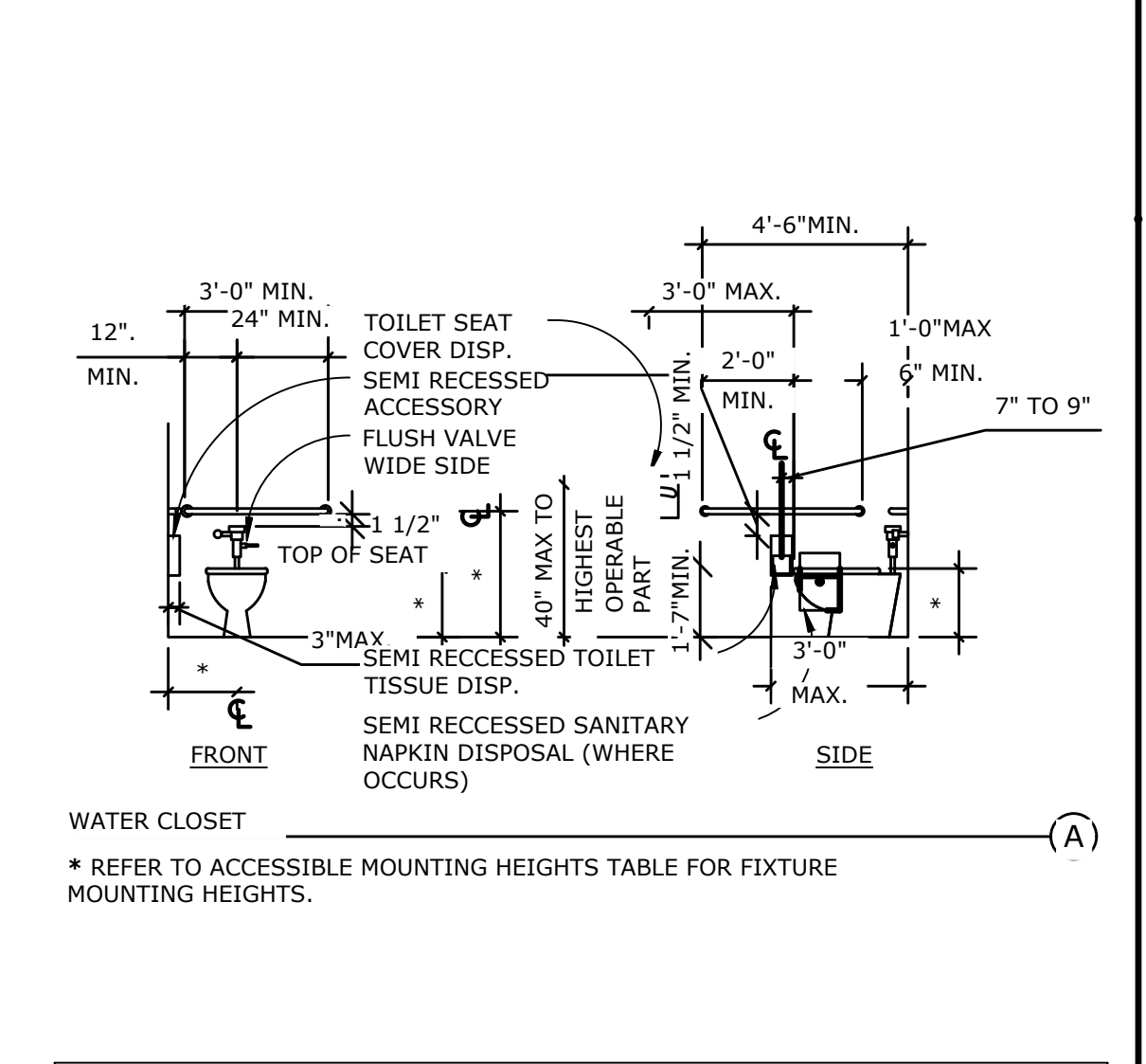
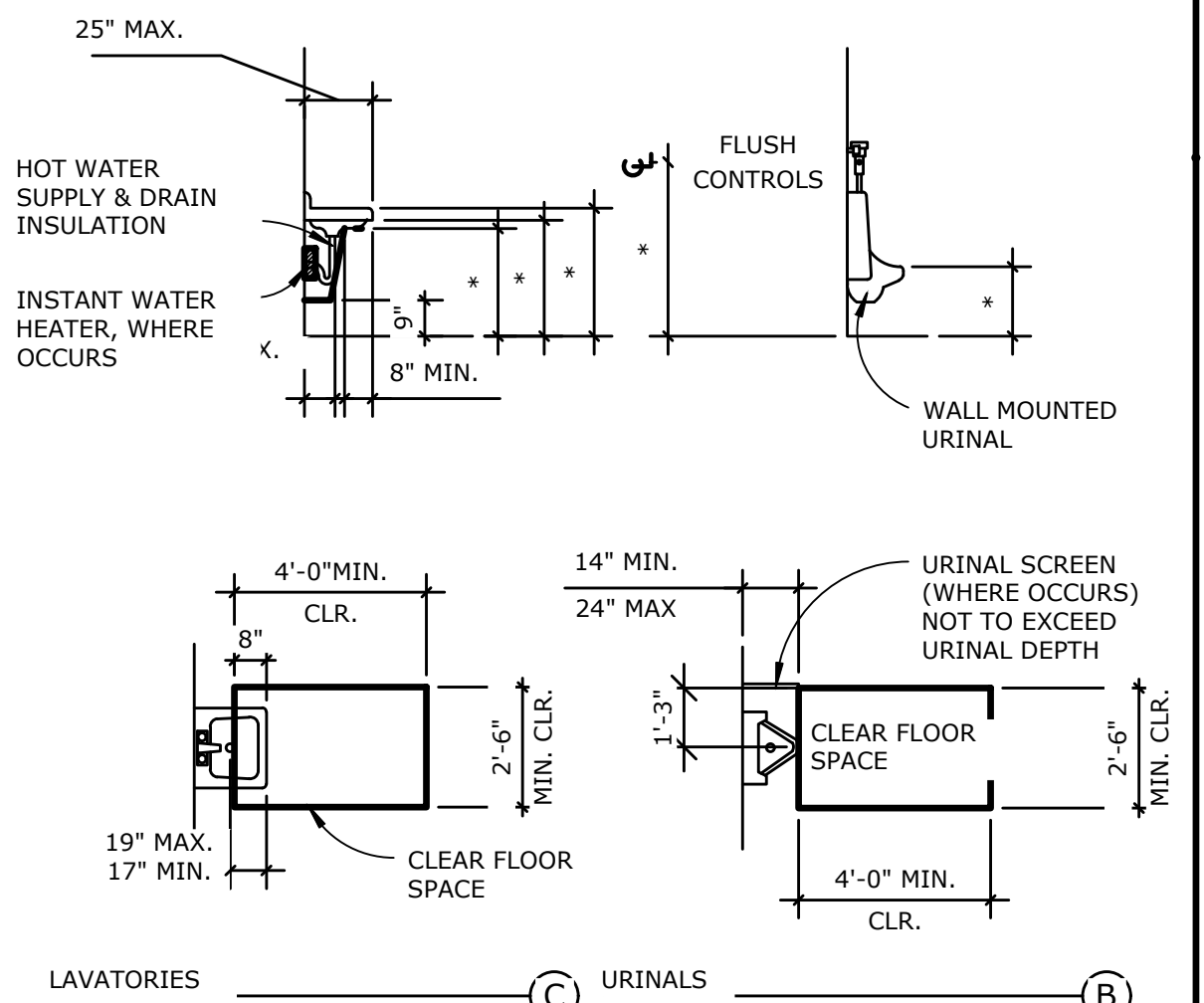
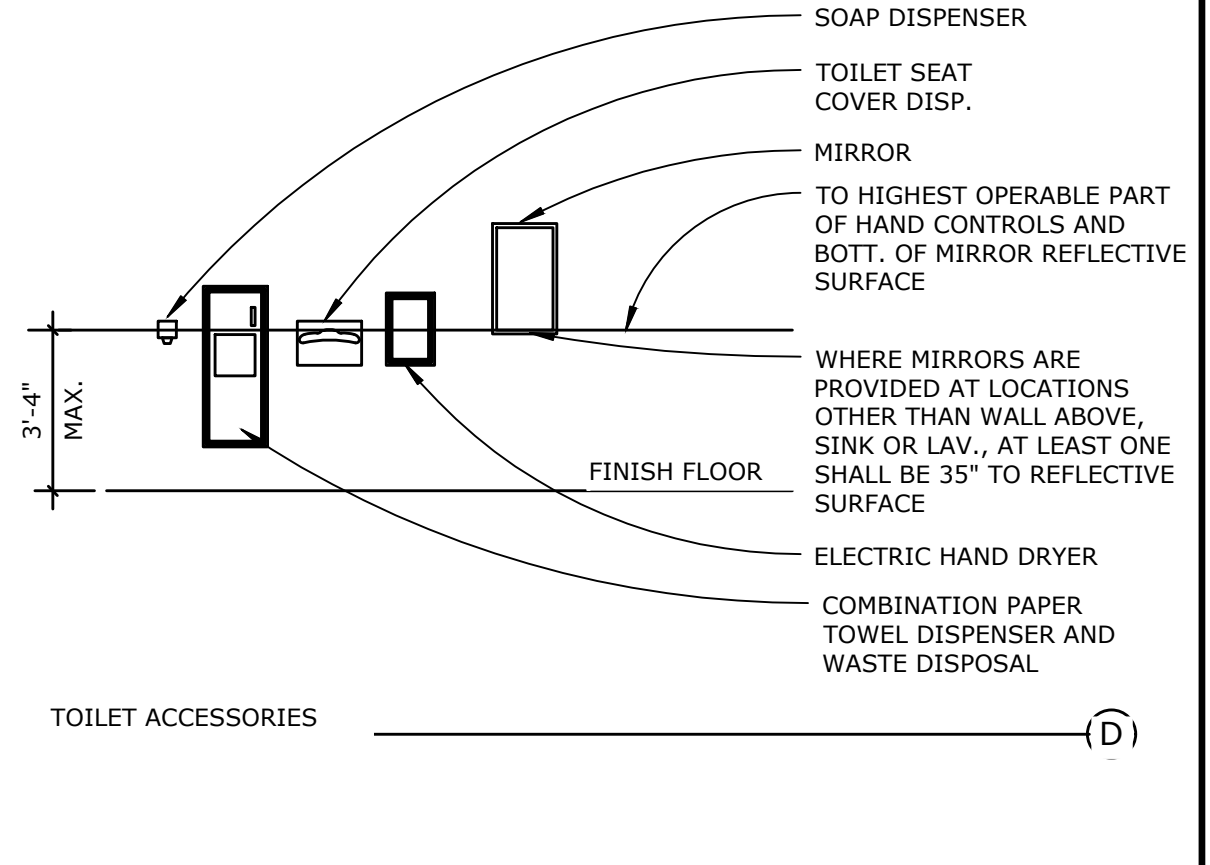


A

- 06112 NEW 2X WOOD STUD WALL INFILL
- 08060 EXISTING WINDOWS TO REMAIN
- 0840 CERAMIC TILE MAINCOT PER DETAIL 1/A870
- 04922 PREP, PRIME AND PAINT ENTIRE WALL
- 10200 TOILET COMPARTMENT PARTITION(S)
- 10220 URINAL SCREEN PARTITION(S)
- 10410 TOILET ROOM SIGNAGE - SEE DOOR SCHEDULE
- 10810 STAINLESS STEEL GRAB BAR
- 10820 SOAP DISPENSER SURFACE-MOUNTED
- 10830 MULTIFOLD PAPER TOWEL DISPENSER (STUDENTS) (4" PROJECTION MAX.)
- 10841 ROLL TOILET TISSUE DISPENSER (3" PROJECTION MAX.)
- 10850 TOILET SEAT COVER DISPENSER (3" PROJECTION MAX.)
- 10860 WASTE RECEPTACLE (BY OWNER N.G.)
- 10865 NAPKIN DISPOSAL (3" PROJECTION MAX.)
- 10890 STAINLESS STEEL MIRROR - SIZE PER SPECS
- 10495 ACCESSIBLE LAVATORY - SEE PLUMBING PLANS
- 10440 STANDARD WATER CLOSET - SEE PLUMBING PLANS
- 10445 ACCESSIBLE WATER CLOSET - SEE PLUMBING PLANS
- 10455 ACCESSIBLE WALL-MOUNTED URINAL - SEE PLUMBING PLANS



EXISTING ACCESSIBLE TOILETS 3
EXISTING TO REMAIN AS INSTALLED UNDER 03-107573
1/8"=1'-0"



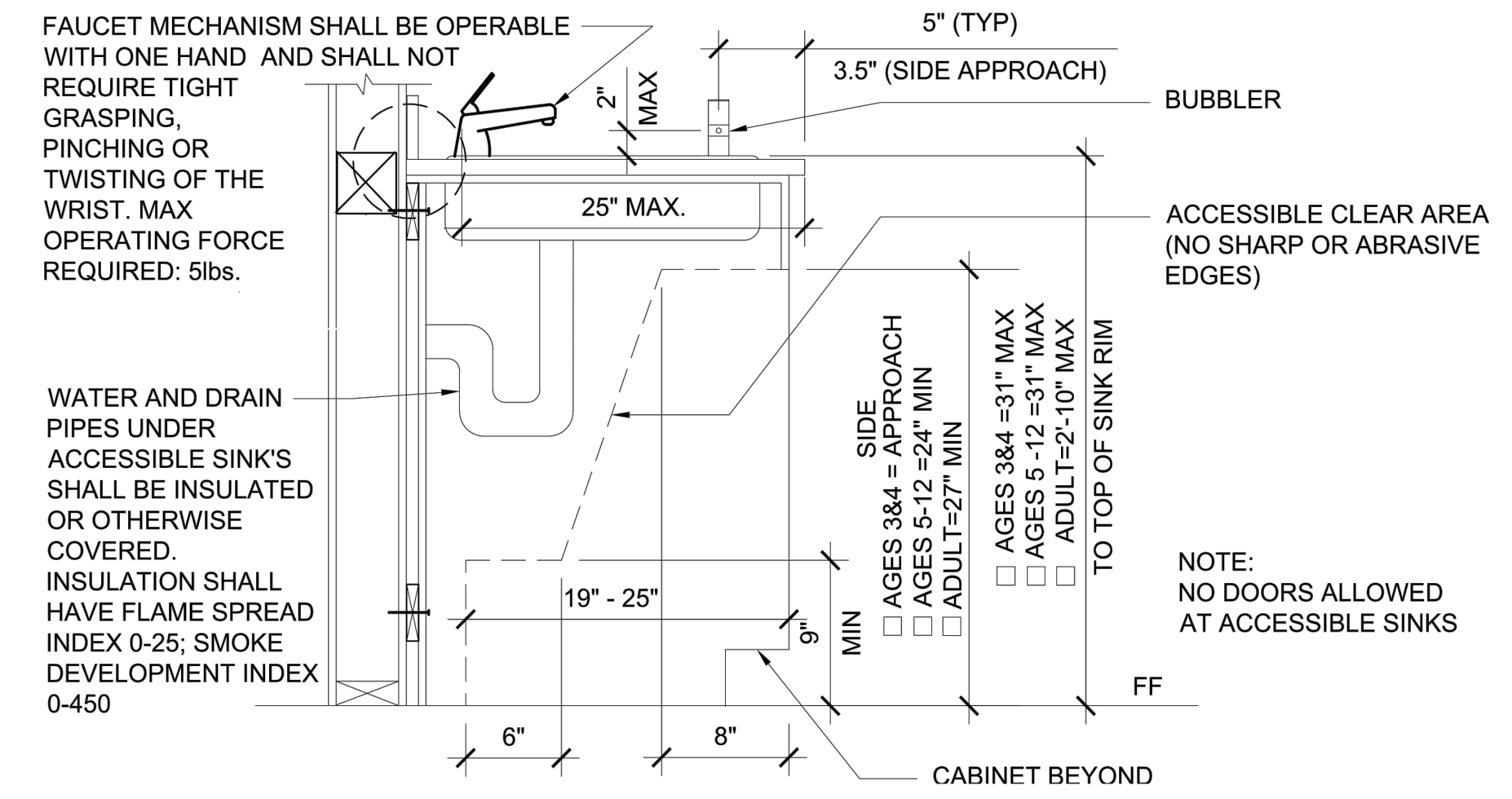
MOUNTING HEIGHTS 1
N.T.S.

PROJECT NAME:
NEW RELOCATABLE CLASSROOMS AND FIRE ALARM UPGRADES
LEWIS ELEMENTARY SCHOOL
13220 BELLFLOWER BLVD.
DOWNEY, CA 90242

CLIENT:
DOWNEY UNIFIED SCHOOL DISTRICT
11627 BROOKSHIRE AVE.
DOWNEY, CA 90242

Rev.	Date	Description

JOB NO: XXX
DATE: XXX
DRAWN: XXX
CHECK: XX
ARCHITECT: RN
ENGINEER:
SHEET DESCRIPTION:
TOILET ROOM PLANS
SHEET NO:

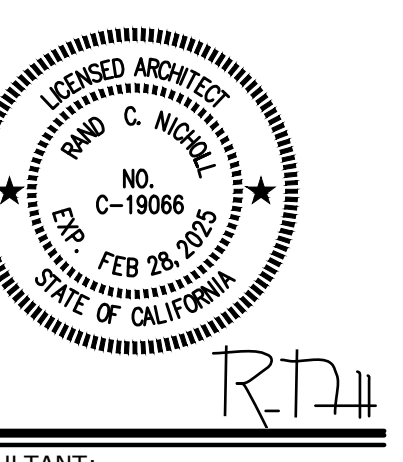


CLASSROOM SINK	1/2"	1/2"	2"	1 1/2"	JUST CRA-1725-A-GR 17"x25" w/ 4 1/2" BOWL DEPTH, WITH CHICAGO FAUCET #350 AND BUBBLER JSB-10
CS 1					

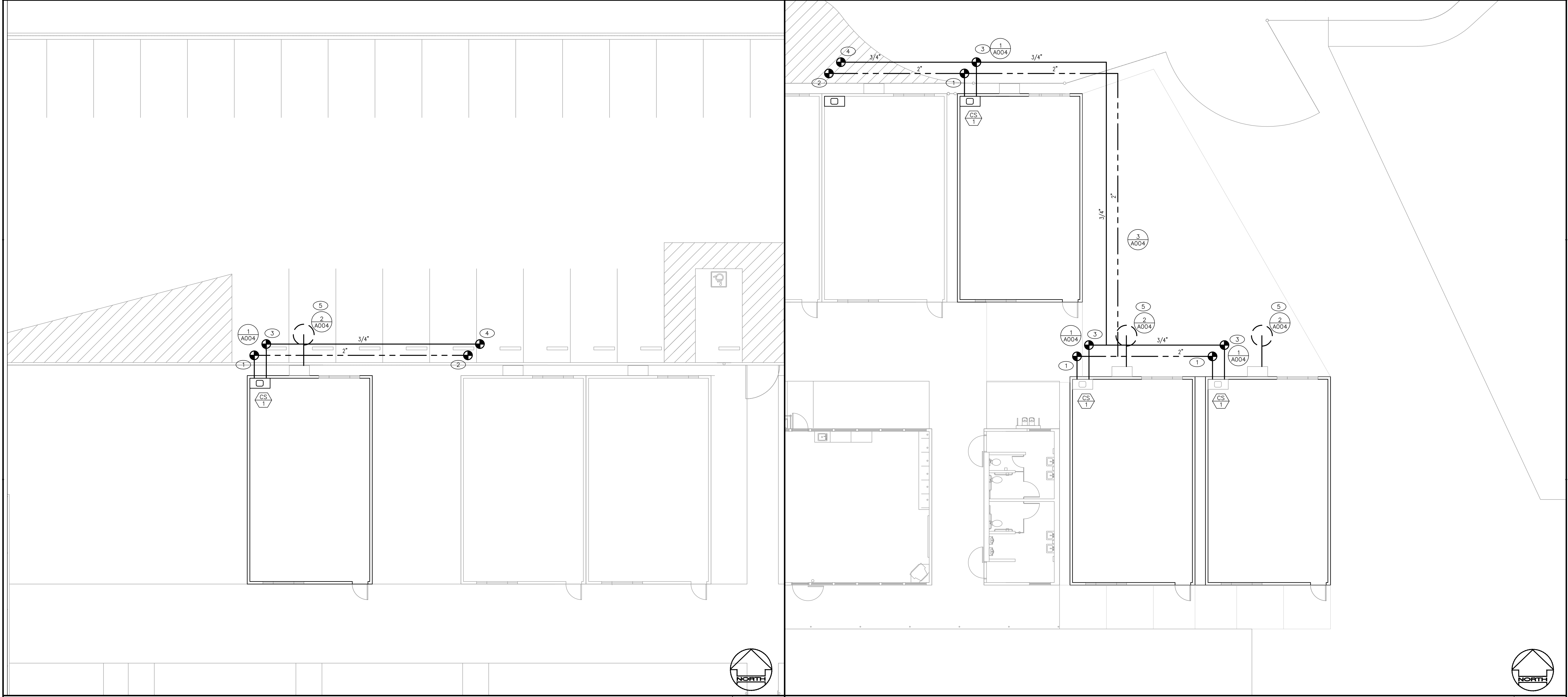
PLUMBING FIXTURE SCHEDULE

- P.O.C. 2" WASTE (SCHD. 40 ABS) TO MODULAR STUB OUT ABOVE GRADE SERVING THE CLASSROOM SINK. PROVIDE A MINIMUM OF 12" COVER. EXTEND 2" ABS AS INDICATED COMPLETE WITH CLEAN OUT PLUG, TRACER WIRE AND DETECTABLE WARNING TAPE. PATCH GRADE TO MATCH EXISTING.
- P.O.C. 2" ABS TO 3" ABS SITE SANITARY SEWER BELOW GRADE. FIELD VERIFY EXACT LOCATION AND INVERT ELEVATION PRIOR TO THE START OF WORK. PATCH GRADE TO MATCH EXISTING.
- P.O.C. 3/4" DOMESTIC COLD WATER (TYPE 'L' COPPER) TO 3/4" MODULAR STUB OUT SERVING THE CLASSROOM SINK. FIELD VERIFY EXACT SIZE AND LOCATION PRIOR TO STARTING WORK. PATCH GRADE TO MATCH EXISTING.
- P.O.C. 3/4" DOMESTIC COLD WATER (TYPE 'K' COPPER) TO 3/4" SITE DOMESTIC COLD WATER. EXTEND SERVICE AS INDICATED WITH TRACER WIRE AND DETECTABLE WARNING TAPE. FIELD VERIFY EXACT SIZE AND LOCATION PRIOR TO STARTING WORK. PATCH GRADE TO MATCH EXISTING.
- 3/4" CD FROM OUTDOOR AC UNIT DN. TO BELOW GRADE, DISCHARGE INTO DRYWELL.

RNA
 RAND NICHOLL ARCHITECTURE
 4591 SIRODAY AVENUE
 YORBA LINDA, CA 92886
 714.915.4504



CONSULTANT:



PLUMBING ENLARGED PLAN

2
1/8" = 1'-0"

PLUMBING ENLARGED PLAN

1
1/8" = 1'-0"

PROJECT NAME:
**NEW RELOCATABLE CLASSROOMS
 AND FIRE ALARM UPGRADES**
 LEWIS ELEMENTARY SCHOOL
 13220 BELFLOWER BLVD.
 DOWNEY, CA 90242

CLIENT:
**DOWNEY UNIFIED
 SCHOOL DISTRICT**
 11627 BROOKSHIRE AVE.
 DOWNEY, CA 90242

Rev.	Date	Description

JOB NO: XXX
 DATE: XXX
 DRAWN: XXX
 CHECK: XX
 ARCHITECT: RN
 ENGINEER:
 SHEET DESCRIPTION:
PLUMBING PLANS

SHEET NO:
A005

GENERAL SINGLE-LINE NOTES

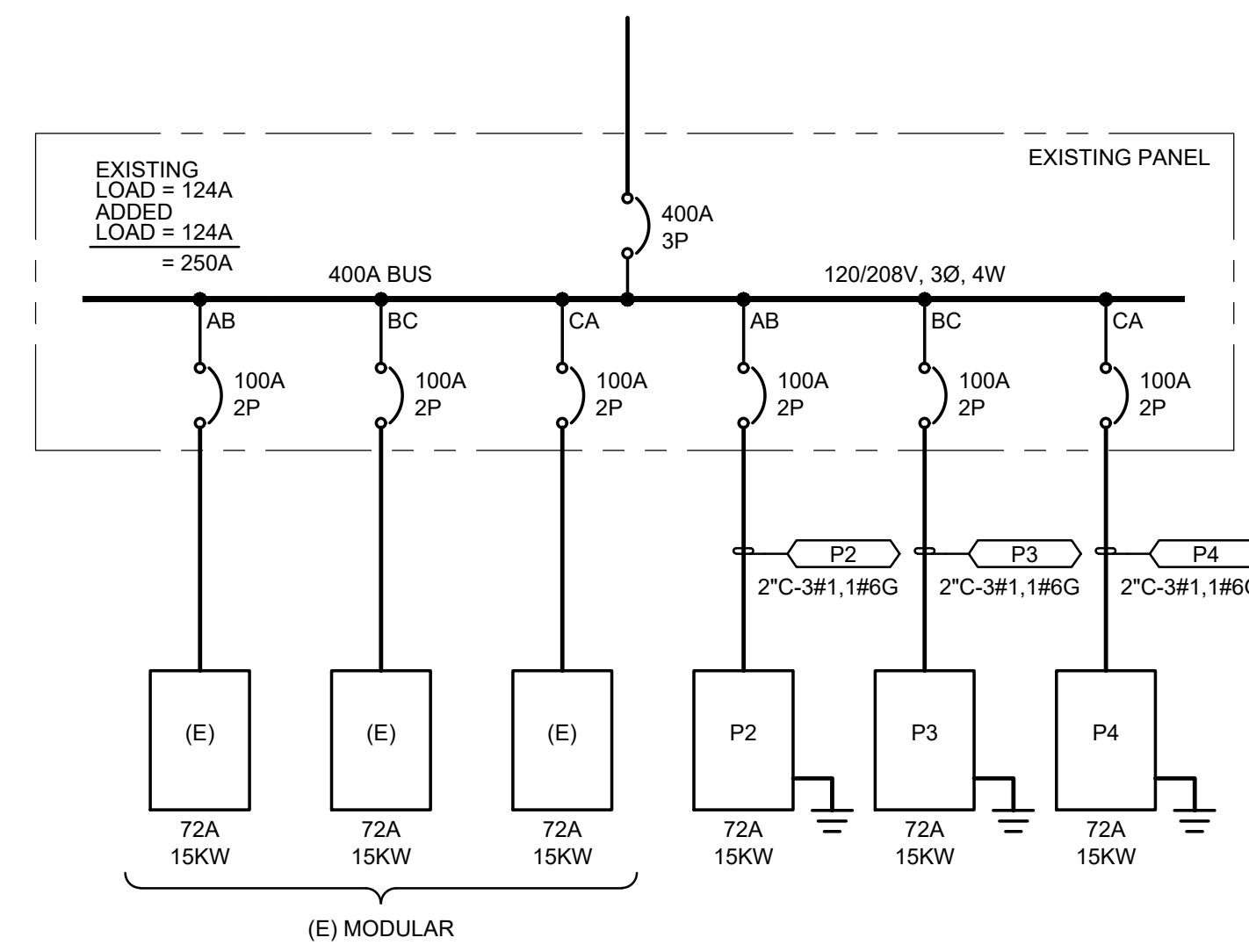
1. ALL EQUIPMENT TO BE SQUARE D OR EQUAL BY SIEMENS, CUTLER-HAMMER, S.E. OR RSC-SIERA.
2. ALL ELECTRICAL EQUIPMENT SHALL BE PROVIDED WITH SPECIFIED AND APPROPRIATE UL LISTING BASED ON THE ENVIRONMENT IN WHICH THE EQUIPMENT IS TO BE MOUNTED.
3. ALL ELECTRICAL EQUIPMENT SHALL BE PROVIDED WITH AND BRACED FOR REQUIRED FAULT CURRENT RATINGS BASED ON THEIR VOLTAGE AND LOCATION WITHIN THE SYSTEM. SHOP DRAWINGS TO INCLUDE FAULT CURRENT RATINGS FOR ALL ELECTRICAL EQUIPMENT. NO SERIES RATING SHALL BE ALLOWED.
4. ALL TERMINATIONS AND ENCLOSURES SHALL BE RATED FOR USE WITH 75 DEGREE CELSIUS CONDUCTORS.
5. ALL SERVICE ENTRANCE EQUIPMENT/DISTRIBUTION BOARDS/SWITCHBOARDS RATED AT 600A OR GREATER SHALL BE PROVIDED WITH A SOLID STATE MAIN OVER-CURRENT PROTECTIVE DEVICE AND BUSSING RATED AT 100% OPERATION.
6. ALL SWITCH/DISTRIBUTION BOARDS SHALL BE PROVIDED WITH:
 - a. COPPER BUSSING WITH RECTANGULAR CROSS SECTION. HORIZONTAL AND VERTICAL BUSSING SHALL BE FULL LENGTH AND HAVE PROVISIONS FOR FUTURE EXTENSIONS WHERE APPLICABLE. ALL BUSSING SHALL HAVE A MINIMUM WITHSTAND RATING EQUAL TO AVAILABLE FAULT CURRENT INDICATED ON THE AIC CALCULATION. ALL VERTICAL AND HORIZONTAL BUSSING SHALL BE RATED AT FULL CAPACITY IN ALL SWITCHBOARD AND DISTRIBUTION BOARD ASSEMBLIES. PROVIDE 100% NEUTRAL BUSSING MINIMUM - UNLESS OTHERWISE NOTED. PROVIDE FULL LENGTH GROUND BUSS, AND WHERE INDICATED ON PLANS ISOLATED GROUND BUSSING. PROVIDE REAR WIRE WAY IN ALL SWITCHBOARD SECTIONS - UNLESS OTHERWISE NOTED OR REQUIRED.
 - b. LUGS SHALL BE SUITABLE FOR USE WITH BOTH COPPER AND ALUMINUM CONDUCTORS AND 75 DEGREE CELSIUS AMPACITY CONDUCTORS.
 - c. PERMANENT PLACARDS(S) MARKED PER THE SPECIFICATIONS AND PER NEC (CEC - WHERE ADOPTED SECTIONS 225.37, 230.2(E), 690.56(B) & (C), 692.56, 700 & 701.9, AND 702.8 DENOTING PRESENCE OF ADDITIONAL SERVICES: PHOTOVOLTAIC SYSTEMS, FUEL CELLS, EMERGENCY OR STAND-BY POWER SOURCES, ETC. AS APPLICABLE.
8. CONTRACTOR SHALL PROVIDE SWITCHBOARD SHOP DRAWINGS TO SERVING UTILITY COMPANY PRIOR TO FABRICATION OF EQUIPMENT. CONTRACTOR SHALL SECURE CONFIRMATION PROPOSED SWITCHBOARD COMPLES WITH ELECTRICAL UTILITY COMPANY REGULATIONS.
9. ELECTRICAL EQUIPMENT SUBMITTALS SHALL BE ACCOMPANIED BY A 1/4" = 1'-0" SCALED DRAWING WHICH REFERENCES ALL ELECTRICAL EQUIPMENT ROOMS AND EQUIPMENT. DRAWING SHALL CLEARLY IDENTIFY ADEQUATE SPACE IS PROVIDED IN ELECTRICAL ROOMS TO ACCOMMODATE THE INSTALLATION OF ELECTRICAL EQUIPMENT WHILE MAINTAINING ALL REQUIRED CODE CLEARANCES. ALL SUBMITTALS NOT ACCOMPANIED BY SCALED DRAWING WILL BE REJECTED AS INCOMPLETE.
10. EC SHALL CONDUCT, WITH ASSISTANCE OF SWITCHGEAR MANUFACTURER, AN ELECTRICAL HAZARD ANALYSIS CONSISTING OF AN ARC FLASH, SHORT CIRCUIT, AND COORDINATION STUDY TO DETERMINE APPROPRIATE LEVELS OF PERSONNEL PROTECTIVE EQUIPMENT AS REQUIRED BY NFPA 70E AND IEEE STD 1584, AND TO ENSURE PROPER COORDINATION INCLUDING GROUND FAULT COORDINATION EXISTS. CURRENT COORDINATION OF MAIN BREAKER AND ANY FEEDER GROUND FAULT DEVICES WITH DOWNSTREAM CIRCUIT BREAKERS 30A AND LESS.
 - a. STUDY SHALL INCLUDE ALL PORTIONS OF ELECTRICAL SINGLE-LINE DIAGRAM. NORMAL SYSTEM CONNECTIONS AND THOSE THAT RESULT IN MAXIMUM FAULT CONDITION SHALL BE ADEQUATELY COVERED IN THE STUDY. PERFORM STUDY WITH THE AID OF A COMPUTER PROGRAM SKM CAPTOR, OR EQUAL. STUDY SHALL IDENTIFY SELECTIVE COORDINATION SUCH THAT DEVICE CLOSEST TO FAULT WILL TRIP FIRST. GROUND FAULT PORTION OF THE STUDY SHALL DEMONSTRATE COORDINATION OF MAIN BREAKER AND ANY FEEDER GROUND FAULT DEVICES WITH DOWNSTREAM CIRCUIT BREAKERS 30A AND LESS.
 - b. EC SHALL BE RESPONSIBLE TO RECOMMEND SETTINGS OF ALL DEVICES AND TO INCLUDE GROUND FAULT SETTINGS NECESSARY TO ACHIEVE SYSTEM COORDINATION. CONTRACTOR SHALL FIELD ADJUST DEVICES ACCORDINGLY UTILIZING A QUALIFIED MANUFACTURER'S REPRESENTATIVE.
 - c. DURING THE CONSTRUCTION PHASE OF THE PROJECT ALL GROUND FAULT RELAYS SHALL BE SET AT SHORT DELAY.
 - d. RESULT OF COORDINATION STUDY SHALL BE SUBMITTED AS PART OF OVERALL SWITCHGEAR SUBMITTAL AND SHALL INCLUDE PROTECTIVE DEVICE TIME VERSUS CURRENT COORDINATION CURVES, GROUPING APPROPRIATE DEVICES TOGETHER, TABULATIONS OF RELAY AND CIRCUIT BREAKER TRIP SETTINGS, FUSE SELECTION, AND COMMENTARY REGARDING SAME.
 - e. A GROUND FAULT SYSTEM TEST SHALL BE CONDUCTED BY AN INDEPENDENT TESTING AGENCY PER NEC (CEC - WHERE ADOPTED) 230.95(C). GROUND FAULT SYSTEM TEST SHALL BE PERFORMED IN PRESENCE OF LOCAL AHI. VERIFICATION OF DEVICE SETTINGS PER THE COORDINATION STUDY SHALL BE PERFORMED BY SAME INDEPENDENT TESTING AGENCY. GROUND FAULT TEST RESULTS SHALL BE DELIVERED TO ENGINEER OF RECORD.
 - f. PERFORM ARC FLASH ANALYSIS TO DETERMINE FLASH BOUNDARY, FLASH HAZARD CATEGORY, PPE REQUIREMENTS, AND MINIMUM ARC RATING (CAL/SQUARE CM). ABOVE INFORMATION SHALL BE INDICATED AT EACH ARC FLASH SOURCE ON A NEC (CEC WHERE ADOPTED) COMPLIANT ARC FLASH HAZARD LABEL(S) AS MANUFACTURED BY BRADY.
11. GROUND ALL ELECTRICAL EQUIPMENT, BRANCH CIRCUITS, FEEDERS, PANEL AND DISTRIBUTION BOARDS, ELECTRICAL SERVICES, ETC. PER ADOPTED NEC ARTICLE 250.
12. FEEDER SPECIFICATIONS ARE BASED ON USE OF COPPER CONDUCTORS AND SHALL BE PROVIDED WITH A CODE SIZED COPPER GROUNDING CONDUCTOR.
13. ALL MAIN SWITCHBOARDS, PANELBOARDS, DISTRIBUTION BOARDS, ETC. SHALL BE PROVIDED WITH A COPPER BUSS RATED AT SPECIFIED AMPACITY. ALL SWITCHBOARDS AND DISTRIBUTION BOARDS SHALL ALIGN IN FRONT. ALL PANELBOARDS SHALL BE PROVIDED WITH BOLT-ON BREAKERS, DEADFRONT COVERS WITH LOCKABLE DOORS, FACTORY INSTALLED MAIN CIRCUIT BREAKERS (IF APPLICABLE), AND PANEL DIRECTORY PER THESE DOCUMENTS.
14. ALL ELECTRICAL EQUIPMENT (I.E. SWITCHGEAR, TRANSFORMERS, DISTRIBUTION BOARDS, PANELBOARDS, DISCONNECT SWITCHES, ETC.) SHALL BE PROVIDED WITH A PHENOLIC NAMEPLATE WITH ENGRAVED WHITE LETTERS REFERENCING FOLLOWING INFORMATION:

LINE 1 - "EQUIPMENT NAME"
 LINE 2 - "FED FROM"
 LINE 3 - "VOLTAGE, AMPACITY, PHASE"
 LINE 4 - "DATE INSTALLED"

NAMEPLATES SHALL BE SIZED BASED ON FOLLOWING:
 SWITCHBOARDS, DISTRIBUTION BOARDS, TRANSFORMERS:
 * LINE 1 = 1/2" LETTERS, LINES 2, 3, & 4 = 1/4" LETTERS
 PANELBOARDS, MOTOR CONTROL CENTERS, DISCONNECTS, STARTERS, ETC:
 * LINE 1 = 3/8" LETTERS, LINES 2, 3, & 4 = 1/4" LETTERS

NAMEPLATE COLORS SHALL BE AS FOLLOWS:
 BLACK = NORMAL POWER
 RED = LIFE SAFETY/EMERGENCY POWER
 BLUE = STANDBY POWER
 GREEN = INVERTER POWER

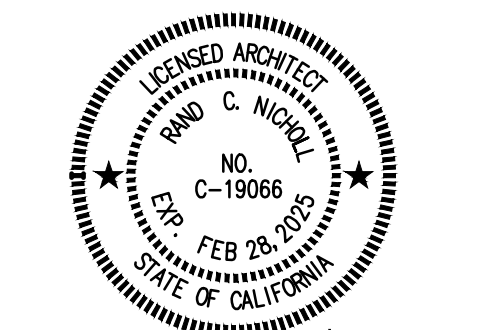
ALL NAMEPLATES SHALL BE FASTENED WITH A MINIMUM OF TWO (2) MACHINE SCREWS. NO SELF ADHESIVE NAMEPLATES ARE ALLOWED.
15. ELECTRICAL DESIGN COMPUTES VOLTAGE DROP BASED ON FEEDER LENGTHS REFERENCED ON SINGLE-LINE DIAGRAM. EC TO NOTIFY ENGINEER OF RECORD IN EVENT FIELD CONDITIONS CAUSE A SUBSTANTIAL INCREASE IN OVERALL FEEDER LENGTH.
16. ANY FLOOR-STANDING ELECTRICAL EQUIPMENT (I.E. INVERTERS, DISTRIBUTION BOARDS, SWITCHBOARDS, ATS SWITCHES, MOTOR CONTROL CENTERS, TRANSFORMERS ETC.) ARE TO BE MOUNTED ON A MINIMUM 4" HIGH HOUSEKEEPING PAD WHICH EXTENDS 4" BEYOND EQUIPMENT IN ALL DIRECTIONS.
17. ALL MOTOR RELATED CIRCUITS ARE TO BE PROVIDED WITH PROTECTIVE RELAYS FOR PHASE FAILURE AND UNDER-VOLTAGE.
18. ELECTRICAL CONTRACTOR TO INCLUDE IN BID ALL ASSOCIATED COSTS FOR THIRD PARTY TESTING OF ELECTRICAL EQUIPMENT, GROUND FAULT, CONDUCTORS, ETC.
19. ALL FEEDER DISTANCES REFERENCED ON DRAWINGS ARE FOR DESIGN PURPOSES ONLY. LENGTHS AS INDICATED ARE NOT TO BE UTILIZED IN MATERIAL TAKE-OFFS.
20. TRANSFORMERS SHALL HAVE COPPER WINDING.



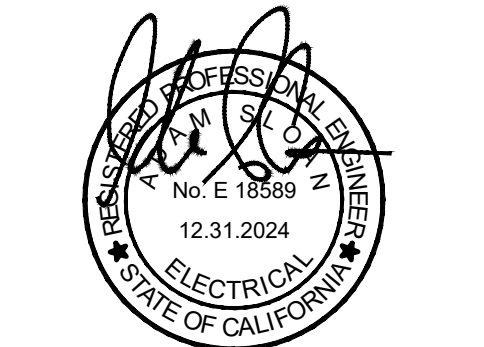
EXISTING PANEL - SINGLE-LINE DIAGRAM 1



RAND NICHOLL ARCHITECTURE
 4591 SIRODAY AVENUE
 YORBA LINDA, CA 92886
 714.915.4504



CONSULTANT:
 R.N.



AG Design Inc.
 Consulting Electrical Engineers
 714.750.9900
 www.AGDesignInc.com

2000 W. Chagwood Ave. Suite 105 | Orange, CA 92668

PROJECT NAME:

**NEW RELOCATABLE CLASSROOMS
 AND FIRE ALARM UPGRADES**
 LEWIS ELEMENTARY SCHOOL
 13220 BELFLOWER BLVD.
 DOWNEY, CA 90242

CLIENT:

**DOWNEY UNIFIED
 SCHOOL DISTRICT**
 11627 BROOKSHIRE AVE.
 DOWNEY, CA 90242

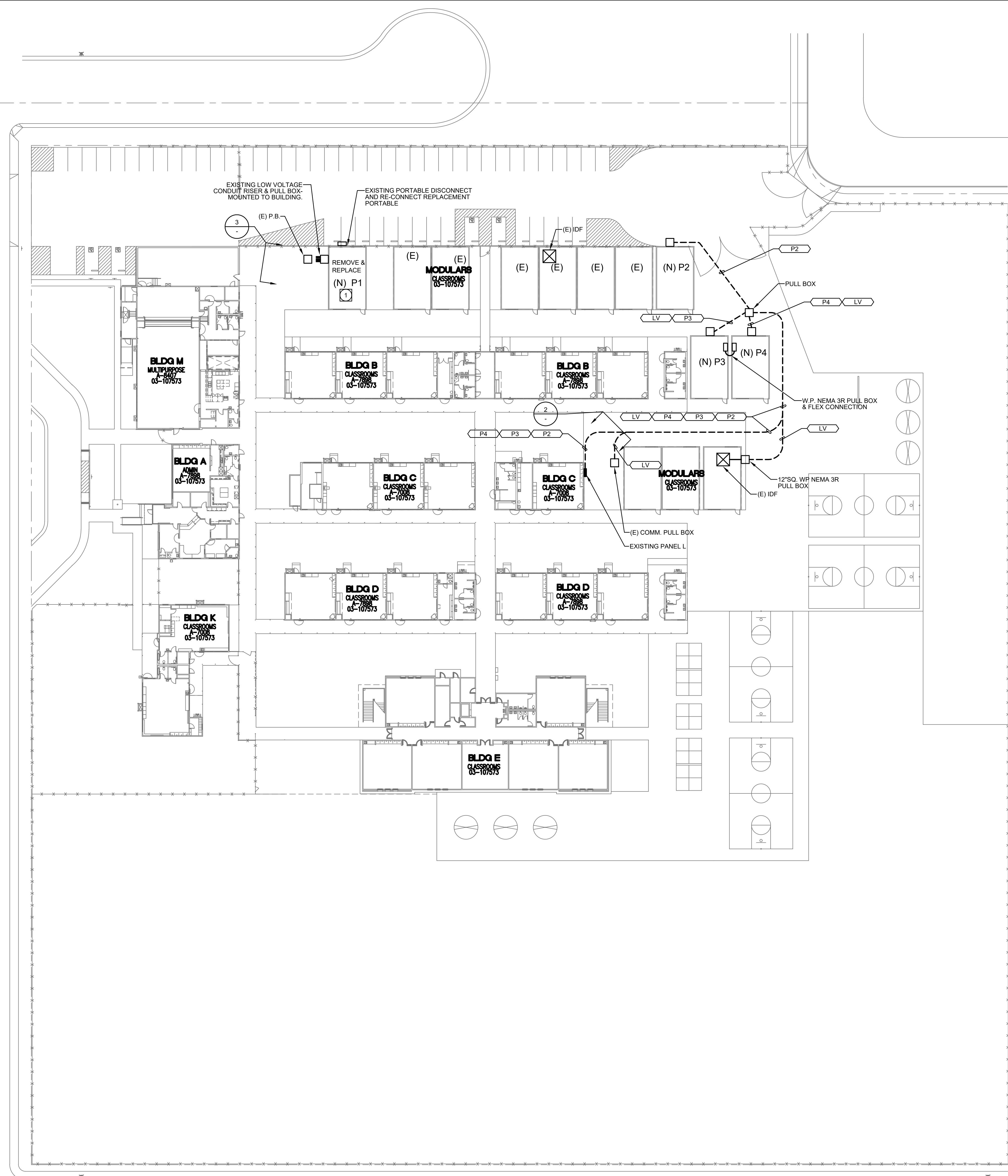
Rev.	Date	Description

JOB NO: XXX
 DATE: XXX
 DRAWN: XXX
 CHECK: XX
 ARCHITECT: RN
 ENGINEER:
 SHEET DESCRIPTION:
**ELECTRICAL SINGLE
 LINE DIAGRAM**

SHEET NO:
E001

PLAN NOTE:

- ① EXISTING BUILDING TO BE REPLACED.
- LV 3-27C
- FIRE ALARM (2SB,1UA)
- DATA
- SPARE

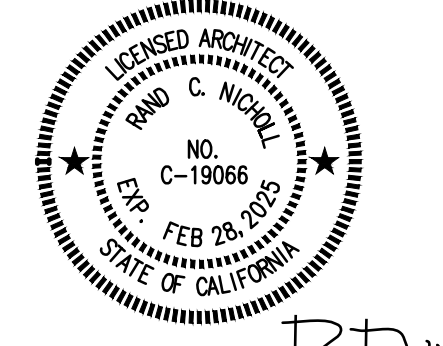


EXISTING CONDUIT RISER PICTURE ②

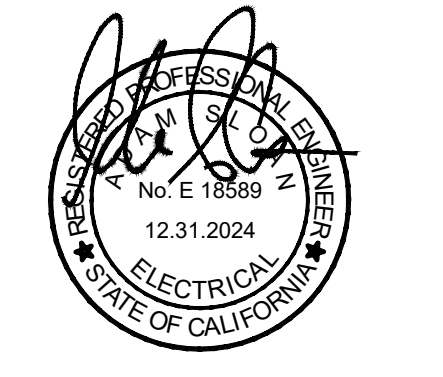


EXISTING CONDUIT RISER PICTURE ③

RNA
 RAND NICHOLL ARCHITECTURE
 4591 SIRODAY AVENUE
 YORBA LINDA, CA 92886
 714.915.4504



CONSULTANT:



AG Design Inc.
 Consulting Electrical Engineers
 714.769.9900
 www.AGDesignEng.com

2600 W. Chagwood Ave. Suite 105 | Orange, CA 92668

PROJECT NAME:

**NEW RELOCATABLE CLASSROOMS
 AND FIRE ALARM UPGRADES**
 LEWIS ELEMENTARY SCHOOL
 13220 BELFLOWER BLVD.
 DOWNEY, CA 90242

CLIENT:

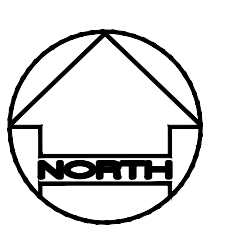
**DOWNEY UNIFIED
 SCHOOL DISTRICT**
 11627 BROOKSHIRE AVE.
 DOWNEY, CA 90242

Rev.	Date	Description

JOB NO: XXX
 DATE: XXX
 DRAWN: XXX
 CHECK: XX
 ARCHITECT: RN
 ENGINEER:

SHEET DESCRIPTION:
**ELECTRICAL SITE
 PLAN**

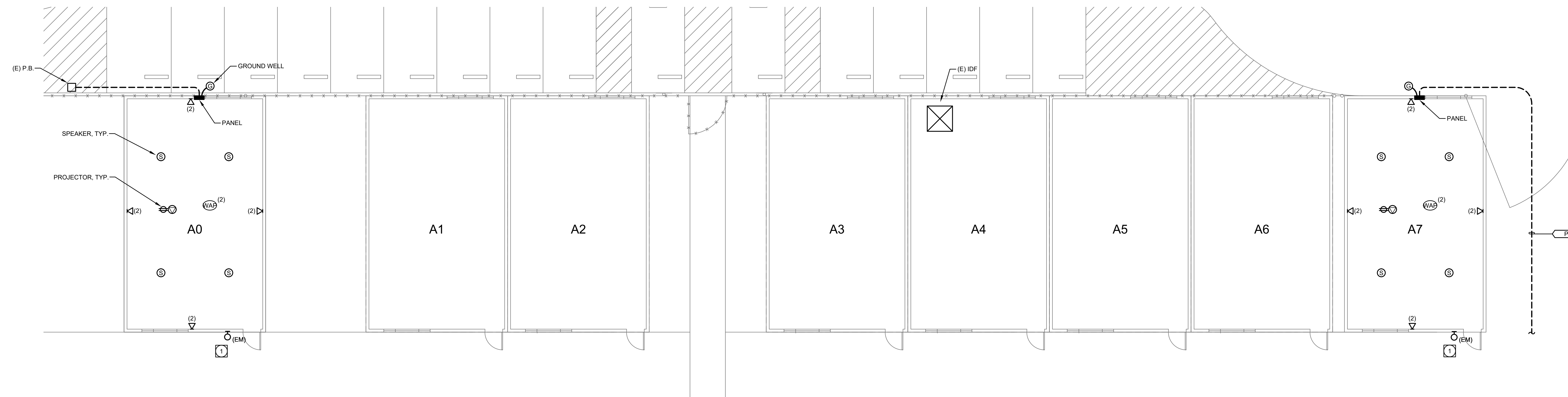
SHEET NO:



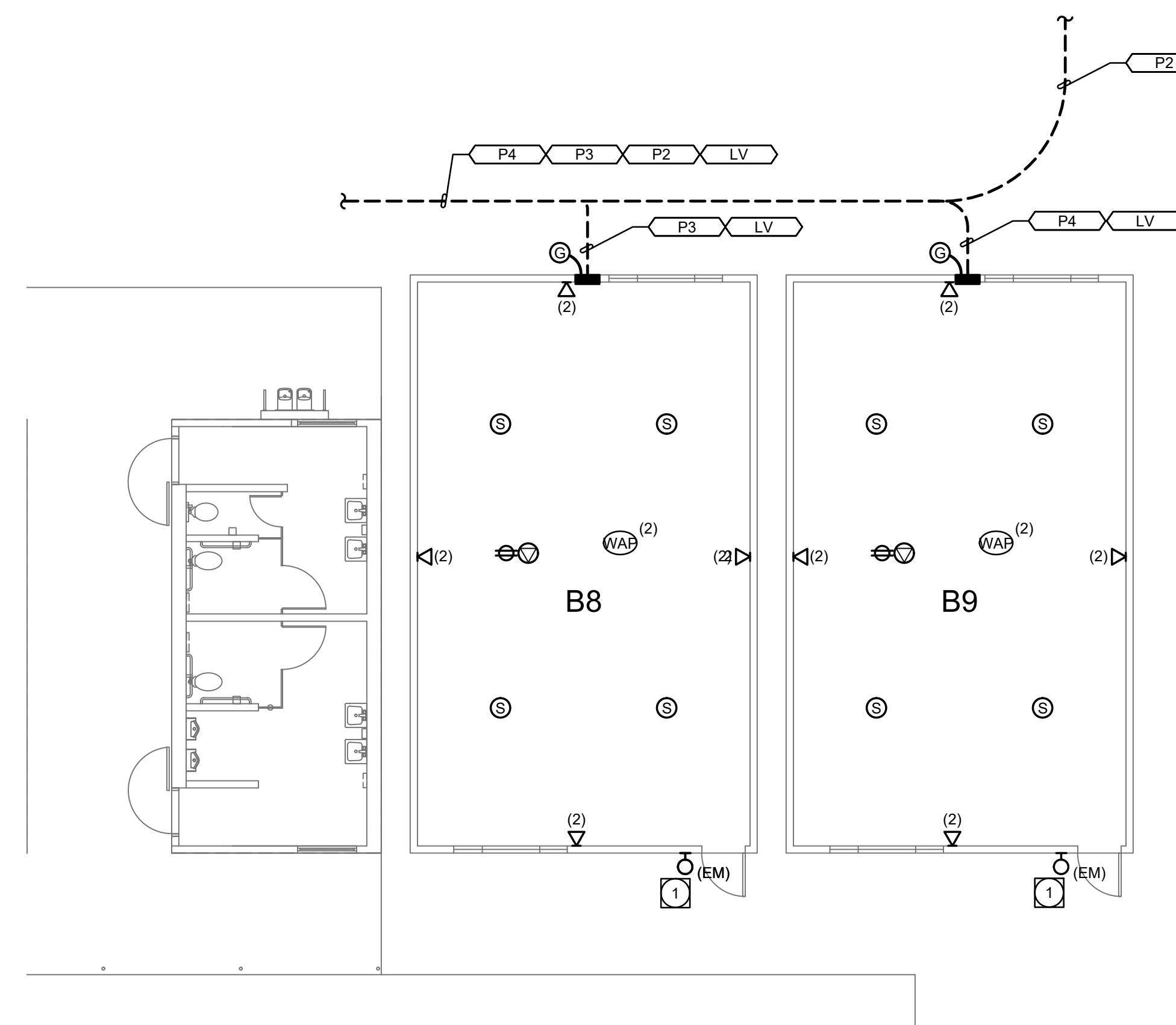
SHEET NOTES:

1 PROVIDE NEW WALL PACK LIGHT FIXTURE, 50W 4000K WITH PHOTOCONTROL AND 90 MINUTE EMERGENCY BATTERY BACK-UP (SYLVANIA #WALPAK-2C-050-UNV-7-40-CO-BZ-PE OR APPROVED EQUAL). CONNECT TO EXISTING CIRCUITRY.

- LV -3-2" C
- FIRE ALARM (2SB,1UA)
- DATA
- SPARE

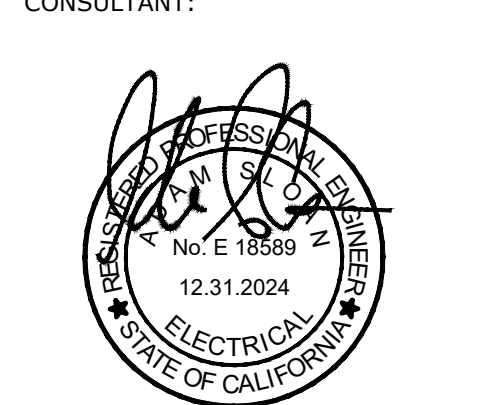
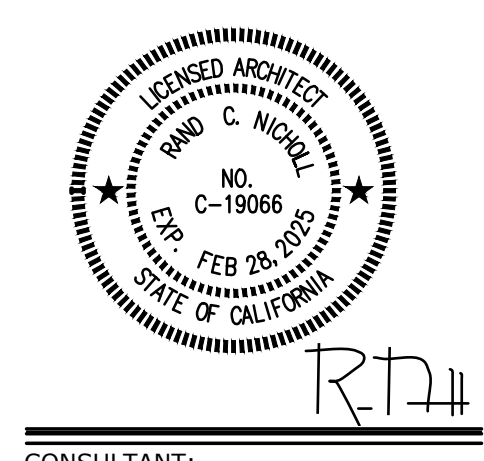


RELOCATABLE CLASSROOMS ELECTRICAL PLAN – NORTH 1
1/8"=1'-0"



RELOCATABLE CLASSROOMS ELECTRICAL PLAN – NORTH EAST 2
1/8"=1'-0"

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PROJECT NAME:

**NEW RELOCATABLE CLASSROOMS
AND FIRE ALARM UPGRADES**
LEWIS ELEMENTARY SCHOOL
13220 BELFLOWER BLVD.
DOWNEY, CA 90242

CLIENT:

**DOWNEY UNIFIED
SCHOOL DISTRICT**
11627 BROOKSHIRE AVE.
DOWNEY, CA 90242

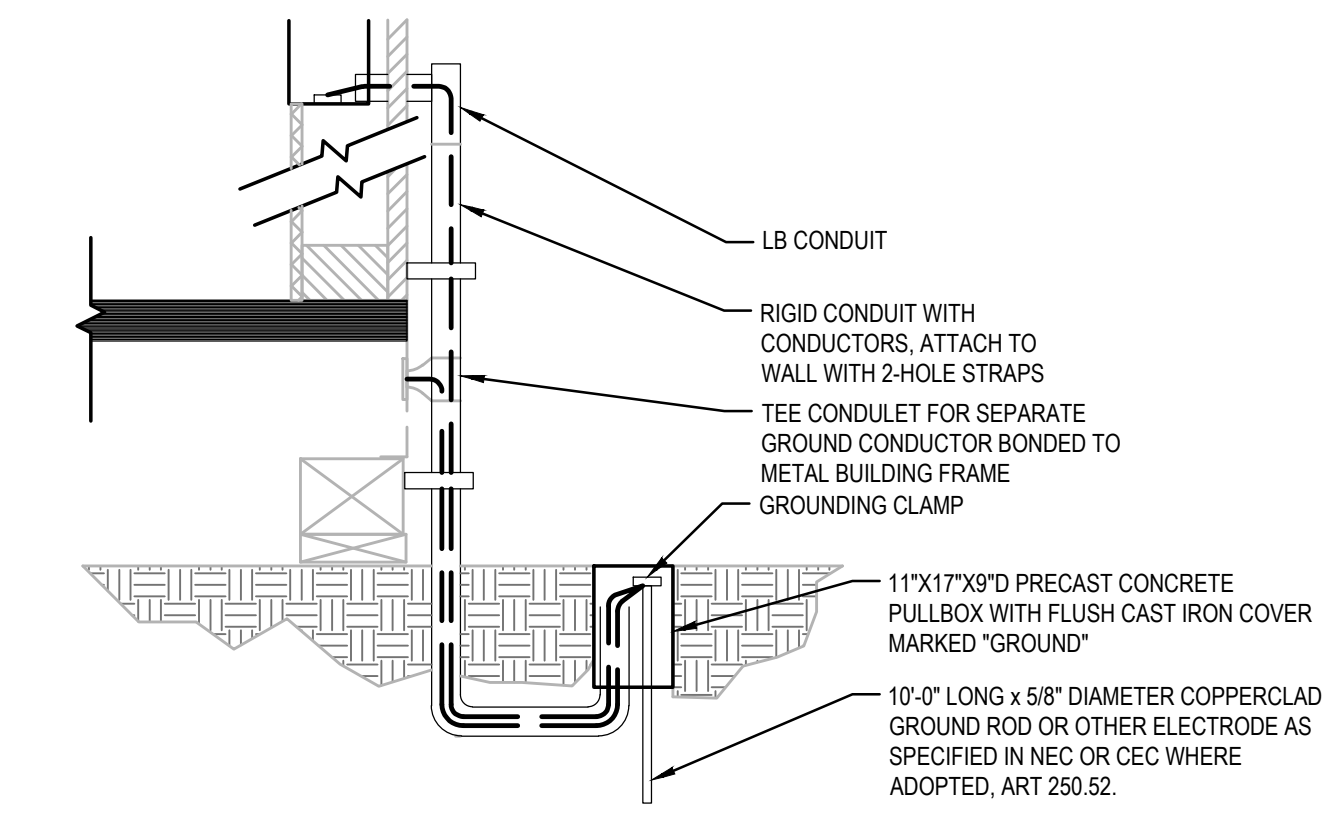
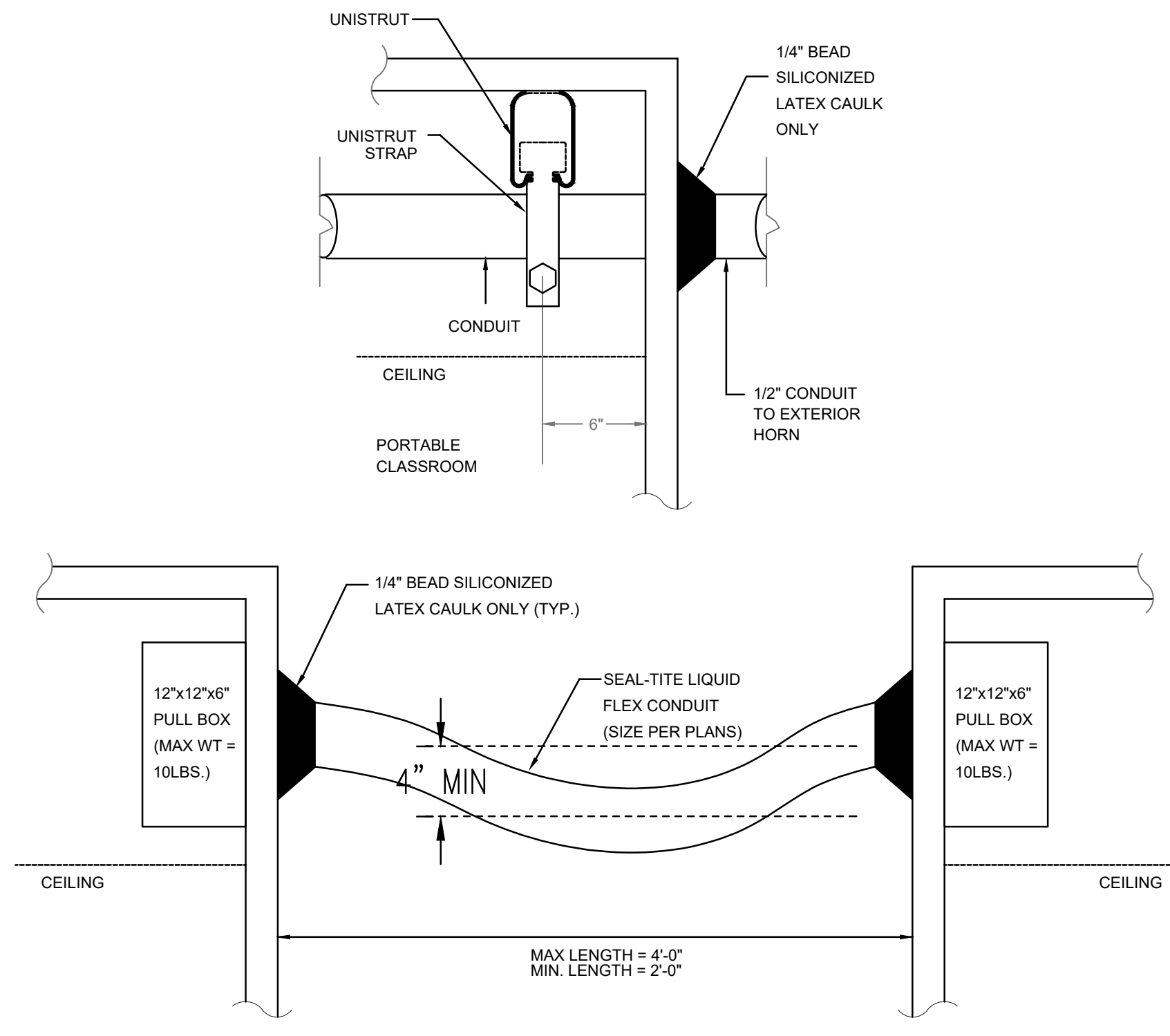
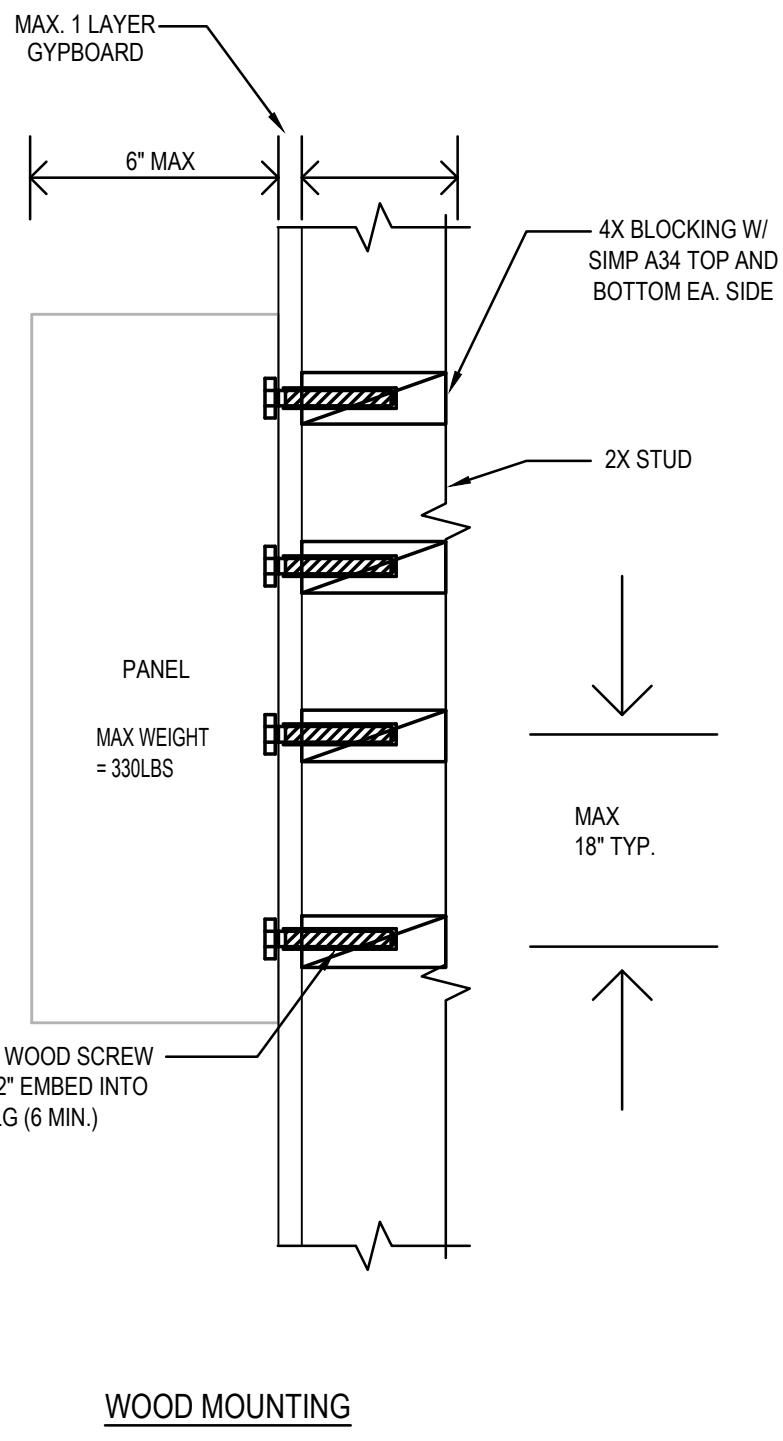
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DATE: XXX
DRAWN: XXX
CHECK: XX
ARCHITECT: RN
ENGINEER:

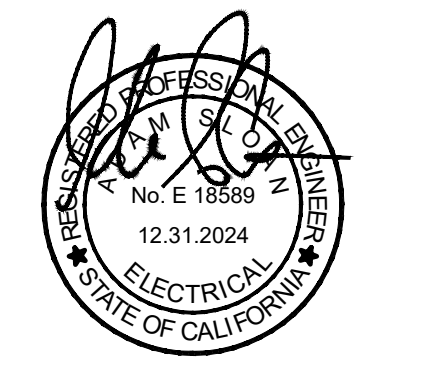
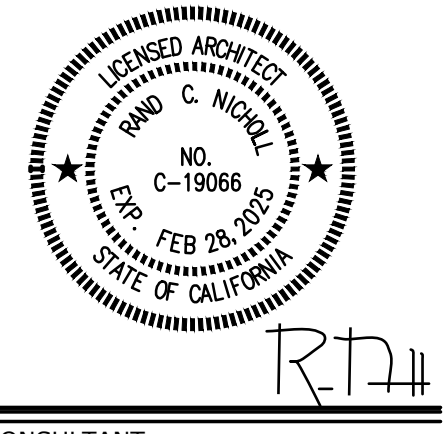
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**ELECTRICAL -
RELOCATABLES**

SHEET NO:

E101



- NOTES:**
- 1. **METAL MODULAR BUILDINGS**: WHEN METAL BUILDINGS ARE MADE OF COMPONENTS, EACH BUILDING COMPONENT MUST BE ELECTRICALLY BONDED TOGETHER IN A MANNER ACCEPTABLE TO DSA/SS. PAINT ON THE SURFACE WILL INHIBIT PASSAGE OF ELECTRICAL CURRENT. THEREFORE BOLTED CONNECTIONS OF COMPONENT PARTS ARE NOT AN ACCESSIBLE ELECTRICAL BOND.
 - 2. **WOOD MODULAR BUILDINGS**: IN WOOD FRAME MODULAR BUILDINGS, THE ELECTRICAL SYSTEM MUST BE GROUNDED AS REQUIRED IN TITLE 24.
 - 3. **GROUNTING**: THE ELECTRICAL CIRCUITS ARE USUALLY PROPERLY GROUNDED, HOWEVER, IT IS ALSO NECESSARY TO INDEPENDENTLY GROUND THE STEEL FRAMES. THIS IS PARTICULARLY IMPORTANT WHEN THE BUILDING IS SUPPORTED ON A FOUNDATION MADE OF WOOD.
 - 4. INSPECTOR OF RECORD SHALL WITNESS GROUND TEST AND SUBMIT A COPY OF THE REPORT TO THE ARCHITECT. ALL BUILDING COMPONENTS MUST BE ELECTRICALLY BONDED TOGETHER AND MUST BE INDEPENDENTLY GROUNDED. ALL GROUNTING SYSTEMS ARE TO BE TESTED WITH A MEGGER UNIT OR IN AN OTHERWISE ACCEPTABLE MANNER. REFER TO C.E.C. SECTIONS 250-81 AND 250-83 FOR SPECIFIC GROUNTING REQUIREMENTS.
 - 5. SIZE OF CONDUCTORS SHALL COMPLY WITH NEC TABLE 250.95.
 - 6. BOND SEPARATE CONDUCTORS FROM GROUND ROD TO ELECTRICAL PANEL AND TO METAL BUILDING FRAME (NEC 250-81). IN ADDITION TO THE DETAIL SHOWN ABOVE, BOND THE ELECTRICAL CONDUCTOR GROUND TO METAL WATER PIPE EMBEDDED AT LEAST 10 FEET INTO THE SOIL IF AVAILABLE (NEC 250-81 AND NEC 250-83).
 - 7. ALL MODULES OF METAL FRAME BUILDINGS AND RAMP SHALL BE ELECTRICALLY BONDED TOGETHER (BOLTING ONLY IS NOT ACCEPTABLE BONDING).
 - 8. CHECK RESISTANCE TO GROUND. IF RESISTANCE EXCEEDS 25 OHMS, INSTALL ADDITIONAL GROUND RODS WITH CONDUCTORS AS SHOWN, SEPARATED AT LEAST 6'-0" UNITS. RESISTANCE IS REDUCED TO 25 OHMS OR LESS. (NEC 250-84).
 - 9. SEE SPECIFICATIONS FOR TESTING OF GROUNTING REQUIRED.
 - 10. ALL ELECTRICAL WORK TO MEET THE REQUIREMENTS OF THE STATE ELECTRICAL CODES, PART 3 OF TITLE 24, CAC, WHICH REQUIRES PROPER GROUNTING OF ALL ELECTRICAL CIRCUITS, EQUIPMENT, ETC. FOR PUBLIC SCHOOL BUILDINGS(S), REGARDLESS OF THE TYPE OF CONSTRUCTION.



SURFACE MOUNTED PANEL/CABINET (TYP.)

NOT TO SCALE 3

SEAL TIGHT PENETRATION

NOT TO SCALE 2

PORTABLE/OVERHEAD POLE BUILDING GROUNDING DETAIL

NOT TO SCALE 1

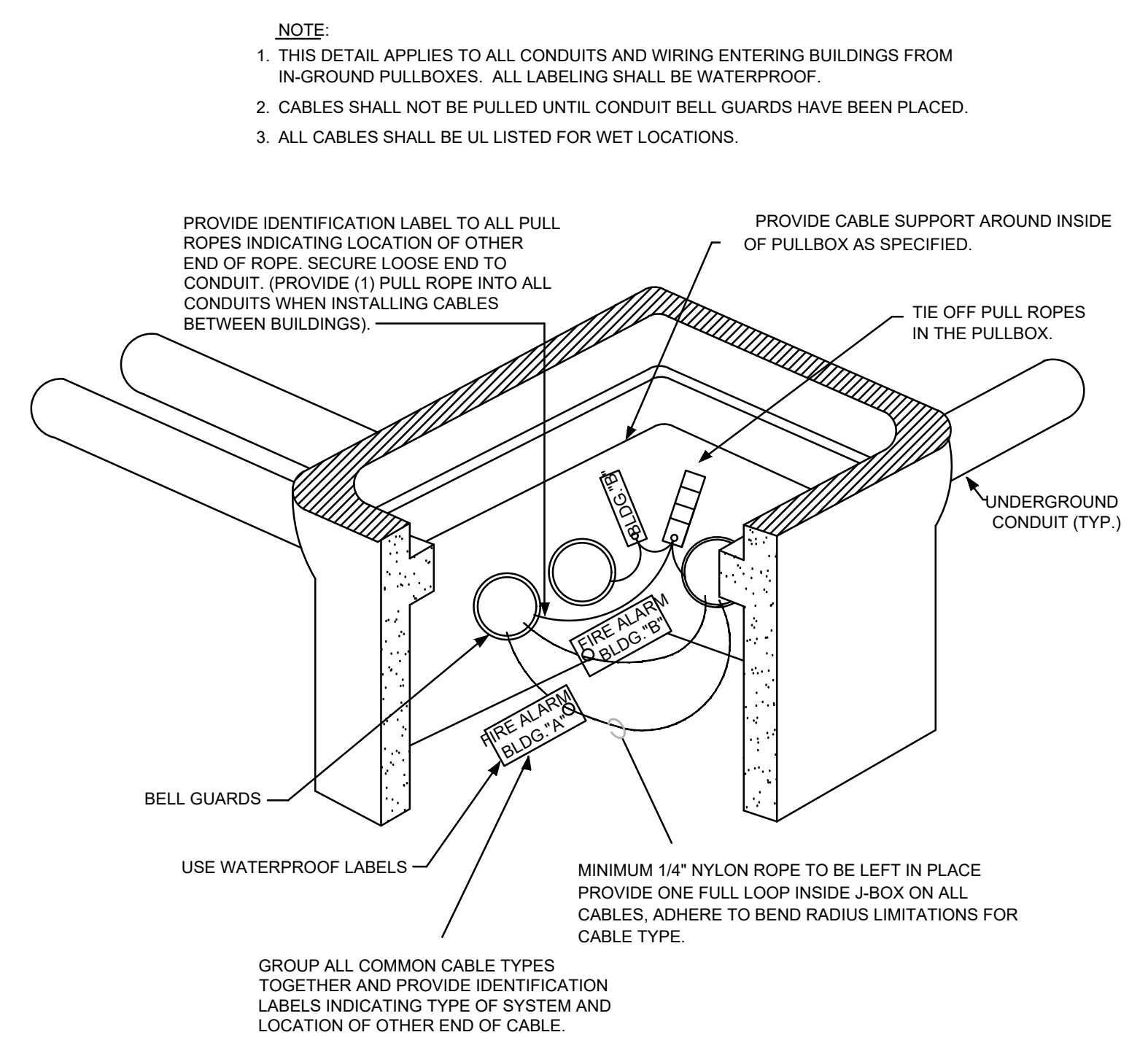
PROJECT NAME:

**NEW RELOCATABLE CLASSROOMS
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DOWNEY, CA 90242

CLIENT:
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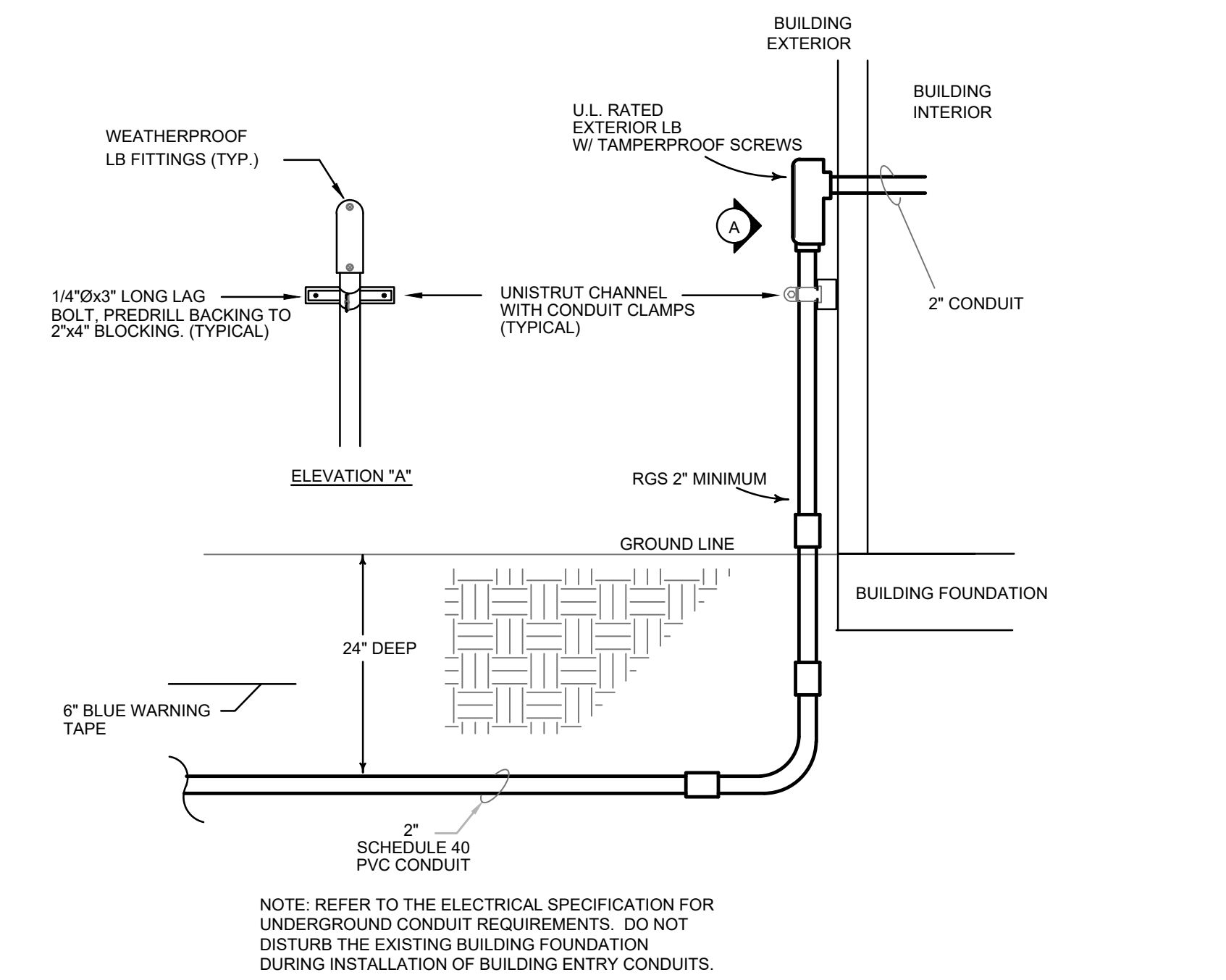
Rev.	Date	Description

JOB NO: XXX
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DRAWN: XXX
CHECK: XX
ARCHITECT: RN
ENGINEER:
SHEET DESCRIPTION:
ELECTRICAL DETAILS
SHEET NO:



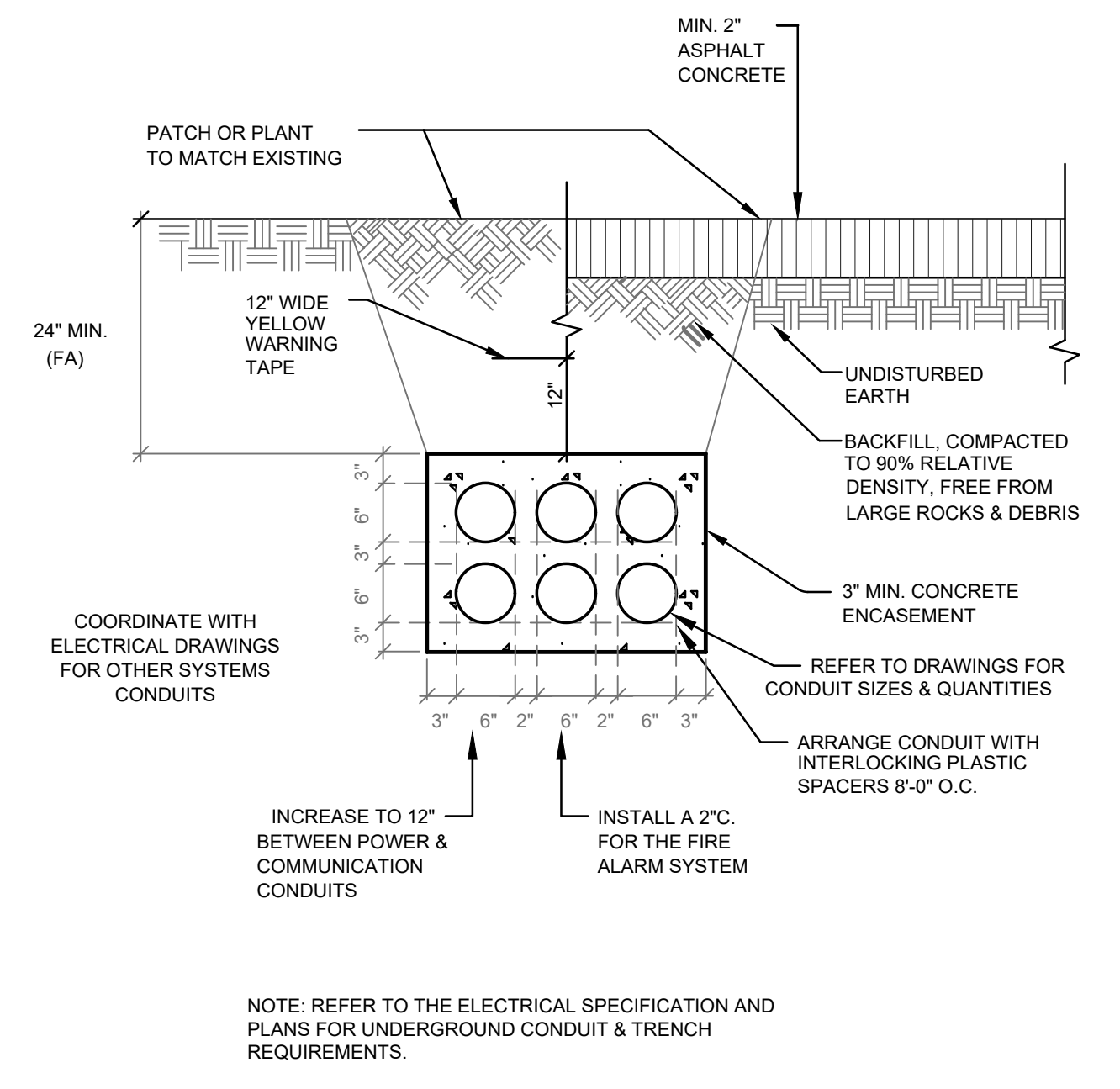
IN-GROUND PULL BOX WIRING & LABELING

NOT TO SCALE 6



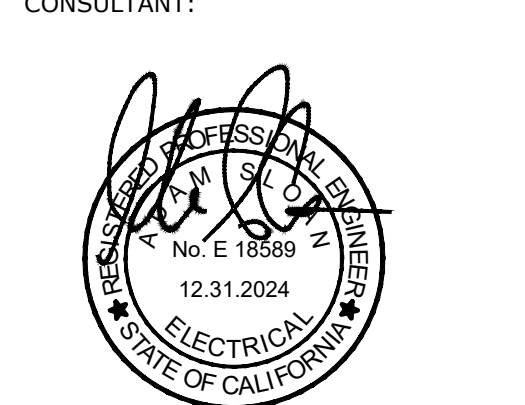
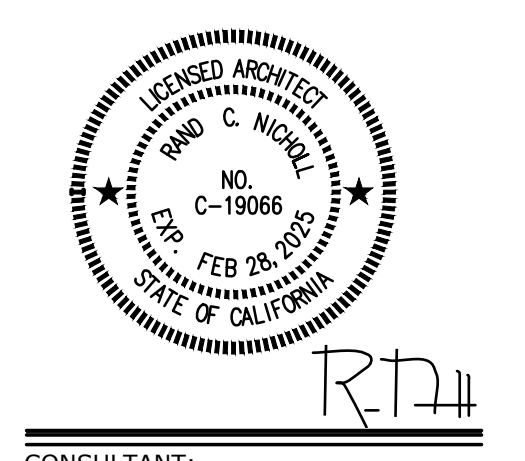
UNDERGROUND CONDUIT ENTRY INTO BUILDINGS

NOT TO SCALE 5



UNDERGROUND MULTI-CONDUIT DETAIL

NOT TO SCALE 4



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Rev.	Date	Description

JOB NO: XXX
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 ENGINEER:

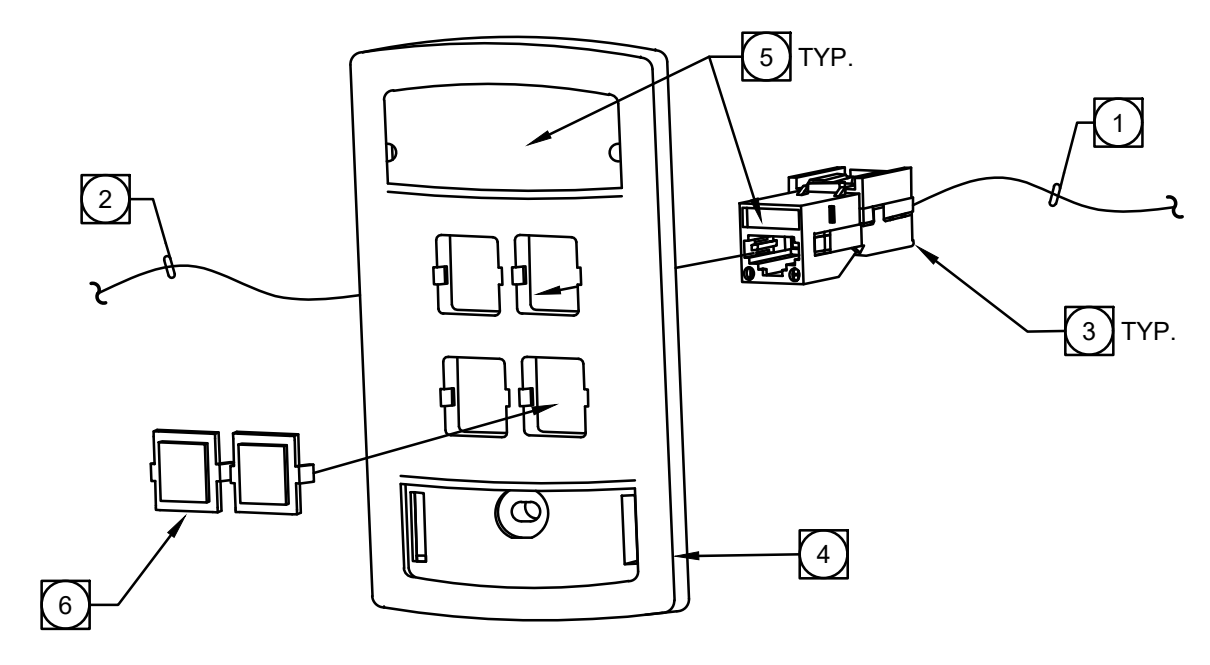
SHEET DESCRIPTION:
**LOW VOLTAGE
 DETAILS**

SHEET NO:
E502

WHERE THE FOLLOWING SYMBOLS ARE INDICATED ON THE ELECTRICAL DRAWINGS ARCHITECTURAL DRAWINGS AND/OR STRUCTURE CABLING SYSTEM DRAWINGS:



THE FOLLOWING SHALL BE PROVIDED, AS DEPICTED IN THE FOLLOWING DIAGRAMMATIC CONNECTIVITY DETAIL.

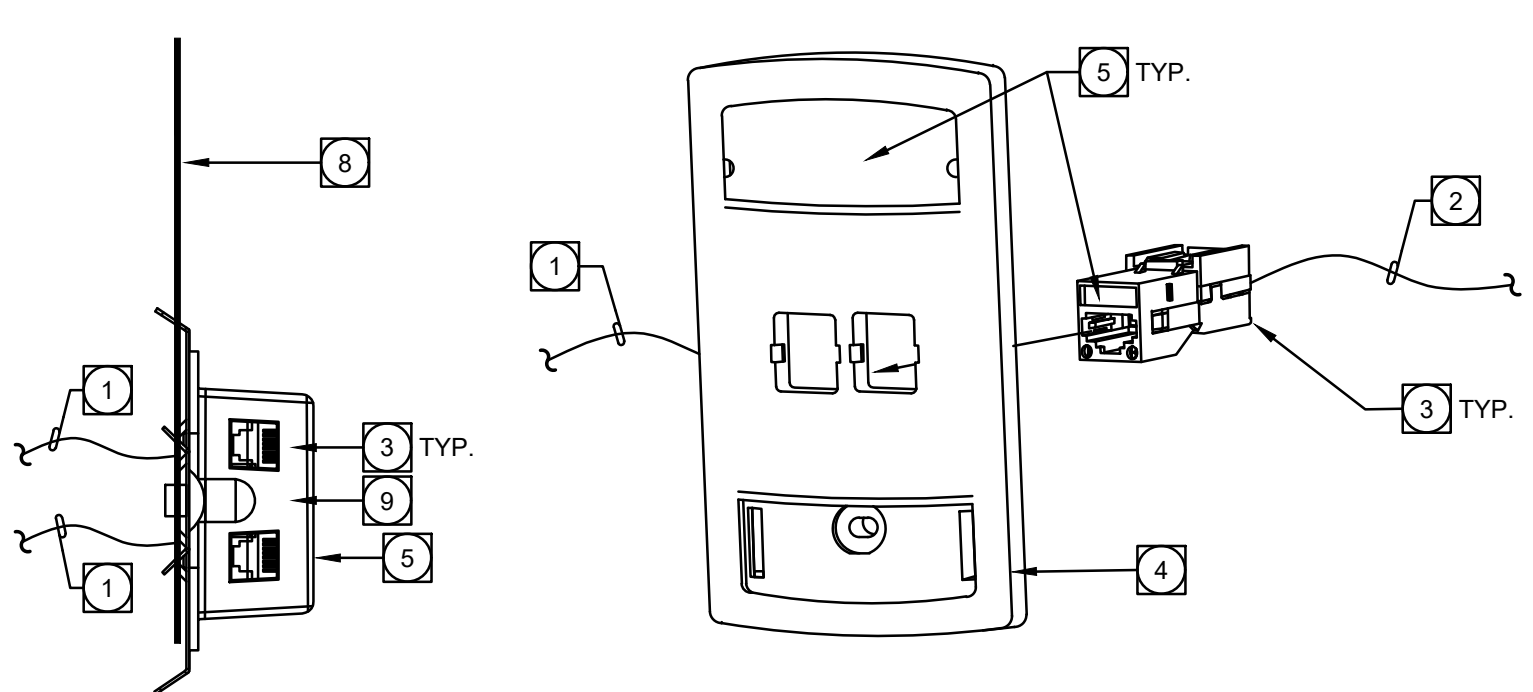


TYP. VOICE/DATA COMBINATION DEVICE 5

WHERE THE FOLLOWING SYMBOLS ARE INDICATED ON THE ELECTRICAL DRAWINGS ARCHITECTURAL DRAWINGS AND/OR STRUCTURE CABLING SYSTEM DRAWINGS:



THE FOLLOWING SHALL BE PROVIDED, AS DEPICTED IN THE FOLLOWING DIAGRAMMATIC CONNECTIVITY DETAIL.



USE THIS OUTLET TYPE WHEN SHOWN ABOVE ACCESSIBLE CEILING SPACE
 USE THIS OUTLET TYPE WHEN SHOWN ABOVE/IN AN INACCESSIBLE CEILING SPACE

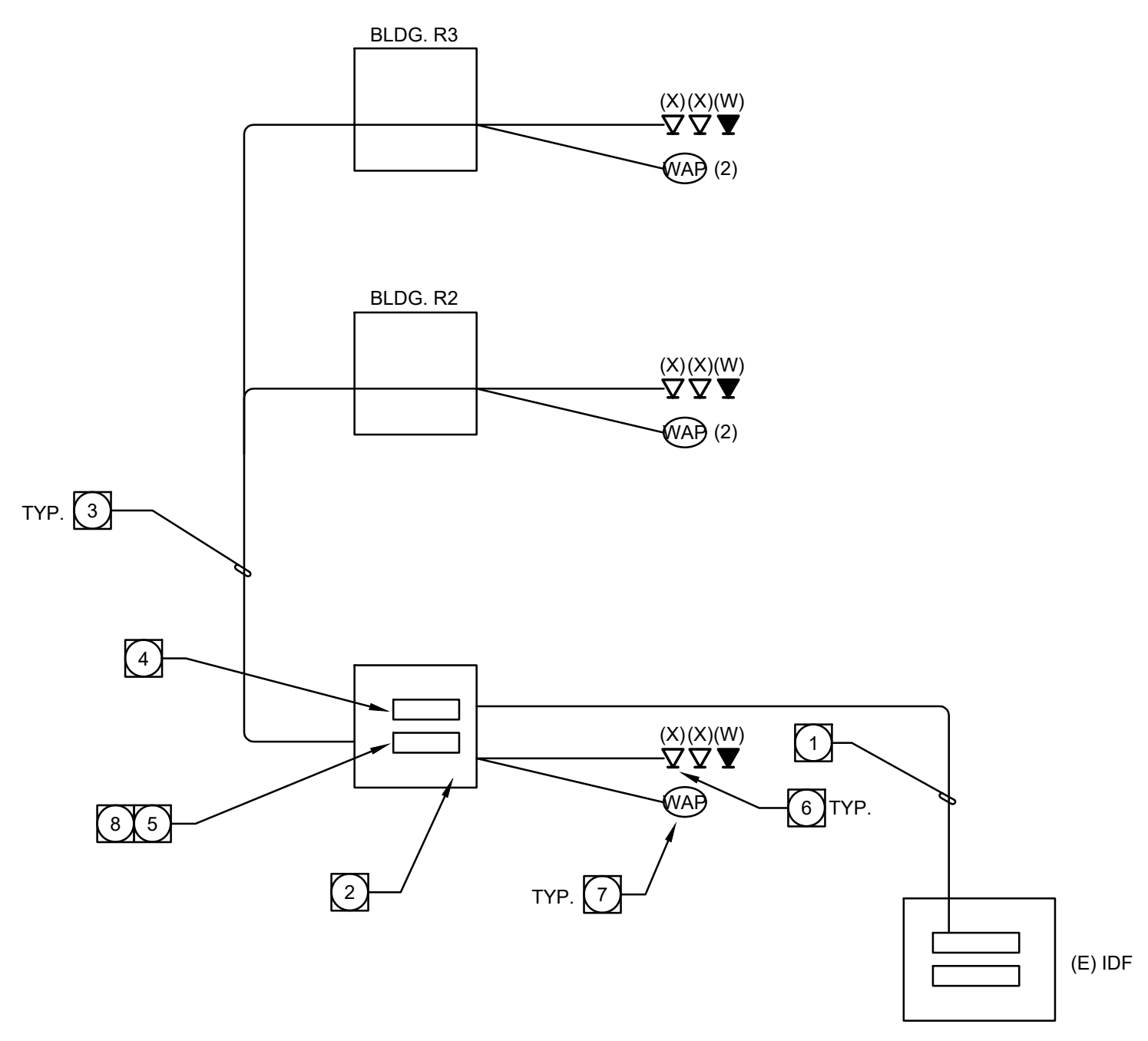
TYPICAL CEILING MOUNT DATA DEVICE 4

SPECIFIC NOTES

1. DATA - PROVIDE (1) CAT 6, 4 PAIR UTP CABLE(S) TO RESPECTIVE MDF/BDF/IDF/VOICE RACK. COLOR OF CABLE(S) SHALL BE WHITE. TERMINATE STATION END(S) IN STATION CONNECTOR(S) PER SPECIFICATIONS. TERMINATE RACK END(S) ON PATCH PANEL(S) PER SPECIFICATIONS.
2. DATA - PROVIDE (1) CAT 6, 4 PAIR UTP CABLE(S) TO RESPECTIVE MDF/BDF/IDF/VOICE RACK. COLOR OF CABLE(S) SHALL BE BLUE. TERMINATE STATION END(S) IN STATION CONNECTOR(S) PER SPECIFICATIONS. TERMINATE RACK END(S) ON PATCH PANEL(S) PER SPECIFICATIONS.
3. PROVIDE STATION CONNECTOR PER SPECIFICATIONS.
4. PROVIDE COVERPLATE PER SPECIFICATION. COVERPLATE MATERIAL AND FINISH SHALL MATCH ADJACENT/NEARBY POWER COVERPLATES. PROVIDE FLOOR BOX, POWER POLE & MODULAR FURNITURE, DEVICE BRACKETS/CUSTOM ADAPTERS AS REQUIRED FOR A COMPLETE INSTALLATION. INCLUDE ALL COSTS IN BASE BID.
5. PROVIDE COVERPLATE LABELING PER SPECIFICATION. SEE SPECIFICATIONS FOR ALL OTHER LABELING REQUIREMENTS.
6. BLANK INSERT ALL UNUSED OPENINGS SHALL BE COVERED WITH A BLANK INSERT MATCHING THE COLOR OF THE FACEPLATE.
7. FOR WALL PHONE DEVICES, PROVIDE A STAINLESS STEEL FACEPLATE WITH STANDARD MOUNTING POSTS TOP AND BOTTOM. MOUNT AT 44" AFF UNLESS OTHERWISE INDICATED ON PLANS.
8. INSTALL DEDICATED SUSPENDED CEILING WIREHANGAR OR SUPPORT ROD/ROD HANGAR DIRECTLY TO STRUCTURAL CEILING ABOVE TO SUPPORT WAP 2-PORT HOUSING.
9. PROVIDE (1) SURFACE MOUNT, PLENUM-RATED TWO-PORT HOUSING. (SYSTEMAX P/N M1025MB-B-262 OR EQUAL) MOUNTED TO IN-CEILING BRACKET WITH SPRING WIRE MOUNT (LEVITON 49223-CBC OR EQUAL) WHERE APPLICABLE. PROVIDE 15FT SLACK LOOP NEAR WAP SUSPENSION POINT.

GENERAL NOTES

1. INSTALLATION OF EQUIPMENT AND WIRING MUST MEET ALL APPLICABLE CODES AND STANDARDS INCLUDING BUT NOT LIMITED TO NEC, NFPA, ANSII/EIA/TIA AND ISO 9001.
2. EQUIPMENT AND MATERIALS MUST COMPLY WITH UL LISTING AND EACH ITEM STAMPED OR LABELED AS SUCH.
3. COMPLIANCE WITH ANSII/EIA/IEA 569-C. COMMERCIAL BUILDING STANDARDS FOR TELECOMMUNICATIONS PATHWAYS AND SPACES.
4. COMPLIANCE WITH ANSII/EIA/IEA 568-D. COMMERCIAL BUILDING STANDARDS FOR TELECOMMUNICATIONS CABLING STANDARDS.
5. DRAWINGS AND LAYOUTS ARE PRIMARILY DIAGRAMMATIC. CONTRACTOR IS RESPONSIBLE FOR FINAL FOOTAGES AND EXACT LOCATIONS.
6. COMMUNICATIONS CABLES (ANY TYPE) ROUTED THRU FURNITURE SYSTEMS SHALL BE ROUTED VIA DEDICATED COMMUNICATIONS PATHWAY. WHEN AVAILABLE. WHEN DEDICATED COMMUNICATIONS PATHWAY IS UNAVAILABLE, THE ABOVE-MENTIONED CABLES SHALL BE ROUTED IN A BARRIERED SYSTEMS FURNITURE RACEWAY SEPARATE FROM POWER CONDUCTORS PER EIA/TIA STANDARDS AND NEC REQUIREMENTS.
7. CONTRACTOR SHALL VERIFY SYSTEMS FURNITURE TYPE AND CABLE ROUTING/FACEPLATE LOCATION WITHIN SYSTEMS FURNITURE PRIOR TO BID. INCLUDE ALL COSTS IN BASE BID.
8. REFERENCE ALL ELECTRICAL DRAWINGS (SHELL & T.I.).
9. REFERENCE ALL STRUCTURED CABLING SYSTEM DRAWINGS (SCS-SHEETS).
10. REFERENCE ALL ARCHITECTURAL DRAWINGS (SHELL & T.I.).
11. REFERENCE ALL ELECTRICAL AND STRUCTURED CABLING SYSTEMS SPECIFICATIONS (ALL 16000 NUMBERED SPECIFICATIONS)
12. CONTRACTOR SHALL UTILIZE CONDUIT(S)/SLEEVES(S) SEQUENTIALLY, MAXIMIZING THE CABLE FILL IN EACH BEFORE UTILIZING THE NEXT CONDUIT(S)/SLEEVE(S). MAXIMUM ALLOWABLE CONDUIT FILL SHALL BE BASED ON NEC TABLES FOR CONDUIT FILL.



LAN AND WIRELESS LAN SYSTEMS DIAGRAM KEY NOTES:

1. (1) 8-STRANDS (S2) SINGLE-MODE INDOOR/OUTDOOR FIBER OPTIC BACKBONE FOR NEW IDF ENCLOSURE. SEE SPECIFICATIONS FOR MORE INFORMATION. USE LC CONNECTORS ON BOTH ENDS.
2. EXISTING IDF CABINET. SEE RACK ELEVATION FOR MORE INFORMATION. ACTIVE NETWORK EQUIPMENT TO BE CFCI.
3. CATEGORY-6 4-PAIR UTP CABLE PER SPECIFICATIONS QUANTITY OF CABLES TO EACH DEVICE PER FACEPLATE DETAILS AND SPECIFICATIONS.
4. RACK MOUNTED FIBER TERMINATION HOUSING PER SPECIFICATIONS. COMPLETE WITH LC CONNECTORS, PANELS, ADAPTERS, FAN OUT KITS, ETC. AS REQUIRED TO TERMINATE ALL FIBER STRANES. CONTRACTOR TO COORDINATE RACK LOCATION AND SPACE REQUIREMENTS IN MDF WITH DISTRICT IT.
5. RACK MOUNTED 24-PORT CATEGORY-6 PATCH PANEL PER SPECIFICATIONS FOR DATA.
6. DATA/VOICE OUTLET. QUANTITY AND LOCATIONS PER PLAN DRAWINGS. SEE FACEPLATE DETAILS AND SPECIFICATION FOR MORE INFORMATION.
7. OFCI-WIRELESS ACCESS POINT QUANTITY AND LOCATIONS PER PLAN DRAWINGS. SEE FACEPLATE DETAILS FOR MORE INFORMATION.
8. RACK MOUNTED 24-PORT CATEGORY-6 PATCH PANEL PER SPECIFICATIONS FOR ANCILLARY CIRCUITS.

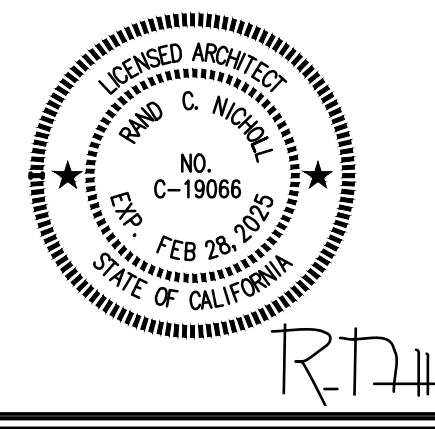
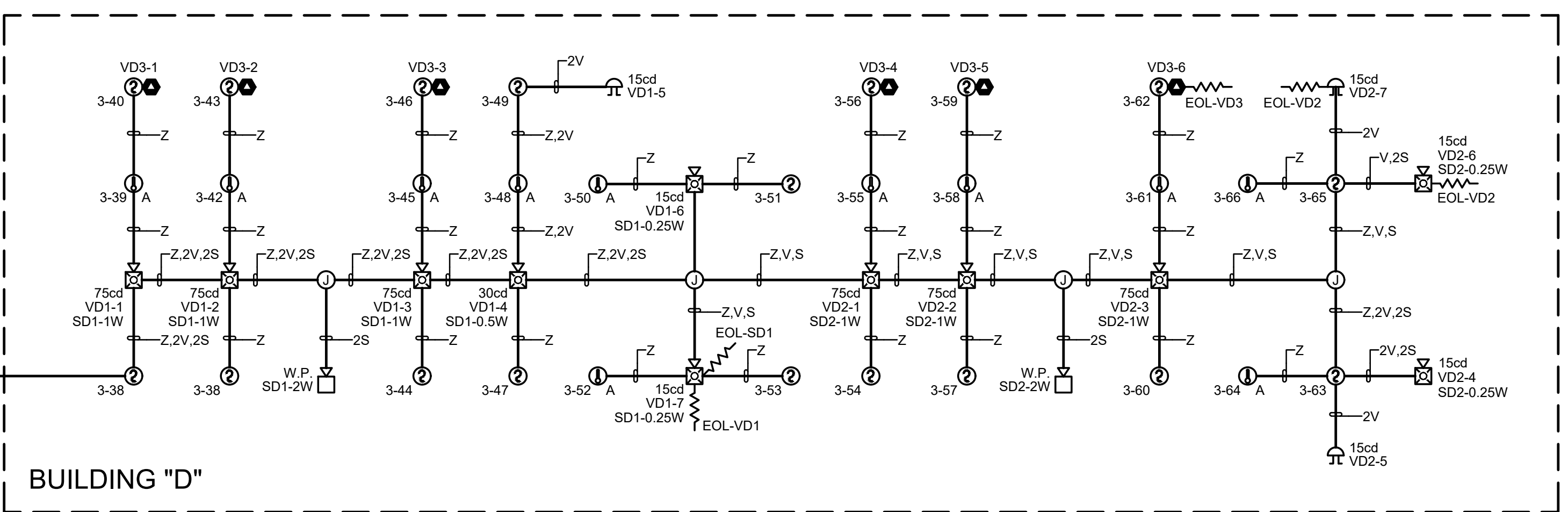
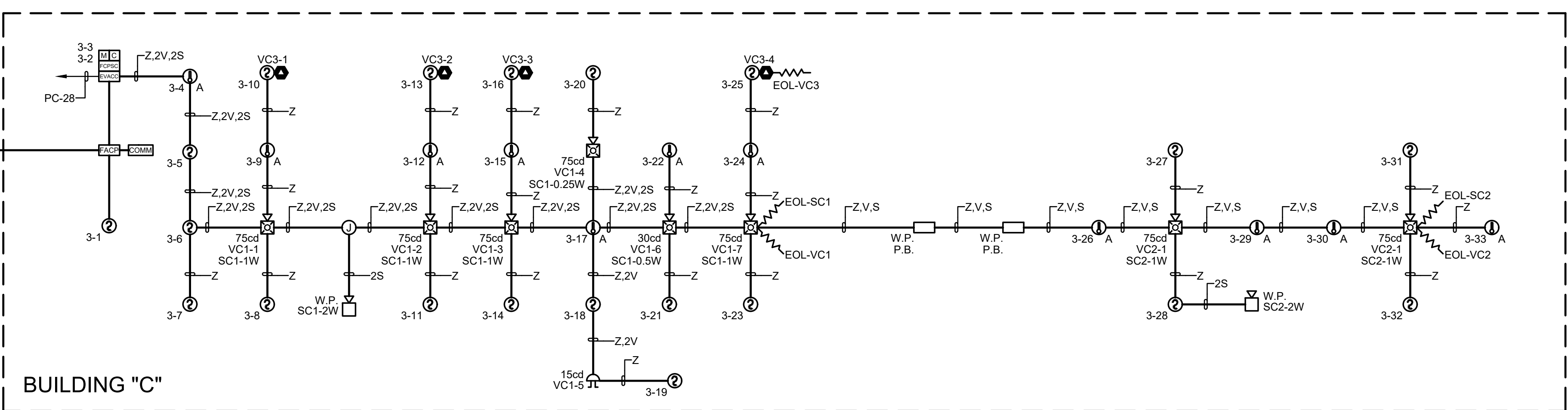
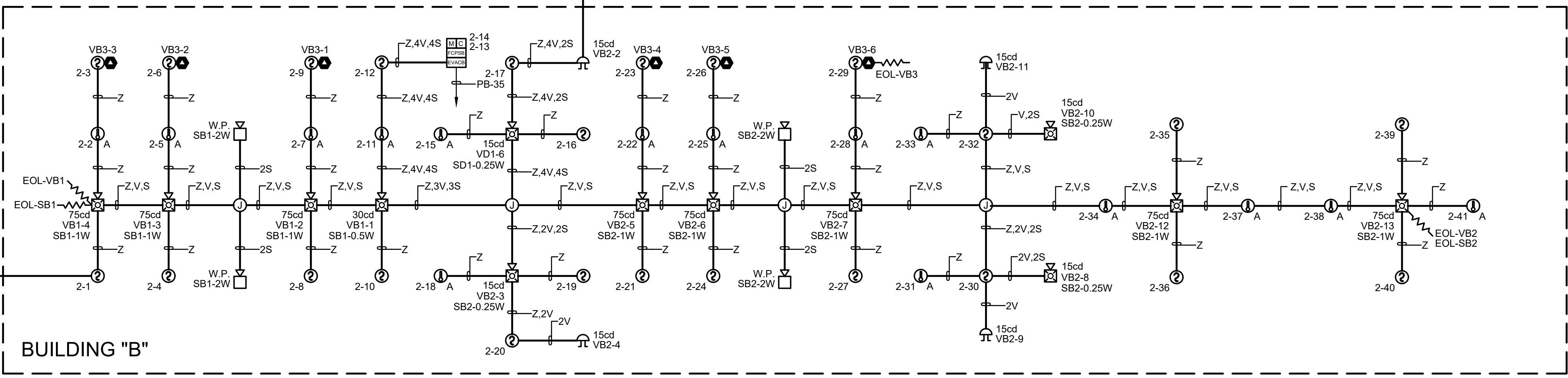
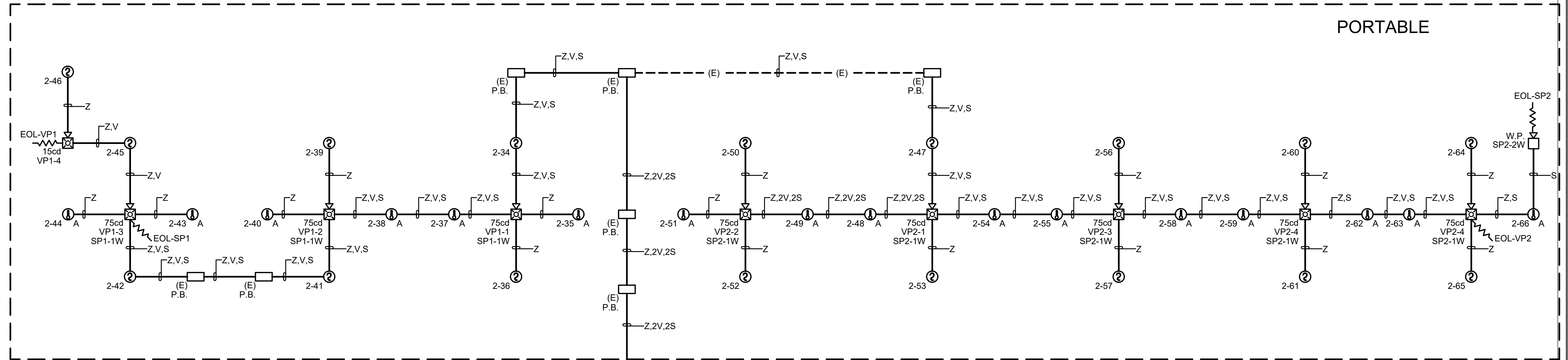
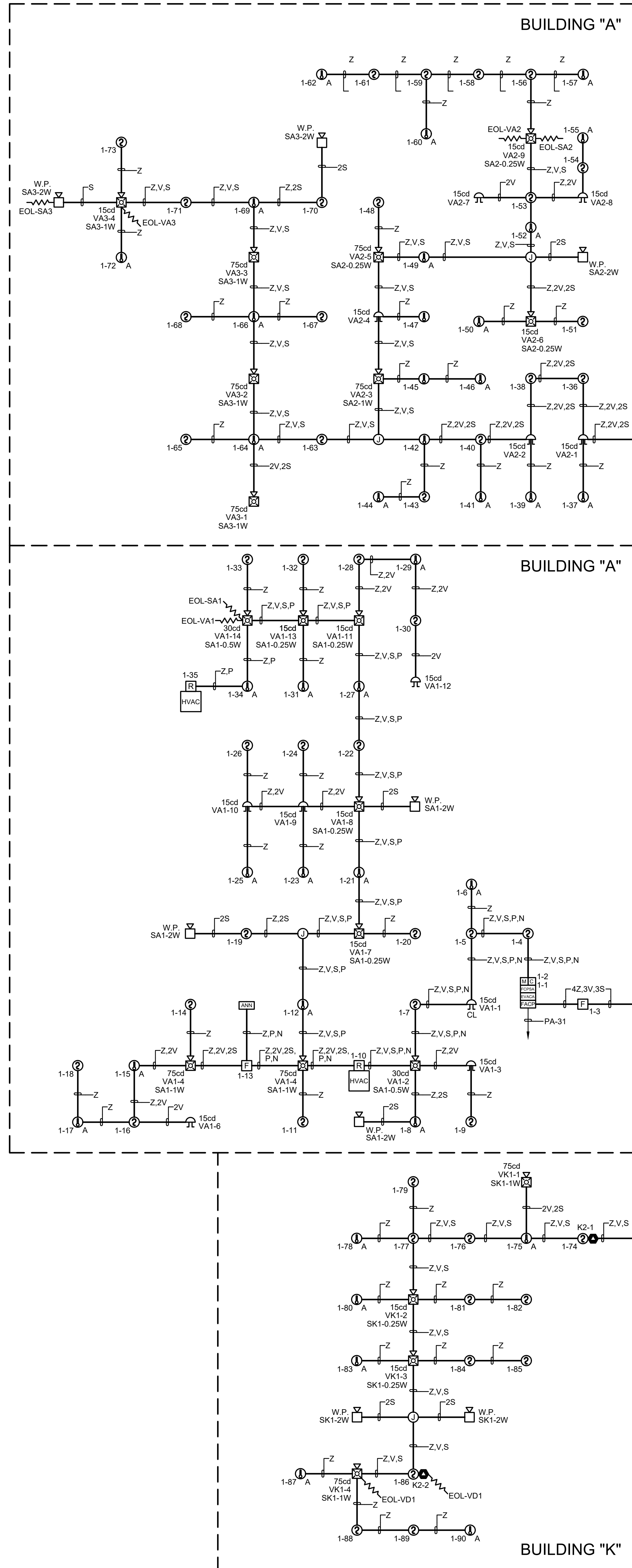
LAN AND WIRELESS LAN SYSTEMS GENERAL NOTES:

1. PROVIDE COMPLETE WITH ALL CABLES, DEVICES, MATERIAL, TERMINATIONS, TESTING, AND LABOR, PER THE SPECIFICATIONS.
2. TERMINATE ALL CABLING AS SPECIFIED BY MANUFACTURER, IN THEIR RESPECTIVE TERMINAL CABINETS.
3. ALL CABLING SHALL BE RATED FOR THE ENVIRONMENT FOR WHICH IT IS INSTALLED, PER CALIFORNIA ELECTRICAL CODE AND TIA-568-C.
4. PROVIDE ALL REQUIRED CONDUIT, BOXES, BUSHINGS, FITTINGS, SUPPORTS, MOUNTS, FASTENERS, WEATHERPROOFING, FIREPROOFING, ETC. AS REQUIRED.
5. REFERENCE DISTRICT SPECIFICATIONS AND STANDARDS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

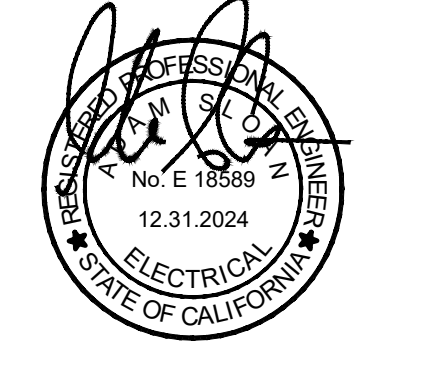
LOCAL AREA NETWORK (LAN) / VOIP/ WIRELESS LAN SYSTEM BLOCK DIAGRAM

SCALE: NTS

1



CONSULTANT:



PROJECT NAME:

**NEW RELOCATABLE CLASSROOMS
 AND FIRE ALARM UPGRADES
 LEWIS ELEMENTARY SCHOOL
 13220 BELFLOWER BLVD.
 DOWNEY, CA 90242**

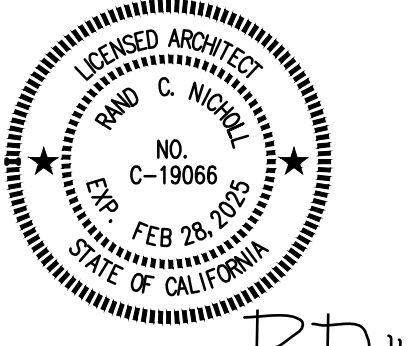
CLIENT:

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 SCHOOL DISTRICT**
 11627 BROOKSHIRE AVE.
 DOWNEY, CA 90242

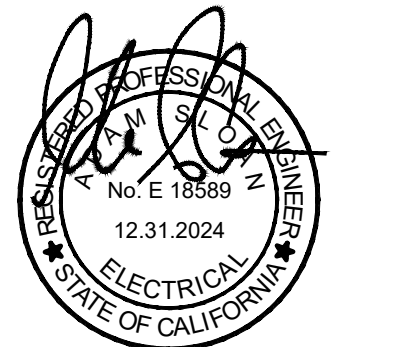
Rev.	Date	Description

JOB NO: XXX
 DATE: XXX
 DRAWN: XXX
 CHECK: XX
 ARCHITECT: RN
 ENGINEER:
 SHEET DESCRIPTION:
**FIRE ALARM RISER
 DIAGRAM**

SHEET NO:
FA001



CONSULTANT: RNA



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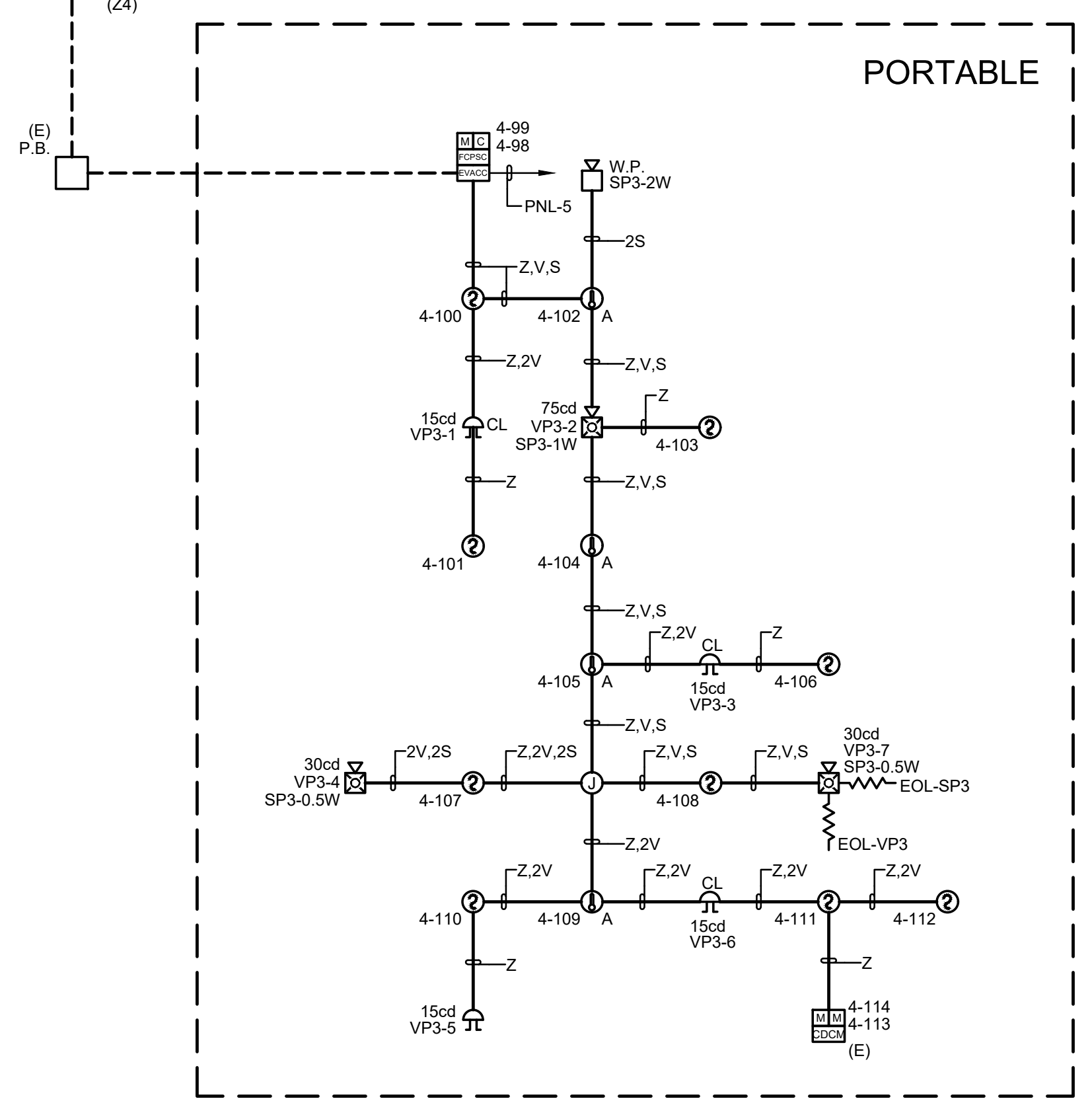
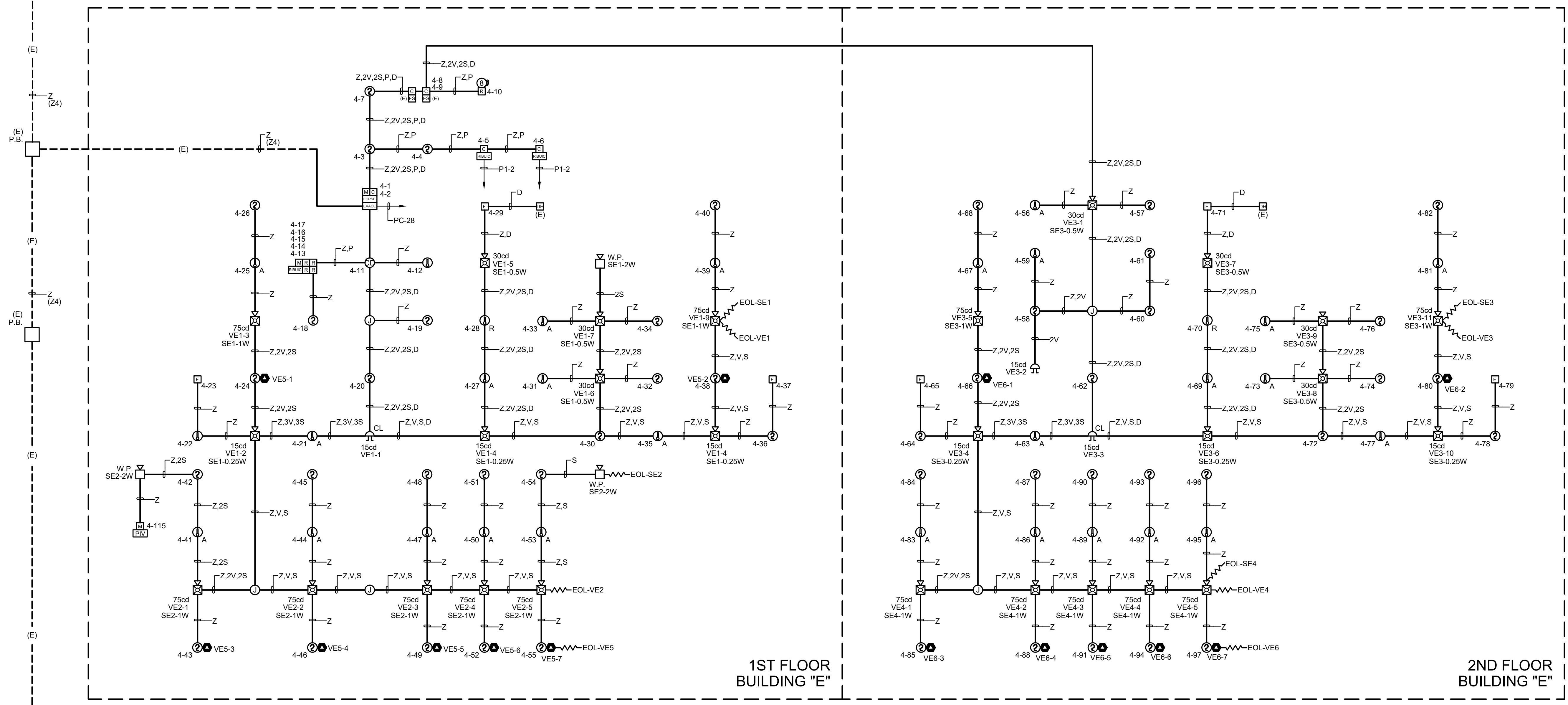
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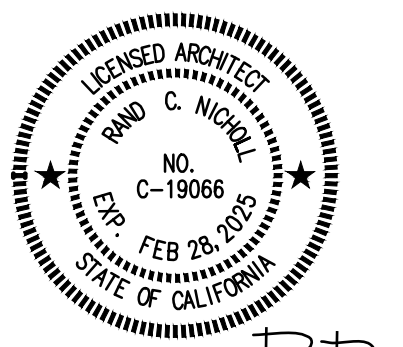
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 ARCHITECT: RN
 ENGINEER:

SHEET DESCRIPTION:
**FIRE ALARM RISER
 DIAGRAM**

SHEET NO:
FA002

SEE SHEET FA001
 FOR CONTINUATION





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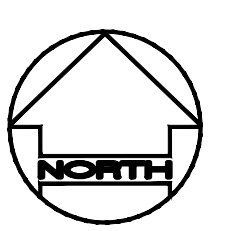
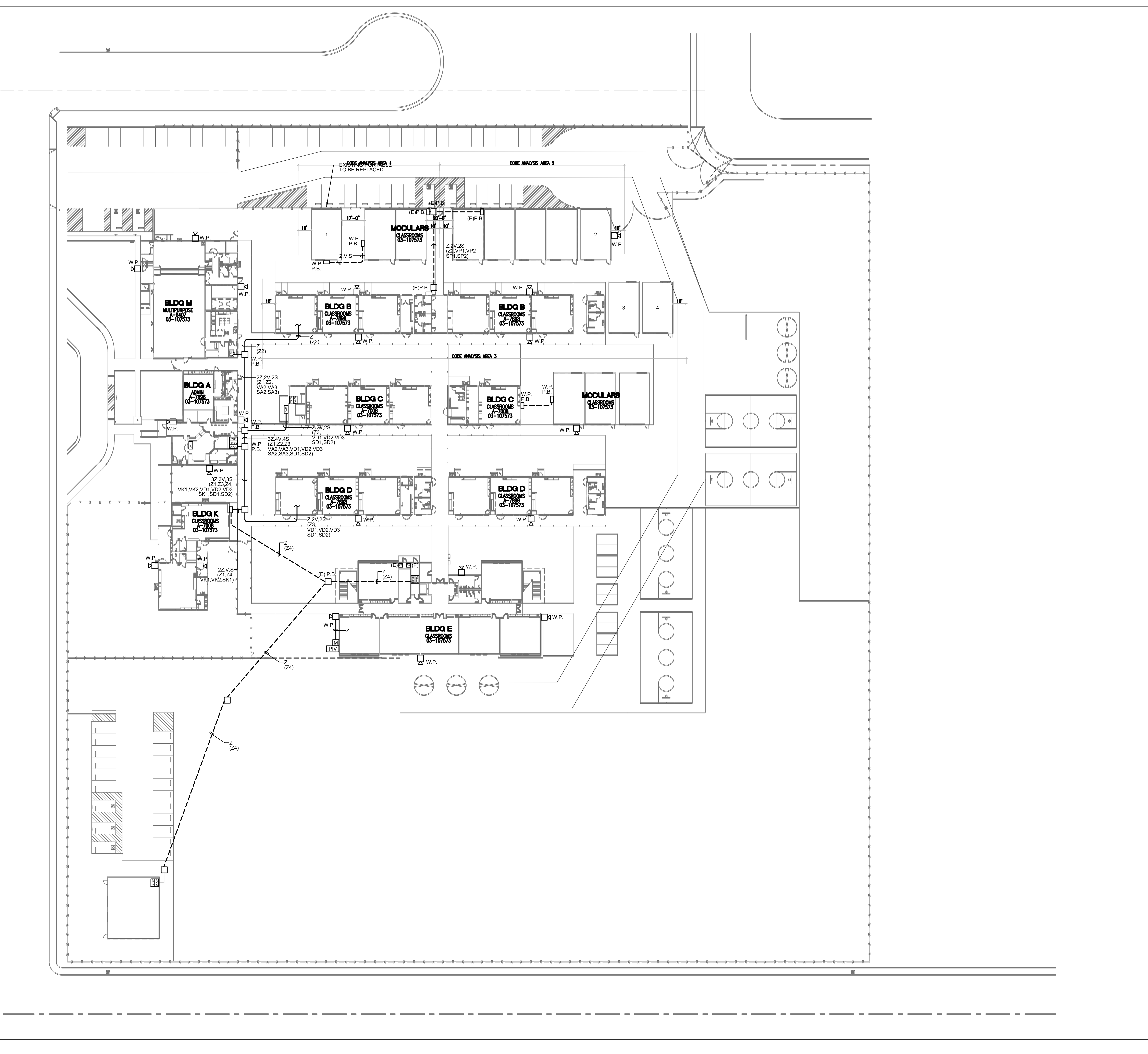
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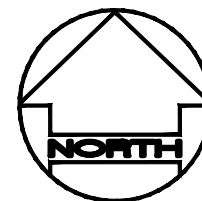
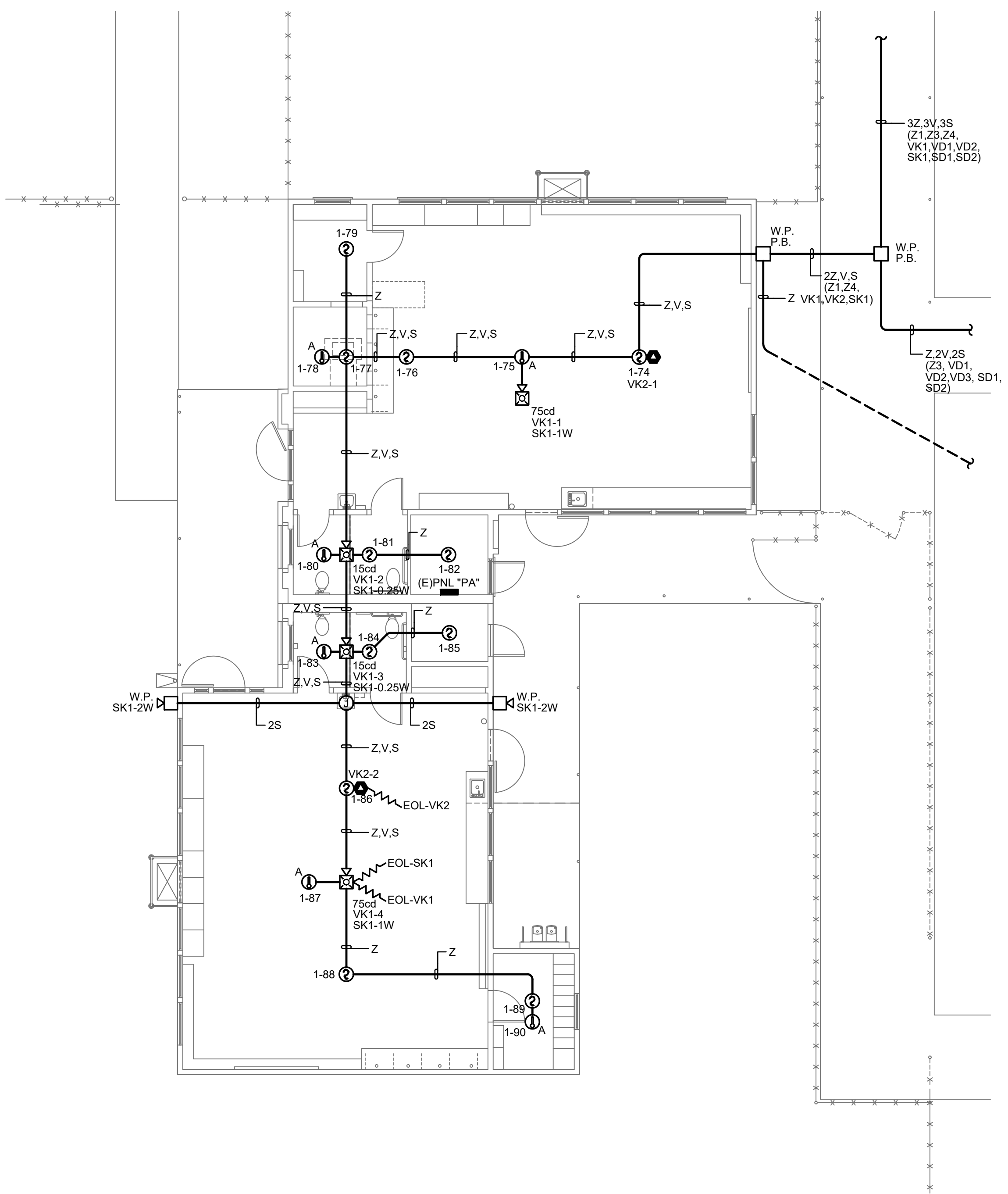
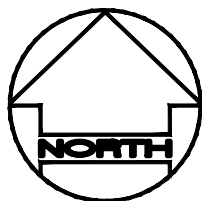
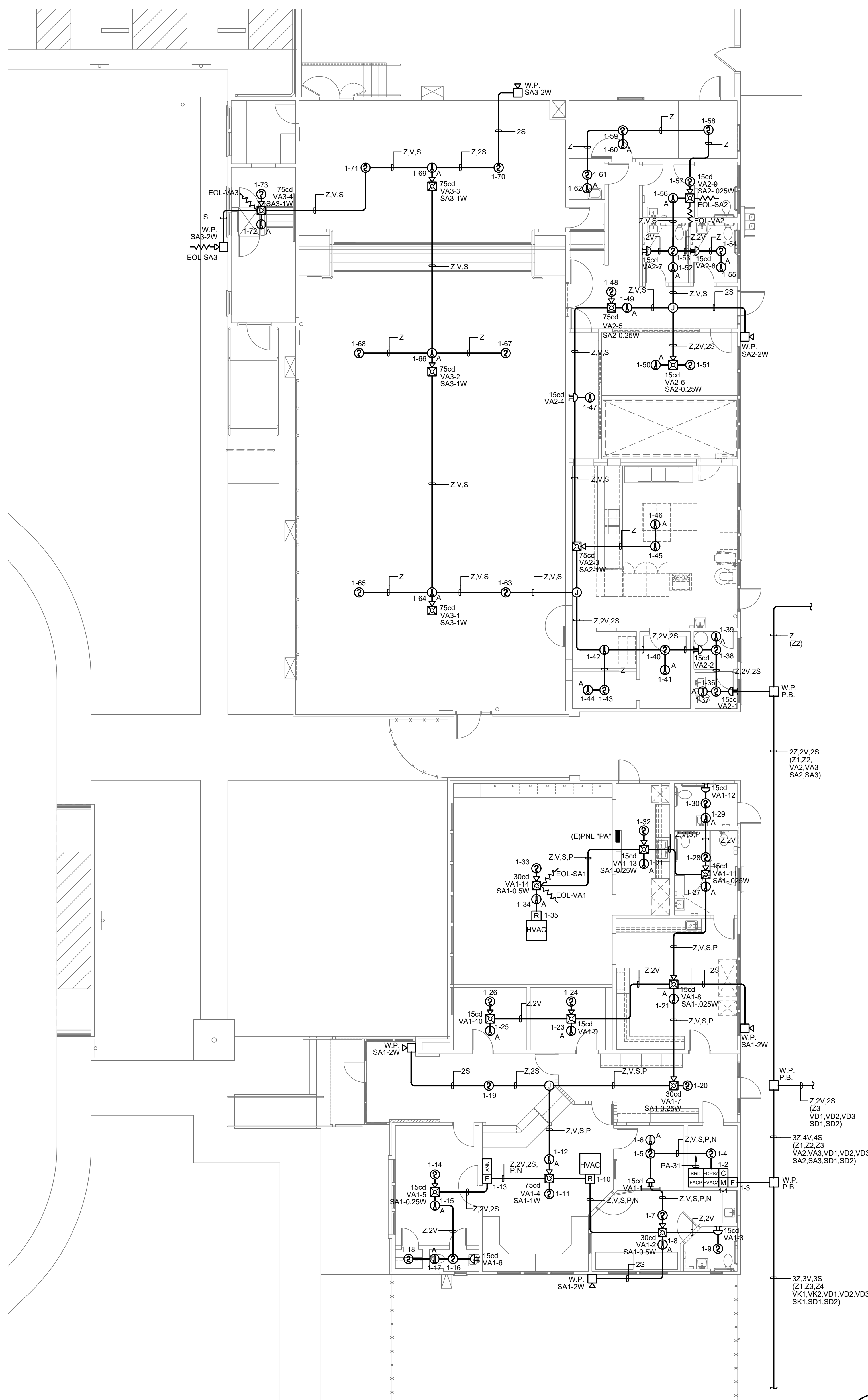
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ARCHITECT: RN
ENGINEER:

SHEET DESCRIPTION:
**FIRE ALARM SITE
PLAN**

SHEET NO:

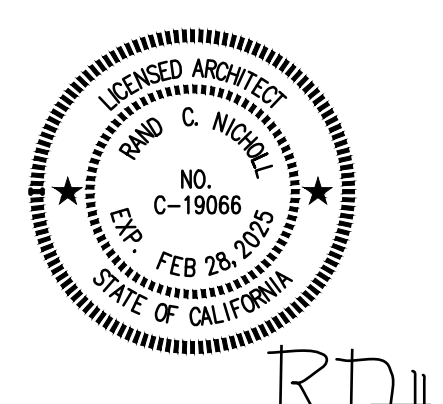
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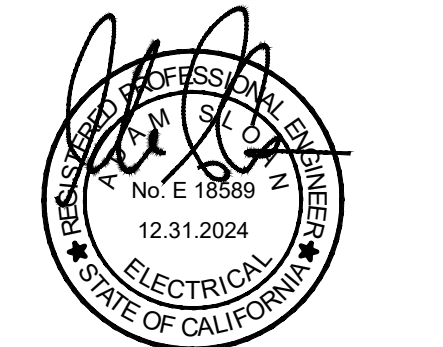


- PLAN NOTES:**
- 1 EXISTING GYP BOARD CEILING, ATTIC SPACE.
 - 2 EXISTING GYP BOARD CEILING, NO ATTIC SPACE.
 - 3 EXISTING GLUE ON TILES, ATTIC SPACE.
 - 4 EXISTING GLUE ON TILES, NO ATTIC SPACE.
 - 5 EXISTING T-BAR CEILING, ATTIC SPACE.
 - 6 EXISTING EXPOSED CEILING, NO ATTIC SPACE.
 - 7 EXISTING EXPOSED BEAM, NO ATTIC SPACE, BEAM DEPTH AS NOTED.
 - 8 PROVIDE NEW (1) 20A 1P CIRCUIT BREAKER TO EXISTING PANEL SPACE, AS INDICATED. CIRCUIT BREAKER SHALL MATCH BY TYPE/STYLE/RATING. PROVIDE LOCK ON DEVICE TO CIRCUIT BREAKER HANDLE, WITH RED MARKING, ACCESSIBLE ONLY TO AUTHORIZED PERSONNEL, IDENTIFIED AS "FIRE ALARM CIRCUIT", AND LOCATION OF CIRCUIT BREAKER PERMANENTLY IDENTIFIED AT FIRE ALARM CONTROL UNIT IN COMPLIANCE WITH NFPA 72, 10.6.5.2.
 - 9 PROVIDE (2) CAT8 TO MDF/IDF WITHIN THE BUILDING FOR REMOTE STATION MONITORING.
 - 10 EXISTING HVAC UNIT (FIELD VERIFY EXACT LOCATION). PROVIDE AUTOMATIC SHUT OFF PER CMIC 808, WITH CONTROL RELAY MODULE (AOM-2RF) (LOCATE ABOVE ACCESSIBLE CEILING SPACE BELOW HVAC UNIT)
 - 11 PROVIDE NEW ACCESS PANEL

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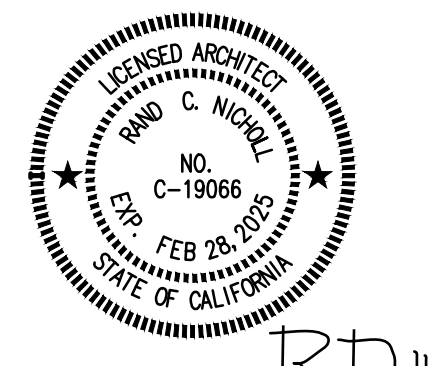
CLIENT:
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 SCHOOL DISTRICT**
 11627 BROOKSHIRE AVE.
 DOWNEY, CA 90242

Rev.	Date	Description

JOB NO:	XXX
DATE:	XXX
DRAWN:	XXX
CHECK:	XX
ARCHITECT:	RN
ENGINEER:	
SHEET DESCRIPTION:	FIRE ALARM - BLDG. A, K & M
SHEET NO:	



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YORBA LINDA, CA 92886
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CONSULTANT:



AG Design Inc.
Consulting Electrical Engineers
714.759.9900
www.AGDesignEng.com

200 W. Orangewood Ave. Suite 105 | Orange, CA 92668

PROJECT NAME:

**NEW RELOCATABLE CLASSROOMS
AND FIRE ALARM UPGRADES**
LEWIS ELEMENTARY SCHOOL
13220 BELFLOWER BLVD.
DOWNEY, CA 90242

CLIENT:

**DOWNEY UNIFIED
SCHOOL DISTRICT**
11627 BROOKSHIRE AVE.
DOWNEY, CA 90242

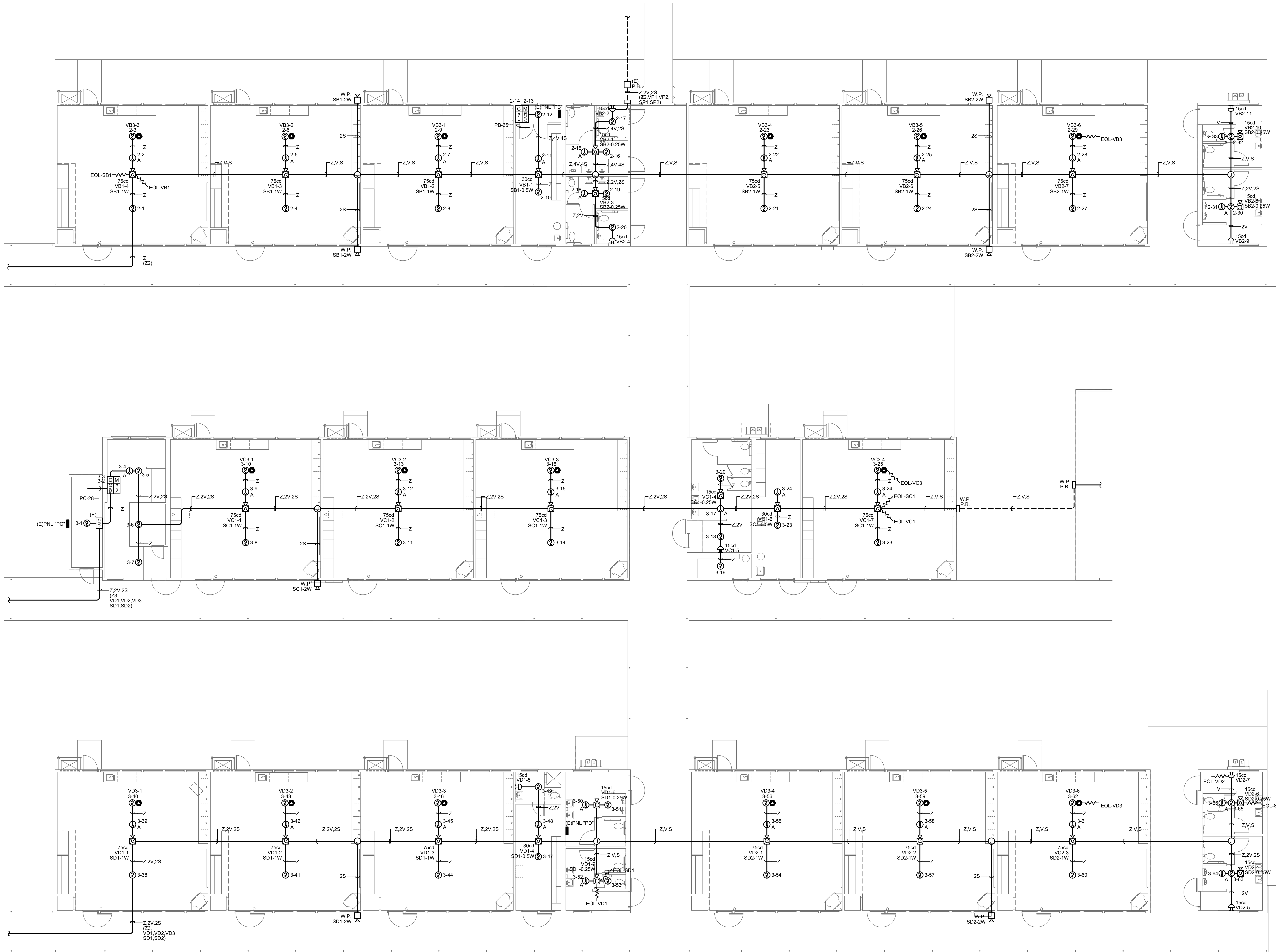
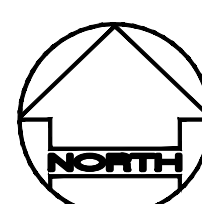
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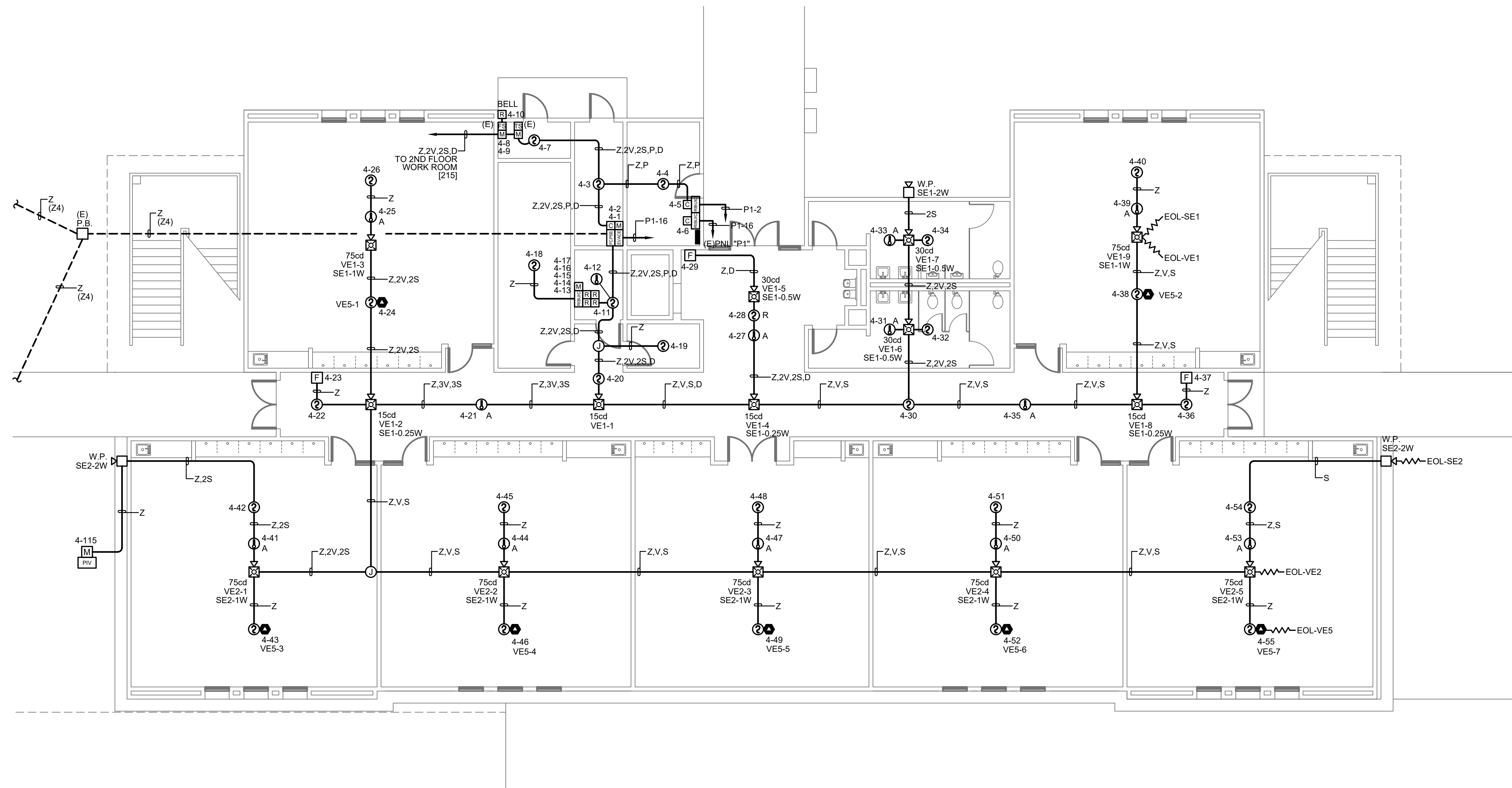
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CHECK: XX
ARCHITECT: RN
ENGINEER:

SHEET DESCRIPTION:
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B, C & D**

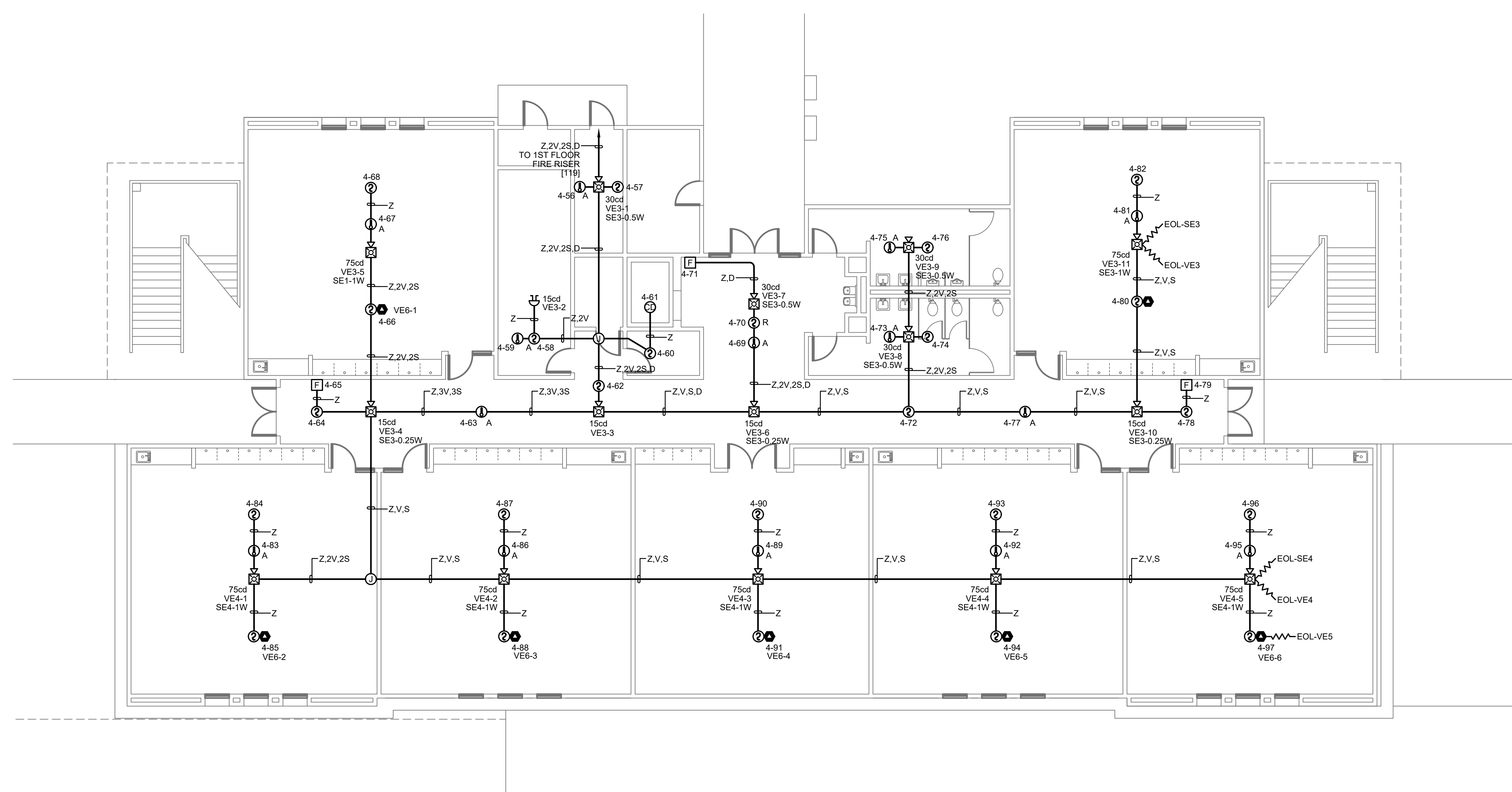
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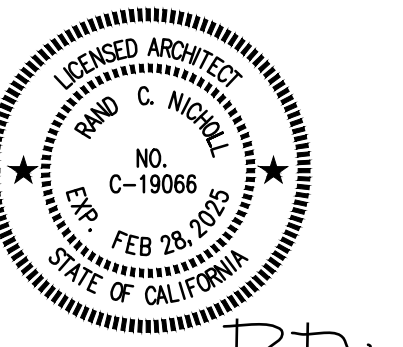
BUILDING E FIRE ALARM PLAN – FIRST FLOOR 1
1/8"=1'-0"



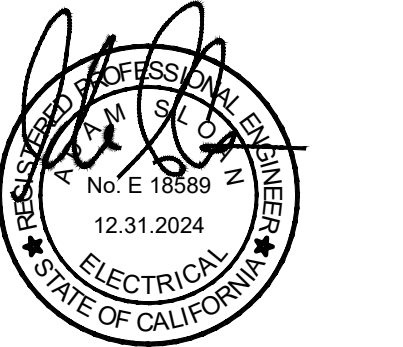
BUILDING E FIRE ALARM PLAN – SECOND FLOOR 2
1/8"=1'-0"



RAND NICHOLL ARCHITECTURE
4591 SIRODAY AVENUE
YORBA LINDA, CA 92886
714.915.4504



CONSULTANT:
R.N.



AG Design Inc.
714.759.9900
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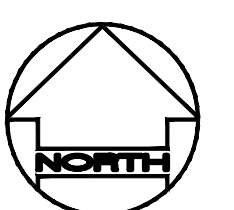
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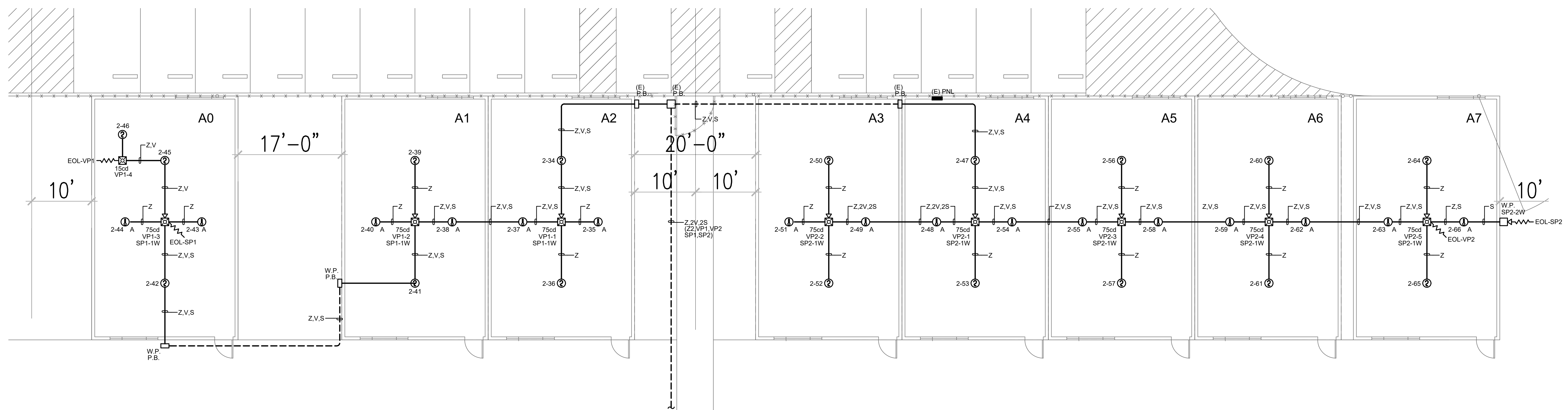
ENGINEER:

SHEET DESCRIPTION:
FIRE ALARM - BLDG. E
FIRST & SECOND FLOORS

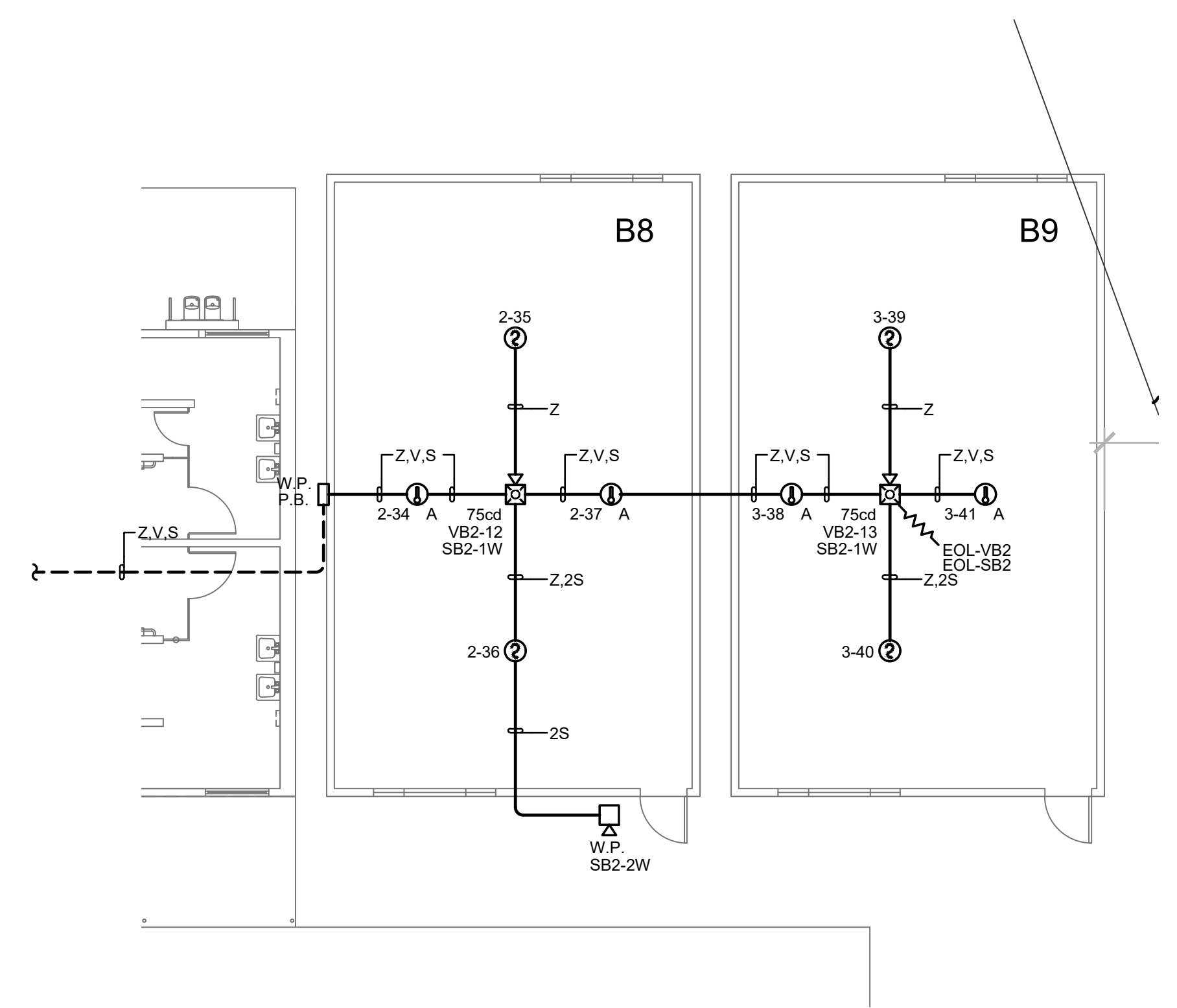
SHEET NO:

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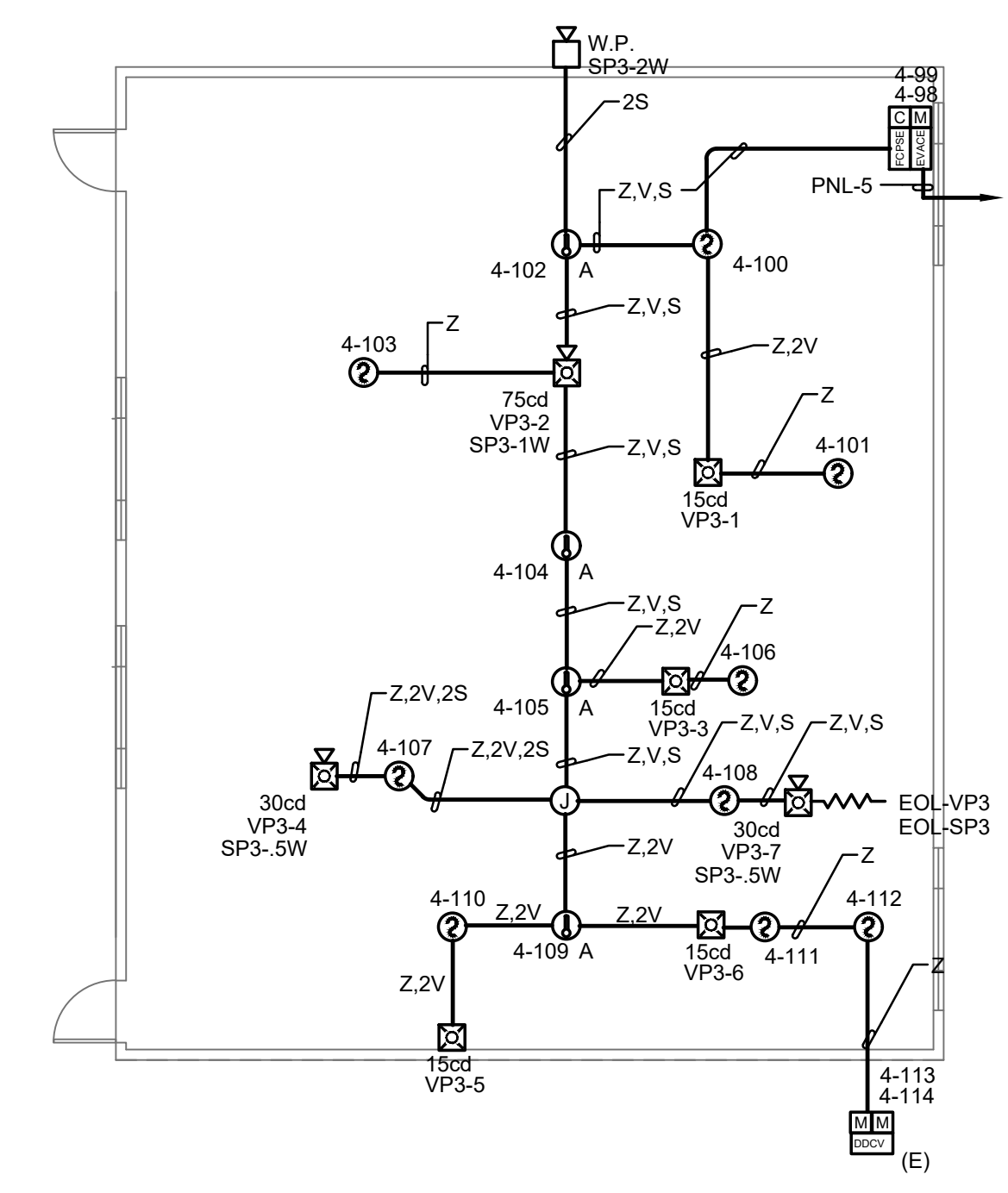




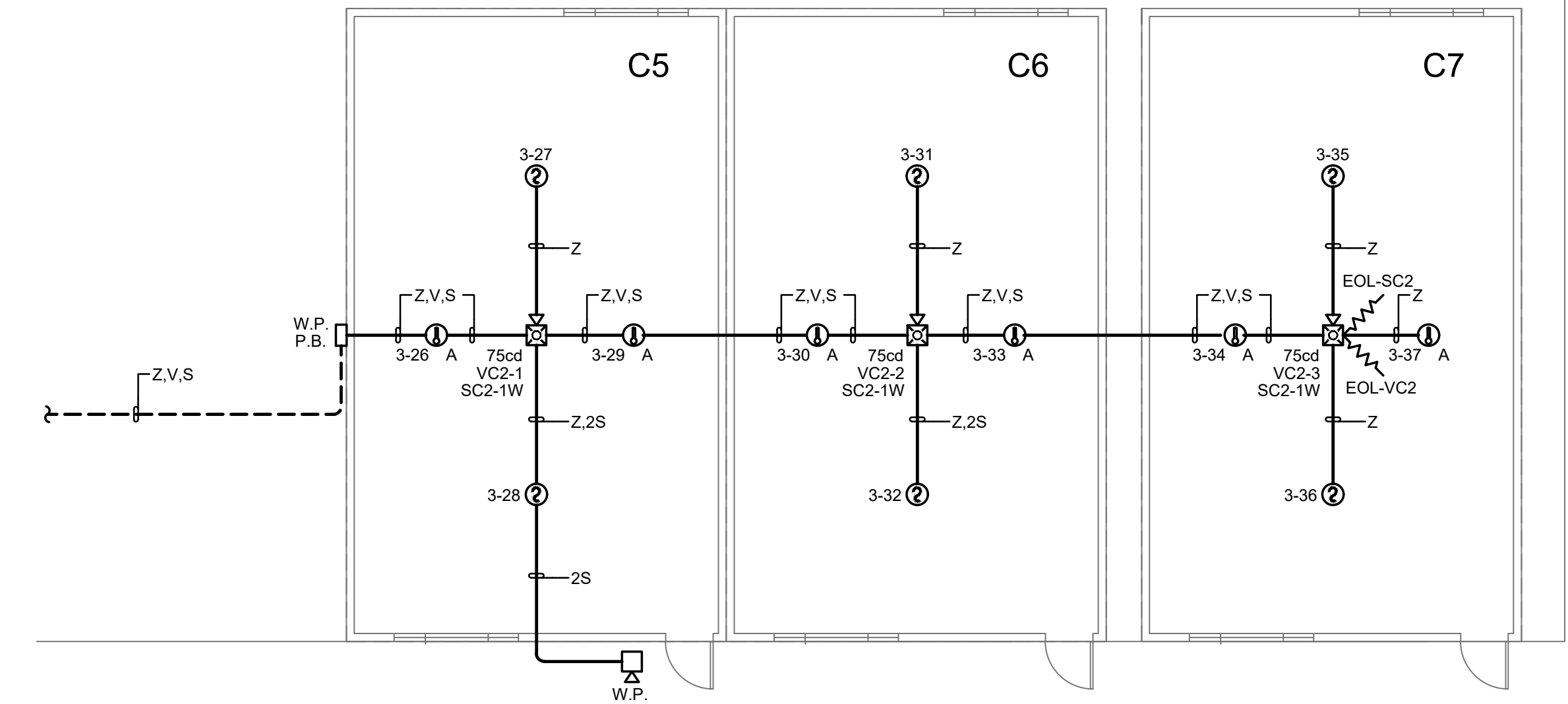
RELOCATABLE CLASSROOMS FIRE ALARM PLAN – NORTH 1
1/8"=1'-0"



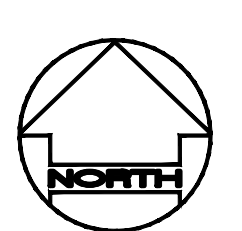
RELOCATABLE CLASSROOMS FIRE ALARM PLAN – NORTH EAST 2
1/8"=1'-0"



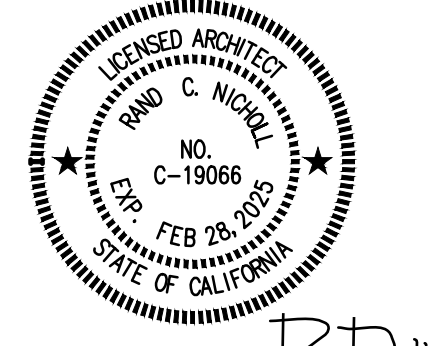
PORTABLE "K" FIRE ALARM PLAN 4
1/8"=1'-0"



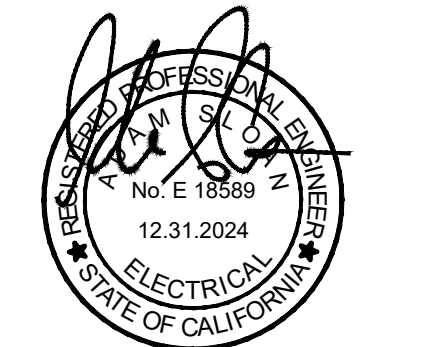
RELOCATABLE CLASSROOMS FIRE ALARM PLAN – SOUTH EAST 3
1/8"=1'-0"



RNA
RAND NICHOLL ARCHITECTURE
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YORBA LINDA, CA 92886
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CONSULTANT: RNA



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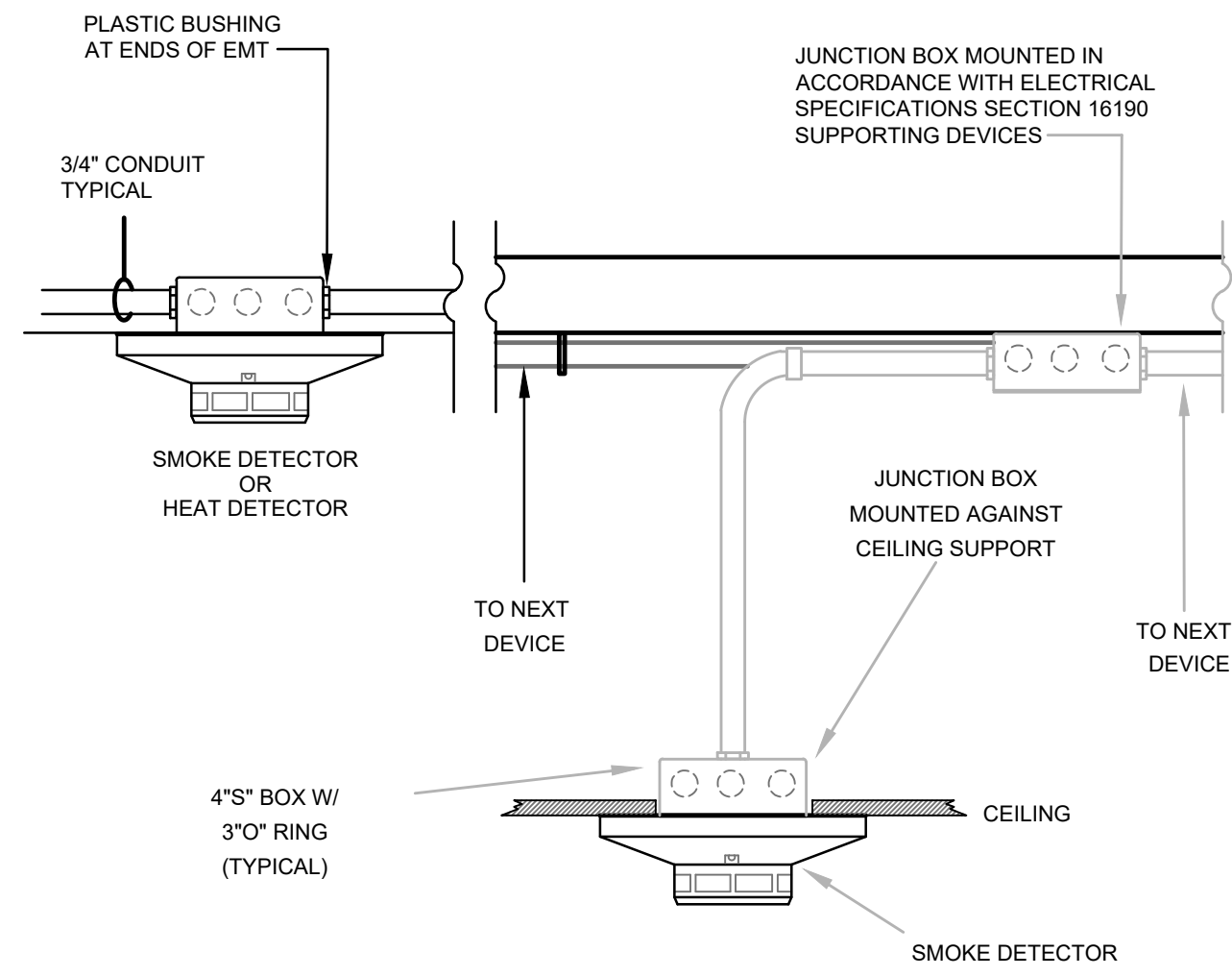
CLIENT:
**DOWNEY UNIFIED
SCHOOL DISTRICT**
11627 BROOKSHIRE AVE.
DOWNEY, CA 90242

Rev.	Date	Description

JOB NO: XXX
DATE: XXX
DRAWN: XXX
CHECK: XX
ARCHITECT: RN

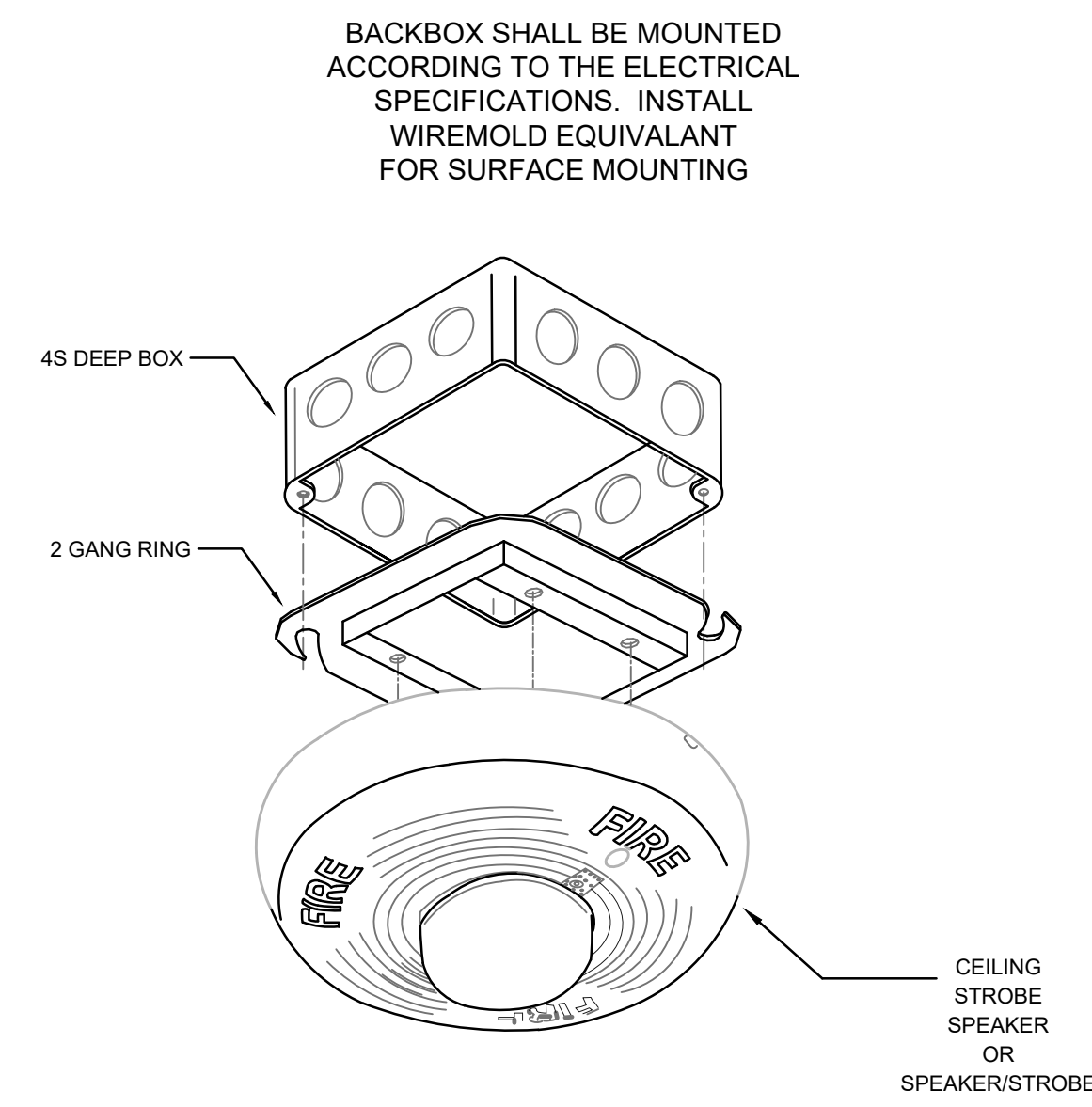
ENGINEER:
SHEET DESCRIPTION:
**FIRE ALARM -
RELOCATABLES**

SHEET NO:
FA104



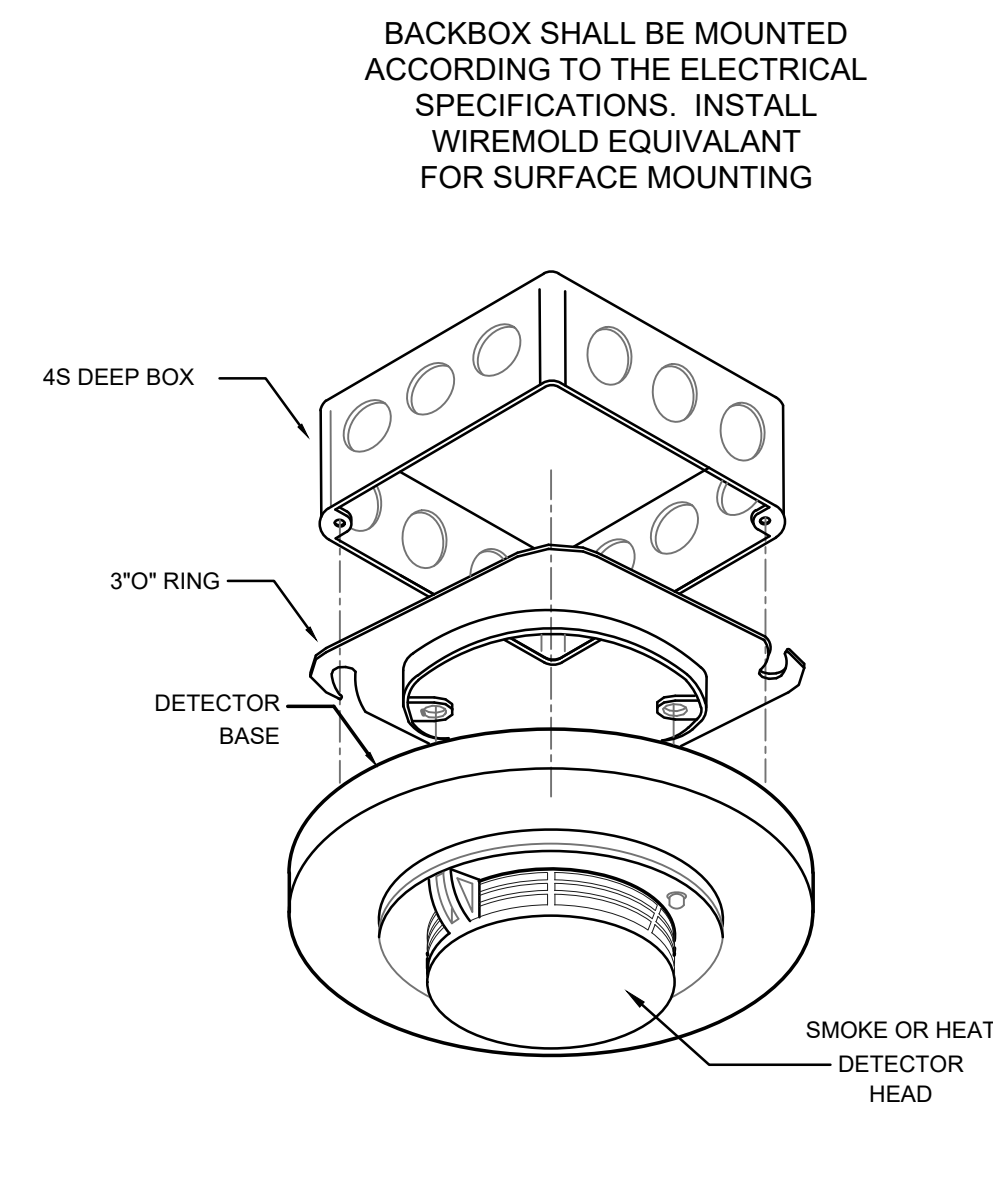
TYPICAL DETECTOR MOUNTING DETAIL

NOT TO SCALE 4



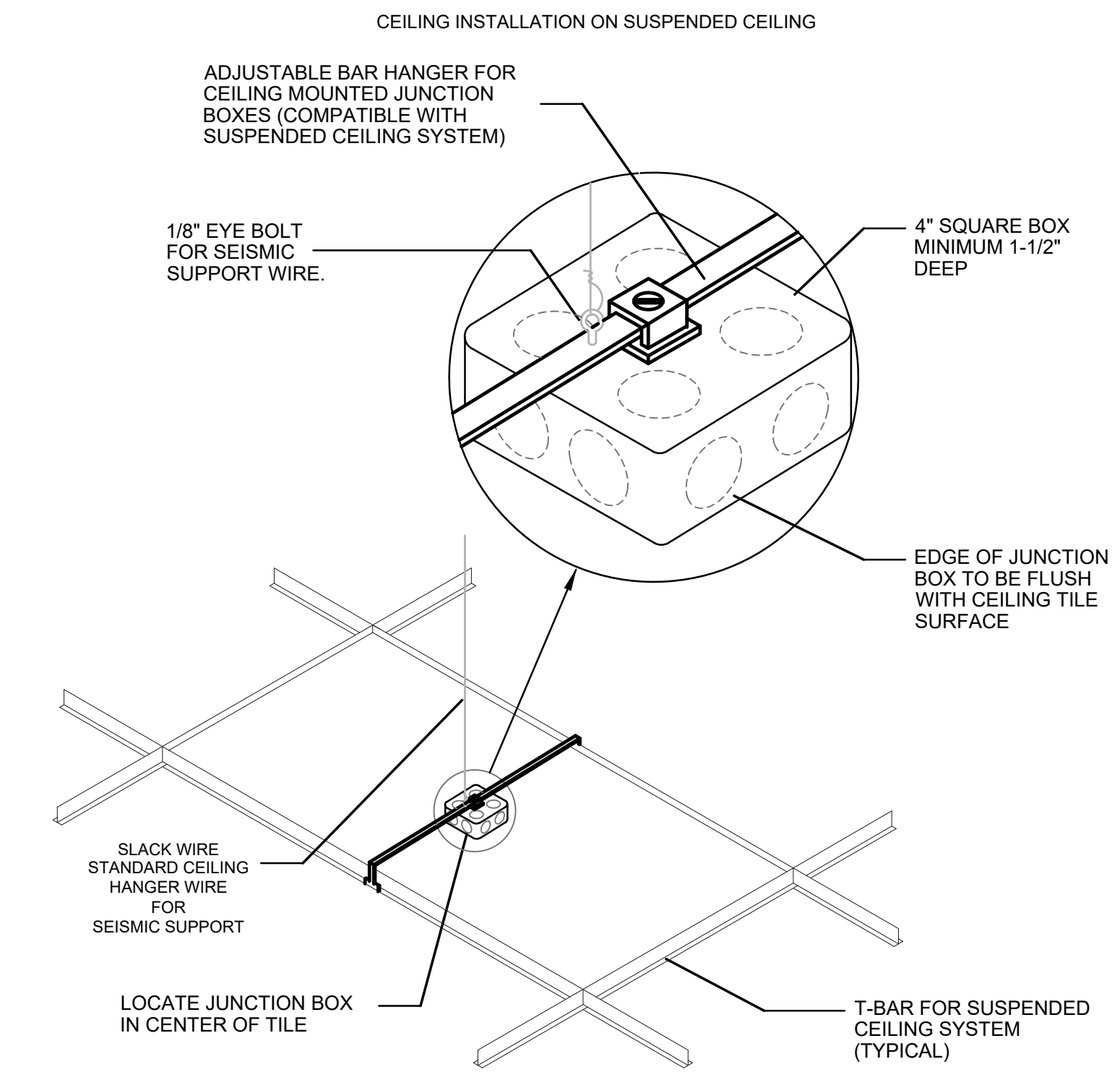
CEILING MOUNT STROBE, SPEAKER & SPEAKER/STROBE DETAIL

NOT TO SCALE 3



CEILING/ATTIC MOUNT SMOKE & HEAT DETAIL

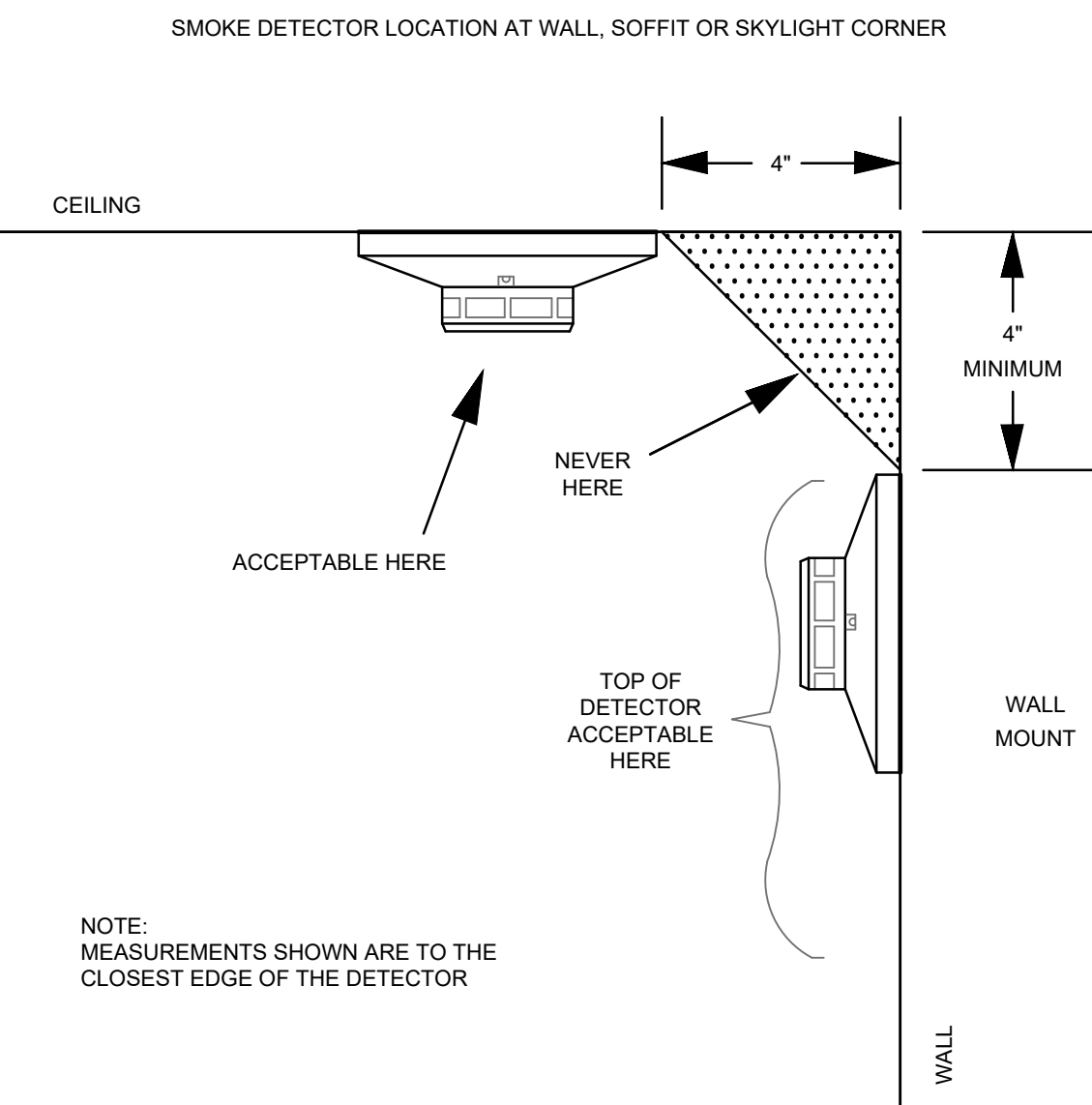
NOT TO SCALE 2



SMOKE DETECTOR, STROBE, SPEAKER & SPEAKER/STROBE MOUNTING

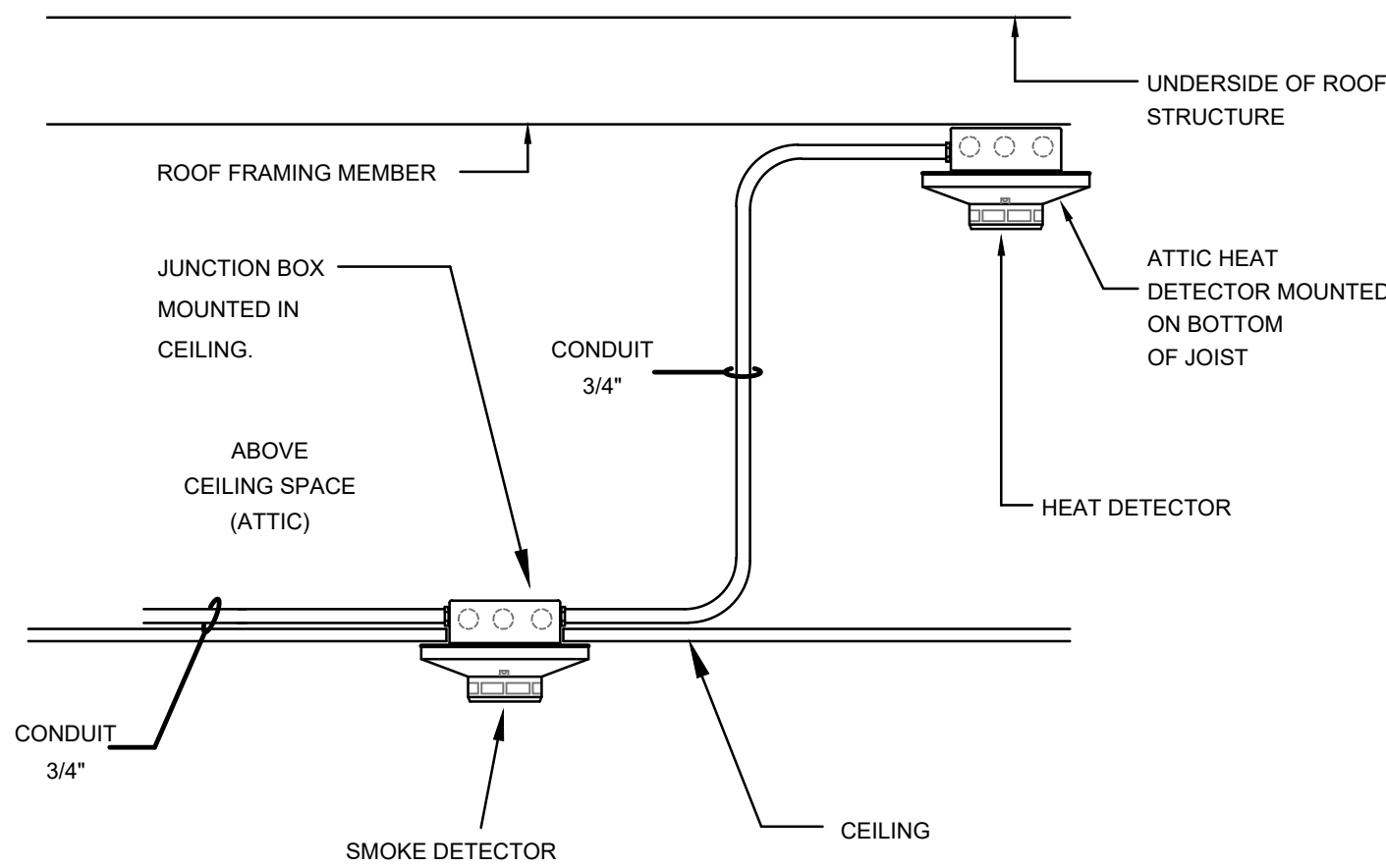
NOT TO SCALE 1

NFPA 72 A.17.7.4.1 Detectors should not be located in a direct airflow or closer than 36 in. (910 mm) from an air supply diffuser or return air opening. Supply or return sources larger than those commonly found in residential and small commercial establishments can require greater clearance to smoke detectors. Similarly, smoke detectors should be located farther away from high velocity air supplies.



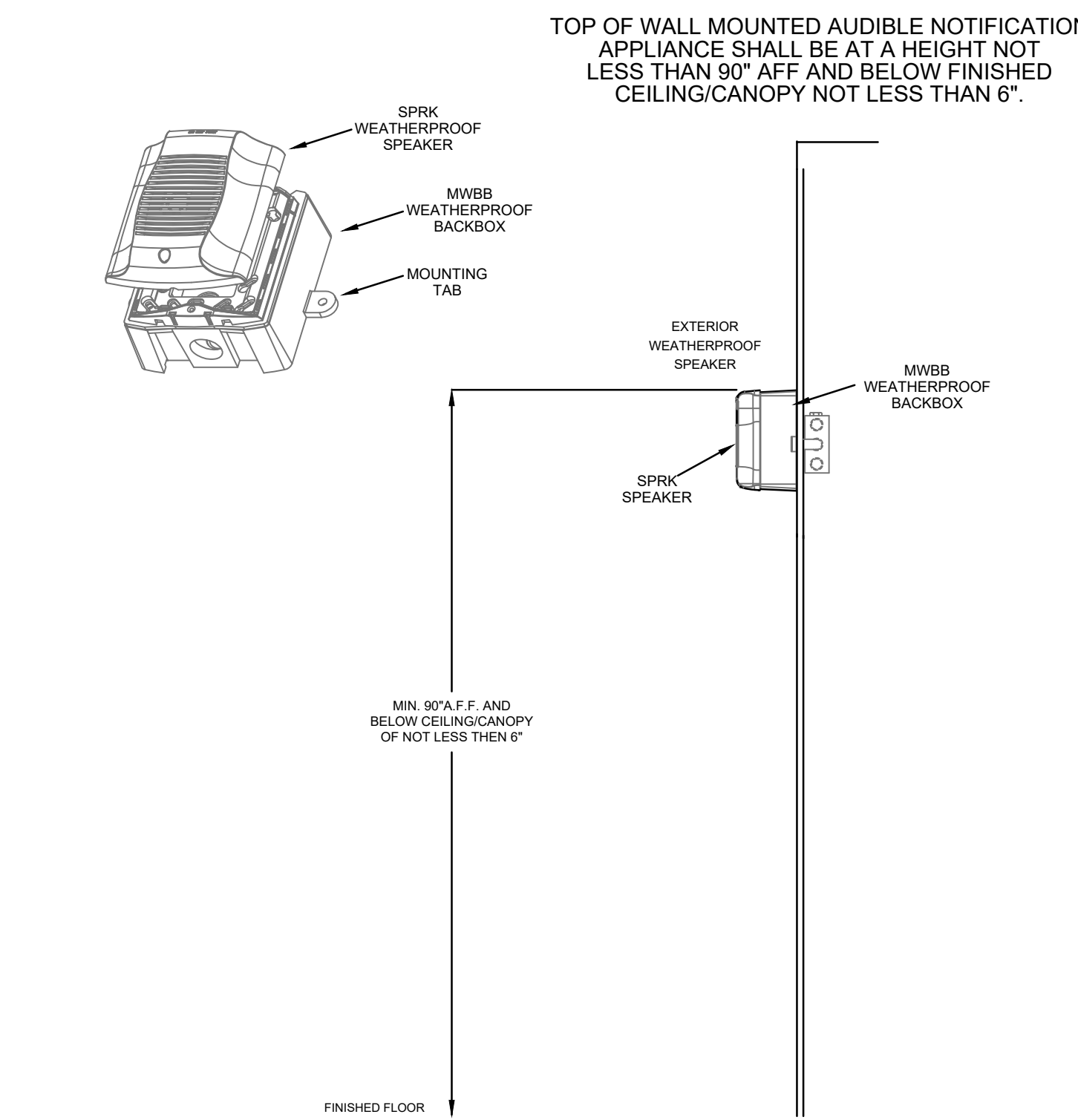
SMOKE DETECTOR CORNER MOUNTING DETAIL

NOT TO SCALE 8



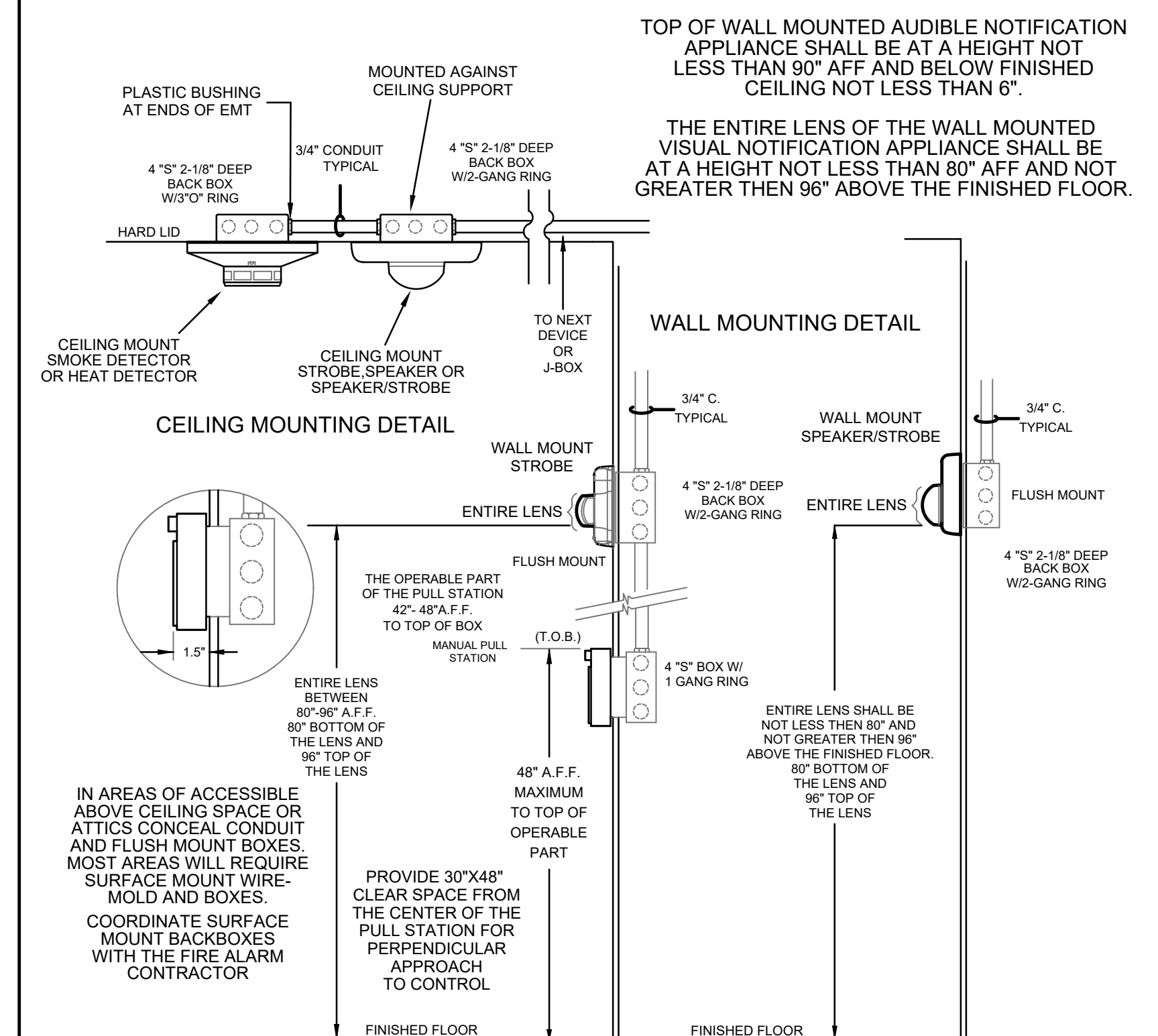
TYPICAL SMOKE DETECTOR & HEAT DETECTOR MOUNTING

NOT TO SCALE 7



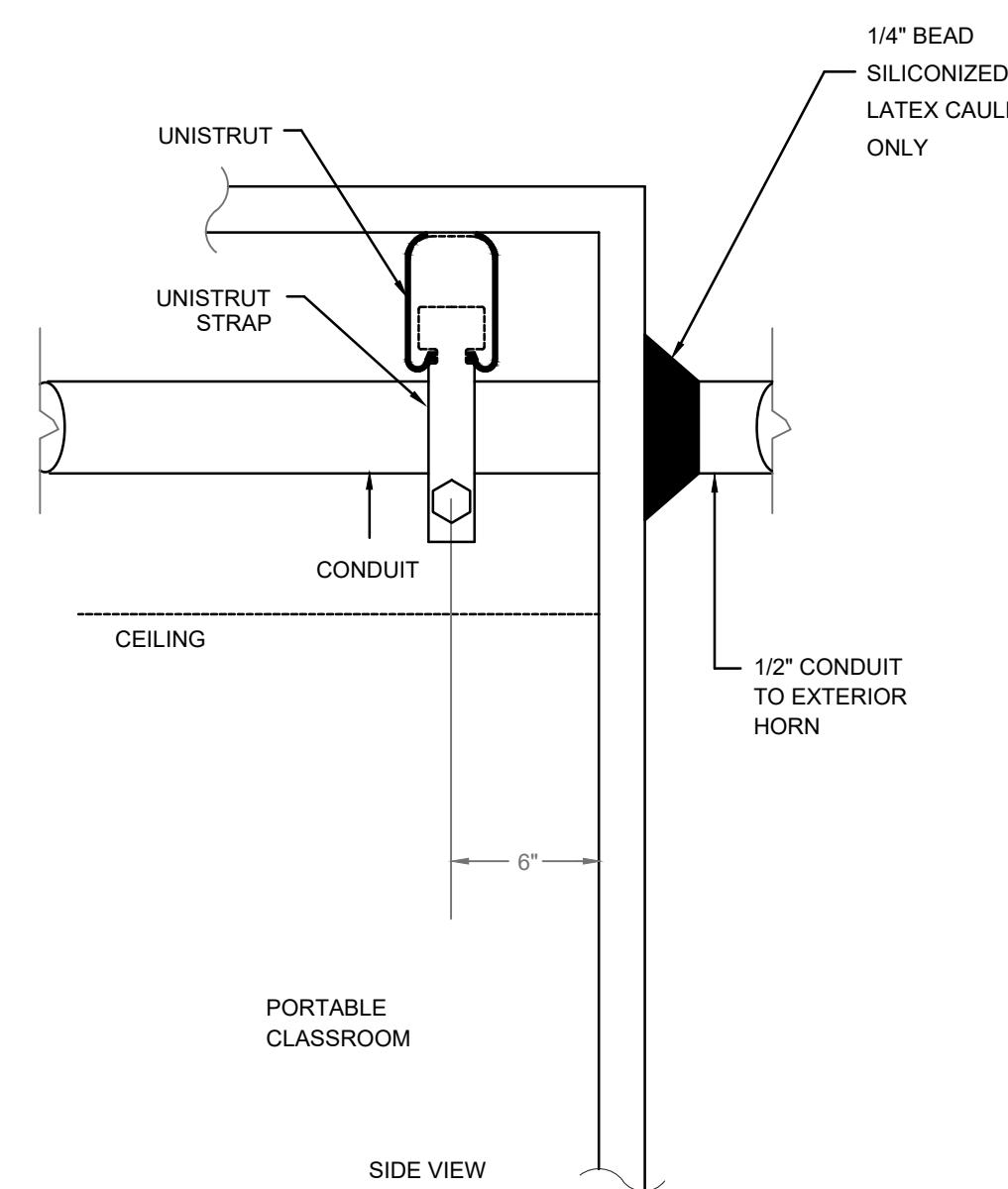
EXTERIOR SPEAKER MOUNTING

NOT TO SCALE 6



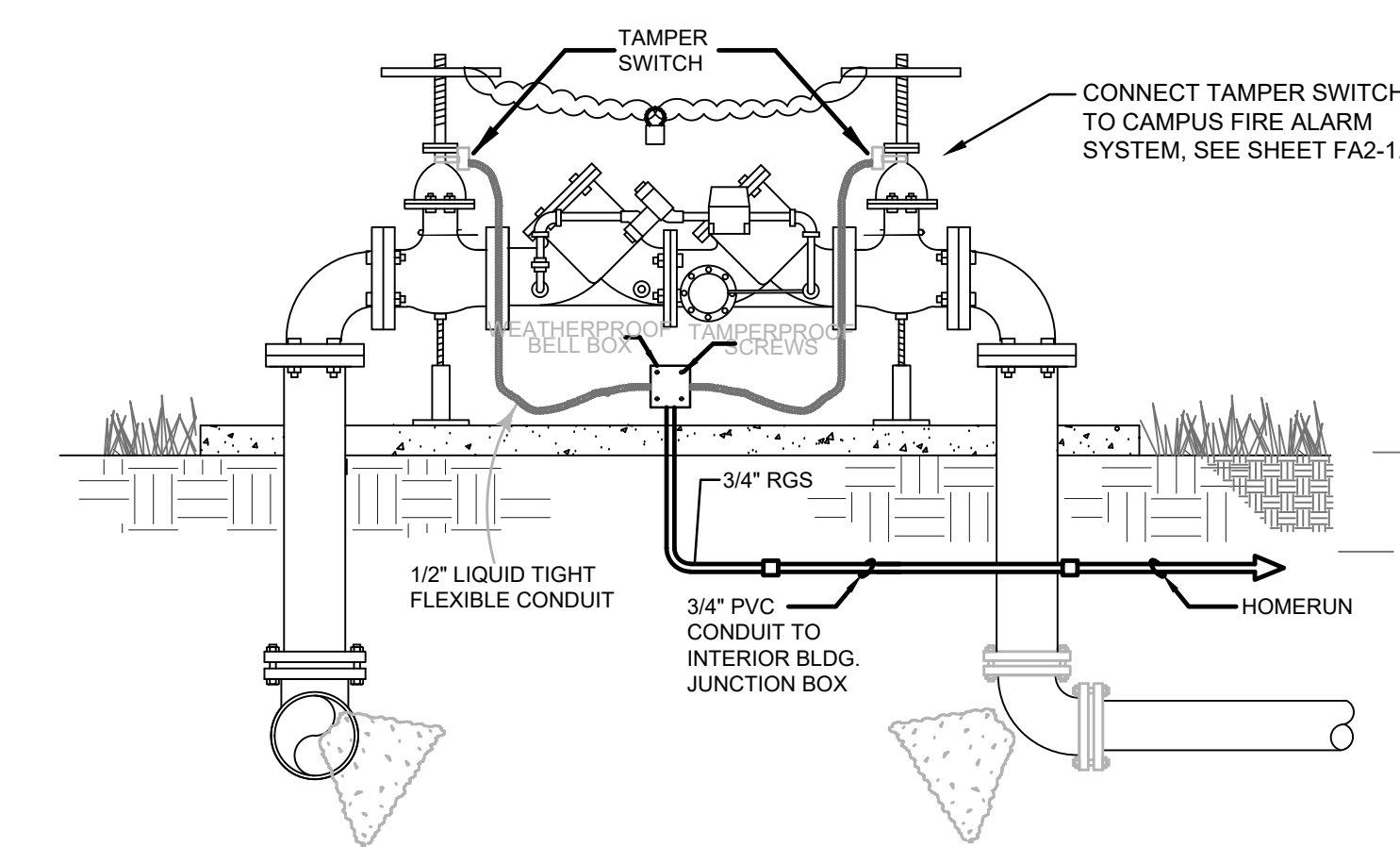
MOUNTING HEIGHT DETAIL

NOT TO SCALE 5



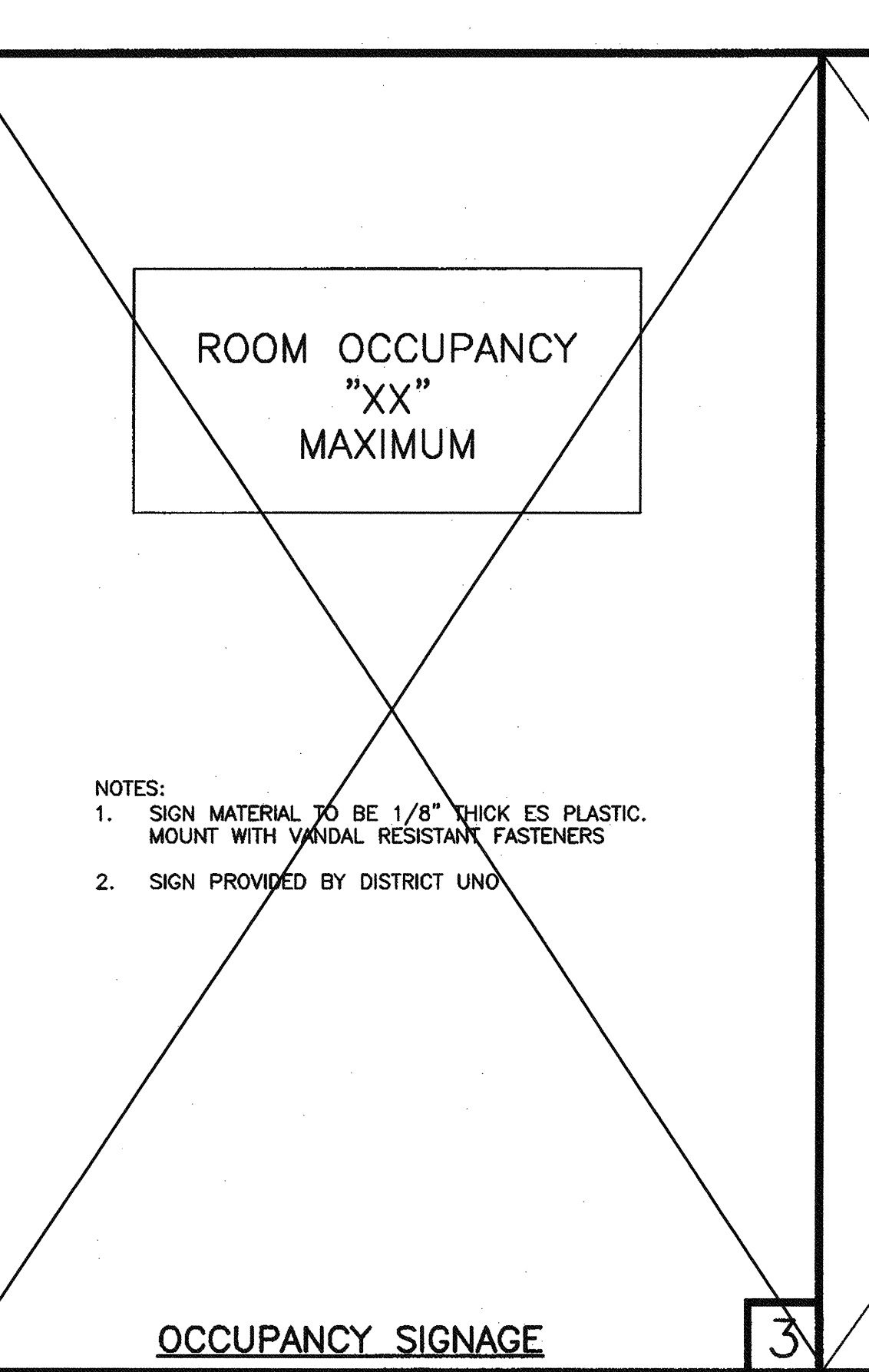
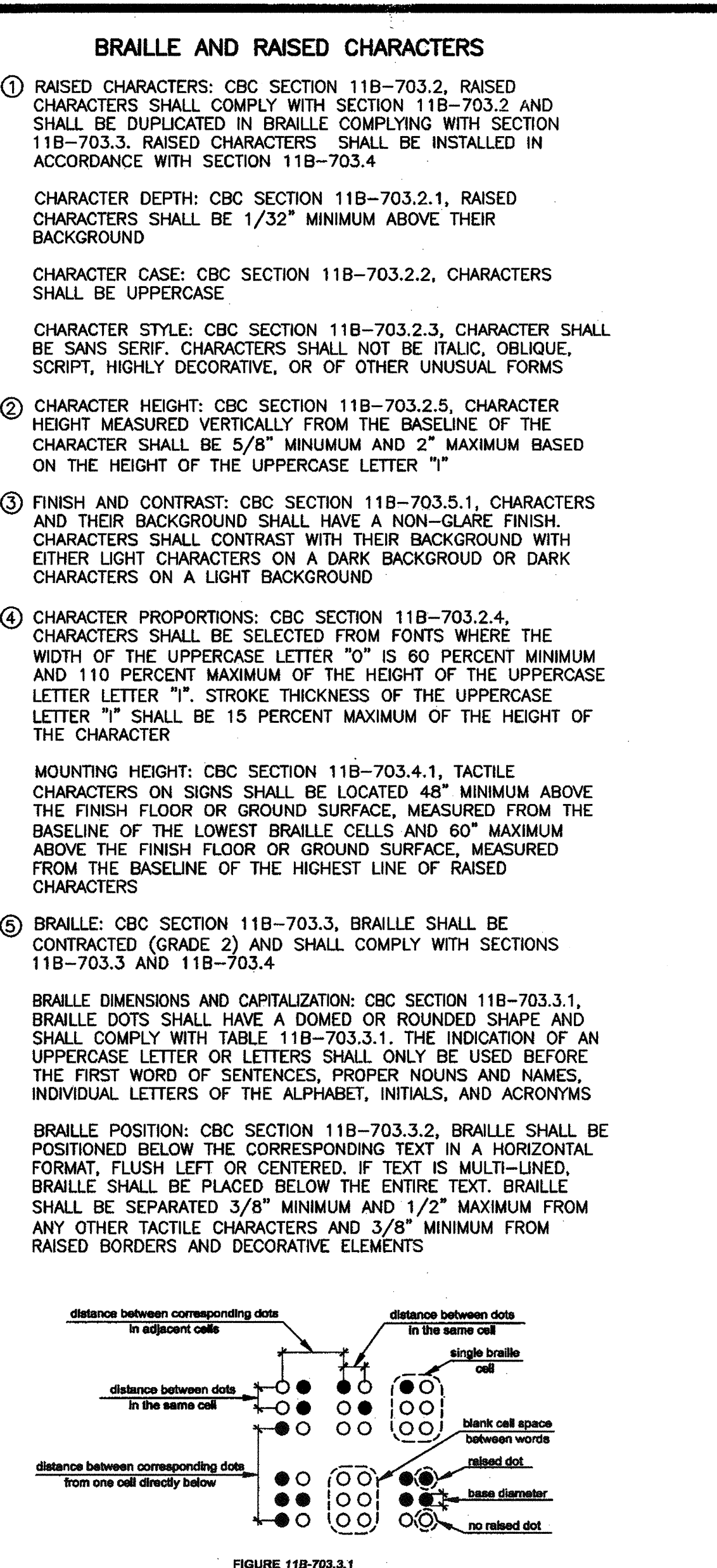
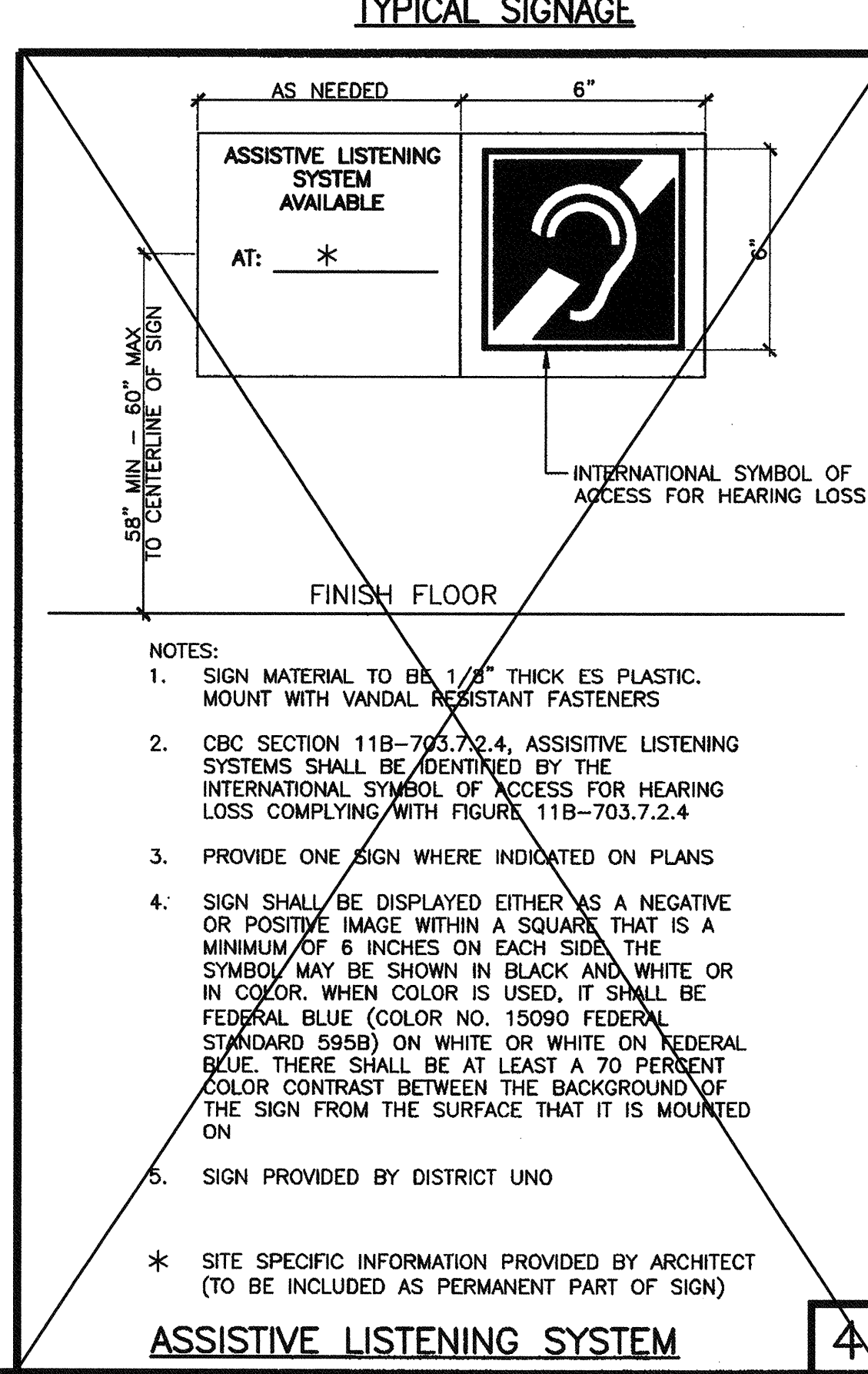
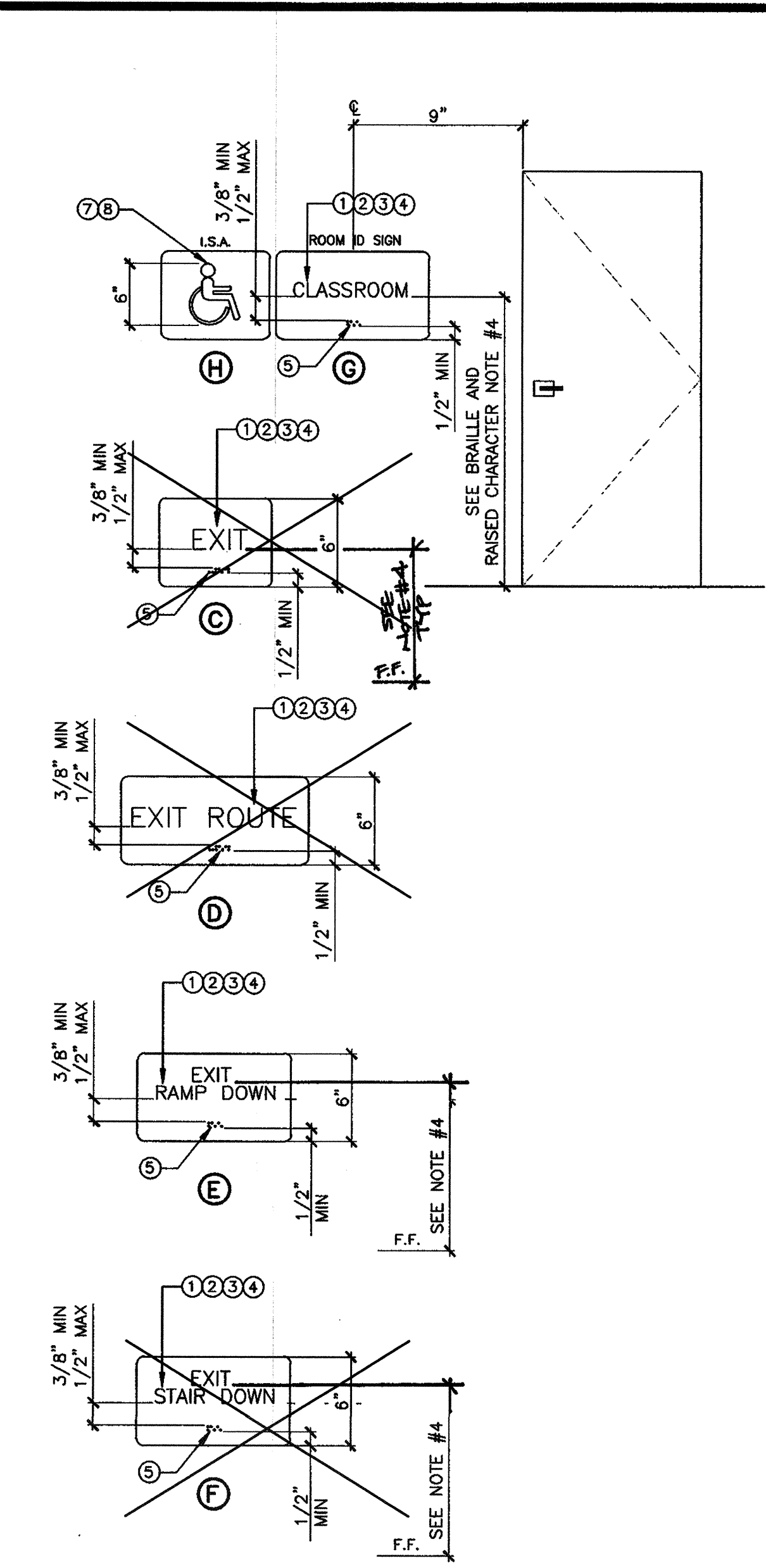
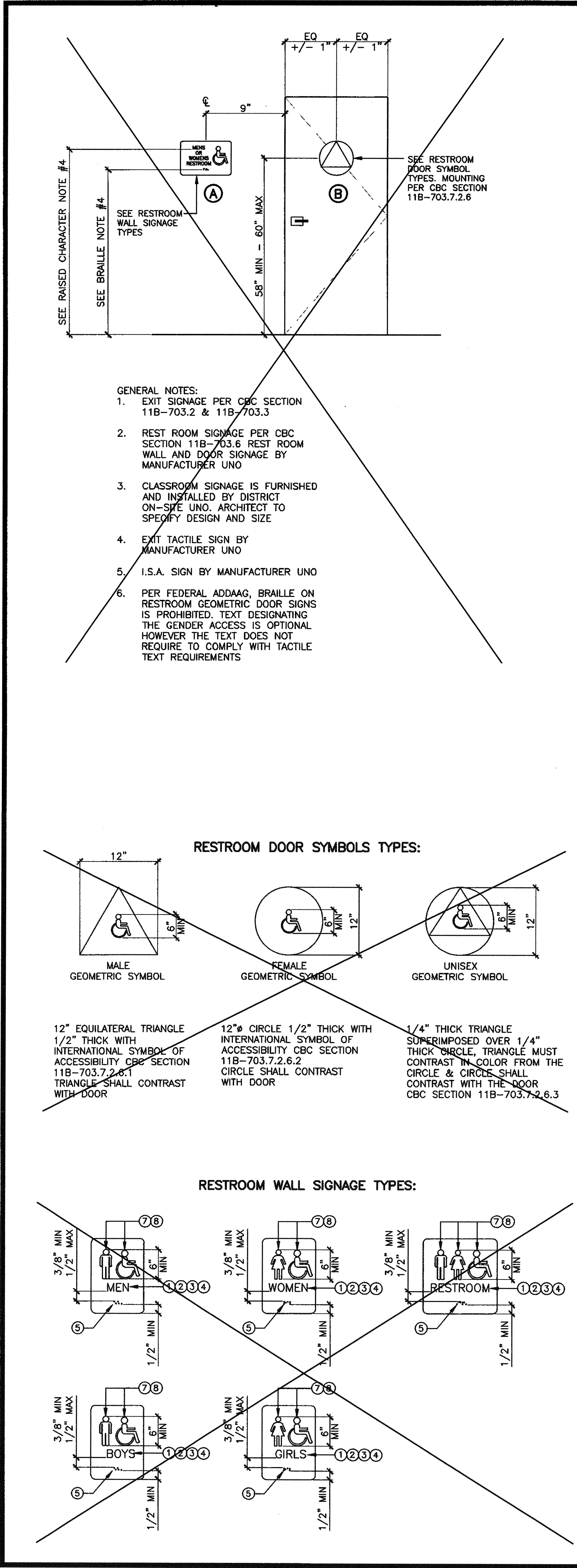
SEAL TIGHT PENETRATION

NOT TO SCALE 10



BACKFLOW DOUBLE DETECTION TAMPER SWITCH DETAIL

NOT TO SCALE 9



BRILLE AND RAISED CHARACTERS

① RAISED CHARACTERS: CBC SECTION 11B-703.2, RAISED CHARACTERS SHALL COMPLY WITH SECTION 11B-703.2 AND SHALL BE DUPLICATED IN BRILLE COMPLYING WITH SECTION 11B-703.3. RAISED CHARACTERS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 11B-703.4

CHARACTER DEPTH: CBC SECTION 11B-703.2.1, RAISED CHARACTERS SHALL BE 1/32" MINIMUM ABOVE THEIR BACKGROUND

CHARACTER CASE: CBC SECTION 11B-703.2.2, CHARACTERS SHALL BE UPPERCASE

CHARACTER STYLE: CBC SECTION 11B-703.2.3, CHARACTER SHALL BE SANS SERIF, CHARACTERS SHALL NOT BE ITALIC, OBLIQUE, SCRIPT, HIGHLY DECORATIVE, OR OF OTHER UNUSUAL FORMS

② CHARACTER HEIGHT: CBC SECTION 11B-703.2.5, CHARACTER HEIGHT MEASURED VERTICALLY FROM THE BASELINE OF THE CHARACTER SHALL BE 5/8" MINIMUM AND 2" MAXIMUM BASED ON THE HEIGHT OF THE UPPERCASE LETTER "I"

③ FINISH AND CONTRAST: CBC SECTION 11B-703.5.1, CHARACTERS AND THEIR BACKGROUND SHALL HAVE A NON-GLARE FINISH. CHARACTERS SHALL CONTRAST WITH THEIR BACKGROUND WITH EITHER LIGHT CHARACTERS ON A DARK BACKGROUND OR DARK CHARACTERS ON A LIGHT BACKGROUND

④ CHARACTER PROPORTIONS: CBC SECTION 11B-703.2.4, CHARACTERS SHALL BE SELECTED FROM FONTS WHERE THE WIDTH OF THE UPPERCASE LETTER "O" IS 80 PERCENT MINIMUM AND 110 PERCENT MAXIMUM OF THE HEIGHT OF THE UPPERCASE LETTER "I". STROKE THICKNESS OF THE UPPERCASE LETTER "I" SHALL BE 15 PERCENT MAXIMUM OF THE HEIGHT OF THE CHARACTER

MOUNTING HEIGHT: CBC SECTION 11B-703.4.1, TACTILE CHARACTERS ON SIGNS SHALL BE LOCATED 48" MINIMUM ABOVE THE FINISH FLOOR OR GROUND SURFACE, MEASURED FROM THE BASELINE OF THE LOWEST BRILLE CELLS AND 60" MAXIMUM ABOVE THE FINISH FLOOR OR GROUND SURFACE, MEASURED FROM THE BASELINE OF THE HIGHEST LINE OF RAISED CHARACTERS

⑤ BRILLE: CBC SECTION 11B-703.3, BRILLE SHALL BE CONTRACTED (GRADE 2) AND SHALL COMPLY WITH SECTIONS 11B-703.3 AND 11B-703.4

BRILLE DIMENSIONS AND CAPITALIZATION: CBC SECTION 11B-703.3.1, BRILLE DOTS SHALL HAVE A DOMED OR ROUNDED SHAPE AND SHALL COMPLY WITH TABLE 11B-703.3.1. THE INDICATION OF AN UPPERCASE LETTER OR LETTERS SHALL ONLY BE USED BEFORE THE FIRST WORD OF SENTENCES, PROPER NOUNS AND NAMES, INDIVIDUAL LETTERS OF THE ALPHABET, INITIALS, AND ACRONYMS

BRILLE POSITION: CBC SECTION 11B-703.3.2, BRILLE SHALL BE POSITIONED BELOW THE CORRESPONDING TEXT IN A HORIZONTAL FORMAT, FLUSH LEFT OR CENTERED. IF TEXT IS MULTI-LINED, BRILLE SHALL BE PLACED BELOW THE ENTIRE TEXT. BRILLE SHALL BE SEPARATED 3/8" MINIMUM AND 1/2" MAXIMUM FROM ANY OTHER TACTILE CHARACTERS AND 3/8" MINIMUM FROM RAISED BORDERS AND DECORATIVE ELEMENTS

PICTOGRAMS AND SYMBOLS (WALL ROOM I.D. SIGN)

⑦ PICTOGRAM FIELD: CBC SECTION 11B-703.6.1, PICTOGRAMS SHALL HAVE A FIELD HEIGHT OF 6 INCHES MINIMUM. CHARACTERS AND BRILLE SHALL NOT BE LOCATED IN THE PICTOGRAM FIELD

FINISH AND CONTRAST: CBC SECTION 11B-703.6.2, PICTOGRAMS AND THEIR FIELD SHALL HAVE A NON-GLARE FINISH. PICTOGRAMS SHALL CONTRAST WITH THEIR FIELD WITH EITHER A LIGHT PICTOGRAM ON A DARK FIELD OR A DARK PICTOGRAM ON A LIGHT FIELD

TEXT DESCRIPTION: CBC SECTION 11B-703.6.3, PICTOGRAMS SHALL HAVE TEXT DESCRIPTORS LOCATED DIRECTLY BELOW THE PICTOGRAM FIELD. TEXT DESCRIPTION SHALL COMPLY WITH SECTION 11B-703.2, 11B-703.3, AND 11B-703.4

⑧ INTERNATIONAL SYMBOL OF ACCESSIBILITY: CBC SECTION 11B-703.7.2.1, THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL COMPLY WITH FIGURE 11B-703.7.2.1. THE SYMBOL SHALL CONSIST OF A WHITE FIGURE ON A BLUE BACKGROUND. THE BLUE SHALL BE COLOR NO. 15090 FEDERAL STANDARD 595B

EXCEPTION: THE APPROPRIATE ENFORCEMENT AGENCY MAY APPROVE OTHER COLORS TO COMPLEMENT DECOR OR UNIQUE DESIGNS. THE SYMBOL CONTRAST SHALL BE LIGHT ON DARK OR DARK ON LIGHT

FINISH AND CONTRAST: SYMBOLS OF ACCESSIBILITY AND THEIR BACKGROUND SHALL HAVE A NON-GLARE FINISH. SYMBOLS OR ACCESSIBILITY SHALL CONTRAST WITH THEIR BACKGROUND WITH EITHER A LIGHT SYMBOL ON A DARK BACKGROUND OR A DARK SYMBOL ON A LIGHT BACKGROUND

IMPACT CONSTRUCTION SERVICES INC.
 CONTRACTORS LICENSE #945691

NORTHERN CALIFORNIA DIVISION: 4501 COMMERCIAL AVE, ATWATER, CA 95301, PHONE: (209) 550-8508, FAX: (209) 550-8503

SOUTHERN CALIFORNIA DIVISION: 1000 N. HARLEY BLDG. BLVD., PERRIS, CA 92571, PHONE: (951) 943-9899, FAX: (951) 943-9430

WEBSITE: WWW.IMPACTCONSTRUCTION.COM

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PROJECT NAME: BELLFLOWER USD MAYFAIR HS

SHEET TITLE: SIGNAGE SPECIFICATIONS AND ACCESSIBILITY

MFR. STRUCTURAL ENGINEER OF RECORD ON PC: [Stamp]

MFR. PROJECT SPECIFIC PROFESSIONAL OF RECORD: [Stamp]

ARCHITECT OF RECORD: [Stamp]

PROJECT SPECIFIC STATE AGENCY APPROVAL: [Stamp]

IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT: [Stamp]

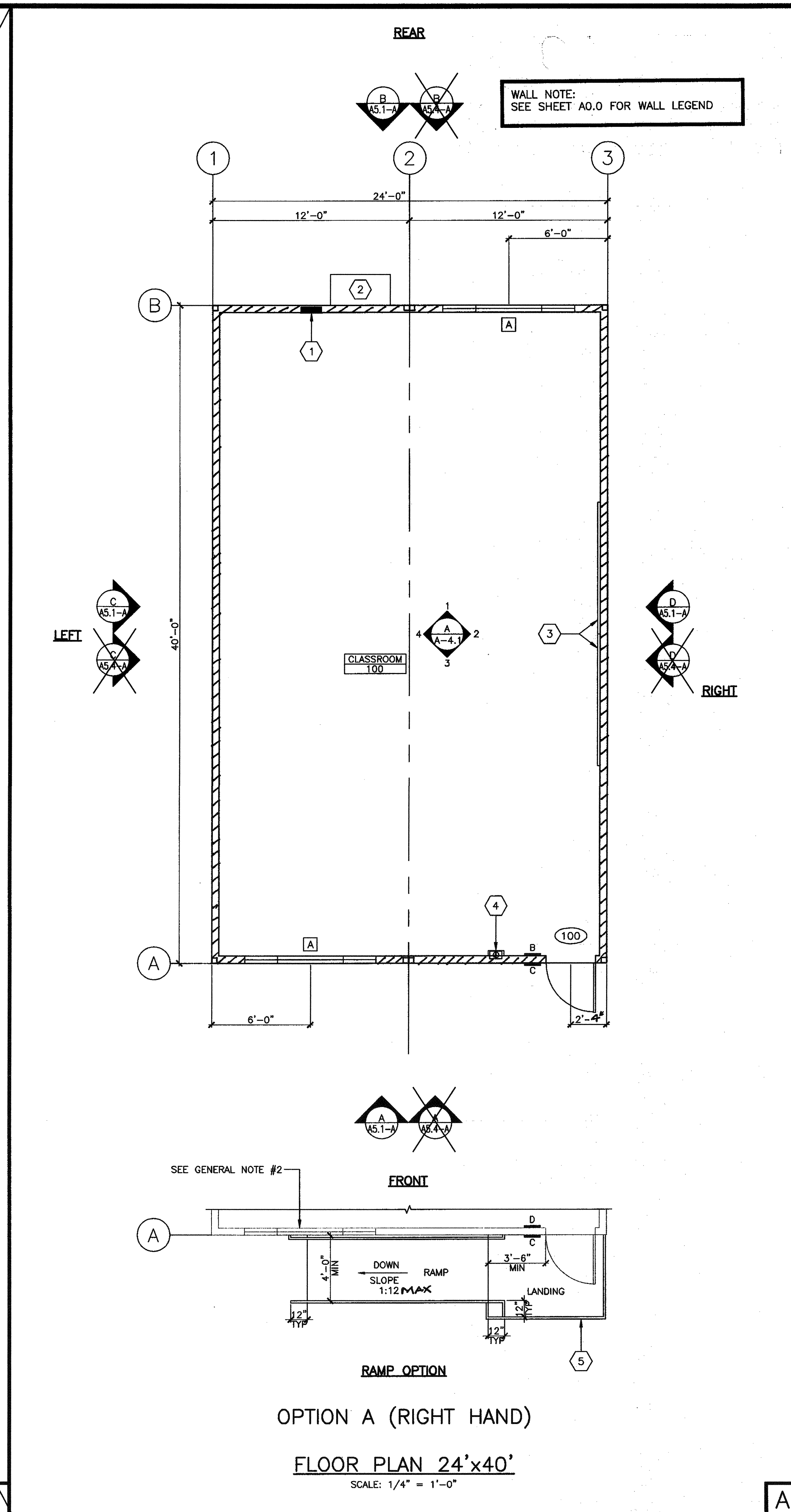
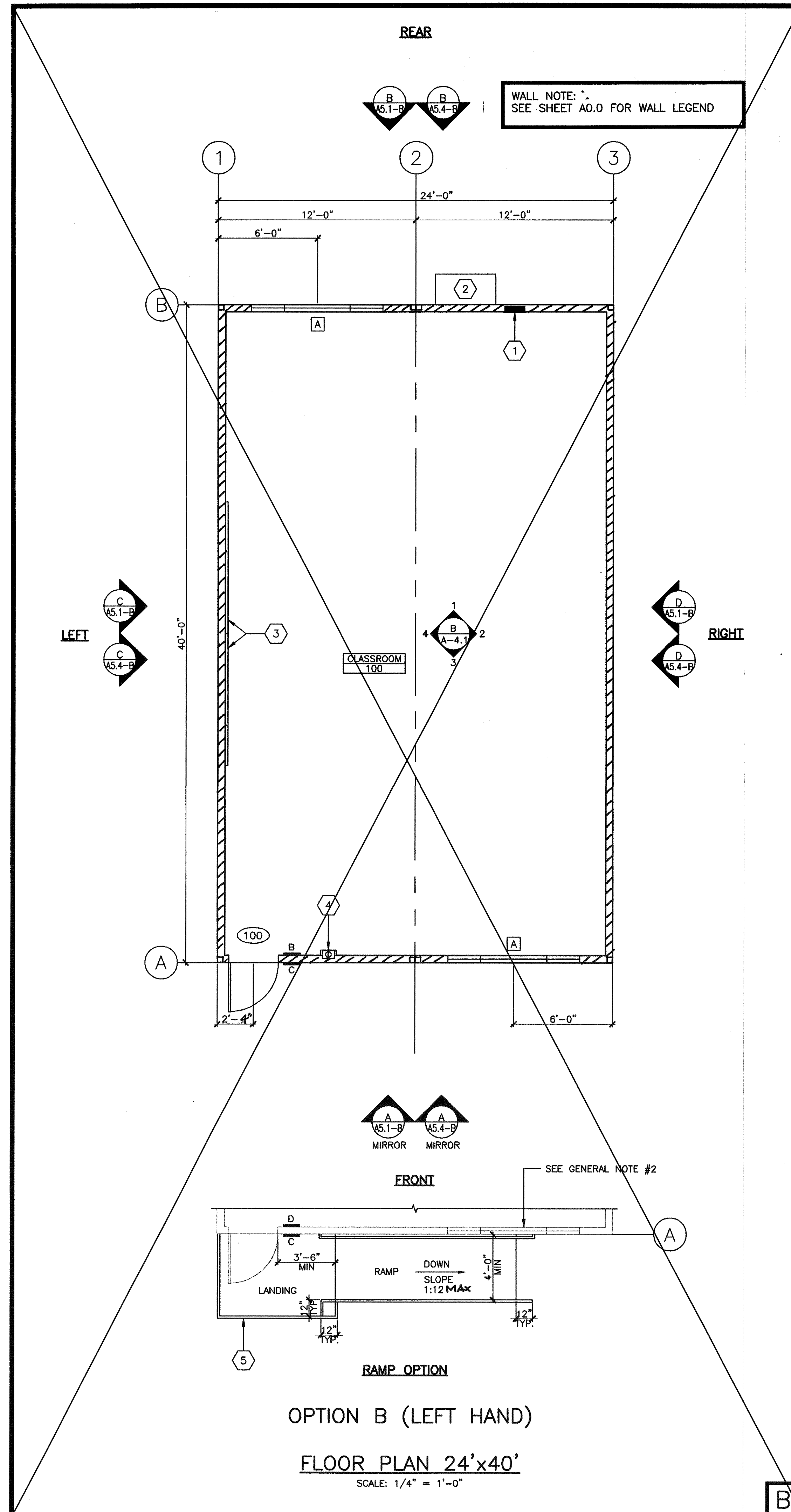
PRE-CHECK (PC) DOCUMENT CODE: 2013 CBC A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED

IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT: [Stamp]

PC 02-114405 DATE: JAN 11 2017

REVISIONS:

PROJECT NO.: 00000
 DRAWN BY: J. CHAN-LUGAY
 SCALE: AS NOTED
 DATE: 10-03-16
 SHEET NUMBER: A0.4



- KEY NOTES**
- ELECTRICAL PANEL (SEE #4 OR #10/AB.1 AND ELECTRICAL SHEETS)
 - AC UNIT (SEE MECHANICAL SHEETS)
 - 8'x4' MARKER BOARDS +30" AFF
 - FIRE EXTINGUISHER-5 LB DRY CHEMICAL W/ 2A-10B-C UL RATING +48" AFF TO TOP OF HANDLE IN SEMI-RECESSED CABINET WITH 4" MAX PROJECTION, TYP. SEE #4 OR #10/AB.1 FOR BLOCK-OUT
 - RAMP AND LANDING (SEE RAMP DETAILS, "R" SHEETS)

- SIGNAGE LEGEND**
- A. = ID SIGN - #1C/A0.4
 - B. = EXIT TACTILE SIGN - #1C/A0.4
 - C. = ID SIGN WITH ISA IDENTIFICATION - #1H,G/A0.4
 - D. = EXIT RAMP DOWN SIGN - #1E/A0.4
 - E. = RESTROOM-DOOR-SIGN - #1B/A0.4
 - F. = RESTROOM-WALL-SIGN - #1A/A0.4

- GENERAL NOTES**
- SIGNAGE REQUIRED PER APPLICABLE CODES LISTED ON COVER SHEET PROVIDED AND INSTALLED BY DISTRICT ON SITE, SEE ACCESS SHEET
 - WHEN USING A RAMP OPTION AS SHOWN NEXT TO AN ADJACENT WINDOW, IT MUST COMPLY WITH THE ILLUSTRATION ON 18/RO.0 THE FOLLOWING TWO OPTIONS CAN BE CONSIDERED:
OPTION #1: USE A RAMP CONFIGURATION THAT IS AWAY FROM THE BUILDING
OPTION #2: THE WINDOW SILL HEIGHT NEEDS TO BE ELEVATED OR LOCATED IN A MANNER TO ACCOMMODATE THE CODE COMPLIANCE ILLUSTRATION MENTIONED ON 18/RO.0

IMPACT CONSTRUCTION SERVICES INC.
CONTRACTORS LICENSE #945691

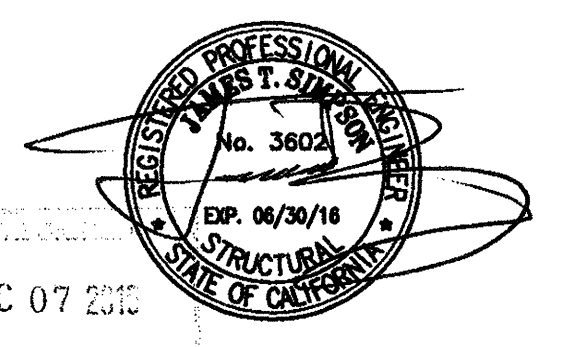
NORTHERN CALIFORNIA DIVISION
450 COMMERCIAL AVE
ATWATER, CA 95301
PHONE: (209) 580-8508
FAX: (209) 580-8503
WEBSITE: WWW.IMPACTCONSTRUCTION.COM

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PERDIE, CA 92571
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PROJECT NAME:
**BELLFLOWER USD
MAYFAIR HS**

SHEET TITLE:
**FLOOR PLAN
24'x40'**

MFR. STRUCTURAL ENGINEER OF RECORD ON PC

DEC 07 2017

MFR. PROJECT SPECIFIC PROFESSIONAL OF RECORD

ARCHITECT OF RECORD

PROJECT SPECIFIC STATE AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
03-17957
AC/FLS/SS/TN
DATE: MAR 21 2017

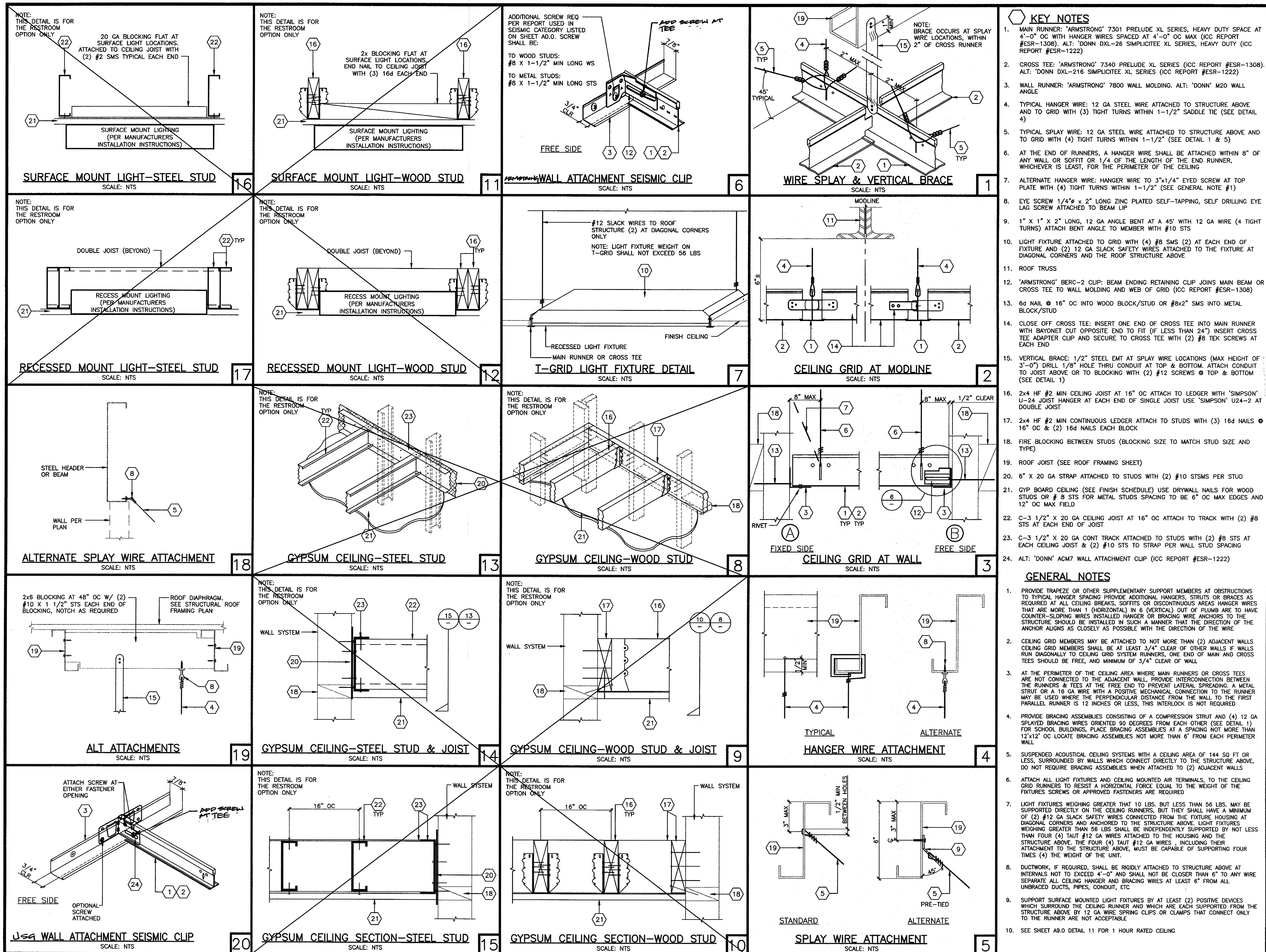
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CODE: 2013 CBC
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IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
PC 02-114405
FILE # 02-114405
DATE: MAR 11 2017

REVISIONS

PROJECT NO.: 00000
DRAWN BY: J. CHAN-LUGAY
SCALE: AS NOTED
DATE: 10-03-16
SHEET NUMBER

A1.1



- ### KEY NOTES
1. MAIN RUNNER: 'ARMSTRONG' 7301 PRELUDE XL SERIES, HEAVY DUTY SPACE AT 4'-0" OC WITH HANGER WIRES SPACED AT 4'-0" OC MAX (ICC REPORT #ESR-1308). ALT.: 'DONN' DXL-26 SIMPLICITEE XL SERIES, HEAVY DUTY (ICC REPORT #ESR-1222)
 2. CROSS TEE: 'ARMSTRONG' 7340 PRELUDE XL SERIES (ICC REPORT #ESR-1308). ALT.: 'DONN' DXL-216 SIMPLICITEE XL SERIES (ICC REPORT #ESR-1222)
 3. WALL RUNNER: 'ARMSTRONG' 7900 WALL MOLDING. ALT.: 'DONN' M20 WALL ANGLE
 4. TYPICAL HANGER WIRE: 12 GA STEEL WIRE ATTACHED TO STRUCTURE ABOVE AND TO GRID WITH (3) TIGHT TURNS WITHIN 1'-1/2" SADDLE TIE (SEE DETAIL 4)
 5. TYPICAL SPLAY WIRE: 12 GA STEEL WIRE ATTACHED TO STRUCTURE ABOVE AND TO GRID WITH (4) TIGHT TURNS WITHIN 1'-1/2" (SEE DETAIL 1 & 5)
 6. AT THE END OF RUNNERS, A HANGER WIRE SHALL BE ATTACHED WITHIN 8" OF ANY WALL OR SOFFIT OR 1/4 OF THE LENGTH OF THE END RUNNER, WHICHEVER IS LEAST, FOR THE PERIMETER OF THE CEILING
 7. ALTERNATE HANGER WIRE: HANGER WIRE TO 3"x1/4" EYED SCREW AT TOP PLATE WITH (4) TIGHT TURNS WITHIN 1'-1/2" (SEE GENERAL NOTE #1)
 8. EYE SCREW 1/4"x 2" LONG ZINC PLATED SELF-TAPPING, SELF DRILLING EYE LAG SCREW ATTACHED TO BEAM LIP
 9. 1" x 1" x 2" LONG, 12 GA ANGLE BENT AT A 45° WITH 12 GA WIRE (4 TIGHT TURNS) ATTACH BENT ANGLE TO MEMBER WITH #10 STS
 10. LIGHT FIXTURE ATTACHED TO GRID WITH (4) #8 SMS (2) AT EACH END OF FIXTURE AND (2) 12 GA SLACK SAFETY WIRES, ATTACHED TO THE FIXTURE AT DIAGONAL CORNERS AND THE ROOF STRUCTURE ABOVE
 11. ROOF TRUSS
 12. 'ARMSTRONG' BEC-2 CLIP: BEAM ENDING RETAINING CLIP JOINS MAIN BEAM OR CROSS TEE TO WALL MOLDING AND WEB OF GRID (ICC REPORT #ESR-1308)
 13. 6d NAIL @ 16" OC INTO WOOD BLOCK/STUD OR #8x2" SMS INTO METAL BLOCK/STUD
 14. CLOSE OFF CROSS TEE: INSERT ONE END OF CROSS TEE INTO MAIN RUNNER WITH BAYONET CUT OPPOSITE END TO FIT (IF LESS THAN 24") INSERT CROSS TEE ADAPTER CLIP AND SECURE TO CROSS TEE WITH (2) #8 TEK SCREWS AT EACH END
 15. VERTICAL BRACE: 1/2" STEEL EMT AT SPLAY WIRE LOCATIONS (MAX HEIGHT OF 3'-0") OR 1" X 1" X 2" STEEL CHANNEL AT TOP & BOTTOM. ATTACH CONDUIT TO JOIST ABOVE OR TO BLOCKING WITH (2) #12 SCREWS @ TOP & BOTTOM (SEE DETAIL 1)
 16. 2x4 HF #2 MIN CEILING JOIST AT 16" OC ATTACH TO LEDGER WITH 'SIMPSON' U-24 JOIST HANGER AT EACH END OF SINGLE JOIST USE 'SIMPSON' U24-2 AT DOUBLE JOIST
 17. 2x4 HF #2 MIN CONTINUOUS LEDGER ATTACH TO STUDS WITH (3) 16d NAILS @ 16" OC & (2) 16d NAILS EACH BLOCK
 18. FIRE BLOCKING BETWEEN STUDS (BLOCKING SIZE TO MATCH STUD SIZE AND TYPE)
 19. ROOF JOIST (SEE ROOF FRAMING SHEET)
 20. 6" x 20 GA STRAP ATTACHED TO STUDS WITH (2) #10 STSMS PER STUD
 21. GYP BOARD CEILING (SEE FINISH SCHEDULE) USE DRYWALL NAILS FOR WOOD STUDS OR #8 STS FOR METAL STUDS SPACING TO BE 6" OC MAX EDGES AND 12" OC MAX FIELD
 22. C-3 1/2" X 20 GA CEILING JOIST AT 16" OC ATTACH TO TRACK WITH (2) #8 STS AT EACH END OF JOIST
 23. C-3 1/2" X 20 GA CONT TRACK ATTACHED TO STUDS WITH (2) #8 STS AT EACH CEILING JOIST & (2) #10 STS TO STRAP PER WALL STUD SPACING
 24. ALT.: 'DONN' ACM7 WALL ATTACHMENT CLIP (ICC REPORT #ESR-1222)
- ### GENERAL NOTES
1. PROVIDE TRAPEZOID OR OTHER SUPPLEMENTARY SUPPORT MEMBERS AT OBSTRUCTIONS TO TYPICAL HANGER SPACING PROVIDE ADDITIONAL HANGERS, STRUTS OR BRACES AS REQUIRED AT ALL CEILING BREAKS, SOFFITS OR DISCONTINUOUS AREAS HANGER WIRES THAT ARE MORE THAN 1 (HORIZONTAL) IN 6 (VERTICAL) OUT OF PLUMB ARE TO HAVE COUNTER-SLOPING WIRES INSTALLED HANGER OR BRACING WIRE ANCHORS TO THE STRUCTURE SHOULD BE INSTALLED IN SUCH A MANNER THAT THE DIRECTION OF THE ANCHOR ALIGNS AS CLOSELY AS POSSIBLE WITH THE DIRECTION OF THE WIRE
 2. CEILING GRID MEMBERS MAY BE ATTACHED TO NOT MORE THAN (2) ADJACENT WALLS CEILING GRID MEMBERS SHALL BE AT LEAST 3/4" CLEAR OF OTHER WALLS IF WALLS RUN DIAGONALLY TO CEILING GRID SYSTEM RUNNERS, ONE END OF MAIN AND CROSS TEES SHOULD BE FREE, AND MINIMUM OF 3/4" CLEAR OF WALL
 3. AT THE PERIMETER OF THE CEILING AREA WHERE MAIN RUNNERS OR CROSS TEES ARE NOT CONNECTED TO THE ADJACENT WALL, PROVIDE INTERCONNECTION BETWEEN THE RUNNERS & TEES AT THE FREE END TO PREVENT LATERAL SPREADING. A METAL STRUT OR A 16 GA WIRE WITH A POSITIVE MECHANICAL CONNECTION TO THE RUNNER MAY BE USED WHERE THE PERPENDICULAR DISTANCE FROM THE WALL TO THE FIRST PARALLEL RUNNER IS 12 INCHES OR LESS, THIS INTERLOCK IS NOT REQUIRED
 4. PROVIDE BRACING ASSEMBLIES CONSISTING OF A COMPRESSION STRUT AND (4) 12 GA SPAYED BRACING WIRES ORIENTED 90 DEGREES FROM EACH OTHER (SEE DETAIL 1) FOR SCHOOL BUILDINGS, PLACE BRACING ASSEMBLIES AT A SPACING NOT MORE THAN 12'X12' LOCATE BRACING ASSEMBLIES NOT MORE THAN 6' FROM EACH PERIMETER WALL
 5. SUSPENDED ACoustical CEILING SYSTEMS WITH A CEILING AREA OF 144-50 FT OR LESS, SURROUND BY WALLS WHICH CONNECT DIRECTLY TO THE STRUCTURE ABOVE. DO NOT REQUIRE BRACING ASSEMBLIES WHEN ATTACHED TO (2) ADJACENT WALLS
 6. ATTACH ALL LIGHT FIXTURES AND CEILING MOUNTED AIR TERMINALS TO THE CEILING GRID RUNNERS TO RESIST A HORIZONTAL FORCE EQUAL TO THE WEIGHT OF THE FIXTURES SCREWS OR APPROVED FASTENERS ARE REQUIRED
 7. LIGHT FIXTURES WEIGHING GREATER THAN 10 LBS. BUT LESS THAN 55 LBS. MAY BE SUPPORTED DIRECTLY ON THE CEILING RUNNERS BUT THEY SHALL HAVE A MINIMUM OF (2) 12 GA SLACK SAFETY WIRES CONNECTED FROM THE FIXTURE HOUSING AT DIAGONAL CORNERS AND ANCHORED TO THE STRUCTURE ABOVE. LIGHT FIXTURES WEIGHING GREATER THAN 55 LBS SHALL BE INDEPENDENTLY SUPPORTED BY NOT LESS THAN FOUR (4) TAUT #12 GA WIRES ATTACHED TO THE HOUSING AND THE STRUCTURE ABOVE, THE FOUR (4) TAUT #12 GA WIRES, INCLUDING THEIR ATTACHMENT TO THE STRUCTURE ABOVE, MUST BE CAPABLE OF SUPPORTING FOUR TIMES (4) THE WEIGHT OF THE UNIT.
 8. DUCTWORK, IF REQUIRED, SHALL BE RIGIDLY ATTACHED TO STRUCTURE ABOVE AT INTERVALS NOT TO EXCEED 4'-0" AND SHALL NOT BE CLOSER THAN 6" TO ANY WIRE SEPARATE ALL CEILING HANGER AND BRACING WIRES AT LEAST 6" FROM ALL UNBRACED DUCTS, PIPES, CONDUIT, ETC
 9. SUPPORT SURFACE MOUNTED LIGHT FIXTURES BY AT LEAST (2) POSITIVE DEVICES WHICH SURROUND THE CEILING RUNNER AND WHICH ARE EACH SUPPORTED FROM THE STRUCTURE ABOVE BY 12 GA WIRE SPRING CLIPS OR CLAMPS THAT CONNECT ONLY TO THE RUNNER ARE NOT ACCEPTABLE
 10. SEE SHEET A9.0 DETAIL 11 FOR 1 HOUR RATED CEILING

IMPACT

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CONTRACTORS LICENSE #245691

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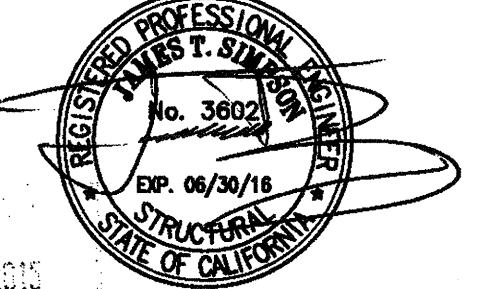
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PROJECT NAME: **BELLFLOWER USD MAYFAIR HS**

SHEET TITLE: **REFLECTED CEILING DETAILS**

MFR. STRUCTURAL ENGINEER OF RECORD ON PC



 DEC 07 2016

MFR. PROJECT SPECIFIC PROFESSIONAL OF RECORD

ARCHITECT OF RECORD

PROJECT SPECIFIC STATE AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT

03 117957
AC 22/PLS/SS/TN
DATE: MAR 2 2017

PRE-CHECK (PC) DOCUMENT
CODE: 2013 CBC
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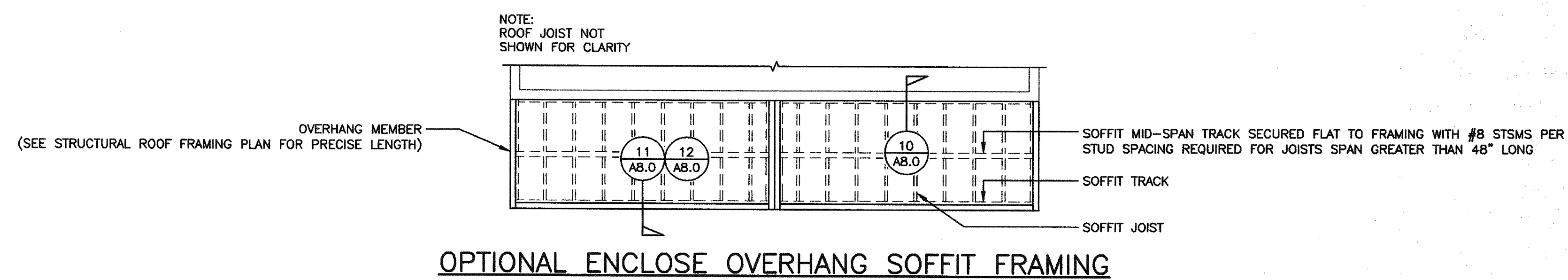
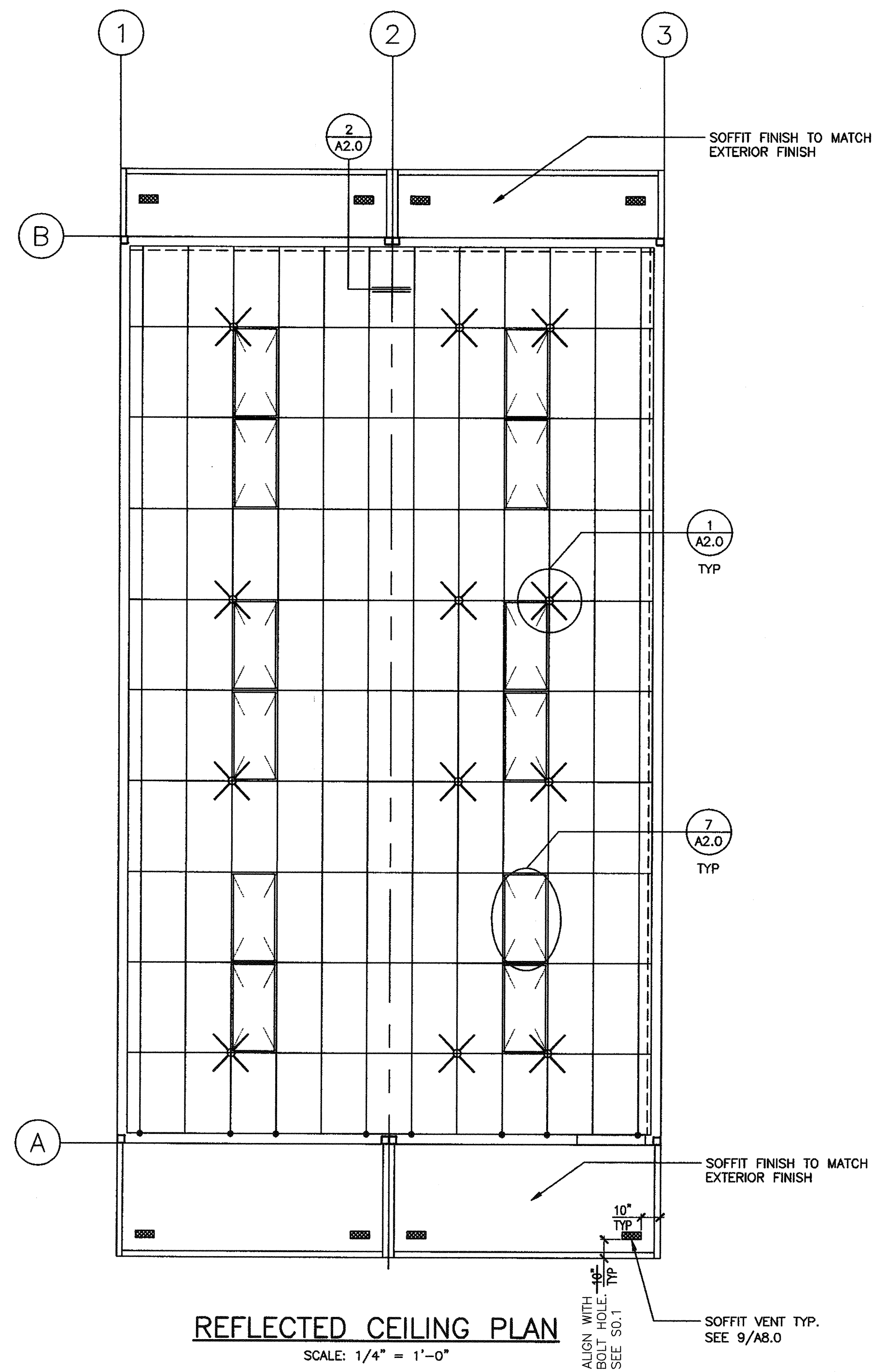
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DIV. OF THE STATE ARCHITECT

PC 02-114405
DATE: JAN 11 2016

REVISIONS

PROJECT NO.:	00000	DRAWN BY:	J. CHAN-LUGAY
SCALE:	AS NOTED	DATE:	10-03-16

A2.0



LEGEND

- SUPPLY AIR DIFFUSERS NOT SHOWN FOR CLARITY (SEE MECHANICAL PLAN)
- 2'x4' FLUORESCENT DROP-IN FIXTURE (SEE ELECTRICAL PLAN)
- 4-WAY SPLAY WIRE SYSTEM
- 48" T-GRID CEILING
- INDICATES FREE SIDE. ALL OTHER SIDES SHALL BE FIXED (SEE SHEET 3/A2.0 OR 20/A2.0)
- INDICATES MAIN RUNNER LOCATIONS

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CONTRACTORS LICENSE #945601

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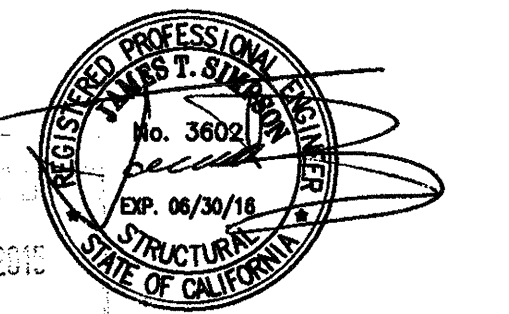
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PROJECT NAME:

BELLFLOWER USD
MAYFAIR HS

SHEET TITLE:
REFLECTED CEILING PLAN
24'x40'

MFR. STRUCTURAL ENGINEER OF RECORD ON PC



MFR. PROJECT SPECIFIC PROFESSIONAL OF RECORD

ARCHITECT OF RECORD

PROJECT SPECIFIC STATE AGENCY APPROVAL

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DIV. OF THE STATE ARCHITECT
11 03 17957
AC/PLS/MS
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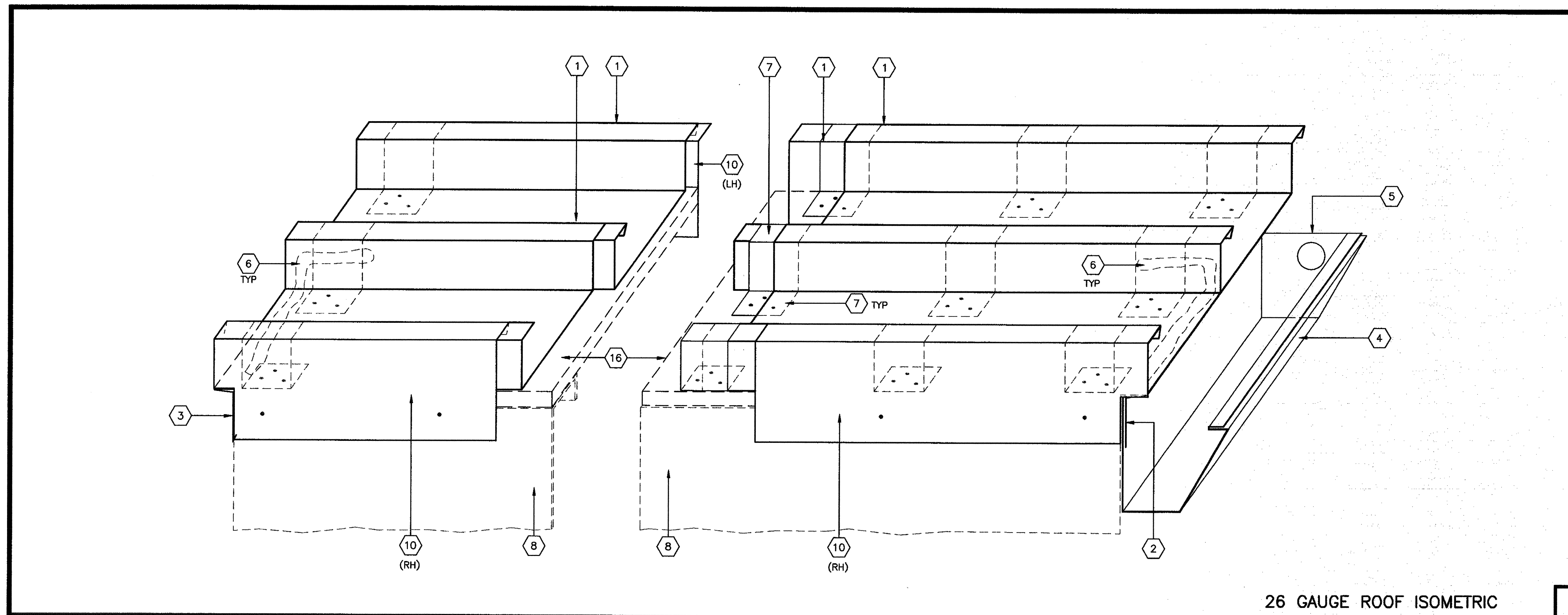
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PC 02-114405
AC/PLS/MS
DATE: JAN 11 2016

REVISIONS

PROJECT NO.: 00000
DRAWN BY: J. CHAN-LUGAY
SCALE: AS NOTED
DATE: 10-03-16
SHEET NUMBER

FOR NOTES SEE SHEET A2.0

A2.1



26 GAUGE ROOF ISOMETRIC 1

- KEY NOTES**
- 26 GA STANDING SEAM GALVANIZED METAL ROOF
 - 26 GA END FLASHING ATTACH WITH #8 STSMS @ 24" OC
 - 26 GA STARTER FLASHING ATTACH WITH #8 STSMS @ 6" OC
 - 26 GA GUTTER
 - GUTTER END CAP ATTACH WITH (2) #8 STSMS EACH SIDE
 - SEALANT APPLIED TO FLASHING EDGE AND STANDING SEAM—#116 VULKEM POLYURETHANE SEALANT OR EQUAL MEETING FEDERAL SPECIFICATIONS TT-S-00230C, TYPE II, CLASS A
 - 22 GA HOLD DOWN CLIP SECURED THROUGH PLYWOOD ROOF AND JOIST WITH (3) #8 STS SCREWS PER CLIP. CLIP SPACING SHALL BE 48" OC MAX AND 24" OC MAX AT OVERHANGS
 - ROOF BEAM/HEADER (SEE STRUCTURAL ROOF FRAMING PLANS)
 - USE #8 STS AT 24" OC MAX FOR MATERIAL THICKNESS UP TO 10 GA COVER SCREW W/#116 VULKEM POLYURETHANE SEALANT OR EQUAL MEETING FEDERAL SPECIFICATIONS TT-S-00230C, TYPE II, CLASS A
 - 26 GA SIDE WALL FLASHING ATTACH WITH #8 STSMS @ 24" OC
 - 26 GA METAL ROOF CAP BETWEEN ADJACENT BUILDINGS
 - ROOF OVERHANG MEMBER (SEE STRUCTURAL ROOF FRAMING PLANS)
 - 1X STUCCO STOP ATTACHED WITH #8 STSMS AT 36" OC
 - USE #14 STS AT 24" OC MAX ALONG MODLINE TRUSS COVER SCREW W/#116 VULKEM POLYURETHANE SEALANT OR EQUAL MEETING FEDERAL SPECIFICATIONS TT-S-00230C, TYPE II, CLASS A
 - ROOF TRUSS MEMBER (SEE ROOF TRUSS DETAIL SHEET)
 - PLYWOOD FOR ROOF DIAPHRAGM (SEE STRUCTURAL ROOF FRAMING PLANS)
 - ROOF PURLIN MEMBER (SEE STRUCTURAL ROOF FRAMING PLANS)

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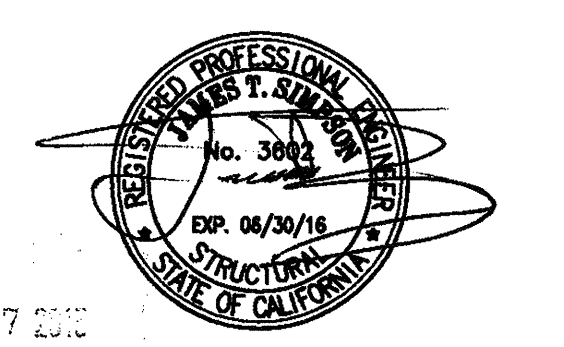
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PROJECT NAME:
BELLFLOWER USD
MAYFAIR HS

SHEET TITLE:
ROOF DETAILS
26 GAUGE METAL

MFR. STRUCTURAL ENGINEER OF RECORD ON PC



DEC 07 2015

MFR. PROJECT SPECIFIC PROFESSIONAL OF RECORD

ARCHITECT OF RECORD

PROJECT SPECIFIC STATE AGENCY APPROVAL

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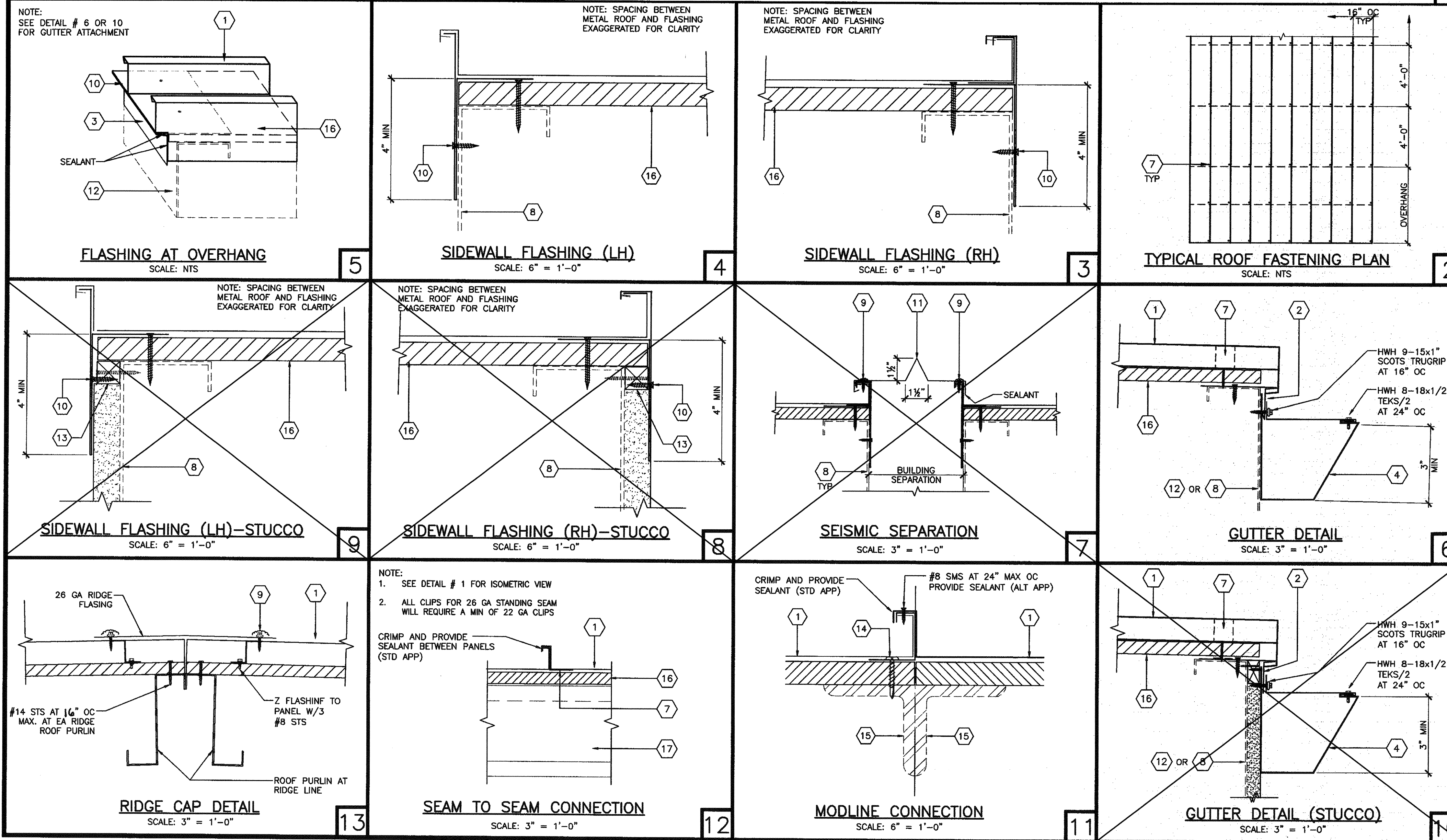
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FILE # 2015-00000000
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DATE: JAN 11 2016

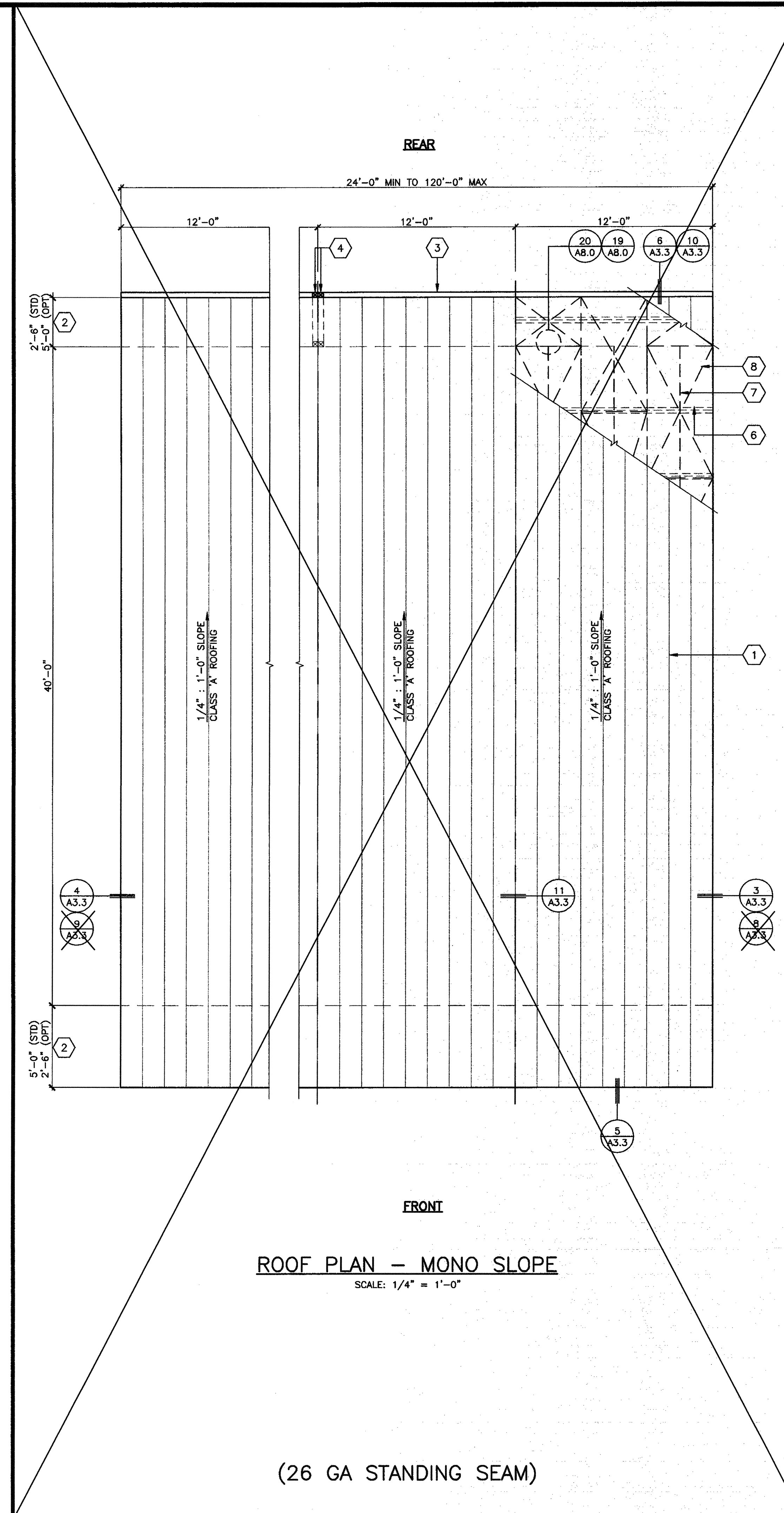
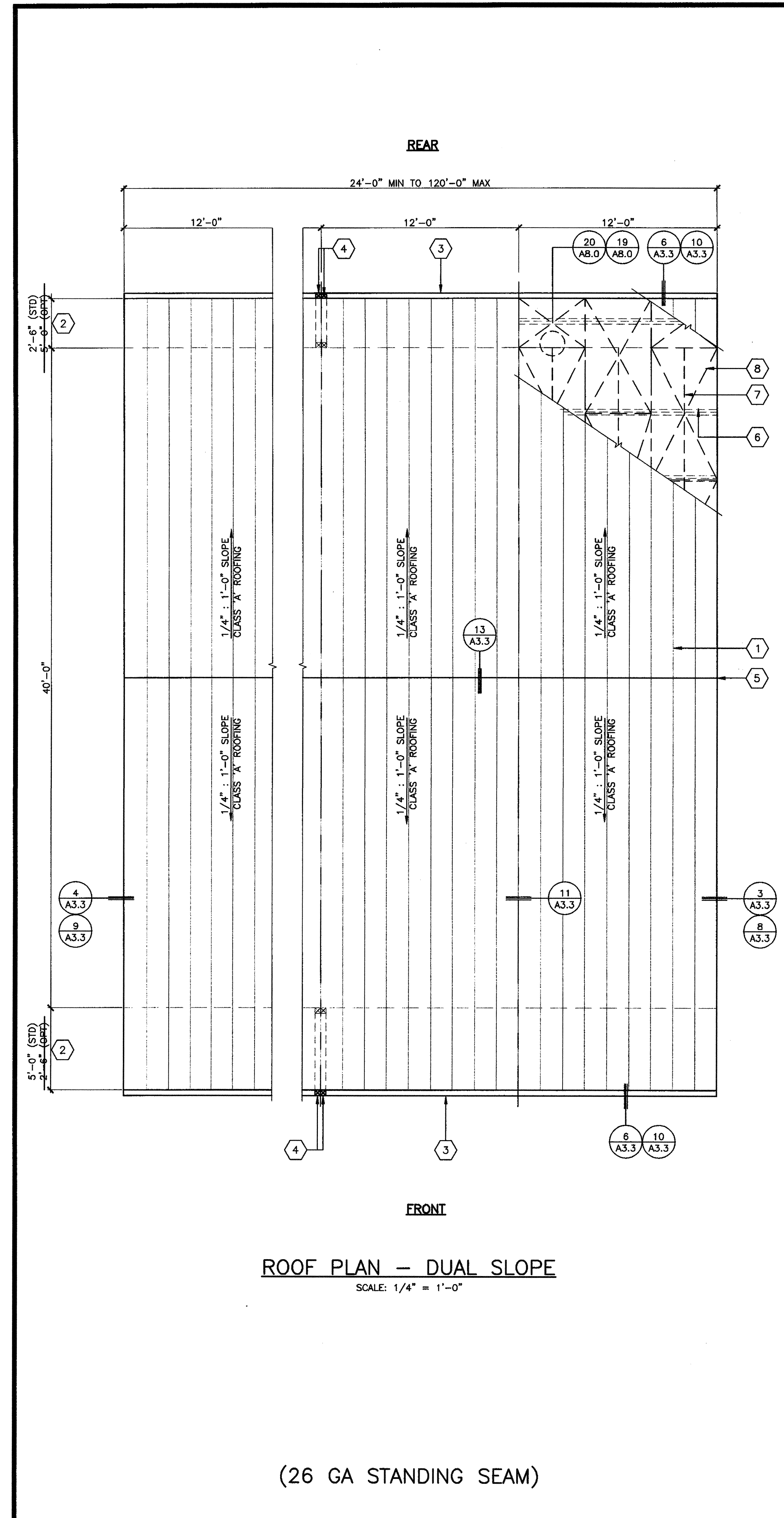
REVISIONS

PROJECT NO.: 00000
DRAWN BY: J. CHAN-LUGAY
SCALE: AS NOTED
DATE: 10-03-16

SHEET NUMBER
A3.3



- GENERAL NOTES**
- SEE SHEET METAL AND FLASHING DETAILS SHEET A8.2 FOR MORE INFORMATION



KEY NOTES

1. STEEL ROOF DECK: 26 GA ROLL FORMED STANDING SEAM SEE DETAIL #16/AB.2
2. OVERHANG MEMBER (SEE STRUCTURAL ROOF FRAMING PLAN FOR PRECISE LENGTH)
3. GUTTER (SEE ROOF DETAILS SHEET FOR MORE INFORMATION)
4. DOWNSPOUT SEE DETAIL #17/AB.0 FOR MORE INFORMATION SEE EXTERIOR SHEET FOR EXACT LOCATION FOR BUILDINGS GREATER THAN 60'-0" SEE SHEET AD.5
5. RIDGE LINE
6. JOIST (SEE STRUCTURAL ROOF FRAMING PLANS)
7. 16 GA WIRE ATTACHED TO ROOF JOISTS FOR INSULATION SUPPORT AT 24" OC MAX
8. PLYWOOD FOR ROOF DIAPHRAGM (SEE STRUCTURAL ROOF FRAMING PLANS)

GENERAL NOTES

1. BUILDING HOUSING GROUP 'E' OCCUPANCIES SHALL HAVE ROOF COVERINGS AS SPECIFIED IN TABLE 1505.1 CBC, CLASS 'B' MIN, PER CBC 1505.1.2
2. SEE MECHANICAL PLAN FOR ROOF TOP AC UNIT LOCATIONS. REFER TO #15/AB.0 FOR MOUNTING DETAIL
3. SEE SHEET METAL AND FLASHING DETAILS SHEET AB.2 FOR MORE INFORMATION
4. PROVIDE DRAFTSTOPS AT ATTIC SPACES EXCEEDING 3,000 SF PER SECTION 717.4 (APPLIES TO BUILDINGS EQUIPPED WITH AN OPEN-WEB TRUSS SYSTEM ONLY). SEE #16/AB.1

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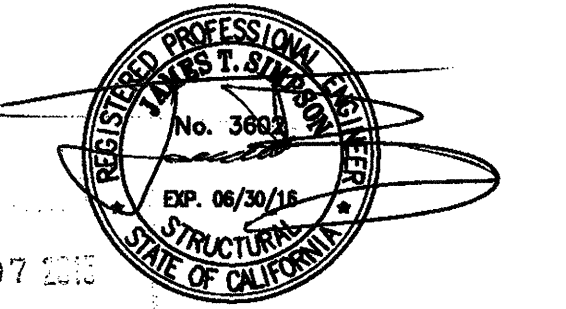
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PROJECT NAME:
**BELLFLOWER USD
 MAYFAIR HS**

SHEET TITLE:
**ROOF PLAN
 MONO & DUAL SLOPE
 26 GAUGE METAL**

MFR. STRUCTURAL ENGINEER OF RECORD ON PC



MFR. PROJECT SPECIFIC PROFESSIONAL OF RECORD

ARCHITECT OF RECORD

PROJECT SPECIFIC STATE AGENCY APPROVAL

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 03-111957
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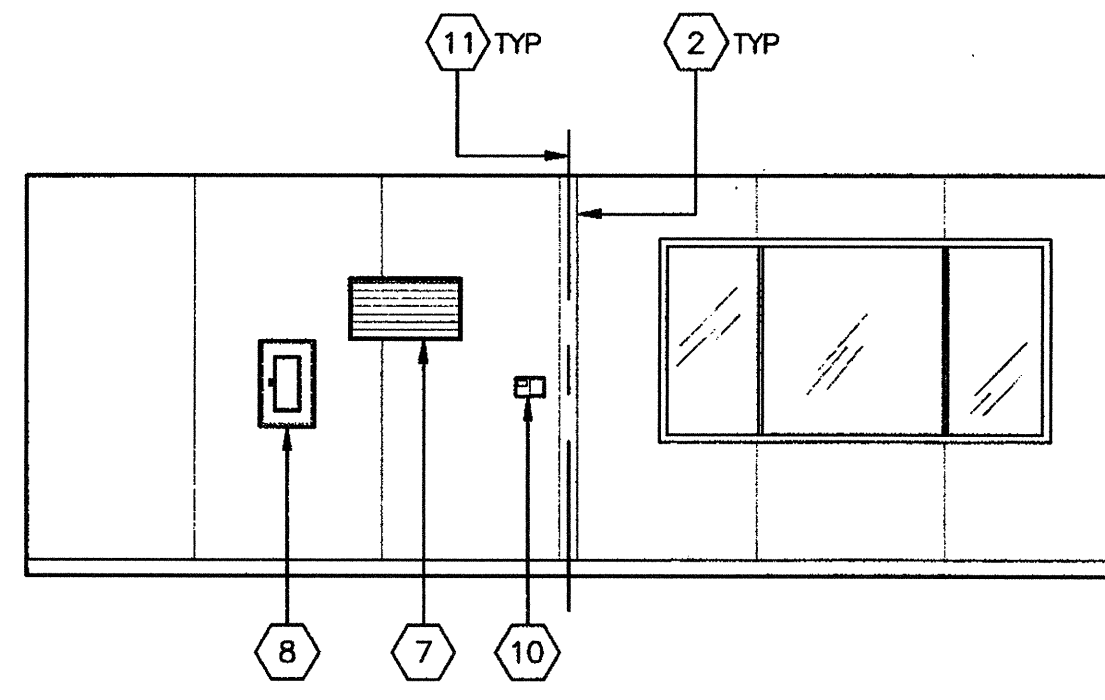
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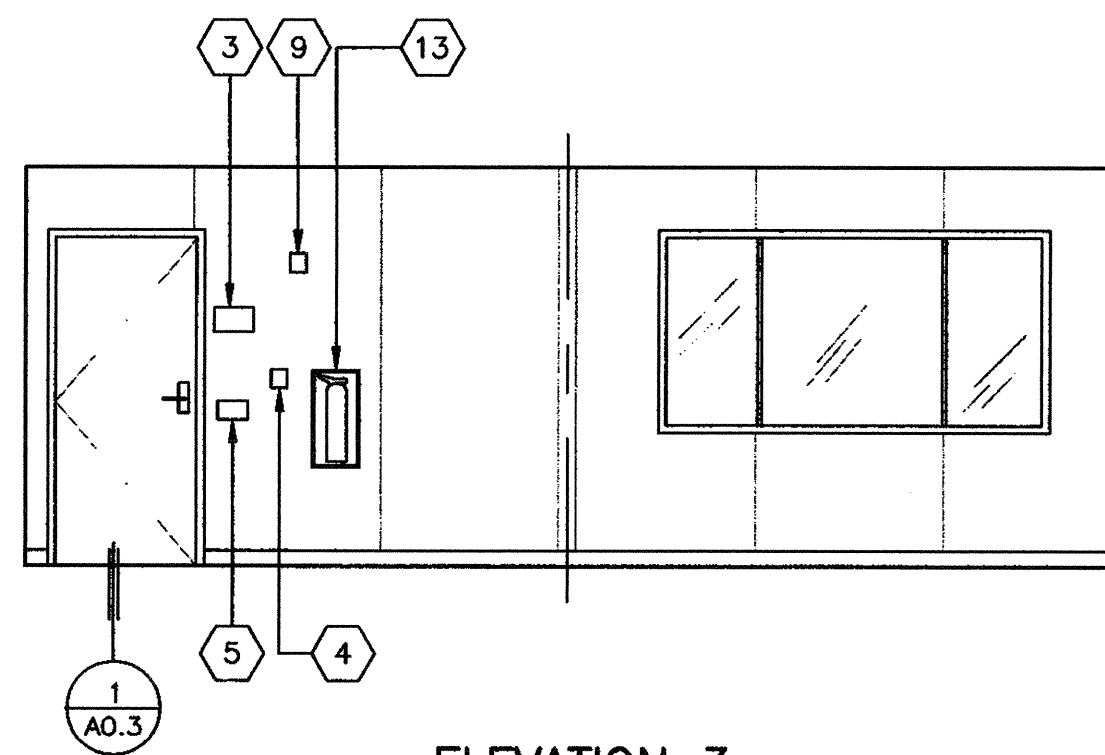
REVISIONS

PROJECT NO.: 00000
 DRAWN BY: J. CHAN-LUGAY
 SCALE: AS NOTED
 DATE: 10-03-16
 SHEET NUMBER

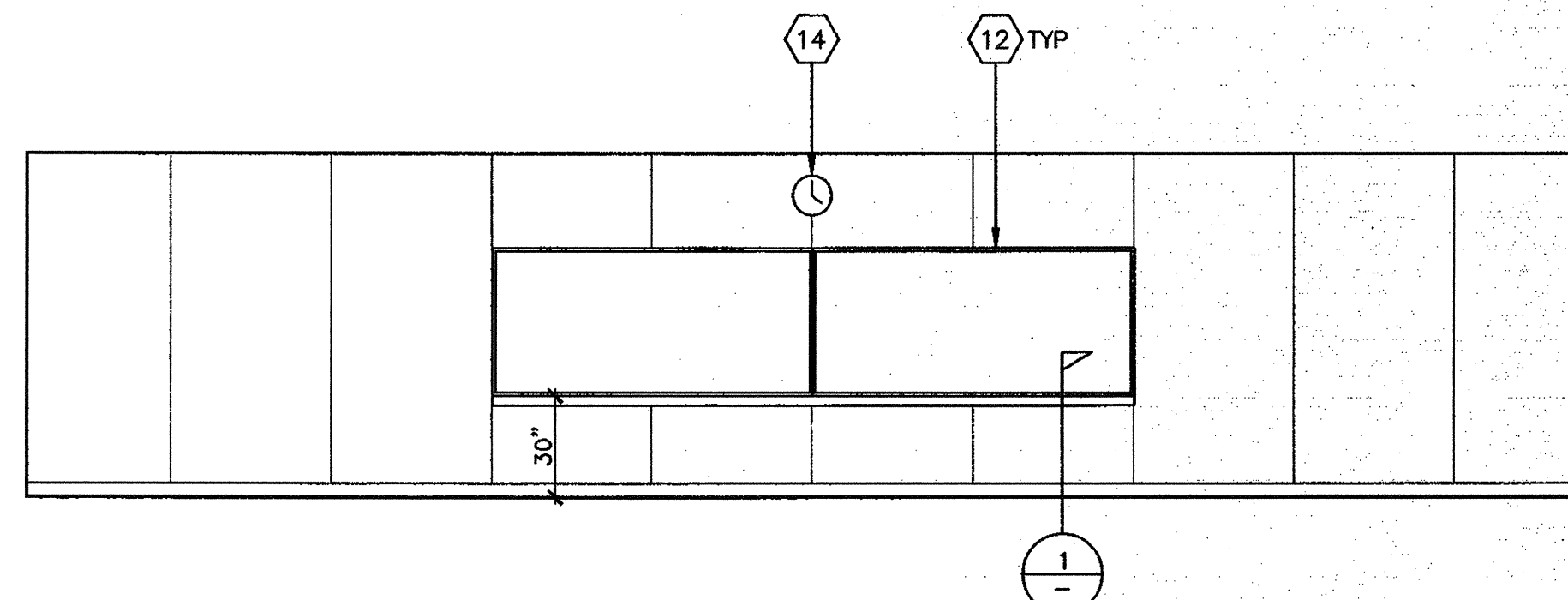
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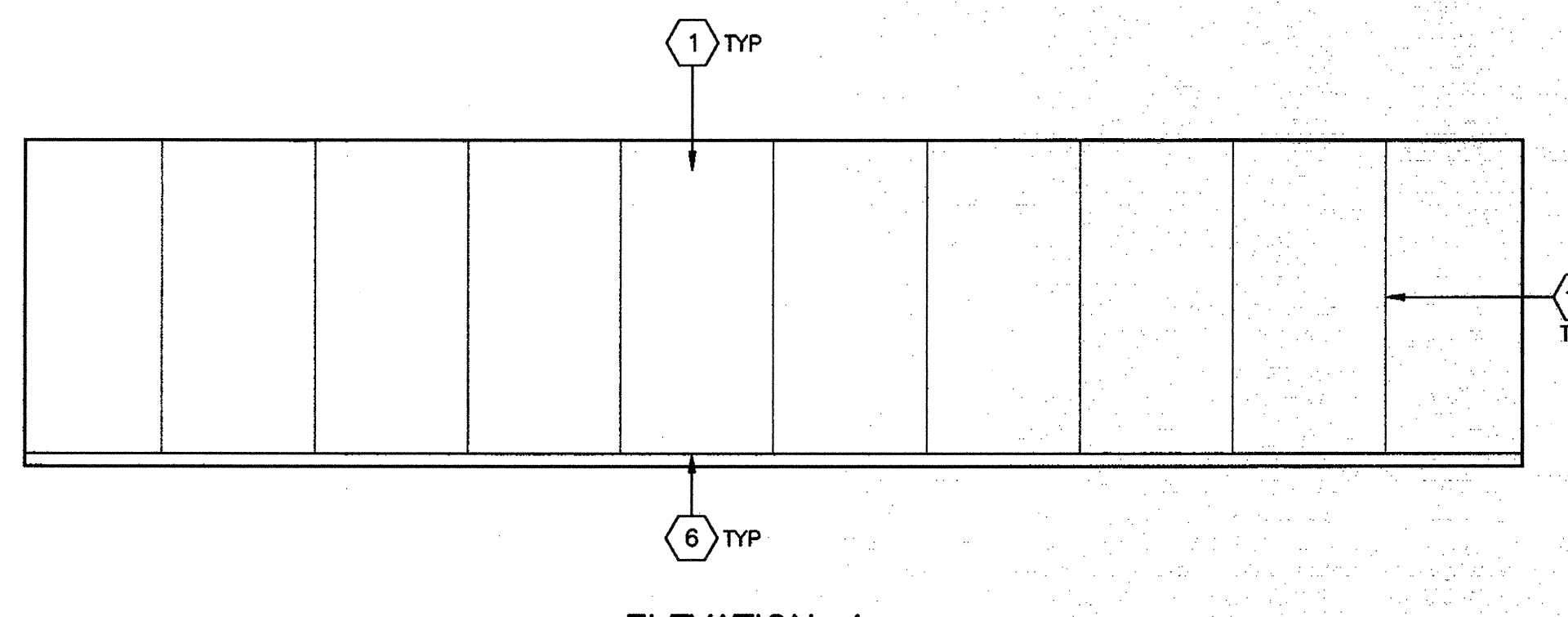
ELEVATION 1



ELEVATION 3



ELEVATION 2



ELEVATION 4

INTERIOR ELEVATIONS
OPTION A (RIGHT HAND)
SCALE: 1/4" = 1'-0"

KEY NOTES

1. TYPICAL INTERIOR FINISH
2. CLOSURE AT MODULAR JOINT
3. TACTILE EXIT SIGNAGE (SEE SIGNAGE SHEET)
4. FIRE ALARM PULL STATION (SEE ELECTRICAL PLAN)
5. OCCUPANCY SENSOR OR LIGHT SWITCH (SEE ELECTRICAL PLAN)
6. TOP SET BASE TYPICAL (SEE FINISH SCHEDULE)
7. RETURN AIR GRILL
8. ELECTRICAL PANEL +48" TO HANDLE
9. HORN/STROBE (SEE ELECTRICAL PLAN)
10. THERMOSTAT (SEE MECHANICAL PLAN)
11. MODULAR JOINT
12. 8'-0" x 4'-0" MARKER BOARD, EASIER RAIL PROJECT 4" MAX
13. FIRE EXTINGUISHER IN SEMI-RECESSED CABINET
14. 12" DIA ELECTRIC CLOCK (SEE ELECTRICAL PLAN)
15. WALL SYSTEM (SEE WALL FRAMING ELEVATION SHEET)
16. INTERIOR FINISH SEAM

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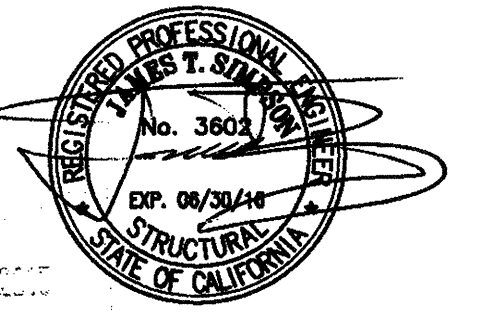
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PROJECT NAME:

BELLFLOWER USD
MAYFAIR HS

SHEET TITLE:
INTERIOR ELEVATIONS
24'x40'

MFR. STRUCTURAL ENGINEER OF RECORD ON FC



DEC 07 2011

MFR. PROJECT SPECIFIC PROFESSIONAL OF RECORD

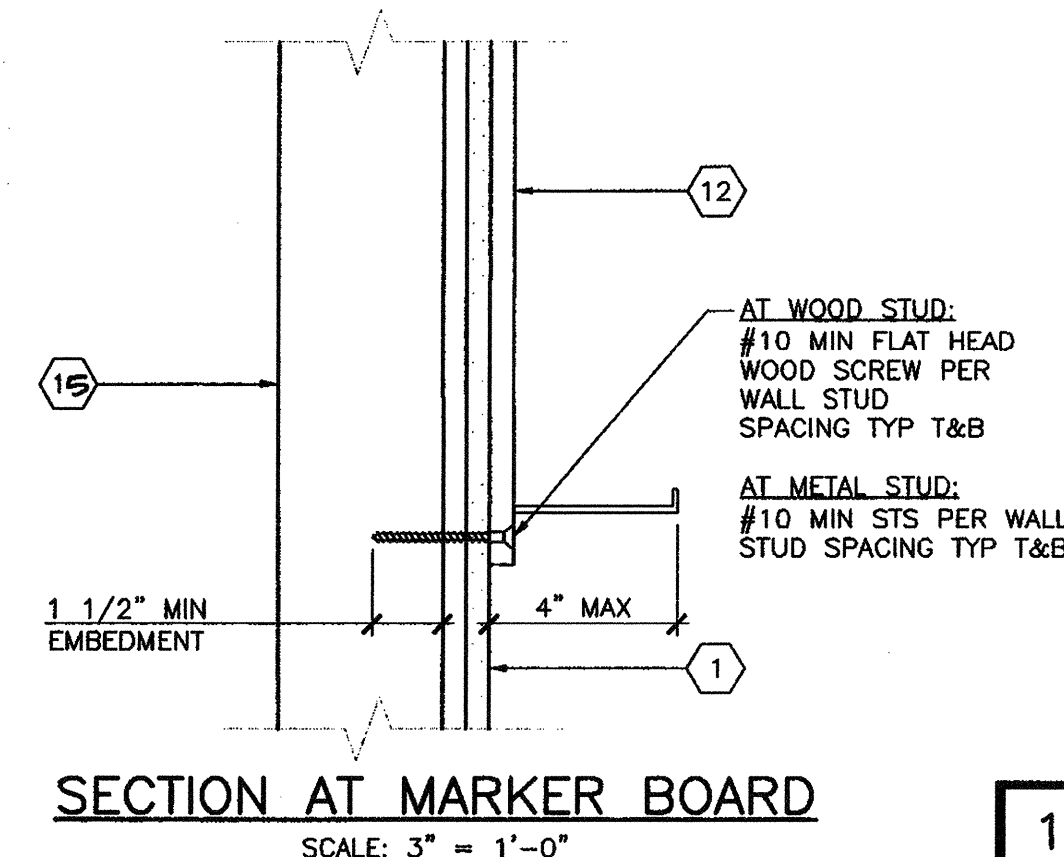
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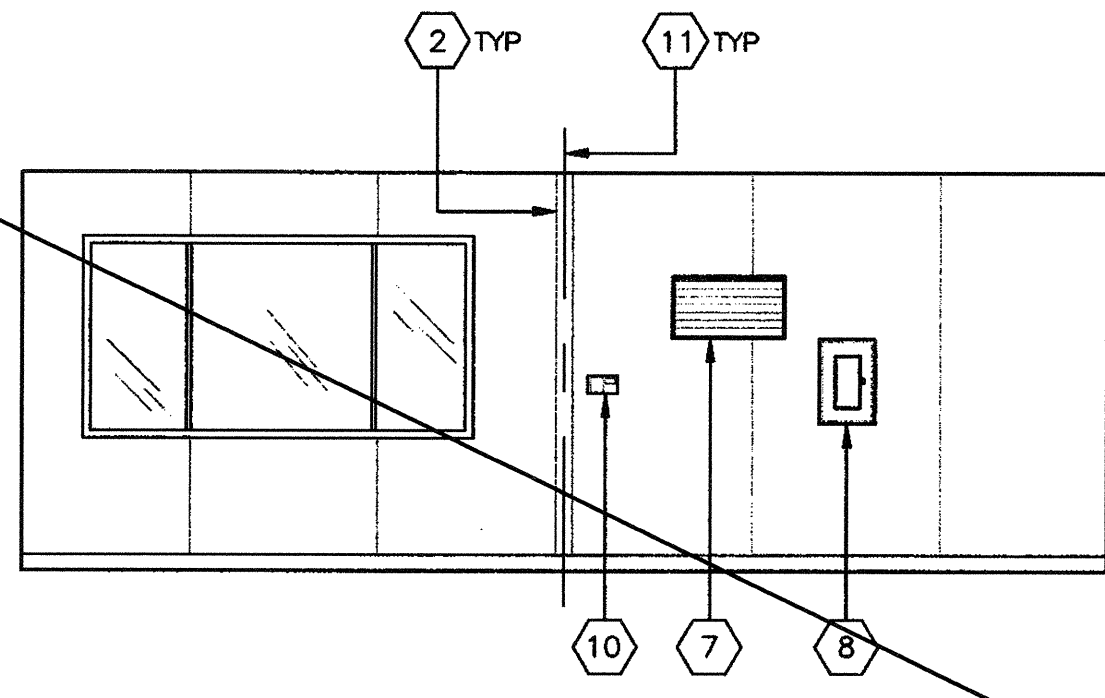
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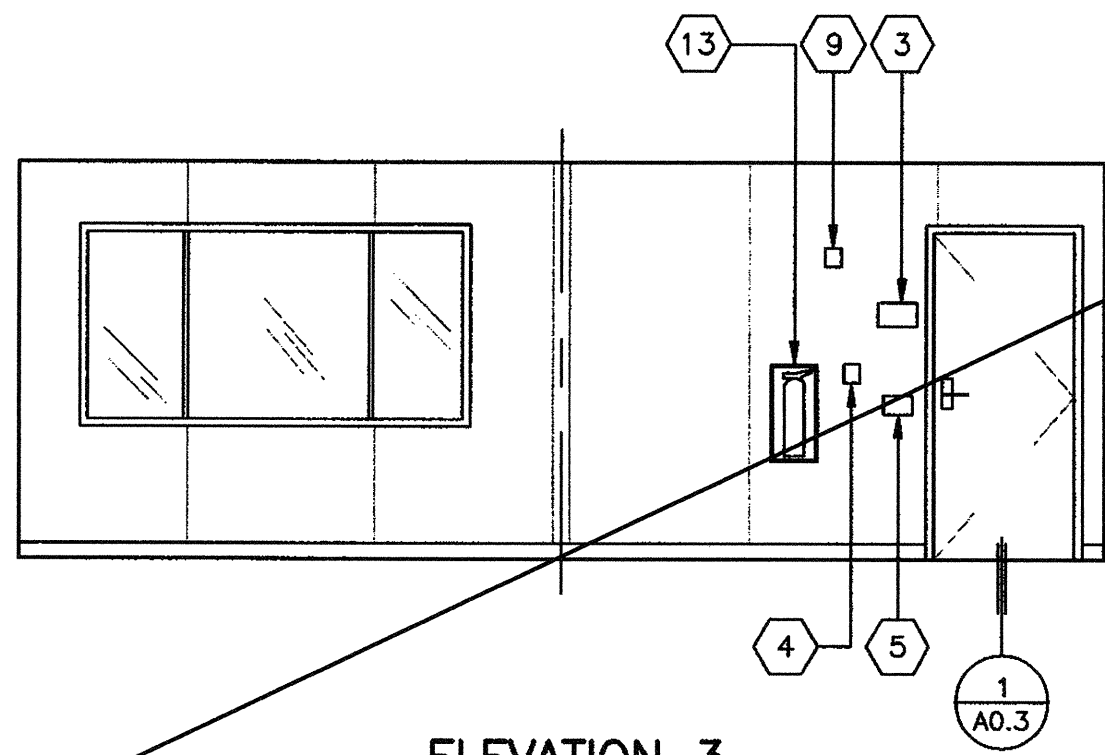
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DIV. OF THE STATE ARCHITECT
PC 02-114405
Date: JAN 1 1 2017



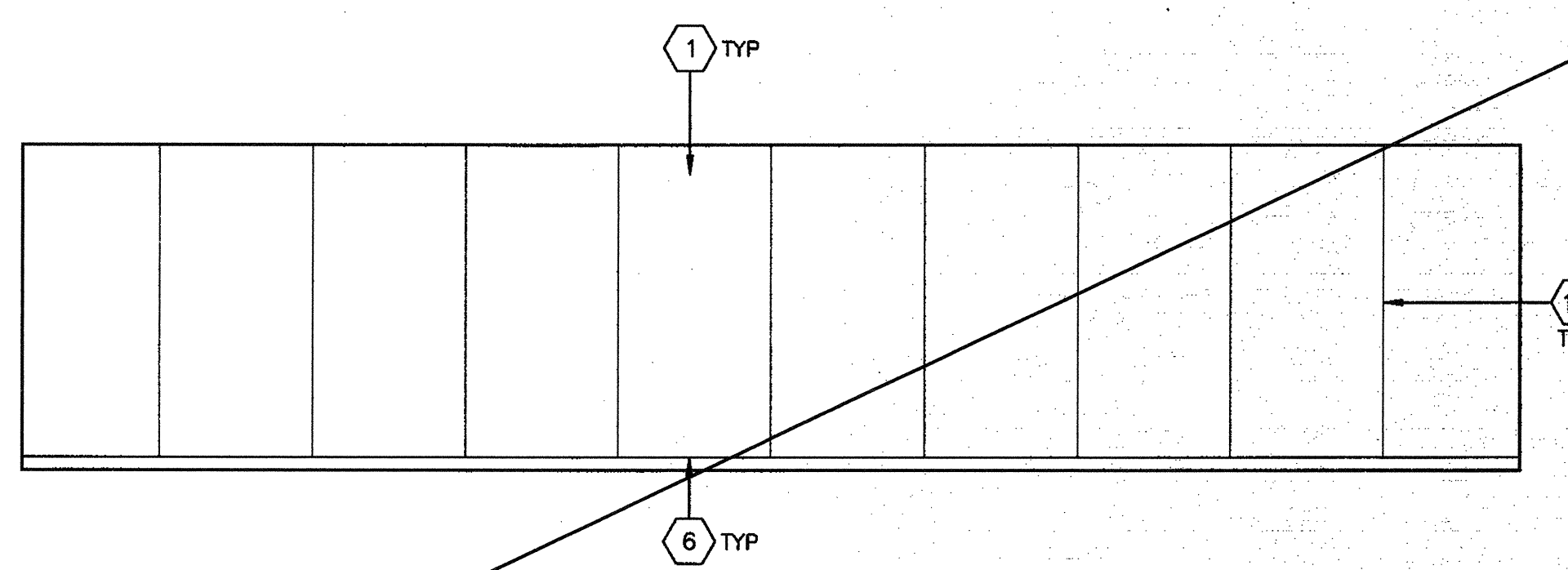
SECTION AT MARKER BOARD
SCALE: 3" = 1'-0"



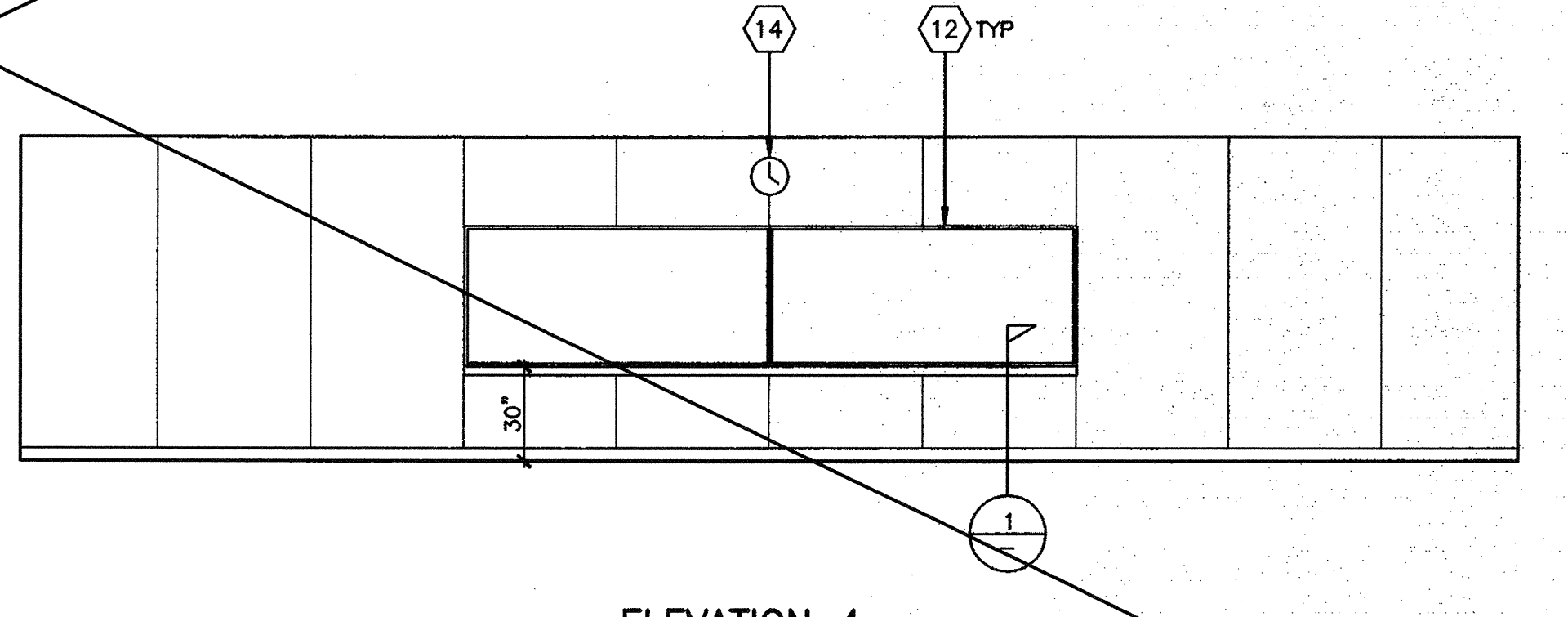
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ELEVATION 3

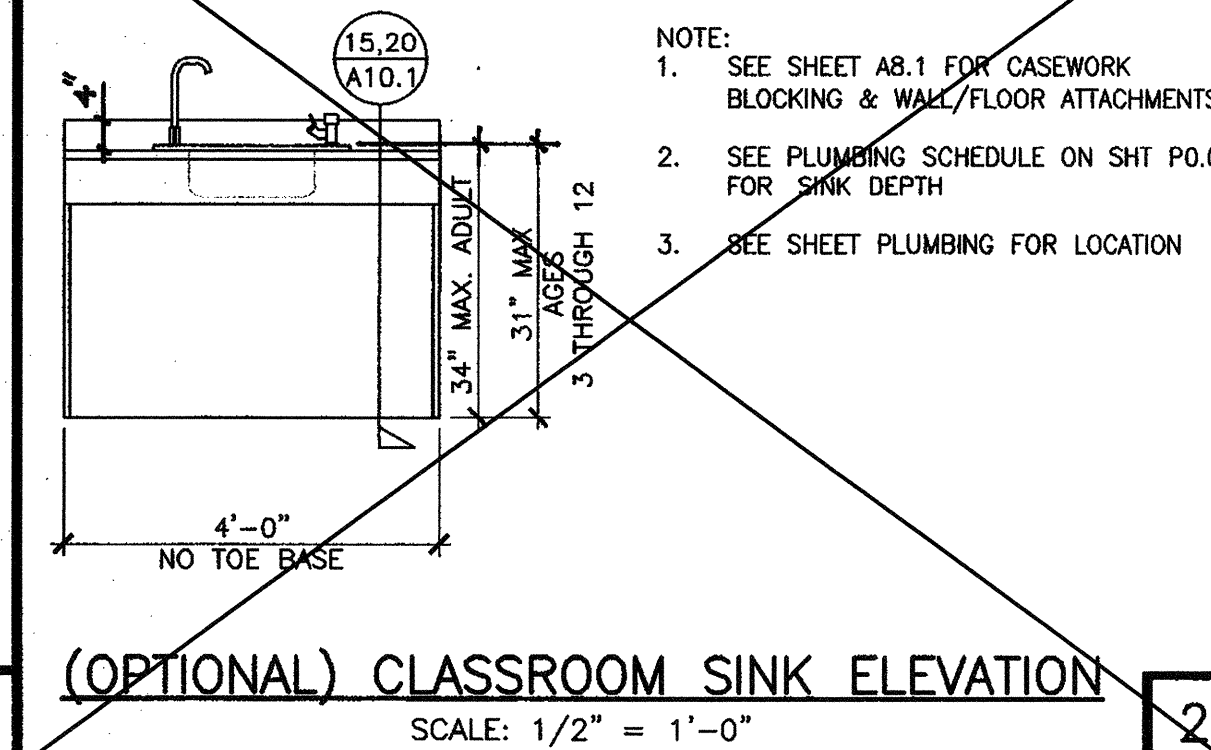


ELEVATION 2



ELEVATION 4

INTERIOR ELEVATIONS
OPTION B (LEFT HAND)
SCALE: 1/4" = 1'-0"



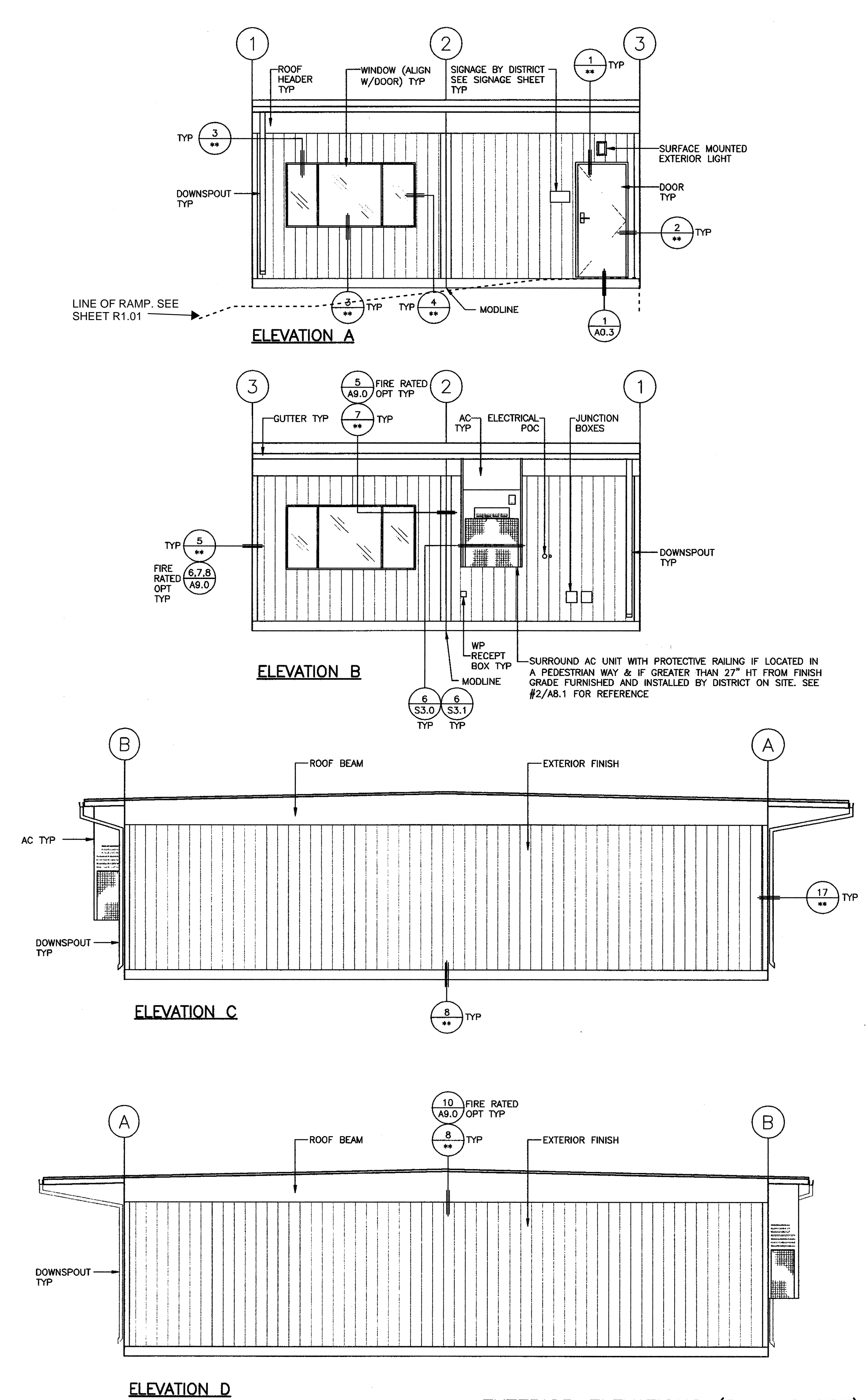
(OPTIONAL) CLASSROOM SINK ELEVATION
SCALE: 1/2" = 1'-0"

REVISIONS

1	SEE SHEET AB.1 FOR CASEWORK BLOCKING & WALL/FLOOR ATTACHMENTS
2	SEE PLUMBING SCHEDULE ON SHT P0.0 FOR SINK DEPTH
3	SEE SHEET PLUMBING FOR LOCATION

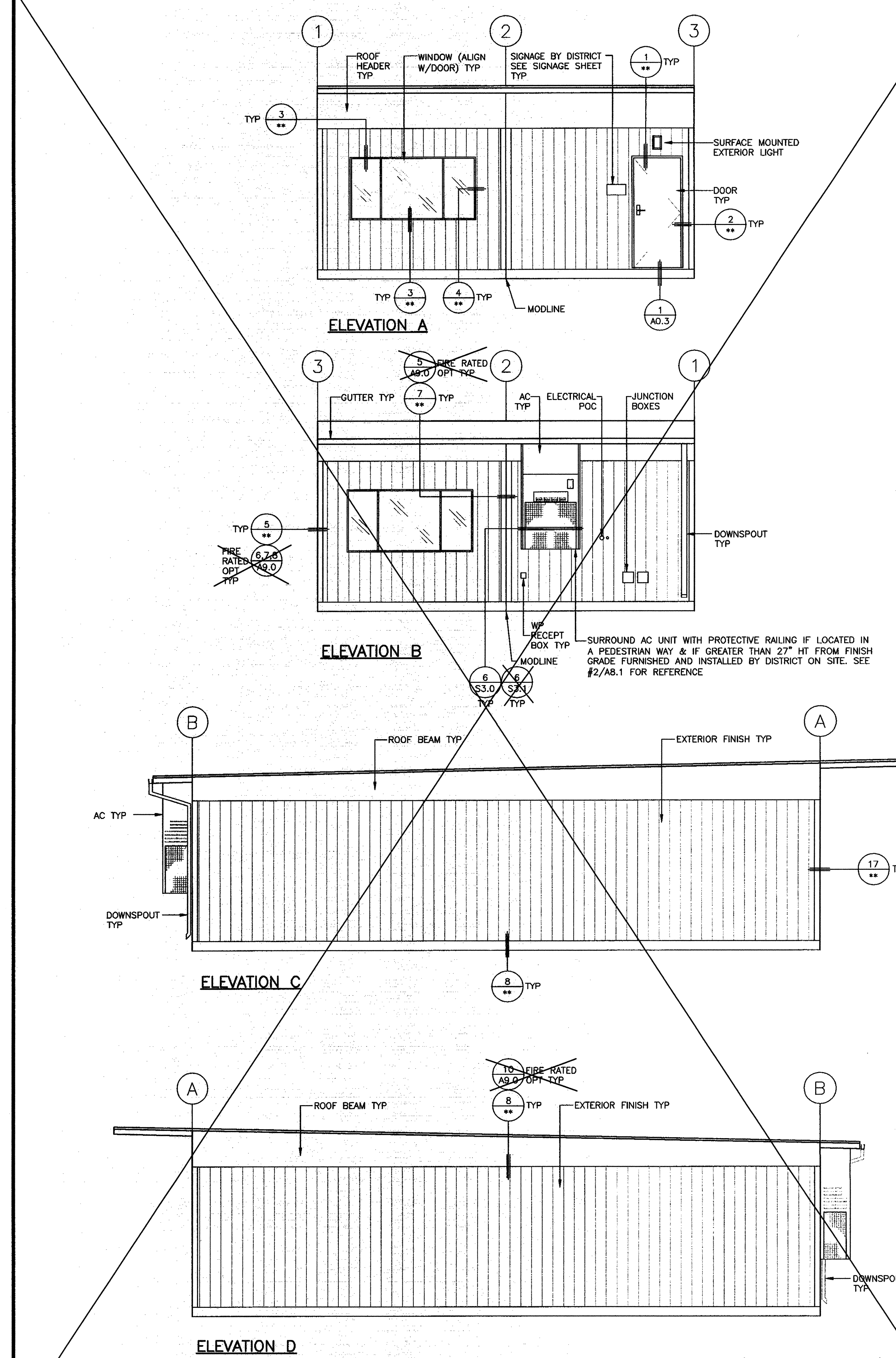
PROJECT NO.: 00000
DRAWN BY: J. CHAN-LUGAY
SCALE: AS NOTED
DATE: 10-03-16
SHEET NUMBER

A4.1



EXTERIOR ELEVATIONS (DUAL SLOPE)

SCALE: 1/4" = 1'-0"
 • RAMP AND LANDING NOT SHOWN FOR CLARITY (SEE ELEVATIONS ON RAMP SHEETS)
 • SEE SHEET ** FOR ARCHITECTURAL DETAILS



EXTERIOR ELEVATIONS (MONO SLOPE)

SCALE: 1/4" = 1'-0"
 • RAMP AND LANDING NOT SHOWN FOR CLARITY (SEE ELEVATIONS ON RAMP SHEETS)
 • SEE SHEET ** FOR ARCHITECTURAL DETAILS

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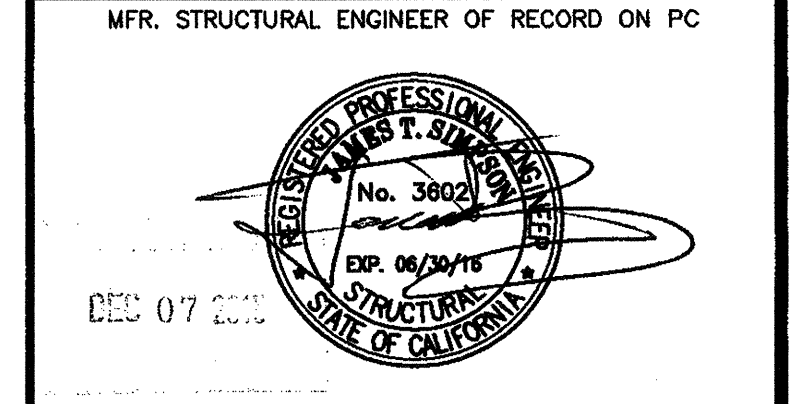
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PROJECT NAME:
**BELLFLOWER USD
 MAYFAIR HS**

SHEET TITLE:
**EXTERIOR ELEVATIONS
 WOOD SIDING
 24'x40'
 OPTION "A" (RIGHT HAND)**



MFR. PROJECT SPECIFIC PROFESSIONAL OF RECORD

ARCHITECT OF RECORD

PROJECT SPECIFIC STATE AGENCY APPROVAL

IDENTIFICATION STAMP
 DIV. OF THE STATE ARCHITECT
 05-117957
 AC/PLS/LESS-TY
 DATE: MAR 2 1 2017

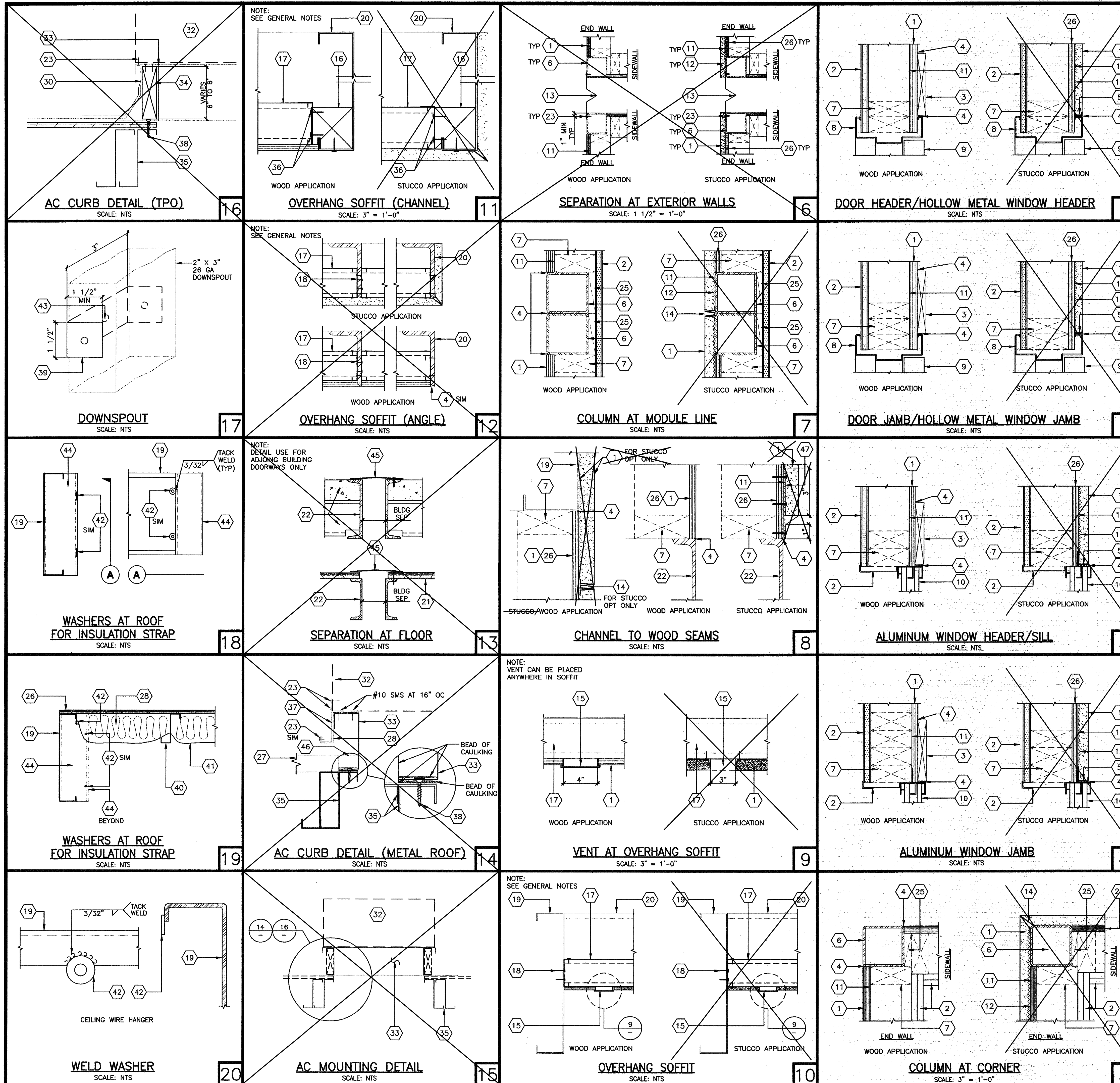
PRE-CHECK (PC) DOCUMENT
 CODE: 2013 CBS
 A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED

IDENTIFICATION STAMP
 DIV. OF THE STATE ARCHITECT
 PC 02-114405
 AC/PLS/LESS-TY
 DATE: JAN 1 1 2016

REVISIONS

PROJECT NO.: 00000
 DRAWN BY: J. CHAN-LUGAY
 SCALE: AS NOTED
 DATE: 10-03-16
 SHEET NUMBER

A5.1-A



KEY NOTES

1. EXTERIOR FINISH (SEE CONSTRUCTION MATERIALS SCHEDULE)
2. INTERIOR FINISH (SEE FINISH SCHEDULE)
3. OPTIONAL TRIM - 5/4 ENGINEERED WOOD TRIM NAILED TO WALL @ 24" OC MAX (SEE NAILING SCHEDULE ON WALL FRAMING ELEVATION SHEET)
4. PAINTABLE SEALANT USE ALSO AT LOCATIONS THAT NEED A WATER TIGHT SEAL WHERE EXTERIOR BUILDING MATERIALS MEET
5. J-MOLD
6. COLUMN
7. WALL FRAMING - WOOD STUDS (SEE FRAMING SHEET)
8. DOOR/WINDOW FRAME
9. DOOR (SEE DOOR SCHEDULE)
10. WINDOW (SEE WINDOW SCHEDULE)
11. BUILDING PAPER
12. SELF FURRING METAL LATH
13. 26 GA GALVANIZED SEISMIC FLASHING
14. CONTROL JOINT
15. 4"x10" VENT AT WOOD APPLICATION LOCATED 10" FROM OVERHANG PERIMETER AT EACH 12"-0" WIDE MODULE OVERHANG (SEE RCP)
16. 3" CONTINUOUS AT STUCCO APPLICATION STARTING AT 10" FROM OVERHANG PERIMETER
17. 4x BLOCK ATTACHED TO OVERHANG MEMBER WITH #10 STS @ 24" OC OR 0.145" HILTI SHOT PIN AT 24" OC (ICC REPORT #ESR-2269)
18. C-3.5" X 20 GA METAL STUDS @ 16" OC ATTACH STUD TO TRACK WITH #8 SMS AT EACH FLANGE
19. C-3.5" X 20 GA METAL TRACK TO ROOF HEADER WITH (2) #8 SMS AT 12" OC
19. ROOF HEADER/BREAM
20. OVERHANG MEMBER (STRUCTURAL ROOF FRAMING PLAN)
21. PLYWOOD FLOOR (SEE STRUCTURAL FLOOR FRAMING PLAN)
22. FLOOR SYSTEM (SEE STRUCTURAL FLOOR FRAMING PLAN)
23. #8 SELF TAPPING SHEET METAL SCREW @ 24" OC
24. NOT USED
25. 2X PLYWOOD SPACER
26. PLYWOOD SHEATHING (SEE WALL FRAMING ELEVATION SHEET)
27. ROOF FINISH (SEE SHEET A0.2)
28. 22 GA MIN 2" WIDE ANGLE
29. NOT USED
30. COMPOSITION FLASHING
31. NOT USED
32. AC UNIT
33. PREFABRICATED METAL CURB
34. PLYWOOD FILLER AROUND CURB
35. DOUBLE JOIST
36. ATTACH METAL TRACK TO BLOCK WITH (2) #10 WOOD SCREW @ 12" OC
37. 22 GA MIN FLASHING
38. (6) #10x2" RH TEK SCREWS EACH SIDE OF CURB TO ROOF DECK
39. 24 GA METAL STRAP, TOTAL OF (2) TOP AND BOTTOM AT 12" MIN FROM EACH END OF DOWNSPOUT WITH #8 SMS ON EACH SIDE
40. ROOF JOIST
41. STRAP FOR INSULATION
42. WELD WASHER - 1 3/8" X 3/32" THICK WITH 9/16" HOLE, WELD TO UPPER CHANNEL FLANGE
43. ATTACH STRAP TO WALL WITH #10 WOOD SCREW FOR WOOD SIDING APPLICATION; USE #10 STS FOR STUCCO FINISH APPLICATION
44. ROOF STUD COLUMN
45. SEISMIC THRESHOLD USE #10 STS SECURE TO ONE SIDE ONLY OR INSTALL PER SPECIFIC THRESHOLD MANUFACTURER REQUIREMENTS
46. HIDDEN LINE REPRESENT TO TRIM AND BEND STANDING SEAM FLAT AROUND A/C OPENING
47. STUCCO WEEP SCREED. INSTALL WITH #10 STS

GENERAL NOTES

1. EXTERIOR PLYWOOD ATTACHED TO STUDS WITH CORROSION RESISTANT SCREWS (SEE WALL FRAMING ELEVATION SHEET FOR ATTACHMENT INFORMATION)
2. (ALTERNATE EXT WALL FINISH) 7/8" STUCCO FINISH OVER SELF-FURRING LATH OVER FELT PAPER OVER CD-X PLYWOOD SHEATHING SEE SHEET A0.2 FOR FELT PAPER, SELF-FURRING LATH AND CEMENT ATTACHMENT SEE WALL FRAMING ELEVATION SHEET FOR CD-X PLYWOOD ATTACHMENT NOTE: USE #10 X 3/4" WATERHEAD STS @ 6" EN & 12" FN
3. (STANDARD EXT WALL FINISH) 5/8" PLYWOOD SIDING (DURATEMP) SEE SHEET A0.2 FOR INFORMATION SEE WALL FRAMING ELEVATION SHEET FOR PLYWOOD SIDING ATTACHMENT
4. (STANDARD SOFFIT FINISH) 5/8" PLYWOOD SIDING (DURATEMP) SEE SHEET A0.2 FOR INFORMATION. SEE WALL FRAMING ELEVATION SHEET FOR PLYWOOD SIDING ATTACHMENT (SIMILAR ATTACHMENT)
5. (ALTERNATE SOFFIT FINISH) 7/8" STUCCO FINISH OVER 3/8" RIB LATH OVER FELT PAPER OVER CD-X PLYWOOD SHEATHING SEE SHEET A0.2 FOR FELT PAPER, RIB LATH AND CEMENT ATTACHMENT SEE WALL FRAMING ELEVATION SHEET FOR CD-X PLYWOOD ATTACHMENT NOTE: USE #8-18 X 3/8" STS (MIN 7/16" HEAD DIA) WITH 1" OD X 1/4" ID WASHERS AT 7" EN & 7" FN
6. SOFFIT NOTE: THE NET FREE VENTILATION AREA SHALL NOT BE LESS THAN 1/150 OF THE AREA OF THE SPACE TO BE VENTILATED

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PROJECT NAME:

BELLFLOWER USD
MAYFAIR HS

SHEET TITLE:
**ARCHITECTURAL
DETAILS**
WOOD STUCCO
OPTION

MFR. STRUCTURAL ENGINEER OF RECORD ON PC



DATE SIGNED:
DEC 07 2017

MFR. PROJECT SPECIFIC PROFESSIONAL OF RECORD

ARCHITECT OF RECORD

PROJECT SPECIFIC STATE AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
03 117957
AC/PLS/SS/TN
DATE: MAR 2 1 2017

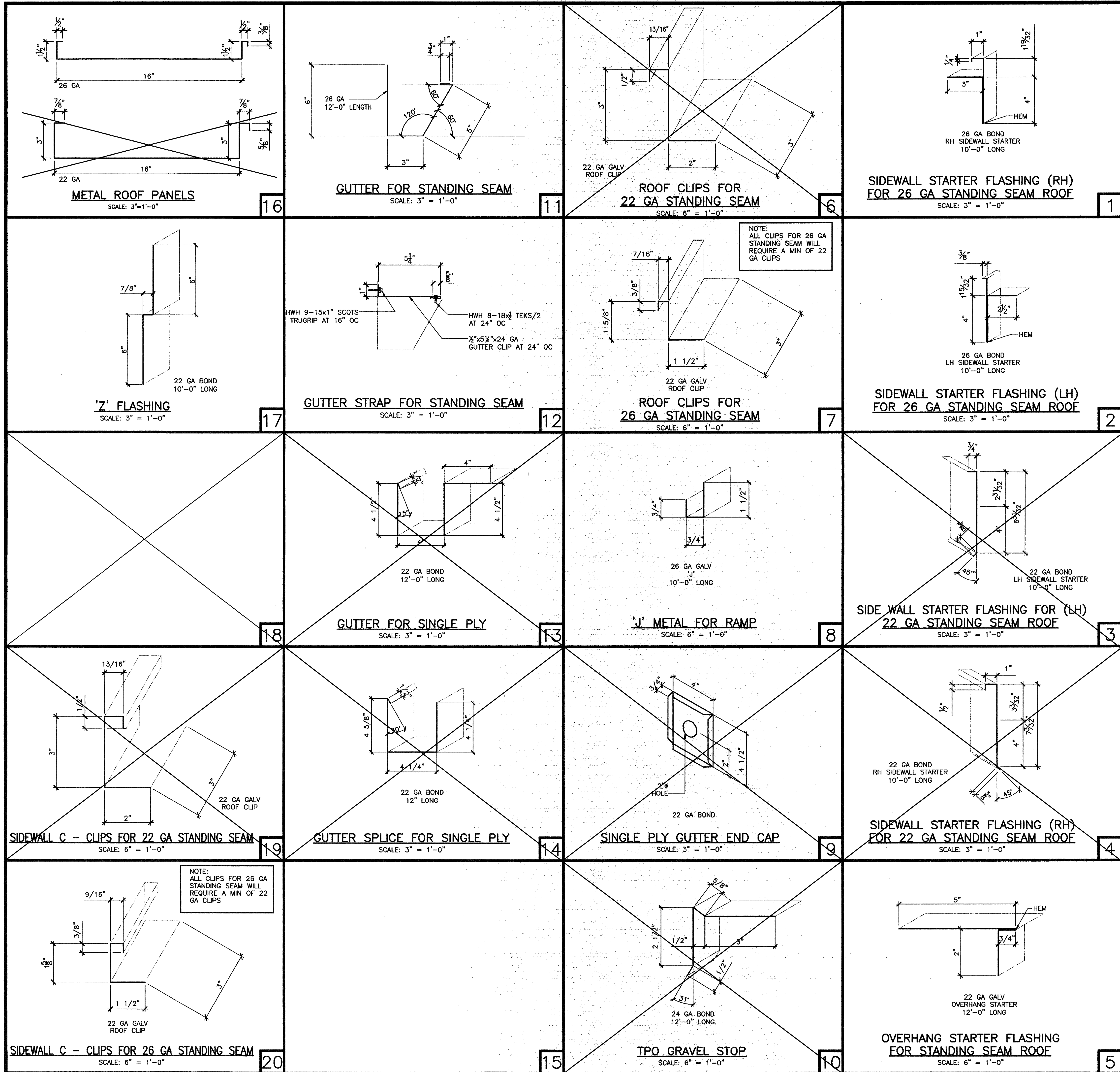
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PC 02-114405
AC/PLS/SS/TN
DATE: JAN 11 2018

REVISIONS

PROJECT NO.: 00000
DRAWN BY: J. CHAN-LUGAY
SCALE: AS NOTED
DATE: 10-03-16

SHEET NUMBER
A8.0



GENERAL NOTES

- USE 1/8" BEND RADIUS AT EACH BEND
- THE DIMENSIONS SHOWN ARE SUBJECT TO CHANGE DUE TO CONSTRUCTION TOLERANCES AND OR SITE SPECIFIC CONDITIONS. IN NO WAY SHAPE OR FORM, THE GAUGE THICKNESS CAN NOT BE THINNER THAN SHOWN ON THE PLAN UNO

ABBREVIATIONS

BOND: BONDORIZED
GA: GAUGE
GALV: GALVANIZED
ID: INSIDE DIMENSION
LH: LEFT HAND
MAX: MAXIMUM
MIN: MINIMUM
NTS: NOT TO SCALE
RH: RIGHT HAND
TPO: THERMOPLASTIC POLYOLEFINS

PROJECT NAME: BELLFLOWER USD MAYFAIR HS

SHEET TITLE: SHEET METAL AND FLASHING DETAILS

MFR. STRUCTURAL ENGINEER OF RECORD ON PC: [Professional Seal]

DATE SIGNED: DEC 07 2011

MFR. PROJECT SPECIFIC PROFESSIONAL OF RECORD:

ARCHITECT OF RECORD:

PROJECT SPECIFIC STATE AGENCY APPROVAL:

IDENTIFICATION STAMP: DIV. OF THE STATE ARCHITECT
 03-117957
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 DATE: JAN 11 2008

REVISIONS:

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PROJECT NO.: 00000
DRAWN BY: J. CHAN-LUGAY
SCALE: AS NOTED
DATE: 10-03-16
SHEET NUMBER: A8.2

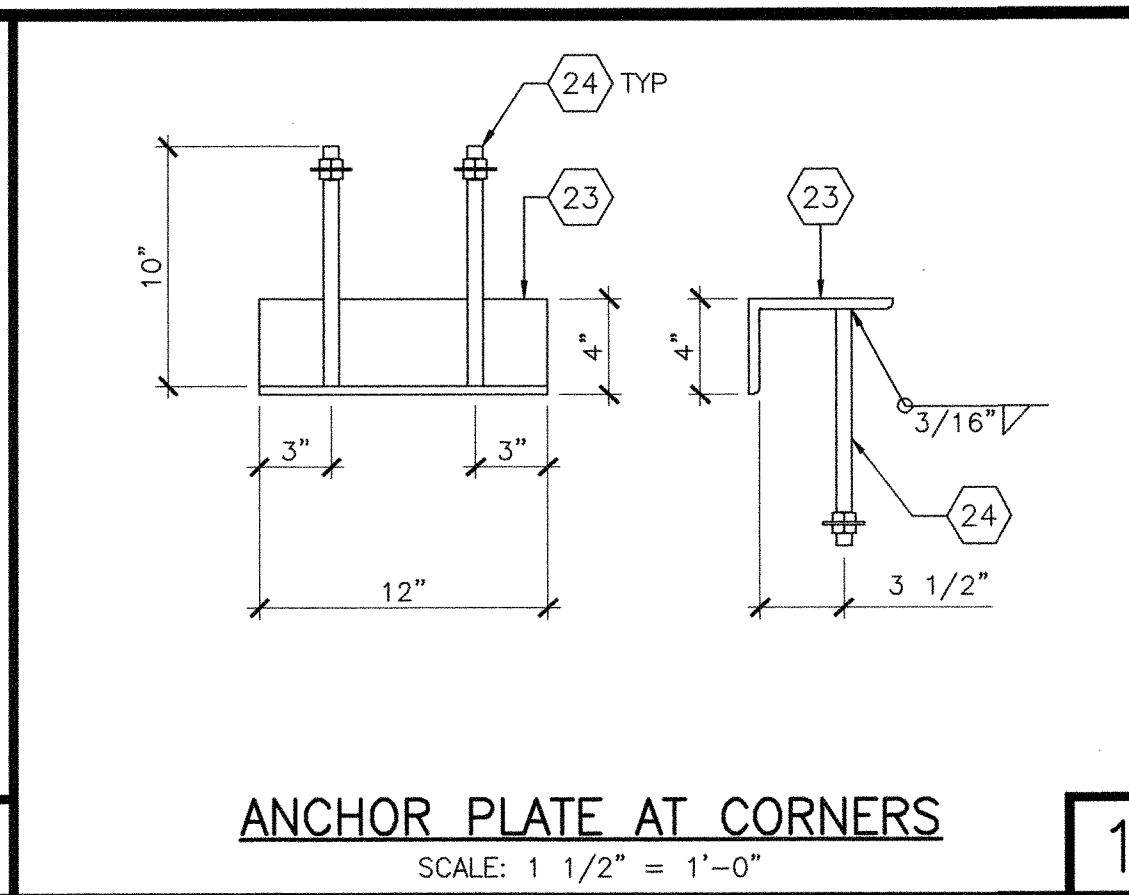
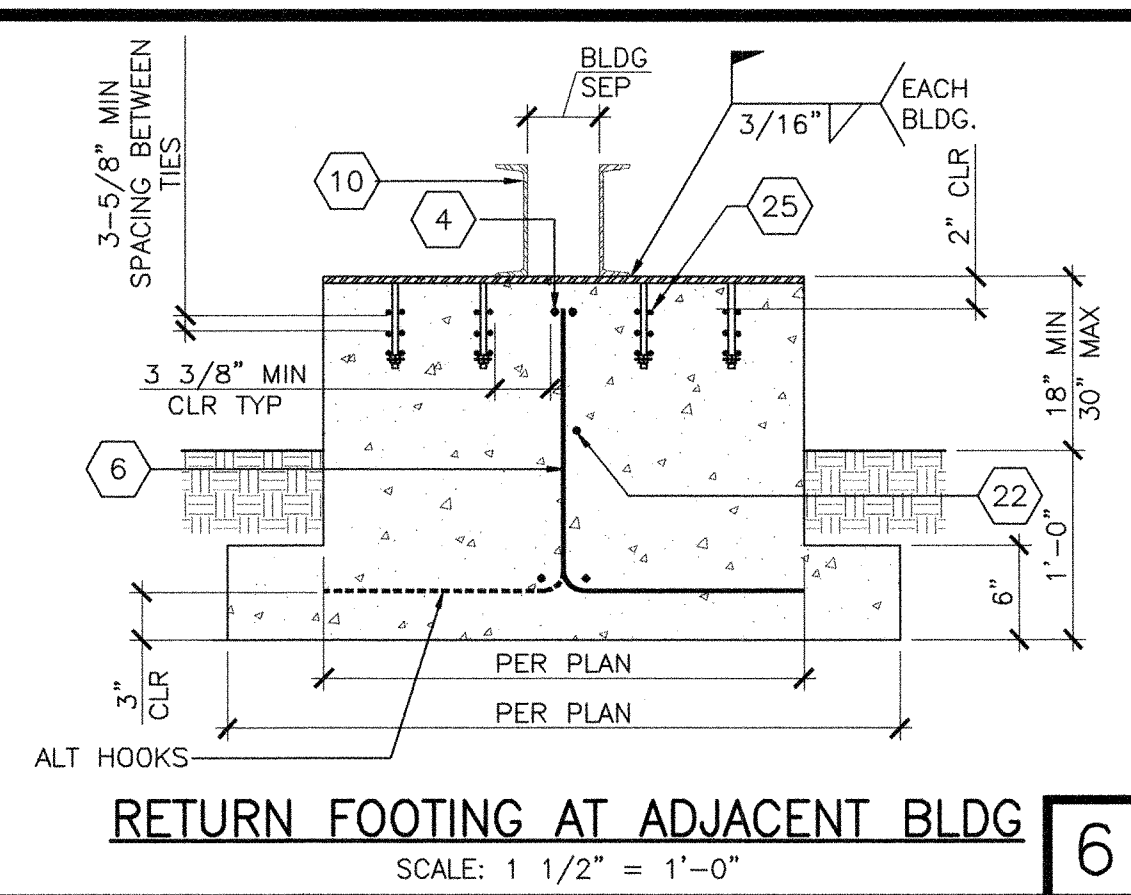
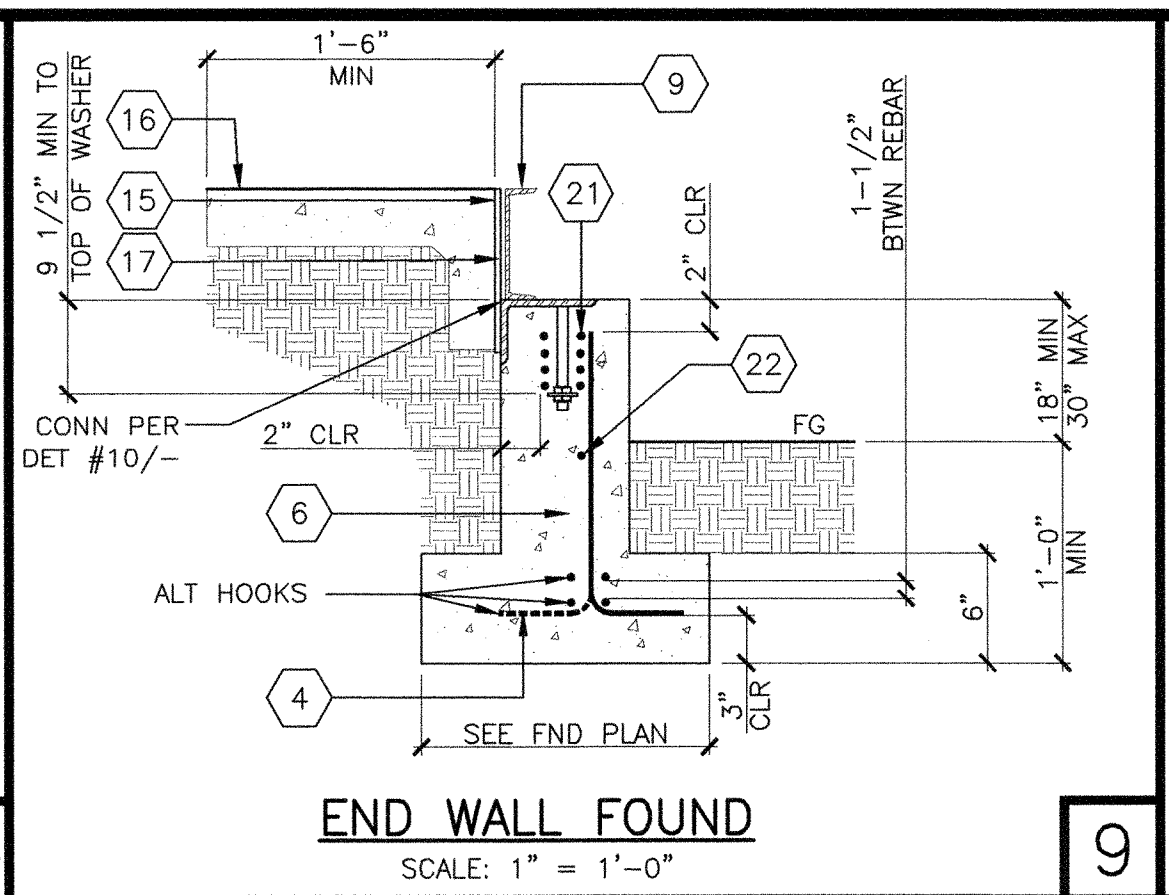
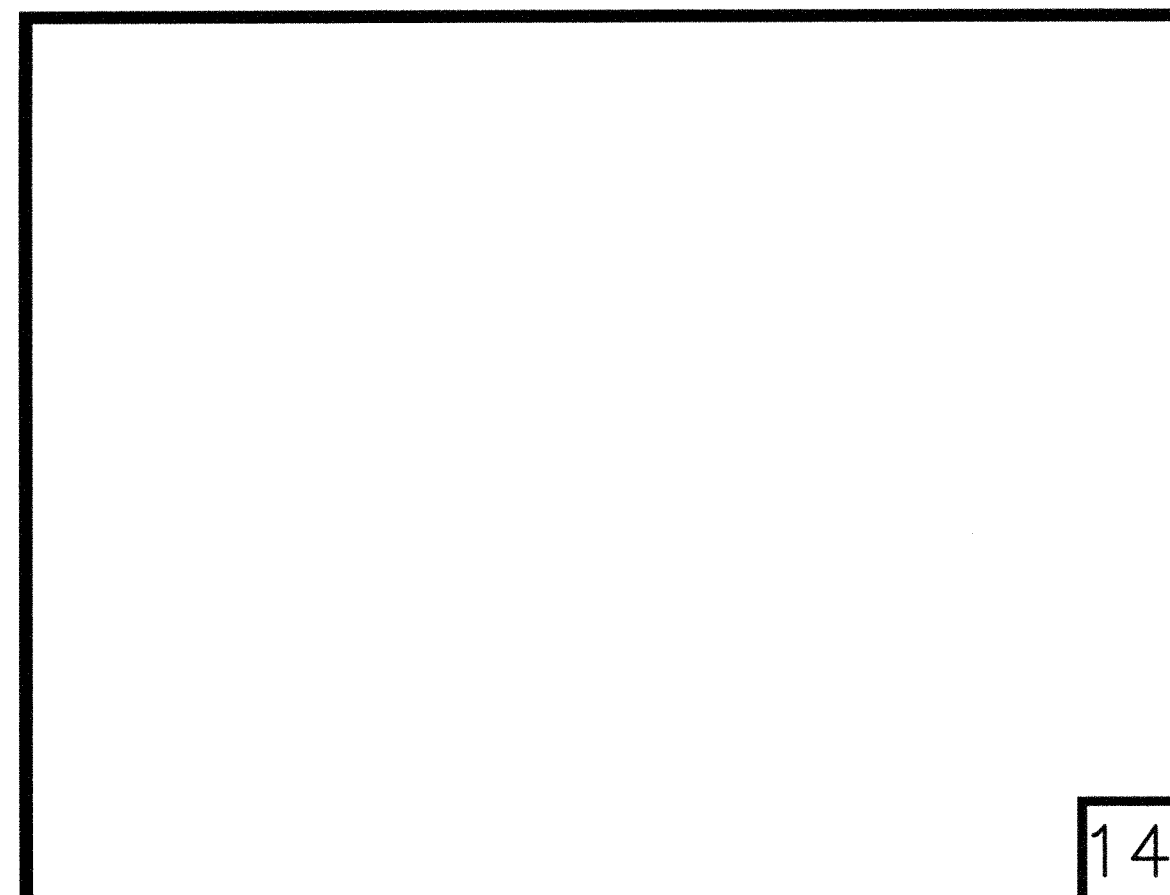
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- KEY NOTES**
- NOT USED
 - NOT USED
 - NOT USED
 - REBAR - (2) #5 CONTINUOUS TOP AND BOTTOM, MIN. 1 1/2" APART
 - REBAR - (1) #5 CONTINUOUS TOP AND BOTTOM
 - REBAR - (1) #3 VERT @ 24" OC (CENTERED IN STEM WALL)
 - NOT USED
 - NOT USED
 - STEEL PERIMETER FRAME - END CHANNEL
 - STEEL PERIMETER FRAME - SIDE CHANNEL
 - REBAR - #4 TIES @ 8" OC
 - REBAR - (2) #4 TIES AT TOP 5", MIN. 1 1/2" APART.
 - REBAR - #5 EA WAY (SEE SCHEDULE ON FOUNDATION PLAN FOR AMOUNT)
 - REBAR - (4) #5 VERT
 - FELT EXPANSION JOINT (NOT BY BUILDING MANUFACTURER)
 - MOW STRIP/CONCRETE SIDEWALK (NOT BY BUILDING MANUFACTURER)
 - 22 GA GALVANIZED SHEET METAL FLASHING EXTEND 6" BELOW PERIMETER FRAME
 - ANCHOR PLATE PER DETAIL #6, F.O.O.
 - 22 GA. GALV. SHEET METAL FLASHING EXTENDED 6" ABOVE FLOOR, BEHIND SIDING AND DOWN PERIMETER FRAME 5" MIN. APPLY SEALANT AS SHOWN.
 - REBAR - (4) #4 AT TOP STEMWALL AT EACH SIDE OF BOLT SPACED 1-1/2" CLR OF EACH REBAR
 - WHEN STEM WALL HEIGHT ABOVE FOOTING EXCEEDS 24", PROVIDE (1) ADDITIONAL #5 REBAR AT MID-HEIGHT OF STEM WALL
 - L-4" X 6" X 3/8" THICK STEEL EMBEDMENT PLATE
 - 5/8" MIN ALL-THREAD WELDED TO STEEL PLATE AT ONE END AND DOUBLE NUT WITH 1/4" THICK WASHER AT THE OTHER END
 - (3) #3 HAIR PIN TIES GRADE 60 ANCHOR REINFORCING, MIN 24" LAP AT EACH HAIR PIN

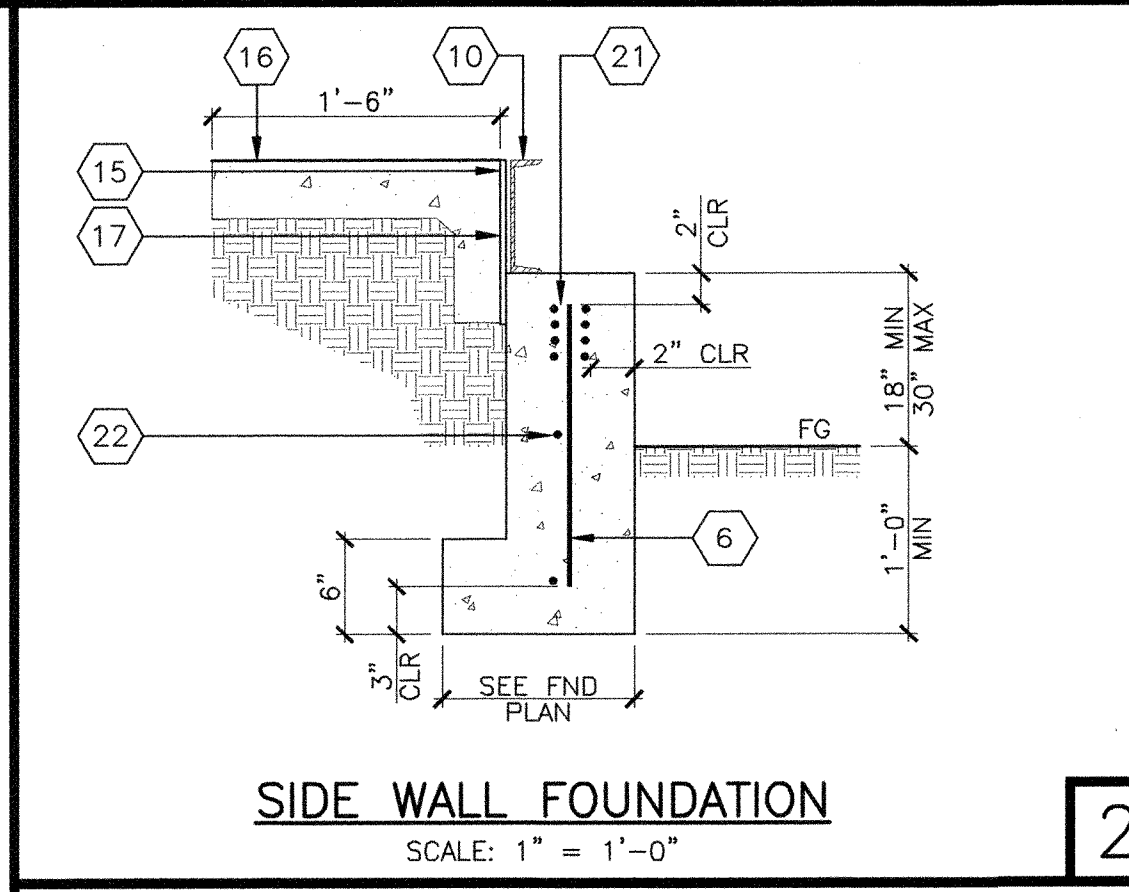
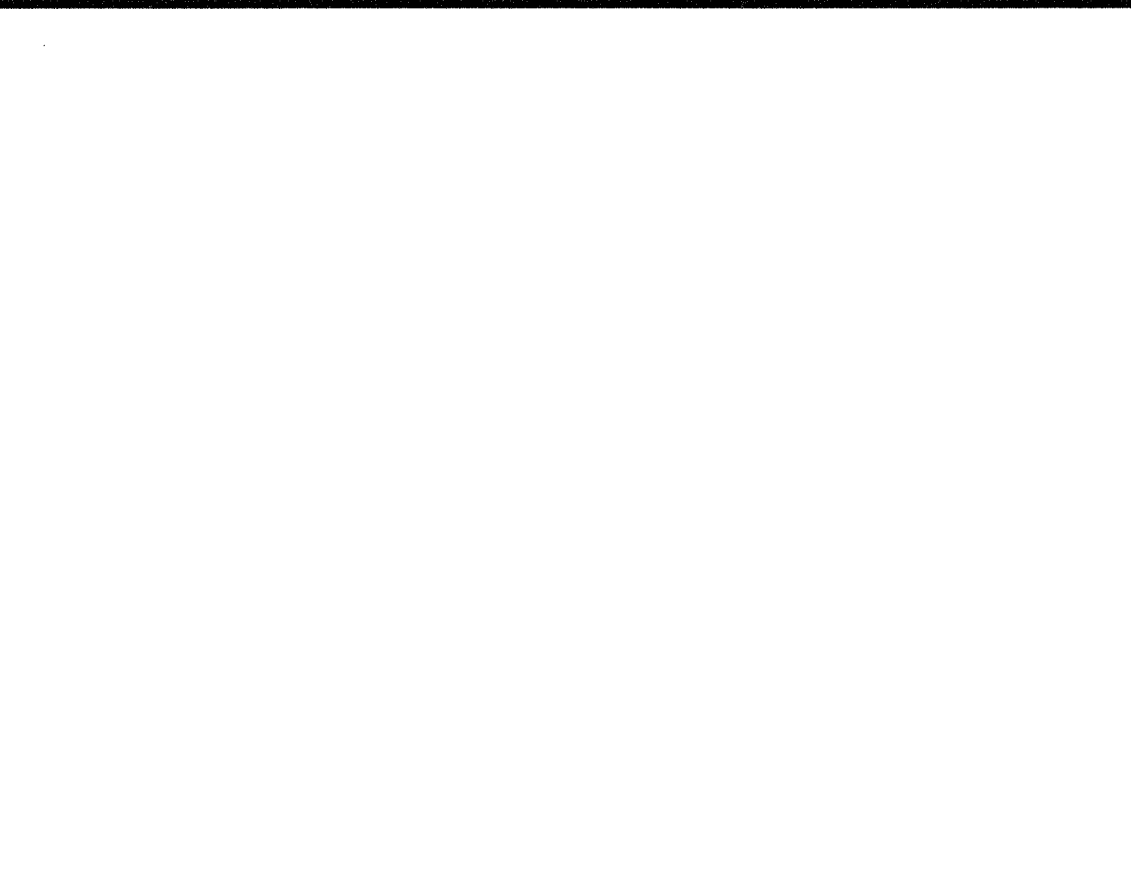
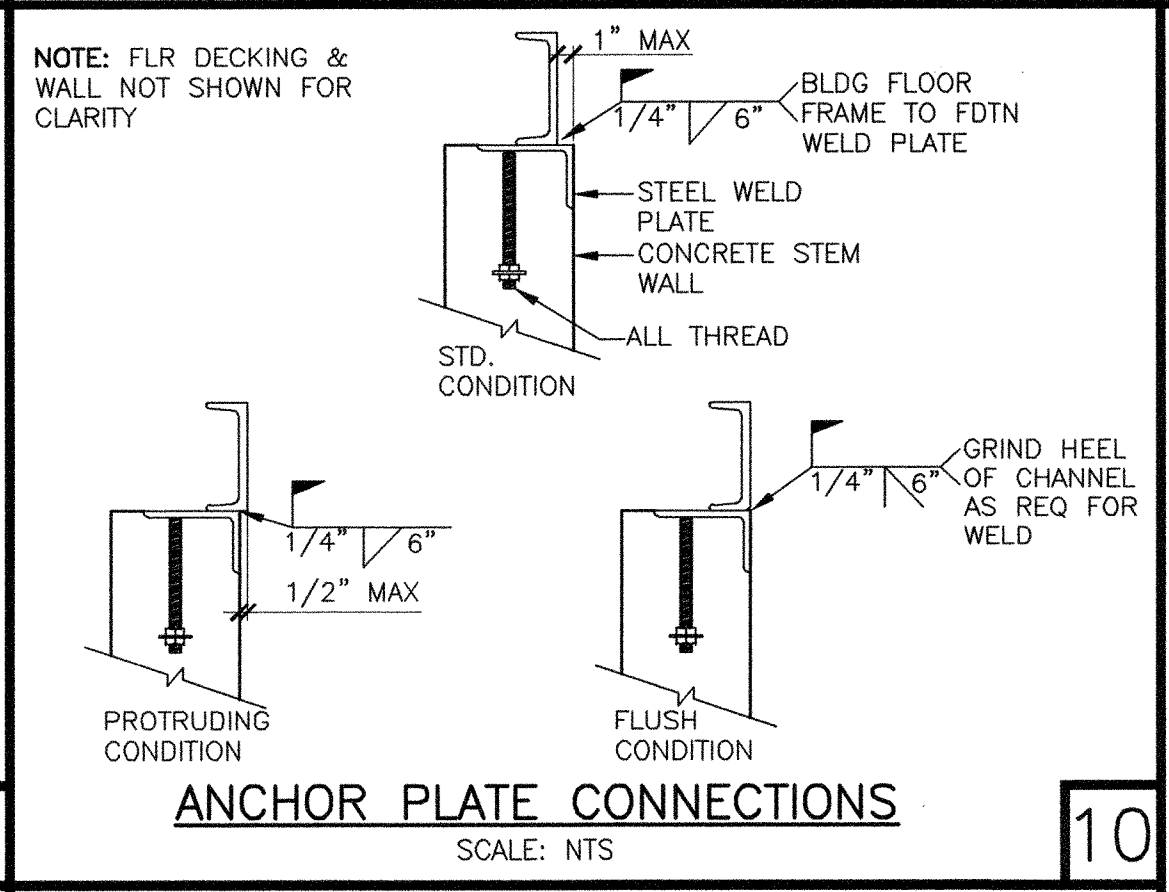
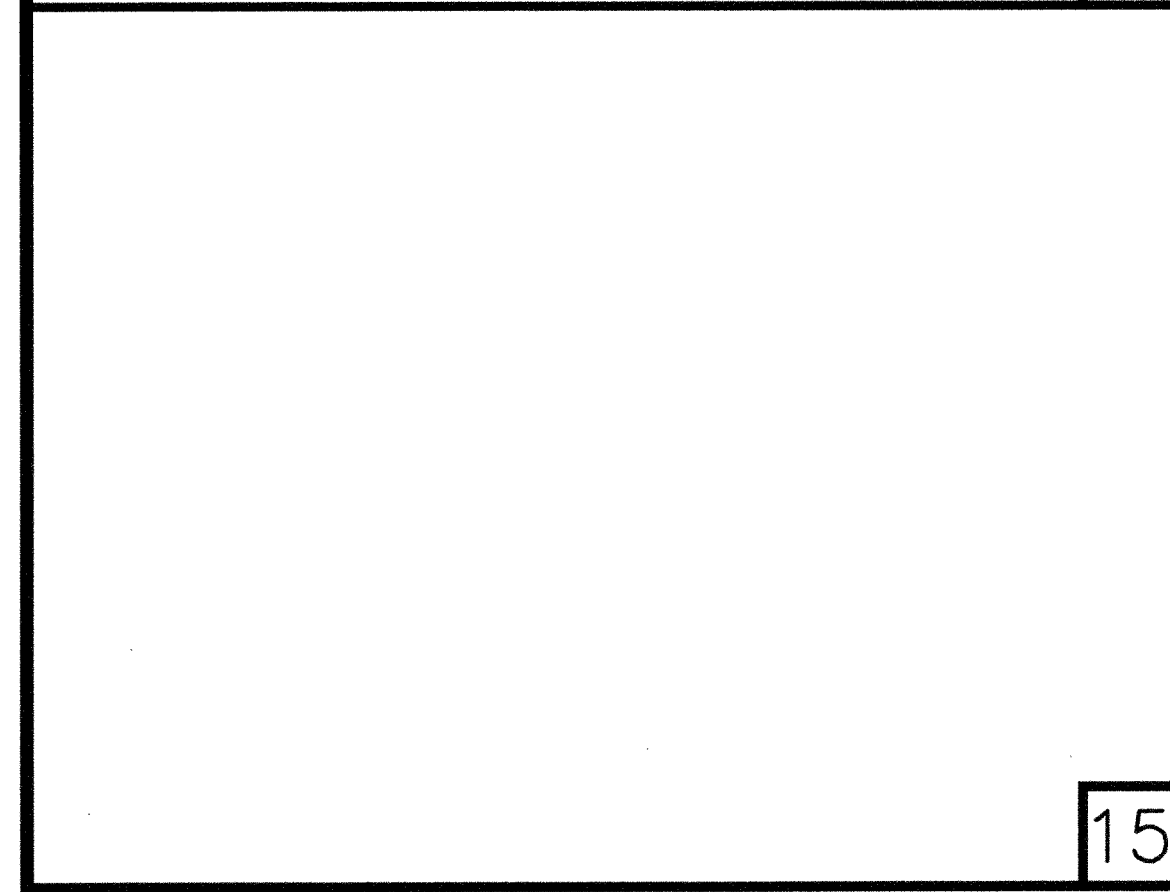
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PROJECT NAME:



SHEET TITLE:
FLUSH TO GRADE CONCRETE FOUNDATION DETAILS

MFR. STRUCTURAL ENGINEER OF RECORD ON PC

MFR. PROJECT SPECIFIC PROFESSIONAL OF RECORD

ARCHITECT OF RECORD

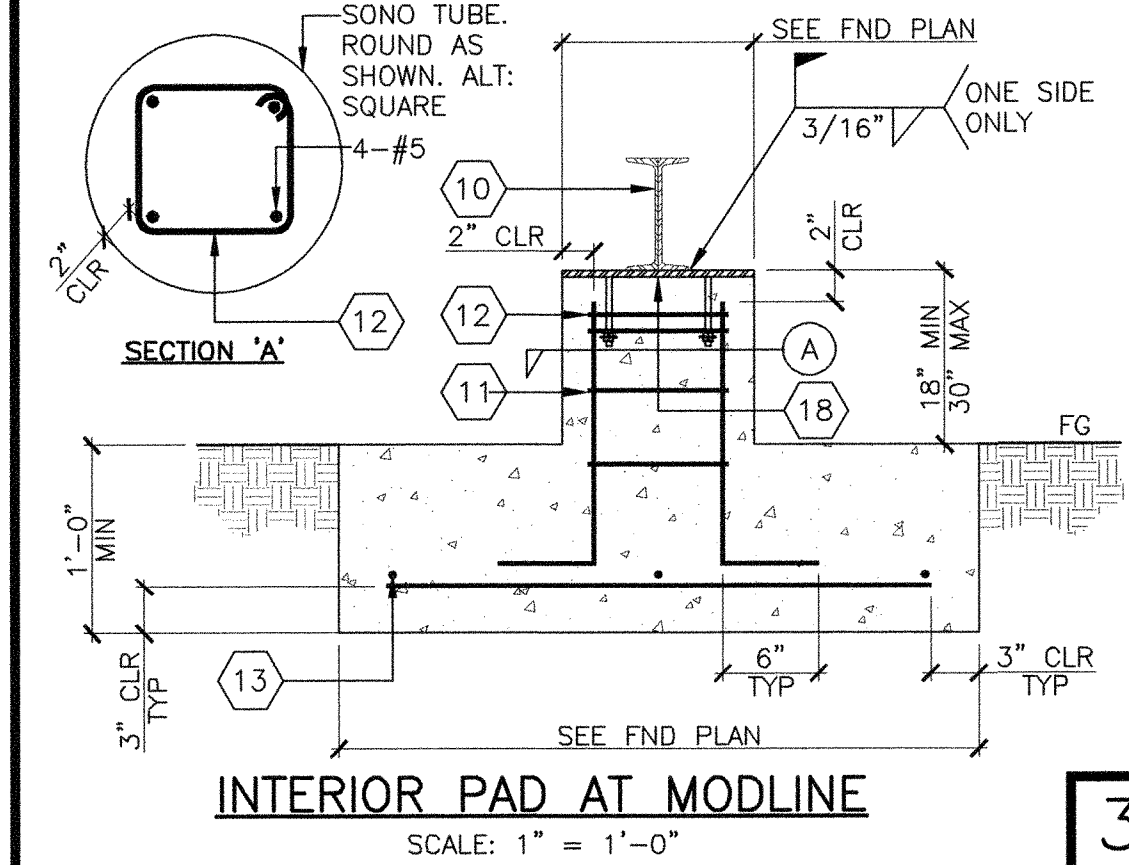
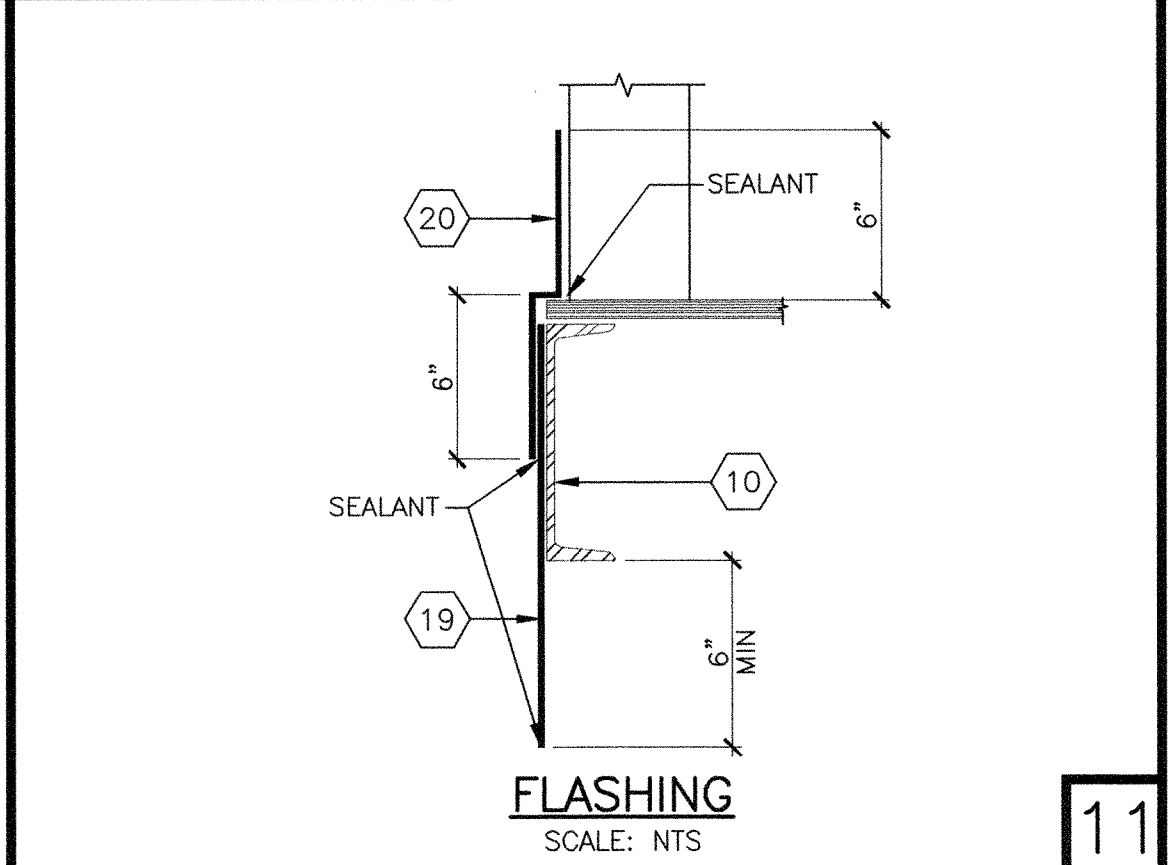
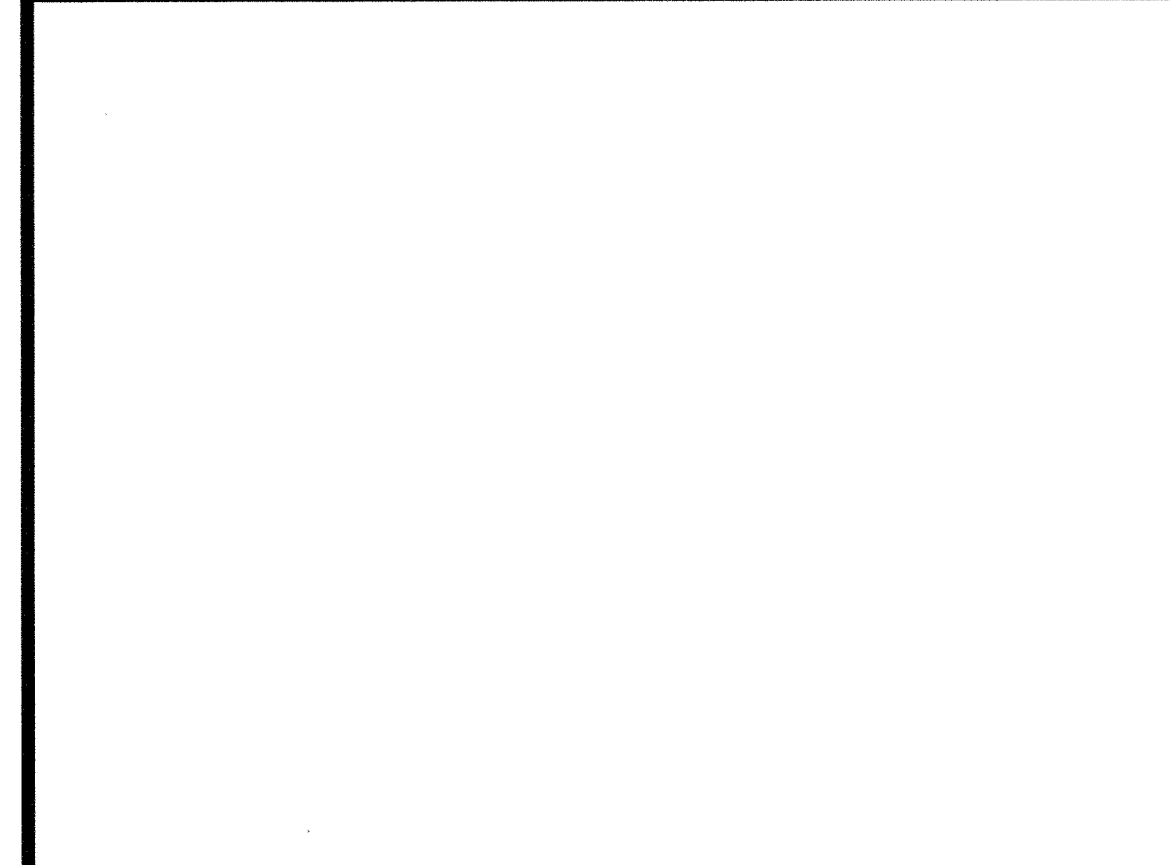
PROJECT SPECIFIC STATE AGENCY APPROVAL

PRE-CHECK (PC) DOCUMENT
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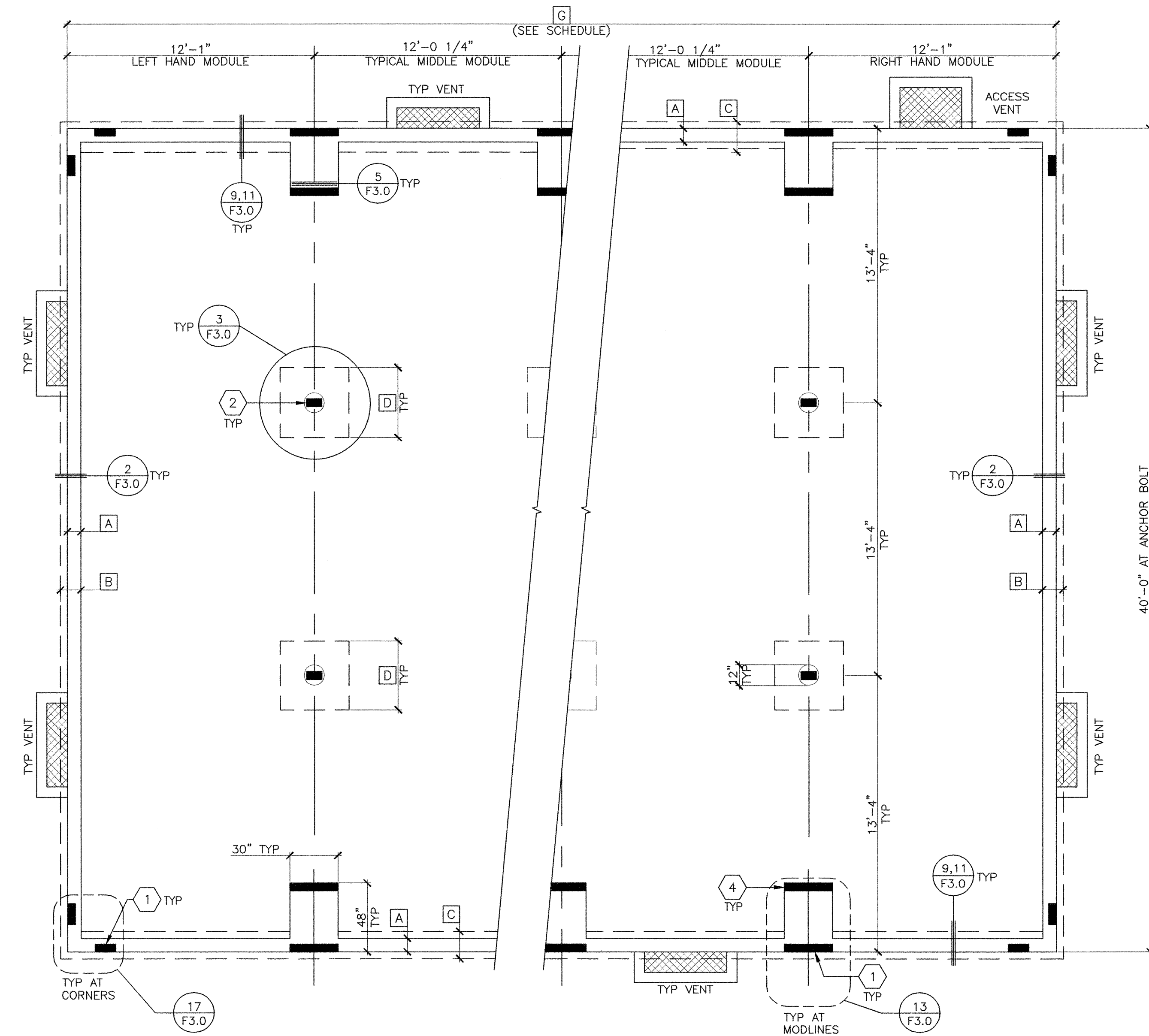
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DV. OF THE STATE ARCHITECT
PC 02-114405
FILE #: PC-80
AC: FLS SS: [Signature]
DATE: JAN 11 2016

REVISIONS

PROJECT NO.: 00-0000
DRAWN BY: 00
SCALE: AS NOTED
DATE: 00-00-00
SHEET NUMBER

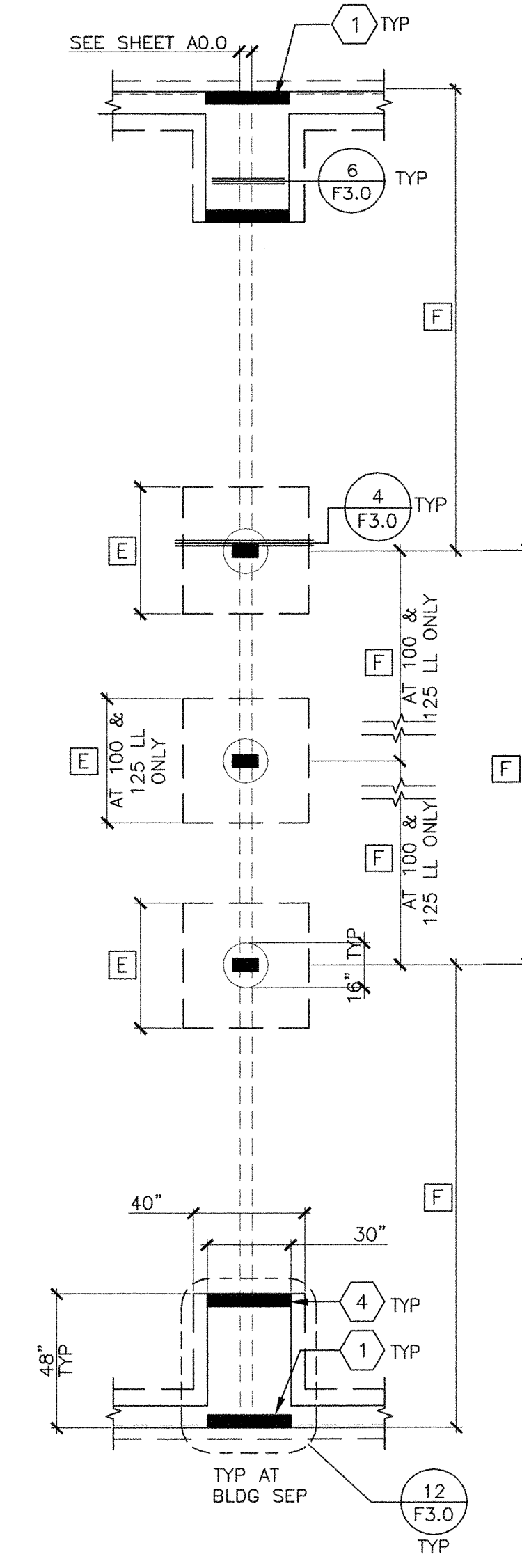


F3.0



50, 50+15, 100 & 125 PSF FOUNDATION PLAN

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

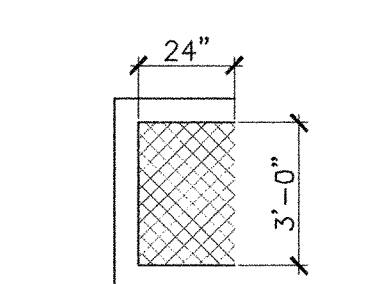


50, 50+15, 100 & 125 PSF ADJACENT BUILDING SEPARATION

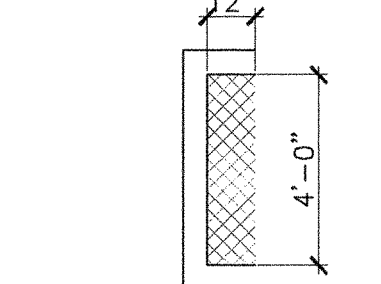
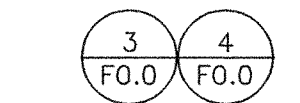
SCALE: 1/4" = 1'-0"

KEY NOTES

- ANCHOR PLATE AT CORNERS AND MODLINES
- ANCHOR PLATE AT PIERS - SEE #6/F0.0
- NOT USED
- ANCHOR PLATES REQUIRED AT RETURN STEMWALL FOOTING AND/OR BLDG SEP STEMWALL FOOTING TYP



ACCESS VENT
ACCESS VENT: 36"x18" PROVIDES 4.5 SF VENTILATION



TYPICAL VENT
VENT: 48"x12" PROVIDES 6 SF VENTILATION

TYPICAL VENT & ACCESS VENT DETAILS

GENERAL NOTES

- THE LOCATION OF VENTS SHOWN HERE IS FOR REFERENCE ONLY AS THE LOCATIONS OF VENTS WILL VARY FROM JOB TO JOB. THE OPENINGS SHALL BE LOCATED AS CLOSE TO THE CORNER AS PRACTICAL AND SHALL PROVIDE CROSS VENTILATION. THE OPENINGS SHALL BE EQUALLY DISTRIBUTED ALONG THE LENGTH OF AT LEAST (2) OPPOSITE ENDS.
- UNDER FLOOR VENTILATION SHALL BE PROVIDED AT A NET AREA OF NOT LESS THAN 1 SQUARE FOOT FOR EACH 150 SQUARE FEET OF UNDER FLOOR AREA.
- PER SECTION 1203.3.2 EXCEPTION 2, THE TOTAL AREA OF VENTILATION OPENINGS IS PERMITTED TO BE REDUCED TO 1/1500 OF THE UNDER-FLOOR AREA WHERE THE GROUND SURFACE IS COVERED WITH A CLASS I VAPORRETARDER MATERIAL AND THE REQUIRED OPENINGS ARE PLACED SO AS TO PROVIDE CROSS VENTILATION OF THE SPACE. THE INSTALLATION OF OPERABLE LOUVERS SHALL NOT BE PROHIBITED.

SCHEDULES (□ = REF LETTERS TO SCHEDULES BELOW TYP)

BUILDING SIZE	VENTILATION REQUIRED	MIN # VENTS
24'x40'	6.0 SF	2
36'x40'	9.0 SF	2
48'x40'	12.0 SF	3
60'x40'	16.0 SF	4
72'x40'	19.0 SF	5
84'x40'	22.0 SF	5
96'x40'	25.0 SF	6
108'x40'	28.0 SF	6
120'x40'	32.0 SF	8

ACCESS VENT CAN BE USED IN PLACE OF A TYPICAL VENT AS NECESSARY

FLOOR LOAD	REBAR SCHEDULE	
	PLYWOOD FLOOR	CONCRETE FLOOR
50	3	4
50+15	3	4
100	3	4
125	4	6

FOR INTERIOR PADS @ MODLINE AND ADJACENT BUILDINGS (#5 REBAR EACH WAY)

FLOOR LIVE LOAD PSF	FLUSH TO GRADE FOUNDATION							
	PLYWOOD FLOOR				CONCRETE FLOOR			
	50	50+15	100	125	50	50+15	100	125
A STEM WALL	8"(W)	8"(W)	8"(W)	8"(W)	8"(W)	8"(W)	8"(W)	8"(W)
B SIDE WALL FOOTING	12"(W)	12"(W)	12"(W)	14"(W)	12"(W)	12"(W)	12"(W)	14"(W)
C END WALL FOOTING	18"(W)	20"(W)	20"(W)	22"(W)	25"(W)	27"(W)	27"(W)	29"(W)
D INTERIOR PAD FOOTING x12" DEEP	3'-4" SQ	4'-0" SQ	4'-0" SQ	4'-6" SQ	3'-11" SQ	4'-5" SQ	5'-0" SQ	5'-5" SQ
E ADJACENT PAD FOOTING x12" DEEP	3'-9" SQ	4'-3" SQ	4'-3" SQ	4'-8" SQ	4'-3" SQ	4'-9" SQ	5'-3" SQ	5'-9" SQ
F ADJACENT PAD FOOTING SPACING	13'-4"	13'-4"	10'-0"	10'-0"	13'-4"	13'-4"	10'-0"	10'-0"

TOTAL FOUNDATION FOS TO FOS	
24'x40'	24'-2"
36'x40'	36'-2 1/4"
48'x40'	48'-2 1/2"
60'x40'	60'-2 3/4"
72'x40'	72'-3"
84'x40'	84'-3 1/4"
96'x40'	96'-3 1/2"
108'x40'	108'-3 3/4"
120'x40'	120'-4"

IMPACT CONSTRUCTION SERVICES INC.

CONTRACTORS LICENSE #945691
 NORTHERN CALIFORNIA DIVISION: 450 COMMERCE AVE., ATWATER, CA 95221, PHONE: (209) 590-8506, FAX: (209) 580-8503
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PROJECT NAME:

SHEET TITLE:
FLUSH TO GRADE CONCRETE FOUNDATION PLAN

MFR. STRUCTURAL ENGINEER OF RECORD ON PC

MFR. PROJECT SPECIFIC PROFESSIONAL OF RECORD
 ARCHITECT OF RECORD

PROJECT SPECIFIC STATE AGENCY APPROVAL

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 DIV. OF THE STATE ARCHITECT
PC 02-114405
 FILE #: PC-80
 AC: FIS SS
 DATE: **JAN 11 2018**

REVISIONS
 PROJECT NO.: 00-0000
 DRAWN BY: 00
 SCALE: AS NOTED
 DATE: 00-00-00

SHEET NUMBER
F3.1

GENERAL NOTES

GENERAL NOTES:
1. ALL CONSTRUCTION SHALL COMPLY WITH THE 2013 EDITION OF THE CALIFORNIA BUILDING CODE, CCR TITLE 24, PART 2 (CBC) AND CCR TITLE 24, PART 1, CHAPTER 4, GROUP 1, LATEST REVISIONS.

WOOD:
1. STRUCTURAL FRAMING SHALL BE HEM FIR - LARCH GRADED IN ACCORDANCE WITH THE STANDARD GRADING RULES OF THE WESTERN WOOD PRODUCTS ASSOCIATION OR STANDARD GRADING RULES #17 OF THE WEST COAST LUMBER INSPECTION BUREAU, LATEST EDITIONS. GRADES SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON THE DRAWINGS. (HEM FIR SOUTH IS NOT ALLOWED.) EACH PIECE SHALL BE GRADE MARKED AND NO PIECE MAY FALL BELOW GRADES INDICATED.

CONCRETE:
1. ALL CONSTRUCTION SHALL DEVELOP A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 3500 PSI AT 28 DAYS IN ACCORDANCE WITH ASTM C31 AND C39. TESTING SHALL BE IN ACCORDANCE WITH CBC (CCR TITLE 24, PART 2) SECTION 1905A.1.1 AND ACI 318 SECTION 5.6. SAMPLES FOR STRENGTH TESTS OF EACH CLASS OF CONCRETE PLACED EACH DAY SHALL BE TAKEN NOT LESS THAN ONCE A DAY, OR NOT LESS THAN ONCE FOR EACH 30 CUBIC YARDS (38.3 m³) OF CONCRETE, OR NOT LESS THAN 2000 SQUARE FEET (186 m²) OF SURFACE AREA FOR SLABS OR WALLS. ADDITIONAL SAMPLES FOR SEVEN-DAY COMPRESSIVE STRENGTH TESTS SHALL BE TAKEN FOR EACH CLASS OF CONCRETE AT THE BEGINNING OF THE CONCRETE WORK OR WHENEVER THE MIX OR AGGREGATE IS CHANGED.

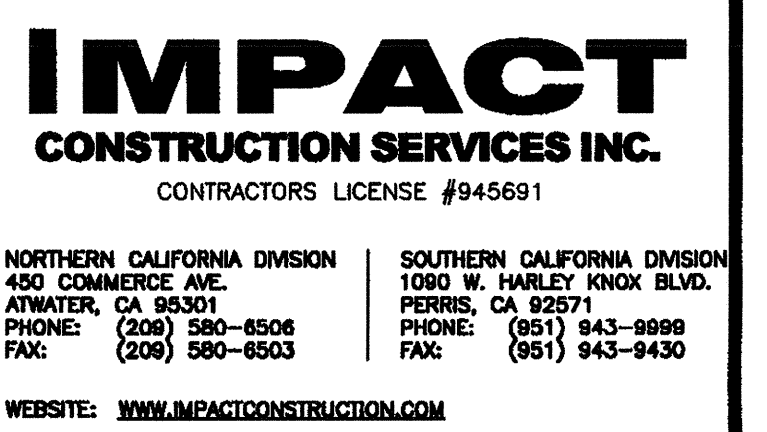
CONCRETE FOUNDATION:
1. FOUNDATION BEARING SHALL BE AS APPROVED BY THE DIVISION OF THE STATE ARCHITECT AND THE OWNER'S ARCHITECT. IT IS THE SCHOOL DISTRICT'S RESPONSIBILITY TO PROVIDE ADEQUATE BEARING TO DEVELOP THE ALLOWABLE BEARING PRESSURE NOTED BELOW.

STRUCTURAL STEEL:
1. NOT USED
2. NOT USED
3. NOT USED
4. ALL WELDING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CALIFORNIA BUILDING CODE (CBC) AND THE STRUCTURAL WELDING CODE - STEEL, AWS D1.1, LATEST EDITION OF THE AMERICAN WELDING SOCIETY. WELDING DONE BY SHIELDING ELECTRIC-ARC OR FLUX-CORED PROCESS COMPLYING WITH AWS.

FOUNDATION: (RESTRAINED)
1. FOUNDATION BEARING SHALL BE AS APPROVED BY THE DIVISION OF THE STATE ARCHITECT, AND THE OWNER'S ARCHITECT. IT IS THE SCHOOL DISTRICT'S RESPONSIBILITY TO PROVIDE ADEQUATE BEARING TO DEVELOP THE ALLOWABLE BEARING PRESSURE NOTED BELOW.

COLD FORMED STRUCTURAL STEEL:
1. ALL LIGHT GAUGE METAL FRAMING SHALL BE THE TYPE, SIZE AND GAUGE AS SHOWN ON THE PLANS AND BE FABRICATED AND ERECTED IN ACCORDANCE WITH LATEST AISI SPECIFICATIONS.

ACCEPTABLE FASTENERS / ICC REPORTS:
SILL PLATE THROUGH LIGHTWEIGHT CONCRETE: ICC REPORT #ESR-2269 OR #ESR-1752
SHOT PIN THROUGH LIGHT GAUGE STEEL: ICC REPORT #ESR-2269



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BELLFLOWER USD MAYFAIR HS

STRUCTURAL NOTES AND SPECIFICATIONS

DATE SIGNED: 08/07/2017
MR. PROJECT SPECIFIC PROFESSIONAL OF RECORD

ARCHITECT OF RECORD

IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT. 02-117957

PRE-CHECK (PC) DOCUMENT CODE: 2013 CBC. A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED.

REVISIONS table with columns for description and revision number. S0.0a

GENERAL NOTES

**STEEL STUD MANUFACTURERS ASSOCIATION (SSMA)
STEEL STUD FORMAT CONVERSION CHART**

ORDINARY FORMAT	SSMA FORMAT
C-3 5/8" X 1 1/2" X 20 GA (TRACK) C-3 5/8" X 1 5/8" X 20 GA (STUD)	3621150-33 (TRACK) 362S162-33 (STUD)
C-3 5/8" X 1 1/2" X 18 GA (TRACK) C-3 5/8" X 1 5/8" X 18 GA (STUD)	3621150-43 (TRACK) 362S162-43 (STUD)
C-3 5/8" X 1 1/2" X 16 GA (TRACK) C-3 5/8" X 1 5/8" X 16 GA (STUD)	3621150-54 (TRACK) 362S162-54 (STUD)
C-4" X 1 1/2" X 20 GA (TRACK) C-4" X 1 5/8" X 20 GA (STUD)	400T150-33 (TRACK) 400S162-33 (STUD)
C-4" X 1 1/2" X 18 GA (TRACK) C-4" X 1 5/8" X 18 GA (STUD)	400T150-43 (TRACK) 400S162-43 (STUD)
C-4" X 1 1/2" X 16 GA (TRACK) C-4" X 1 5/8" X 16 GA (STUD)	400T150-54 (TRACK) 400S162-54 (STUD)
C-5 1/2" X 1 1/2" X 20 GA (TRACK) C-5 1/2" X 1 5/8" X 20 GA (STUD)	550T150-33 (TRACK) 550S162-33 (STUD)
C-5 1/2" X 1 1/2" X 18 GA (TRACK) C-5 1/2" X 1 5/8" X 18 GA (STUD)	550T150-43 (TRACK) 550S162-43 (STUD)
C-5 1/2" X 1 1/2" X 16 GA (TRACK) C-5 1/2" X 1 5/8" X 16 GA (STUD)	550T150-54 (TRACK) 550S162-54 (STUD)
C-6" X 1 1/2" X 20 GA (TRACK) C-6" X 1 5/8" X 20 GA (STUD)	600T150-33 (TRACK) 600S162-33 (STUD)
C-6" X 1 1/2" X 18 GA (TRACK) C-6" X 1 5/8" X 18 GA (STUD)	600T150-43 (TRACK) 600S162-43 (STUD)
C-6" X 1 1/2" X 16 GA (TRACK) C-6" X 1 5/8" X 16 GA (STUD)	600T150-54 (TRACK) 600S162-54 (STUD)
C-8" X 1 1/2" X 20 GA (TRACK) C-8" X 1 5/8" X 20 GA (STUD)	800T150-33 (TRACK) 800S162-33 (STUD)
C-8" X 1 1/2" X 18 GA (TRACK) C-8" X 1 5/8" X 18 GA (STUD)	800T150-43 (TRACK) 800S162-43 (STUD)
C-8" X 1 1/2" X 16 GA (TRACK) C-8" X 1 5/8" X 16 GA (STUD)	800T150-54 (TRACK) 800S162-54 (STUD)

**STEEL STUD MANUFACTURERS ASSOCIATION (SSMA)
MIL THICKNESS FORMAT CONVERSION CHART**

GUAGE FORMAT	DESIGN THICKNESS	MILS
25	0.0188	18
22	0.0283	27
20	0.0346	33
18	0.0451	43
16	0.0566	54
14	0.0713	68
12	0.1017	97
10	0.1242	118

**AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)
HOT ROLLED MEMBER FORMAT CONVERSION CHART**

ORDINARY FORMAT	AISC FORMAT
C-6" X 8.2 LB	C 6x8.2
C-7" X 9.8 LB	C 7x9.8
C-10" X 15.3 LB	C 10x15.3
L-1 1/2" X 1 1/2" X 3/16"	L 1-1/2x1-1/2x3/16
L-2" X 2" X 3/16"	L 2x2x3/16
L-3" X 3" X 3/8"	L 3x3x3/8
L-5" X 3" X 3/8"	L 5x3x3/8

**IMPACT
CONSTRUCTION SERVICES INC.**

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PROJECT NAME:

**BELLFLOWER USD
MAYFAIR HS**

SHEET TITLE:

**STRUCTURAL NOTES AND
SPECIFICATIONS**

MFR. STRUCTURAL ENGINEER OF RECORD ON PC

DATE SIGNED
DEC 07 2011

MFR. PROJECT SPECIFIC PROFESSIONAL OF RECORD

ARCHITECT OF RECORD

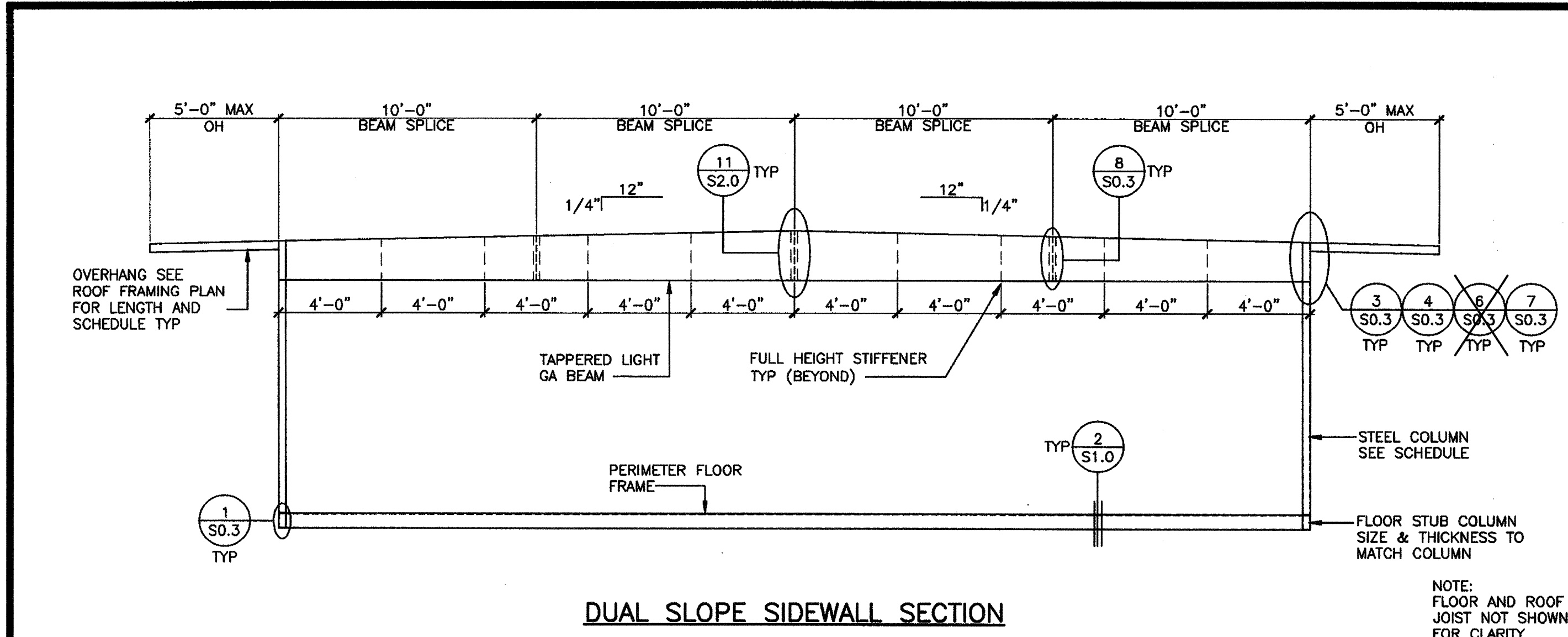
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 IDENTIFICATION STAMP
 DIV. OF THE STATE ARCHITECT
 03-117957
 AC PLS V SS TN
 DATE MAR 2 1 2011

PRE-CHECK (PC) DOCUMENT
 CODE: 2013 CSC
 A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS
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 IDENTIFICATION STAMP
 DIV. OF THE STATE ARCHITECT
 PC 02-114405
 FILE # PC-02
 AC PLS V SS TN
 DATE JAN 11 2008

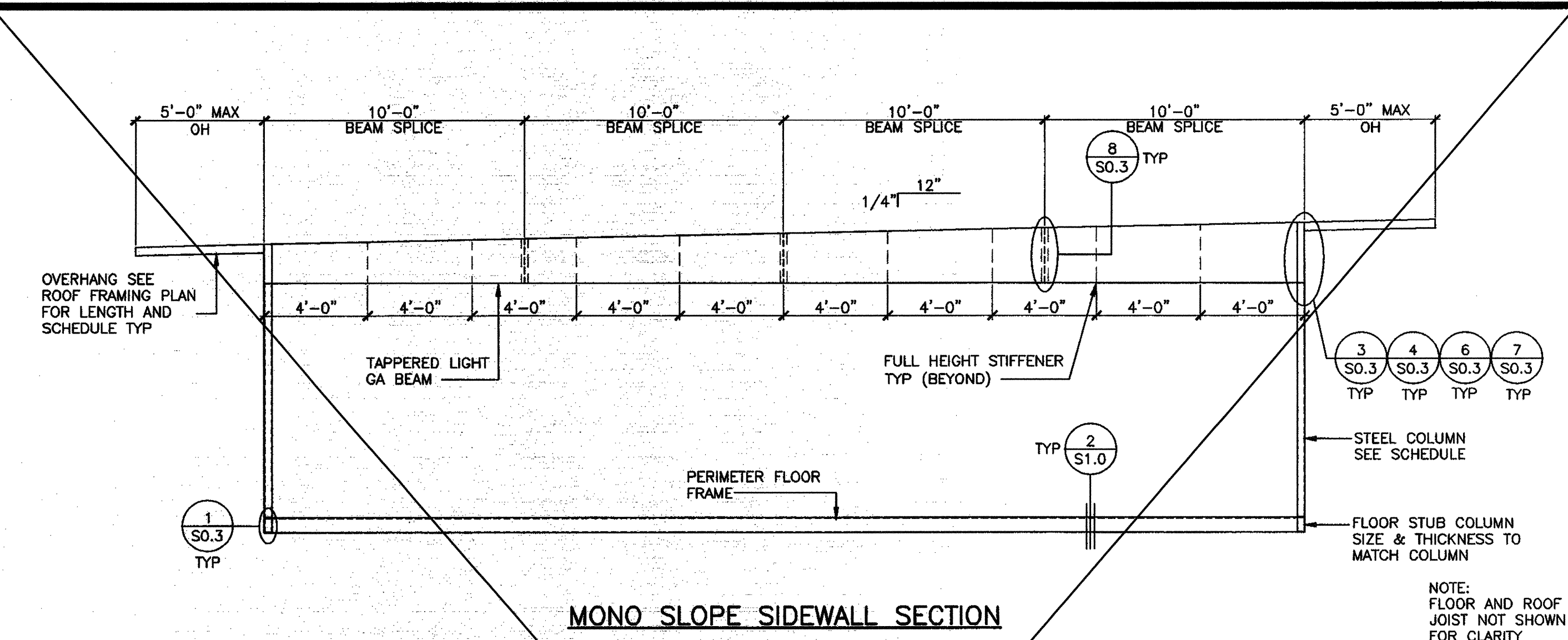
REVISIONS
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PROJECT NO.: 00000
 DRAWN BY: J. CHAN-LUGAY
 SCALE: AS NOTED
 DATE: 10-03-16
 SHEET NUMBER

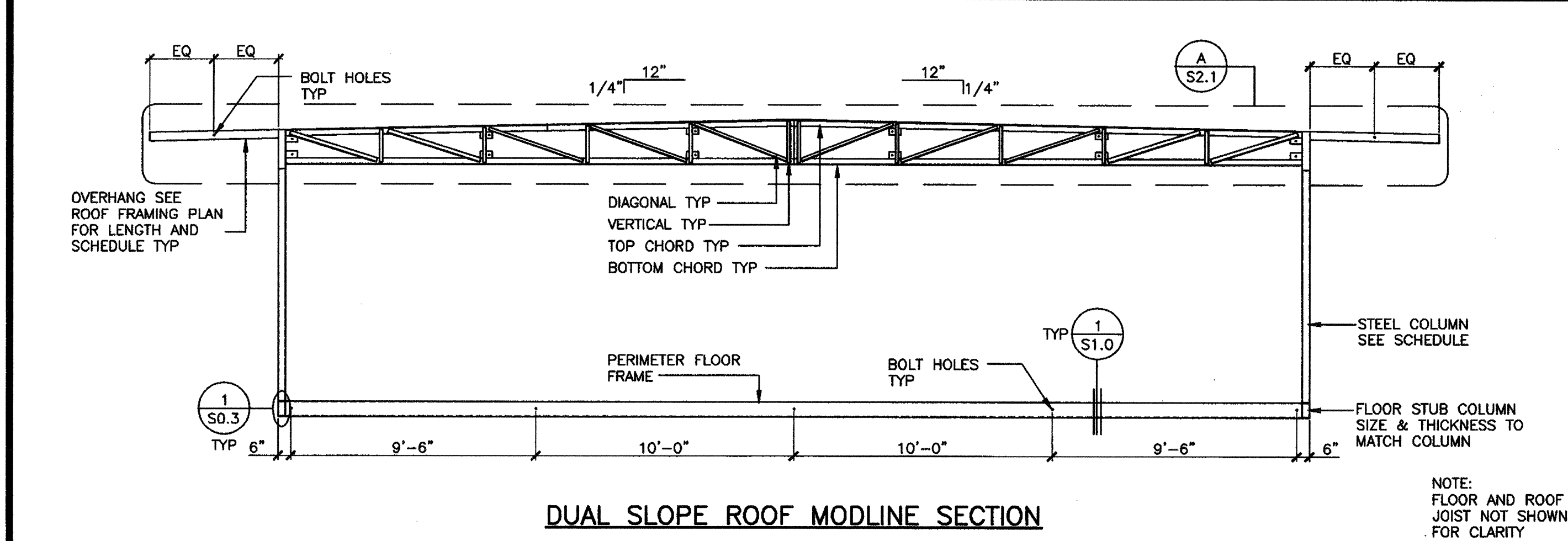
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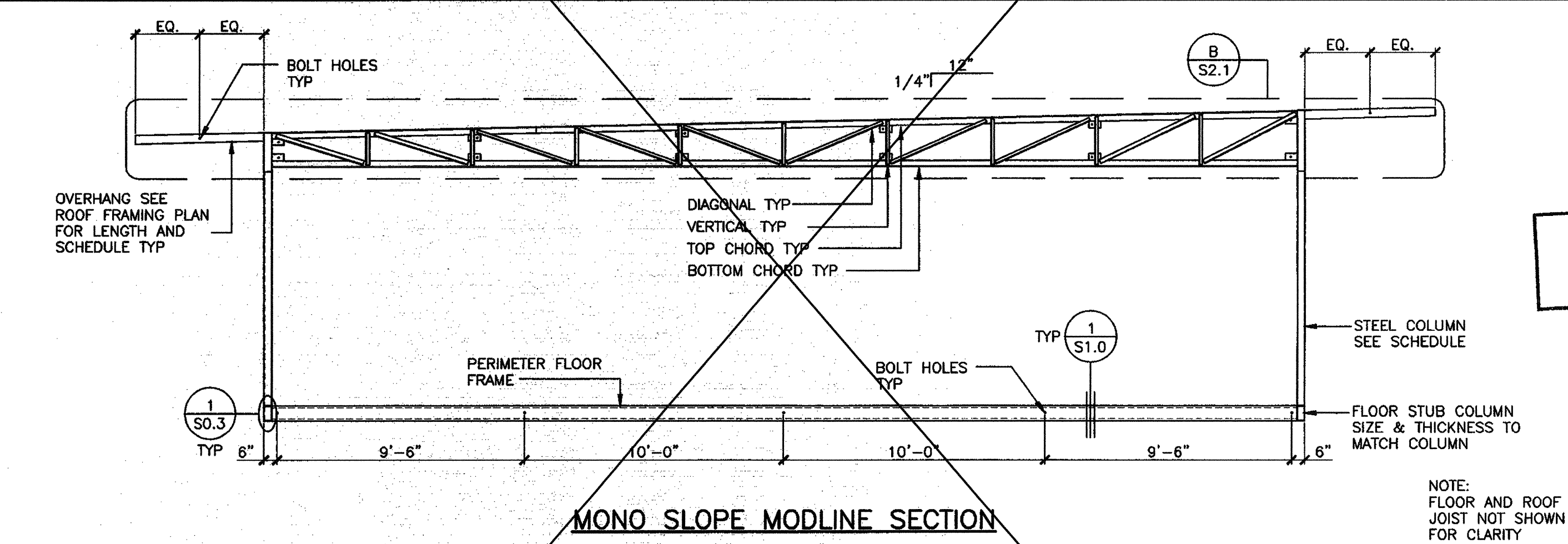
DUAL SLOPE SIDEWALL SECTION



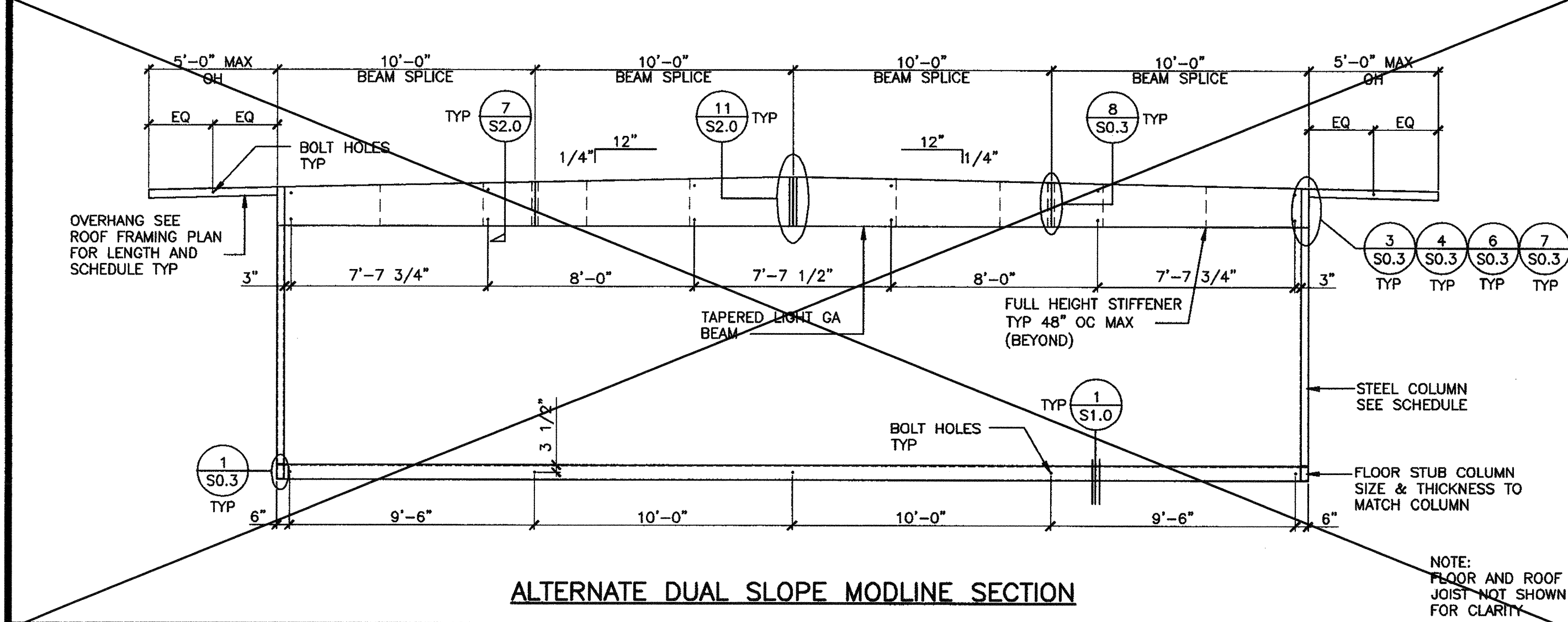
MONO SLOPE SIDEWALL SECTION



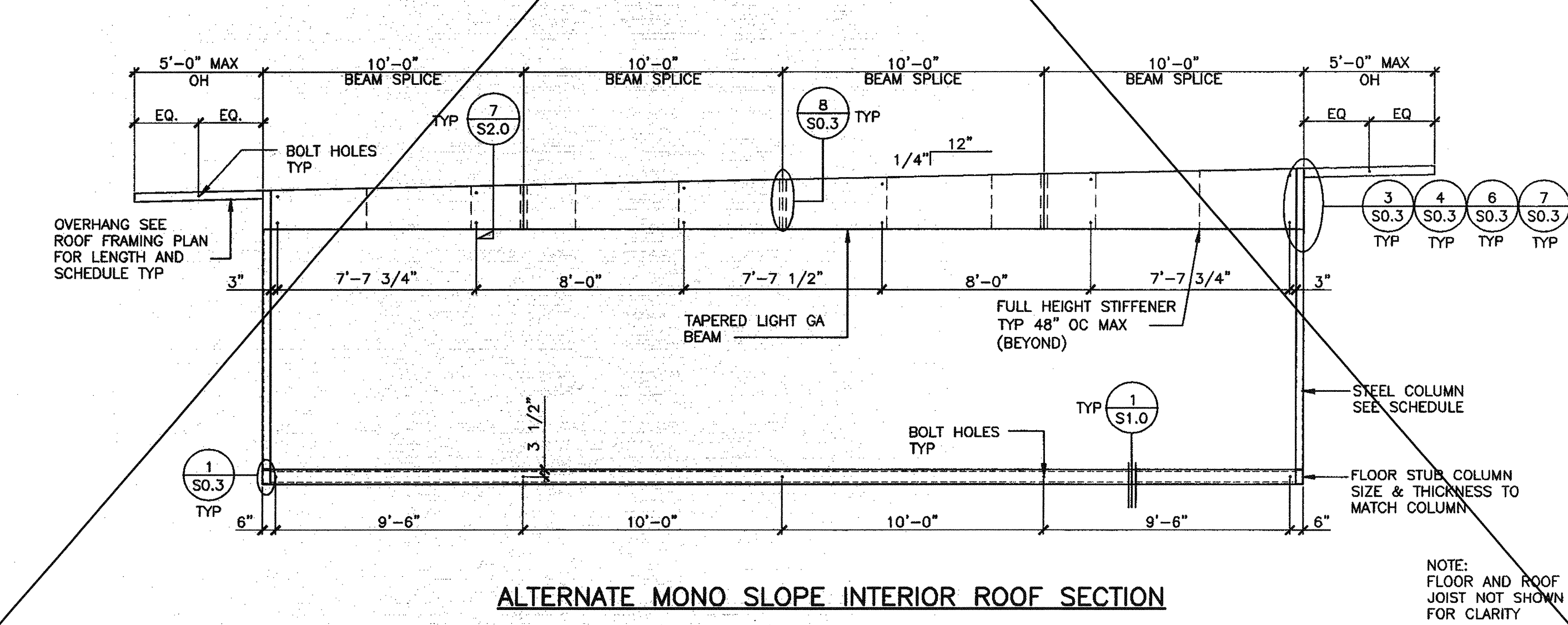
DUAL SLOPE ROOF MODLINE SECTION



MONO SLOPE MODLINE SECTION



ALTERNATE DUAL SLOPE MODLINE SECTION



ALTERNATE MONO SLOPE INTERIOR ROOF SECTION

STEEL COLUMNS

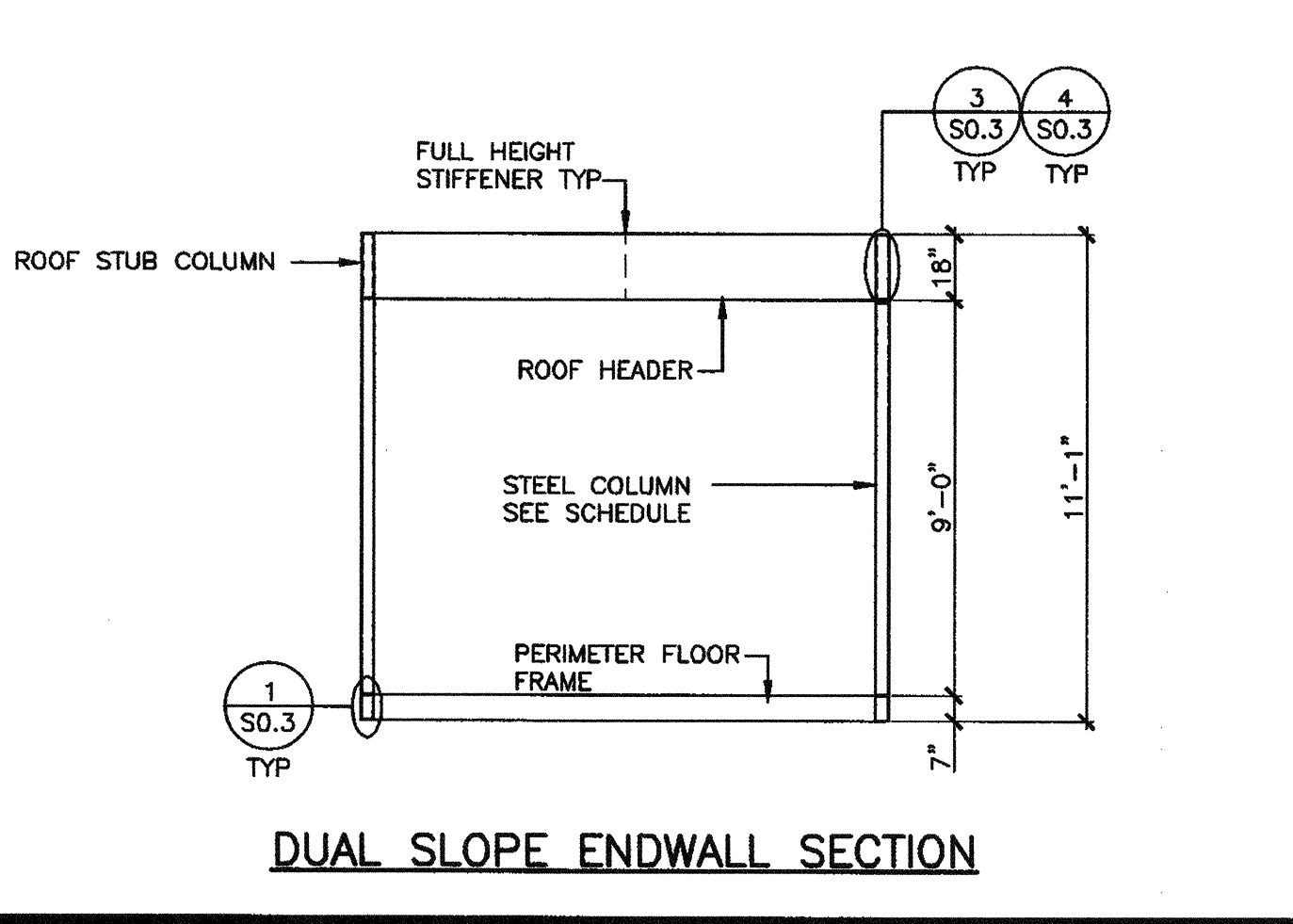
CORNER COLUMNS: 4"x4"x1/4"

MIDSPAN COLUMN @ SIDEWALL: N/A

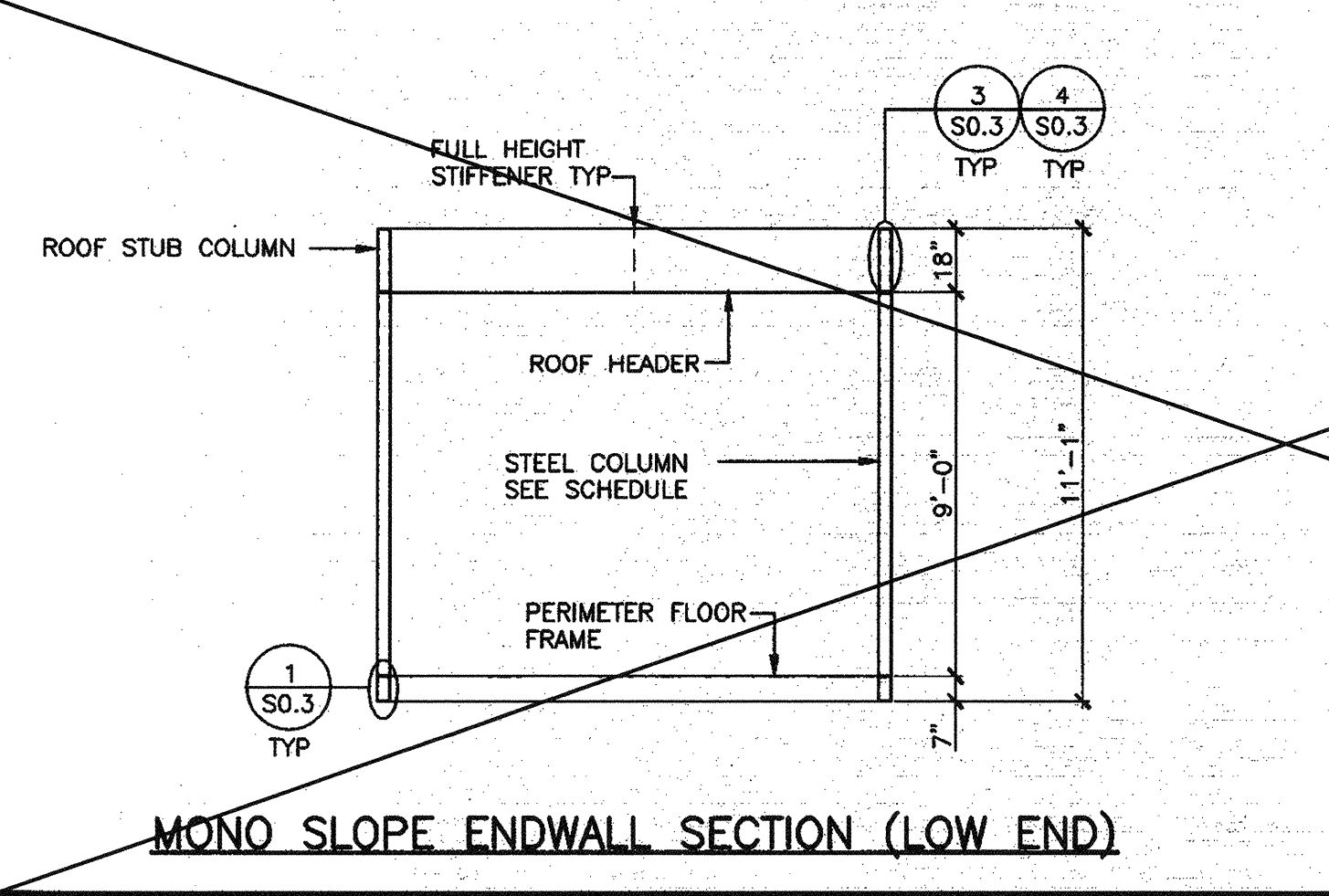
REFERENCE: FRAME SECTION SHEETS

NOTE: (NOTE: THE STEEL POST HEIGHT IS FROM TOP OF FLOOR DM TO TOP OF SIDEWALL BEAM/HEADER)

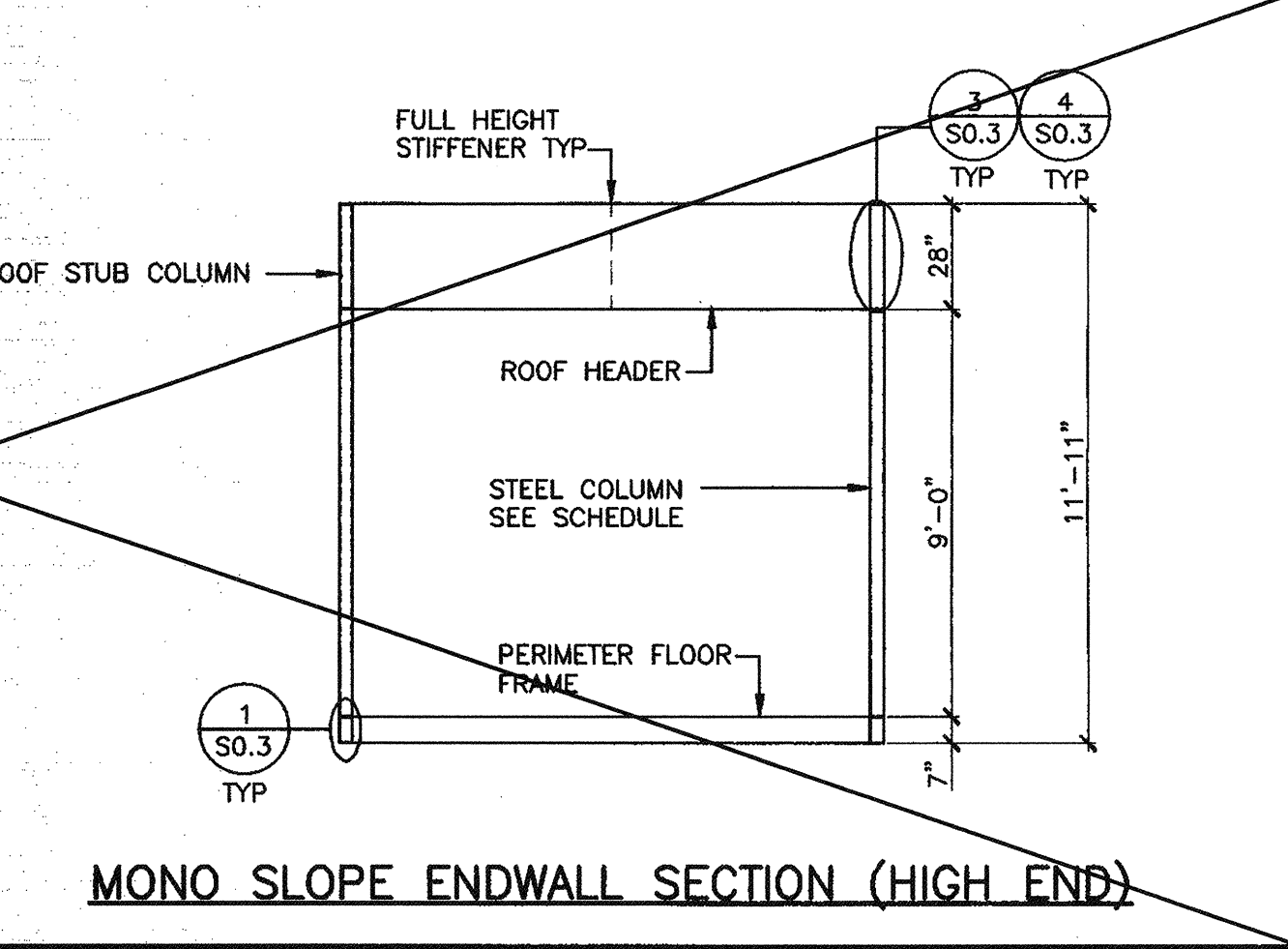
COLUMN SCHEDULE



DUAL SLOPE ENDWALL SECTION



MONO SLOPE ENDWALL SECTION (LOW END)



MONO SLOPE ENDWALL SECTION (HIGH END)

IMPACT CONSTRUCTION SERVICES INC.
 CONTRACTORS LICENSE #245691

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PROJECT NAME:
**BELLFLOWER USD
 MAYFAIR HS**

SHEET TITLE:
**BUILDING SECTIONS
 PLYWOOD FLOOR**

MFR. STRUCTURAL ENGINEER OF RECORD ON PC

DATE SIGNED: 07/2017

MFR. PROJECT SPECIFIC PROFESSIONAL OF RECORD

ARCHITECT OF RECORD

PROJECT SPECIFIC STATE AGENCY APPROVAL

IDENTIFICATION STAMP
 DIV. OF THE STATE ARCHITECT
 No. 03-117957
 AC: FLS/SS/TN
 Date: MAR 21 2017

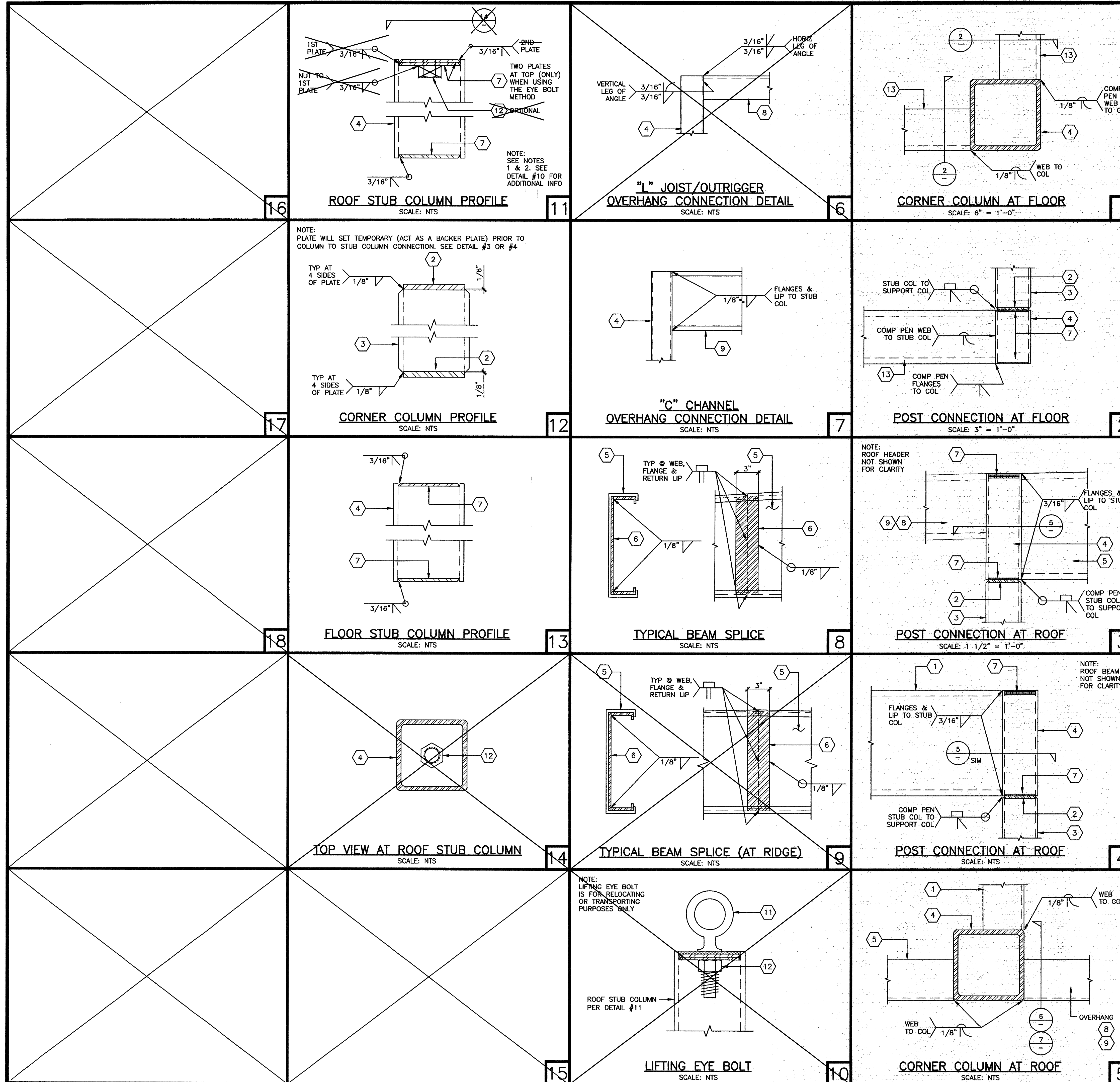
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 A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED

IDENTIFICATION STAMP
 DIV. OF THE STATE ARCHITECT
 PC 02-114405
 FILE # PC-80
 AC: FLS/SS/TN
 Date: JAN 11 2017

REVISIONS

PROJECT NO.: 00000
 DRAWN BY: J. CHAN-LUGAY
 SCALE: AS NOTED
 DATE: 10-03-16
 SHEET NUMBER

S0.1



KEY NOTES

1. ROOF HEADER/BEAM (SEE STRUCTURAL ROOF FRAMING PLAN)
2. 3/8" PLATE FITTED INSIDE COLUMN AND WELD IN PLACE
3. COLUMN (SEE DETAIL #12)
4. STUB COLUMN, SAME SIZE AND THICKNESS AS COLUMN SEE DETAIL #11 (FOR ROOF) AND DETAIL #13 (FLOOR)
5. TAPERED ROOF BEAM (SEE STRUCTURAL ROOF FRAMING PLAN)
6. 10 GA BACK-UP PLATE FOR BEAM SPLICE
7. 3/8" PLATE FITTED INSIDE COLUMN AND WELDED IN PLACE
8. OVERHANG ANGLE MEMBER (SEE DETAIL 6)
9. OVERHANG C-CHANNEL MEMBER (SEE DETAIL 7)
10. 1/4" FULL DEPTH STIFFENER INSIDE SPLICE LOCATIONS AT ROOF BEAM
11. 1" LIFTING EYE BOLT
12. LIFTING EYE BOLT NUT
13. FLOOR BEAM (SEE STRUCTURAL FLOOR FRAMING PLAN)

GENERAL NOTES

1. DRILL HOLES AT PLATES FOR THE LIFTING EYE BOLT SCREW
2. INSTALL LIFTING EYE BOLT NUT TO 1ST PLATES PRIOR TO INSTALLING THE PLATE INSIDE THE COLUMN

IMPACT CONSTRUCTION SERVICES INC.
CONTRACTORS LICENSE #945691

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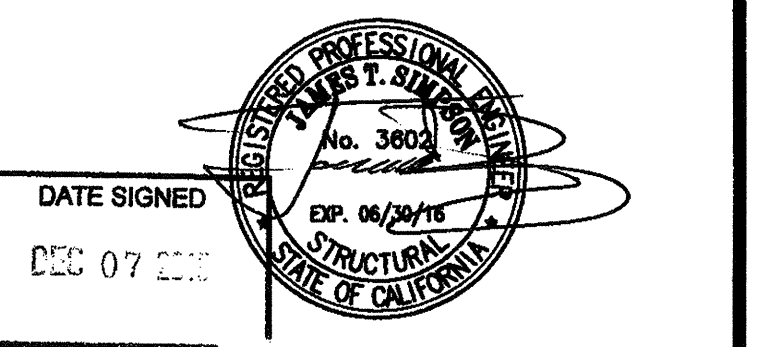
PROJECT NAME:

BELLFLOWER USD
MAYFAIR HS

SHEET TITLE:

TYPICAL STRUCTURAL DETAILS

MFR. STRUCTURAL ENGINEER OF RECORD ON PC



DATE SIGNED
DEC 07 2017

MFR. PROJECT SPECIFIC PROFESSIONAL OF RECORD

ARCHITECT OF RECORD

PROJECT SPECIFIC STATE AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
03-117957
AC: PCS ✓ SS ✓ TN ✓
Date: MAR 21 2017

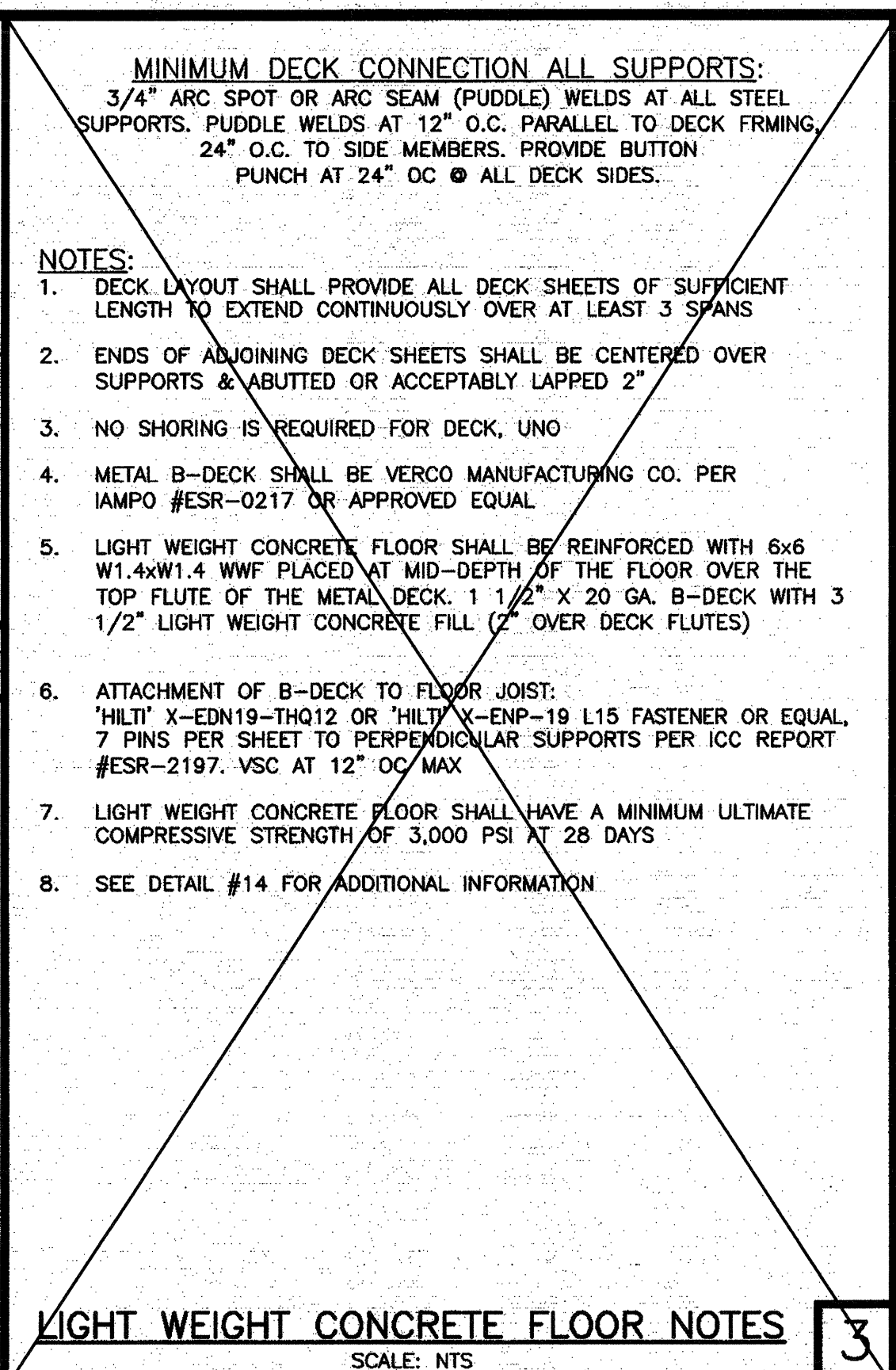
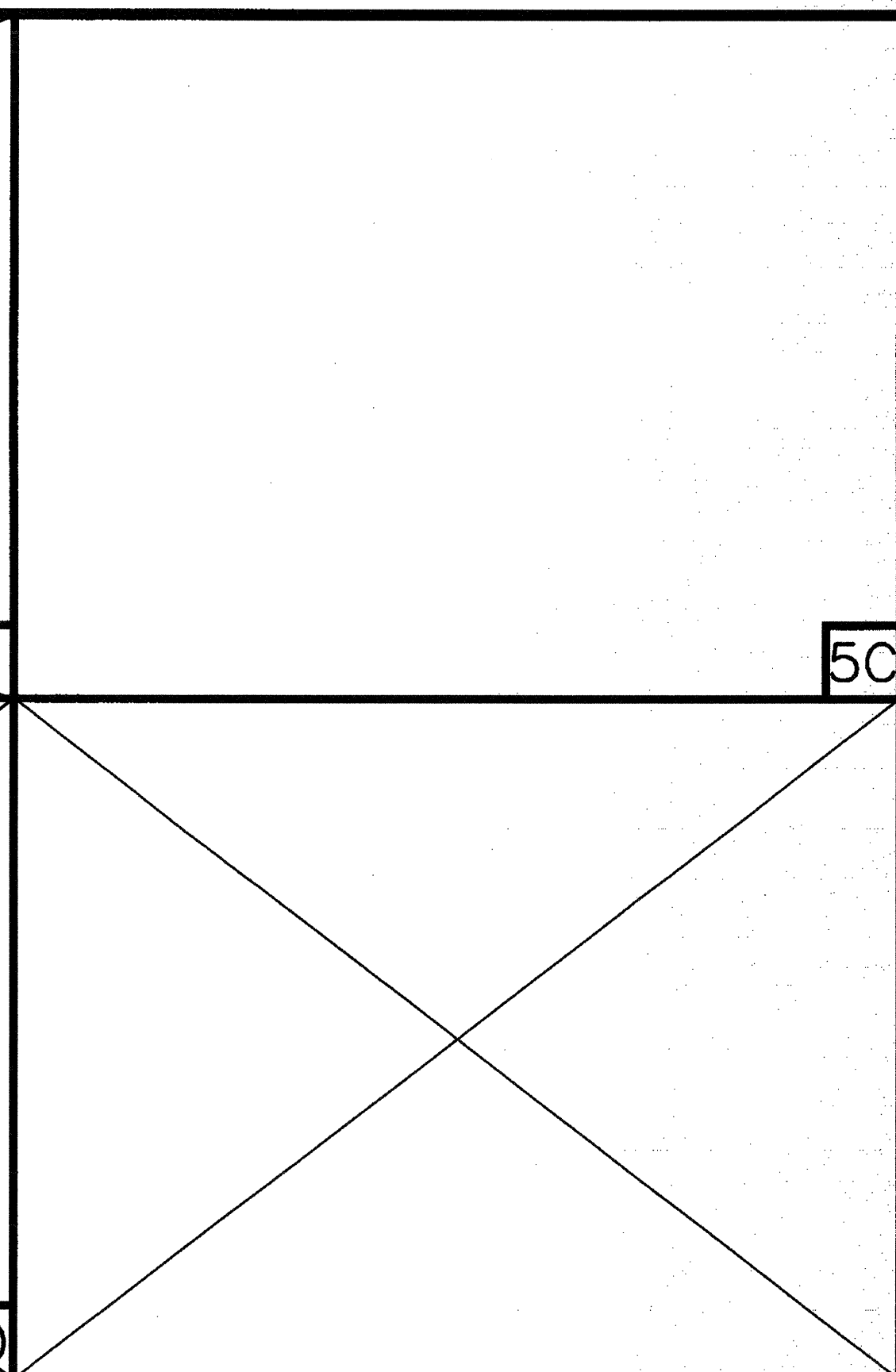
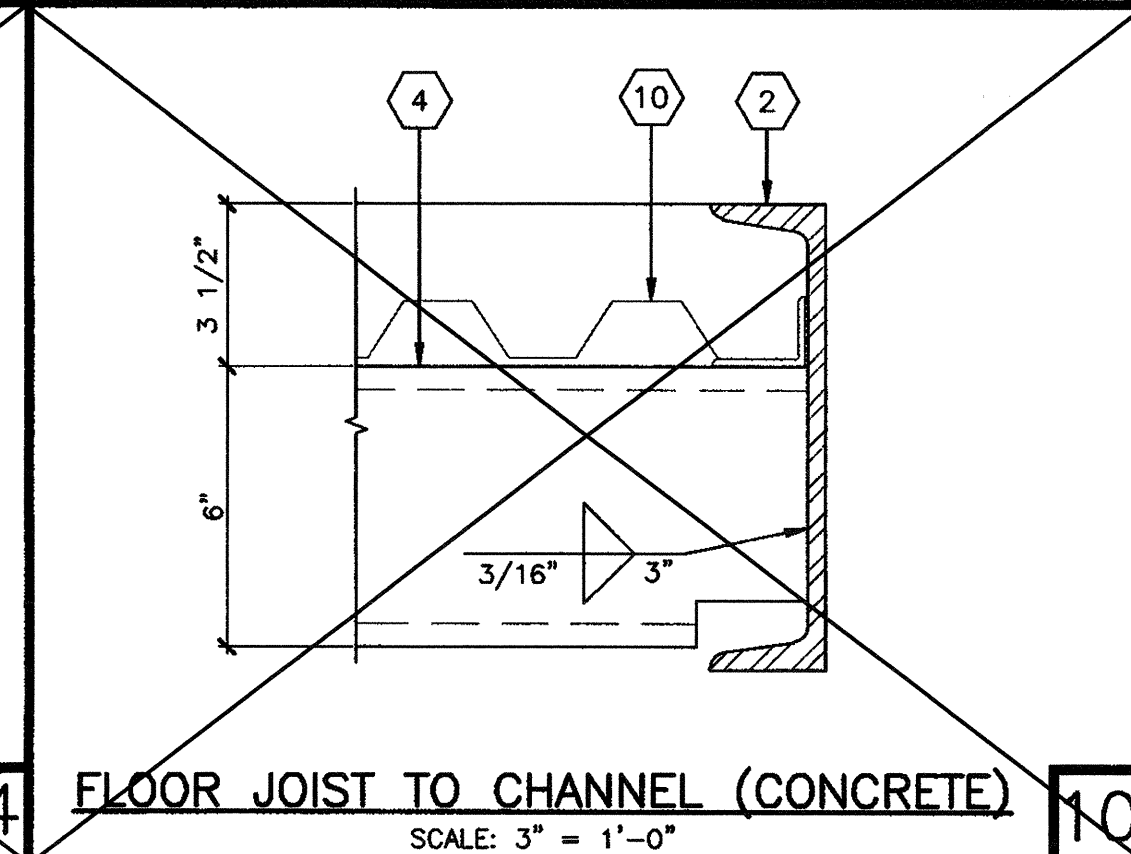
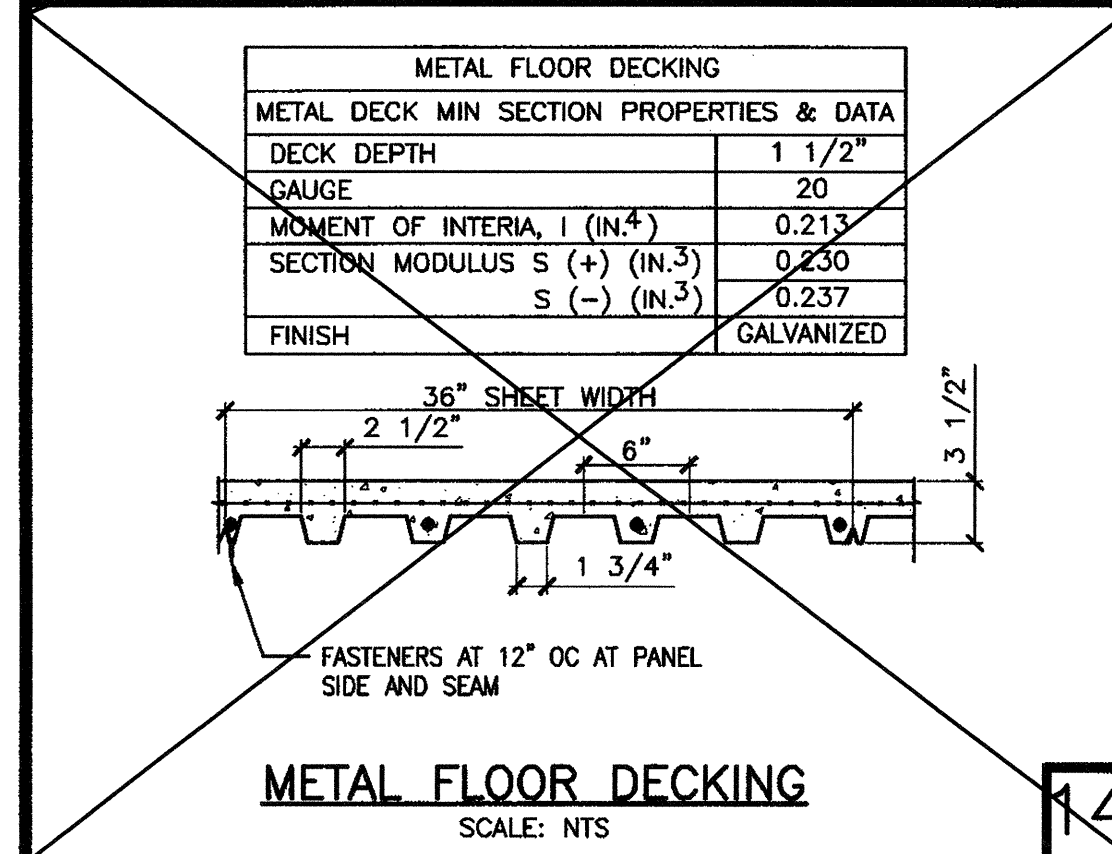
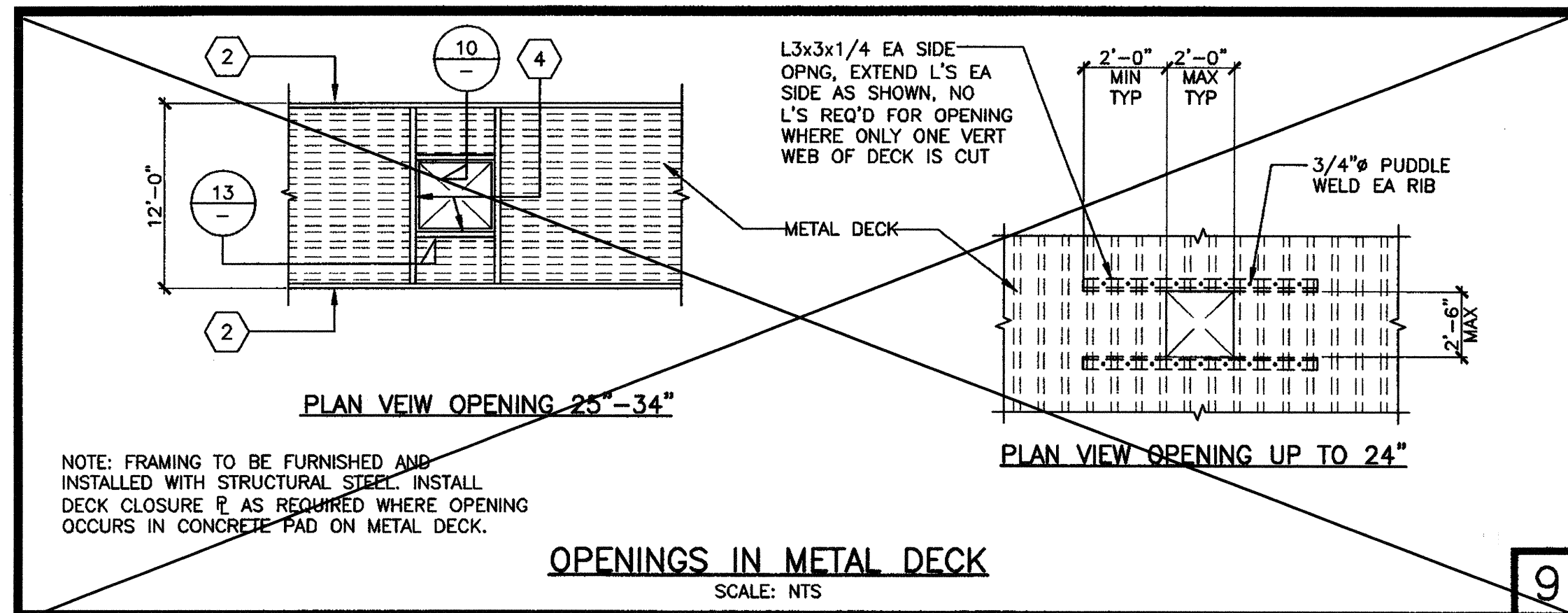
PRE-CHECK (PC) DOCUMENT
CODE: 2013 CBC
A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS
REQUIRED

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
PC 02-114405
FILE #: PC-80
AC: FLS ✓ SS ✓
DATE: JAN 11 2016

REVISIONS

PROJECT NO.: 00000
DRAWN BY: J. CHAN-LUGAY
SCALE: AS NOTED
DATE: 10-03-16

SHEET NUMBER
S0.3



- KEY NOTES**
- PLYWOOD FLOOR SHEATHING
 - PERIMETER CHANNEL (SEE STRUCTURAL FLOOR FRAMING PLANS)
 - NOT USED
 - FLOOR JOIST AND/OR BLOCK (SEE STRUCTURAL FLOOR FRAMING PLANS)
 - 5/8" MACHINE BOLT
 - NOT USED
 - NOT USED
 - 4"x6"x1/4" PLATE AT 7" CHANNEL SPLICE. 4"x6"x1/4" PLATE AT 10" CHANNEL SPLICE
 - 6"x3"x1/4" ANCHOR PLATE-DRILL (2) HOLES AS SHOWN
 - METAL DECK FLOOR (SEE DETAIL 14)
 - NOT USED
 - MINIMUM 2"x2"x1/4" THICK PLATE. PLATE QUANTITY TO BE FIELD VERIFY
 - 2"x2"x1/4" SELF ANGLE SUPPORT
 - NOT USED
 - 1/2" MACHINE BOLT WITH NUT, TYP OF 2
 - INSULATION ON "SEAL TITE" TYPE HW POLYMAX UNDERBELLY OR EQUAL WITH BI-DIRECTIONAL POLYESTER FIBERS
 - BOTTOM BOARD

IMPACT CONSTRUCTION SERVICES INC.
CONTRACTORS LICENSE #445691

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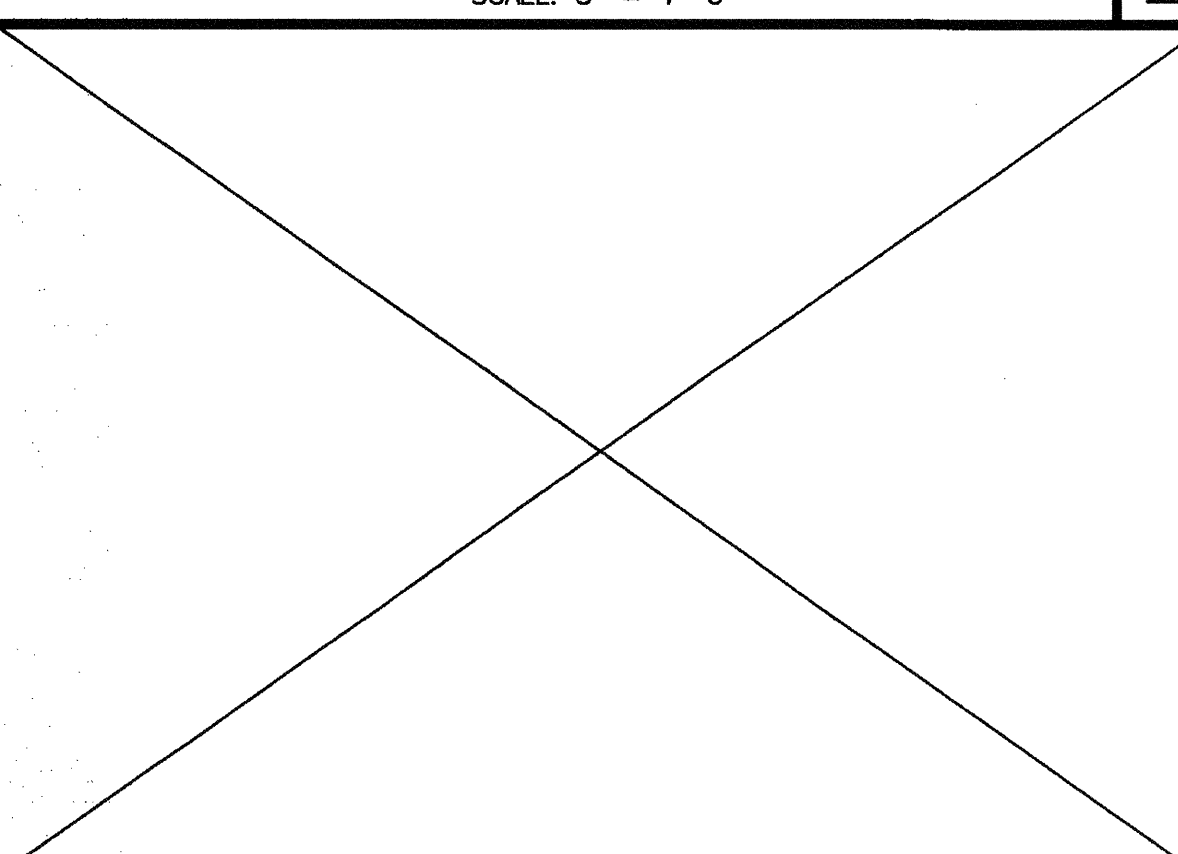
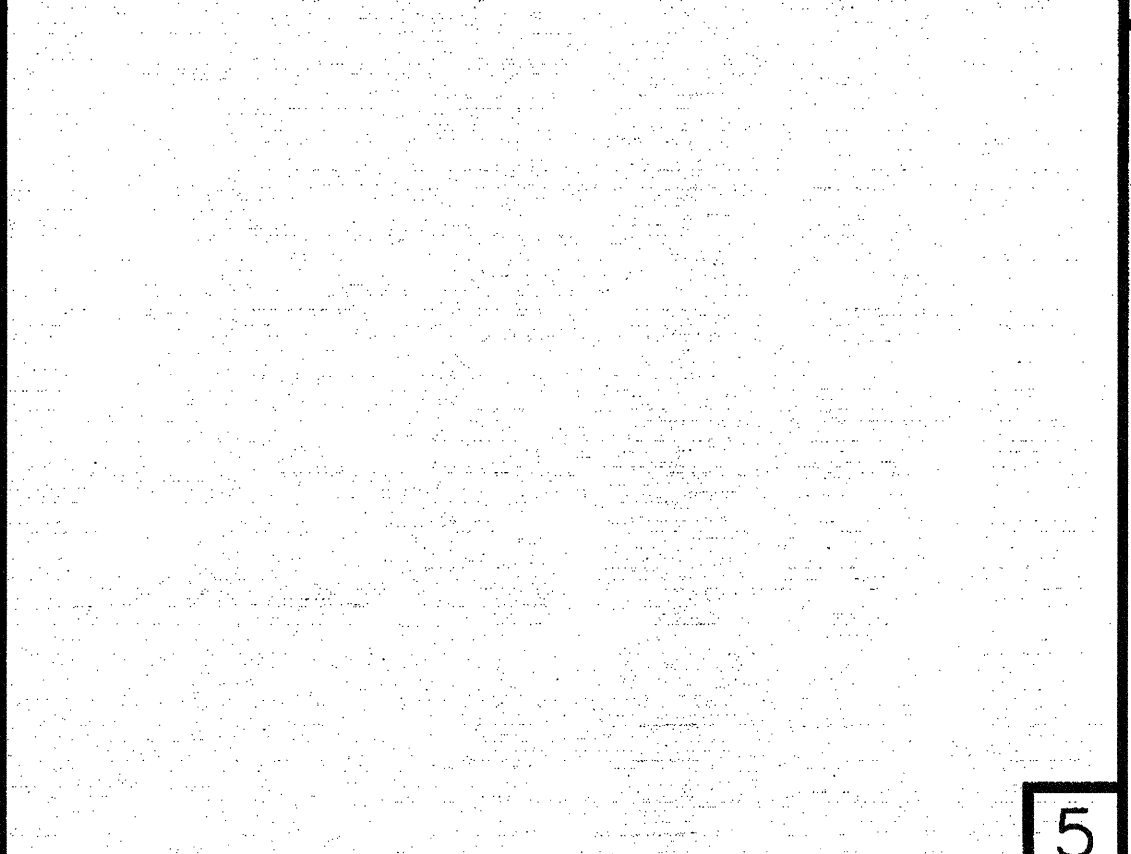
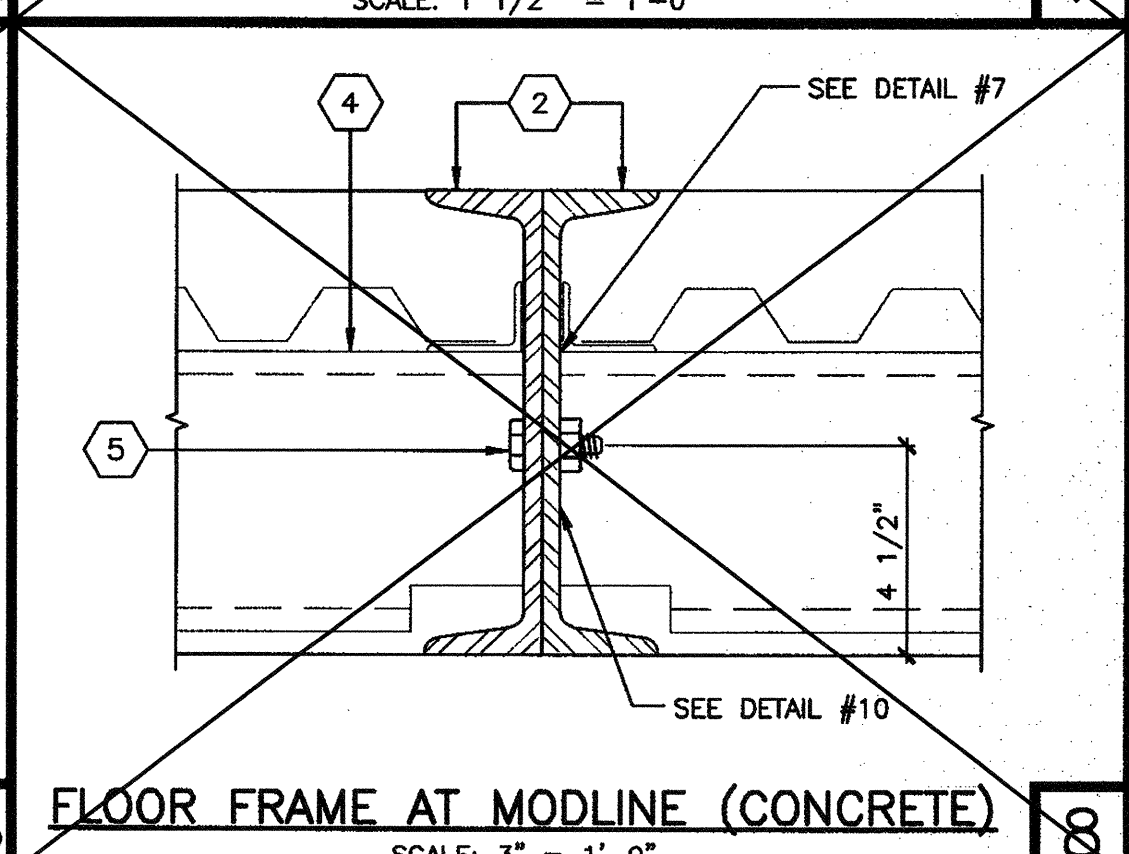
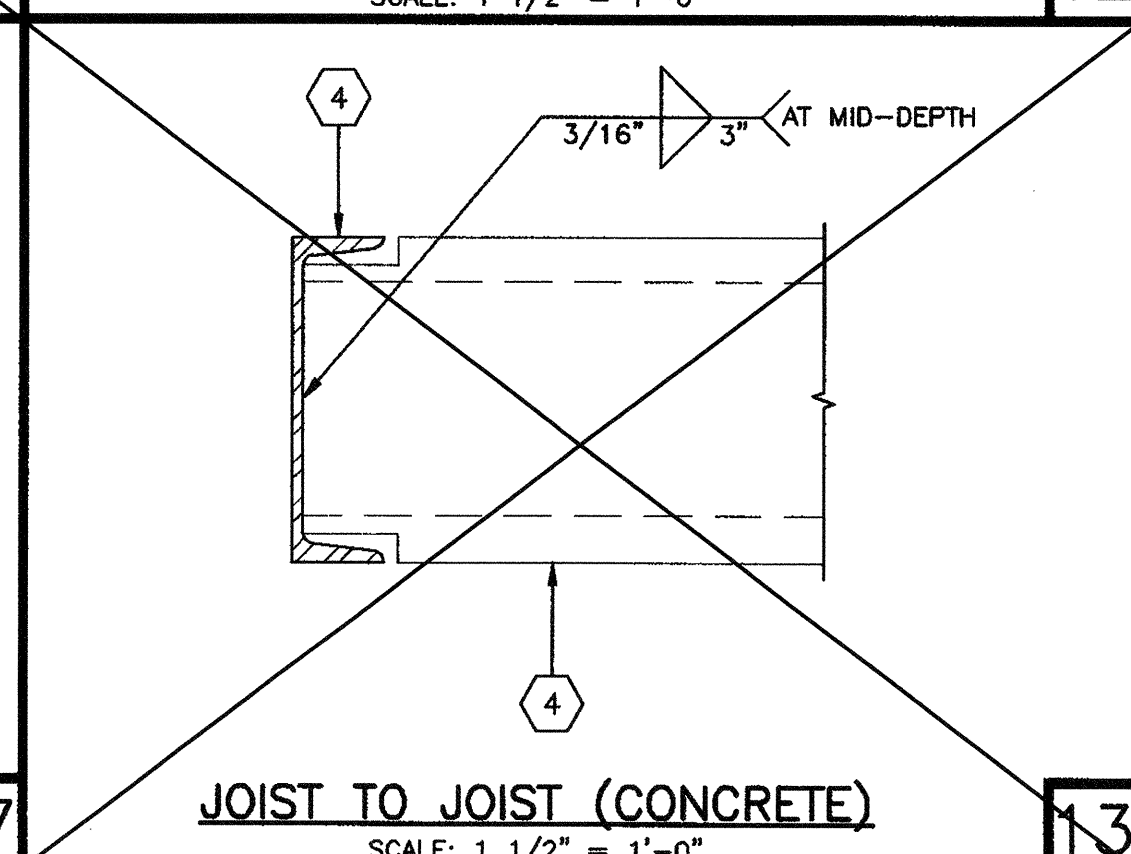
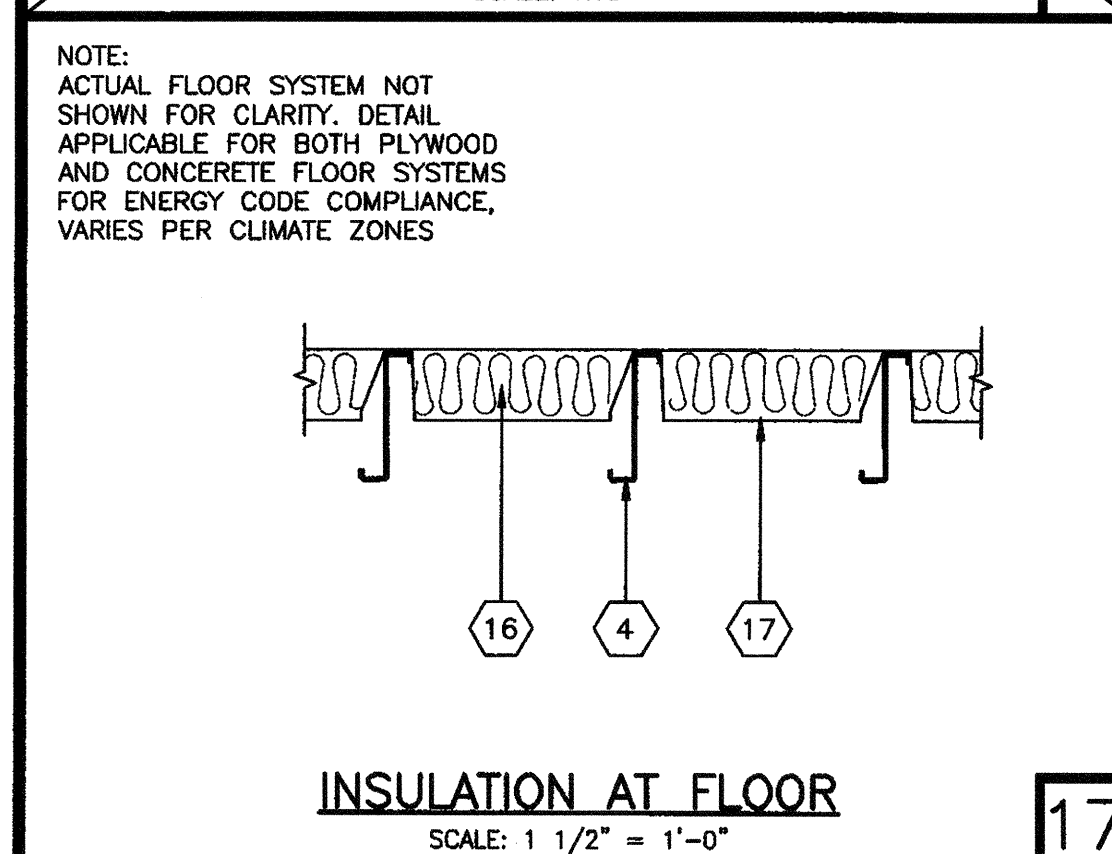
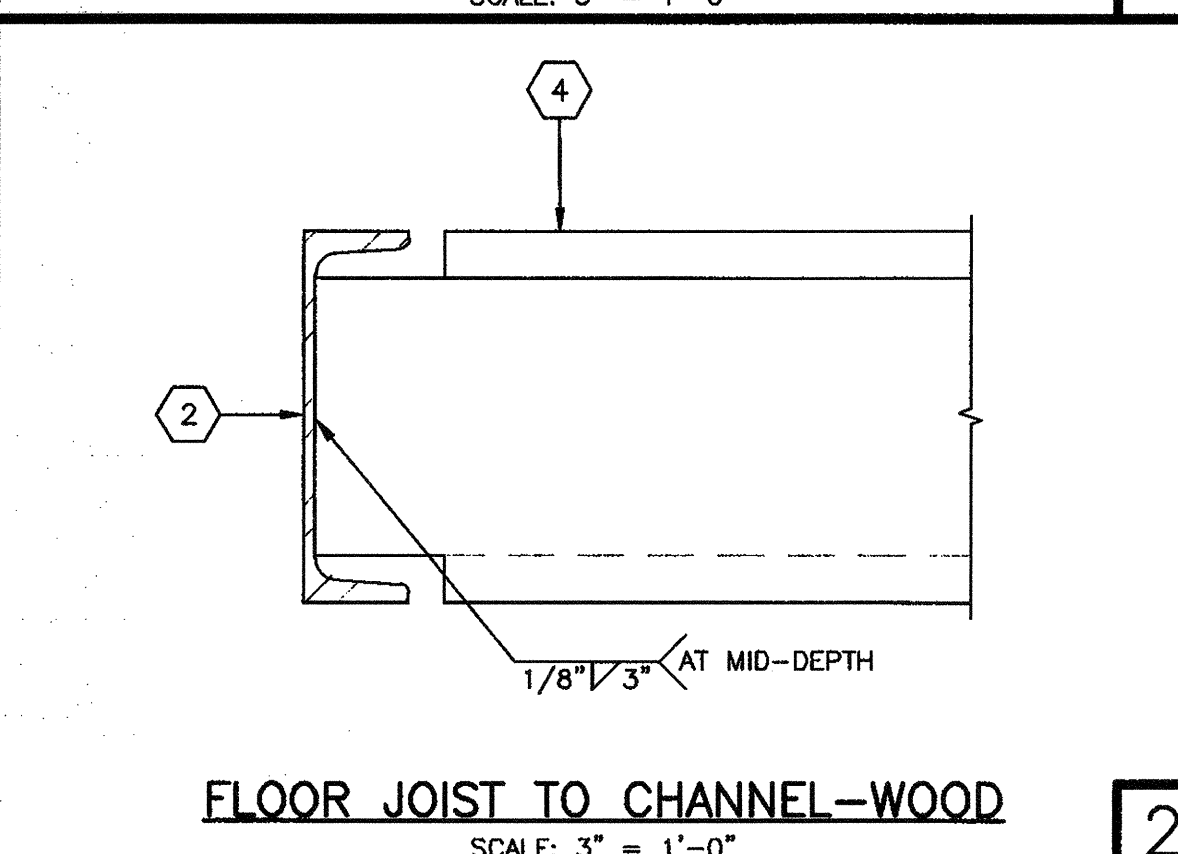
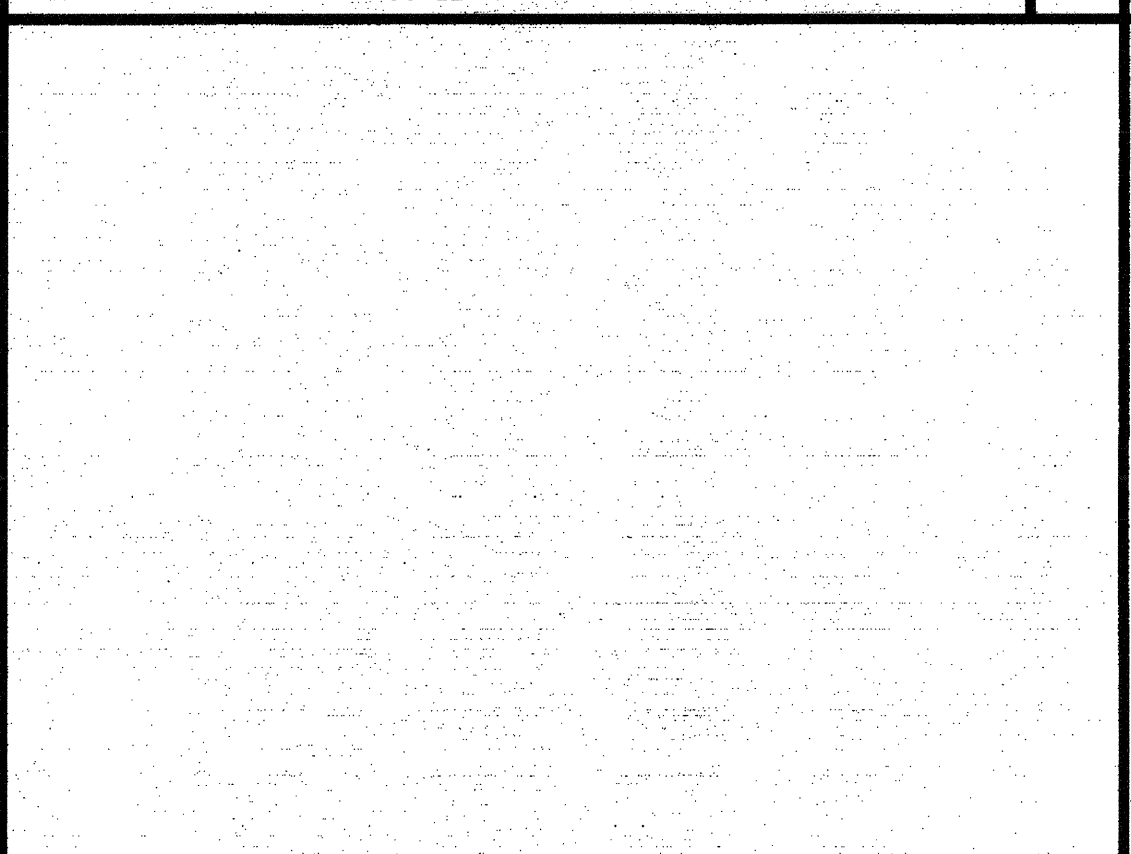
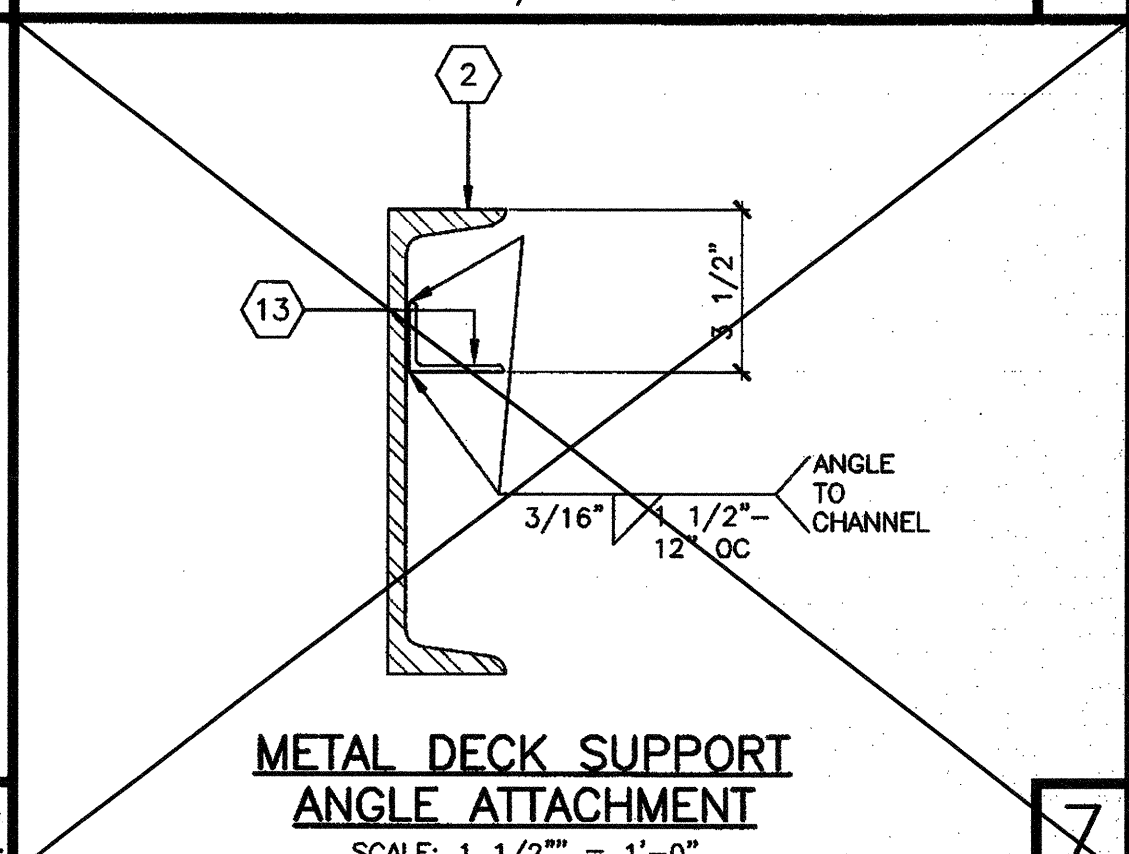
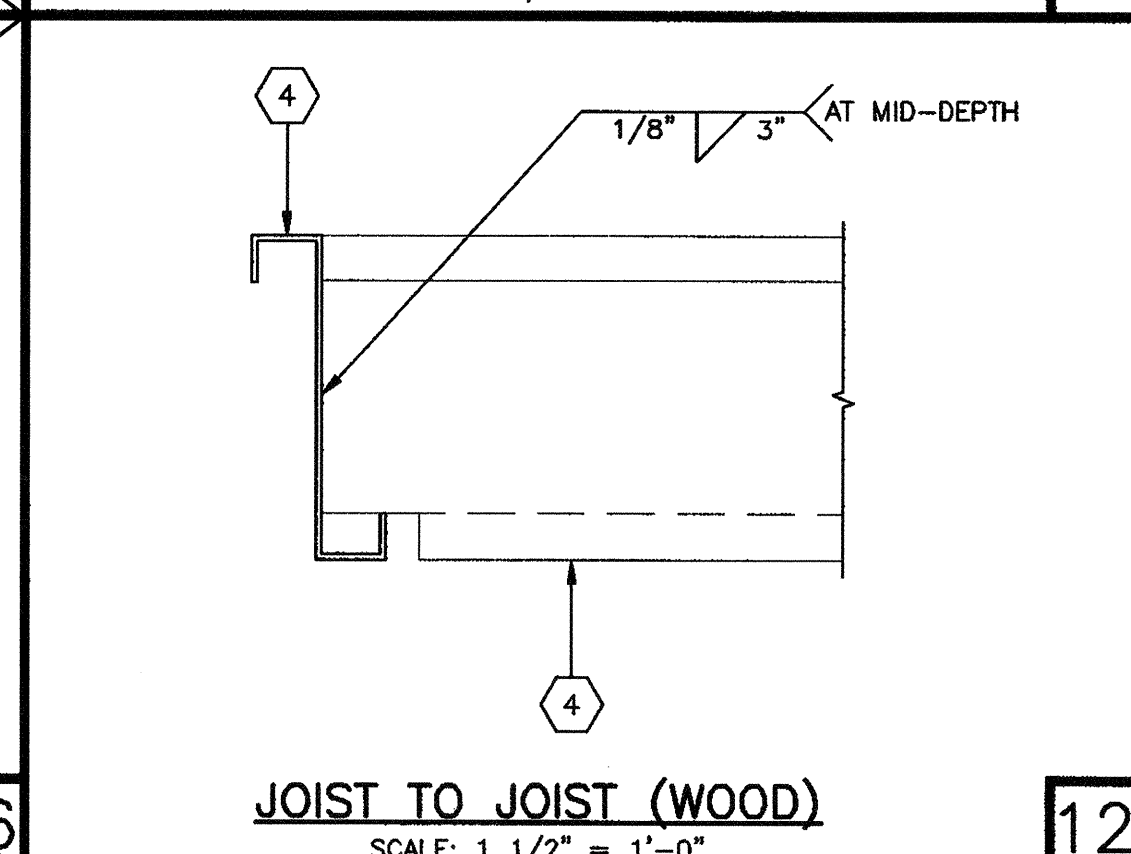
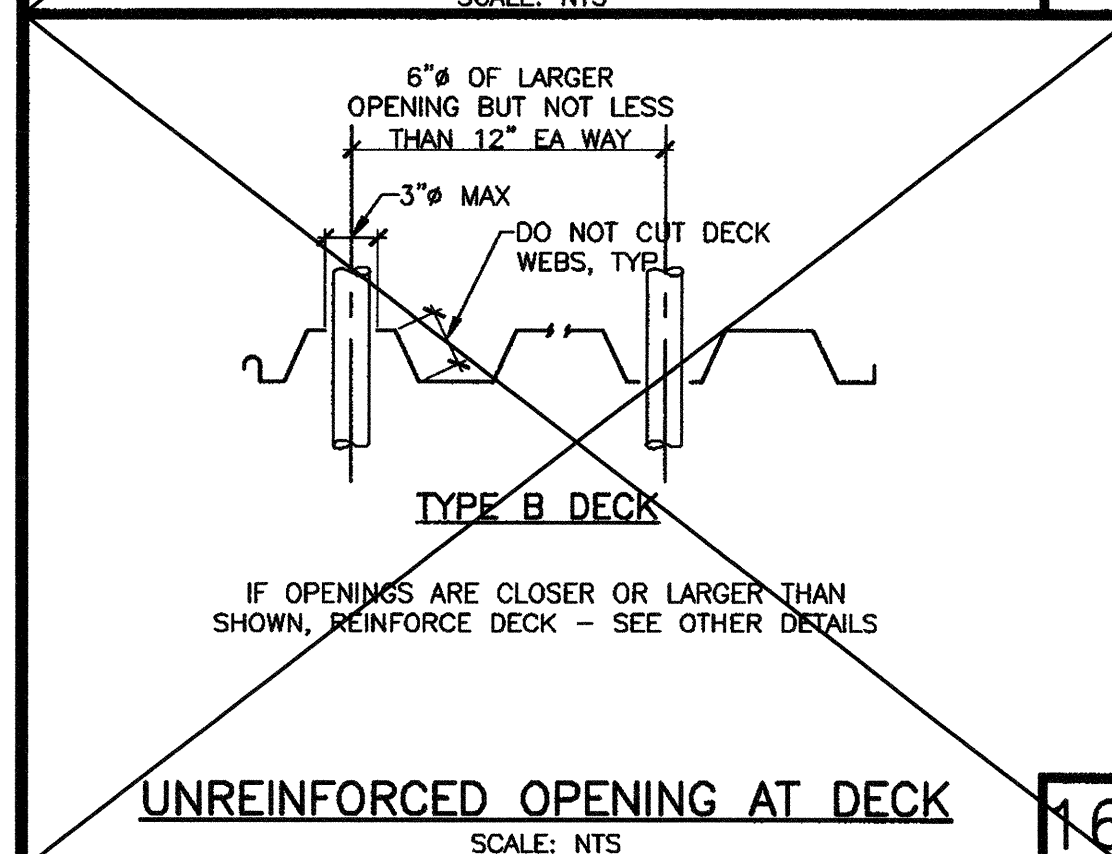
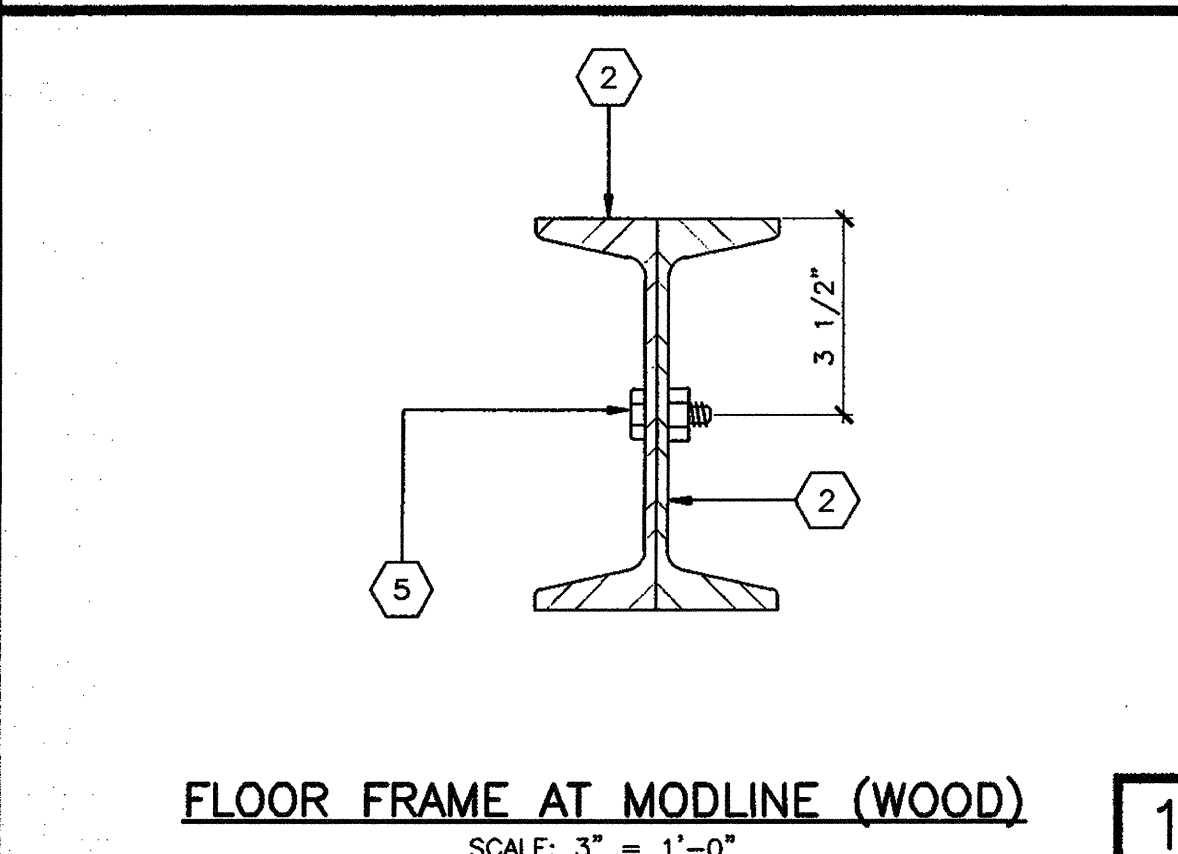
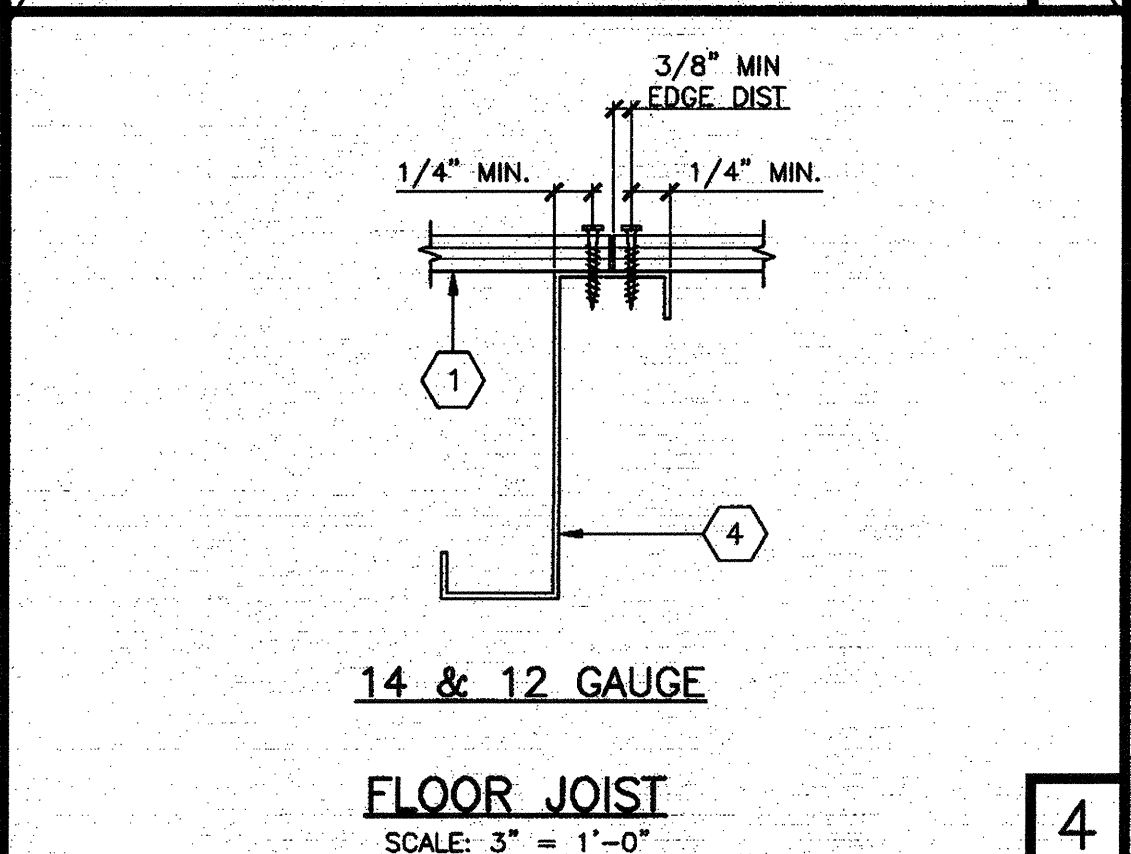
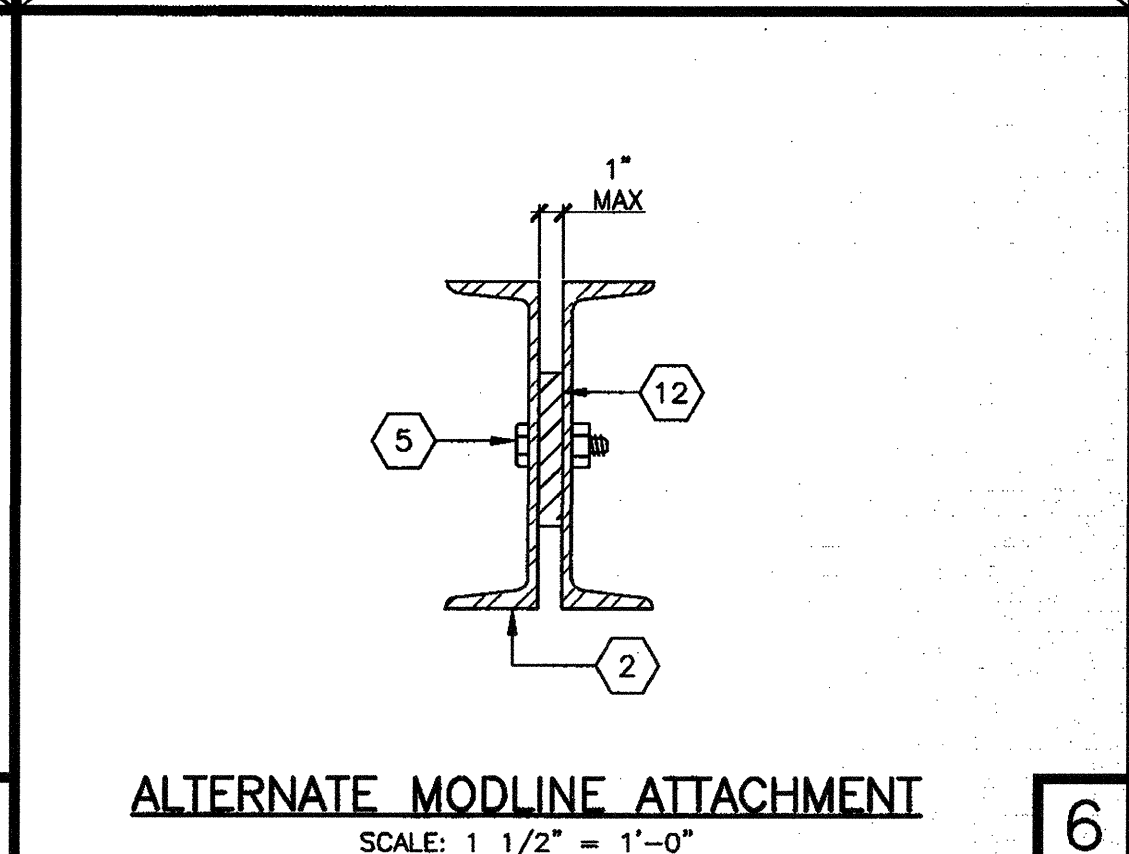
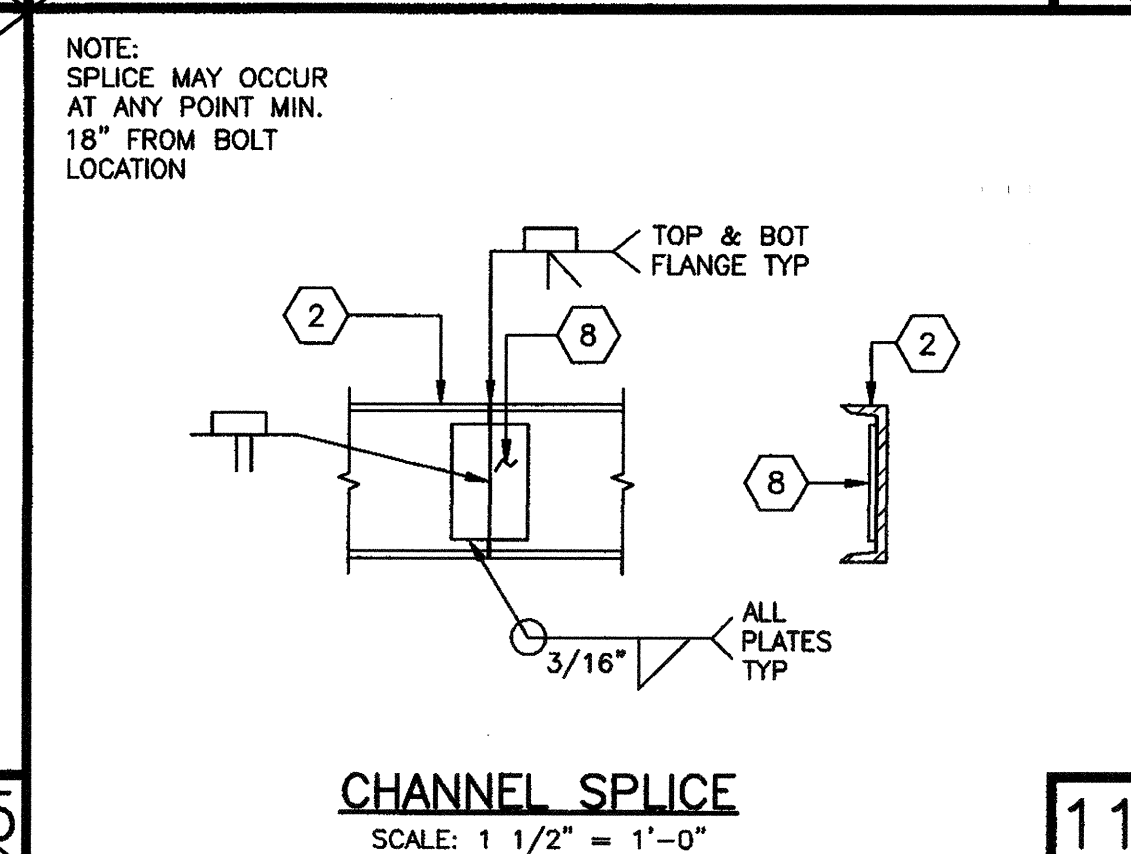
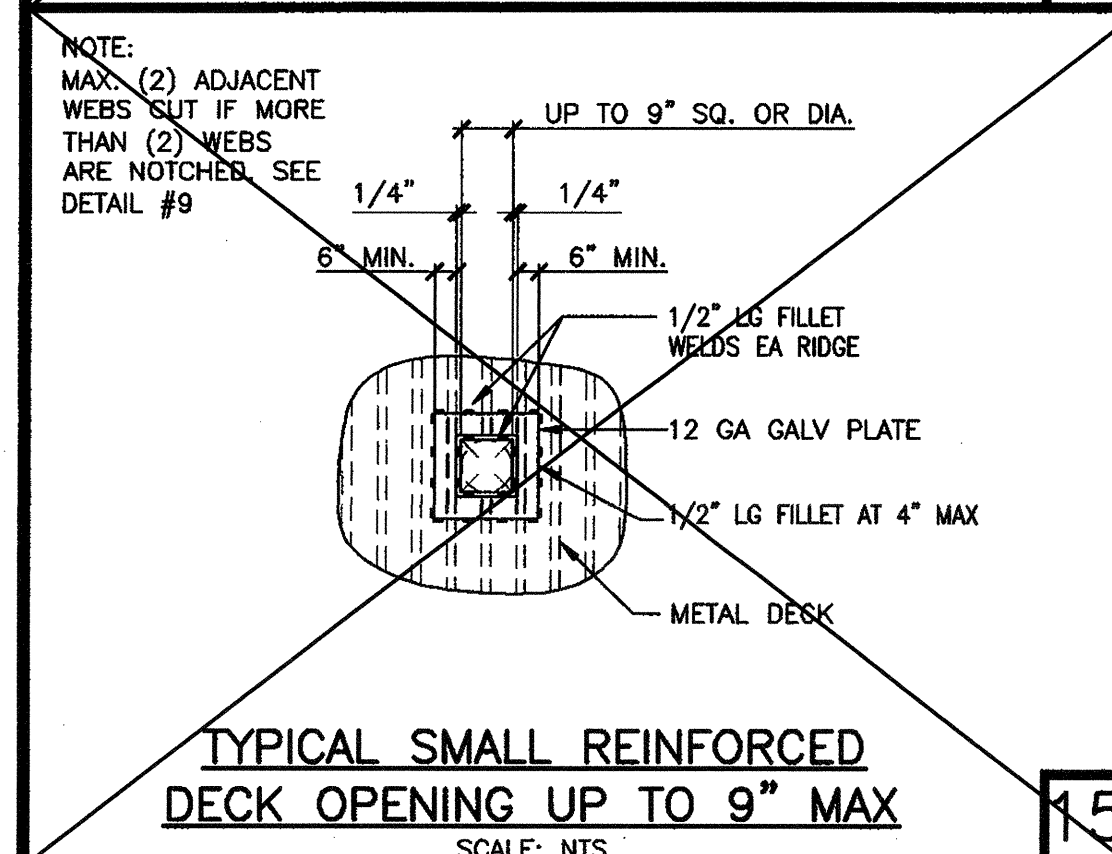
PROJECT NAME:
**BELLFLOWER USD
MAYFAIR HS**

SHEET TITLE:
**FLOOR FRAMING DETAILS
PLYWOOD & CONCRETE**

MFR. STRUCTURAL ENGINEER OF RECORD ON PC

DATE SIGNED
DEC 22 2015

MFR. PROJECT SPECIFIC PROFESSIONAL OF RECORD



ARCHITECT OF RECORD

PROJECT SPECIFIC STATE AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
03-117957
AC: PLS V SS TN
Date: JMR 2.1.2017

PRE-CHECK (PC) DOCUMENT
CODE: 2013 CBC
A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
PC 02-114405
FILE #: PC-00
AC: PLS V SS TN
DATE: JAN 11 2016

REVISIONS

PROJECT NO.: 00000

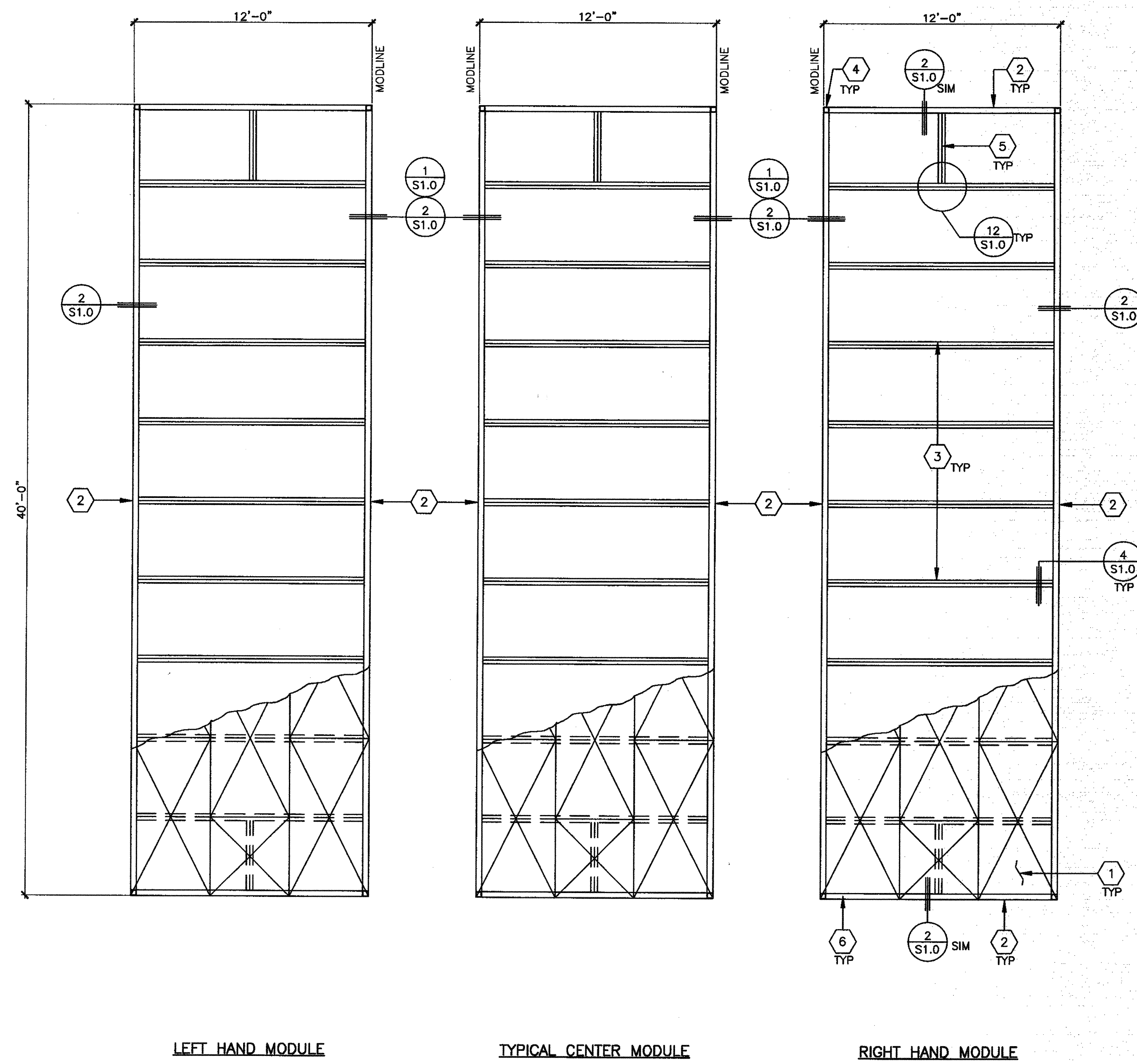
DRAWN BY: J. CHAN-LUGAY

SCALE: AS NOTED

DATE: 10-03-16

SHEET NUMBER

S1.0



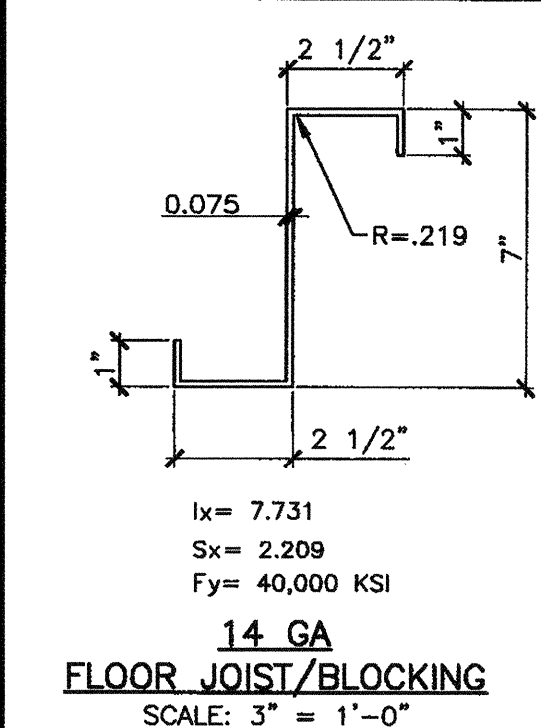
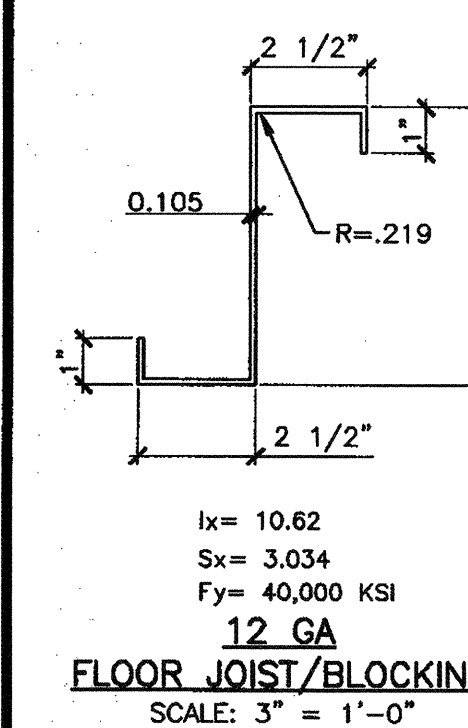
FLOOR FRAMING PLAN
SCALE: 1/4" = 1'-0"

KEY NOTES

- PLYWOOD FLOOR SHEATHING: 1 1/8" APA RATED OR EQUAL PS 1-07 T&G EDGES, 48" SPAN RATING; ATTACH TO STEEL FRAMING WITH MIN #10-24x1 3/4" SELF TAP SCREW @ 6" OC BOUNDARY & EDGES AND 12" OC FIELD PROVIDE FIELD NAILING @ 6" OC WHERE FLOOR JOISTS ARE AT 48" OC. MIN 24" SHEET DIMENSION
- C-7" x 9.8 LB PERIMETER FRAME
- FLOOR JOIST MEMBER (FLOOR JOIST ARE SHOWN AT 48" OC AS AN EXAMPLE ONLY SEE SCHEDULE BELOW FOR SPACING)
- STEEL STUB COLUMN
- JOIST BLOCK MEMBER AT 1ST BAY (SAME MEMBER AS TYP FLOOR JOIST). SECURE PLYWOOD TO THIS MEMBER AT 6" OC MAX

STANDARD FLOOR JOIST SCHEDULE (14 GA)		
FLOOR LOAD	FLOOR JOIST	SPACING
50	Z 7x2 1/2x14 GA	32" OC
50+15	Z 7x2 1/2x14 GA	24" OC
100	Z 7x2 1/2x14 GA	16" OC
125	Z 7x2 1/2x14 GA	16" OC

ALTERNATE FLOOR JOIST SCHEDULE (12 GA)		
FLOOR LOAD	FLOOR JOIST	SPACING
50	Z 7x2 1/2x12 GA	16" OC
50+15	Z 7x2 1/2x12 GA	32" OC
100	Z 7x2 1/2x12 GA	24" OC
125	Z 7x2 1/2x12 GA	16" OC



IMPACT CONSTRUCTION SERVICES INC.
CONTRACTORS LICENSE #945661

NORTHERN CALIFORNIA DIVISION
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SOUTHERN CALIFORNIA DIVISION
1090 W. HARLEY KNOX BLVD.
PERRIS, CA 92571
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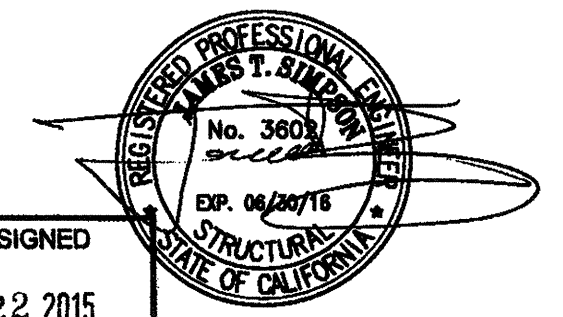
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PROJECT NAME:
**BELLFLOWER USD
MAYFAIR HS**

SHEET TITLE:
**FLOOR FRAMING PLAN
PLYWOOD**

MFR. STRUCTURAL ENGINEER OF RECORD ON PC



DATE SIGNED
DEC 22 2015

MFR. PROJECT SPECIFIC PROFESSIONAL OF RECORD

ARCHITECT OF RECORD

PROJECT SPECIFIC STATE AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
11 03 117957
AC FLS SS NY
DATE: MAR 2 1 2017

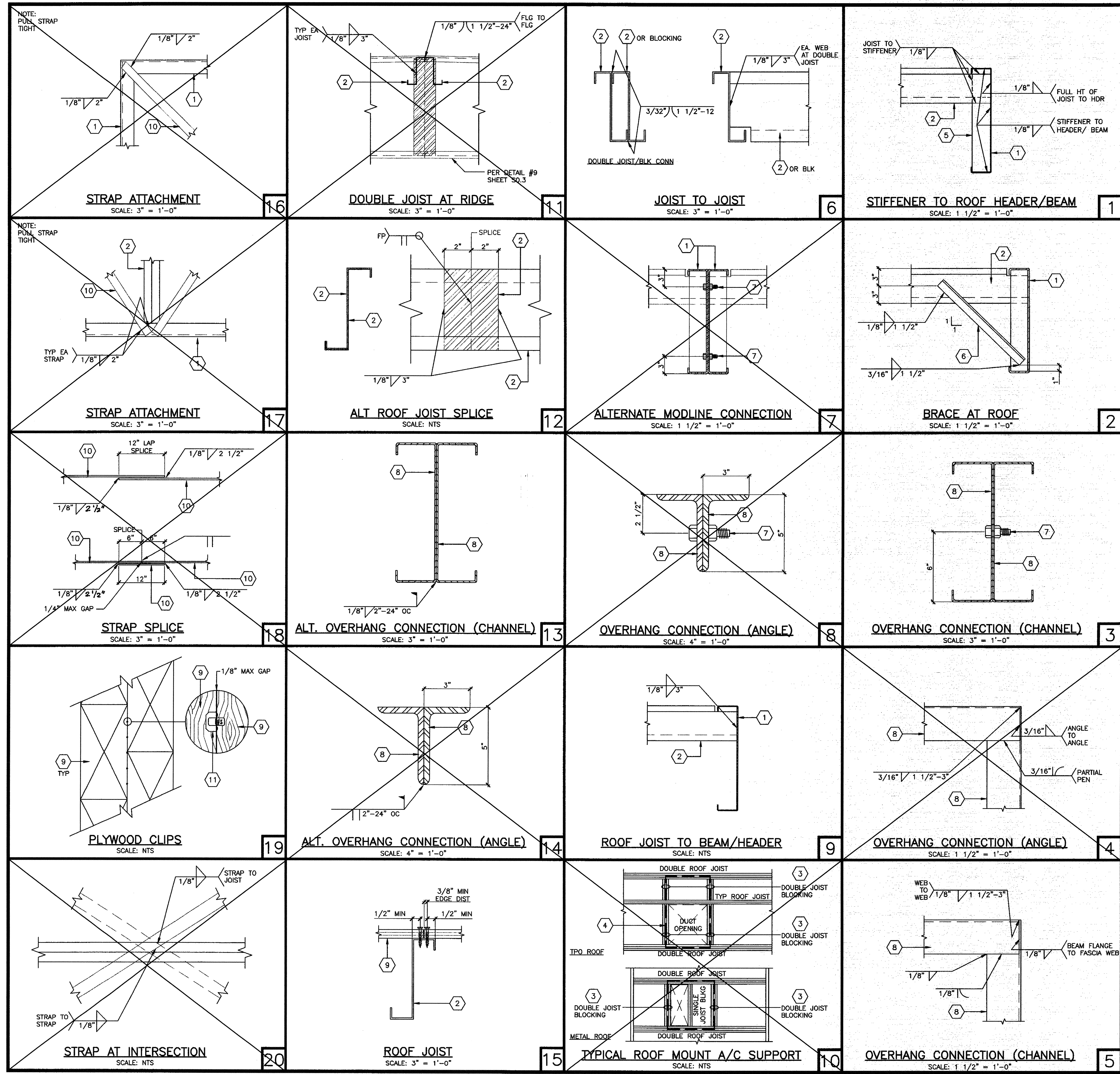
PRE-CHECK (PC) DOCUMENT
CODE: 2013 CSC
A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS
REQUIRED

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
PC 02-114405
FILE # PC-00
AC FLS SS NY
DATE: JAN 1 1 2017

REVISIONS

PROJECT NO.: 00000
DRAWN BY: J. CHAN-LUGAY
SCALE: AS NOTED
DATE: 10-03-16

SHEET NUMBER
S1.1



KEY NOTES

1. ROOF HEADER/BEAM (SEE STRUCTURAL ROOF FRAMING PLAN)
2. ROOF/CEILING JOIST (SEE STRUCTURAL ROOF FRAMING PLAN)
3. DOUBLE JOIST BLOCKING
4. ROOF MOUNTED A/C UNIT (SEE MECHANICAL PLANS)
5. 1/4" STIFFENER
6. L-1 1/2" x 1 1/2" x 3/16" BRACE
7. 5/8" MACHINE BOLT
8. OVERHANG OUTRIGGER/HEADER (SEE STRUCTURAL ROOF FRAMING PLAN)
9. PLYWOOD ROOF
10. METAL STRAP (SEE SHEET S2.3)
11. "SIMPSON" PSCL (3/4" x 20 GA) PLYWOOD CLIPS. SEE SHEET S2.2 FOR PLYWOOD ATTACHMENT INFORMATION

IMPACT CONSTRUCTION SERVICES INC.
CONTRACTORS LICENSE #845691

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SOUTHERN CALIFORNIA DIVISION
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PERRIS, CA 92571
PHONE: (951) 943-6888
FAX: (951) 943-9430

WEBSITE: WWW.IMPACTCONSTRUCTION.COM

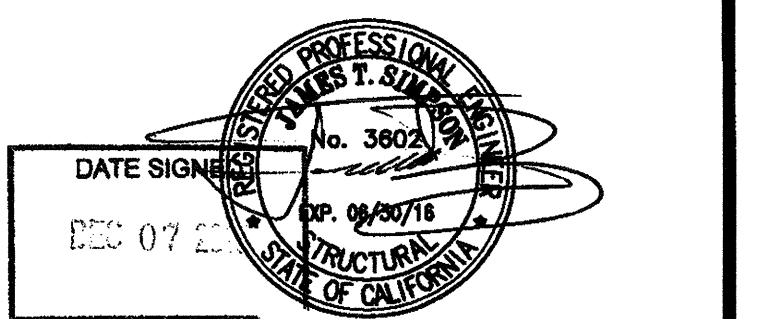
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PROJECT NAME:

BELLFLOWER USD
MAYFAIR HS

SHEET TITLE:
ROOF FRAMING DETAILS

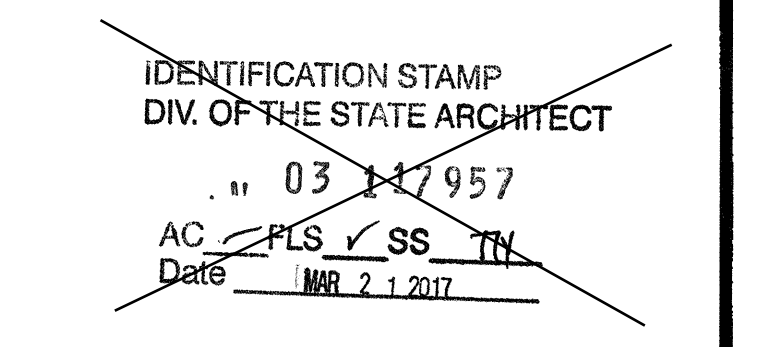
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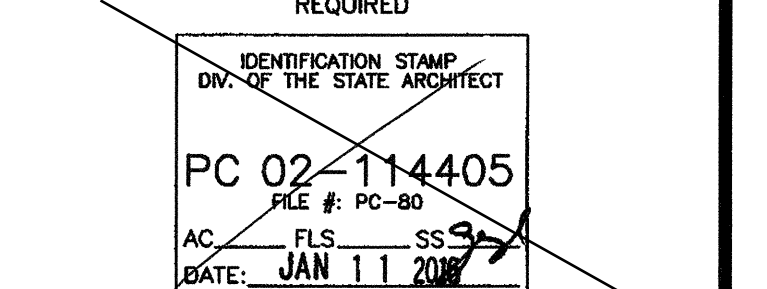
MFR. PROJECT SPECIFIC PROFESSIONAL OF RECORD

ARCHITECT OF RECORD

PROJECT SPECIFIC STATE AGENCY APPROVAL



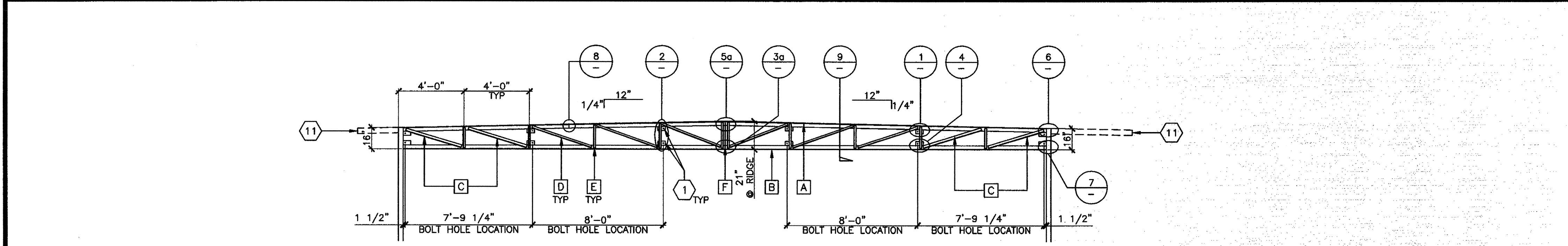
PRE-CHECK (PC) DOCUMENT CODE: 2013 CBC. A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED.



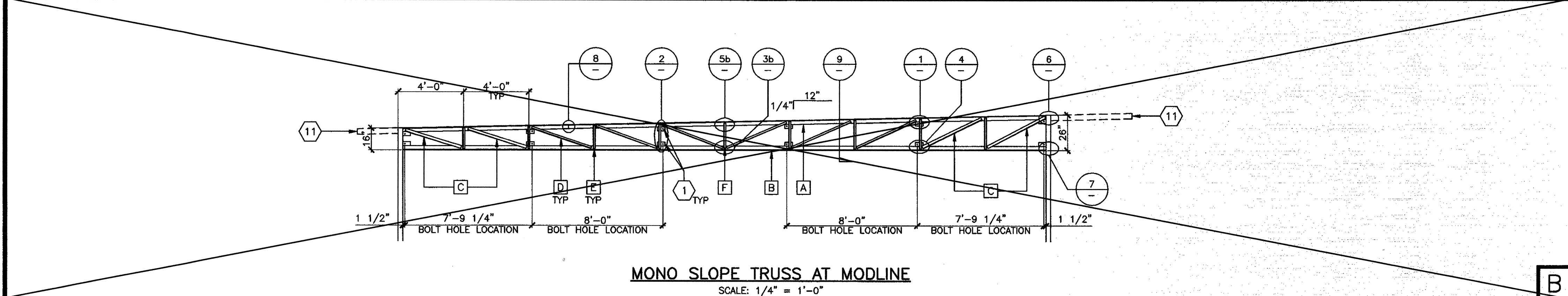
REVISIONS

PROJECT NO.: 00000
DRAWN BY: J. CHAN-LUGAY
SCALE: AS NOTED
DATE: 10-03-16

SHEET NUMBER
S2.0



DUAL SLOPE TRUSS AT MODLINE
SCALE: 1/4" = 1'-0"



MONO SLOPE TRUSS AT MODLINE
SCALE: 1/4" = 1'-0"

KEY NOTES

- 3/8" x 3" x 5 1/2" PLATE WITH 11/16" HOLE FOR 5/8" MACHINE BOLT PLATES AT 8'-0" OC MAX WHERE OCCURS PER ELEVATION FOR MODULE CONNECTION SEE DETAIL 2
- 5/8" MACHINE BOLT AT 8'-0" OC MAX
- 6" LONG x 1/4" BACK UP PLATE
- 1/4" FULL DEPTH STIFFENER PLATE
- NOT USED
- NOT USED
- STEEL ROOF JOIST
- L-1 1/2" x 1 1/2" x 3/16" BRACE EACH SIDE @ 8'-0" OC MAX
- STEEL COLUMN
- STEEL STUB COLUMN
- OVERHANG
- NOT USED

GENERAL NOTES

- ALL STEEL GRADES TO BE A-36 OR EQUAL WITH 36 KSI MIN YIELD
- REQUIRED ELECTRODES FOR ALL WELDS TO BE E-70-XX OR EQUAL
- VOLTAGE & AMPERAGE SHALL BE PER ELECTRODE MANUFACTURERS SPECS
- BOLTS & NUTS TO BE A307

TRUSS SCHEDULE

A	TOP CHORD	L-3" x 3" x 3/8"
B	BOTTOM CHORD	L-3" x 3" x 3/8"
C	1ST & 2ND DIAGONAL	L-2" x 2" x 3/16" - 4" TOTAL WELD COMBINED
D	TYPICAL DIAGONAL	L-1 1/2" x 1 1/2" x 3/16" - 1-1/2" FILLET WELD AT EACH SIDE EACH END
E	TYPICAL VERTICAL	L-1 1/2" x 1 1/2" x 3/16" - 1-1/2" FILLET WELD AT EACH SIDE EACH END
F	CAMBER	5/8" AT MIDSPAN

IMPACT CONSTRUCTION SERVICES INC.
CONTRACTORS LICENSE #945691

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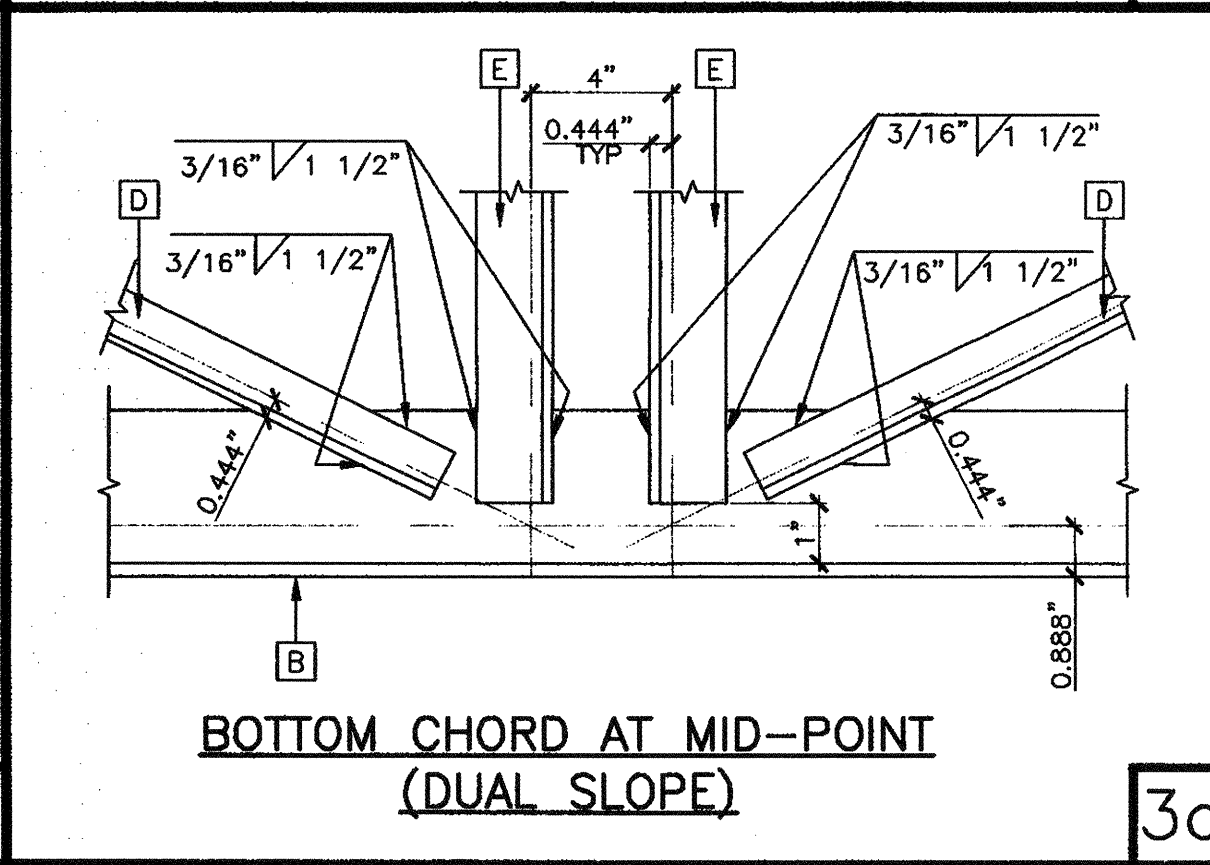
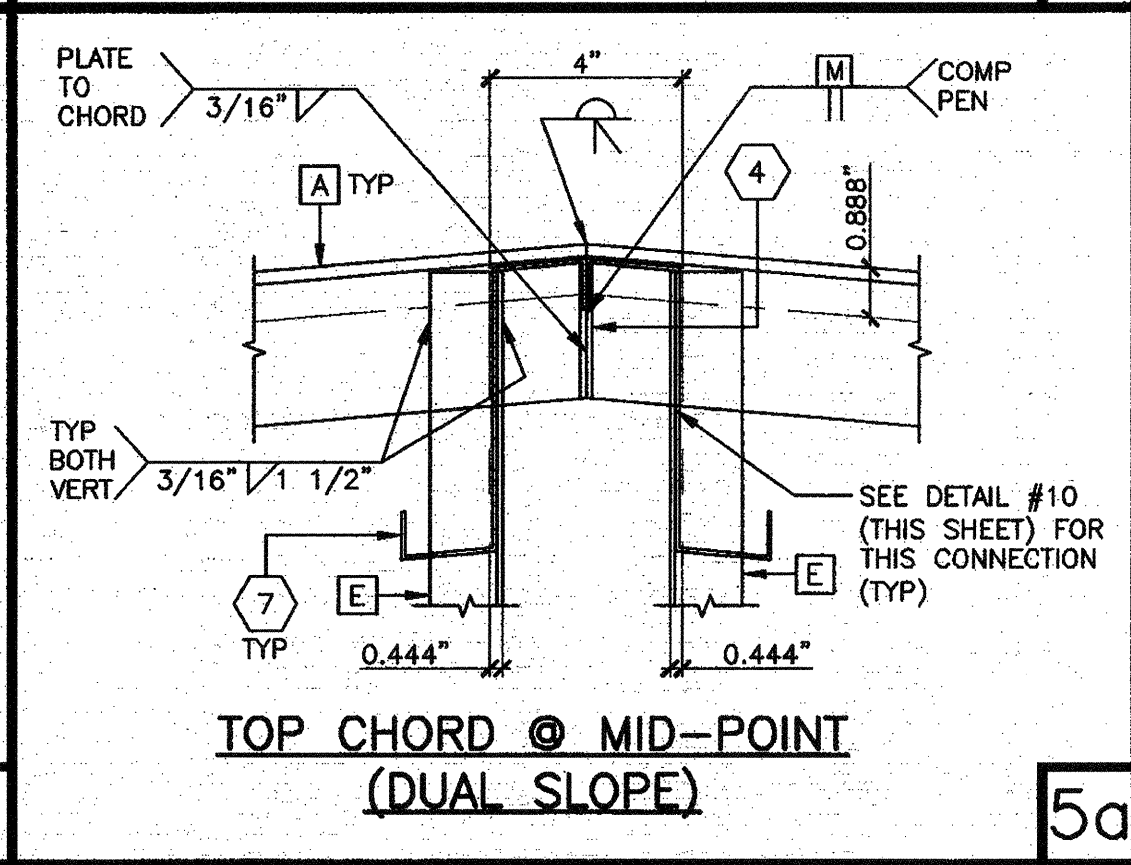
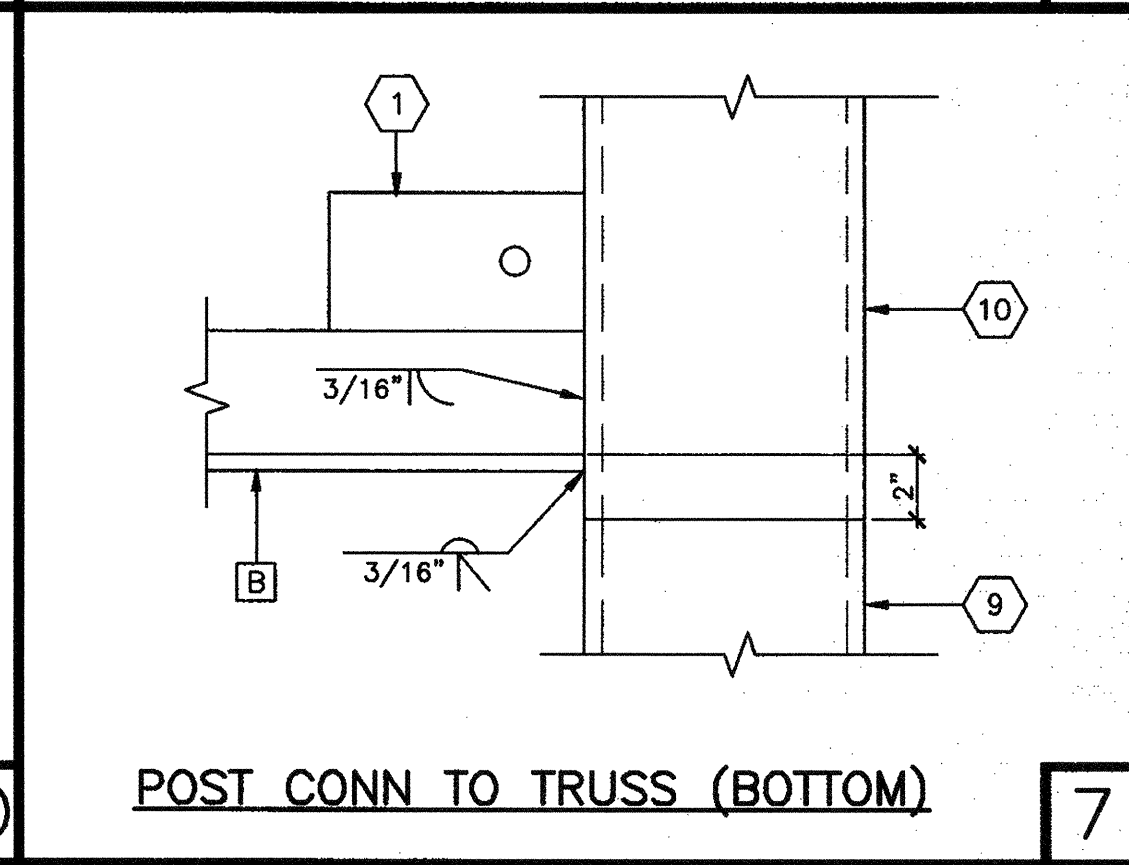
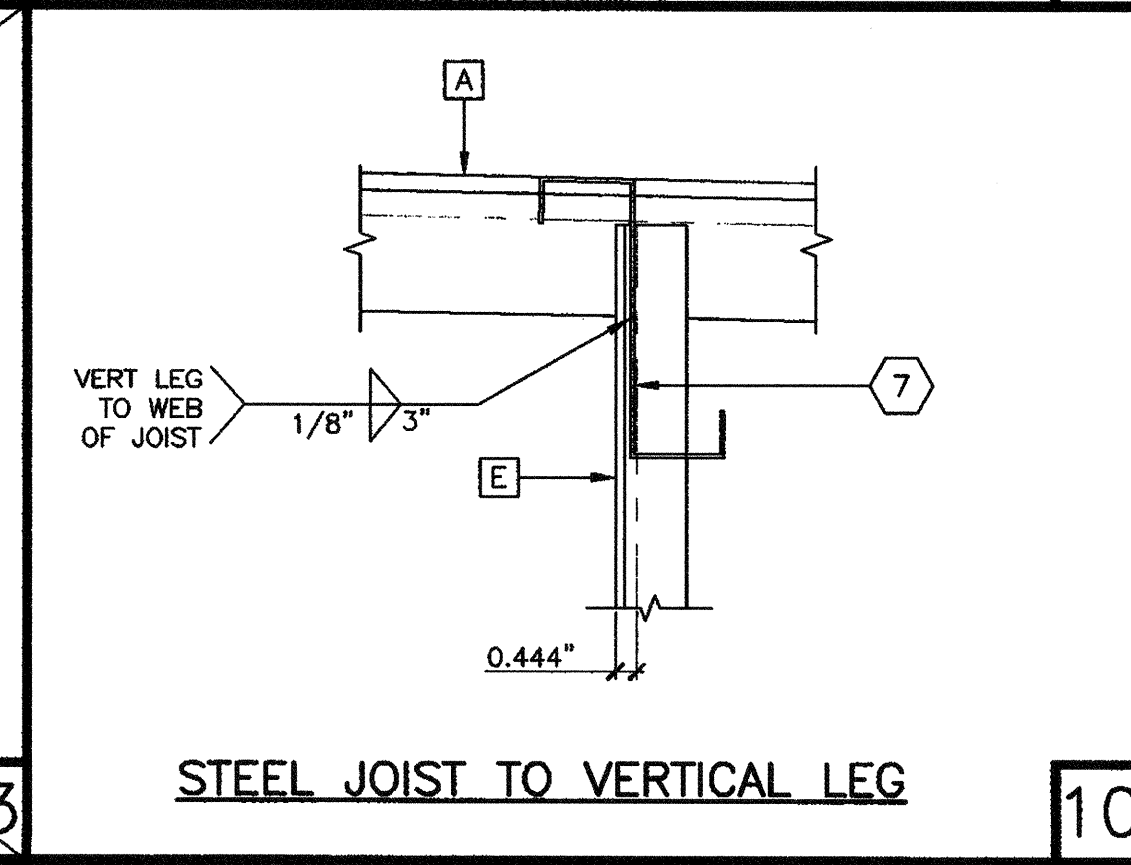
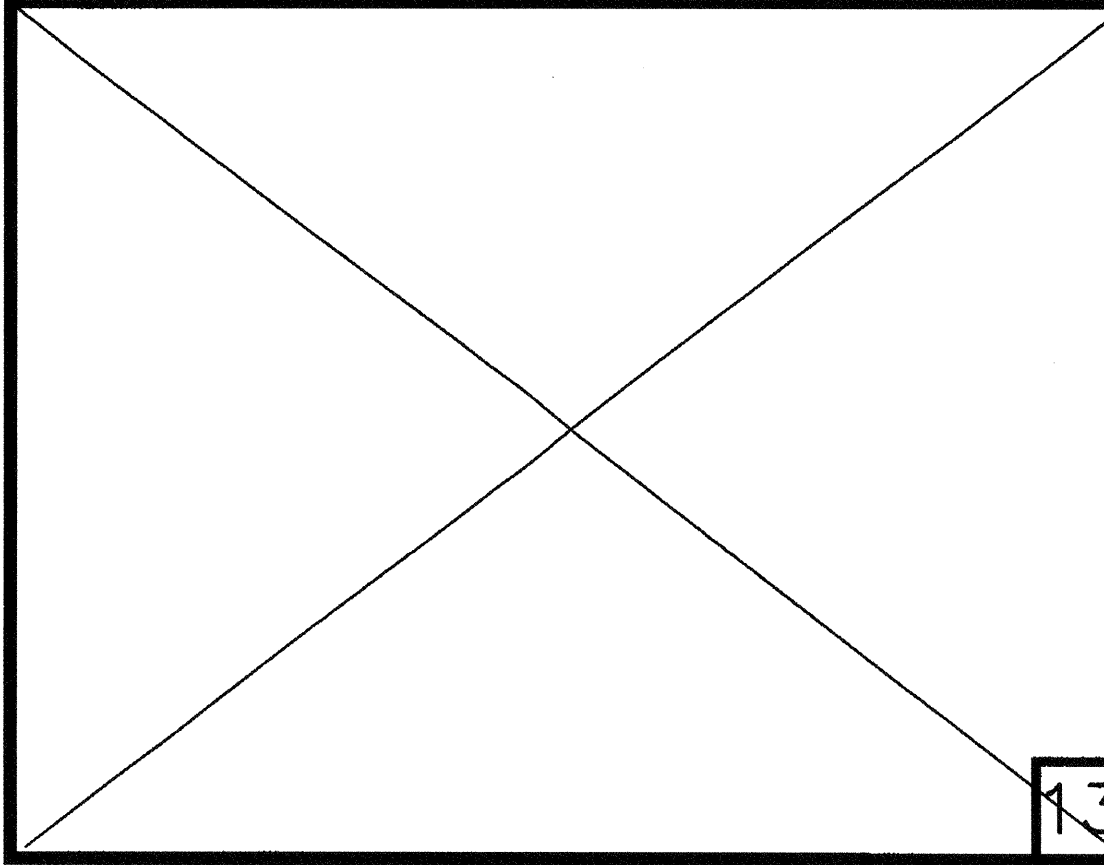
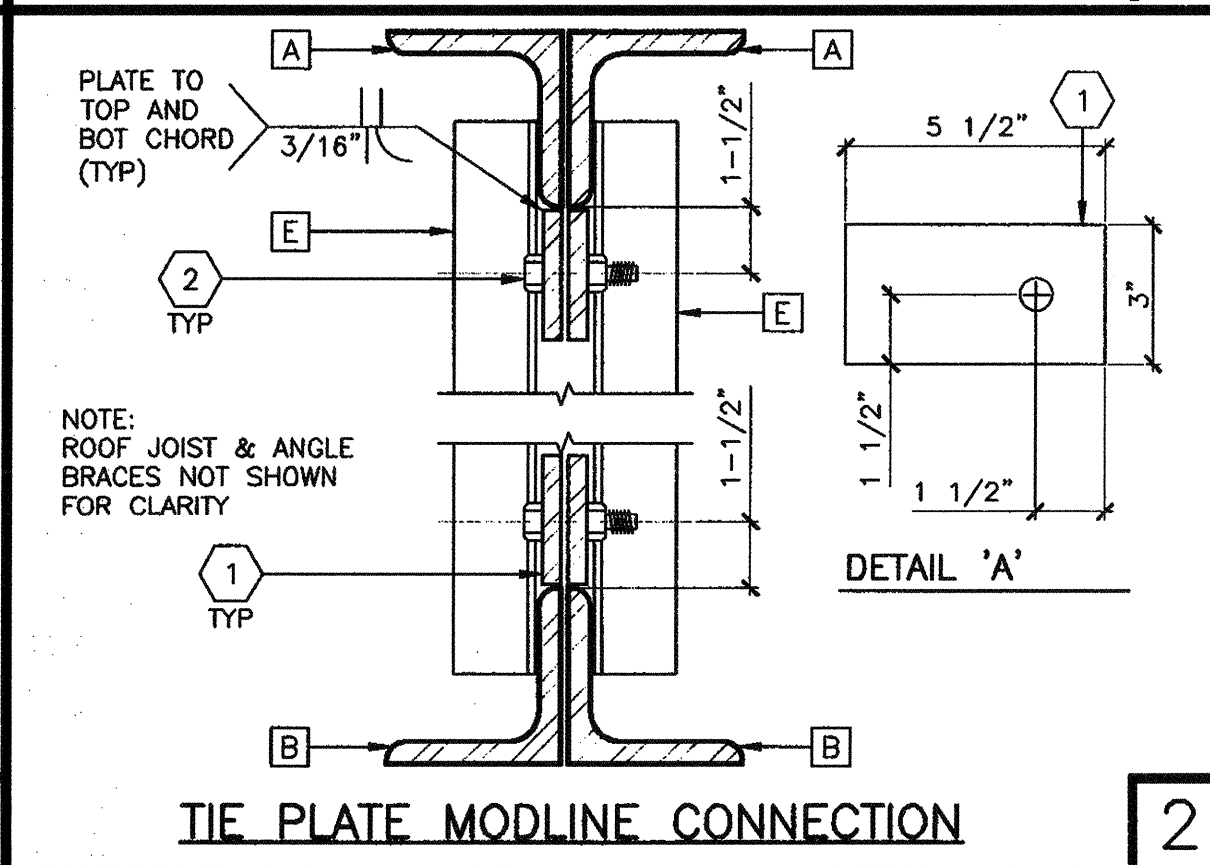
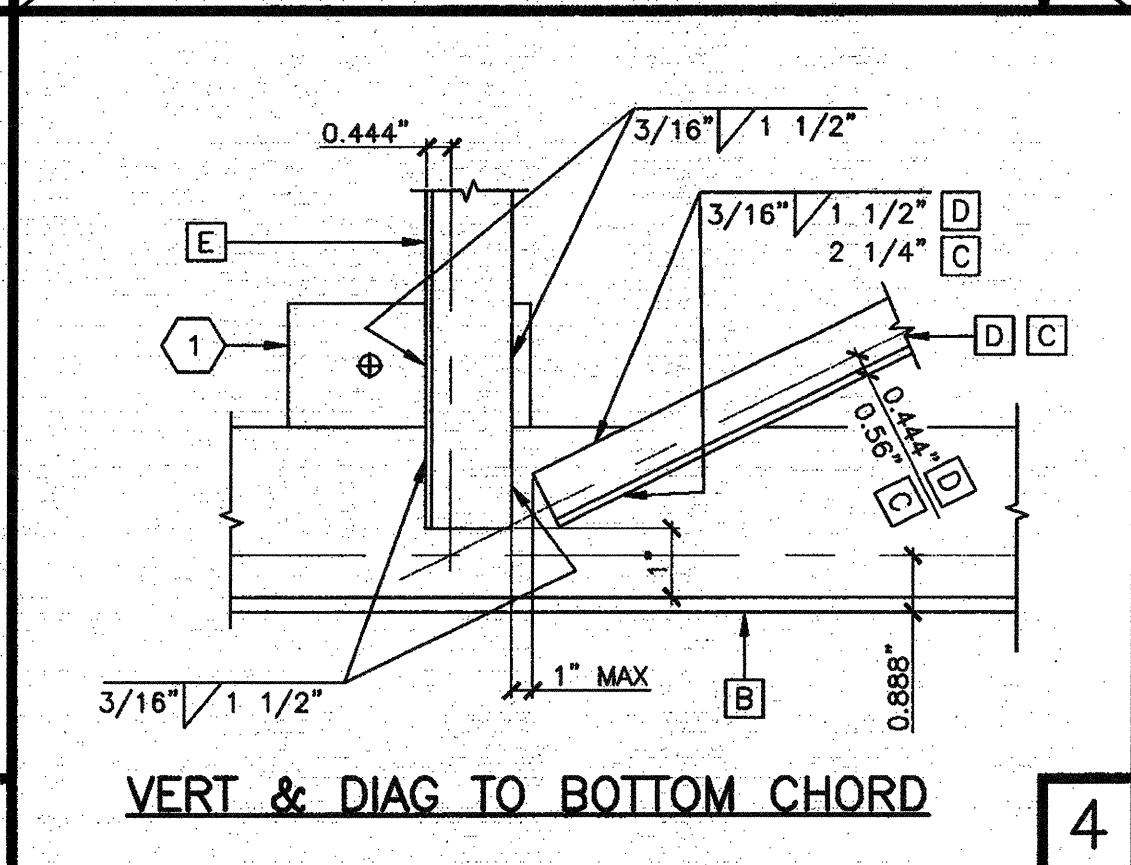
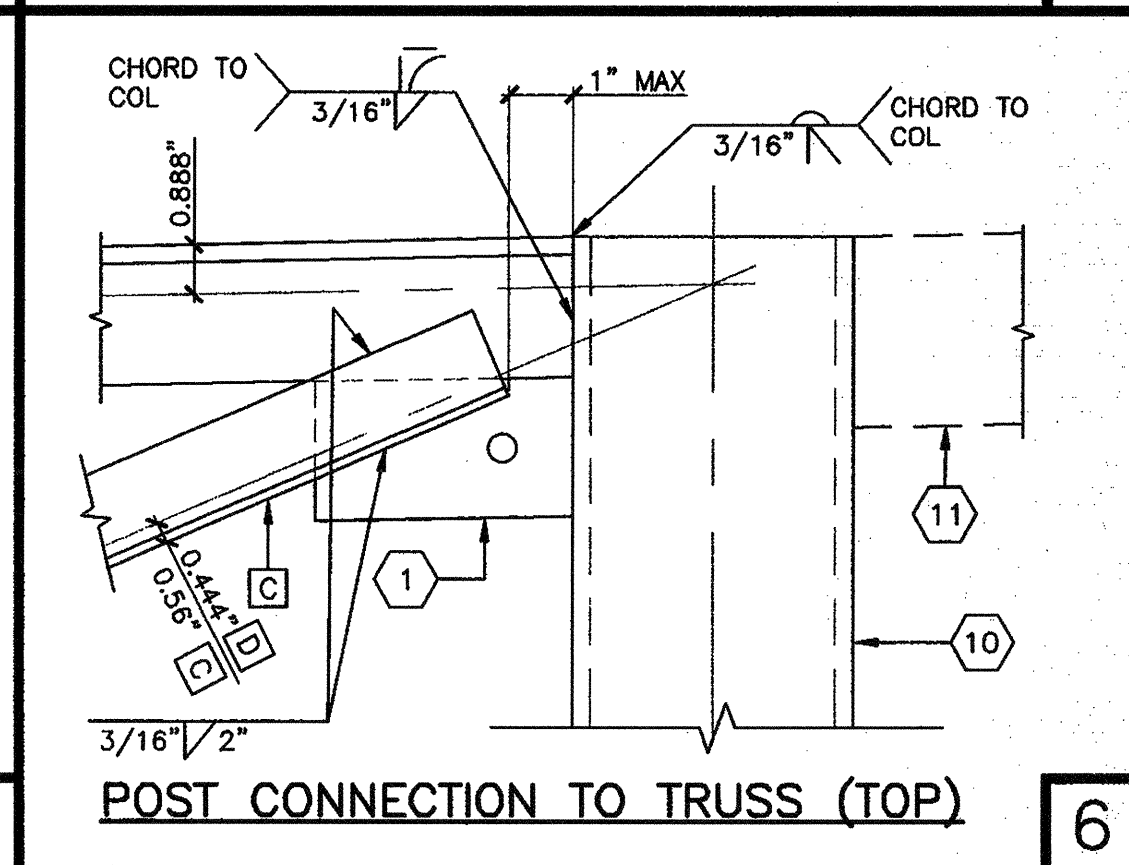
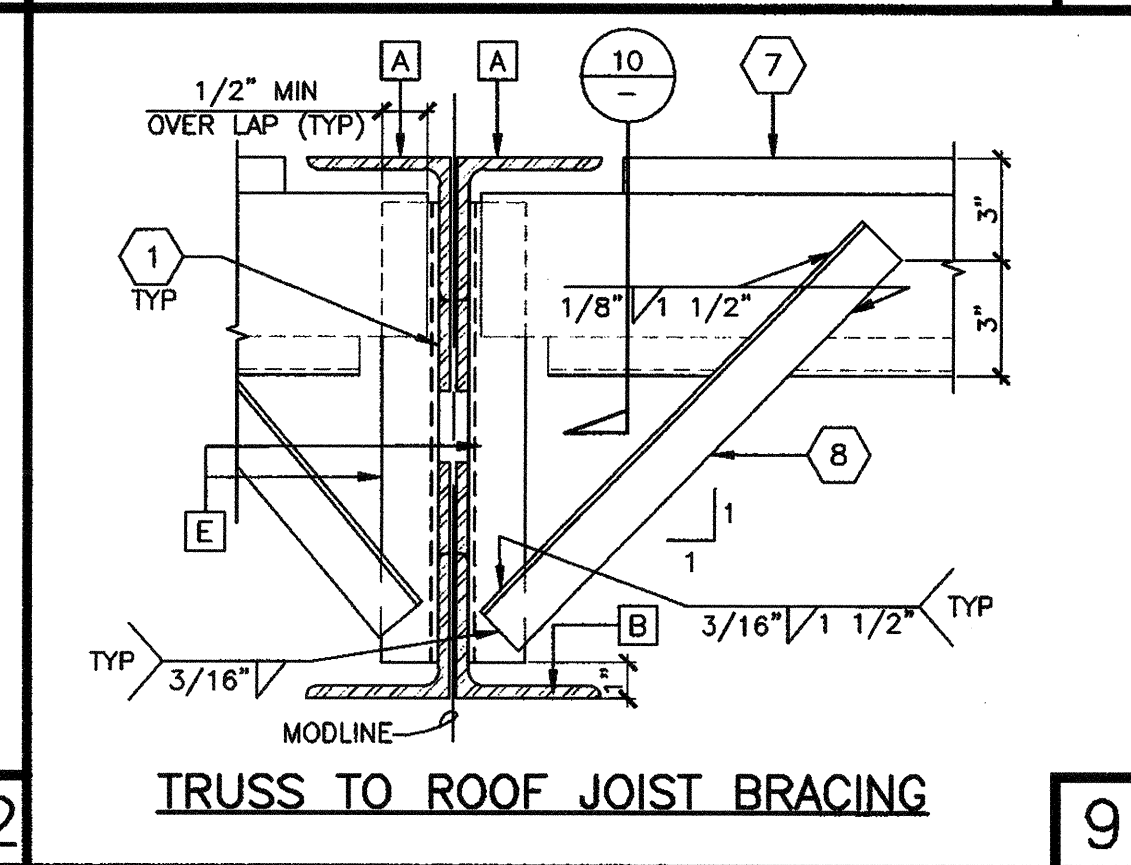
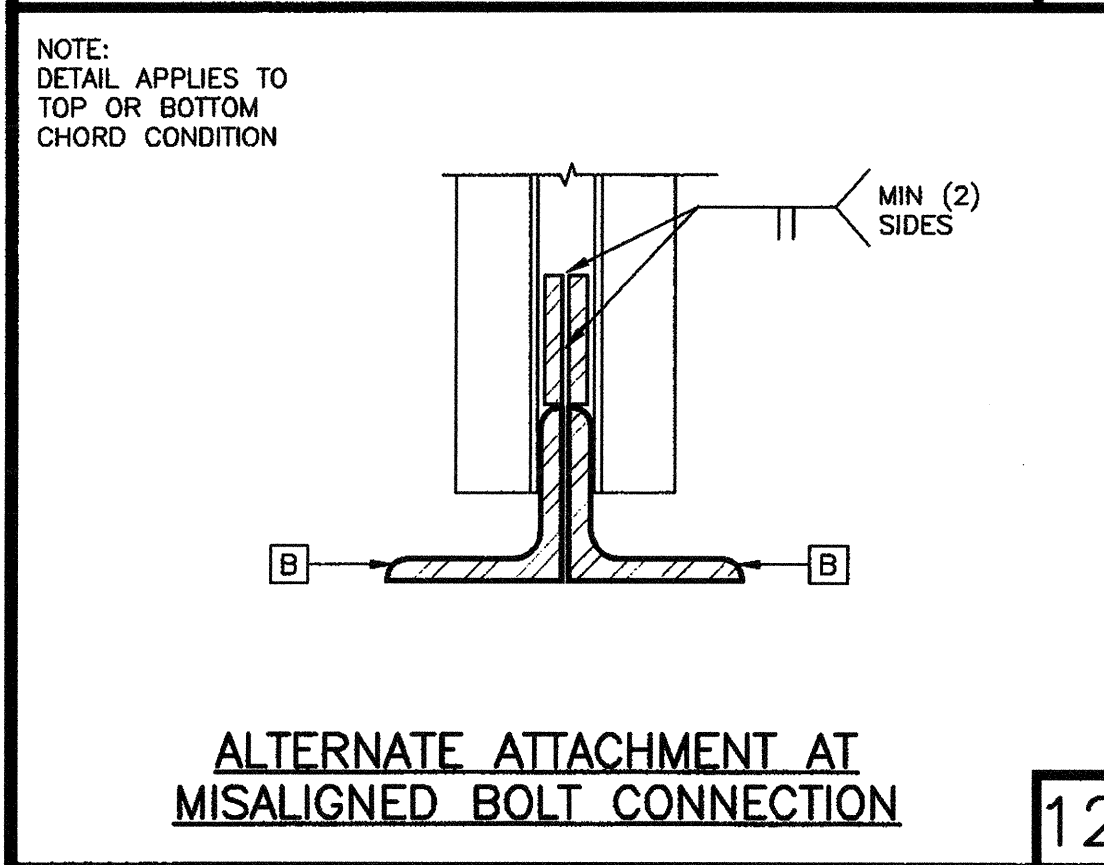
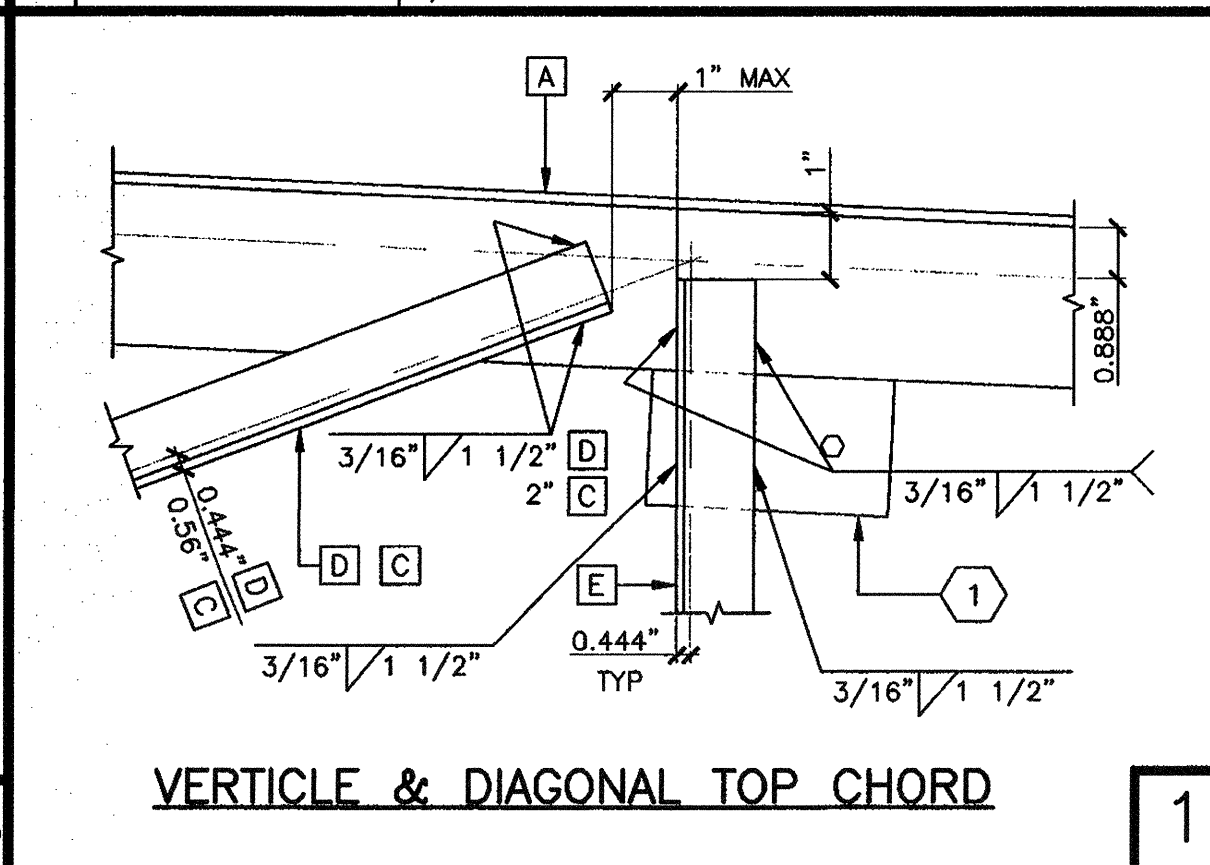
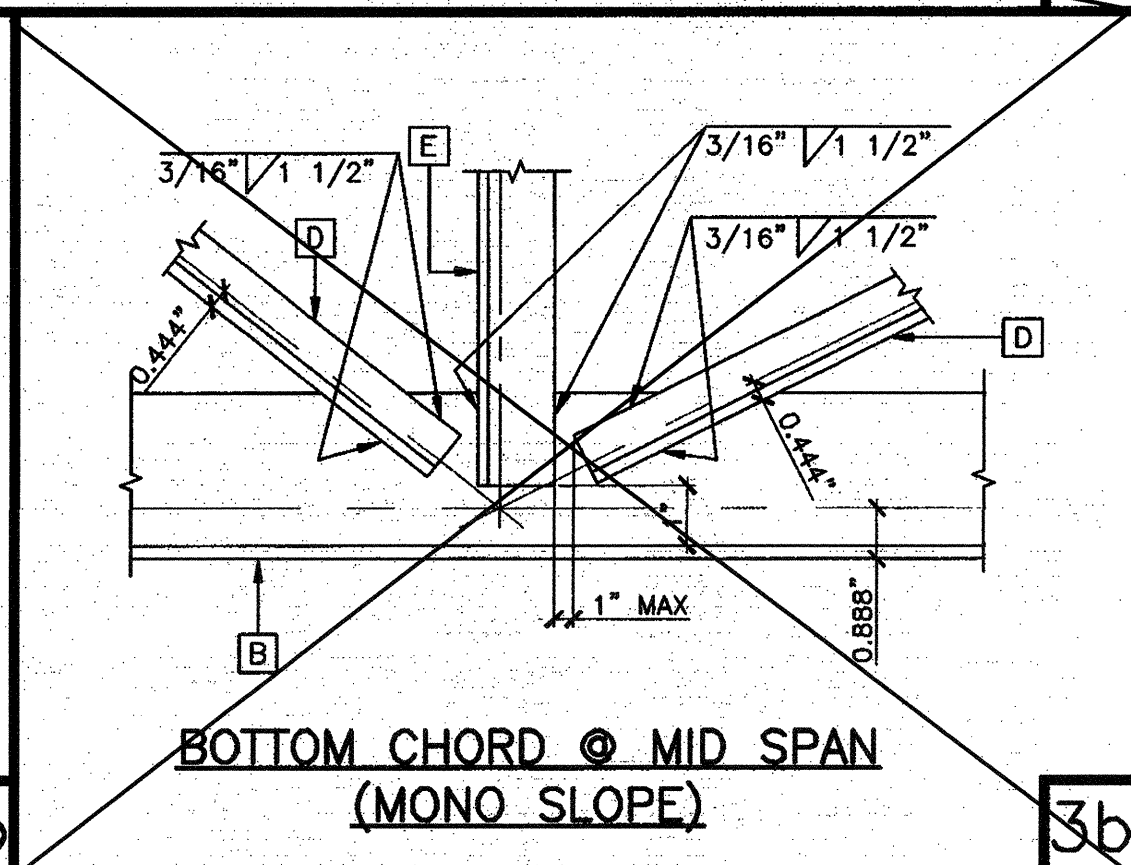
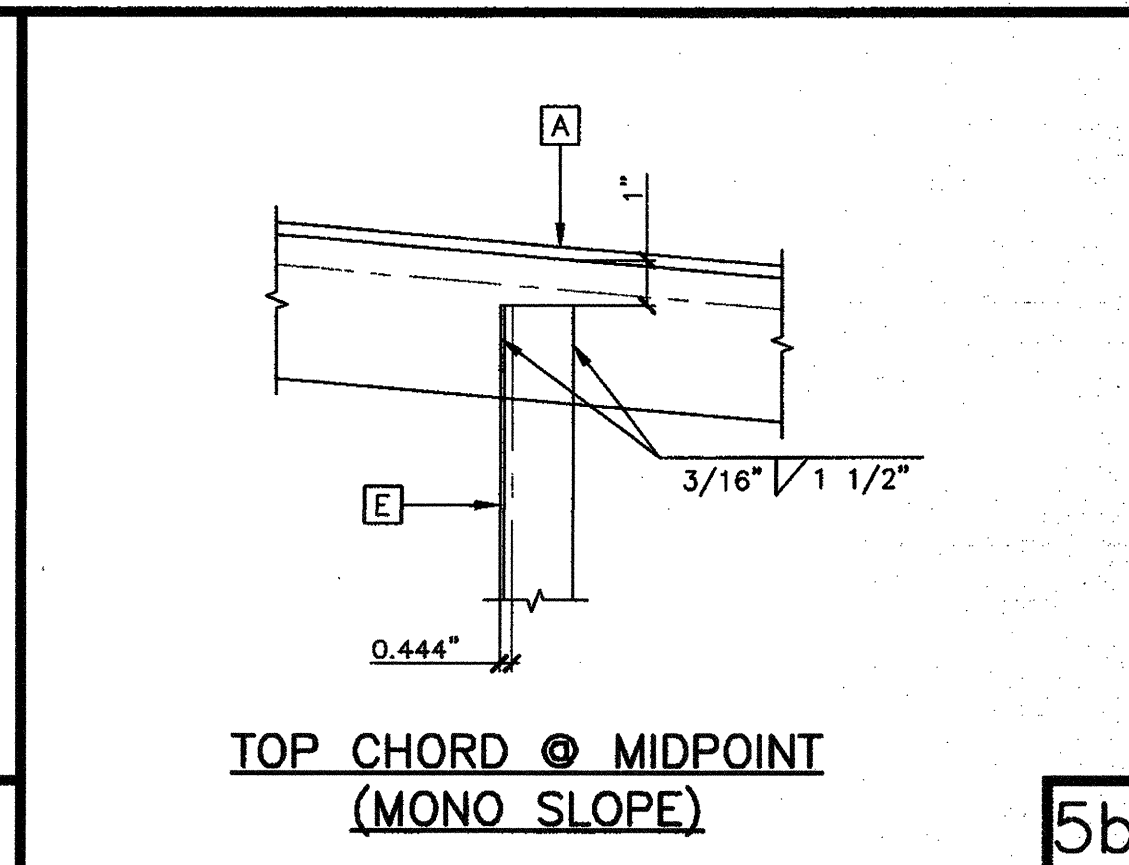
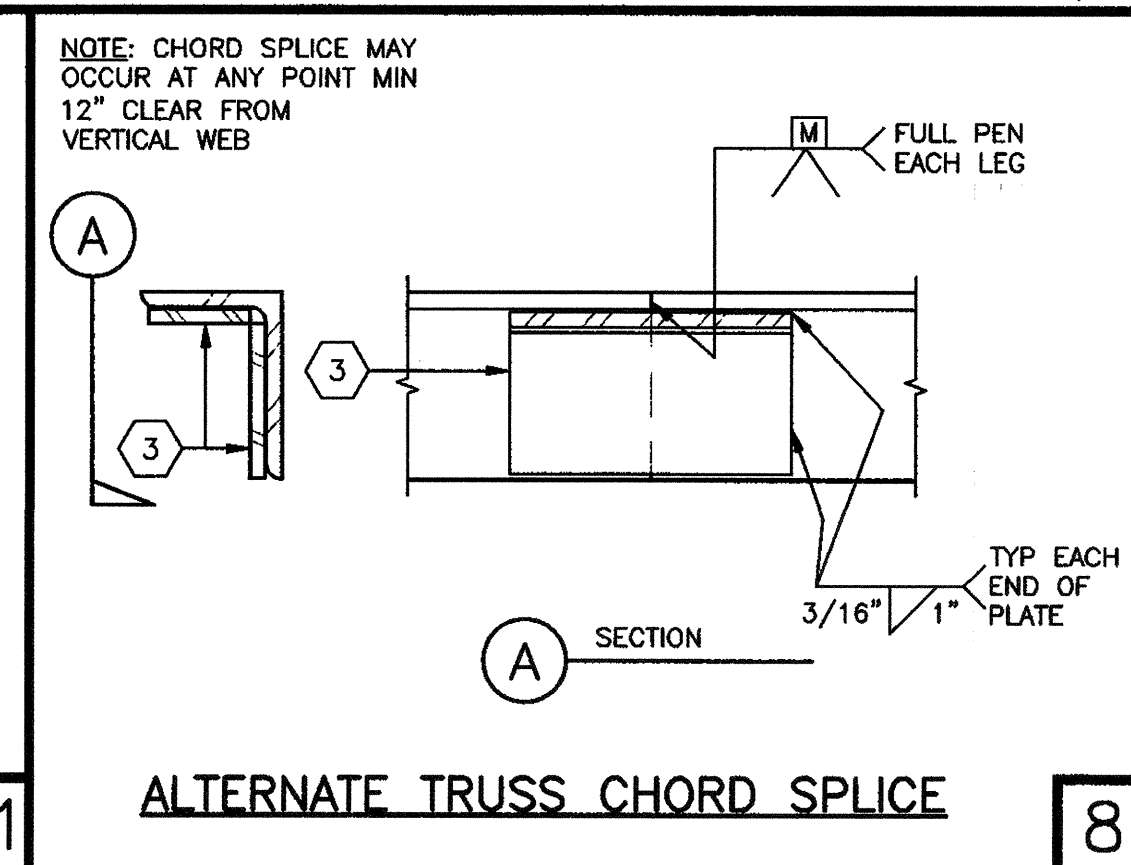
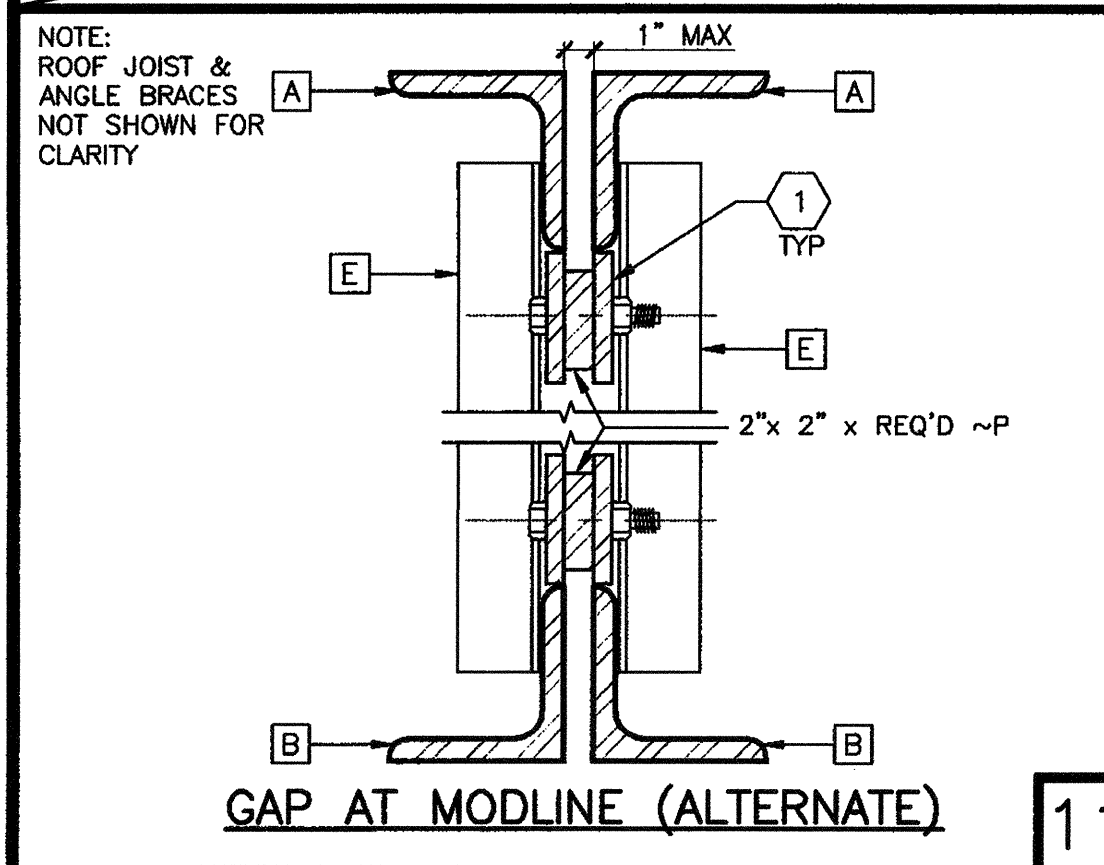
PROJECT NAME:
**BELFLOWER USD
MAYFAIR HS**

SHEET TITLE:
**ROOF TRUSS
AND DETAILS**

MFR. STRUCTURAL ENGINEER OF RECORD ON PC

DATE SIGNED: 03/07/2017

PROFESSIONAL SEAL: J. CHAN-LUGAY, P.E., S.E., Structural Engineer, State of California



PROJECT SPECIFIC STATE AGENCY APPROVAL

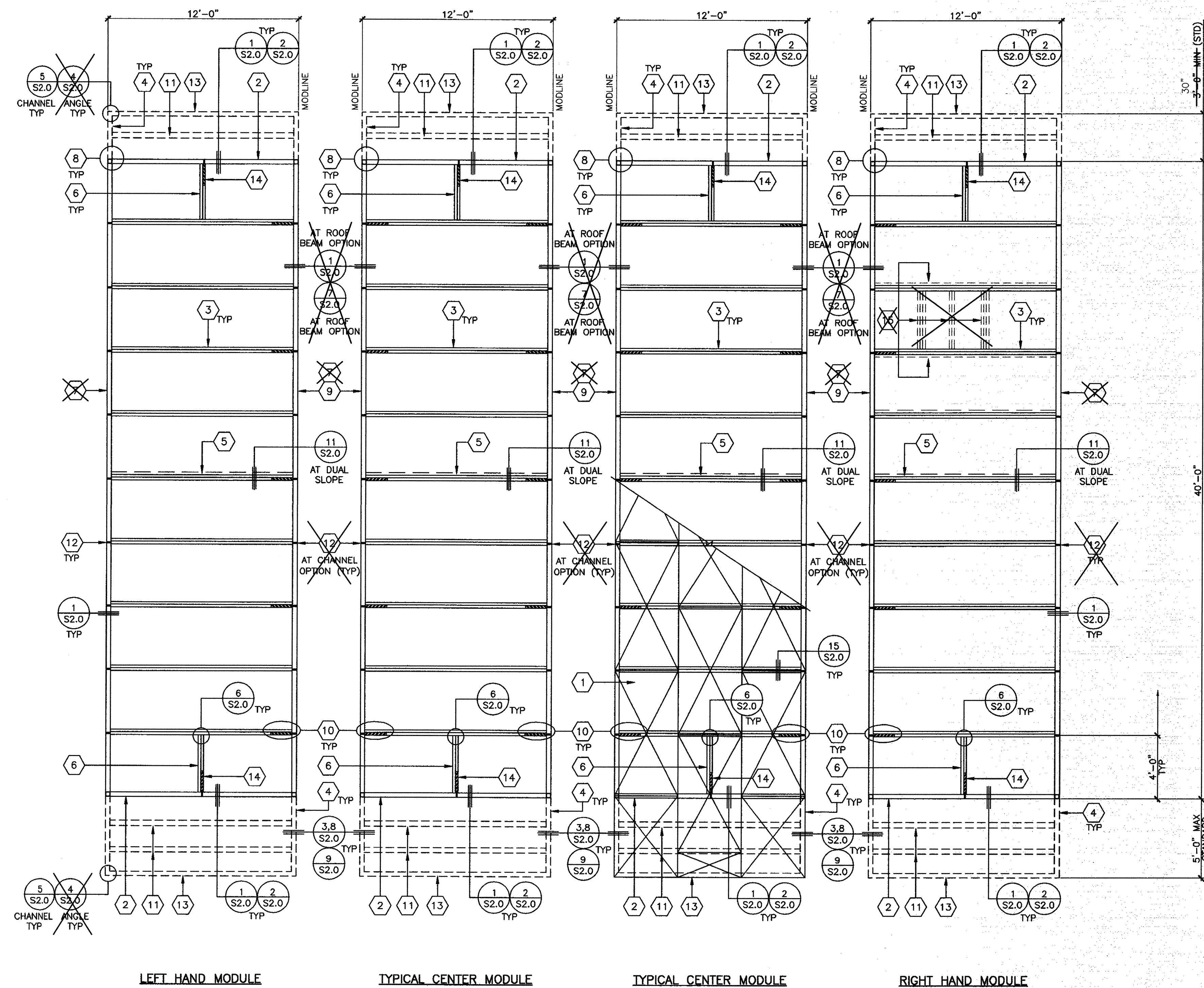
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
AC: FLS, SS, TN
Date: MAR 2 1 2017

PRE-CHECK (PC) DOCUMENT
CODE: 2013 CBC
A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
PC 02-114405
FILE #: PC-80
AC: FLS, SS, TN
DATE: JAN 1 1 2017

REVISIONS

PROJECT NO.: 00000
DRAWN BY: J. CHAN-LUGAY
SCALE: AS NOTED
DATE: 10-03-16
SHEET NUMBER
S2.1

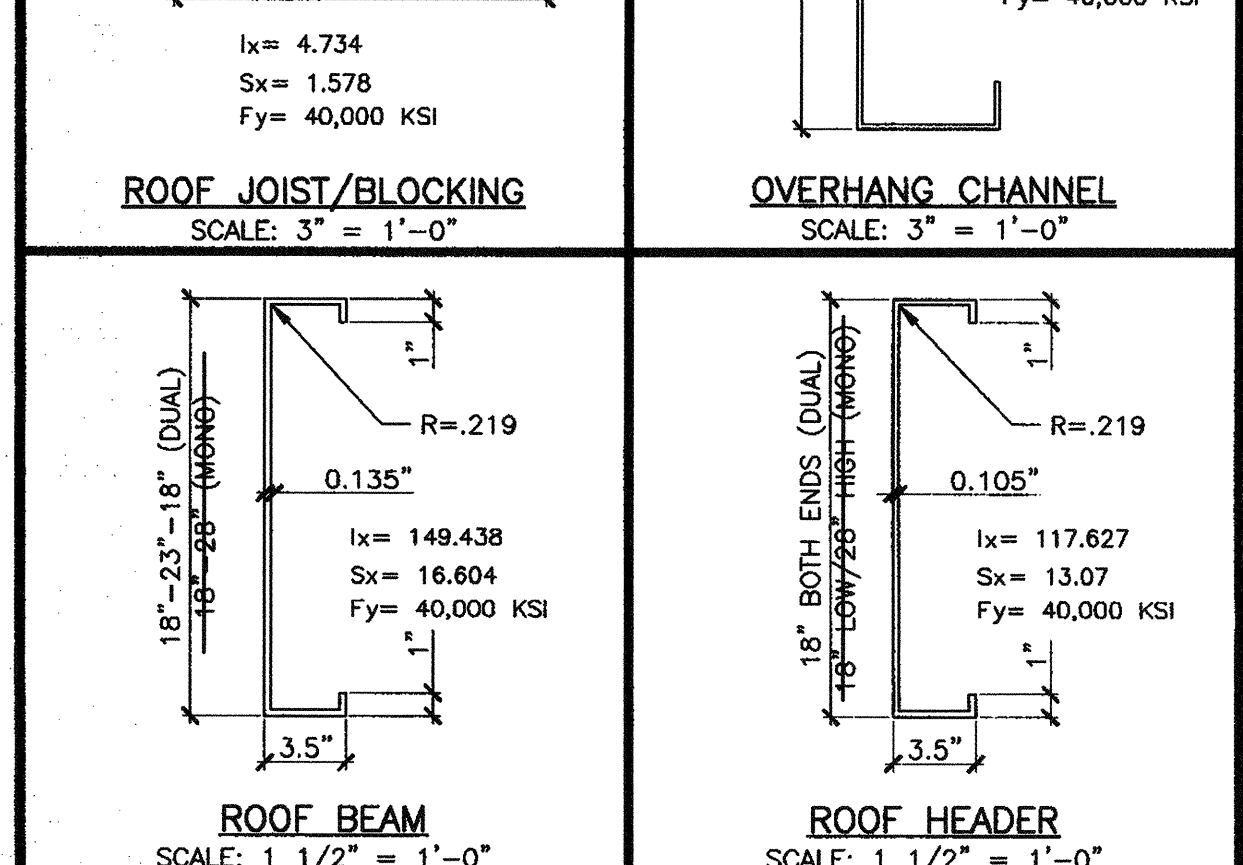
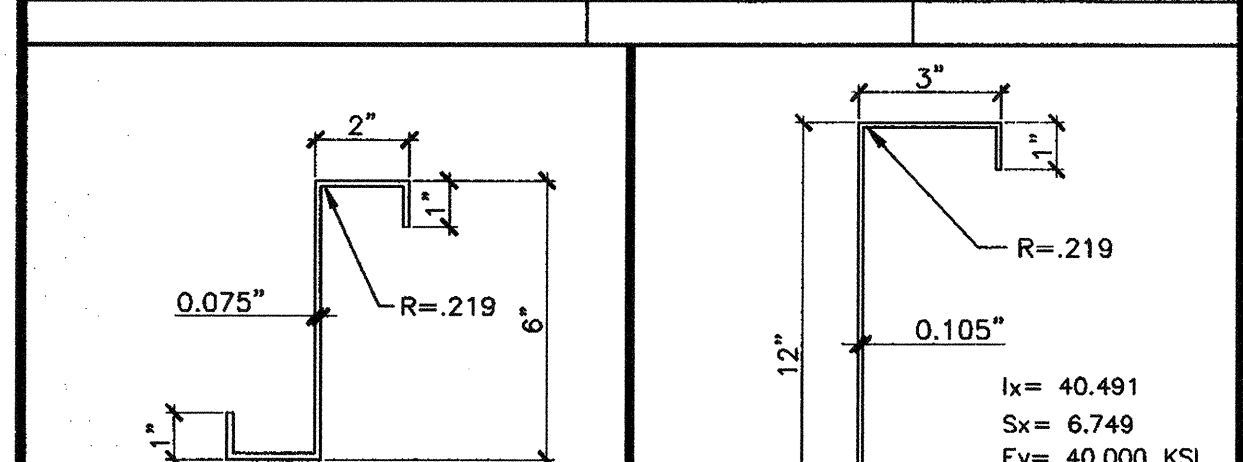


ROOF FRAMING PLAN W/ PLYWOOD DECK
SCALE: 1/4" = 1'-0"

KEY NOTES

- ROOF SHEATHING: 3/4" C-D EXPOSURE 1, 48/24 SPAN RATING, PS 1-07, APA RATED OR EQUAL, SQUARE EDGE W/ PLYWOOD CLIPS @ 16" OC LONG EDGES ON UNSUPPORTED EDGES (SEE #19/S2.0); ATTACH TO STEEL FRAMING WITH #10-24 X 1 3/4" SELF TAP SCREWS @ 6" OC BOUNDARY & EDGES AND 6" OC FIELD WHERE JOIST ARE AT 48" OC AND 12" OC FIELD AT JOISTS WITH SPACING LESS THAN 48" OC. MIN 24" SHEET DIMENSION
ALT: USE 'NAILPRO' NP145S FASTENER 0.145"Ø SHOT PIN PER ICC REPORT #ESR-2981
- ROOF HEADER (SEE SCHEDULE BELOW) BOUNDARY NAILING AT HEADER
- Z ROOF JOIST (SEE SCHEDULE BELOW)
- OVERHANG OUTRIGGER, TYPICAL EACH SIDE (SEE SCHEDULE BELOW)
- USE DOUBLE JOIST AT THIS LOCATION (MIDSPAN) FOR DUAL SLOPE ROOF. ADDITIONAL JOIST SHOWN AS HIDDEN LINES USE SINGLE JOIST AT THIS LOCATION FOR MONO SLOPE ROOF.
- Z MEMBER BLOCK AT MIDSPAN OF HEADER, TYPICAL EACH END
- OPTIONAL ROOF BEAM AT MODLINE (SEE SCHEDULE BELOW)
- STEEL CORNER STUB COLUMN
- STEEL TRUSS (SEE ROOF TRUSS & DETAILS SHEET)
- STEEL TRUSS BRACE, WHERE TRUSSES OCCUR (SEE ROOF TRUSS & DETAILS SHEET)
- OVERHANG JOIST (SEE SCHEDULE BELOW)
- 1/4" FULL HEIGHT STIFFENER AT ROOF BEAM TYPICAL (SEE STRUCTURAL BLDG SECTION SHEET)
- OVERHANG FASCIA (SEE SCHEDULE BELOW)
- STEEL BRACE AT ROOF HEADER TYPICAL (SEE BUILDING SECTIONS)
- TYPICAL A/C ROOF MOUNT FRAMING. SEE MECHANICAL PLANS FOR LOCATIONS PROVIDE DOUBLE PURLING AS SHOWN. SEE DETAIL #10/S2.0

ROOF BEAM SCHEDULE		
ROOF SLOPE		
DUAL	18"-23"-18" x 3 1/2" x 10 GA TAPERED SECTION CHANNEL	
MONO	18"-28" x 3 1/2" x 10 GA TAPERED SECTION CHANNEL	
ROOF HEADER SCHEDULE		
ROOF SLOPE		
DUAL	18" x 3 1/2" x 12 GA CHANNEL (BOTH ENDS)	
MONO	18" x 3 1/2" x 12 GA CHANNEL (LOW END) 28" x 3 1/2" x 12 GA CHANNEL (HIGH END)	
ROOF JOIST SCHEDULE		
JOIST	SPACING	
6" x 2" x 14 GA Z-MEMBER	48" OC	
MODLINE SCHEDULE		
TOP CHORD	BOTTOM CHORD	CHANNEL
SEE ROOF TRUSS SHEET	SEE ROOF TRUSS SHEET	N/A
N/A	N/A	18" TO 28" CHANNEL
OVERHANG SCHEDULE		
JOIST	OUTRIGGER	FASCIA
6" x 2" x 14 GA AT 24" MAX OC	L-5" x 3" x 3/8"	L-5" x 3" x 3/8"
Z-6" x 2" x 14 GA AT 24" MAX OC	C-12" x 3" x 12 GA	C-12" x 3" x 12 GA



IMPACT CONSTRUCTION SERVICES INC.
CONTRACTORS LICENSE #945681

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PROJECT NAME:
BELLFLOWER USD MAYFAIR HS

SHEET TITLE:
ROOF FRAMING PLAN PLYWOOD SHEATHING

MFR. STRUCTURAL ENGINEER OF RECORD ON PC

DATE SIGNED
DEC 07 2011

MFR. PROJECT SPECIFIC PROFESSIONAL OF RECORD

ROOF BEAM SCHEDULE		
ROOF SLOPE		
DUAL	18"-23"-18" x 3 1/2" x 10 GA TAPERED SECTION CHANNEL	
MONO	18"-28" x 3 1/2" x 10 GA TAPERED SECTION CHANNEL	
ROOF HEADER SCHEDULE		
ROOF SLOPE		
DUAL	18" x 3 1/2" x 12 GA CHANNEL (BOTH ENDS)	
MONO	18" x 3 1/2" x 12 GA CHANNEL (LOW END) 28" x 3 1/2" x 12 GA CHANNEL (HIGH END)	
ROOF JOIST SCHEDULE		
JOIST	SPACING	
6" x 2" x 14 GA Z-MEMBER	48" OC	
MODLINE SCHEDULE		
TOP CHORD	BOTTOM CHORD	CHANNEL
SEE ROOF TRUSS SHEET	SEE ROOF TRUSS SHEET	N/A
N/A	N/A	18" TO 28" CHANNEL
OVERHANG SCHEDULE		
JOIST	OUTRIGGER	FASCIA
6" x 2" x 14 GA AT 24" MAX OC	L-5" x 3" x 3/8"	L-5" x 3" x 3/8"
Z-6" x 2" x 14 GA AT 24" MAX OC	C-12" x 3" x 12 GA	C-12" x 3" x 12 GA

PROJECT SPECIFIC STATE AGENCY APPROVAL

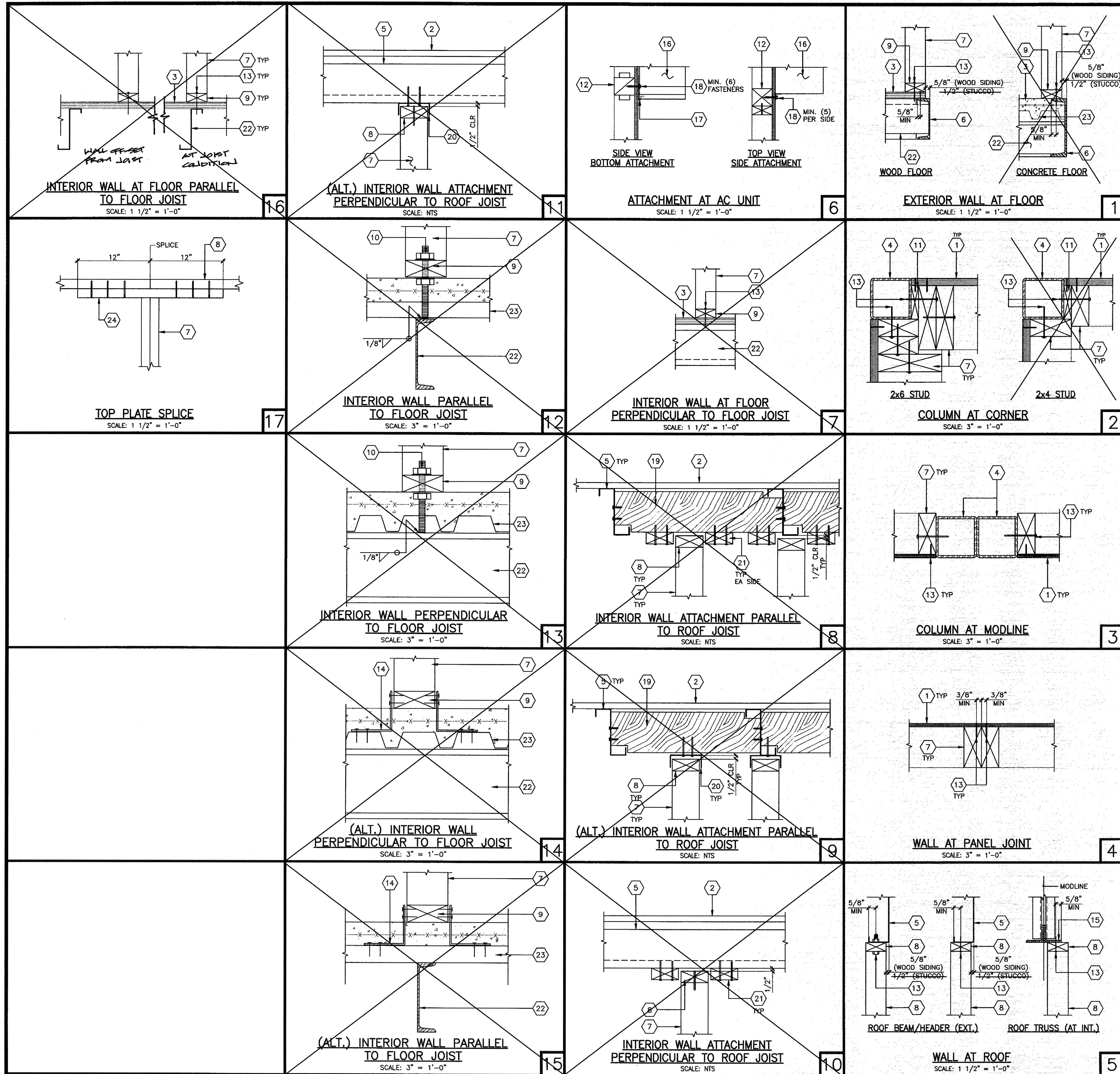
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
03 117957
AC: PLS SS
Date: 11/7/2011

PRE-CHECK (PC) DOCUMENT CODE: 2013 CBC
A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
PC 02-114405
FILE #: PC-02
DATE: JAN 11 2012

REVISIONS

PROJECT NO.: 00000
DRAWN BY: J. CHAN-LUGAY
SCALE: AS NOTED
DATE: 10-03-16
SHEET NUMBER
S2.2



KEY NOTES

- EXTERIOR PLYWOOD SIDING/SHEATHING (SEE WALL FRAMING ELEVATION SHEET)
- ROOF DIAPHRAGM (SEE STRUCTURAL ROOF FRAMING PLAN)
- FLOOR SYSTEM (SEE FLOOR FRAMING SHEET)
- STEEL COLUMN
- STEEL ROOF JOIST (SEE STRUCTURAL ROOF FRAMING PLAN)
- PERIMETER FLOOR FRAME (SEE STRUCTURAL FLOOR FRAMING PLAN)
- 2x FULL HEIGHT STUDS
- 2x BOTTOM PLATE (PRESSURE TREATED @ CONCRETE FLOOR OPTION)
- 1/2" THREADED ROD WELD TO FLOOR JOIST OR BLOCKING. FASTEN TO SILL PLATE (2) NUTS & (2) WASHERS @ 48" OC MAX
- CONTINUOUS SPACER AS REQUIRED
- 4x POST / BLOCKING. SEE WALL FRAMING ELEVATION SHEET
- FASTENERS (SEE WALL FRAMING SCHEDULE ON WALL FRAMING ELEVATION SHEET)
- GAVL L-3 1/2" X 3 1/2" X 1/4" X 6" LONG ANGLE @ 24" OC STAGGERED, ATTACHED TO WALL AND METAL FLOOR DECK WITH (2) #10 SMS, 24" MIN FROM END OF WALL OR SPLICE
- TRUSS BOTTOM CHORD
- WALL MOUNTED AC UNIT (SEE MECHANICAL PLANS)
- 16 GAx24" LONG STEEL BOTTOM BRACKET AT AC
- 3/8" X 2 1/2" LAG BOLTS, QUANTITY INDICATED BY PRE DRILLED HOLES ON AC UNIT
- 2x6 BLOCKING @ 48" OC W/ (2) #10x1 1/2" STS EACH END OF BLOCKING, NOTCH AS REQUIRED
- CONTINUOUS C-3 1/2" X 1 5/8" X 20 GA TRACK, SECURED TO MEMBERS W/(2) #10 STS AT ROOF JOIST OR (2) 16d NAILS INTO 2x BLOCK TYP
- CONTINUOUS 2x BLOCKING @ EACH SIDE OF TOP PLATE WITH (2) 16d NAILS TO EACH BLOCKING @ 48" OC OR (2) #10 STS TO EACH JOIST TYPICAL
- FLOOR JOIST MEMBER OR BLOCKING (SEE FLOOR FRAMING PLAN)
- METAL FLOOR DECK
- 2x BLOCK AT SPLICE LOCATION. SECURE 2x BLOCK WITH (6) 16d NAILS AT EACH SIDE.

GENERAL NOTES

- SEE WALL FRAMING ELEVATION SHEET S3.2 FOR NAILING SCHEDULE

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CONTRACTORS LICENSE #945691

NORTHERN CALIFORNIA DIVISION
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SOUTHERN CALIFORNIA DIVISION
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PHONE: (951) 843-9988
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WEBSITE: WWW.IMPACTCONSTRUCTION.COM

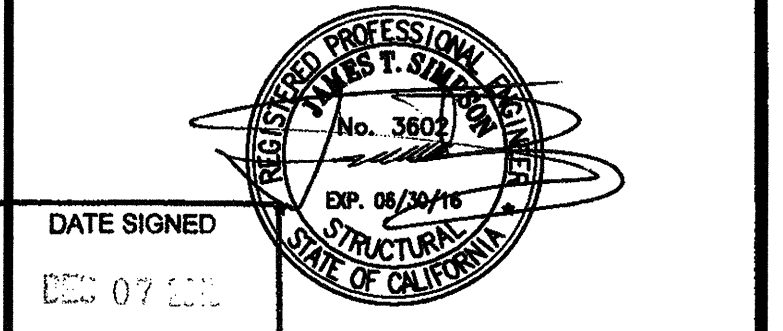
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PROJECT NAME:

BELLFLOWER USD
MAYFAIR HS

SHEET TITLE:
WALL FRAMING
DETAILS WOOD STUDS

MFR. STRUCTURAL ENGINEER OF RECORD ON PC



DATE SIGNED:
07/01/17

MFR. PROJECT SPECIFIC PROFESSIONAL OF RECORD

ARCHITECT OF RECORD

PROJECT SPECIFIC STATE AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
" 03117957
AC: FLS ✓ SS ✓ TX ✓
DATE: MAR 21 2017

PRE-CHECK (PC) DOCUMENT
CODE: 2013 CBC
A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED

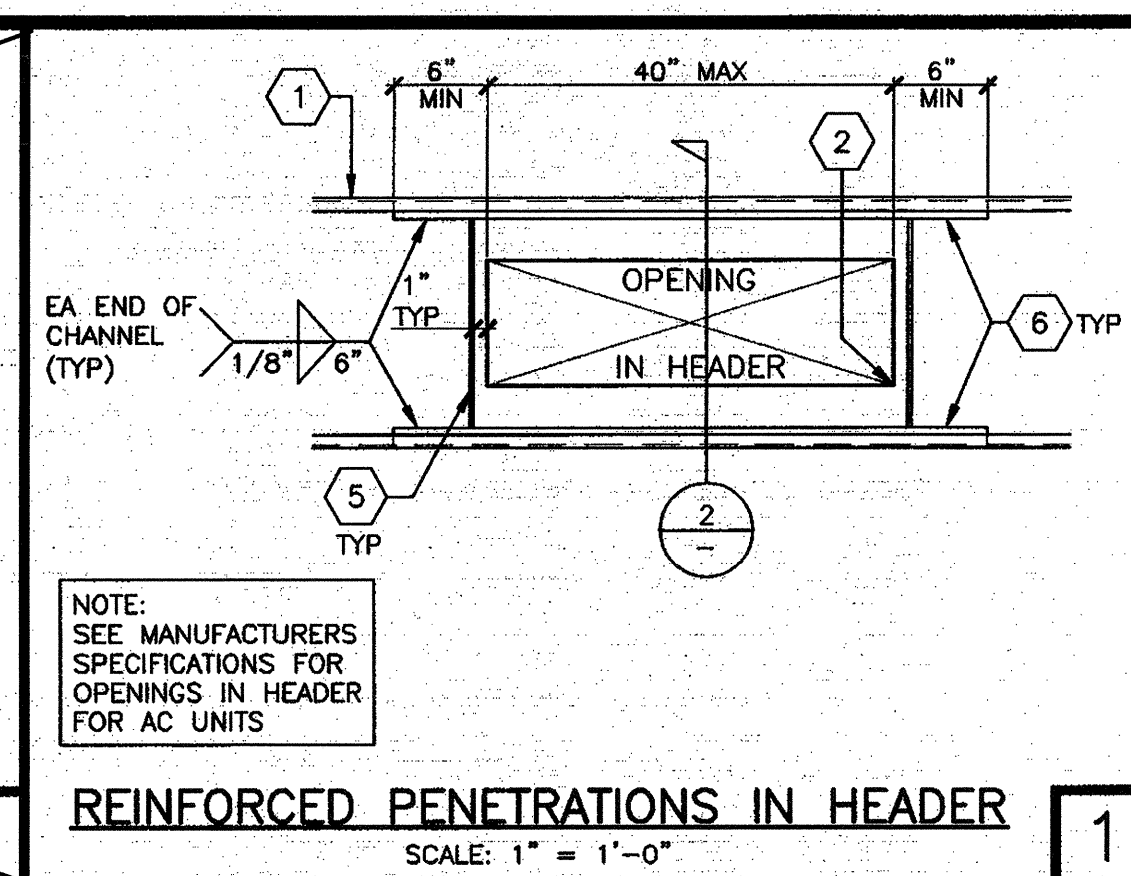
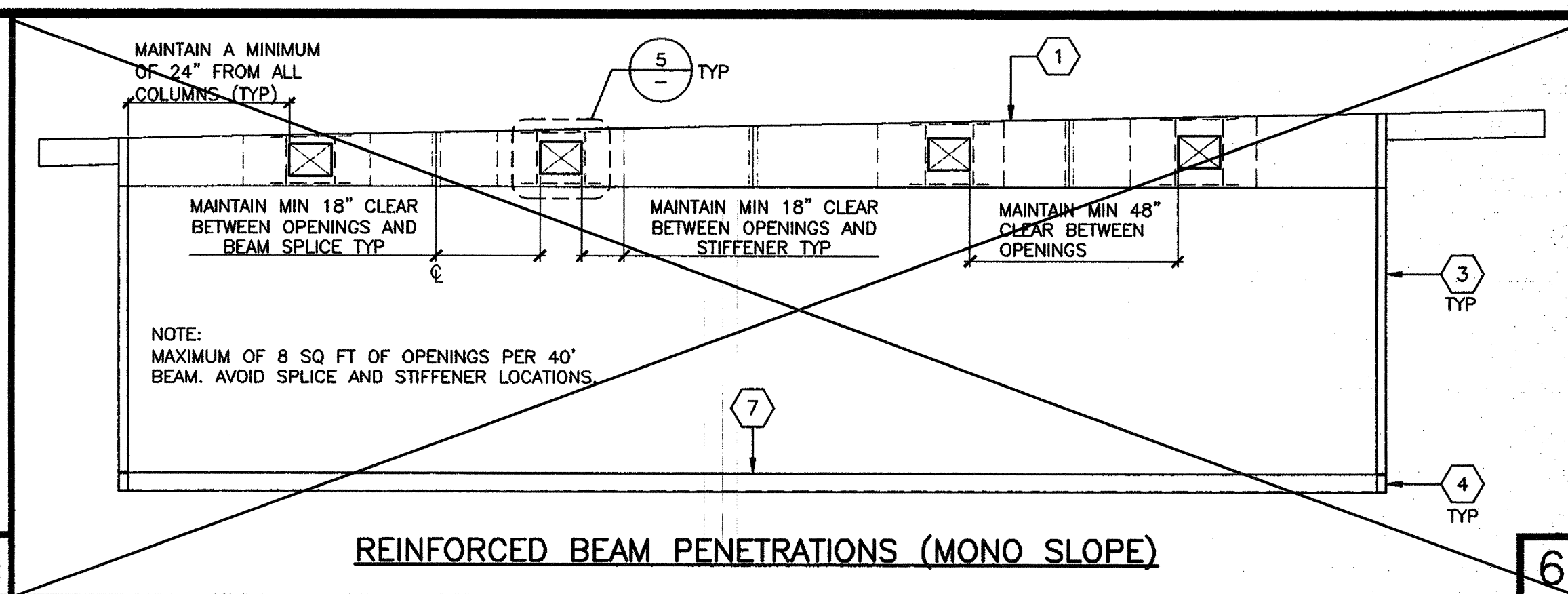
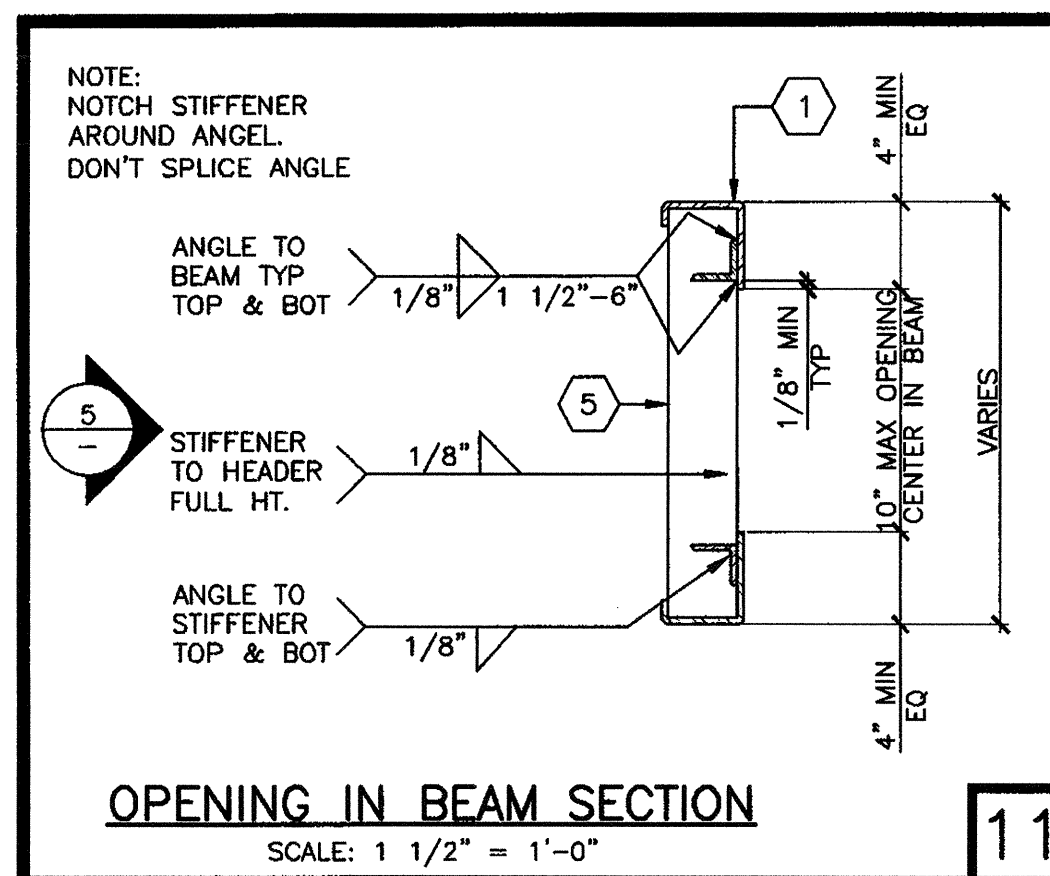
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DIV. OF THE STATE ARCHITECT
PC 02-14405
FILE # PO-80
AC: FLS ✓ SS ✓ TX ✓
DATE: JAN 11 2017

REVISIONS

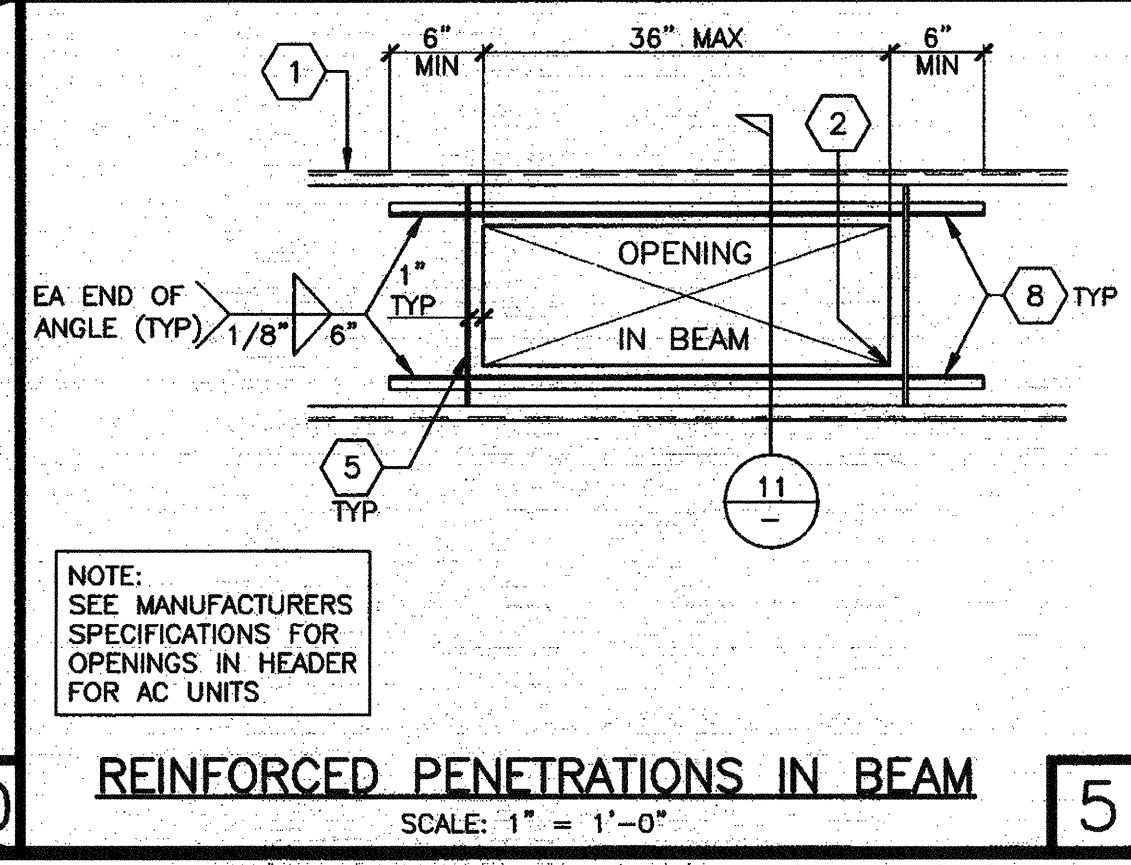
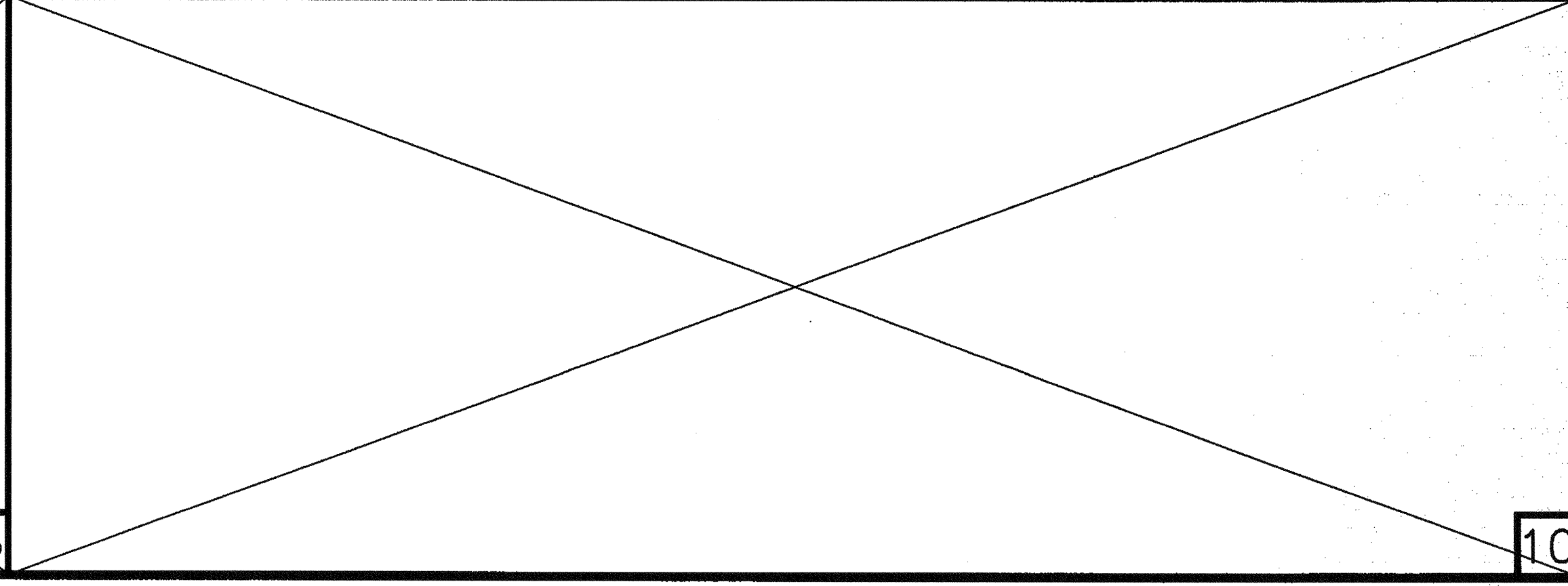
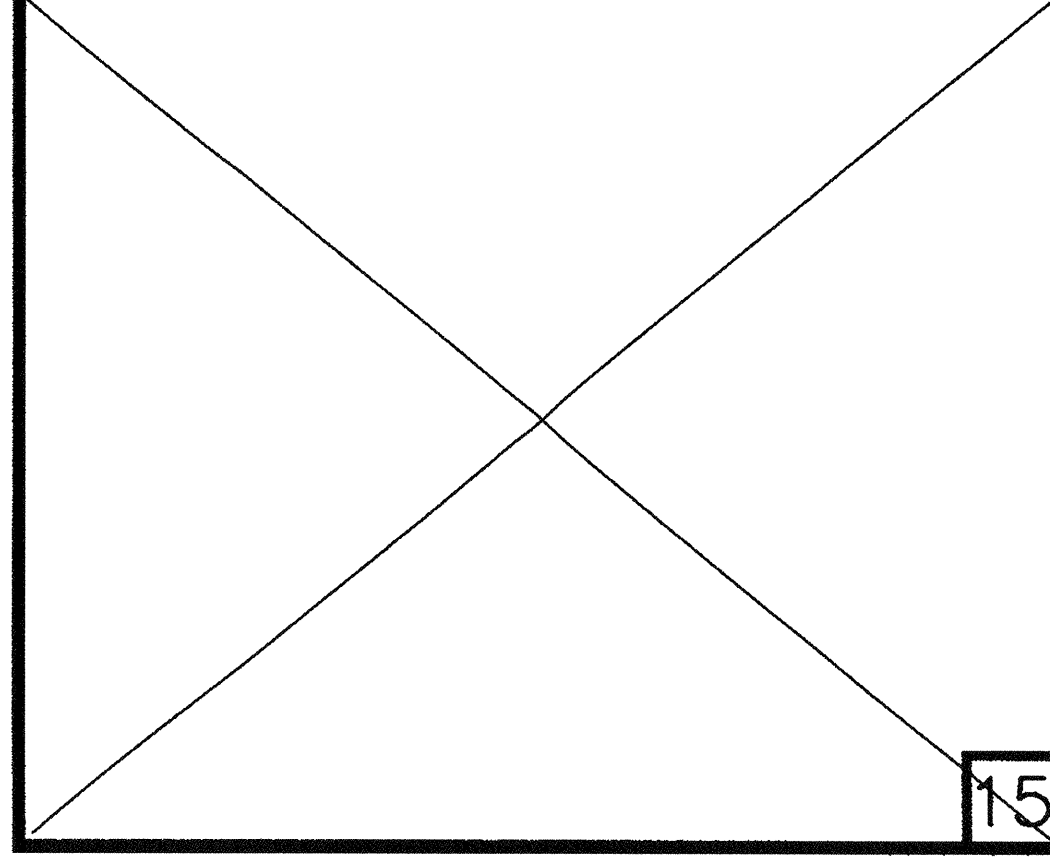
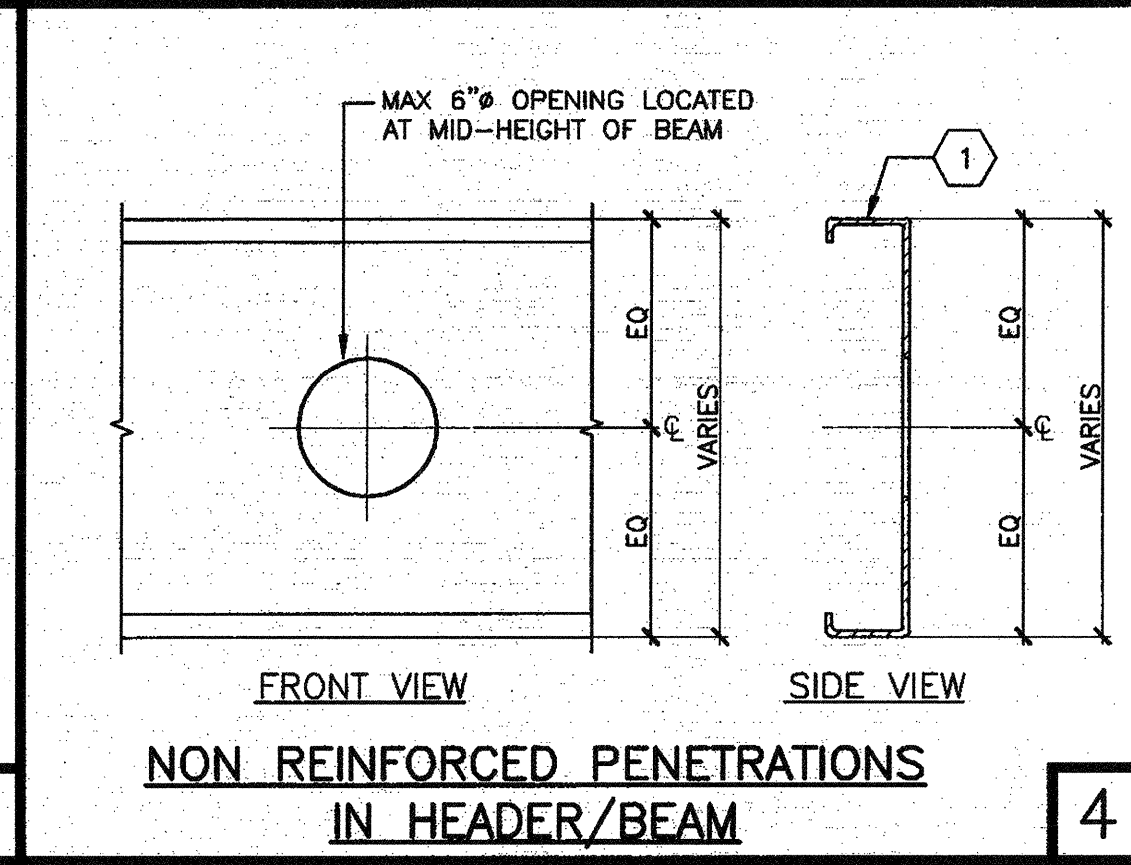
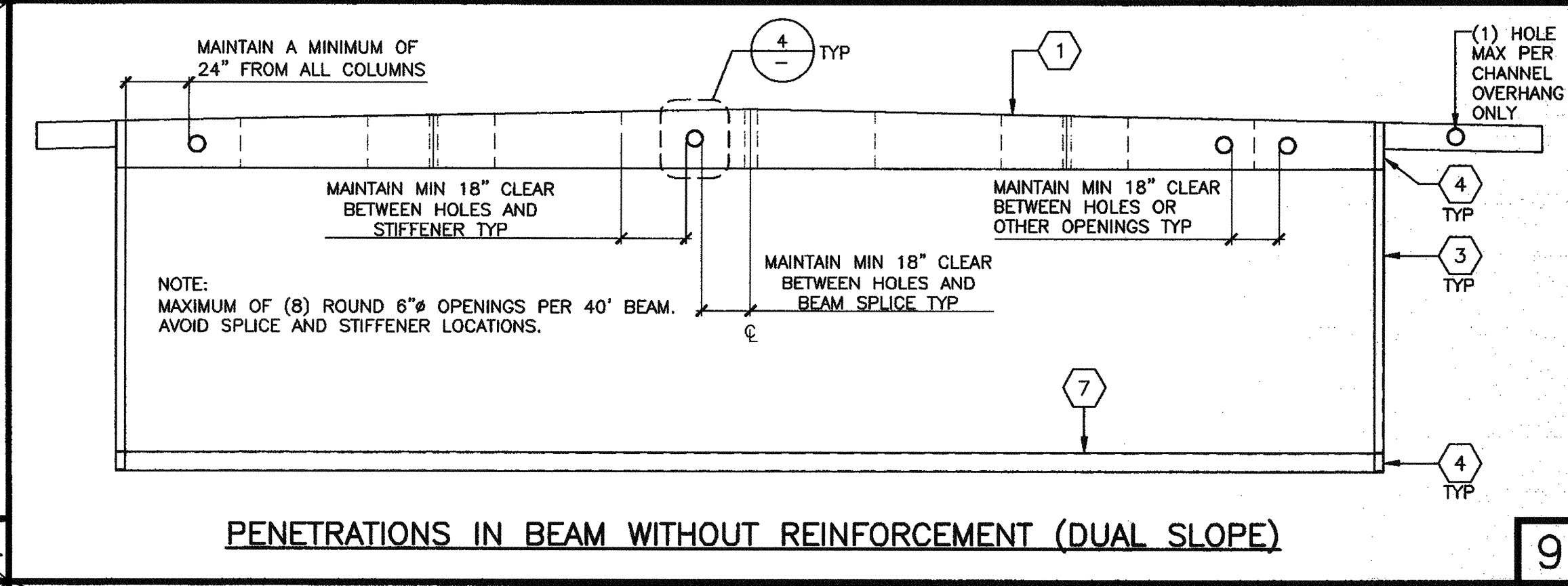
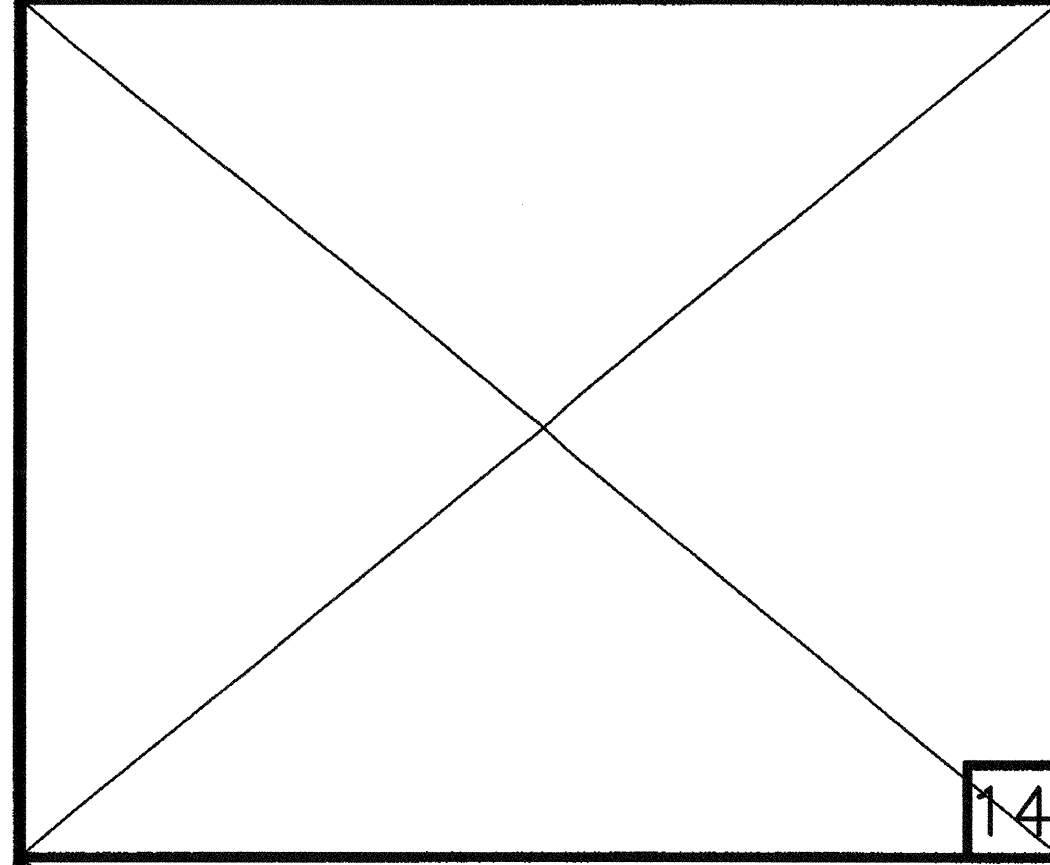
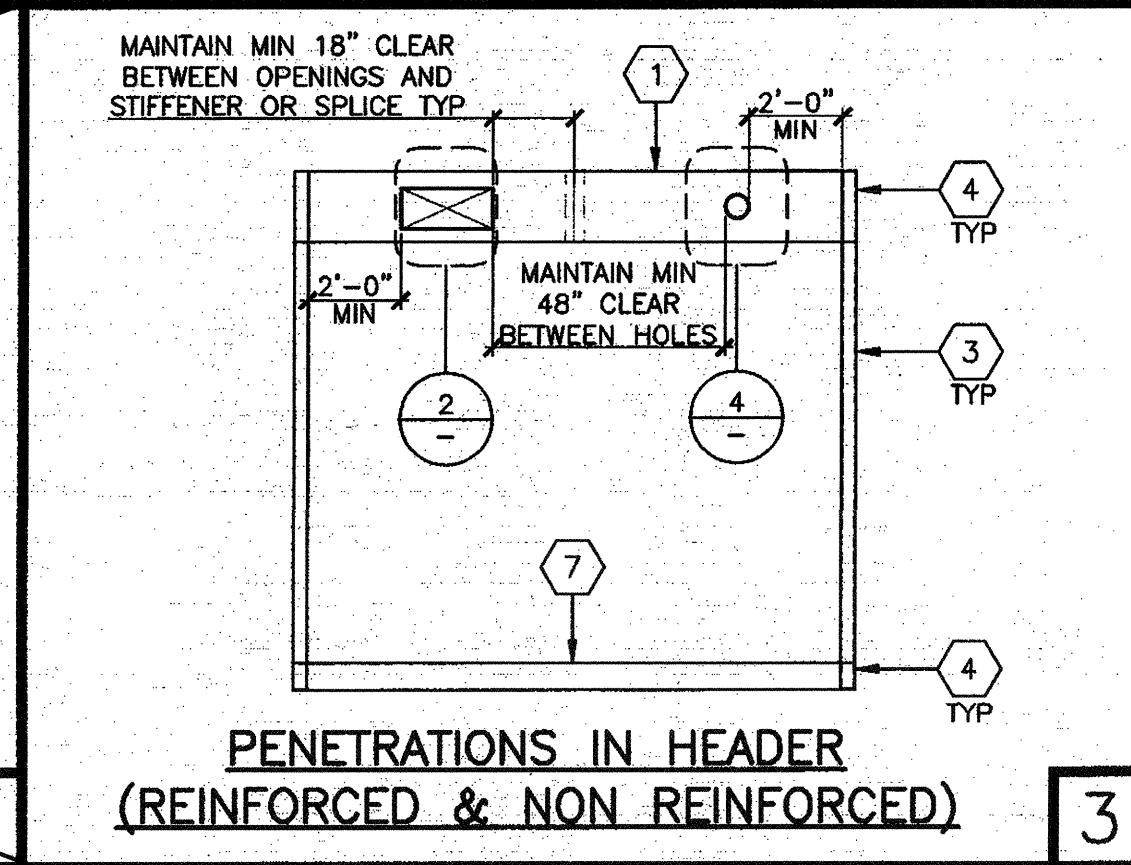
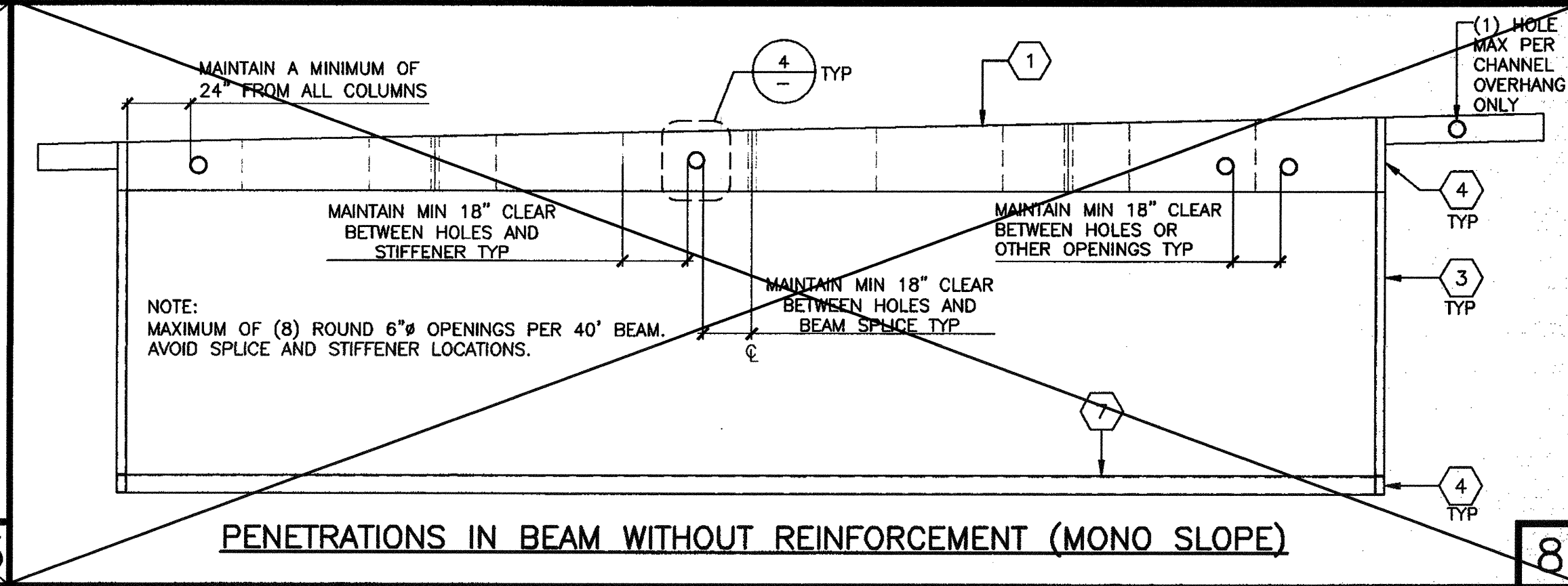
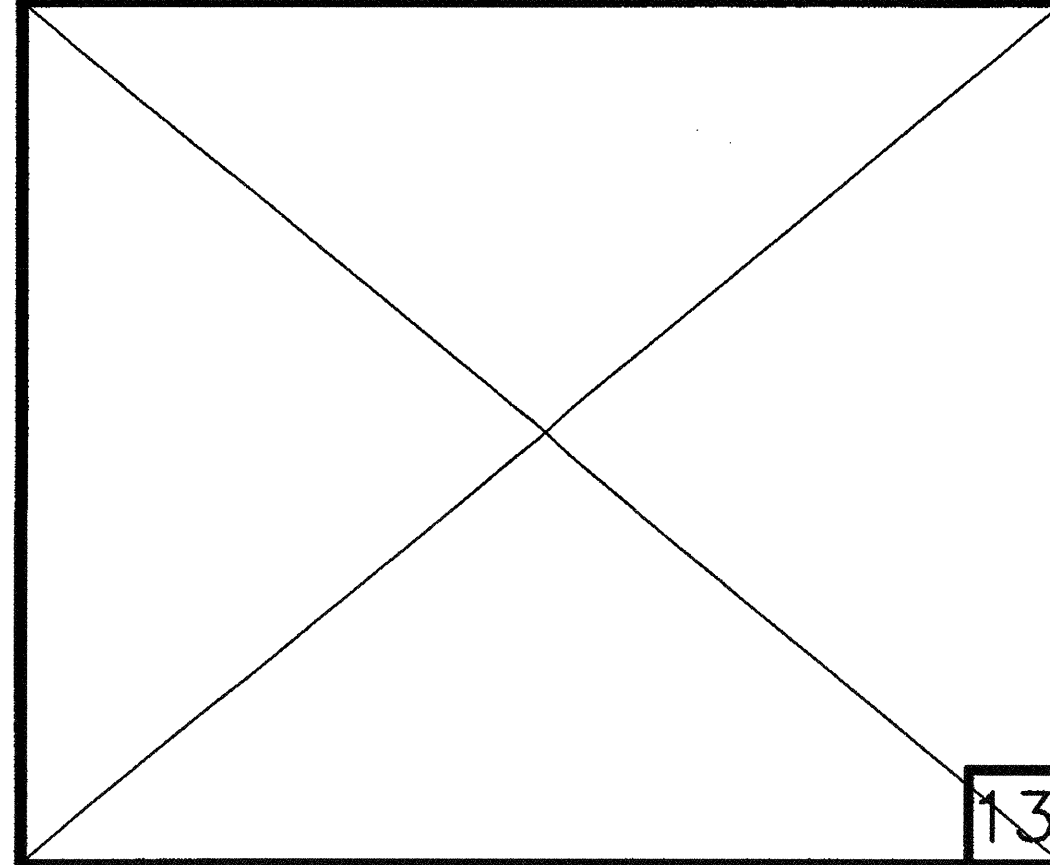
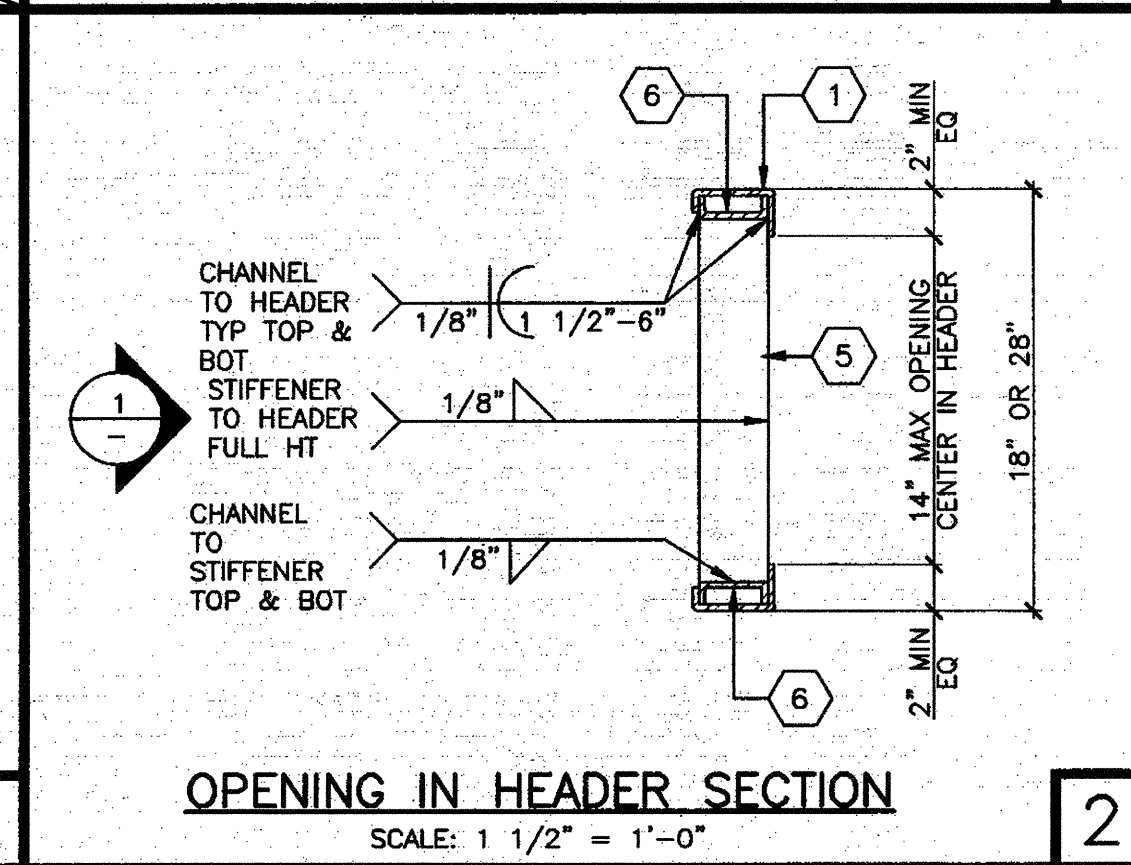
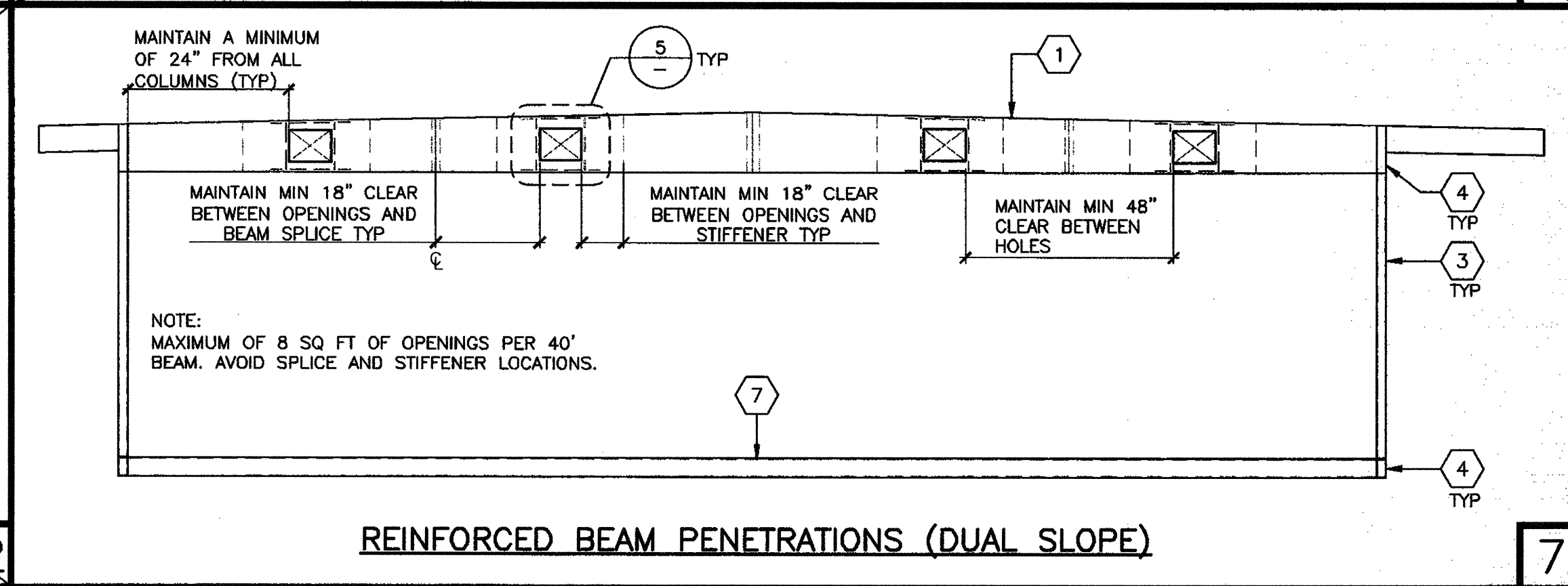
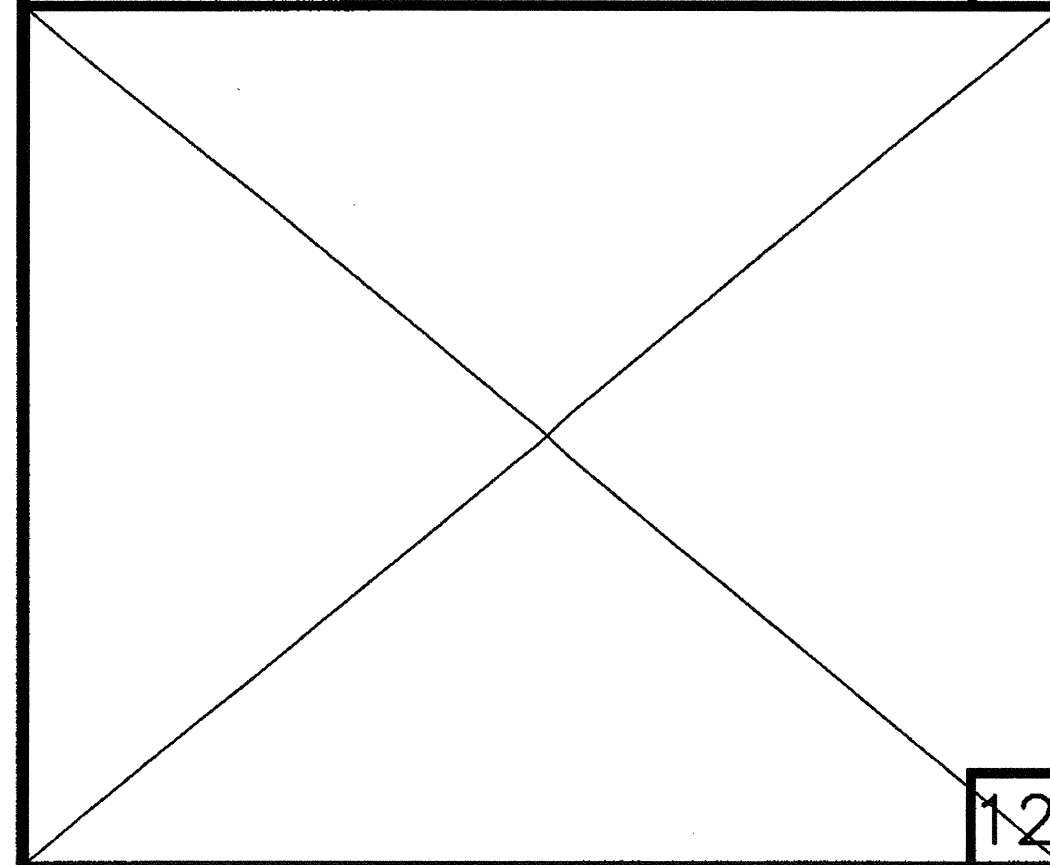
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PROJECT NO.: 00000
DRAWN BY: J. CHAN-LUGAY
SCALE: AS NOTED
DATE: 10-03-16
SHEET NUMBER

S3.0



- KEY NOTES**
1. ROOF HEADER/BEAM (SEE ROOF STRUCTURAL FRAMING PLAN)
 2. CUT CORNERS WITH 1/4" RADIUS
 3. COLUMN (SEE STRUCTURAL BUILDING SECTION SHEETS)
 4. STUB COLUMN (SEE STRUCTURAL BUILDING SECTION SHEETS)
 5. 1/4" STIFFENER PLATE
 6. C-3 1/4" X 1" X 10 GA CHANNEL TOP AND BOTTOM
 7. PERIMETER FLOOR BEAM (SEE STRUCTURAL FLOOR FRAMING SHEETS)
 8. L-2" X 2" X 1/4" ANGLE TOP AND BOTTOM



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CONTRACTORS LICENSE #945691

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PROJECT NAME:
**BELLFLOWER USD
MAYFAIR HS**

SHEET TITLE:
**ALLOWABLE BEAM AND
HEADER PENETRATIONS**

MFR. STRUCTURAL ENGINEER OF RECORD ON PC

DATE SIGNED
DEC 07 2010

MFR. PROJECT SPECIFIC PROFESSIONAL OF RECORD

ARCHITECT OF RECORD

PROJECT SPECIFIC STATE AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
No. 03-11957
AC-FLS-SS-TN
DATE: MAR 2 2 2017

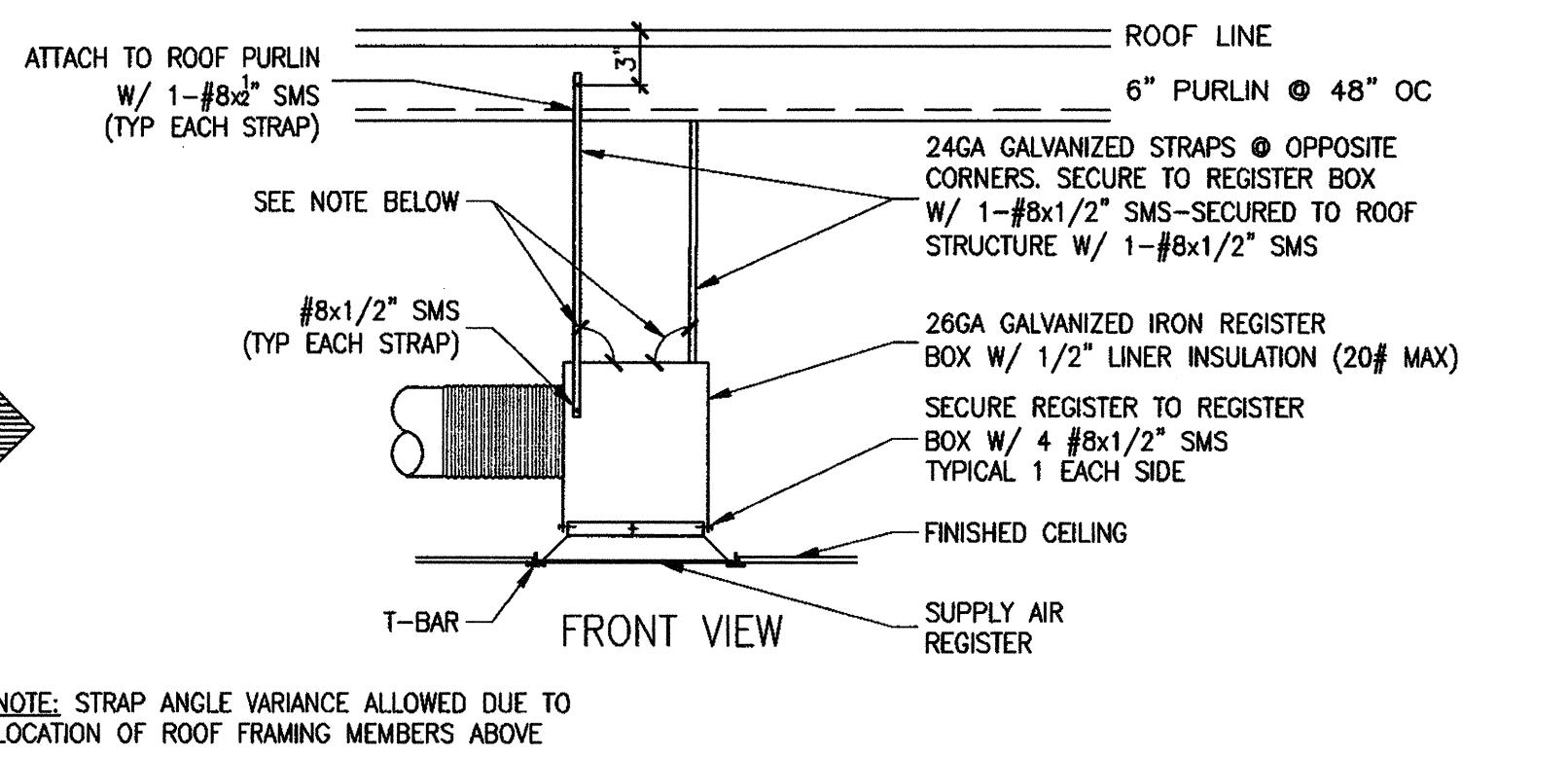
PRE-CHECK (PC) DOCUMENT
CODE: 2013 CBC
A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
PC 02-114405
No. 02-114405
AC-FLS-SS-TN
DATE: JAN 11 2010

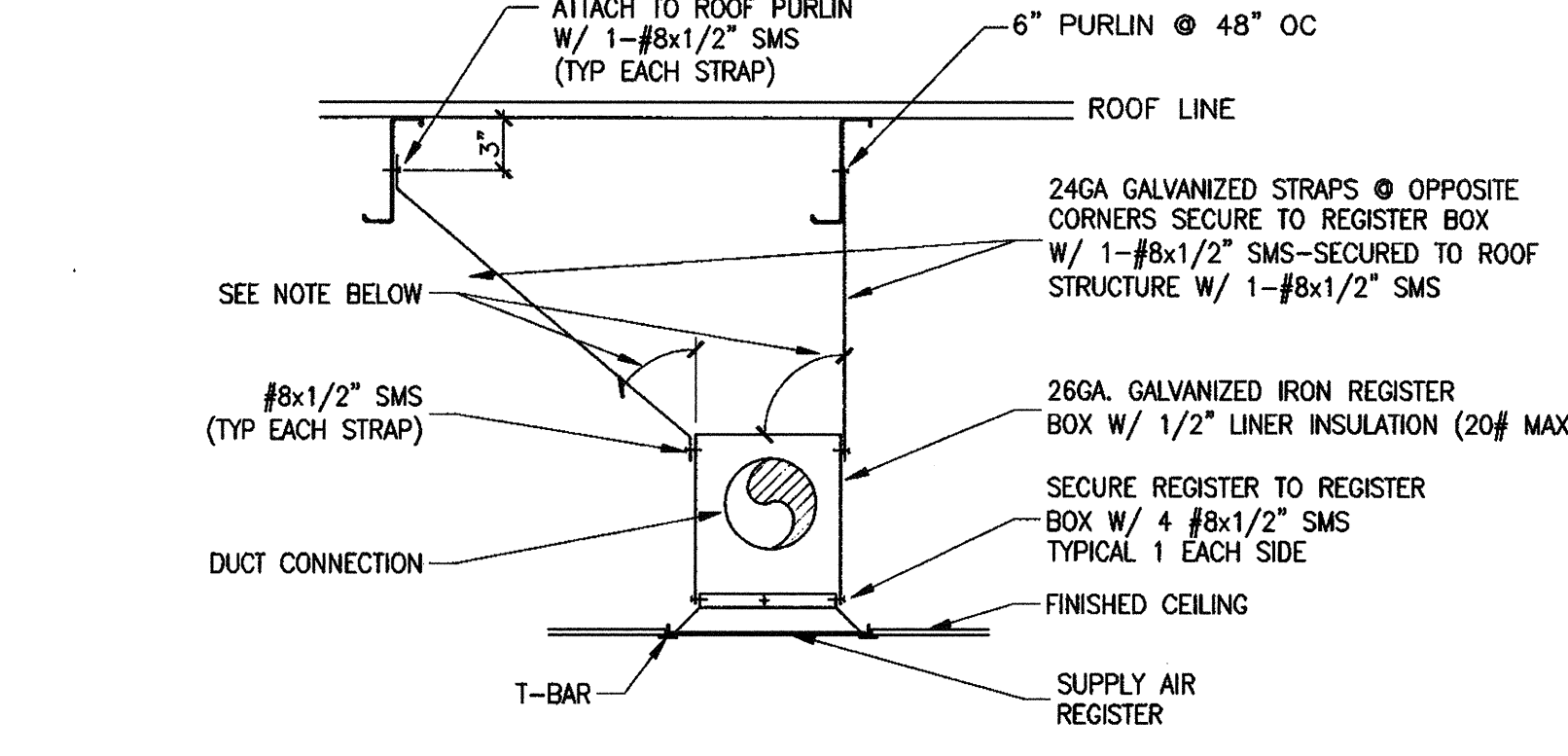
REVISIONS

PROJECT NO.: 00000
DRAWN BY: J. CHAN-LUGAY
SCALE: AS NOTED
DATE: 10-03-16
SHEET NUMBER

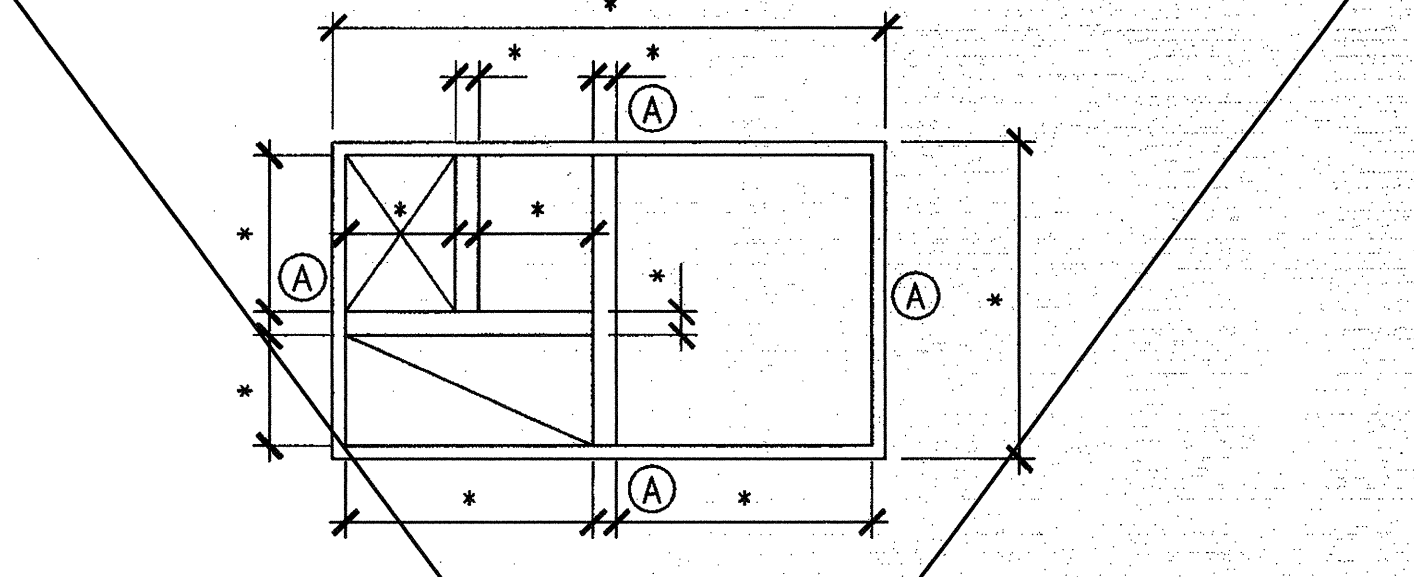
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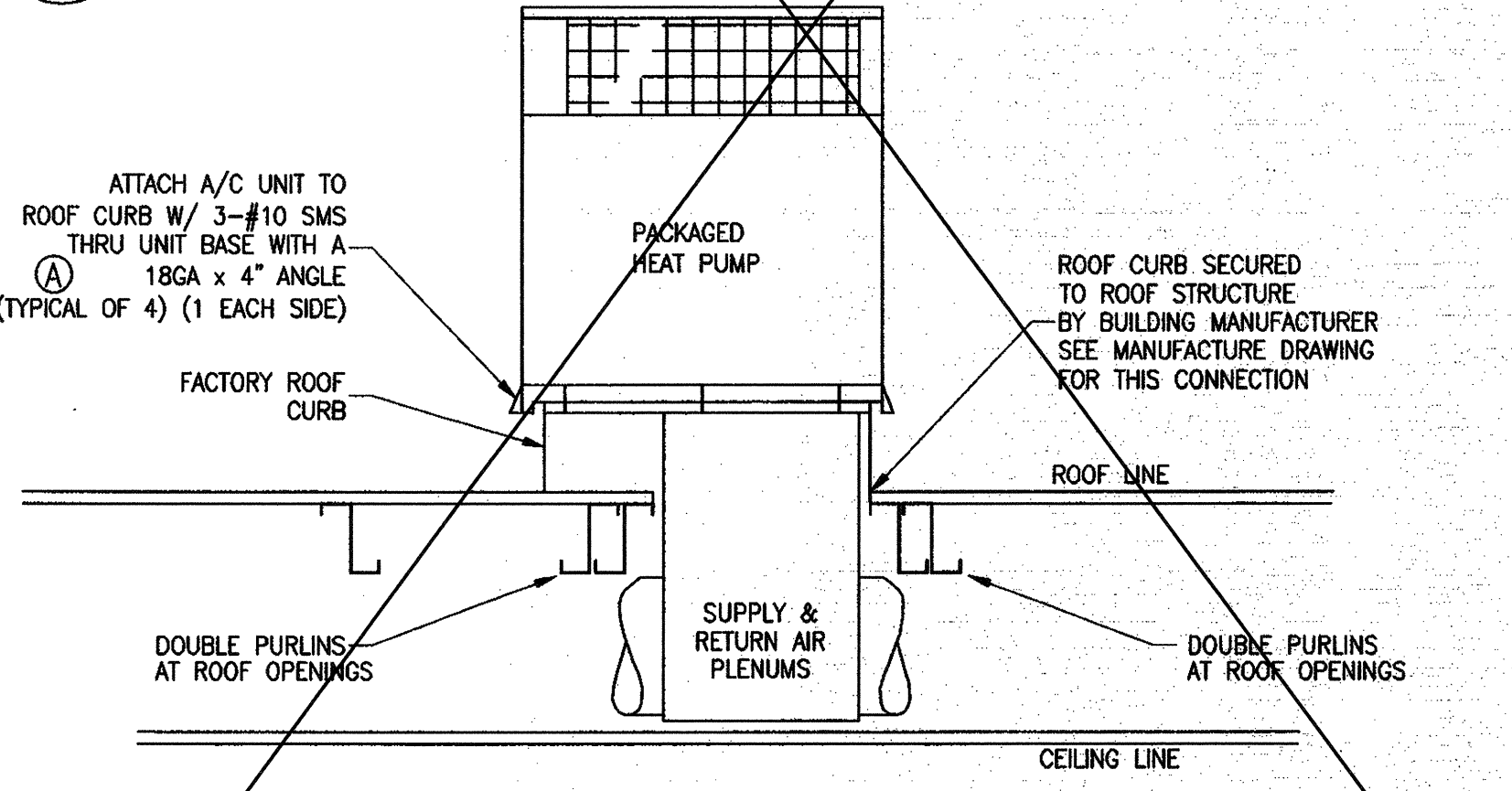
A SECTION AT SUPPLY/REGISTER



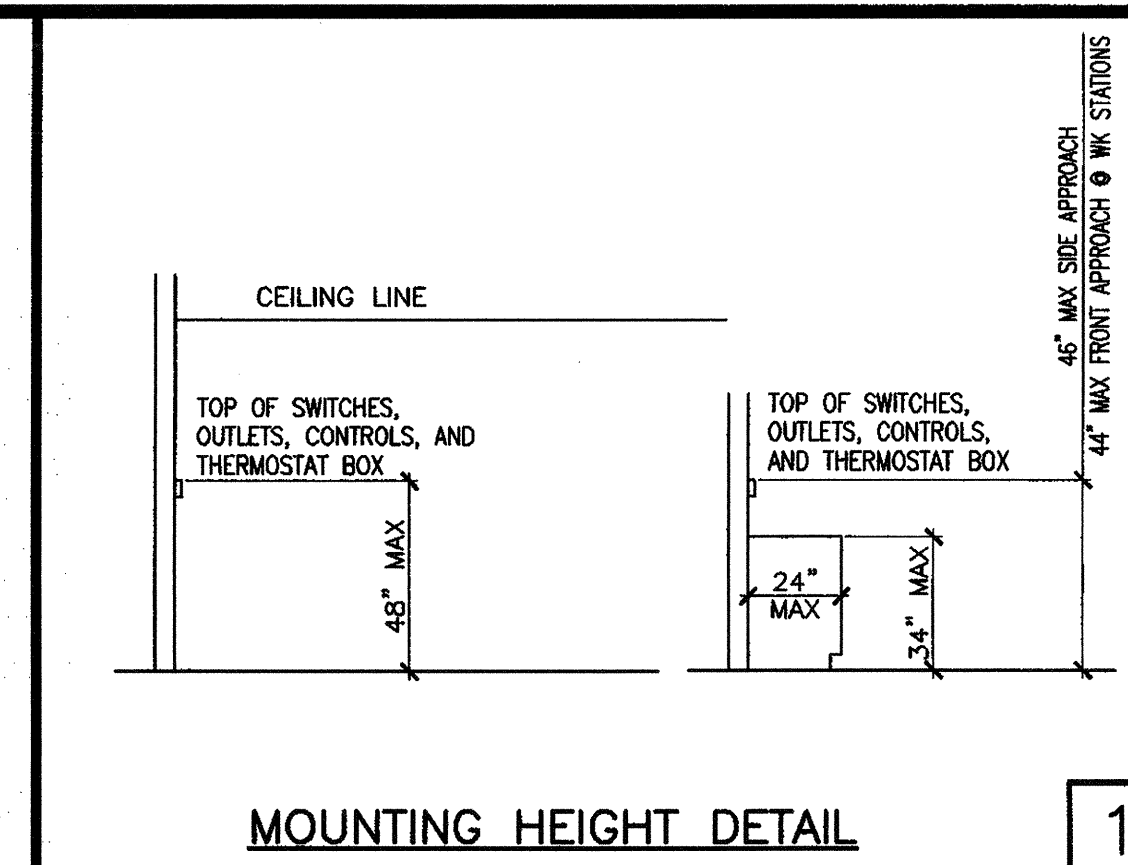
B SIDE VIEW AT SUPPLY/REGISTER



C HEAT PUMP CURB PLAN VIEW



D SECTION THRU ROOF TOP HEAT PUMP



1 MOUNTING HEIGHT DETAIL

SIZE: 24X40	ZONE 14	ZONE 15	ZONE 16
(1) 24X40			
TYPE: HEAT PUMP	AC-1	AC-1	AC-1
WALL: METAL STUDS	R-19+4" RIGID	R-19+4" RIGID	R-19+4" RIGID
ROOF: METAL ROOF	R-30	R-30	R-30
FLOOR: CONC FLOOR	R-0	R-0	R-0
SIZE: 120X40			
(5) 24X40			
TYPE: HEAT PUMP	*AC-3 (5 UNITS)	*AC-3 (5 UNITS)	*AC-3 (5 UNITS)
WALL: METAL STUDS	R-19+4" RIGID	R-19+4" RIGID	R-19+4" RIGID
ROOF: METAL ROOF	R-30	R-30	R-30
FLOOR: CONC FLOOR	R-0	R-0	R-0

NOTE: THE ABOVE CHART ARE MINIMUM REQUIREMENTS THAT MUST COMPLY WHEN BUILDINGS (SMALLEST TO LARGEST) ARE PLACED IN THE ZONED AREAS IN ORDER TO MEET TITLE 24 ENERGY COMPLIANCE. THE WALL TYPE, ROOF TYPE AND FLOOR TYPE (LISTED) ARE CONSIDERED WORSE CASE MATERIALS. PROJECT SPECIFIC MATERIALS THAT ARE NOT LISTED PER THE ABOVE CHART SHALL PROCEED WITH MATERIALS LISTED SHEET A0.2. * = AC-3 IS MAX TONNAGE. OPTIONAL AC-1 OR AC-2 (5 UNITS) CAN BE SUBSTITUTED

SIZE: 24X40	ZONE 14	ZONE 15	ZONE 16
(1) 24X40			
TYPE: HEAT PUMP	AC-1A	AC-1A	AC-1A
WALL: METAL STUDS	R-19+4" RIGID	R-19+4" RIGID	R-19+4" RIGID
ROOF: METAL ROOF	R-30	R-30	R-30
FLOOR: CONC FLOOR	R-0	R-0	R-0
SIZE: 120X40			
(5) 24X40			
TYPE: HEAT PUMP	*AC-3A (5 UNITS)	*AC-3A (5 UNITS)	*AC-3A (5 UNITS)
WALL: METAL STUDS	R-19+4" RIGID	R-19+4" RIGID	R-19+4" RIGID
ROOF: METAL ROOF	R-30	R-30	R-30
FLOOR: CONC FLOOR	R-0	R-0	R-0

NOTE: THE ABOVE CHART ARE MINIMUM REQUIREMENTS THAT MUST COMPLY WHEN BUILDINGS (SMALLEST TO LARGEST) ARE PLACED IN THE ZONED AREAS IN ORDER TO MEET TITLE 24 ENERGY COMPLIANCE. THE WALL TYPE, ROOF TYPE AND FLOOR TYPE (LISTED) ARE CONSIDERED WORSE CASE MATERIALS. PROJECT SPECIFIC MATERIALS THAT ARE NOT LISTED PER THE ABOVE CHART SHALL PROCEED WITH MATERIALS LISTED SHEET A0.2. * = AC-3A IS MAX TONNAGE. OPTIONAL AC-1A OR AC-2A (5 UNITS) CAN BE SUBSTITUTED

GENERAL NOTE:

WHEN AN INTERIOR ROOM(S) ARE ADDED AND COMBINED A/C SYSTEM EXCEEDS 2000 CFM, AN AUTOMATIC SHUT DOWN OF A/C UNITS MUST BE PROVIDED AND SHOWN ON THIS PLAN SET AND COORDINATED WITH THE ARCHITECT'S FIRE ALARM SYSTEM DRAWINGS PER CMC SECTION 609

WALL MOUNT EQUIPMENT SCHEDULE

- AC-1** BARD: W43H1-A-A05XXXXXX, R410a, WALL MOUNTED HEAT PUMP
41,000 BTUH COOLING
38,000 BTUH HEATING, COP = 3.2
1250 CFM @ .15 ESP, WT = 550 LBS
208/230V-1PH-60CY, MCA = 55, MOP = 60
WITH OPTIONAL FACTORY CRV
- AC-2** BARD: W49H1-A-A05XXXXXX, R410a, WALL MOUNTED HEAT PUMP
43,500 BTUH COOLING
44,000 BTUH HEATING, COP = 3.0
1400 CFM @ .20 ESP, WT = 550 LBS
208/230V-1PH-60CY, MCA = 63, MOP = 70
WITH OPTIONAL FACTORY CRV
- AC-3** BARD: W61H1-A-A05XXXXXX, R410a, WALL MOUNTED HEAT PUMP
55,000 BTUH COOLING
50,000 BTUH HEATING, COP = 3.0
1450 CFM @ .20 ESP, WT = 580 LBS
208/230V-1PH-60CY, MCA = 69, MOP = 80
WITH OPTIONAL FACTORY CRV

ROOF MOUNT EQUIPMENT SCHEDULE

- AC-1A** GOODMAN: CPH036-0101DXXX, ROOF MOUNTED HEAT PUMP
35,000 BTUH COOLING, SEER/EER = 13.0/11.0
34,600 BTUH HEATING, HSPF = 7.7
1200 CFM @ .2 ESP, WT = 605 LBS
208/230V-1PH-60CY, MCA = 25, MOP = 40
WITH FACTORY ROOF CURB & FRESH AIR INTAKE
- AC-2A** GOODMAN: CPH048-0101DXXX, ROOF MOUNTED HEAT PUMP
46,000 BTUH COOLING, SEER/EER = 13.0/11.3
45,000 BTUH HEATING, HSPF = 7.7
1500 CFM @ .2 ESP, WT = 610 LBS
208/230V-1PH-60CY, MCA = 29, MOP = 45
WITH FACTORY ROOF CURB & FRESH AIR INTAKE
- AC-3A** GOODMAN: CPH060-0101DXXX, ROOF MOUNTED HEAT PUMP
59,500 BTUH COOLING, SEER/EER = 13.0/11.0
57,000 BTUH HEATING, HSPF = 7.7
1950 CFM @ .2 ESP, WT = 615 LBS
208/230V-1PH-60CY, MCA = 25, MOP = 40
WITH FACTORY ROOF CURB & FRESH AIR INTAKE

MATERIAL SCHEDULE

- SUPPLY AIR PLENUM: GALV. IRON SHEETS W/ 1/2" LINER INSULATION
- INTERIOR DUCTWORK: FLEX DUCT CLASS 1 UL-181
- REGISTER BOXES: GALV IRON SHEETS W/ 1/2" LINER INSULATION
- SUPPLY AIR REGISTERS: METALAIR 7650-6' SERIES
- RETURN AIR GRILLES: METALAIR 'RH' SERIES
- THERMOSTAT: WHITE RODGERS '1F92' SERIES
- ATTACH ALL SUPPLY AND RETURN AIR REGISTERS TO REGISTER BOXES WITH 4-#8x1/2" SMS - ATTACH REGISTER BOX TO ROOF STRUCTURE WITH 2-1/2" GALV STRAPS AT OPPOSITE CORNERS
- FLAME SPREAD LESS THAN 25 SMOKE DEVELOPED RATING LESS THAN 50

LEGEND AND ABBREVIATIONS

- SUPPLY DUCT
- RETURN DUCT
- 12" NUMBER INDICATES DUCT SIZE
- RETURN REGISTER
- RETURN REGISTER
- SUPPLY REGISTER
- EXHAUST FAN
- 12"x12" HOLE THRU BEAM
- 16"x10" HOLE THRU BEAM
- FIRE SMOKE DAMPER 'POTTORF': FSD-125R
- COMBINATION SMOKE FIRE DAMPER 'POTTORF': FSD-141
- CONDENSTATE DRAIN
- DIRECTIONAL AIR FLOW
- BAROMETRIC RELIEF DAMPER THRU WALL
- UCD UNDERCUT DOOR
- BAROMETRIC RELIEF DAMPER THRU ROOF
- TOP OF THERMOSTAT +48" AFF
- DAMPER
- EQUIPMENT CALLOUT: TOP = EQUIPMENT TYPE BOTTOM = IDENTIFICATION
- E ELECTRICAL LOCATION (PROVIDE WP BOX)
- G GAS LOCATION
- RAG RETURN AIR GRILL
- EP EXTRA PURLIN
- RL RIDGE LINE

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CONTRACTORS LICENSE #945691

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PROJECT NAME:
**BELFLOWER USD
MAYFAIR HS**

SHEET TITLE:
MECHANICAL DETAILS

MFR. STRUCTURAL ENGINEER OF RECORD ON PC

DATE SIGNED:
03/07/2017

MFR. PROJECT SPECIFIC PROFESSIONAL OF RECORD

ARCHITECT OF RECORD

PROJECT SPECIFIC STATE AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
03/07/2017
AC FLS 22 SS TY
03/07 11/2/2017

PRE-CHECK (PC) DOCUMENT
CODE: 2013 CBC
A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
PC 02-114405
DATE: JAN 11 2017

REVISIONS

PROJECT NO.: 00000
DRAWN BY: J. CHAN-LUGAY
SCALE: AS NOTED
DATE: 10-03-16
SHEET NUMBER

M0.0

IMPACT
CONSTRUCTION SERVICES INC.

CONTRACTORS LICENSE #945691

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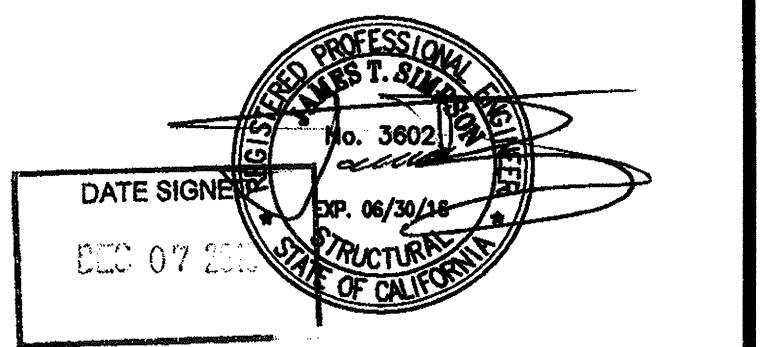
PROJECT NAME:

BELLFLOWER USD
MAYFAIR HS

SHEET TITLE:

MECHANICAL PLAN
WALL MOUNT
24'X40'

MFR. STRUCTURAL ENGINEER OF RECORD ON PC



MFR. PROJECT SPECIFIC PROFESSIONAL OF RECORD

ARCHITECT OF RECORD

PROJECT SPECIFIC STATE AGENCY APPROVAL

~~IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
AC 02-117957
DATE: MAR 2 2017~~

PRE-CHECK (PC) DOCUMENT
CODE: 2015 CBC
A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS
REQUIRED

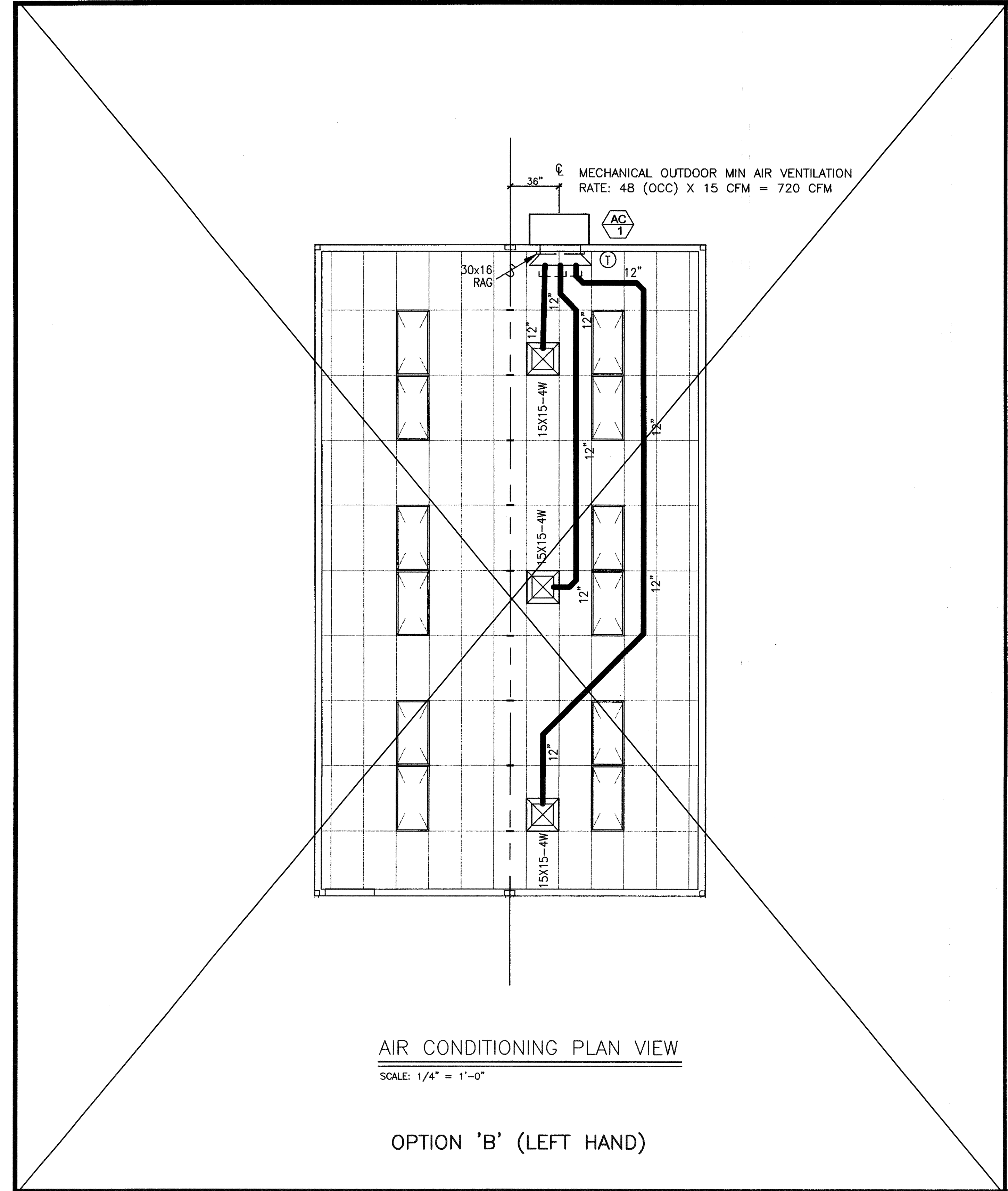
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DIV. OF THE STATE ARCHITECT
PC 02-114405
DATE: JAN 11 2016~~

REVISIONS

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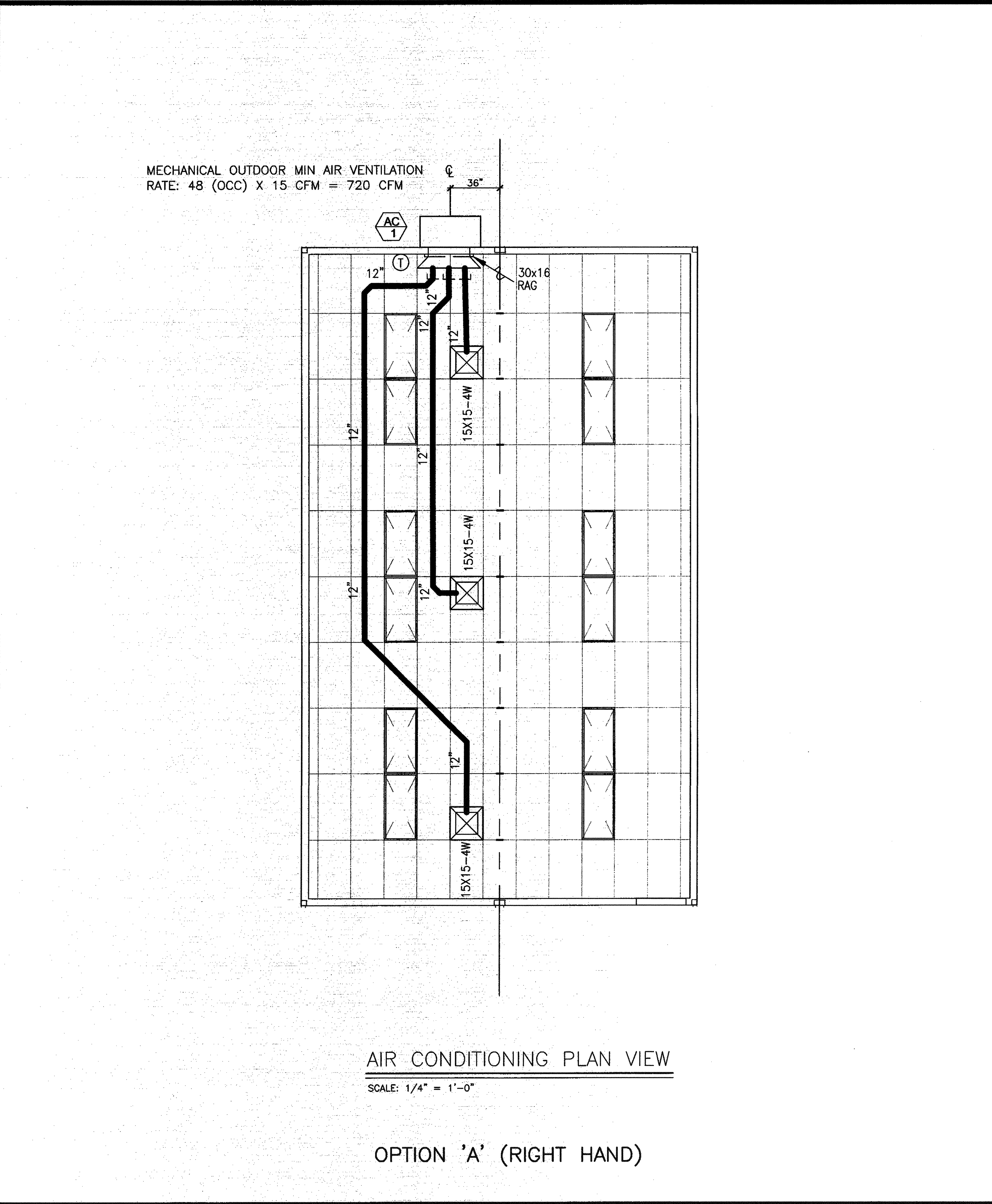
PROJECT NO.: 00000
DRAWN BY: J. CHAN-LUGAY
SCALE: AS NOTED
DATE: 10-03-16
SHEET NUMBER

M1.1



AIR CONDITIONING PLAN VIEW
SCALE: 1/4" = 1'-0"

OPTION 'B' (LEFT HAND)



AIR CONDITIONING PLAN VIEW
SCALE: 1/4" = 1'-0"

OPTION 'A' (RIGHT HAND)

NOTES:

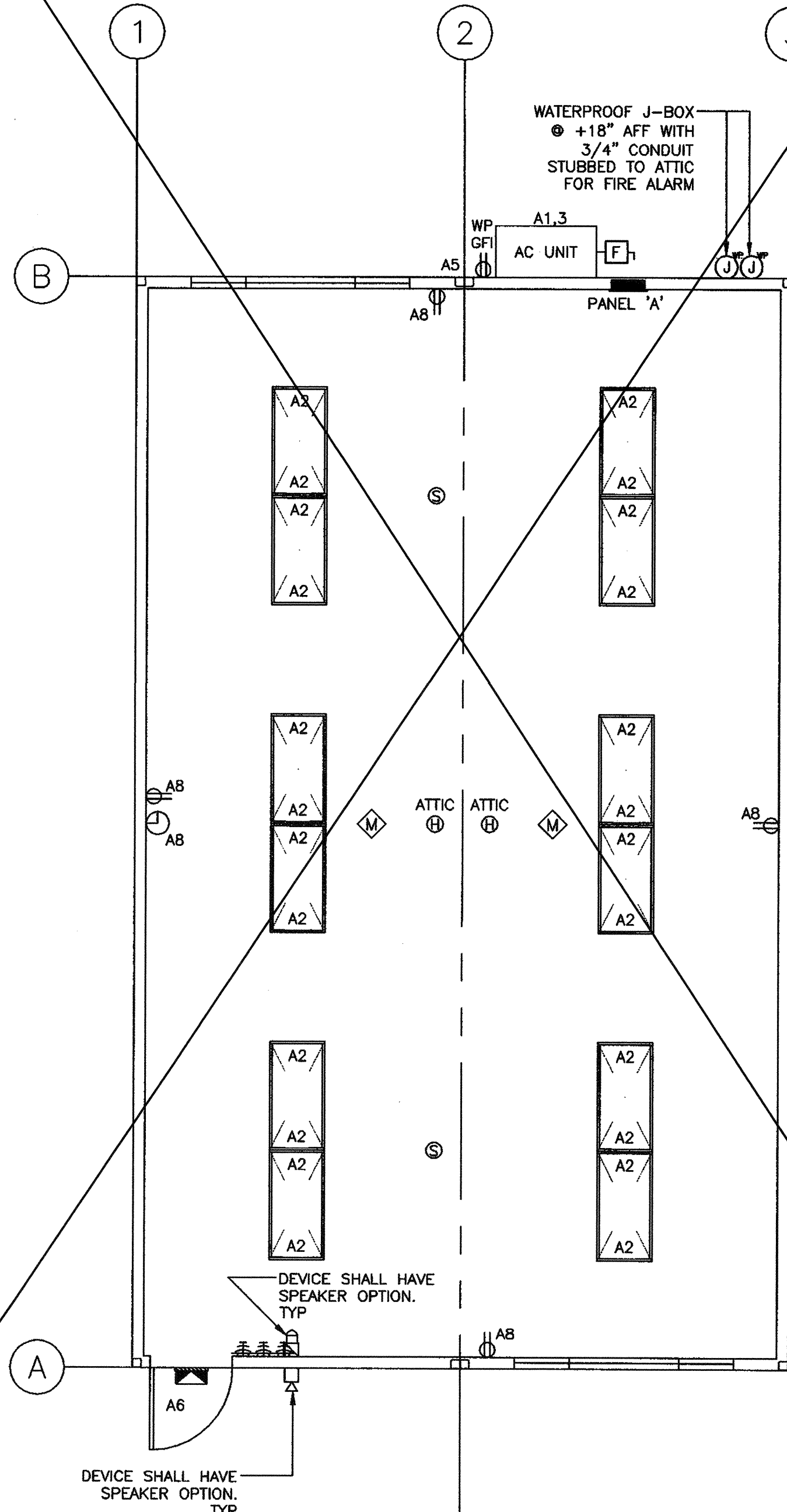
- REFER TO SHEET M0.0 FOR DETAILS, LEGEND AND SCHEDULES
- BUILDING OVERHANG PROJECTION MUST BE A MINIMUM 36" FOR ANY HVAC UNIT 13.00 SEER AND GREATER
- DUCT SEALING LEAKAGE RATE SHALL NOT EXCEED 6%

GENERAL NOTES

- SEE SHEET E0.0 FOR ELECTRICAL, FIRE ALARM AND SIGNAL PLAN DESIGN NOTES
- PROVIDE EMERGENCY LIGHTING AT ALL EXTERIOR DOORS PER SECTION 1006.3.5. LOCATION OF EMERGENCY LIGHTING TO BE DETERMINED BY SITE ARCHITECT BASED ON PROJECT SPECIFIC DESIGN
- CBC SECTION 907.5.2.2.5, EMERGENCY POWER FOR EMERGENCY VOICE COMMUNICATION.
- SEE DAYLIT FLOOR PLANS FOR DAYLIT LOCATIONS

LOAD CENTER SCHEDULE													PANEL A	
VOLTS	PHASE	BUSS	FEED										WALL	
120/208	1	100 A												
MAIN BRKR	WIRE	MOUNT	LOCATION											
100 A	3	RECESSED	INTERIOR											
DESCRIPTION	A#	B#	WIRE SIZE	BREAKER	POLE	DCT. NO.	A	B	POLE	DCT. NO.	WIRE SIZE	WATTS	DESCRIPTION	
A/C	5720	6	70	2	1	1	2	1	20	12	526		LIGHTS	
A/C	5720	6	70	2	1	3	4	1	20	12	526		LIGHTS	
EXT RECEPT	180	12	20	1	5	6	1	20	12	42			EXTERIOR LIGHTS	
													RECEPT	
													F.A.C.P.	
SUB TOTAL	5900	5720										1168	1426	SUB TOTAL
LOAD													TOTAL LOAD	
A 7,068													L.C.L. = 1,052 x 1.25 = 1,315	
B 7,146													OTHER = 13,162	
TOTAL 14,214													MAX DEMAND = 14,477	
													MAX DEMAND 70 AMPS	

* LABEL & LOCK ON DEVICE



OPTION 'B' (LEFT HAND)

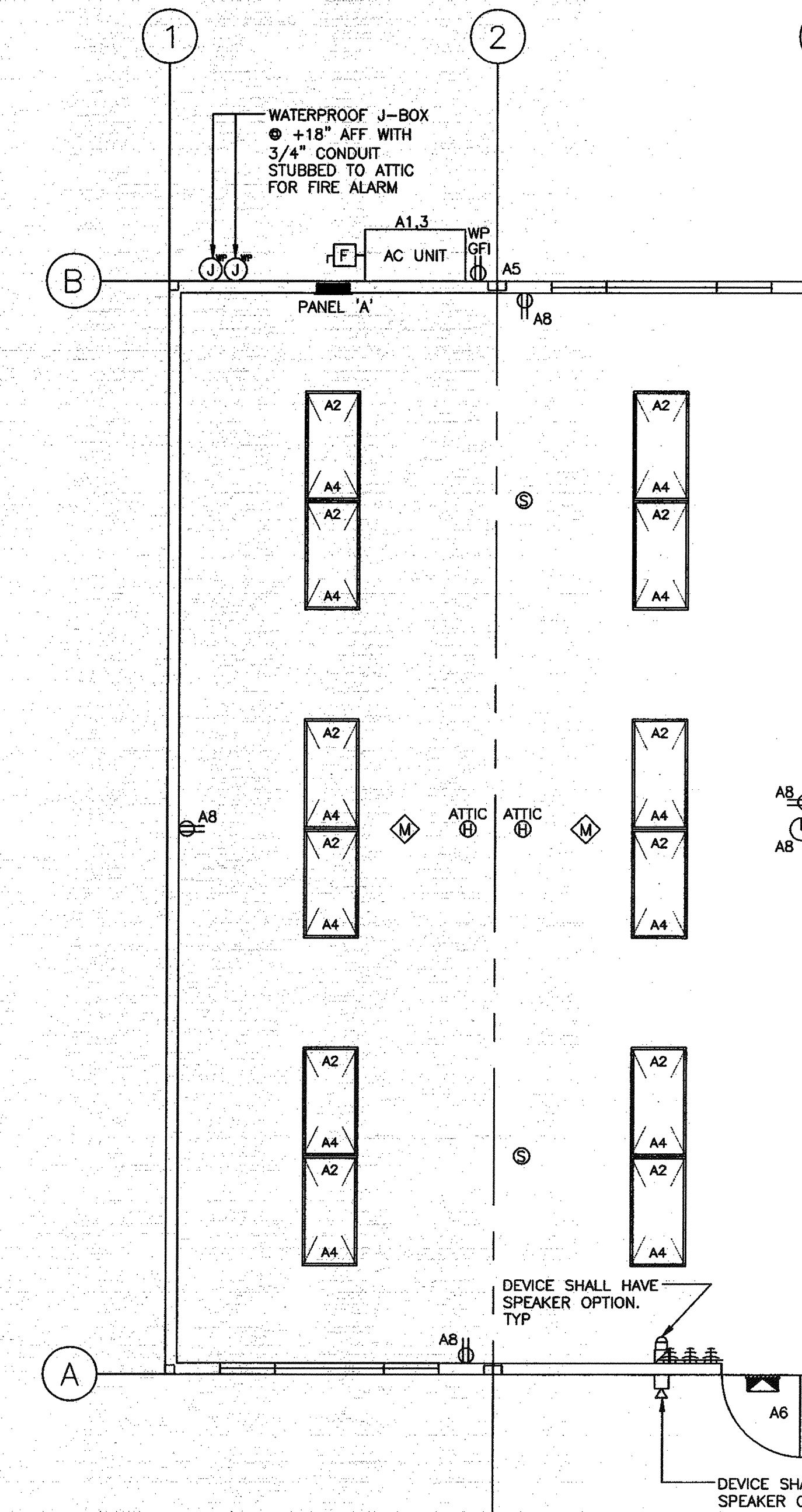
ELECTRICAL PLAN - WALL MOUNTED HVAC
SCALE: 1/4" = 1'-0"

GENERAL NOTES

- SEE SHEET E0.0 FOR ELECTRICAL, FIRE ALARM AND SIGNAL PLAN DESIGN NOTES
- PROVIDE EMERGENCY LIGHTING AT ALL EXTERIOR DOORS PER SECTION 1006.3.5. LOCATION OF EMERGENCY LIGHTING TO BE DETERMINED BY SITE ARCHITECT BASED ON PROJECT SPECIFIC DESIGN
- CBC SECTION 907.5.2.2.5, EMERGENCY POWER FOR EMERGENCY VOICE COMMUNICATION.
- SEE DAYLIT FLOOR PLANS FOR DAYLIT LOCATIONS

LOAD CENTER SCHEDULE													PANEL A	
VOLTS	PHASE	BUSS	FEED										WALL	
120/208	1	100 A												
MAIN BRKR	WIRE	MOUNT	LOCATION											
100 A	3	RECESSED	INTERIOR											
DESCRIPTION	A#	B#	WIRE SIZE	BREAKER	POLE	DCT. NO.	A	B	POLE	DCT. NO.	WIRE SIZE	WATTS	DESCRIPTION	
A/C	5720	6	70	2	1	1	2	1	20	12	526		LIGHTS	
A/C	5720	6	70	2	1	3	4	1	20	12	526		LIGHTS	
EXT RECEPT	180	12	20	1	5	6	1	20	12	42			EXTERIOR LIGHTS	
													RECEPT	
													F.A.C.P.	
SUB TOTAL	5900	5720										1168	1426	SUB TOTAL
LOAD													TOTAL LOAD	
A 7,068													L.C.L. = 1,052 x 1.25 = 1,315	
B 7,146													OTHER = 13,162	
TOTAL 14,214													MAX DEMAND = 14,477	
													MAX DEMAND 70 AMPS	

* LABEL & LOCK ON DEVICE



OPTION 'A' (RIGHT HAND)

ELECTRICAL PLAN - WALL MOUNTED HVAC
SCALE: 1/4" = 1'-0"

IMPACT CONSTRUCTION SERVICES INC.

CONTRACTORS LICENSE #944691
NORTHERN CALIFORNIA DIVISION
450 COMMERCE AVE.
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FAX: (209) 590-8503
SOUTHERN CALIFORNIA DIVISION
1900 W. HURLEY RIVER BLVD.
PERRIS, CA 92571
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WEBSITE: WWW.IMPACTCONSTRUCTION.COM
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PROJECT NAME:
**BELLFLOWER USD
MAYFAIR HS**

SHEET TITLE:
**ELECTRICAL PLAN
24'X40'
(WALL MOUNTED HVAC)**

MFR. STRUCTURAL ENGINEER OF RECORD ON PC

DATE SIGNED
07/07/17

MFR. PROJECT SPECIFIC PROFESSIONAL OF RECORD

ARCHITECT OF RECORD

PROJECT SPECIFIC STATE AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
03 11 17 957
AC PLS/CSS
Date 11/2/17

PRE-CHECK (PC) DOCUMENT
CODE: 2013 CBC
A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS
REQUIRED

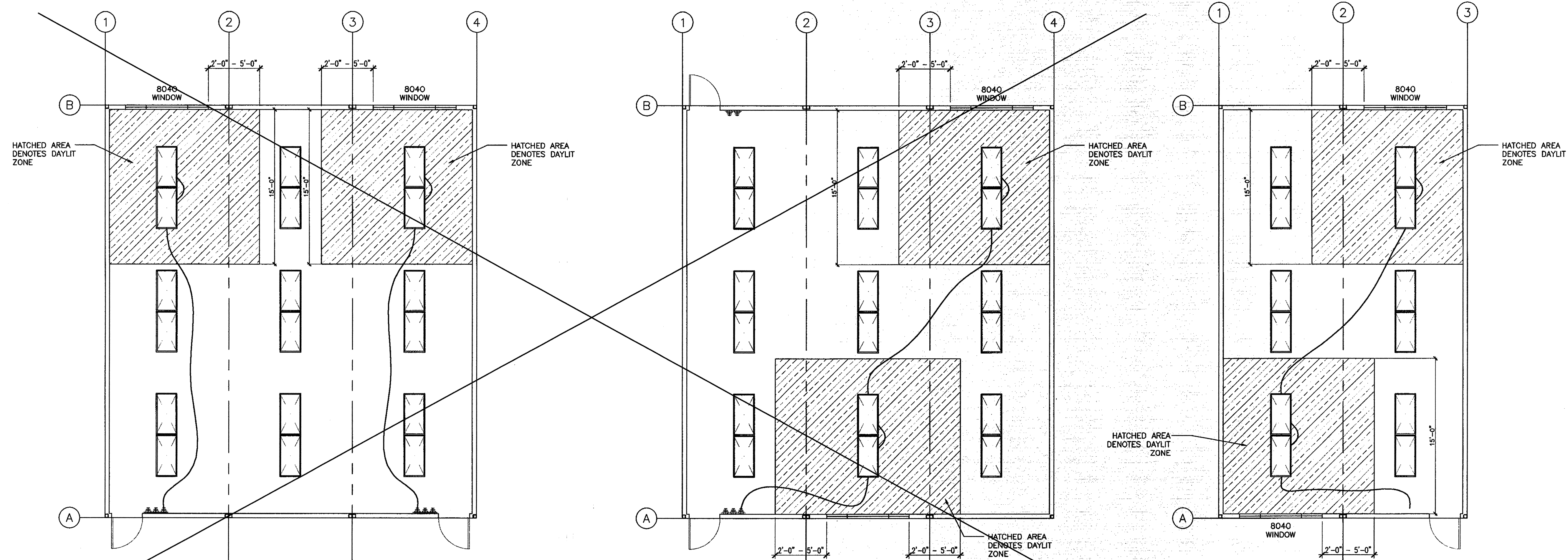
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
PC 02-114405
AC PLS/CSS
DATE: JAN 11 2017

REVISIONS

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PROJECT NO.: 00000
DRAWN BY: J. CHAN-LUGAY
SCALE: AS NOTED
DATE: 10-03-16
SHEET NUMBER

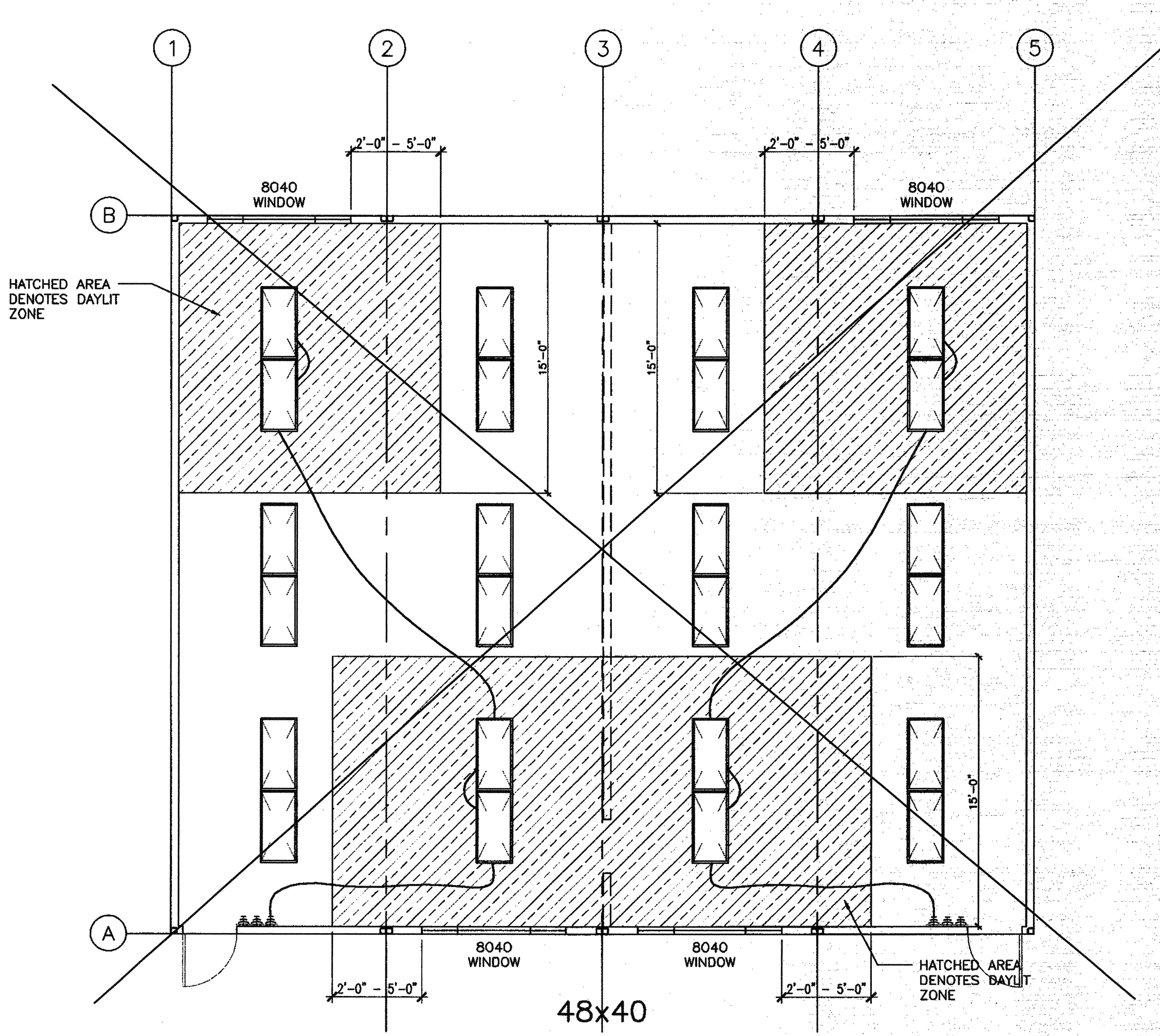
E1.0



36x40
(USED IN FLOOR PLANS 60'x40', 84'x40' & 108'x40')

36'x40' (TYPICAL)

24'x40'
OPTION 'A' (RIGHT HAND) SHOWN



48x40

NOTE

1. THE PURPOSE OF THE DAYLIT PLANS ARE TO LOCATE THE DAYLIT ZONES AND ITS OPERATING SWITCH, FOR ALL OTHER ELECTRICAL INFORMATION SEE ELECTRICAL PLANS.
2. 8040 WINDOW (AS SHOWN, SEE ARCHITECTURAL FOR PRECISE SIZE)
3. REFER TO ELECTRICAL PLANS FOR EMERGENCY LIGHT LOCATIONS

DAYLIT ZONE FLOOR PLANS
SCALE: 3/16" = 1'-0"

IMPACT CONSTRUCTION SERVICES INC.
CONTRACTORS LICENSE #945691

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PROJECT NAME:
**BELLFLOWER USD
MAYFAIR HS**

SHEET TITLE:
**DAYLIT ZONE FLOOR PLANS
24'-48'x40'**

MFR. STRUCTURAL ENGINEER OF RECORD ON PC

DATE SIGNED: 02 07 2013

MFR. PROJECT SPECIFIC PROFESSIONAL OF RECORD

ARCHITECT OF RECORD

PROJECT SPECIFIC STATE AGENCY APPROVAL

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
03 17 957
AC FLS LESS TH
DATE MAR 21 2017

PRE-CHECK (PC) DOCUMENT
CODE: 2013 CBC
A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
PC 02-114405
AC FLS LESS TH
DATE: JAN 11 2016

REVISIONS

PROJECT NO.: 00000
DRAWN BY: J. CHAN-LUGAY
SCALE: AS NOTED
DATE: 10-03-16

SHEET NUMBER
E4.0DL