

**DOCUMENT 00 91 03
ADDENDUM NO. 3**

PROJECT: 2024 Cy Lakes HS Renovation
BID DATE: **Thursday, December 19, 2024 (no Change)**
FROM: Carolina Weitzman, A.I.A.
Natex Corporation Architects
447 Heights Blvd, Houston, TX 77007
TO: **Prospective Bidders**

This Addendum forms a part of the Bidding Documents and will be incorporated into Contract Documents. Insofar as the Project Manual or Drawings or both are inconsistent, this Addendum governs. Acknowledge receipt of the Addendum by inserting its number into the Proposal Form. **FAILURE TO DO SO WILL SUBJECT BID TO DISQUALIFICATION.**

PART 1 CHANGES TO PROJECT MANUAL

1. SECTION 27 50 00 "SCHOOL COMMUNICATION SYSTEM":
 - a. Replace this section in its entirety with the attached.
2. SECTION 28 20 00 "VIDEO SURVEILLANCE SYSTEM (VSS)":
 - a. Replace this section in its entirety with the attached.

PART 2 CHANGES TO DRAWINGS

1. SHEET S001 3D VIEWS AND SHEET LIST
 - a. Sheet List: Add S504 CMU & STEEL ROOF DETAILS
2. SHEET S101 GENERAL STRUCTURAL CRITERIA
 - a. Deck Type 1 noted as "NOT USED".
 - b. PEMB notes were added
 - c. Refer to revised sheet
3. SHEET S201G FOUNDATION PLAN – AREA G
 - a. Section 16 & 17/S403 were added to the plan.
 - b. Column C4 was added, along with grids 5.1 & 5.2
 - c. Dimensions added between grids 5.1 & 5.2.
 - d. Refer to revised sheet
4. SHEET S202F LOW ROOF FRAMING PLAN – AREA F
 - a. Roof deck type 1 was changed to deck type 2.
 - b. Refer to revised sheet
5. SHEET S202G LOW ROOF FRAMING – AREA G
 - a. Roof deck type 1 was changed to deck type 2.
 - b. HSS tube added between new C4 columns along with grids 5.1 & 5.2
 - c. Dimensions added between grids 5.1 & 5.2.
 - d. Section 7/S502 was added for column slip connection.
 - e. Section 1/S504 was added for light gauge framing over window.
 - f. Section 1/S602 was shifted for wall exterior clarity.
 - g. Section 2/S504 was added for CMU Lintels at windows.

- h. Section 3/S504 was added.
 - i. Refer to revised sheet
- 6. SHEET S203G HIGH ROOF FRAMING - AREA G
 - a. Sim added to Section 2/S602
 - b. Section 3/S504 added.
 - c. Refer to revised sheet
- 7. SHEET S302 COLUMN AND BASEPLATE SCHEDULE
 - a. Column C4 added to column schedule
 - b. Refer to revised sheet
- 8. SHEET S403 SOG @ GB
 - a. Add details 16 & 17
 - b. Refer to revised sheet
- 9. SHEET S504 CMU & STEEL ROOF DETAIL
 - a. Refer to added sheet
- 10. SHEET A1.05 GREENHOUSE PLAN & DETAILS
 - a. Greenhouse Note 5 – Freestanding tables shown on plan: stainless steel 6' x 10' typical. Contractor to provide and install.
- 11. SHEET A8.01 WALL SECTIONS & DETAILS
 - a. Refer to sheet for revised dimensions and notes.
- 12. SHEET A8.02 WALL SECTIONS & DETAILS
 - a. Refer to revised sheet for added dimensions and notes.
 - b. Detail 3 – Revise expansion joint cover detail
 - c. Detail 4 – Revise expansion joint cover detail
- 13. SHEET A8.03 WALL SECTIONS & DETAILS
 - a. Detail 2 – Revise expansion joint cover detail
 - b. Detail 3 – Revise wall dimensions
 - c. Detail 4 – Revise wall section to match structural
 - d. Refer to revise sheet
- 14. SHEET A8.04 WALL SECTIONS & DETAILS
 - a. Detail 2 – Revise and add notes
 - b. Detail 3 – Revise wall section to match structural
 - c. Detail 4 – Revise foundation detail
 - d. Detail 5 – Add soffit detail
 - e. Refer to revise sheet
- 15. SHEET A10.01 FINE ARTS ELEVATIONS
 - a. Elevations 1 and 2 – all wall panels shown in Black are AP-3.
 - b. Add Black Box note: Install AP-3 where shown on CMU wall per manufacturer's standards and recommendation. Refer to finish legend for product information.
- 16. SHEET A12.00 FINISH LEGEND & ROOM SIGNAGE
 - a. Finish Legend – revise the following:
 - 1. AP-3: Armstrong; Tectum Finale, 2" total thickness; Custom color: Black; Size: 48" x 96"2"; 1" panel on 1" furring with insulation infill.

17. SHEET E2.01, "ELECTRICAL LIGHTING FIRST FLOOR PLAN – AREA F":
 - a. At CORR 1768 exit alcove. Provide one Type 'D2' lighting fixture.
 - b. Outside of STOR 1762, Provide one Type 'W1' wall pack.
 - c. Provided plan note '7'.
 - d. Provided typical note for new exterior lighting.
18. SHEET E2.02, "ELECTRICAL LIGHTING FIRST FLOOR PLAN – AREA G":
 - a. Revised plan East alcove light fixture type to be a recessed can light.
 - b. Revised and provided plan North canopy lighting.
19. SHEET E6.01, "ELECTRICAL DETAILS, LEGENDS, AND SCHEDULES":
 - a. Luminaire Schedule, Revised fixture types W1, W1L, and W1LE to better match existing fixtures at the campus.
20. SHEET P7.02, "PLUMBING SCHEDULES":
 - a. Plumbing Fixture Schedule: SK-5, Revise Service to read "HVAC Training 4025, Greenhouse"
 - b. Delete fixture SK-6.
21. SHEET T0.00, "TECHNOLOGY LEGENDS AND SCHEDULES":
 - a. Add Responsibility Matrix to sheet.
22. SHEET T1.02, "TECHNOLOGY COMPOSITE FLOOR PLANS":
 - a. Add Wall Sleeve notes to plans.
 - b. Add wall sleeve symbol to rooms on level 1 and 2. Reference drawings.
 - c. Add Fire Alarm Replacement Notes.
 - d. Add existing Remote Power Supply locations "RPS."
 - e. Add existing Air Handling Unit locations "AHU."

PART 3 CLARIFICATIONS

1. **Question:** The acronyms in the door comments section of the door schedule can't be found. Please advise what these mean.
Answer: Door abbreviation chart is on sheet. GR is Graphics.
2. **Question:** Is the shop / lab equipment under spec 115700 CFCI or OFCI?
Answer: CFCI
3. **Question:** The acronyms in the door comments section of the door schedule can't be found. Please advise what these mean.
Answer: Door abbreviation chart is on sheet. GR is Graphics.
4. **Question:** Is the stainless steel tables in Greenhouse CFCI or OFCI?
Answer: CFCI
5. **Question:** In the specifications there is a section for spray insulation 072130, however I can't locate this in drawings.
Answer: Use spray insulation for difficult reaching spaces where insulation is required.
6. **Question:** The section (133419-14) call throat size for the roof ventilators 9 or 12 inches, which one is required?
Answer: No ventilators are required.

7. **Question:** Please clarify the gauge for following: roof panel, external walls panels, and liner panels?
Answer: 24

8. **Question:** The section (133419-9) the major-Rib Spacing 18”, can we substitute to 24”, Please confirm?
Answer: No substitution

PART 4 PRIOR APPROVALS

1. Specification Section 133419 Pre-Engineered Building – Alliance is an approved manufacturer.

END OF ADDENDUM NO. 3

APPROVED FOR ISSUE


By M. Carolina Weitzman, principal, NATEX Architects

END OF DOCUMENT

Total No. of Pages to Addendum No.3: 52 pages.

SECTION 27 50 00 - SCHOOL COMMUNICATION SYSTEM

PART 1 - GENERAL

1.1 RELATED WORK

The following, in their entirety and as applicable, shall apply to this section. Including any associated drawings.

- A. Conditions of the Contract
- B. Division 1
- C. Division 26
- D. Division 27
- E. Division 28

1.2 SUMMARY

A. This section includes a fully operational IP platform for a district-wide internal and school Critical Communications Solution, incorporating school safety notifications and general communications including but not limited to the following:

1. The platform shall provide complete internal communications and employ state of the art IP Technology including the minimum functions listed.
 - a. Two-way internal intercommunications between staff locations and classrooms.
 - b. Scheduled bell events.
 - c. Emergency announcements that will override any pre-programmed audio, assuring that all Emergency/Lockdown etc., are heard at each and every speaker location.
 - d. Capability of prerecording emergency announcements that can be activated by a Soft Key on an administrative console, panic button, dial string, or web browser.
 - e. Atomic Time Synchronization with Class Change Tones utilizing multiple, programmable schedules for each zone.
 - f. District-wide, Emergency, Group, All School and Zone live voice paging.
 - g. District-wide, Emergency, Group, All School and Zone paging for pre-recorded audio – tones, music, and voice.
 - h. Web-based user interface.
2. The system shall support a minimum of 1000 level priorities which shall be user-definable, allowing each end point to place a minimum of 5 different priority calls at the same time.
3. Any authorized administrator shall be able to call from outside the school into any classroom, zone, or entire school directly via the School District supplied SIP enabled Telephone Network. This shall allow remote monitoring, call-in annunciation, and two-way conversation from outside the facility as well as paging into the system. (Compliance with NEMA Standard SB-40 for emergency communications in K-12 Schools).
4. Authorized system users shall be able to create a minimum of 100 automated sequences with voice instructions, tones, emails, program distribution, and relay activations and replay them.
5. Automated message strings shall be manually initiated from a single-button access on the console, on a SIP connected telephone, a panic button, from the web-based user interface or via interface with third party systems.



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6. Paging and two-way intercom features shall be accessible from any system console or SIP connected telephone for each campus.
 7. The platform shall synchronize its system time to the network timeserver or a web-based time server.
 8. Each single campus installation shall be locally survivable for intercom, paging, bells, and emergencies such as lockdown, even when the district connection is unavailable.
 9. This specification establishes a minimum level of quality, features, and performance for individual components as well as the integrated system.
 10. Systems that do not comply with the feature-sets highlighted in this Specification will not be considered.
 11. Any network switches that are required shall be provided by the owner. Contractor is responsible for coordinating the switch requirements with the owner.
- B. Locate equipment to accommodate millwork, fixtures, marker boards and other room equipment at no additional cost to the Owner.
- C. Integrate the communications system with the following systems:
1. Clock and Bell System
 2. Local sound reinforcement sound systems
- D. Return air plenum cable shall be used. Wherever cabling is run exposed, conduit shall be used to cover and protect wiring.
- E. The drawings and specifications are to be considered conceptual in nature and are intended to establish system standards insofar as manufacturer type and system configuration. The contractor shall provide pricing of a complete engineered system based on the issued conceptual documentation. The engineered system is to be submitted to the project's consultant for review prior to installation.
- F. This system is intended to be upgraded utilizing the existing Telecenter U controller, with the addition of gateways, to integrate the existing classroom and corridor speakers. Remove Telecenter 5 controller. Connect lockdown buttons to Rauland system. Expand to new areas as shown.
- G. Prior to construction, a system test is required by the contractor, to verify the current state of the system. Any non-functioning item shall be noted and addressed by CFISD maintenance, prior to start of this work. If the system is proven to be 100% functional, the contractor is responsible for any repairs necessary to bring it to its previous state, at no additional cost to the owner.
- G. If there are any discrepancies between the drawings and specification or among themselves, the contractor shall request clarification prior to providing pricing for the scope of work. If a request is not issued and a response not provided via a posted addendum, the contractor shall provide pricing for the costliest scenario and obtain clarification during the project.

1.3 DEFINITION OF TERMS

- A. Installer(s): Shall refer to the person, persons, or company who or which actually contracts to perform the work specified herein.

1.4 SUBMITTALS

- A. Product data for each component.
- B. Shop Drawings: Prior to proceeding with the work: Provide detailed equipment assemblies and indicate dimensions, weights, required clearances, method of field assembly, components, location of each field connection, and a complete schedule of all equipment and materials with associated manufacturer's cuts sheets which are to be used.
 - 1. Wiring Diagrams: Detail wiring for power, signal, and control systems and differentiate between manufacturer-installed and field-installed wiring. Identify terminals to facilitate installation, operation, and maintenance. Include a single-line diagram showing cabling interconnection of components and levels throughout system and impedances.
 - 2. Artwork drawings and lists indicating proposed nameplate nomenclature and arrangements for control panels and plug panels prior to fabrication reflecting equipment used.
 - 3. Each drawing shall have a descriptive title and all sub-parts of each drawing shall be labeled. All drawings shall have the name and locations of the project, Systems Contractor's name in the title block.
 - 4. Details and descriptions of any other aspect of the system, which must differ from the contract documents due to field conditions or equipment, furnished.
- C. FCC Approval: The system shall be approved for direct interconnection to the telephone utility under Part 68 of FCC rules and regulations. Systems, which are not FCC approved or utilize an intermediary device for connection, will not be considered. Provide the FCC registration number of the system being proposed as part of the submittal process.
- D. Product Certificates: Signed by manufacturers certifying that products furnished comply with specified requirements.
- E. Installer Certificates: Signed by manufacturers certifying that Installers comply with specified requirements.
- F. Manufacturer Certificates: Signed by manufacturers certifying that they comply with specified requirements.
- G. Field Test Reports: Indicate and interpret test results for compliance with performance requirements. Include record of final matching transformer-tap settings, and signal ground-resistance measurement certified by Installer.
- H. Maintenance Data: For equipment to be included in maintenance manuals specified in Division 1.
 - 1. Record of Owners equipment-programming option decisions.
 - 2. All instructions necessary for proper operation and manufacturer's instructions.
 - 3. "Proof of Performance" information.
 - 4. Manufacturer's maintenance information.
 - 5. Copies of non-proprietary computer programs and system set up disks documenting all programmable features of the installed system.
- I. Record Drawings: Prior to final acceptance, provide three (3) complete sets of drawings indicating all cable numbers and construction details in accordance with the actual system

installation. Revise all shop drawings to represent actual installation conditions. These Record Drawings will be used during "Final Acceptance Testing".

- J. System Training: Submit the following information describing the training programs and system trainers as outlined in paragraph 1.6 of this specification and in accordance with Division 1 specifications.
1. Include with the submittal a preliminary staff development training program in outline form for review and approval by the owner's representative.
 2. Include with the submittal a current copy of the trainer's certification from the manufacturer that certifies and identifies the trainer(s) who are eligible to provide training and support for the project.
 3. Include with the submittal a current copy of trainer's needs assessment form which will be reviewed with the owner's designated representative for the system's preliminary system programming and configuration.
 4. Include with the submittal copies of all documentation used to identify for the owner those participants attending and completing the training programs.
- K. A copy of the manufacturer's standard statement of warranty proving all equipment provided for the school communications network is covered with the required five-year warranty shall be included with the project submittal. This statement of warranty shall be provided on the manufacturer's stationary.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced Installer who is an authorized representative of equipment manufacturer for both installation and maintenance of equipment required for this Section. Provide the following within thirty (30) days after notification to proceed:
1. Provide a list of installations that the Installer has specifically installed for verification by the Owner. Random installations from other vendors and/or Installers shall not be accepted. The Installer, not its employees, must meet these qualifications.
 2. The Installer shall be bondable.
 3. The Installer shall demonstrate to the satisfaction of the Owner or his representative that he has:
 - a. Adequate plant and equipment to pursue the work properly and expeditiously.
 - b. Adequate staff and technical experience to implement the work.
 - c. Suitable financial status to meet the obligations of the work.
 - d. Technically capable and factory trained service personnel at a local service facility to provide routine and emergency service for all products used in this project.
- B. Because the life expectancy of this type of communications structure normally exceeds 10 years, the owner expects continuity from the service provider. If the installing/servicing company has not been an authorized provider of the manufacturer's product for it least seven (7) years, the following is required:
1. A list of two (2) systems manufacturers of which they currently are authorized service providers where the relationship exceeds seven (7) years.
 2. A letter from the manufacturer outlining the details of changes in service providers over the last seven (7) years and what actions they will take to ensure continuity of service to the customer.

- C. Each major component of equipment shall have the manufacturers name, address and model number on a plate securely affixed in a conspicuous place. NEMA code ratings, UL Label, or other data that is die-stamped into the surface of the equipment shall be easily visible.
- D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction.
- E. Comply with NFPA 70
- F. Comply with NEMA Standard SB-40 for Emergency Communications in K-12 schools.
- G. Comply with UL 60950.

1.6 SUBMITTALS

- A. Project Initiation:
 - 1. Within fourteen (14) days of Notice to Proceed, the projection system installer shall furnish the following in a single consolidated submittal:
 - a. Product Literature: Complete manufacturer's product literature for all, speakers, amplifiers, cable, cross-connect blocks, cable supports, cable labels, outlet devices, and other products to be used in the installation. In addition, whenever substitutions for recommended products are made, samples (when requested by the Owner/Designer) and the manufacturer's supporting documentation demonstrating compatibility with other related products shall be included.
 - b. Construction Schedule: A time-scaled Construction Schedule indicating general project deadlines and specific dates relating to the installation of the cable distribution system.
 - c. The contractor shall provide a letter from the manufacturer stating that the dealer is an authorized service center.
 - d. The resume and contact information of the full-time service personnel responsible for the installed projection system.
 - e. Specification Compliance: A letter shall be provided stating, by section and subsection, that the installer complies with the entire specification section. If the installer intends to deviate from any portion of the specifications, a detailed explanation of reason in which the installer would like to deviate shall be provided in addition to the specification compliance letter. No deviations shall be acceptable until they have been accepted by the project's technology consultant.
 - f. Certifications: The contractor shall submit all of the following certifications, and the certifications must contain dates which are valid from the date of proposal and not expire any sooner than 12 months after substantial completion of the project.
 - 1) State Licenses as applicable to this system
 - 2) Manufacturer's Authorized Dealer Certification
 - 3) Manufacture Installer Training Certificate (required for at least 25% of all installers on site.)
 - g. Provide specification with line-by-line acknowledgement of compliance.
- B. Shop Drawings:
 - 1. Submit the following items, for Owner review and approval, within twenty-eight

(28) days of notice to proceed:

- a. Proposed wiring and connectivity diagram of the proposed projection system including all faceplates and sound reinforcing equipment
- b. In addition to the wiring/connectivity diagram, the submitted drawings shall indicate the following, even if the following is expected to be provided by the project's electrical or general contractor:
 - 1) Location of wall penetrations (all penetrations shall be sleeved and contain protective bushings at both ends)
 - 2) Location of sleeved wall pass-thru
 - 3) Size of sleeve at each location installed
 - 4) Quantity of cable passing through each sleeve
 - 5) Location of drops in each room (quantity or labeling of drops are not required in the submittal plans. Labeling shall be provided in the closeout plans and quantities shall be as per the contract documents, addendums, and issued changes. Each drop shall be labeled for the type of outlet that it is)
 - 6) Conduit routing, size, quantity, and stub-up locations for all floor mounted outlets.
- c. Drawing Compliance: A letter shall be provided stating that the installer complies with the ENTIRE project drawing, including all general, keyed, and notes to contractor. If the installer intends to deviate from any portion of the specifications, a detailed explanation of reason in which the installer would like to deviate shall be provided in addition to the specification compliance letter. No deviations shall be acceptable until they have been accepted by the project's technology consultant.

1.7 IN-SERVICE TRAINING

- A. The contractor shall provide and implement a complete and comprehensive staff training program for all administrators, facility staff members, and teachers. This mandatory training program will provide school staff a complete understanding of how to utilize and properly operate all functions.
- B. The training program shall be implemented by a staff member/trainer employed by the contractor. The trainer must be factory certified to provide training on their product.
- C. All staff development training is to be coordinated through the owner's designated representative. As training sessions are completed, the trainer will provide the school's administrative staff and school district's staff a document listing all the staff and faculty members who attended, received, and completed the training program.

1.8 WARRANTY

- A. Provide a manufacturer's five-year warranty of the school communications network equipment against defects in material and workmanship. This warranty will cover all electronic system components. Additional warranties cover clocks, speakers, and call-in switches. If any defects are found within the warranty period, the defective equipment shall be replaced at no cost (equipment only); a one-year warranty shall be provided for labor.
- B. A copy of the manufacturer's standard statement of warranty proving all equipment provided for the school communications network is covered with the required five-year warranty shall be included with the project submittal. This statement of warranty shall be

provided on the manufacturer's stationary. The standard five-year warranty is an important element in establishing a standard in quality. Manufacturers who circumvent the five-year warranty by offering special "extended warranties" that are not part of their normal published warranty will not be accepted.

- C. Contractor shall respond, excluding weekends and holidays, within 24 hours to any warranty service calls. If equipment cannot be repaired within 24 hours of service visit, the contractor shall provide "loaner" equipment to the facility at no charge.
- D. Make available a service contract offering continuing factory authorized service of the system after the initial warranty period.

1.9 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide the following system:
 - 1. Telecenter U as manufactured by Rauland and installed by a Rauland authorized dealer

PART 2 - PRODUCTS

2.1 SYSTEM REQUIREMENTS

- A. The New Campus Communications System will connect to the Existing District Server for District Wide announcements and all Management Functions. Server Currently Runs the Rauland Telecenter Campus Enterprise Software.
- B. The platform shall utilize state of the art IP Technology for Call-in Notification, School Safety Paging and Evacuation tones, Atomic Time Synchronization, Class Change Tones utilizing multiple, programmable schedules for each zone, Two-way hands-free Internal Communications and Paging, and Program Distribution. The system shall be easy to learn and operate. All standard programming shall be web-based and user friendly to allow the system administrator the ability to easily program system features.
- C. Provide complete and satisfactorily operating district/school communications and district/school safety as described herein, using materials and equipment of types, sizes, ratings, and performances as indicated. Use materials and equipment that comply with referenced standards and manufacturers' standard design and construction, in accordance with published product information. Coordinate the features of all materials and equipment so they form an integrated system, with components and interconnections matched for optimum performance of specified functions.
- D. The platform shall be a single electronic system consisting of a minimum of 10 audio channels for each campus, (classroom) IP Speaker Modules and call switches, IP Zone Modules connecting corridor speakers, inside and outside horns, IP Administrative Consoles, SIP enabled PBX integration and district-wide integration for paging, emergency notifications, calendar scheduling and configuration.
- E. Each Classroom shall be provided with a Speaker Module interface and a minimum of 5 different call switches, each with their own annunciation path and priority.
- F. Call-ins may automatically annunciate (display of priority and location) to administrative consoles, SIP enabled phones, and outside phones.
- G. Call-ins shall be programmed to automatically change priority and annunciation route

based on age of call-in and original priority.

- H. Call-ins may have priority (and annunciation route) changed by user action from a console or SIP enabled phone.
- I. Call-in annunciation route shall include playing pre-recorded audio over speakers, sending a pre-configured email, and activating relays.
- J. The platform shall lend itself to expansion by simple addition of hardware modules.
- K. The platform shall connect directly to an existing, standard protocol WAN/LAN network, without the need for a separate server at each school location. Configuration, including bell schedules, calendars, and emergency sequences can be remotely created, changed, stored, and downloaded to the system by an authorized user from a web-based user interface.
- L. The platform shall provide the ability to initiate school safety paging announcements, evacuation tones and take cover tones from any telephone or connected web browser within the facility or outside the facility to any other location within the facility or district.
- M. The platform shall provide the ability to selectively communicate or monitor individual classrooms in emergency situations from any telephone within the facility or outside the facility to any other location within the facility; all communication within the classroom shall be hands-free and will not require any interaction by the classroom user.
- N. The platform shall provide classroom users the ability to confirm that they have safely secured their classrooms during an emergency with a single button press. The front office administrator will receive confirmation that the classroom is safely secured via an administrative console and web-based user interface. The front office administrator can view classrooms that are not safely secured via the administrative console. The front office administrator can view classrooms that are not safely secured via the web-based user interface. The front office administrator shall be able to initiate two-way communication, without a pre-announcement tone, to the classroom during an emergency via the administrative console. Web-based user interface will still identify that a school is in an emergency, even if all classrooms are safely secured. Individual classroom check-in and school emergency status shall be viewed from the web-based user interface, both on-site and remotely.
- O. IP Addressable and POE powered Speaker Modules for individual rooms shall be system programmable and may be assigned any two, three, four, five- or six-digit number as well as name and description. Any extension may be reassigned at any time.
- P. IP-enabled two-way voice communication shall be available from any provided telephone or administrative console through any speaker in a campus. This shall allow hands-free communication to any classroom or any individual loudspeaker unit. A programmable pre-announce tone shall sound immediately before the intercom path is opened and a supervisory tone shall continue to sound at regular intervals when speaker monitoring is active, complying fully with all privacy legislation. Preannounce tone and supervisory tones shall be disabled during designated emergencies automatically.

- Q. The platform shall allow users to configure multiple schedules per school, with a minimum of 500 unique events per schedule, and automatic Daylight Savings time correction. Schedules can be programmed to occur once, daily, weekly, monthly, or in any combination of the preceding recurrences. Each school may have a minimum of 20 unique bell schedules, with a minimum of 5 active schedules on any given day for each campus. User shall be able to select from 25 standard included tones as well additional user created and uploaded audio files for class change signaling and messaging. In addition, scheduled events shall include relay actions, email notifications, and paging exclusions as system configuration changes. The platform shall allow control of the bell schedules via the district WAN/LAN without the need for a separate server at each school location. Bell schedules can be remotely created, changed, stored, and assigned to calendar days for the local school by an authorized user from a web-based user interface.
- R. The platform shall be able to integrate with an existing PA system or operate as a fully independent IP solution. The platform shall be able to function in combination of said configurations and allow for seamless communication within a school or district-wide, regardless of the type of configuration used. The platform shall be scalable, with the ability to easily add, install, and configure additional equipment to a system.
- S. The platform allows for customization of preprogrammed sequences, used for emergencies, events, and everyday communications. Preprogrammed sequences can be activated from the push of a relay button, soft key of an administrative console, a dial string of a SIP phone, or a web browser configured to the district network. Sequences can be initiated automatically as part of a schedule or on the fly. Preprogrammed sequences can be customized to utilize any combination of audio tones, emails, relays, tone exclusions, swings, delays, duples, SIP phone notifications, and program distribution. Audio tones can include customized audio files and voice messages, recorded in any language. Uploaded audio tones and messages can be preprogrammed to announce repeatedly or individually, as part of a scheduled sequence or on the fly. Each school in a district can have its own customized sequences, and can be activated individually, in groups, or districtwide.

2.2 EQUIPMENT AND MATERIAL

- A. Server Software
1. Provides district-wide paging, bell event scheduling, emergency notification and configuration for entire district.
 2. Ability to configure system and initiate system features, per school and district-wide via web-based user interface.
 3. The software has the ability to sync system time to the Atomic Clock Signal or to the school's or district's network time server.
 4. The software will provide a web browser to deliver district-wide emergency paging, pre-recorded messages, and tones from any authorized computer in the facility or the district. The software must be capable of automatically notifying district personnel via the WAN/LAN of an alarm condition.
 5. The software can automatically broadcast emergency instructions via associated system hardware throughout an entire district when an alarm (e.g., lockdown, lockout, security, fire) is initiated via the web-based user interface. The emergency instructions are preprogrammed and require no user intervention. Bell tones can be halted during an emergency. The system provides redundant alarm annunciation over intercom/paging speakers and is not meant to replace primary

- fire alarm or security systems.
6. The software allows for user-uploaded pre-recorded messages and tones. Software supports the upload of MP3 and WAV file types. User-uploaded pre-recorded messages and tones can be part of emergencies, sequences, and bell schedules.
 7. The software can be installed in cloud, virtual or physical server environments.
 8. The web-based user interface supports secure HTTP browsing.
 9. The software supports encryption to ensure secure access.
 10. The system shall monitor itself if devices go offline and system actions are not received. Specified users shall receive email notifications when devices go offline. The software shall be able to keep a log and report on system activity within a school or all schools district-wide for a minimum of one year. These reports can be exported to excel spreadsheets.
 11. The software will support a minimum of 20 bell schedules per school, with 5 schedules assignable to a specific school day. Bell schedules can be programmed to announce tones, activate relays, send emails, activate program distribution, and notify SIP phones.
 12. The system allows programmable end points to be automatically included or excluded for live paging, bell tones, or prerecorded audio, depending on the time or day or day of the week. These inclusions/exclusions can be applied manually or automatically depending on their schedule.
 13. The software can automatically send an email, as part of a programmed sequence of events, to district administrators alerting them of an emergency within the district.
 14. The software provides the ability to view schools that are in an emergency status, using any web browser on the district's network. The software shall identify the name of the school in an emergency as well the type of emergency that school is in.
 15. The software provides the ability to view individual classrooms that are not checked-in during an emergency, using any web browser on the district's network. The software shall identify the name, extension, and description of the classroom that is not checked-in during the emergency.
 16. The system has a minimum of 5 customizable emergencies, one of them being an All-Clear – with the ability to return the system from an emergency to normal status. Each emergency shall have a minimum of 500 unique events.
 17. As a district-wide communications solution, the system shall be able to provide simultaneous communications to all schools or groups of schools within a district. The system shall allow a user to initiate district-wide communications to individual schools, all schools, or groups of schools, from a web-based user interface. The system shall allow a user to initiate prerecorded audio, live paging, or programmed sequences to individual schools, all schools, or groups of schools, from the web-based user interface. Programmed sequences shall be customizable per school, and the system shall be able to activate them simultaneously to individual schools, all schools, or groups of schools, from the web-based user interface.
 18. The communications software must allow upgrade from an individual school system to multiple schools, or an entire school district, using the same web-based user interface. The communications software from an individual school system must be identical in typical user operation to the multiple schools or entire school district communications system software.

B. Campus Controller

1. Provides call routing for paging and intercom for a single facility.
2. System shall connect to the district provided Telephone Network via a SIP connection.
3. Support a flexible numbering plan allowing two, three, four, five, or six-digit extensions.
4. SIP interface to a district provided Telephone Network shall be capable of allowing connected phones to display classroom call-ins, answer internal intercom call-ins, make pages, and change priorities of call-ins in progress.
5. Direct dialing, two-way amplified voice intercom between any provided telephone or admin console and speaker without the use of a press-to-talk or talk-listen switch.
6. Ability to upgrade priority level from individual call switch.
7. The ability to answer intercom call-ins registered at administrative consoles and pre-selected telephones.
8. The ability to automatically escalate incoming call-ins to an alternate telephone or group of telephones if they remain unanswered for a predetermined amount of time.
9. The ability to manually upgrade an intercom call-in to an alternate telephone or group of telephones.
10. The ability for classrooms to “check-in” via push button when they have successfully secured their location during emergency.
11. Administrative console shall display locations that have not checked in to confirm their secured location and provide hands-free audio monitoring and communication to unsecured locations.
12. The controller shall not need direct connection to any classroom via home run or distributed wiring. It shall communicate solely through the IP network.
13. Single button access from any console on the system to distribute emergency announcements within the facility to all or select locations equipped with speakers. Emergency announcements originating from any assigned administrative console shall have priority over all regular system functions.
14. Ability for administrative consoles and connected phones to selectively monitor audio at any two-way speaker during an emergency.
15. Stores a minimum of 48 hours’ worth of Bell Event Schedules, all emergency notification sequences as well as facility wide configuration.
16. System has the ability to sync system time to the Atomic Clock Signal or to the school’s or districts network time server.
17. System’s SIP Interface shall provide:
 - a. Audio paging access from any telephone to any single intercom speaker, zone (group) of intercom/paging speakers, or all speakers/paging horns throughout the entire facility.
 - b. Ability to answer a call-in directed to that SIP extension.
 - c. Ability to upgrade a call-in directed to that SIP extension.
 - d. Single button access from any telephone on the system to initiate alarm signals within the facility to all or select locations equipped with speakers. A minimum of 25 separate distinct alarm signals shall be provided. Alarm signals originating from any assigned administrative telephone shall have priority over all regular system functions.
 - e. Ability to initiate a school-wide emergency including lockdown and evacuate sequences.
 - f. SIP device shall display call-in information from call in switch.

Information will include a minimum of Classroom Name, Number, and Priority Level.

18. The system will have the ability to utilize a web browser and a USB microphone connected to the PC to deliver district-wide live emergency paging, pre-recorded messages, and tones from any authorized computer in the facility or the district. The system must be capable of automatically notifying district personnel via the WAN of an alarm condition.
19. The system can automatically broadcast emergency instructions throughout an entire campus when an alarm (e.g., lockdown, lockout, security, fire) is tripped or manually activated. The emergency instructions are preprogrammed and require no user intervention. Bell tones can be halted during an emergency. The system provides redundant alarm annunciation over intercom/paging speakers and is not meant to replace primary fire alarm or security systems.

C. IP Addressable Modules:

1. System shall provide multiple IP Addressable Modules for intercom, paging and relay activation.
 - a. All Modules are POE 802.3af compliant
 - b. All Modules support DHCP.
 - c. All Modules connect to network with a single RJ45 connector
2. IP Addressable Speaker Module
 - a. Shall interface to school's data network, a classroom speaker, and multiple call switches.
 - b. A minimum of 5 levels of call-in can be placed from an IP Speaker Module. The call-ins are routed to administrative consoles and select SIP connected telephones and can only be cleared from the system once answered. If a call-in is not answered within a preprogrammed time the call-in may reroute to other telephones, consoles, and speakers.
 - c. An option for Privacy call in switches is supported. When the Privacy switch is activated, it prevents administrative or classroom telephones from monitoring the specific classroom/location intercom speaker.
 - d. The ability to belong to one or more of a minimum of 100 independent zones for zone paging, program/music distribution zones and class change tone zones; this assignment is a programmable function, changeable by time of day. Each IP Speaker Module's location shall be programmed in software to belong to any combination of software zones. IP Speaker Modules shall be designed to mount near ceiling and wall speakers and in the plenum space.
 - e. Intercom and paging volume adjustable from Software interface.
 - f. Rauland TCC2011A with BAFKIT2X2L8RJ speaker or equal for classroomspeakers
3. IP Addressable Zone Paging Module
 - a. Zone Paging Module shall connect multiple speakers for district all page, all page, zone paging, bells, audio events and, emergency notification.
 - b. Zone Paging Modules shall be rack and wall mountable.
 - c. Zone Paging Modules shall be able to belong to one or more of 100 independent zones for live paging, bells, pre-recorded audio, and emergency notification.
4. IP Addressable Aux I/O Module
 - a. Aux I/O Module shall have two input contacts and two output contacts.
 - b. Input and output contacts are individually addressable.

- c. Aux I/O Module shall be wall and rack mountable.
 - d. User can program relays to be activated manually, through an event/bell schedule, or during emergency notification.
 - e. Aux I/O Module can perform school lockdown from a single press of a panic button.
5. IP Addressable Program Line Input Module
- a. Program Line Input Module shall provide line level audio program distribution into system.
 - b. Program Line Input Module shall have a 3.5mm cable jack.
 - c. Program Line Input Module shall be configured via web-based user interface.
 - d. User can configure program distribution to be activated manually or automatically through an event/bell schedule.
 - e. Program Line Input Module will have a system priority level such that emergency communications override program distribution.
- D. IP Addressable Analog Gateway
1. IP Addressable Gateway provides integration with existing analog wiring infrastructure – consisting of shielded two-pair classroom field wiring. The Gateway provides the ability to reuse speaker wiring, speakers, and punch blocks to integrate analog infrastructure with IP platform.
 2. Each Gateway will have 5 watts of power per port and 25 watts total per device.
 3. Supports 24 classrooms that utilize 25 Volt speakers and all current Telecenter call switches for front office notification.
 4. Supports minimum of 5 call switch priorities per classroom, capable of lockdown check-in functionality, while reusing existing shielded two-pair classroom field wiring.
 5. Classroom intercom volume adjustable from Software interface.
 6. Classroom paging volume adjustable from Software interface.
 7. Configured to the school network and can be used in conjunction with IP Addressable Modules.
- E. IP Addressable Administrative Console
1. A full color screen with 64 soft keys, 3 line select, volume control, push to talk, speakerphone mode and left/right and up/down scrolling.
 2. Audio paging access from any Console to any single intercom speaker, zone (group) of intercom/paging speakers, or all speakers/paging horns throughout the entire school.
 3. Programmable soft key access from any console on the system to initiate alarm signals within the school to all or select locations equipped with speakers. A minimum of 25 separate distinct alarm signals shall be provided. Alarm signals originating from any assigned administrative console shall have priority over all regular system functions.
 4. Programmable soft key access from any console to automatically broadcast page emergency instructions throughout an entire school when an alarm (e.g., lockdown, lockout, security, fire) is tripped or manually activated. The emergency instructions are preprogrammed and require no user intervention. The system provides redundant alarm annunciation over intercom/paging speakers and is not meant to replace primary fire alarm or security systems.
 5. Ability to perform intercom to any single IP Addressable Speaker Module.
 6. Ability to display 3 call-ins at a time on the screen while other call-ins are

- annunciating and the ability to scroll to view all call-ins.
 7. Ability to upgrade a call-in via soft key.
 8. Programmable soft key access from any console for activating relays, campus wide.
 9. Ability to maintain, along with controller and other IP Modules system functions, including intercom, bells and paging for the local campus in the event of district-wide connection loss.
 10. Classrooms that have not 'checked-in' during an emergency are listed on the Administrative Console's screen.
 11. The time duration of an emergency is shown on the screen of the administrative console. The check-in timer is shown on the screen of the administrative console.
- F. Audio Paging/Program Amplifiers – Ashly NE 8250
1. Power amplifier(s) shall be provided to provide a minimum of 2 watts of power to all paging speakers, and 15 watts of power to all paging horns.
 2. The maximum load on the paging/program amplifiers shall be 80% of the rated maximum output of the amplifiers.
- G. Normal/Emergency Call Switch – Rauland Dual Level Call-In Switch
1. Normal/Emergency Call Switches indicated on the drawings shall provide the following functions and features:
 - a. One (1) "Normal" call switch that shall activate a distinctive "NORMAL" level call from single button activation. The button shall be clearly marked "NORMAL" and will route the call-in to any one or more Administrative Consoles and/or Marquee Displays for quick and easy response from an Administrative Console.
 - b. One (1) "Emergency" call switch that shall activate a distinctive "EMERGENCY" level call from single button activation. The button shall be red in color and shall be clearly marked "EMERGENCY" and will route the call-in to any one or more Administrative Consoles and/or Displays for quick and easy response from an Administrative Consoles.
- H. Emergency/Check-In Call Switch – Rauland Check-In Call-In Switch
1. Emergency/Check-In Call Switched indicated on the drawings shall provide the following functions and features:
 - a. One (1) "Emergency" call switch that shall activate a distinctive "EMERGENCY" level call from single button activation. The button shall be red in color and shall be clearly marked "EMERGENCY" and will route the call-in to any one or more Administrative Consoles and/or Displays for quick and easy response from an Administrative Consoles.
 - b. One (1) "CHECK-IN" call switch that shall activate a distinctive "CHECK-IN" level call from single button activation. The button shall be blue in color and shall be clearly marked "CHECK-IN" and will route the call-in to any one or more Administrative Consoles. This button will be used for emergency check-ins during school emergencies, notifying the front office of the classroom occupants' safety during an emergency.
- I. Equipment Racks
1. All equipment racks shall provide 44 spaces (77") minimum for mounted system equipment.
 2. All equipment racks shall be multi-rack format ("gangable") style, bolted

- together, and open cavity.
 - 3. All equipment racks will be provided with lockable rear doors.
 - 4. Equipment rack(s) shall be located in climate-controlled areas/rooms as shown on drawings.
 - 5. All head-end, distribution, and source equipment, including data and power, shall be located in racks configured as approved by the Engineer.
 - 6. Rack mounted equipment shall be accessible from front and rear.
 - 7. All unused rack spaces will be covered with appropriate blank/vent panels.
- J. Interior Ceiling Speakers
- 1. Provide Ceiling Speaker Assembly consisting of 8 Ohm, 8" speaker mounted in a 2 foot by 2 foot, lay-in baffle, with an integrated back box that covers the full area of the baffle.
 - 2. The speaker shall be connected by inserting an 8-pin RJ45 terminated CAT 5e or Cat 6 cable.
 - 3. The speaker shall include provisions to allow attachment of a safety cable if required.
 - 4. Quam 17URS 2X2 lay-in speaker or equal for offices and hallways.
 - 5. Rauland ACC1400 or equal with backcan for bathrooms and hard ceilings
- K. Wall Mounted Horns
- 1. Provide double re-entrant type horn loudspeakers with integral driver. The horn loudspeaker shall be impervious to weather and vandalism. Horn shall be constructed of heavy-duty ABS plastic. Horn loudspeaker drivers shall be rated at 15 watts with a frequency response of 480 Hz to 14 KHz. Sensitivity shall be 106 dB 1 watt, 1 meter. Transformer assembly shall be dual voltage multi-tap type suitable for 25 or 70-volt installations. Dispersion pattern shall be 180 degrees conical. The horn loudspeaker shall be constructed of treated heavy gauge aluminum, with all exposed parts potted and a sealed driver. Wiring terminal shall be fully enclosed. The speaker flange and mounting surface shall have a cork-rubber gasket. The horn loudspeakers finish shall be gray baked on enamel.
 - 2. The recessed back box shall be of heavy gauge cold-rolled steel, spot welded for stability with a rust-retardant gray primer finish. Acoustically treat the interior to eliminate mechanical resonance. The back box shall be 10-3/4"x10-3/4"x6" deep.
 - 3. The baffle shall be vandal proof, the faceplate constructed of 14-gauge carbon steel with a minimum tensile strength of 55,000 PSI. A lattice grid sub-plate shall deny access to the horn but be acoustically transparent for sound projection. Provide tamper-proof, stainless steel mounting hardware. The baffle shall a mar/scratch baked epoxy rust inhibitive finish.
- L. Uninterruptible Power Supplies (UPS)
- 1. UPS equipment provided for this system will include Power Conditioning to smooth current and voltage fluctuations.
 - 2. UPS equipment will be sized in accordance with the system manufacturer's recommendations.
 - 3. Provide an individual UPS for EACH remote gateway outside of the MDF (Gateway) furnished with the system.
 - 4. Provide additional UPS(s) for protection of all other equipment furnished with the system and housed in the equipment racks.
 - 5. All UPS equipment shall be rack mounted.

- M. Wall Mounted Volume Control
 - 1. Provide as shown on floor plans. Provide Atlas AT-10PA or approved equal recessed autotransformer volume control. Routine paging shall not override the volume control.

- N. Wall Mounted Emergency Lockdown Button
 - 1. Provide Safety Technology International Stopper Station Push, Turn-to-Reset w/shield w/sound, or pre-approved equal in locations as shown on floor plans.
 - 2. Labeled "LOCKDOWN"
 - 3. Lockdown shall be Blue

- O. Program Source Equipment
 - 1. RDL D-J3 wall mounted RCA and XLR mic/line input panel, or equal, located at receptionist desk, connected to system headend.

- P. Surge Protector
 - 1. Provide TrippLite IsoBar

- Q. Clock System
 - 1. Master clock power supply and clocks by Sapling.
 - a. Provide 16" clocks at following locations; Cafeteria/commons, Library
 - b. Provide 12" clocks at following locations: Clinic, receptionist desk

- P. Additional Equipment:
 - 1. Contractor shall include in their pricing, the cost to furnish and install the following additional equipment. These devices shall be used to fulfill any changes request issued until the list is depleted. Upon the completion of the project, all remaining material shall be delivered to the project for owner stock. No devices shall be used without documentation and written authorization from the project's technology consultant. Contractor shall obtain a signed transmittal of additional equipment to the owner at the end of the project. The signed transmittal shall be included in the contractor's closeout documents.
 - 2. Additional Equipment List:
 - a. Five (5) Ceiling Mounted Speakers with tile bridges
 - b. Two (2) Wall Mounted Volume Controls
 - c. One (1) Exterior Speakers

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine conditions, with the Installer present, for compliance with requirements and other conditions affecting the performance of the School Communications and School Safety Network.

- B. Do not proceed until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Install system in accordance with NFPA 70 and other applicable codes. Install equipment in accordance with manufacturer's written instructions.

- B. Furnish and install all material, devices, components, and equipment for a complete

operational system.

- C. Impedance and Level Matching: Carefully match input and output impedances and signal levels at signal interfaces. Provide matching networks where required.
- D. Control Circuit Wiring: Install control circuits in accordance with NFPA 70 and as indicated. Provide number of conductors as recommended by system manufacturer to provide control functions indicated or specified.
- E. All housings are to be located as indicated.
- F. The contractor shall provide necessary transient protection on the AC power feed, all copper station lines leaving or entering the building, and all central office trunks. All protection shall be as recommended by the equipment supplier and referenced to earth ground.
- G. Wiring within Enclosures: Provide adequate length of conductors. Bundle, lace, and train the conductors to terminal points with no excess. Provide and use lacing bars.
- H. Provide physical isolation from speaker-microphone, telephone, line-level wiring, and power wiring. Run in separate raceways, or where exposed or in same enclosure, provide 12-inch minimum separation between conductors to speaker-microphones, telephone wiring and adjacent parallel power. Provide physical separation as recommended by equipment manufacturer for other system conductors.
- I. Identification of Conductors and Cables: Use color coding of conductors and apply wire and cable marking tape to designate wires and cables so all media are identified in coordination with system wiring diagrams.
- J. Provide integration of local sound reinforcement system override.
- K. Provide integration of remote lockdown pushbuttons.
- L. Install new speaker types as indicated on the drawings.
- M. Speakers in high ambient noise areas (cafetorium, gymnasiums, etc.) shall be tapped as required to overcome the ambient noise generated by the public.
- N. Provide silicone sealant to all openings and conduit penetrations at all exterior back box locations.
- O. Weatherproofing: Provide weatherproof enclosures for items to be mounted outdoors or exposed to weather.
- P. All exterior wall penetrations shall be properly sealed to prevent moisture from entering the building.
- Q. Conduit and Cables
 - 1. Install conduit, fittings and boxes as specified in Division 26.
 - 2. Single system cables shall be grouped together in a common conduit of adequate capacity to facilitate the ease of installation and prevent conductor or insulation

damage.

- a. In no case shall the conduit fill exceed 40% capacity.
- b. Do not group conductors or cables of different systems in a common conduit.
- c. Provide and install protective bushings on all conduit stub outs and sleeves, prior to cable installation, to prevent cable damage.

3. Cable:

- a. Install cables as recommended by the system manufacturer. Conductor quantities specified are minimum required. Conductors to be installed shall be coordinated with the system equipment supplier.
 - b. Cables installed on exposed surfaces, in inaccessible locations, or underground shall be installed in conduit.
 - c. Cables installed above accessible ceiling spaces may be installed without conduit. All cables not installed in conduit shall be plenum rated.
 - d. Cables shall be routed down corridors, parallel and perpendicular to the building walls and structure. Cable to each device shall branch off a main corridor trunk.
 - e. Routing cables through classrooms, offices, storage rooms, restrooms, or any type of room other than a corridor will not be accepted. Enter rooms above the associated room doorway.
 - f. All cabling shall be home runs to head-end equipment to allow for zoning to be accomplished.
4. Cables not installed in conduit shall be grouped and bundled. Cable shall be bundled on a maximum of 2'-6" on center. Support cables from D-rings or J-hooks. D-rings and J-hooks shall be secured to the structure at a maximum of 5' on center. Bundling and support shall be with plenum rated cable ties.
 5. Cables installed in hollow wall spaces shall be installed in conduit to an accessible location.
 6. Tag each circuit at each end and at each terminal with a separate tag indicating the area served.

R. Emergency Lockdown Buttons

1. Cabling for each Emergency Lockdown Button shall be homerun to the Communication System head-end equipment.
2. Communications system shall communicate with intrusion system over the network when there is a lockdown event.
3. Provide connection from the Communication System head-end equipment to the Intrusion Detection System head-end for sending notifications to the CFISD Police Department. Coordinate additional requirements and programming with Owner.
4. Button shall cause the Intercom System to send a distinct alert tone throughout all speakers in the building. Coordinate exact tone with Owner.
5. Button shall send an Emergency Call signal to all Administrative Call Stations.
6. Communication System shall alert essential personnel via SMS and e-mail that a Lockdown event has occurred at the campus. Coordinate additional requirements with Owner.
7. Buttons and alert tone shall be reset by pressing the All-Clear button on any Administrative Call Station console.
8. Coordinate Emergency Lockdown Button device identification naming with Owner.

- S. Volume Controls
 - 1. Volume Controls shall be configured with emergency call override, allowing emergency announcements to be heard regardless of the position of the volume control.

3.3 ADDITIONAL REQUIREMENTS

- A. **Provide visual PA indicator light in deaf education areas and wire into the communications system for bell tones.**

3.4 GROUNDING

- A. Provide equipment grounding connections for Integrated Electronic Communications Network systems as indicated. Tighten connections to comply with tightening torques specified in UL Standard 486A to assure permanent and effective grounds.
- B. Racks and cabinets shall be grounded to the metallic structure of the building or to the building system power ground in accordance with NEC section 250. Securely bond equipment to the ground system through a minimum 14-gauge green insulated conductor.
- C. Ground equipment, conductor, and cable shields to eliminate shock hazard and to minimize to the greatest extent possible, ground loops, common mode returns, noise pickup, cross talk, and other impairments. Provide 5-ohm ground at main equipment location. Measure, record, and report ground resistance.
- D. Electronic systems shall be grounded to the building system ground, with a maximum resistance of 0.1 ohm. Systems ground shall be a driven ground rod, building steel, or other approved ground of the building power systems ground.
- E. Provide all necessary transient protection on the AC power feed and on all copper station lines leaving or entering the building. Note in system drawings, the type and location of these protection devices as well as all wiring information.

3.5 FIELD QUALITY CONTROL

- A. **Manufacturer's Field Services:** Provide services of a duly factory authorized service representative for this project location to supervise the field assembly and connection of components and the pre-testing, testing, and adjustment of the system.
- B. **Inspection:** Make observations to verify that units and controls are properly labeled, and interconnecting wires and terminals are identified. Provide a list of final tap settings of paging speaker line matching transformers.
- C. **Testing:** Rectify deficiencies indicated by tests and completely re-test work affected by such deficiencies at Contractor's expense. Verify by the system test that the total system meets the Specifications and complies with applicable standards.

3.6 FINAL ACCEPTANCE TESTING

- A. The Final Acceptance Testing shall be provided to the Owner, or the Owners designated representative only. Final acceptance testing to any other trade or service provider for the project will not comply with the requirements of this section.
- B. The contractor will provide a Final Acceptance Test record document signed by both the contractor and the Owner or designated Owner's Representative establishing the "In

Warranty” date. The warranty period will not commence until the Final Acceptance Test is completed.

- C. Be prepared to verify the performance of any portion of the installation by demonstration, listening and viewing test, and instrumented measurements. Make additional adjustments within the scope of work and which are deemed necessary by the Owner because of the acceptance test.

3.7 COMMISSIONING

- A. The contractor shall train the Owner's maintenance personnel in the procedures and schedules involved in operating, troubleshooting, servicing, and preventative maintenance of the system. This training will be in accordance with the training as outlined in Section 1.6 of these specifications. In addition to the Training Materials provided, the contractor will also furnish Operators Manuals and Users Guides at the time of this training.
- B. Schedule training with Owner through the Owner’s representative, with at least seven days advance notice.

3.8 OCCUPANCY ADJUSTMENTS

- A. The contractor shall provide Occupancy Adjustments in accordance with Section 1.6 of these specifications. A response scenario amenable to both the owner and the contractor will be established and followed for the first year of service.

3.9 CLEANING AND PROTECTION

- A. Prior to final acceptance, the contractor shall vacuum and clean all system components and protect them from damage and deterioration. All blank spaces in equipment cabinets will be covered with blank panels. Top and side panels, and all cabinet doors will be installed. All general areas within and around all equipment rack/cabinets in the facility will be swept, vacuumed, and cleaned up. No cabinets will be left unlocked, and all cabinet keys will be turned over to the owner or designated owner’s representative.

END OF SECTION

SECTION 28 20 00
VIDEO SURVEILLANCE SYSTEM (VSS)

PART 1-GENERAL

1.1 RELATED WORK

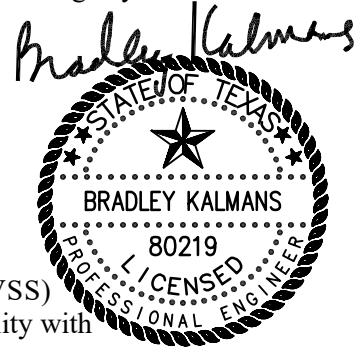
- A. The following, in their entirety and as applicable, shall apply to this section. Including any associated drawings.
1. Conditions of the Contract
 2. Division 1
 3. Division 26
 4. Division 27
 5. Division 28

1.2 DESCRIPTION OF WORK

- A. Provide a complete and tested IP based digital video surveillance system (VSS) including cameras, cabling, digital image storage, integration and accessibility with Owner's Local/Wide Area Network (LAN/WAN), Internet accessibility thru remote view application software and simultaneous user access capability. Provide fully terminated unshielded twisted pair (UTP) cable, UTP terminations, racks, raceways, conduit, and other incidental and miscellaneous premises wiring system hardware as required for a complete and useable system. The installation shall comply with applicable codes and standards in effect at the job site and as indicated in the Specifications and Drawings.
- B. The system shall be Non-Proprietary in nature and be available through multiple distribution channels in the nearest metropolitan marketplace. Systems that are manufactured and installed by a factory office and are not available through multiple distribution channels will not be accepted.
- C. Provide all electronic hardware and coordinate with the building's LAN/WAN. The contractor shall coordinate with other system vendors, where appropriate, to facilitate equipment installation, scheduling, protection of equipment and access to the project site in order to provide the Owner a substantially complete project in a timely manner.
- D. Acceptable manufacturers of NVR equipment shall be Seneca Data only. Contractor must be a current Exacq Enterprise Certified integrator of the solution in the Houston marketplace and be able to include information on current support staff to be able to service this client. Seneca NVR part numbers and configuration are listed in the specification to define equipment capabilities and requirements for this project.
- E. Contractor must be a current integrator of solution in the Houston marketplace and be able to include information on current support staff to be able to service this client as needed 24x7 for emergency support.
- F. Contractor shall provide a complete turnkey solution to the owner and be responsible for the complete installation of a security camera system.
- G. The contractor must be in good standing with the district and have no outstanding performance or warranty items at the time of bid. Any outstanding items or issues is grounds to disqualify the contractors bid.

1.3 QUALITY ASSURANCE

- A. Installer Qualifications:
1. The Video Surveillance System Installer shall be Exacq Enterprise certified and shall meet all applicable regulations. The Contractor shall



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- be a firm normally employed in the security and surveillance industry.
2. The contractor shall be certified by the manufacturing company in all aspects of design, installation and testing of the products described herein. Each contractor shall furnish with their submittal a letter from the manufacture indicating they are a dealer in good standing.
 3. The contractor must be certified by the manufacturer of the products, adhere to the engineering, installation and testing procedures and utilize the authorized manufacturer components and distribution channels.
 4. The contractor shall be experienced in all aspects of this work and shall be required to demonstrate direct experience on recent systems of similar type and size. The contractor shall own and maintain tools and equipment necessary for successful installation and testing of video surveillance distribution systems and have personnel who are adequately trained in the use of such tools and equipment.
 5. A resume of qualifications shall be submitted with the Contractor's proposal indicating the following:
 - a. A list of five recently completed projects using the product proposed of similar type and size with contact names and telephone numbers for each.
 - b. A list of test equipment proposed for use in verifying the installed integrity of metallic cable systems on this project.
 - c. A technical resume of experience for the contractor's Project Manager and on-site installation supervisor who shall be assigned to this project.
 - d. A list of technical product training attended by the contractor's personnel that shall install the video surveillance system shall be submitted.
 - e. Any subcontractor who shall assist the video surveillance contractor in performance of this work shall have the same training and certification as the video surveillance contractor.
- B. The Owner's representative reserves the right to reject all or a portion of the work performed, either on technical or aesthetic grounds.

1.4 REGULATORY REQUIREMENTS

- A. Standards: All work shall be performed in accordance with the latest revisions of the following standards and codes:
 1. Local Building Code
 2. Local Electrical Code
 3. NEC National Electrical Code
- B. Other references:
 1. TIA/EIA-568-A - Commercial Building Telecommunications Wiring Standard
 2. EIA/TIA-569 - Commercial Building Standard for Telecommunications Pathways and Spaces.
 3. TIA/EIA-606 - The Administration Standard for the Telecommunications Infrastructure of Commercial Buildings
 4. TIA/EIA-607 - Commercial Building Grounding and Bonding Requirements for Telecommunications
 5. TIA/EIA TSB 67 - Transmission Performance Specification for Field Testing of Unshielded Twisted-Pair Cabling Systems.
 6. ISO/IEC 11801 - Generic Cabling Standard
 7. EN 50173 - Generic Cabling Standards for Customer Premises
- C. Governing Codes and Conflicts: If the requirements of these specifications or the Project Drawings exceed those of the governing codes, regulations, and manufacturer installation requirements, then the requirements of these specifications and the drawings

shall govern. However, nothing in the drawings or specifications shall be construed to permit work not conforming to all governing codes, regulations, and manufacturer installation requirements.

1.5 SUBMITTALS

- A. Project Initiation: Within fourteen (14) days of Notice to Proceed, the data network system installer shall furnish the following in a single consolidated submittal:
1. Permits: The Contractor shall obtain all required permits and provide copies to the Owner / Architect / Engineer.
 2. Product Literature: Complete manufacturer's product literature for all material, hardware, and equipment to be used in the installation of the specified system. In addition, whenever substitutions for recommended products are made, samples (when requested by the Owner / Designer) and the manufacturer's supporting documentation demonstrating compatibility with other related products shall be included. The submittal shall have some type of distinguishing marker or pointer to indicated what specific product is to be provided
 3. Construction Schedule: A time-scaled Construction Schedule, indicating general project deadlines and specific dates relating to the installation of the cable distribution system.
 4. Specification Compliance: A letter shall be provided stating, by section and subsection, that the SCS installer complies with the entire specification section. If the installer intends to deviate from any portion of the specifications, a detailed explanation of reason in which the installer would like to deviate shall be provided in addition to the specification compliance letter. No deviations shall be acceptable until they have been approved by the Owner.
 5. Each Submittal must have a detailed parts list. Quantities will not be required as the quantity of any portion of this system shall be as required for a complete and functional system and in conjunction with the contract documents.
 6. Certifications: The contractor shall submit all certifications for approved products and the certifications must contain dates which are valid from the date of proposal and not expirer any sooner than 12 months after substantial completion of the project.
 - a. Physical Security Professional (PSP) Certification: This certification must be held by an on-staff, full-time employee of the system installer. The holder must be staffed out of the office that is located within 75 miles of the projected.
 - b. Manufacturer Authorized Dealer Certification must be held by the system installer's office that is located within 75 miles of the project and shall be a company certification, not and individual certification.
 - c. Installer Certifications: Certification indicating that an individual has successfully completed installer training, issued by the VMS and Cameras Manufacturers specified herein, must be held by at least 25% of the, on-site, staff and be made available at the site if requested by the owner, architect, and/or project's technology consultant.
- B. Shop Drawings: Submit the following items, for Owner review and approval, within twenty-eight (28) days of notice to proceed:
1. Proposed cable routing and grouping plan.
 2. In addition to the cable routing, the submitted drawings shall indicate the following, even if the following is expected to be provided by the project's electrical or general contractor:
 - a. Location of sleeved wall and floor pass-thru

- b. Size of sleeve at each location installed
 - c. Quantity of cable passing through each sleeve
 - d. Location of devices and head end equipment.
 - e. Conduit routing, size, and quantity
3. Drawing Compliance: A letter shall be provided stating that the system installer complies with the entire project drawing, including all general, keyed, and notes to contractor. If the installer intends to deviate from any portion of the specifications, a detailed explanation of reason in which the installer would like to deviate shall be provided in addition to the specification compliance letter. No deviations shall be acceptable until they have been approved by the Owner.
 4. All subcontractors shall provide submittals to general contractor for normal distribution to Architects, Engineers and the Owner's project managers.
- C. At Substantial Completion: Provide drawings, to the Owner, to reflect installed cabling with correct labeling and cable routing.
- D. Close-out Procedures: Two (2) copies of the following documents shall be delivered to the building owner's representative at the time of system acceptance. Close out technology documents shall be separated from all other trade's documents. The close out finals shall include:
1. Inspection and Test Reports: During the course of the Project, the Contractor shall maintain an adequate inspection system to ensure that the materials supplied, and the work performed, conform to contract requirements. The Contractor shall provide written documentation that indicates that materials acceptance testing was conducted as specified. The Contractor shall also provide documentation, which indicates that all cable termination testing was completed and that all irregularities were corrected prior to job completion.
 2. Include the Name, address and telephone of the authorized factory representative with a 24-hour emergency service number.
 3. The manual shall also include Manufacturer's data sheets and installation manuals/instructions for all equipment installed a list of recommended spare parts.
 4. Generic or typical owner's instruction and operation manual shall not be acceptable to fulfill this requirement.
 5. An up-to-date record ("as-built") set of approved shop drawing prints that have been revised to show each and every change made to the structure cabling system from the original approved shop drawings. Drawings shall consist of a scaled plan of each building showing the placement of each individual item of the technical cabling system equipment as well as raceway size and routing, junction boxes, and conductor size, quantity, and color in each raceway.
 6. As-built Drawings shall include cable pathways, camera locations with correct labeling and MDF/IDF locations. A copy of the As-Built drawings reflecting the final locations of all cabling shall be given to the designated Owner's representative. The as-built drawings shall be prepared using AutoCAD 2012 or later. Provide the Owner with electronic versions of the as-builts on CD media.
 7. All drawings must reflect final graphic numbering, point to point wiring, device address and programmed characteristics as verified in the presence of the engineer and/or the end user unless device addressing is electronically generated, and automatically graphically self-documented by the system.
 8. A copy of the manufacturer's warranty on the installed system.
 9. Any keys to cabinets and/or equipment and special maintenance tools required to repair, maintain, or service the system.
 10. Operating and Maintenance Instructions for all devices within the system. These instructions shall reflect any changes made during the course of construction, and

shall be provided to the Owner, for their use, in a three-ring binder labeled with the project name and description. (4 copies)

11. Upon completion of the work and at a time designated by the Architect or owner, provide formal training sessions for the Owner's operating personnel to include location, operation, and maintenance of all included systems and equipment. Minimum amount of training time shall be at least 4 hours.

1.6 QUALITY ASSURANCE

A. Contractor Qualifications:

1. The system installer shall be the authorized representative of the manufacturer to sell, install, and service the proposed manufacturer's equipment. The system installer shall have represented the security alarm manufacturer's product for a minimum of five (5) years' with experience installing and servicing systems of similar scope and complexity and evidence that is completed at least three (3) projects of similar design and is currently engaged in the installation and maintenance of systems herein described.
2. The system installer shall be licensed as required, by the State in which the project is located in, as a security services contractor to design, sell, install, and service security alarm systems.
3. The system installer shall provide 24-hour, 365 days per year emergency service with factory trained service technicians.
4. The installing firm shall have personnel on their staff that has been actively engaged in the business of designing, selling, installing, and servicing security systems for at least ten (10) years.
5. The proposing contractor for this system and the installing contractor of this system shall be of the same organization. Absolutely no subcontracting of any portion of this system by the proposing contractor will be allowed.
6. The proposing/installing contractor of this system must be an authorized dealer / integrator for the project's specified Access Control, Audio / Video Intercom, and the Intrusion Detection systems as well as the system specified in this section.
7. Contractor must be a current integrator of solution in the closest major metropolitan area marketplace, have a permanent office located within 75-miles of the project, and be able to include information on current support staff to be able to service this client.
8. All installation, configuration, setup, program and related work shall be performed by electronic technicians thoroughly trained by the manufacturer in the installation and service of the equipment provided.
9. The system installer shall submit credentials of completed manufacturer certification, verified by a third-party organization, as proof of the knowledge.
10. The Contractor shall provide four (4) current references from clients with systems of similar scope and complexity that became operational in the past three (3) years. At least three (3) of the references shall be utilizing the same system components, in a similar configuration as the proposed system
11. Contractor must be in good standing with the Owner and have no outstanding performance or warranty items at the time of bid. Any outstanding items or issues is grounds to disqualify the Contractor for performing any work on the project.

1.7 PRE-INSTALLATION MEETINGS

- A. No less than a minimum of two weeks prior to rough-in or installation of any system devices, the Installer will be required to attend a pre-construction meeting with the

Owner, Architect, and Security Consultant.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
- B. Handling: Handle materials to avoid damage.

1.9 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.10 SEQUENCING

- A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.11 WARRANTY

- A. The VSS furnished by the System Integrator including wiring, software, hardware and third-party products shall be fully warranted for parts, materials and labor for a minimum of 1 year from date of the final acceptance.
- B. Manufacturer shall provide a limited 3-year warranty for the product to be free of defects in material and workmanship.

PART 2 -PRODUCTS

2.1 GENERAL

- A. The data cabling to each camera location on this project shall be provided and installed by the data cabling contractor. The security camera installing contractor shall be responsible for the installation of all power wiring for exterior PTZ domes and power supplies.
- B. The Contractor is responsible for providing all incidental and/or miscellaneous hardware not explicitly specified below as required for a complete and operational system.
- C. Materials shall be as listed no alternate products will be allowed without prior consent of the projects security consultant. Any items approved as equivalent products shall be published by addendum ten days prior to proposal for Architect/Engineer review.
- D. All equipment and materials used shall be standard components, regularly manufactured, regularly utilized in the manufacturer's system.
- E. All systems and components shall have been thoroughly tested and proven in actual use.
- F. All systems and components shall be provided with the availability of a toll free 24-hour technical support phone number from the manufacturer. The phone number shall allow for immediate technical assistance for either the dealer/installer or the end user at no charge.
- G. All systems and components shall be provided with an explicit manufacturer warranty.

2.2 DATA CLOSET (MDF/IDF) TERMINATION HARDWARE

- A. Provide and Install new Tripplite, #B030-008-17-IP, NetDirector 8-Port 1U Rack-Mount Console HDMI KVM Switch with 17 in. LCD and IP Remote Access, Dual Rail.
- B. Security contractor is responsible to coordinate with district police technology department on acquiring network connections as well as any network configuration information such as IP numbers that will be required to connect NVR servers to district network.
- C. Security contractor is responsible to provide network cabling connection, either fiber or category 6A, to owner provided network equipment. This connection allows NVR to

- be connected to owner's local area network.
- D. Security contractor shall provide (1) Minuteman – E2000RTXL2U ups per NVR unit at each rack location to support NVR equipment. Provide 120v. electrical connection at location where NVR is installed.

2.3 CABLE AND INSTALLATION

- A. The Contractor shall provide and install all low voltage plenum rated power cable to exterior PTZ dome camera locations from a central power supply(s). Each power cable shall be individually fused at the power supply so a short in one power cable will blow that fuse and not affect the other cameras. The power supply will be UL listed in an approved enclosure. It is the responsibility of the Contractor to size the power supply to handle the full load of the cameras.
- B. The data cabling to each camera location on this project will be provided and installed by cabling contractor certified by Systimax and authorized to install the cable plant and connectivity products. All category 6A cable shall be Systimax Purple 2071 CAT6A.
- C. Camera contractor is responsible to request and oversee all penetrations and all conduit runs as necessary for installation of CCTV installation.
- D. All exterior penetrations require necessary weatherproofing to avoid moisture penetration.
- E. All Cameras will require 10ft purple Cat6A patch chord at camera location and 7ft purple Cat6A patch chord at panel location provided by certified Systimax Data contractor.
- F. All outdoor cable runs underground shall be in fiber rated for underground use according to Technology specs.
- G. All power circuits required for the NVR servers are to originate as emergency power from its provided UPS.
- H. Contractor shall not run any power cabling for any security equipment on rack tray system due to EMI considerations. Contractor shall provide individual cabling support for all low voltage power cabling.
- I. All cabling for entire project shall be installed at 5'-0" intervals in dedicated support system using a j-hooks support system. Cable supports will be securely attached directly to building structure. Do not attach cabling or supports to ductwork, piping, grid hangers, conduit, or equipment.
- J. Refer to CFISD structured cabling specifications for Category 6A materials and methods.
- K. All category 6A cabling shall be routed to existing MDF and IDF locations and be terminated on existing racks. Provide additional patch panels as required and label ports using existing labeling scheme.
- L. For all cameras that will exceed the maximum category 6A cable limitation the contractor shall provide and install Veracity Outreach Max universal Ethernet and Poe Extender and clearly identify on as-builts. If installed a spare unit will be provided to the owner.

2.4 PROPOSALS

- A. All proposals shall be in the format as shown in the General Conditions Section of the Specification.

2.5 DIGITAL VIDEO RECORDING, MANAGEMENT AND TRANSMISSION SYSTEM

- A. The contractor shall provide and install Network Video Recorders for this project.
- B. Final connection for all new IP cameras shall be provided by the camera contractor.

- Coordinate all recording settings and functions with owner prior to programming.
- C. Network Video Recorders shall be preprogrammed to include a floor plan graphic of each school and the exact camera locations and name of cameras. Field verification of camera names is required to complete this task.

2.6 EQUIPMENT REQUIRED

- A. Provide a 5-year warranty for all NVR equipment.
- B. Digital Video Recorders:
1. Provide one GCON Systems Enterprise Class NVR System or BCD Video Network Video Recorder, per 50 cameras to be installed unless stated otherwise by the owner.
 2. The contractor shall coordinate correct Exacq software version prior to submitting or procuring equipment.
 3. NVR must have SSA agreement in place for two years at time of install.
 4. In response to proposal, contractor shall provide owner with amounts for annual service maintenance agreement that can be purchased after warranty period has expired.

2.7 CAMERAS

- A. Camera Types:
1. All ceiling mounted cameras shall be surface mounted on the ceiling using ceiling mounting kit and accessible by 10ft ladder.
 2. All cameras shown on the drawings to be corner mounted shall receive corner mount kit by specified camera manufacturer, no exception.
 3. Interior Fixed cameras shall be Bosch Flexidome 5000i or AXIS P3265LV if primary is not available. – TYPE C
 4. Exterior Fixed cameras shall be Bosch Flexidome 5000i or Axis P3265-LVE if primary is not available. – TYPE B
 5. Interior Fish Eye cameras shall be Bosch Flexidome 5100I 6mp. – TYPE E
 6. Multi sensor Interior/Exterior Camera shall be Axis P3727-PLE or Wisenet PNM-C16083RVQ– TYPE A
 7. Duo Cameras shall be AXIS P4707-PLVE Platform with IR or Wisenet PNM-7082RVD if Axis is unavailable. – TYPE D
 8. Axis F9114 and Axis F4105-LRE sensors shall be provided to view around a column or skylight where a center mounted single camera cannot be employed. All F4105-LRE lens must be installed with Axis TU6005 plenum cable accessory. – TYPE F
 9. Specialty PTZ camera will be Axis Q6318-LE PTZ if specifically called for by owner-TYPE G
- B. Field of View Determination by the contractor as necessary for fixed camera locations shall be performed at no additional cost to provide the view desired by the owner. Contractor shall coordinate all final camera views and locations with owner for final approval.
- C. IP camera address scheme will be provided to contractor by the owner. All Camera addresses shall follow the provided scheme and be sequential.
- D. Refer to Drawings for additional camera part numbers, Quantities.
- E. Confirmation of camera type per location requires customer verification.

2.8 ADDITIONAL HARDWARE OR EQUIPMENT REQUIRED

- A. Licensing to be provided for all necessary equipment.
- B. Camera mounts and brackets shall be per camera manufacturer.

- C. One ViewSonic VX3211-2K-MHD 32" LED Monitor is required per NVR.
- D. One of each type of camera used on the project is required upon final inspection for spare replacement equipment.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Fire Wall Penetrations: The Contractor shall avoid penetration of fire rated walls and floors wherever possible. Contractor shall also seal all floor, ceiling and wall penetrations in fire or smoke barriers and in the wiring closet.
- B. Provide three sided pre-finished metal hood and seal to wall where conduit penetrates exterior wall.
- C. Install new conduit on portable pipe supports- (low profile type), as manufactured by Portable Pipe Hangers or Advanced Support Products. Provide roof protection pads under each support. Coordinate location and routing with design engineer prior to rough- in or installation of system.
- D. Do not install wall mounted cameras into metal fascia. Ensure they are mounted into brick, and sealed top sides (Not bottom)
- E. Wall Penetrations:
 - 1. Exterior Penetrations- shall be performed by a certified electrical contractor and be sleeved with metallic conduit and resealed with an Underwriter Laboratories (UL) approved sealant.
 - 2. Interior Penetrations- shall be sleeved with metallic conduit and resealed with an Underwriter Laboratories (UL) approved sealant.
- F. Cable Pathway:
 - 1. In suspended ceiling and raised floor areas where duct, cable trays or conduit are not available, the Contractor shall bundle, in bundles of 25 cables or less, with cable ties snug, but not deforming the cable geometry. Cable bundles shall be supported via "J" hooks attached to the existing building structure and framework at a maximum of five (5) foot intervals. Plenum rated cable ties shall be used in all appropriate areas. The Contractor shall adhere to the manufacturer's requirements for bending radius and pulling tension of all cables.
 - 2. Cables shall not be attached to lift out ceiling grid supports or laid directly on the ceiling grid.
 - 3. Cables shall not be attached to or supported by fire sprinkler heads or delivery systems or any environmental sensor located in the ceiling air space.

3.2 EQUIPMENT RACK CONFIGURATION

- A. Cable Placement: Cable installation in the wiring closet must conform to the Project Drawings. All cabling shall be routed so as to avoid interference with any other service or system, operation, or maintenance location. Avoid crossing areas horizontally just above or below any riser conduit. Lay and dress cables to allow other cables to enter the conduit/riser without difficulty at a later time by maintaining a working distance from these openings.
- B. All incoming cables shall be routed on the cable tray and neatly dressed down to the patch panels
- C. Cable shall be routed as closely as possible to the ceiling, floor or corners to ensure that adequate wall or backboard space is available for current and future equipment. All cable runs within the wiring closet shall be horizontal or vertical within the constraints of minimum cable bending radii. Minimum bend radius shall be observed. Cables shall not be tie-wrapped to electrical conduit or other equipment.

3.3 WIRING INSTALLATION

- A. General:
 - 1. Cabling between wiring closet and camera locations shall be made as individual home runs. No intermediate splices may be installed or utilized between the wiring closet and the camera location.
 - 2. All cable must be handled with care during installation so as not to change performance specifications.
- B. Exposed Cable: All cabling shall be installed inside walls or ceiling spaces whenever possible. Exposed cable shall only be run where indicated on the Drawings. Additional exposed cable runs shall require Owner approval, and shall only be allowed when no other options exist. Cabling shall be installed concealed at all times, except in unfinished mechanical rooms or wiring closets where cable shall be installed exposed and located to avoid conflicts with pass-through cabling, etc. Tie wraps shall be used to provide a neat appearance. Provide "D" rings or the appropriate cable guides to dress the cable.
- C. Placement: All cabling and associated hardware shall be placed so as to make efficient use of available space. All cabling and associated hardware shall be placed so as not to impair the Owner's efficient use of their full capacity.
- D. Cable Routes: All cabling placed in ceiling areas must be in conduit, cable tray, or J- Hooks. Cable supports shall be permanently anchored to building structure or substrates. Provide attachment hardware and anchors designed for the structure to which attached and that are suitably sized to carry the weight of the cables to be supported. Attaching cable to pipes or other mechanical items is not permitted. Use J-Hooks for up to 15 cables (Caddy CAT 21 or CAT 32 hooks with appropriate brackets). All runs of sixteen (16) or more cables, provide cable rings on 36" maximum centers to hang cable. Cable shall be routed so as to provide a minimum of 18" spacing from light fixtures, sources of heat, power feeder conduits and EMI sources. Cabling shall not be attached to ceiling grid support wires. Cable runs shall be parallel or perpendicular to building structure. Multiple cables to be banded together every 6 feet.

3.4 DOCUMENTATION

- A. Labels: The Contractor shall label all outlets using permanent machine engraved labels approved by the Owner. Label patch panels in the wiring closet to match those on corresponding camera locations. The font shall be at least one-eighth inch (1/8") in height, block. All labels shall correspond to as-builts and to final test reports.
- B. Contractor shall ensure complete typed labeling of all cameras with numbers that correspond to locations on video server. Labeling system shall correspond to the Owner's labeling system. Verify with Owner. Provide tags (black letters on white labels, plastic coated) on all cables and outlets.
- C. All cables shall be labeled at both ends with a machine label and all terminations shall be stenciled with a typed label for quick circuit identification. Labeling shall conform to TIA/EIA standard 606 and include interconnect cable identification numbers.
- D. A floor plan, clearly labeled with all numbered camera locations, shall be included in the as-built plans.

3.5 CABLE TESTING - BY MANUFACTURER'S REQUIREMENTS

- A. Notification: The Owner/Architect/Engineer shall be notified one week prior to any testing so that the testing may be witnessed.
- B. Final Acceptance: Before requesting a final acceptance, the Contractor shall perform a series of end-to-end installation performance tests. The Contractor shall submit for approval a proposal describing the test procedures, test result forms and time table for all copper and fiber optic cabling.

- C. Procedures: Trained personnel shall perform all testing. Acceptance of the test procedures discussed below is predicated on the Contractor's use of the recommended products and adherence to the inspection requirements and practices set forth. Acceptance of the completed installation shall be evaluated in the context of each of these factors.
- D. Errors: When errors are found, the source of each error shall be determined, corrected and the cable retested. All defective components shall be replaced and retested. Retest results must be entered on the test results form. All corrections shall be made prior to final acceptance test.

3.6 INSPECTION

- A. Conformance to the installation practices covered above are to be verified when completed. In some cases, the Owner / Architect / Engineer may observe before acceptance.

3.7 WARRANTY

- A. Labor and all other costs as necessary to maintain the equipment in operating condition as intended by the product manufacturer after a period of 1 year shall be negotiated with the owner upon project completion.
- B. Guarantee and warrant all equipment provided for a period of 3 years following date of substantial completion, or a period equal to the stated guaranty/warranty offered by the product manufacturer, whichever is the longest in duration. All such warranties shall include all parts (NVR's, and Cameras).

END OF SECTION

STRUCTURAL CONCEPT, STANDARDS AND LOADS

- A. DESIGN CONCEPT: THE STRUCTURE AS SHOWN HAS BEEN DESIGNED IN ACCORDANCE WITH THE BUILDING CODE REQUIREMENTS AND DESIGN STANDARDS TO SUPPORT THE FINAL BUILDING SERVICE LOADS... B. BUILDING CODES AND DESIGN STANDARDS: 1. INTERNATIONAL BUILDING CODE, 2021 EDITION WITH CITY OF HOUSTON, TX AMENDMENTS...

Table with 3 columns: BUILDING AREA, DEAD LOAD (PSF), LIVE LOAD (PSF). Rows include 1. SLAB ON GRADE, 2. ROOF, 3. MECHANICAL AREAS.

Table with 5 columns: ZONE 1, ZONE 1', ZONE 2, ZONE 3. Rows include ROOF and WALLS with various load values.

- a. RE: IRC 2021 FOR ADDITIONAL DESCRIPTION OF PRESSURE ZONES. b. POSITIVE PRESSURES ARE PRESSURES ACTING TOWARD THE BUILDING. c. NEGATIVE PRESSURES ARE PRESSURES ACTING AWAY FROM THE BUILDING.

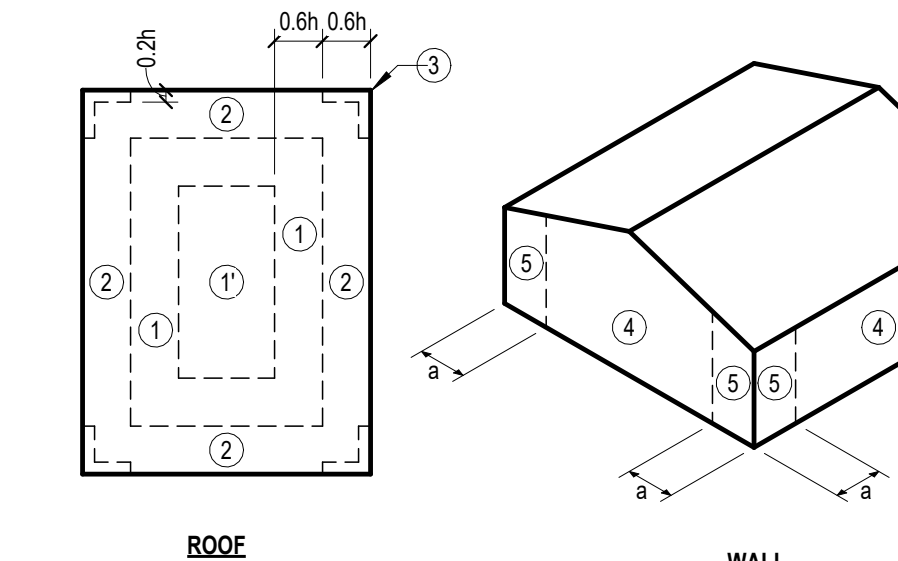


Table with 2 columns: SEISMIC CRITERIA, VALUE. Rows include 1. IMPORTANCE FACTOR, 2. RISK CATEGORY, 3. MAPPED SPECTRAL RESPONSE ACCELERATIONS.

Table with 2 columns: GROUND SNOW LOADS: 5 PSF, SPECIAL LOADS. Rows include 1. STAIR TRENDS, RAILINGS AND GUARDRAILS.

Table with 3 columns: SIZE, WEIGHT MAX, SPACING OF HANGERS. Rows include 4" DIA, 6" DIA, 8" DIA, 10" DIA, 12" DIA.

Table with 2 columns: ITEM, REQUIRED CAPACITY. Rows include TRENDS, TOP RAILS, OTHER RAILS, FILLERS & CONNECTIONS, HAND RAILS.

Table with 2 columns: ITEM, REQUIRED CAPACITY. Rows include STAIR TRENDS, RAILINGS AND GUARDRAILS, TRENDS, TOP RAILS.

GENERAL NOTES FOR CONSTRUCTION

- A. CONSTRUCTION METHODS, PROCEDURES AND SEQUENCES ARE THE RESPONSIBILITY OF THE CONTRACTOR AND THE CONTRACTOR SHALL TAKE ALL THE NECESSARY MEANS TO MAINTAIN AND PROTECT THE STRUCTURAL INTEGRITY OF ALL CONSTRUCTION AT ALL STAGES. B. THESE NOTES APPLY TO STRUCTURAL DOCUMENTS SEALED BY THE STRUCTURAL ENGINEER AND ARE INTENDED TO BE COMPLEMENTARY TO AND USED IN CONJUNCTION WITH THE PLANS AND SPECIFICATIONS...

CONCRETE

Table with 5 columns: BUILDING COMPONENT, 28 DAY CYLINDER COMPRESSIVE STRENGTH (POUNDS PER SQUARE INCH (PSI)), NORMAL WEIGHT, MAX AGGREGATE SIZE (IN), SLUMP (IN), W/C RATIO.

- A. CONCRETE SCHEDULE: 1. DRILLED PIERS, 2. SLAB-ON-GRADE, 3. SLAB-ON-DECK, 4. GRADE BEAMS AND PLINTHS, 5. ALL OTHER CONCRETE. B. PROVIDE DEFORMED NEB BILLET STEEL BARS CONFORMING TO ASTM A615, GRADE 60...

Table with 3 columns: BAR SIZE, GRADE 60, L4 FOR TOP BARS, 28 DAY CYLINDER CONCRETE STRENGTH (PSI), L4 FOR BOTTOM BARS, 28 DAY CYLINDER CONCRETE STRENGTH (PSI).

- 1. WHEN TWO BARS OF DIFFERENT SIZES ARE LAPPED, THE SMALLER SIZE SHALL GOVERN THE LAP LENGTH UNLESS SPECIFICALLY NOTED. 2. WELDED OR MECHANICAL SPLICES CAPABLE OF DEVELOPING 125% OF THE BAR YIELD STRENGTH MAY BE USED IN LIEU OF THE LAPS...

EXCAVATION, BACKFILLING & FOUNDATIONS

- A. A GEOTECHNICAL EXPLORATION OF SUBSURFACE CONDITIONS, CONTAINING TEST BORINGS, LABORATORY TEST, ENGINEERING ANALYSIS AND FOUNDATION RECOMMENDATIONS, PERFORMED BY TERRACON DATED 09/22/2024 REPORT NO. 22245388 IS AVAILABLE FOR REVIEW. B. MAINTAIN PROPER SITE DRAINAGE DURING CONSTRUCTION SO THAT PONDING OF WATER DOES NOT OCCUR IN THE BUILDING AREA.

STRUCTURAL STEEL

- A. ROLLED SHAPES: 1. ALL STRUCTURAL STEEL FOR ALL THE HORIZONTAL FRAMING MEMBER SHALL CONFORM TO ASTM A992, GRADE 50, UNLESS OTHERWISE NOTED. 2. ALL STRUCTURAL STEEL FOR HOLLOW STRUCTURAL SECTIONS SHALL CONFORM TO ASTM A500, GRADE B WITH A MINIMUM YIELD OF 46 KSI...

B. CONNECTIONS

- 1. THE DESIGN OF STRUCTURAL STEEL CONNECTIONS IS THE RESPONSIBILITY OF THE CONTRACTOR AND THE STEEL FABRICATOR. THE DESIGN OF THE CONNECTION SHALL BE PERFORMED BY A REGISTERED PROFESSIONAL ENGINEER EMPLOYED BY THE STEEL FABRICATOR. 2. ALL WELDED CONNECTIONS SHALL CONFORM TO AWS UNLESS OTHERWISE NOTED.

C. WELDS

- 1. CONFORM TO "CODE FOR WELDING IN BUILDING CONSTRUCTION" BY THE AMERICAN WELDING SOCIETY, LATEST EDITION. 2. WELDS ON INDICATED ON DRAWINGS ARE TO BE FILLET ALL AROUND AS PRESCRIBED BY AISC SPECIFICATION...

D. HEADED SHEAR CONNECTORS

- 1. ALL HEADED SHEAR CONNECTORS SHALL BE 3/4 IN. DIAMETER STUDS x 4 1/2 IN. LONG AFTER WELDING AND SHALL CONFORM TO ASTM A108 UNLESS OTHERWISE NOTED.

E. OPEN WEB STEEL JOISTS

- 1. AS APPLICABLE FOR THE OPEN WEB STEEL JOIST TYPE INDICATED ON THE DRAWINGS, CONFORMING TO SJ OR ASC, WHICHEVER IS MORE STRINGENT. 2. PROVIDE JOIST BRIDGING IN ACCORDANCE WITH SJ.

F. STEEL DECK

- TYPE 1: 1. PROVIDE STEEL ROOF DECK 1 1/2" DEEP TYPE B 20 GAUGE STEEL SHEETS AND CONFORMING TO ASTM A653, STRUCTURAL STEEL (SS), GRADE 33, GALVALUME COATING DESIGNATION G60. 2. PROVIDE STEEL ROOF DECK WITH THE FOLLOWING SECTION PROPERTIES: a. MOMENT OF INERTIA: I=0.27 INCH⁴...

TYPE 2

- 1. PROVIDE 1" VENTED METAL DECK, 20 GAUGE STEEL SHEETS AND CONFORMING TO ASTM A653, STRUCTURAL STEEL (SS), GRADE 80, GALVALUME COATING DESIGNATION G60. 2. PROVIDE STEEL ROOF DECK WITH THE FOLLOWING MINIMUM SECTION PROPERTIES: a. MOMENT OF INERTIA: I=0.088 INCHES⁴ FOOT WIDTH...

PRE-ENGINEERED METAL BUILDING SYSTEM LOADS

- A. PROVIDE METAL BUILDING SYSTEM CAPABLE OF WITHSTANDING THE EFFECTS OF GRAVITY LOADS AND THE FOLLOWING LOADS AND CONDITIONS INDICATED. B. ENGINEER METAL BUILDING SYSTEMS ACCORDING TO PROCEDURES IN THE METAL BUILDING MANUFACTURERS ASSOCIATION (MBMA) METAL BUILDING SYSTEMS MANUAL.

Table with 2 columns: MAIN FRAMES LATERAL (DRIFT), VALUE. Rows include METAL PANEL FINISH, PLASTER/STUCCO FINISH, BRICK FINISH.

Table with 2 columns: MAIN FRAMES VERTICAL, VALUE. Rows include NOT SUPPORTING CEILING, SUPPORTING NON PLASTER CEILING, SUPPORTING PLASTER/STUCCO FINISH.

Table with 2 columns: BEARING FRAME RAFTER, VALUE. Rows include NOT SUPPORTING CEILING, SUPPORTING NON PLASTER CEILING, SUPPORTING PLASTER/STUCCO FINISH.

Table with 2 columns: ENDWALL COLUMNS, VALUE. Rows include METAL PANEL FINISH, PLASTER/STUCCO FINISH, BRICK FINISH.

Table with 2 columns: ROOF PANELS, VALUE. Rows include METAL PANEL FINISH, PLASTER/STUCCO FINISH, BRICK FINISH.

Table with 2 columns: PURLINS, VALUE. Rows include NOT SUPPORTING CEILING, SUPPORTING NON PLASTER CEILING, SUPPORTING PLASTER/STUCCO FINISH.

Table with 2 columns: GIRTS LATERAL, VALUE. Rows include METAL PANEL FINISH, PLASTER/STUCCO FINISH/SHYTN SET BRICK, BRICK FINISH.

Table with 2 columns: RAIL BEAMS VERTICAL, VALUE. Rows include CLASS A B C CRANES, CLASS D CRANES, CLASS E AND F CRANES.

Table with 2 columns: RAIL BEAM LATERAL, VALUE. Rows include BRICK Lintel VERTICAL AND LATERAL.

* MINIMUM OR HIGHER IF REQUIRED BY CRANE MANUFACTURER, G.C./PEMB MANUFACTURER TO COORDINATE WITH OWNER AND CRANE MANUFACTURER.



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ADDENDUM 03

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MEPT ENGINEER SALAS O'BRIEN 10930 W. SAM HOUSTON PKWY. N. SUITE 900 HOUSTON, TX 77064 tel: 281.664.1900

LANDSCAPE LANDSCAPE GROUP 17041 EL CAMINO REAL, STE 204 HOUSTON, TX 77058 tel: 281.456.4040

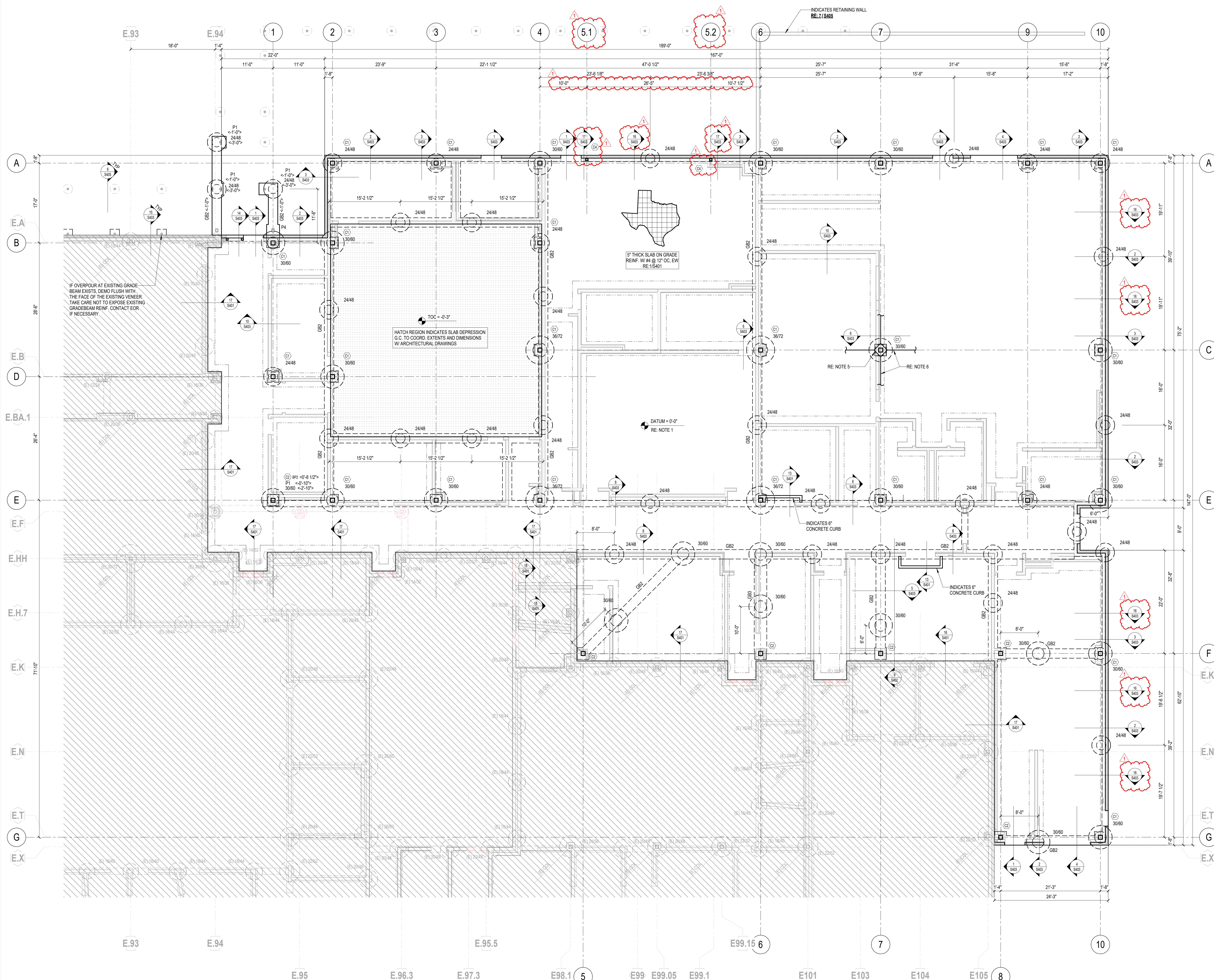
2024 CY-LAKES HIGH SCHOOL RENOVATION 5750 GREENHOUSE RD., KATY, TX 77449 CFSID PROJECT NO. 24-02-5749-R-RFP

Table with 2 columns: T, ADDENDUM 03, 12.13.24. Rows include Reviewer, Submission.

Project Number: 23071 Date: 12-13-2024 Drawn by: JT / AR

GENERAL STRUCTURAL CRITERIA

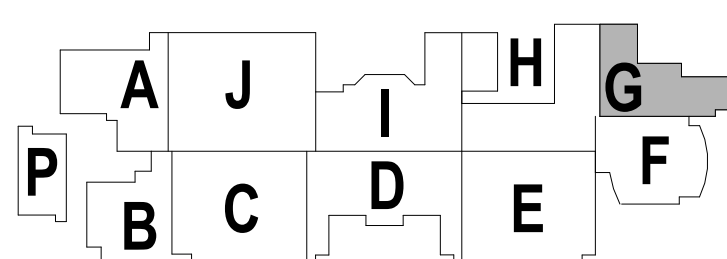
S101



- FOUNDATION NOTES:**
- DATUM ELEVATION $<-0.0'>$ CORRESPONDS TO TRUE ELEVATION = RE. CIVIL. ALL ELEVATIONS ARE RELATIVE TO DATUM ELEVATION $<-0.0'>$.
 - "18/36" (EXAMPLE) INDICATES DRILLED PIER SHAFT AND BELL SIZE. ALL INTERIOR DRILLED PIERS ARE AT ELEVATION $<-2.8'>$ TYP. UON. ALL EXTERIOR DRILLED PIERS ARE AT ELEVATION $<-2.8'>$ TYP. UON. ALL INTERMEDIATE PIERS ARE CENTERED BETWEEN GRIDS ON THE GRADE BEAM. TYP. UON. FOR DRILLED PIER SCHEDULE & DETAILS RE: S301.
 - "P1" (EXAMPLE) INDICATES PLINTH TYPE. ALL INTERIOR PLINTHS ARE TYPE "P1" UON. ALL PERIMETER PLINTHS ARE TYPE "P2" UON. ALL CORNER PLINTHS ARE TYPE "P3" UON. T.O. PLINTHS ARE AT $<-0.8'>$ TYP. UON. FOR PLINTH SCHEDULE & DETAILS RE: S301.
 - "GB1" (EXAMPLE) INDICATES GRADE BEAM TYPE. ALL GRADE BEAMS ARE AT ELEVATION $<-0.8'>$ TYP. UON. PROVIDE TYPICAL CORNER BARS AT ALL GRADE BEAM INTERSECTIONS PER 41S401. FOR GRADE BEAM SCHEDULE & DETAILS RE: S301.
 - "C1" (EXAMPLE) INDICATES COLUMN SIZE.
 - "BP1" (EXAMPLE) INDICATES BASE PLATE TYPE. FOR COLUMN, BASE PLATE & ANCHOR BOLT SCHEDULE RE: S302. PROVIDE TYPICAL BLOCKOUTS AT EACH COLUMN PER DETAILS 6, 7, 8 & 9/S401, TYP. UON.
 - PROVIDE CONTROL JOINTS AT EVERY COLUMN LINE AND AT A MAXIMUM SPACING OF 36 TIMES THE SLAB THICKNESS (NOT TO EXCEED 15'-0"), TYPICAL UON. FOR ADDITIONAL INFORMATION RE: S3401.
 - PROVIDE ADDITIONAL REINFORCING AT ALL RE-ENTRANT CORNERS PER 5/S401.
 - TYPICAL LIGHT POLE FOUNDATION DETAIL RE: 11S405.
 - VERIFY ALL SLOPES, DEPRESSIONS, ELEVATIONS WITH ARCH. PRIOR TO CONSTRUCTION.
 - CONCRETE CURBS NOT SHOWN FOR CLARITY. G.C. TO PROVIDE CONCRETE CURB AS DESIGNATED IN ARCHITECTURAL DRAWINGS. FOR TYPICAL CONCRETE CURB DETAIL RE: 17S401.
 - ALL CMU WALL LOCATIONS ARE FOR REFERENCE ONLY. G.C. TO COORDINATE FINAL CMU WALL LOCATIONS WITH ARCHITECTURAL DRAWINGS FOR SLAB THICKENINGS AND GRADE BEAM DETAILS AT CMU WALLS RE: 8, 9, 10, & 11/S403.
 - G.C. TO PROVIDE A HOUSEKEEPING PAD UNDER ALL MECHANICAL UNITS. FOR TYPICAL HOUSEKEEPING PAD DETAIL RE: 12S401.

1 FOUNDATION PLAN - AREA G
 1/8" = 1'-0"

KEY PLAN: CY-LAKES HIGH SCHOOL BUILDING



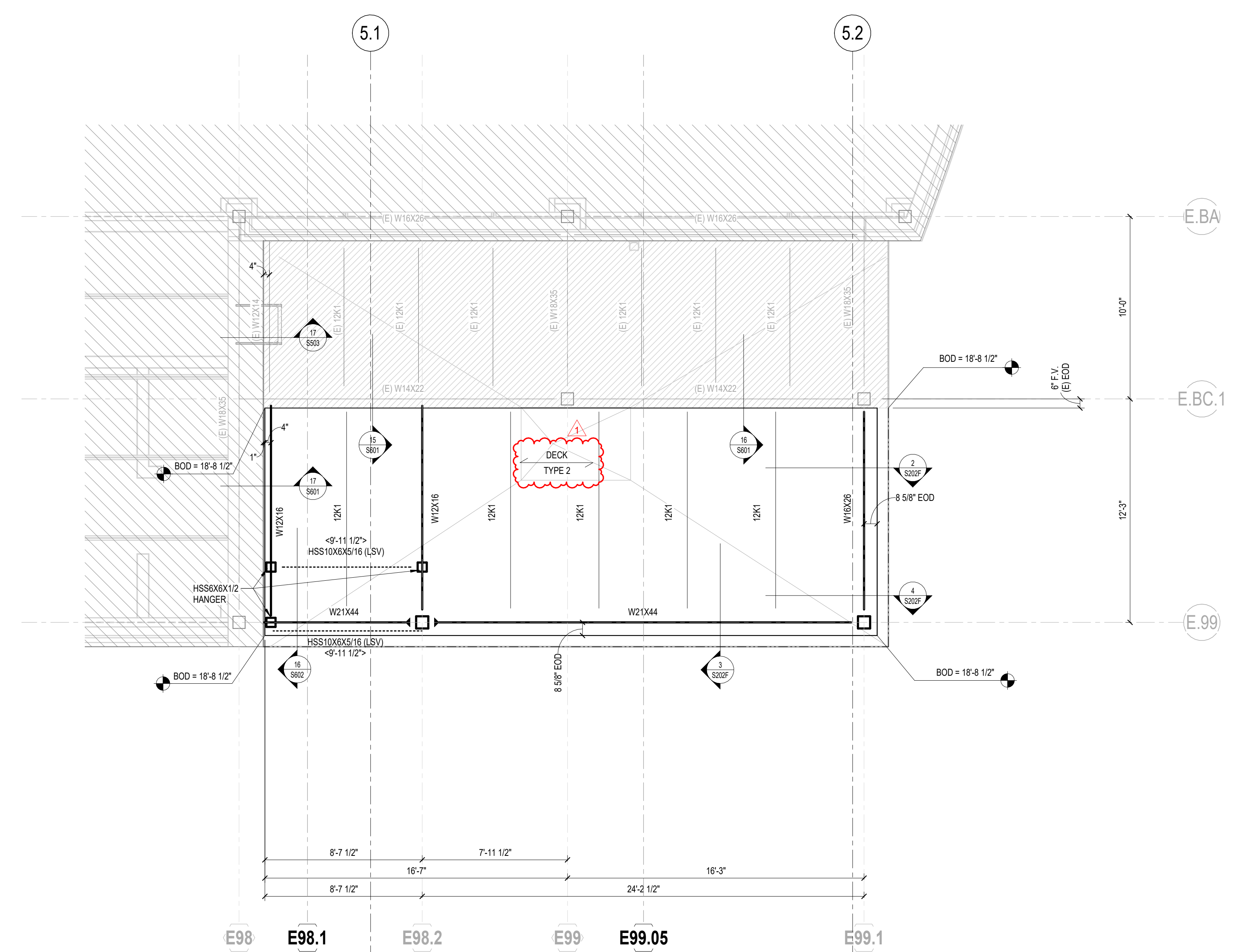
2024 CY-LAKES HIGH SCHOOL RENOVATION
 5750 GREENHOUSE RD., KATY, TX 77449
 CFSID PROJECT NO. 24-02-5749-R-RFP

Project Number: 23071
 Date: 12-13-2024
 Drawn by: JT / AR

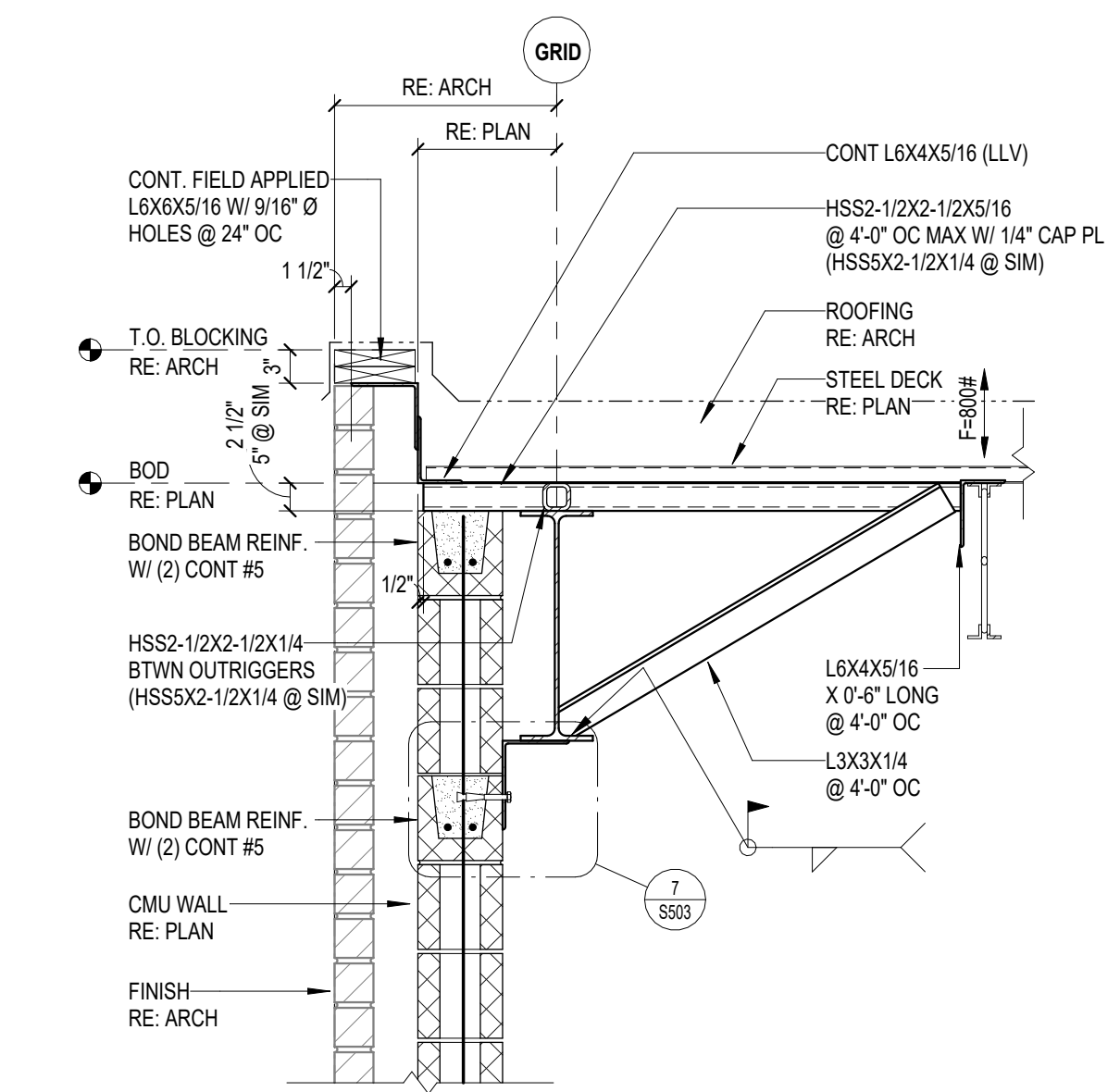
FOUNDATION PLAN - AREA G

S201G

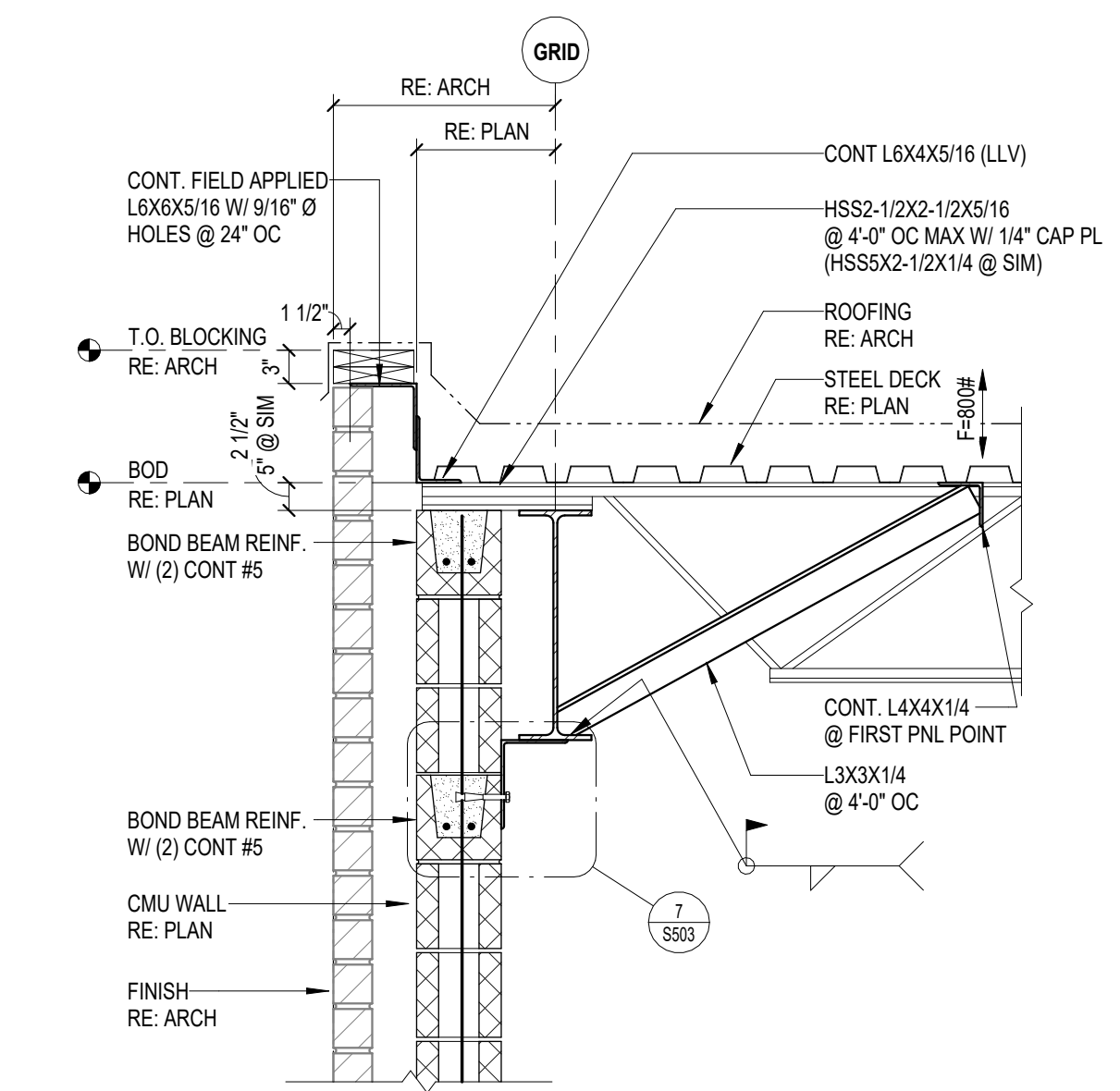
NO.	REVISION	DATE
1	ADDENDUM 03	12.13.24
	Revisions / Submissions	



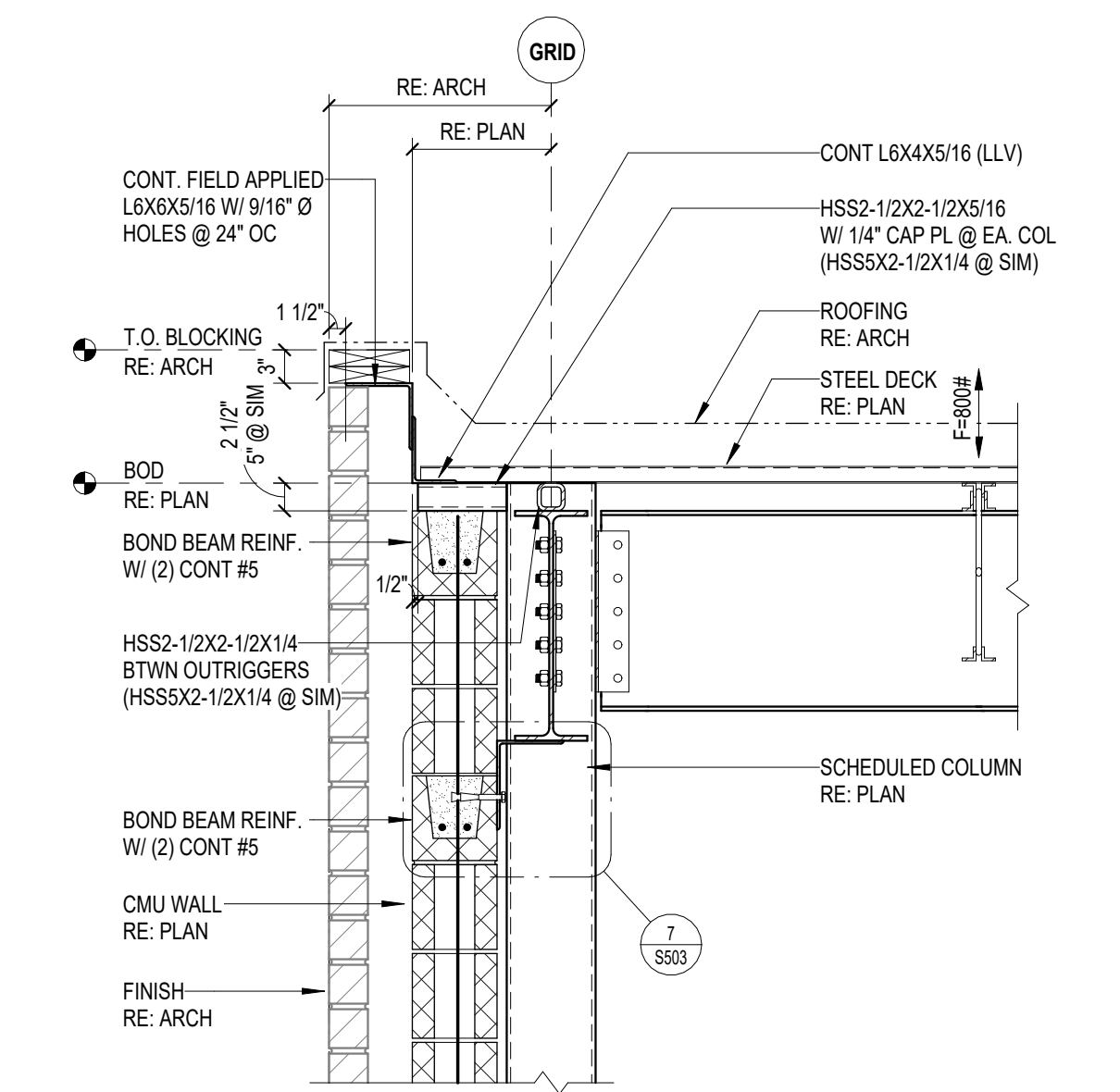
1 LOW ROOF FRAMING PLAN- AREA F
1/4" = 1'-0"



2 SECTION
3/4" = 1'-0"



3 SECTION
3/4" = 1'-0"

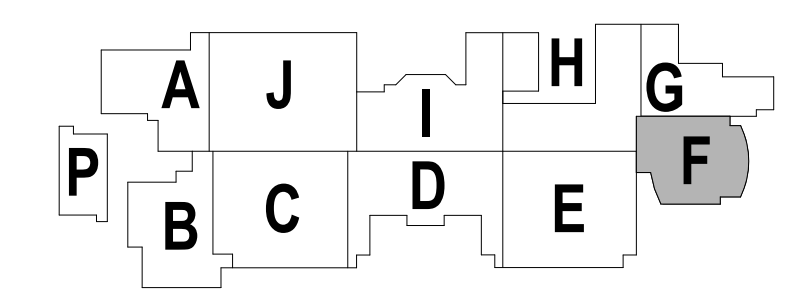


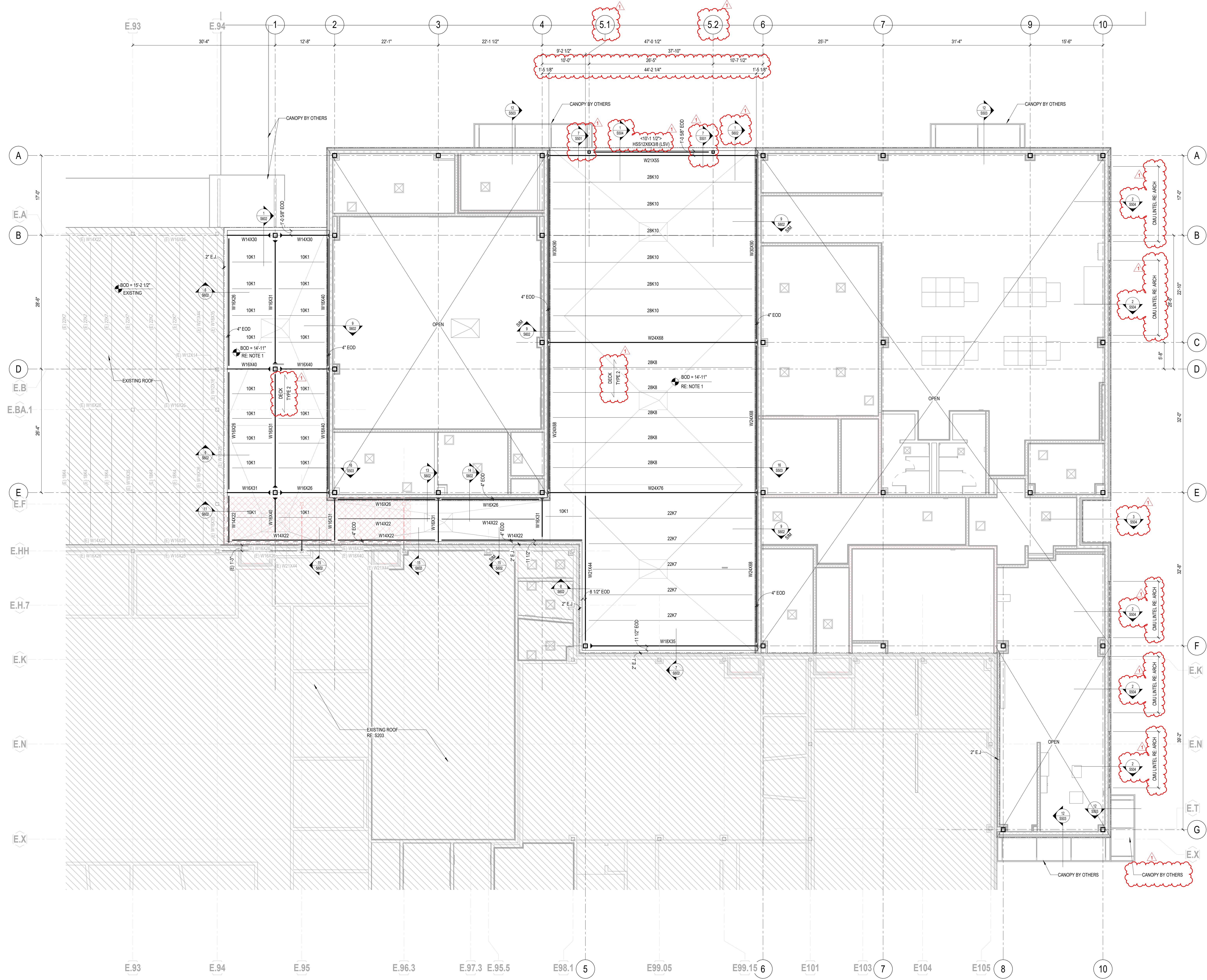
4 SECTION
3/4" = 1'-0"

STEEL ROOF FRAMING NOTES:

- ALL ELEVATIONS ARE RELATIVE TO DATUM ELEVATION.
- DECK TYPE 1 (EXAMPLE) INDICATES ROOF DECK SPAN DIRECTION AND DECK TYPE 1. T.O.S ELEVATION AT ROOF DECKS ARE AT E.O.D. TYP. UON. FOR DECK TYPE INFORMATION **BE-7.1(S101)**
- COORDINATE LOCATIONS AND SIZES OF ALL CHASES AND PENETRATIONS WITH MEP. COORDINATE EXACT LOCATION OF ALL MEP UNITS WITH MEP. FOR FRAMING AROUND ROOF OPENINGS RE
- 350# (EXAMPLE) INDICATES A 350 PLF PIPE RUN BELOW TO BE SUPPORT BY THE STRUCTURE ABOVE. G.C. TO COORDINATE FINAL PIPE RUN LOCATIONS WITH MEP DRAWINGS. ALL PIPE RUNS INDICATED IN THE STRUCTURAL DRAWINGS ARE FOR REFERENCE ONLY. FOR ADDITIONAL INFORMATION **BE-9(S01) & BE-10(S01)**
- ALL BEAMS SUBJECTED TO MOMENT CONNECTION TO BE BRACED AT EVERY 12'-0" OC

Project Number: 23071
Date: 12-13-2024
Drawn by: JT / AR



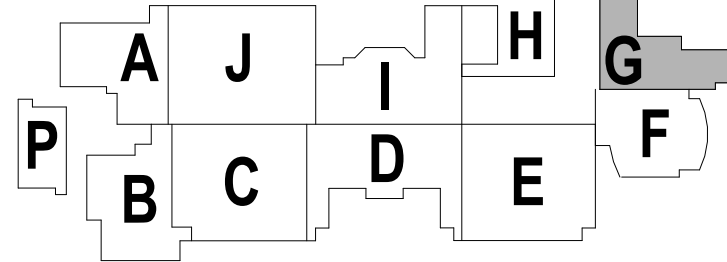


STEEL ROOF FRAMING NOTES:

1. ALL ELEVATIONS ARE RELATIVE TO DATUM ELEVATION.
2. * DECK (EXAMPLE) INDICATES ROOF DECK SPAN TYPE 1 DIRECTION AND DECK TYPE 1. TOS ELEVATION AT ROOF DECKS ARE AT ROD, TYP. UON. FOR DECK TYPE INFORMATION **RE: JZ10101**.
3. COORDINATE LOCATIONS AND SIZES OF ALL CHASES AND PENETRATIONS WITH MEP. COORDINATE EXACT LOCATION OF ALL MEP UNITS WITH MEP. FOR FRAMING AROUND ROOF OPENINGS RE.
4. * (EXAMPLE) INDICATES A 350 PLF PIPE RUN BELOW TO BE SUPPORTED BY THE STRUCTURE ABOVE. G.C. TO COORDINATE FINAL PIPE RUN LOCATIONS WITH MEP DRAWINGS. ALL PIPE RUNS INDICATED IN THE STRUCTURAL DRAWINGS ARE FOR REFERENCE ONLY. FOR ADDITIONAL INFORMATION **RE: JSS01 & RE: 10SS01**.
5. ALL BEAMS SUBJECTED TO MOMENT CONNECTION TO BE BRACED AT EVERY 12'-0" OC.

1 LOW ROOF FRAMING PLAN
1/8" = 1'-0"

KEY PLAN: CY-LAKES HIGH SCHOOL BUILDING



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ADDENDUM 03

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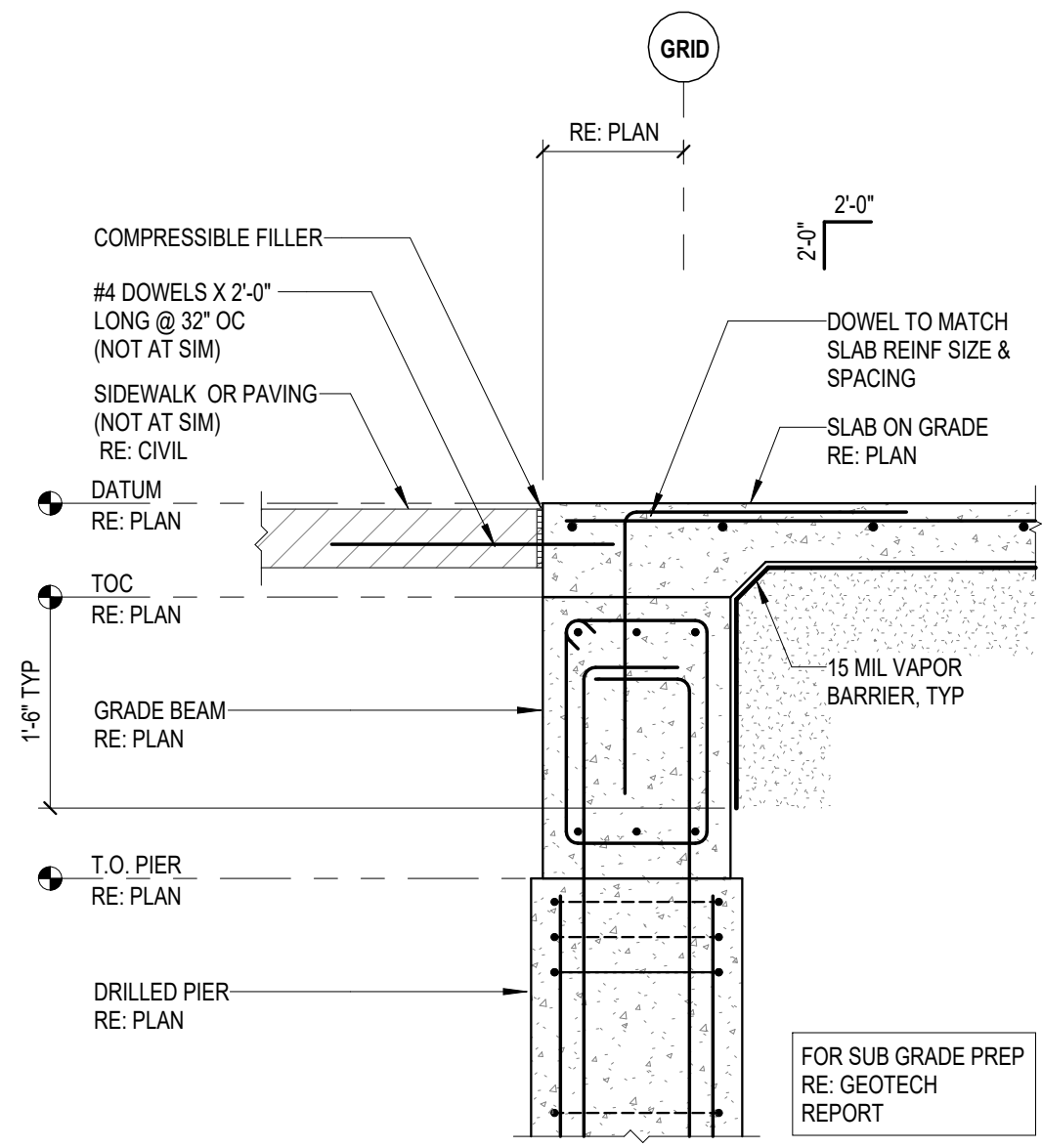
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2024 CY-LAKES HIGH SCHOOL
RENOVATION
5750 GREENHOUSE RD., KATY, TX 77449
CFISD PROJECT NO. 24-02-5749-R-RFP

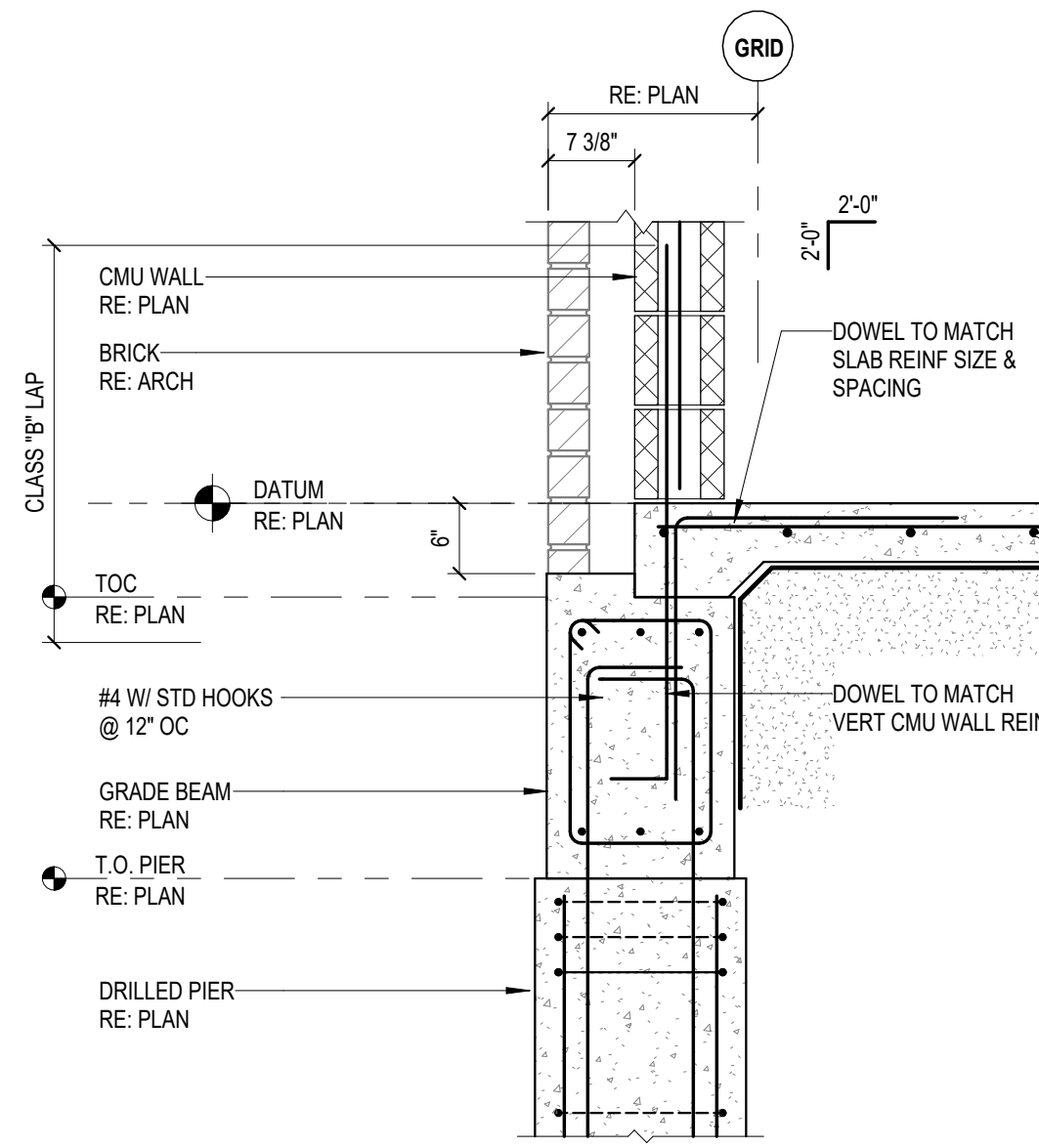
Project Number: 23071
Date: 12-13-2024
Drawn by: JT / AR

LOW ROOF FRAMING PLAN - AREA G

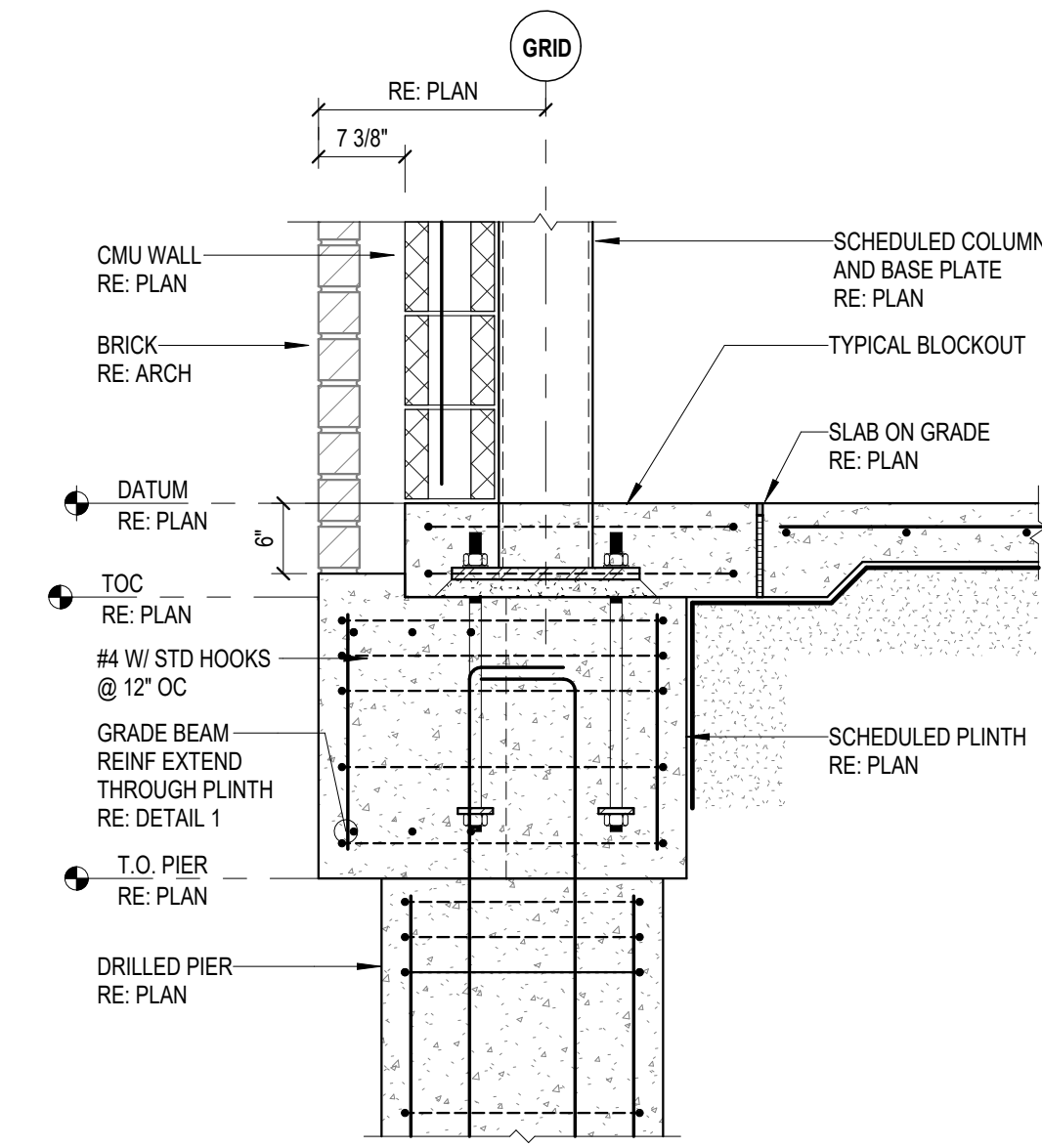
S202G



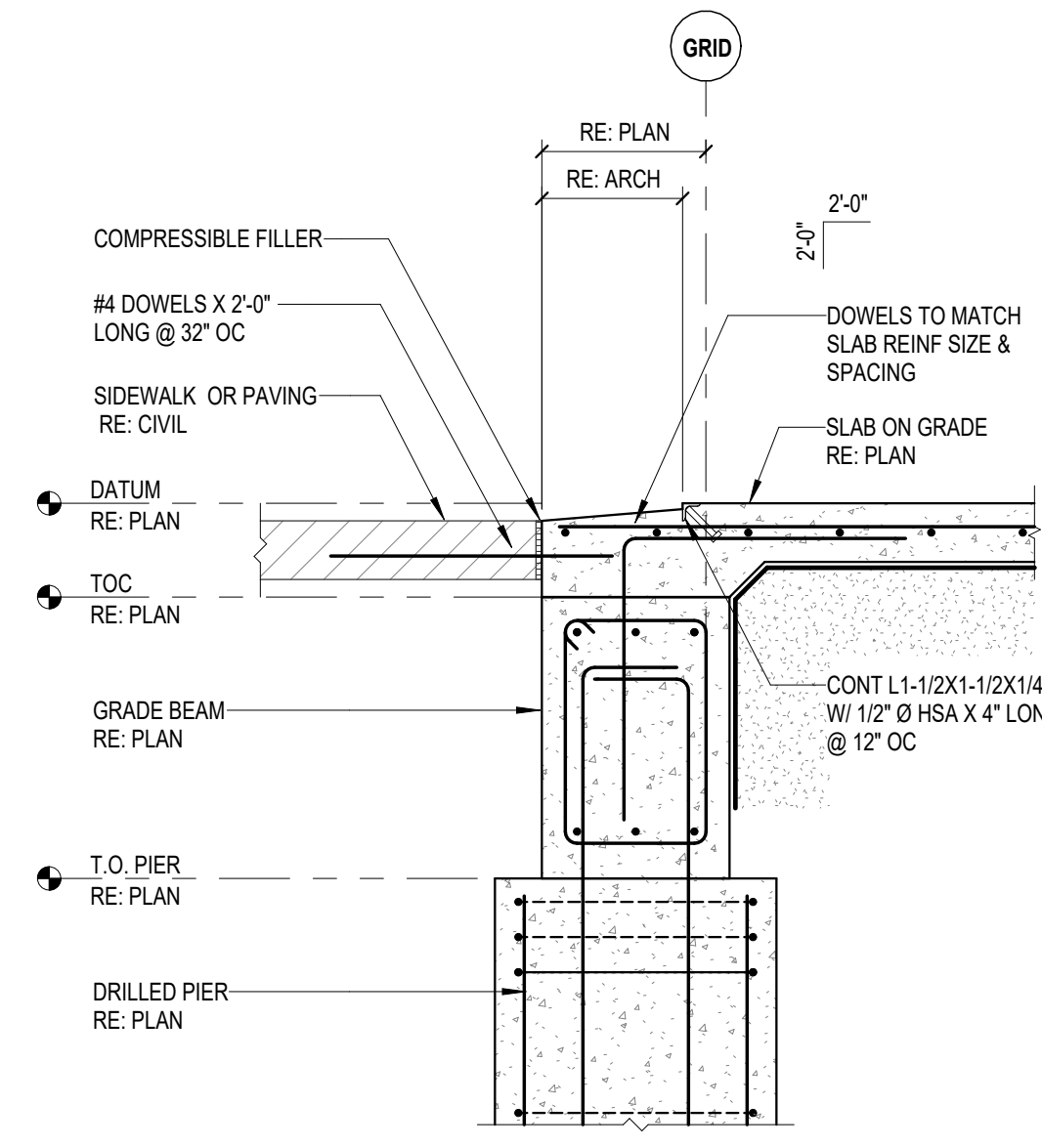
1 SECTION 3/4" = 1'-0"



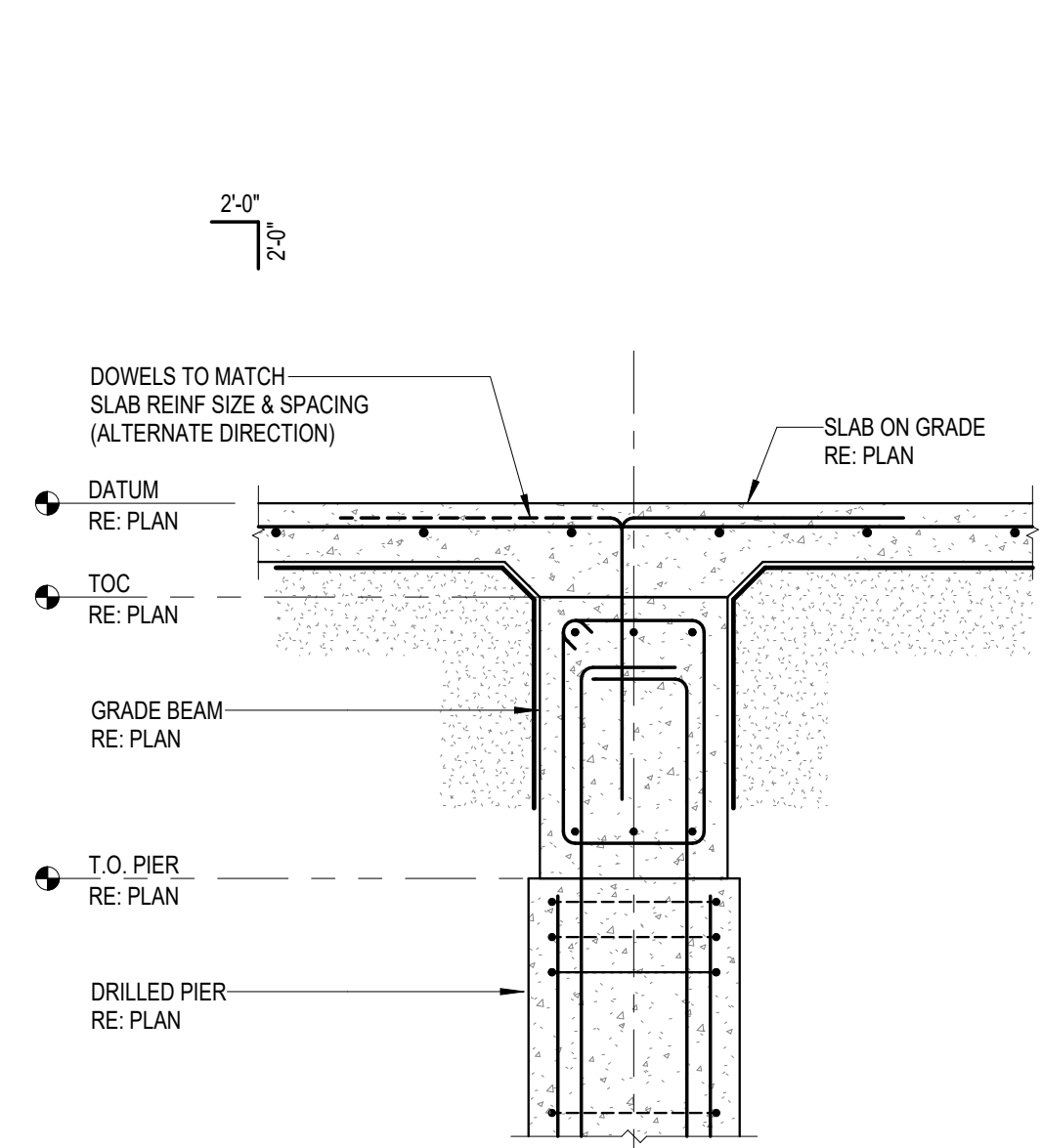
2 SECTION 3/4" = 1'-0"



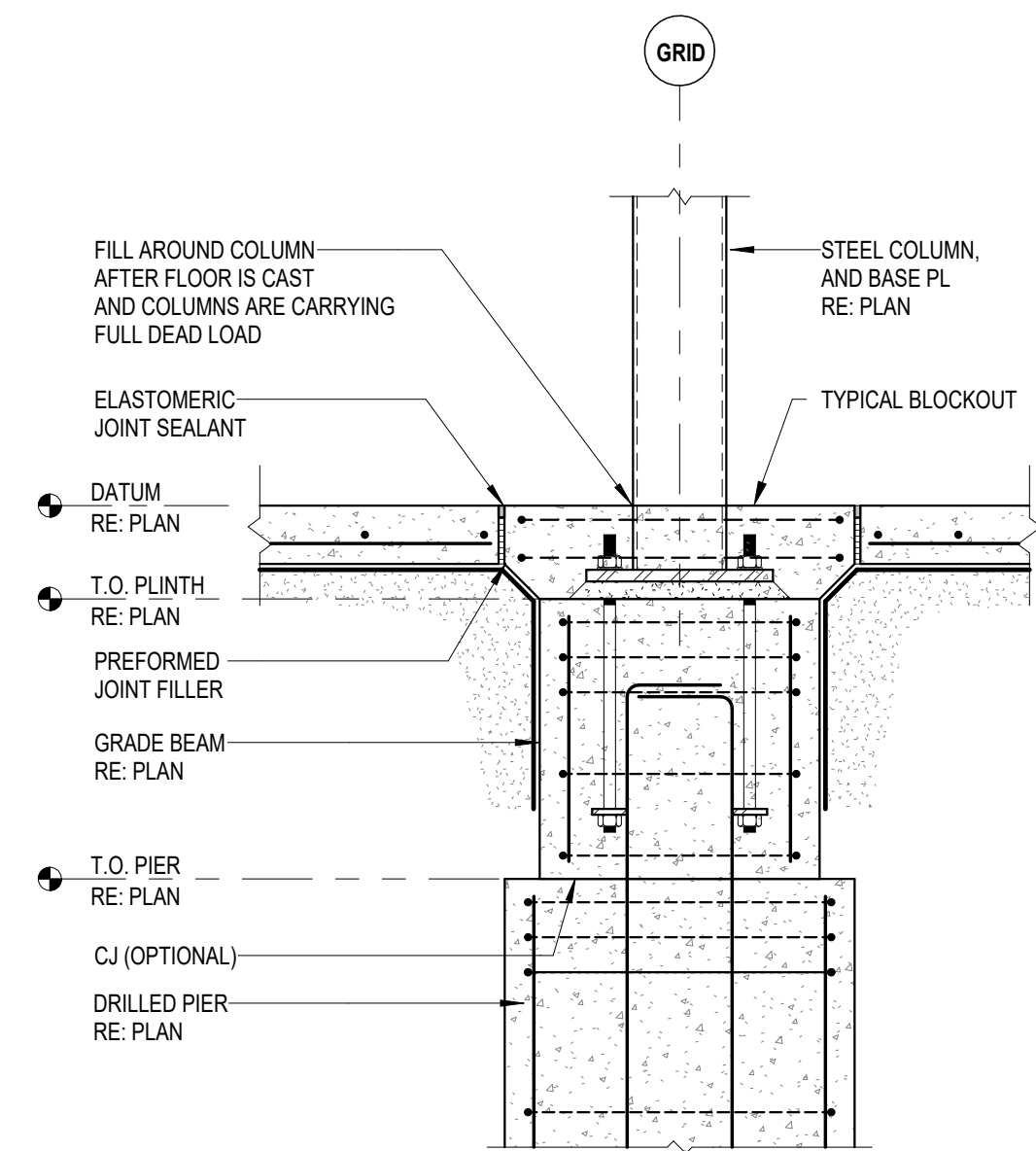
3 SECTION 3/4" = 1'-0"



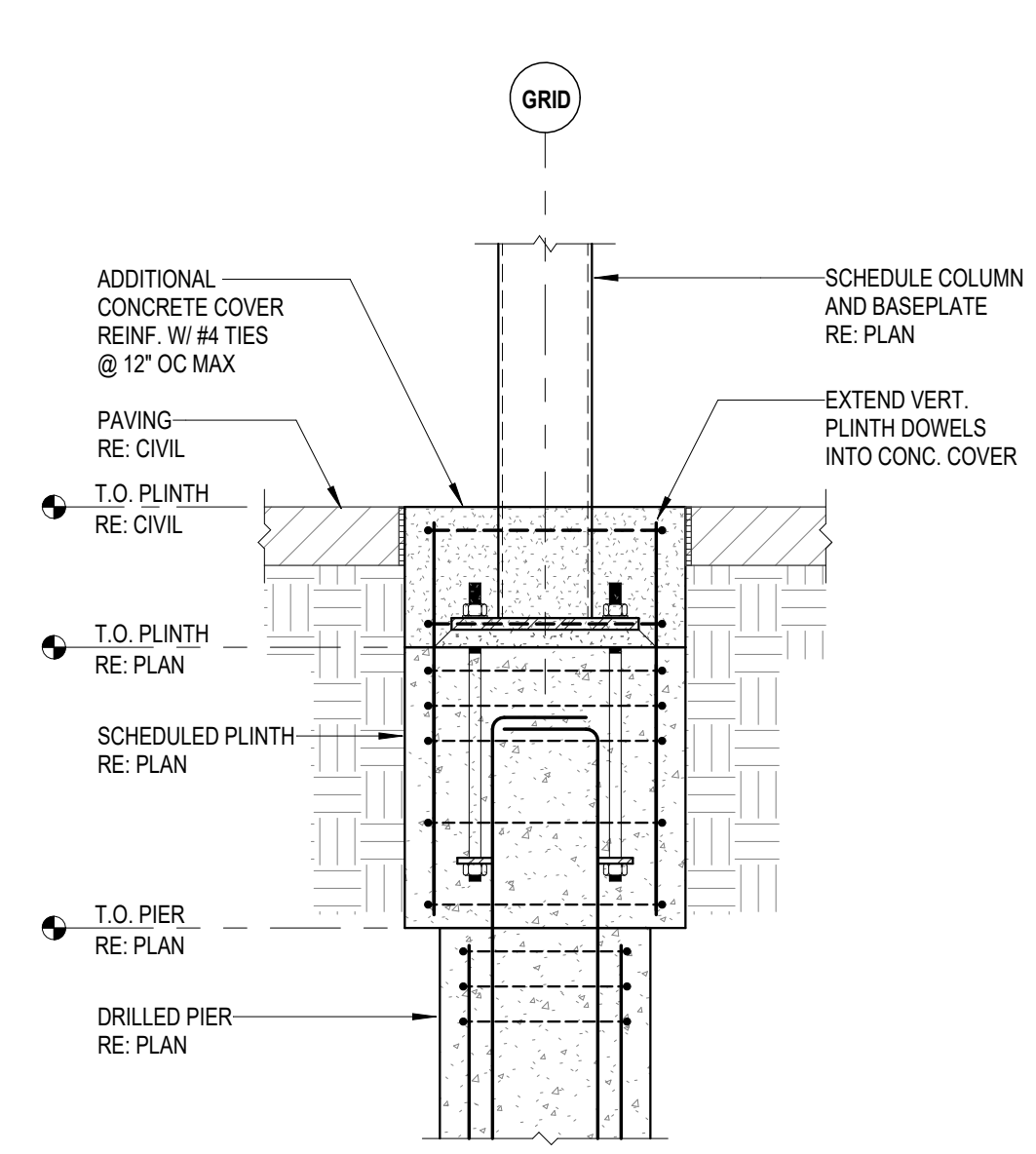
4 SECTION 3/4" = 1'-0"



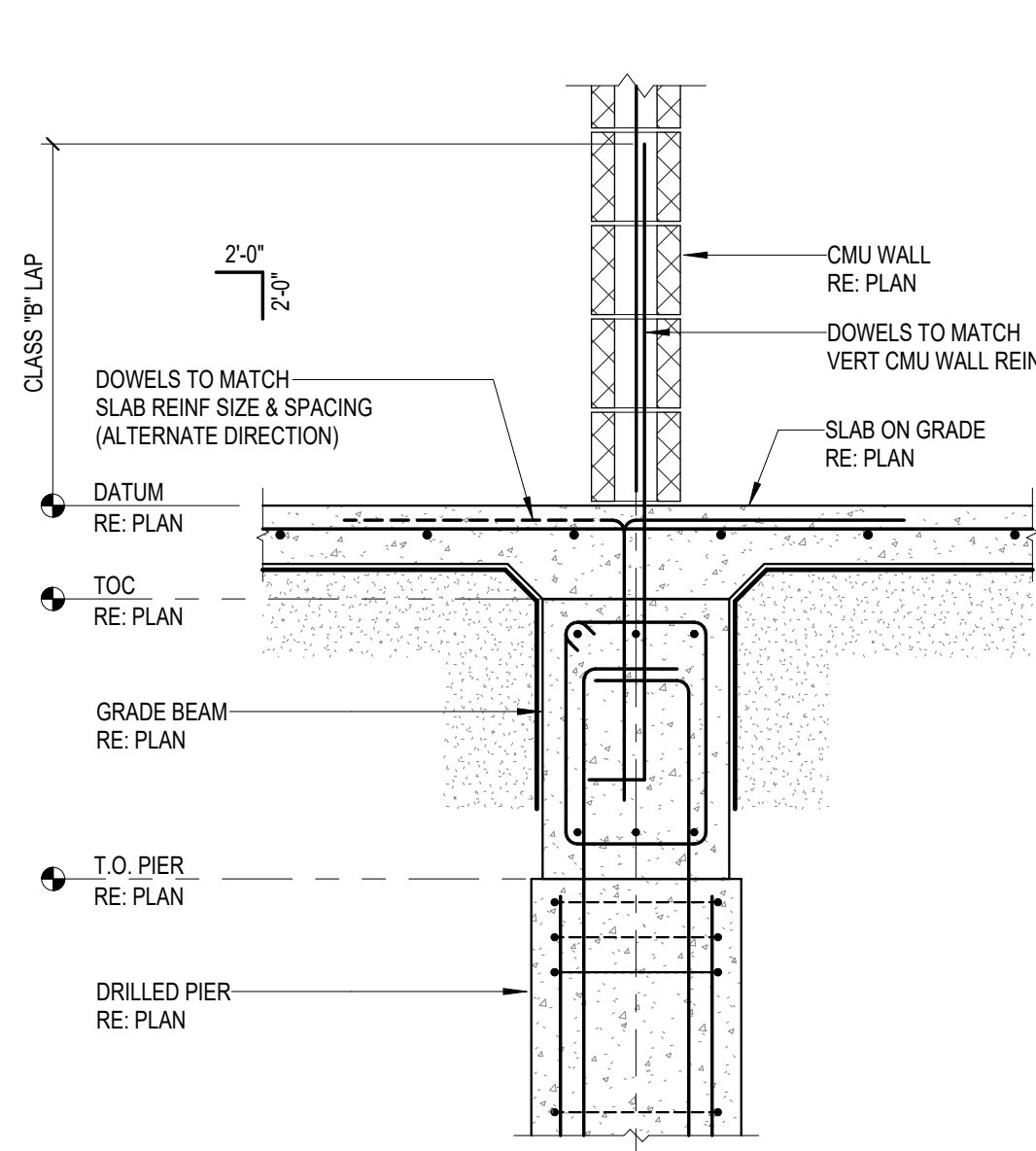
5 SECTION 3/4" = 1'-0"



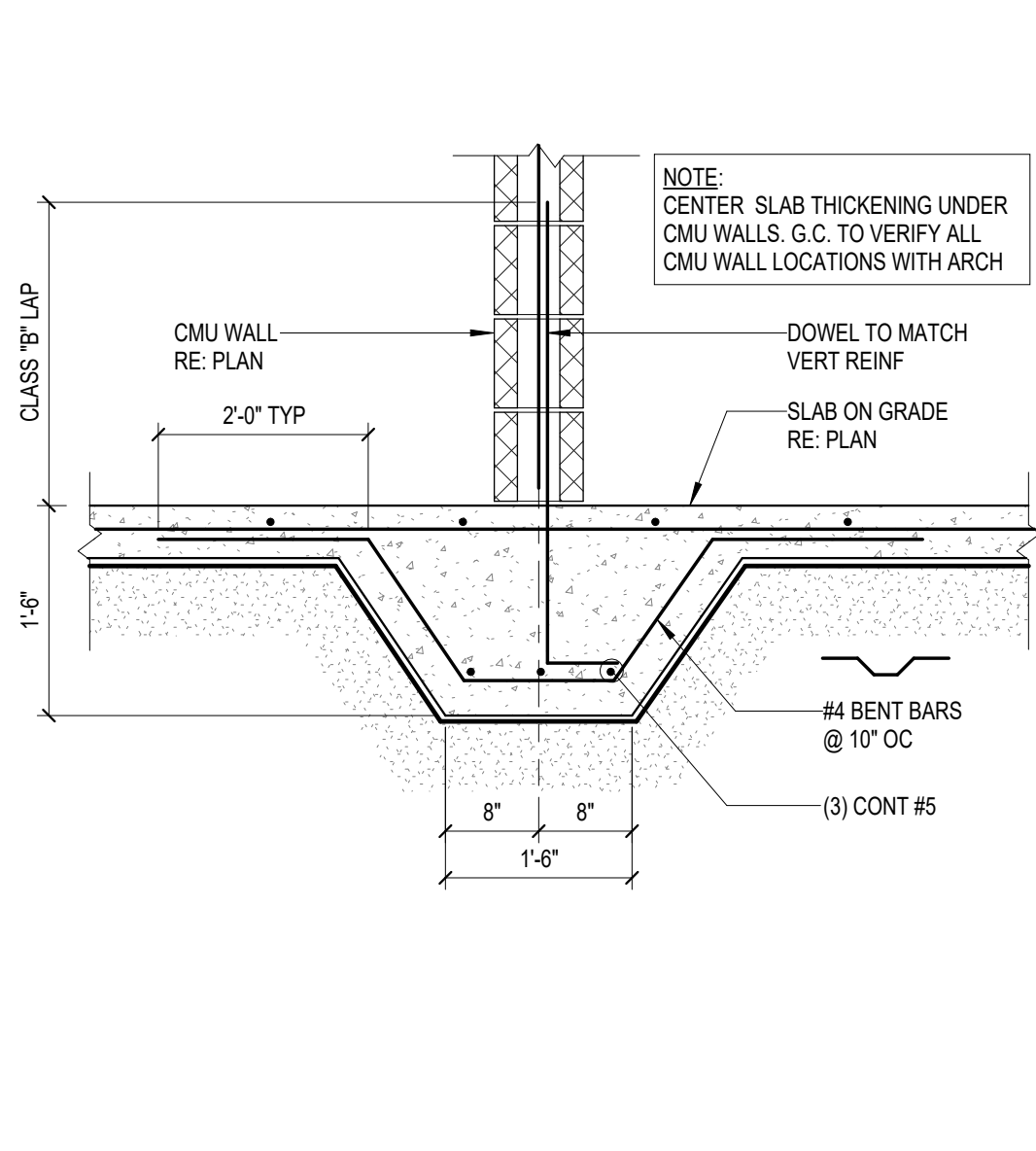
6 SECTION 3/4" = 1'-0"



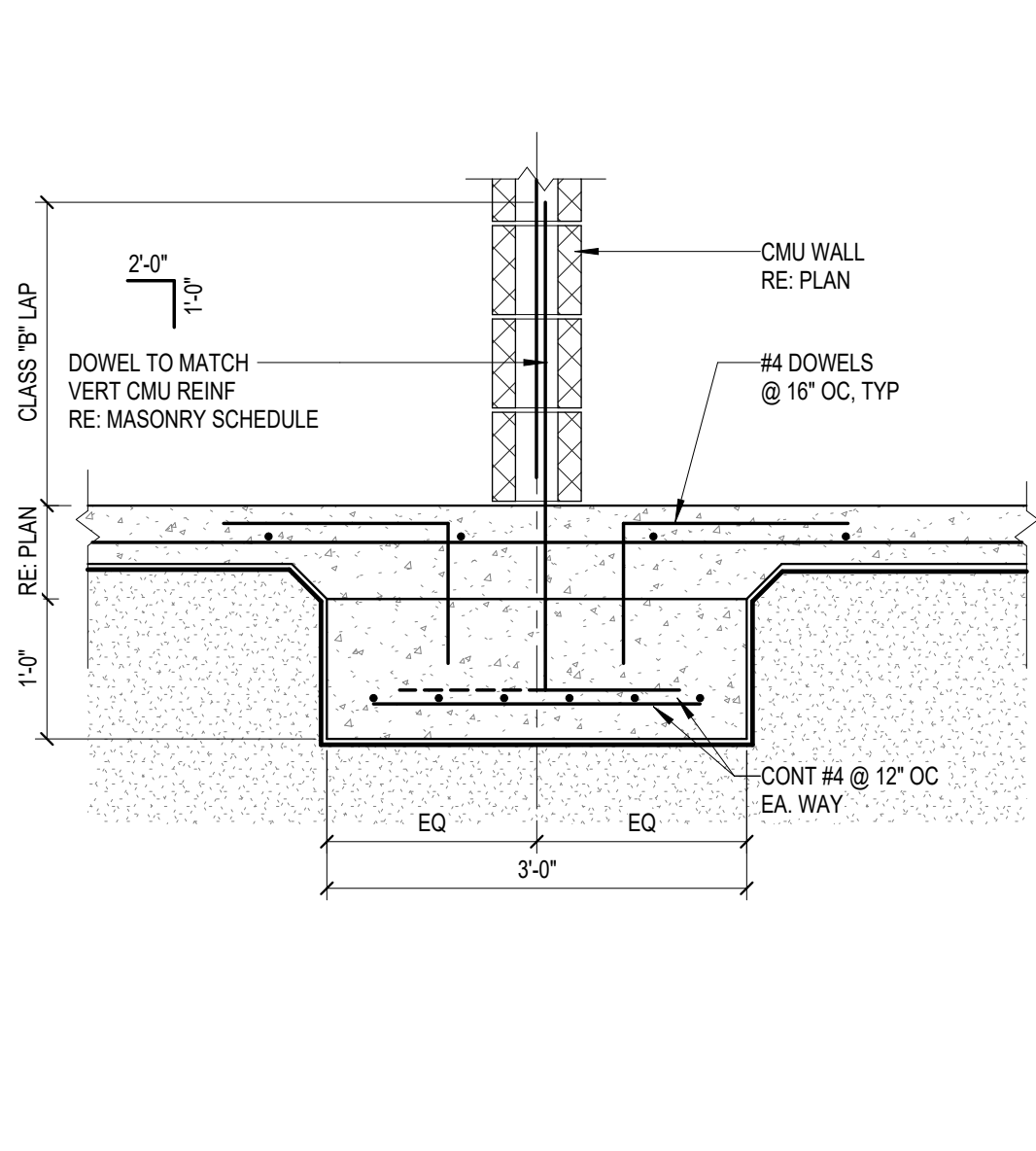
7 SECTION 3/4" = 1'-0"



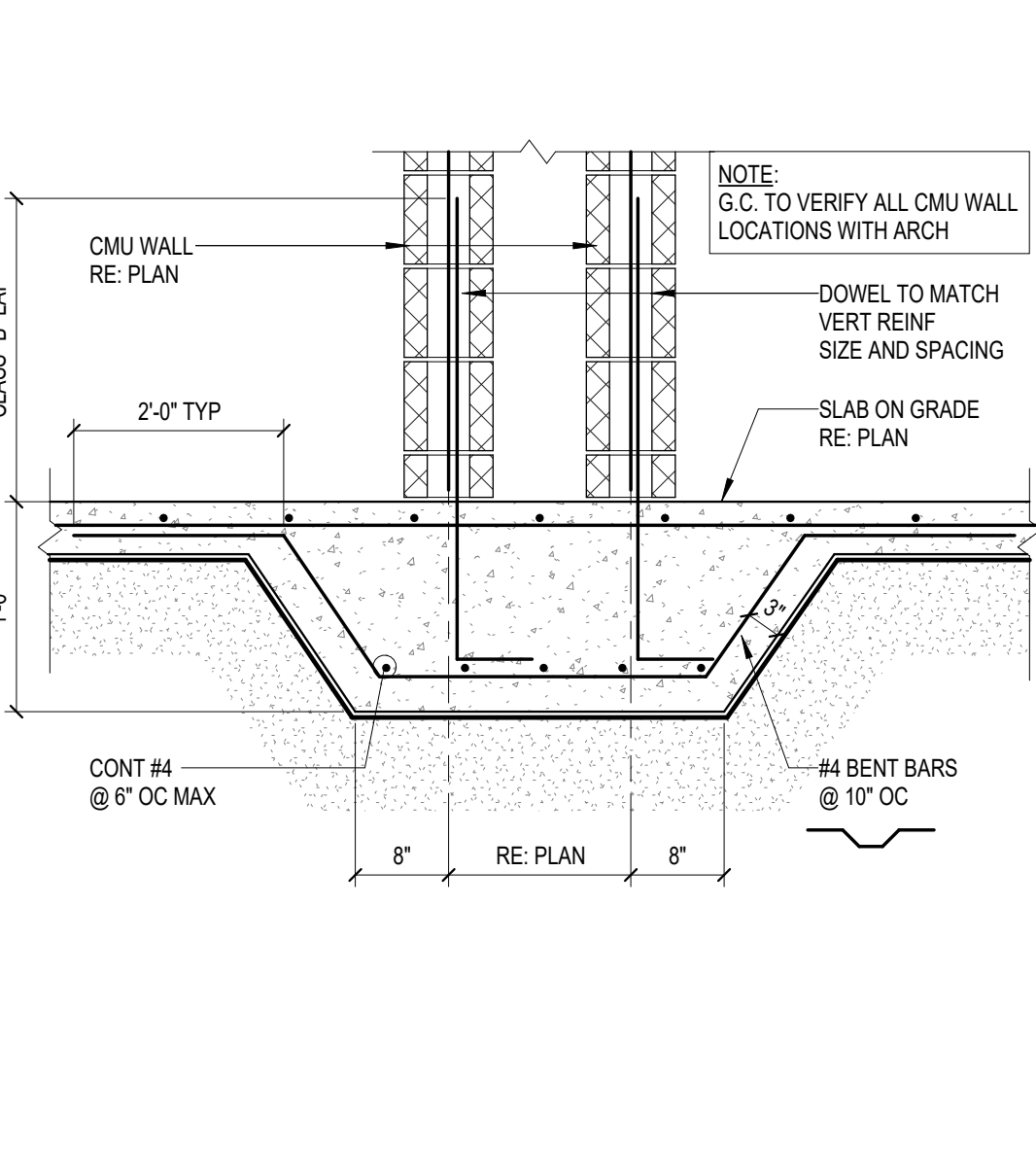
8 SECTION 3/4" = 1'-0"



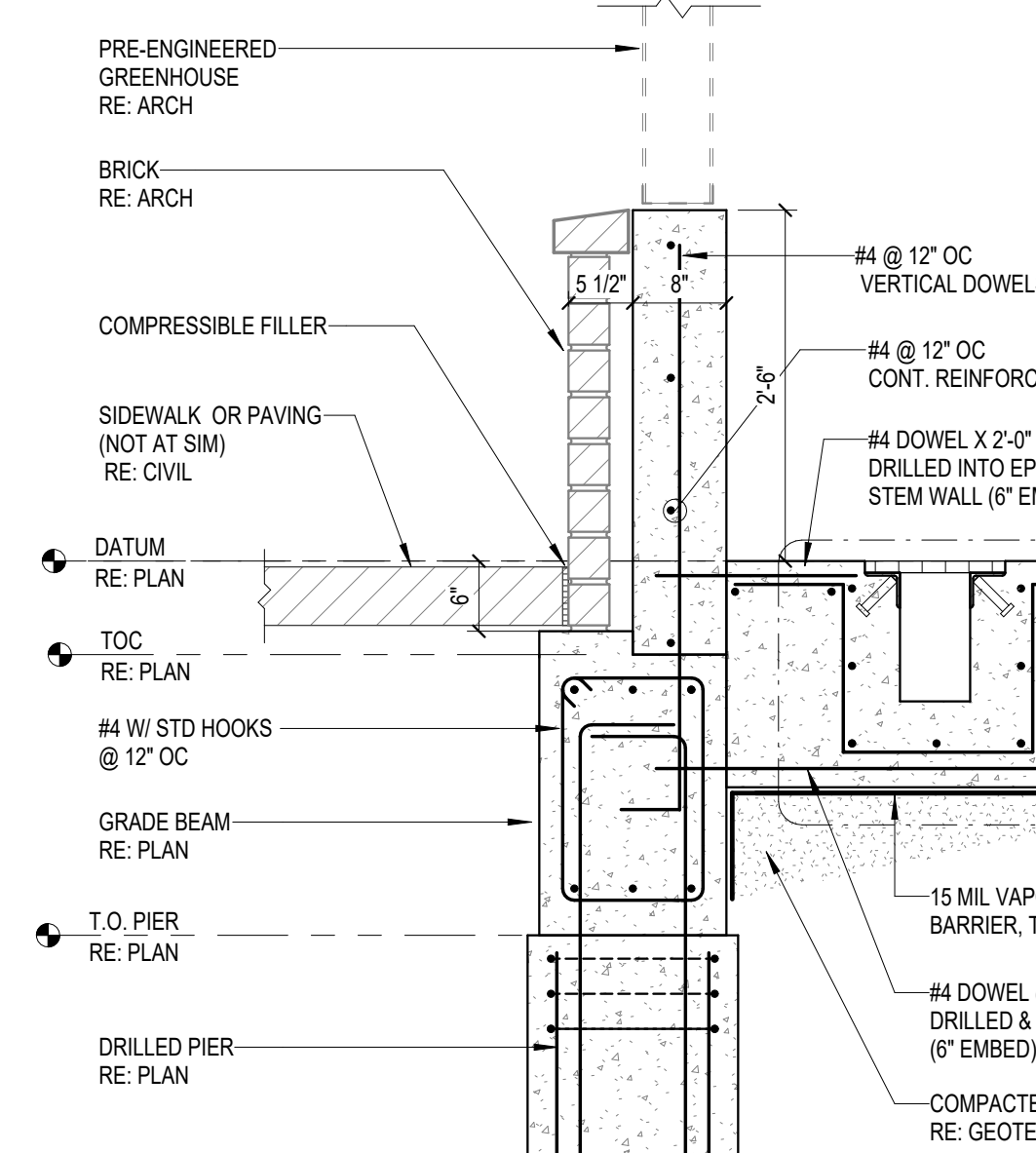
9 TYPICAL SLAB THICKENING AT CMU (11'-0" OR LESS) 3/4" = 1'-0"



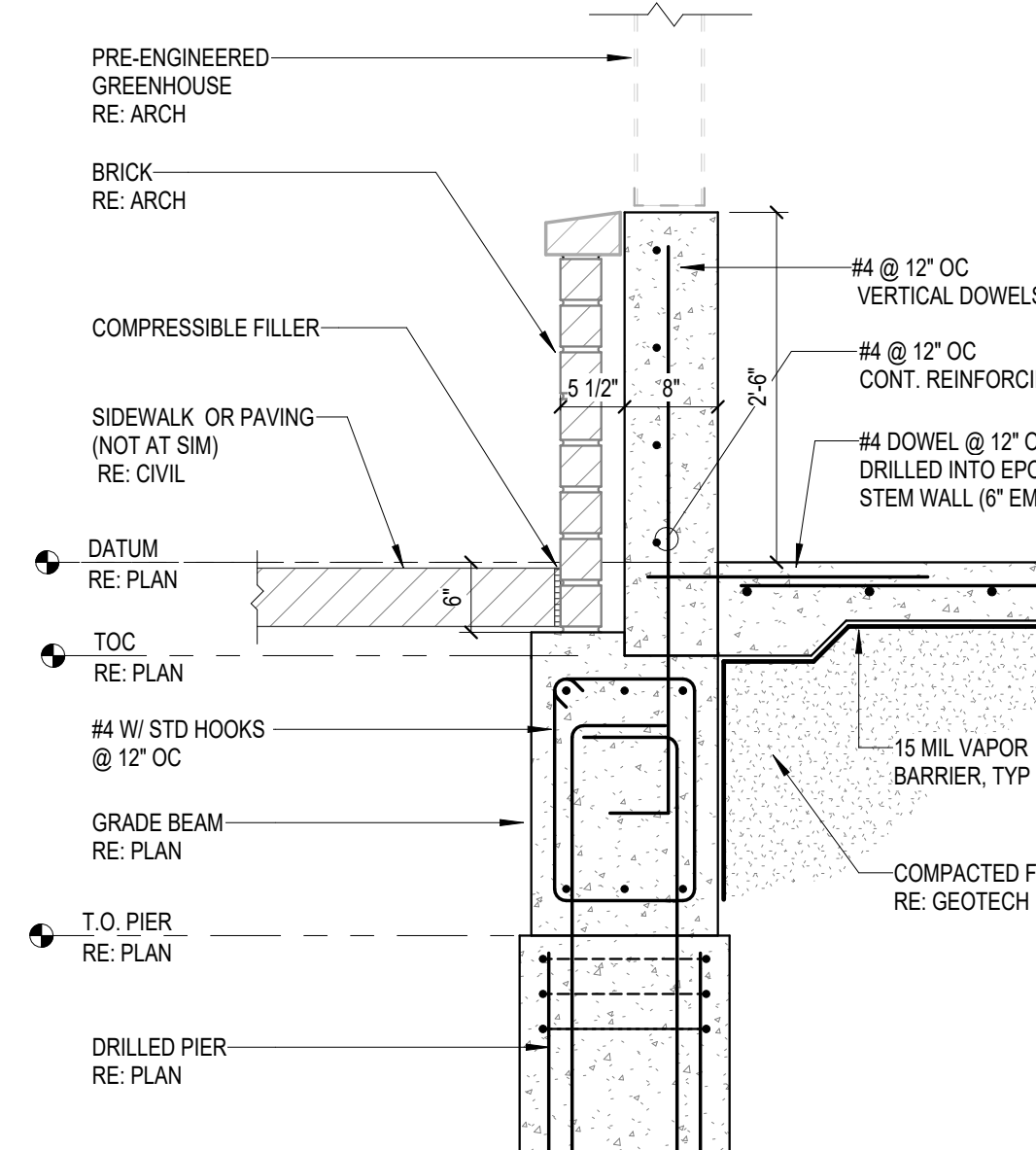
10 TYPICAL SLAB THICKENING AT CMU (20'-0" OR LESS) 3/4" = 1'-0"



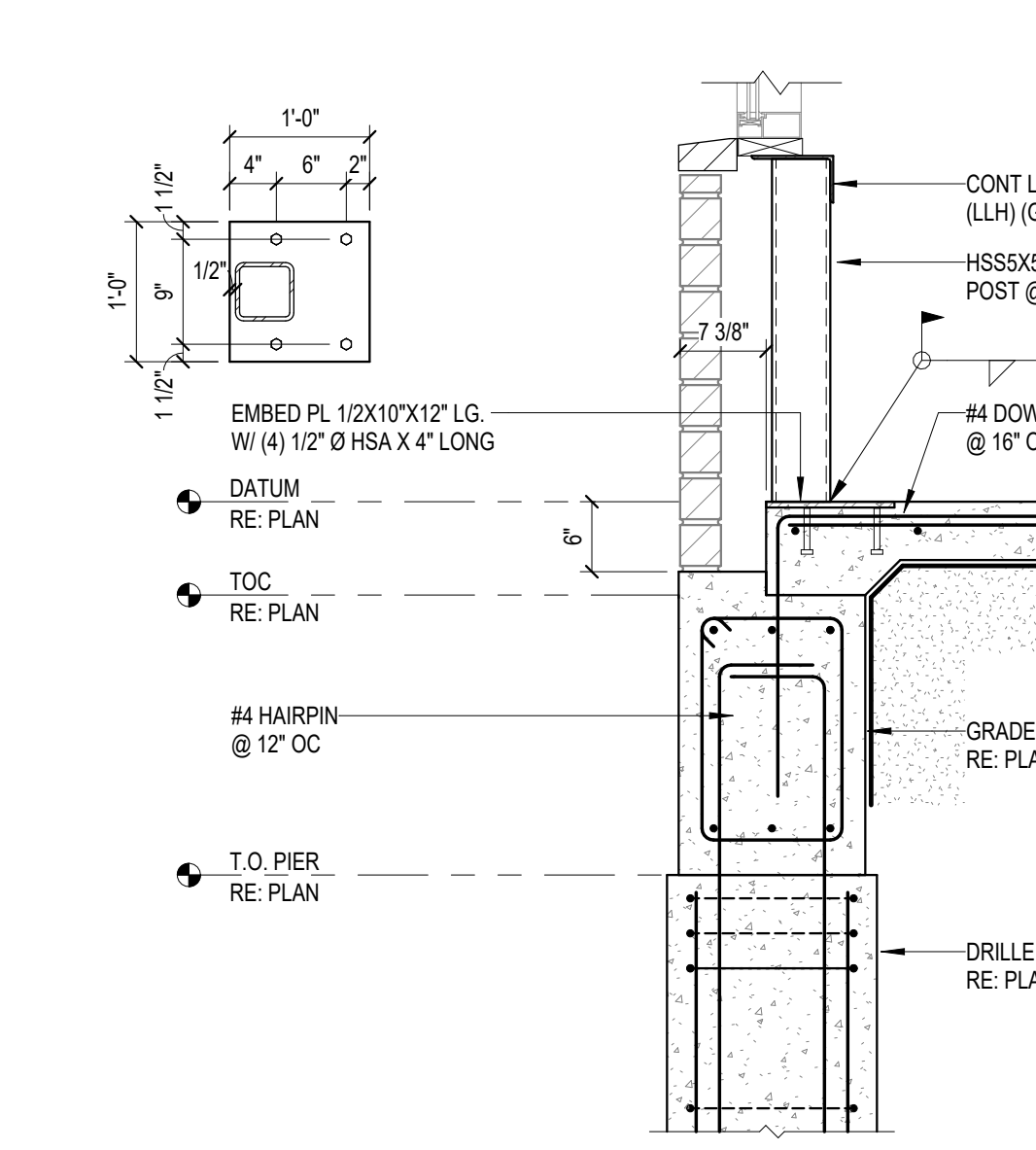
11 TYPICAL SLAB THICKENING AT CMU CHASE 3/4" = 1'-0"



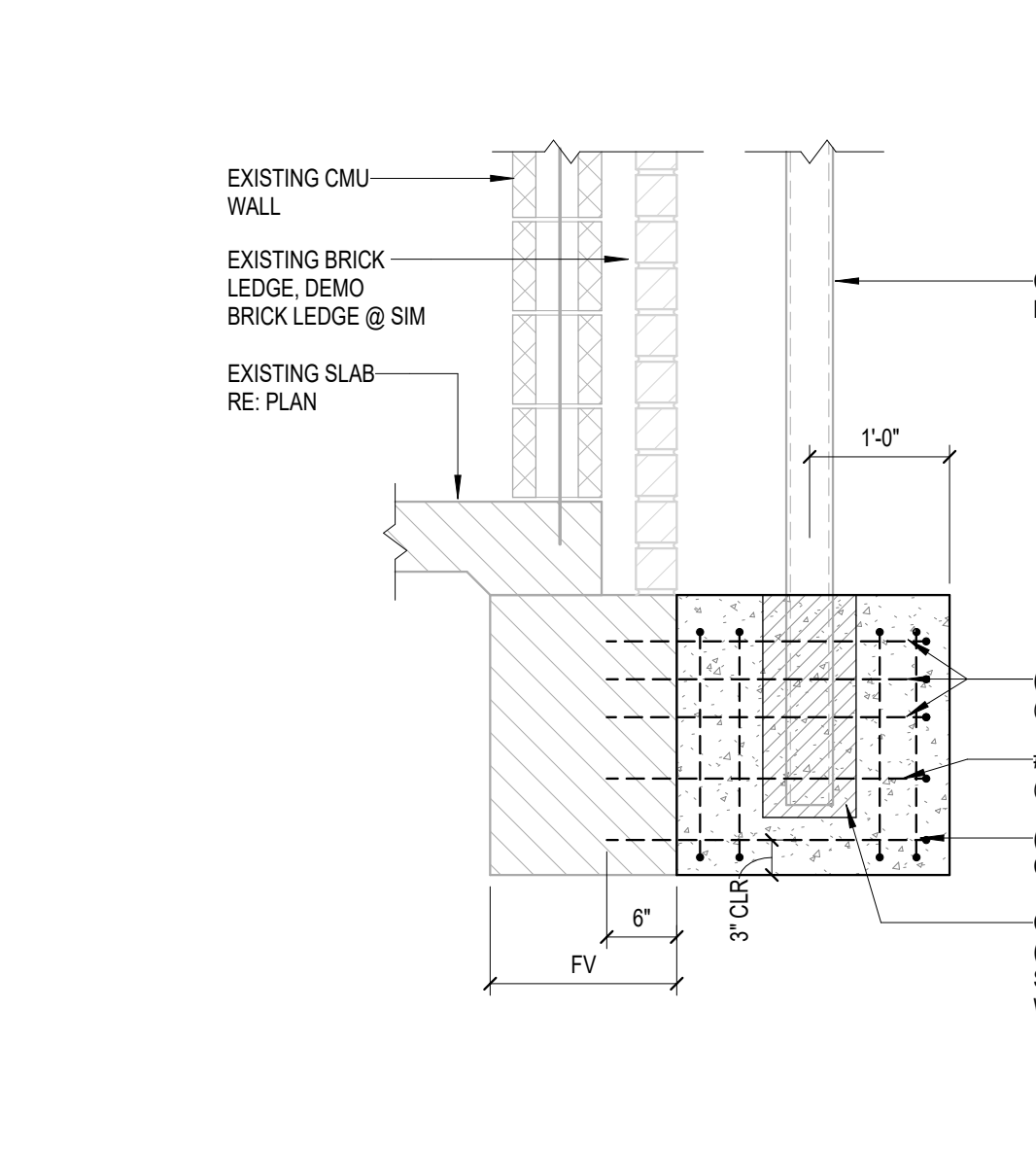
12 SECTION 3/4" = 1'-0"



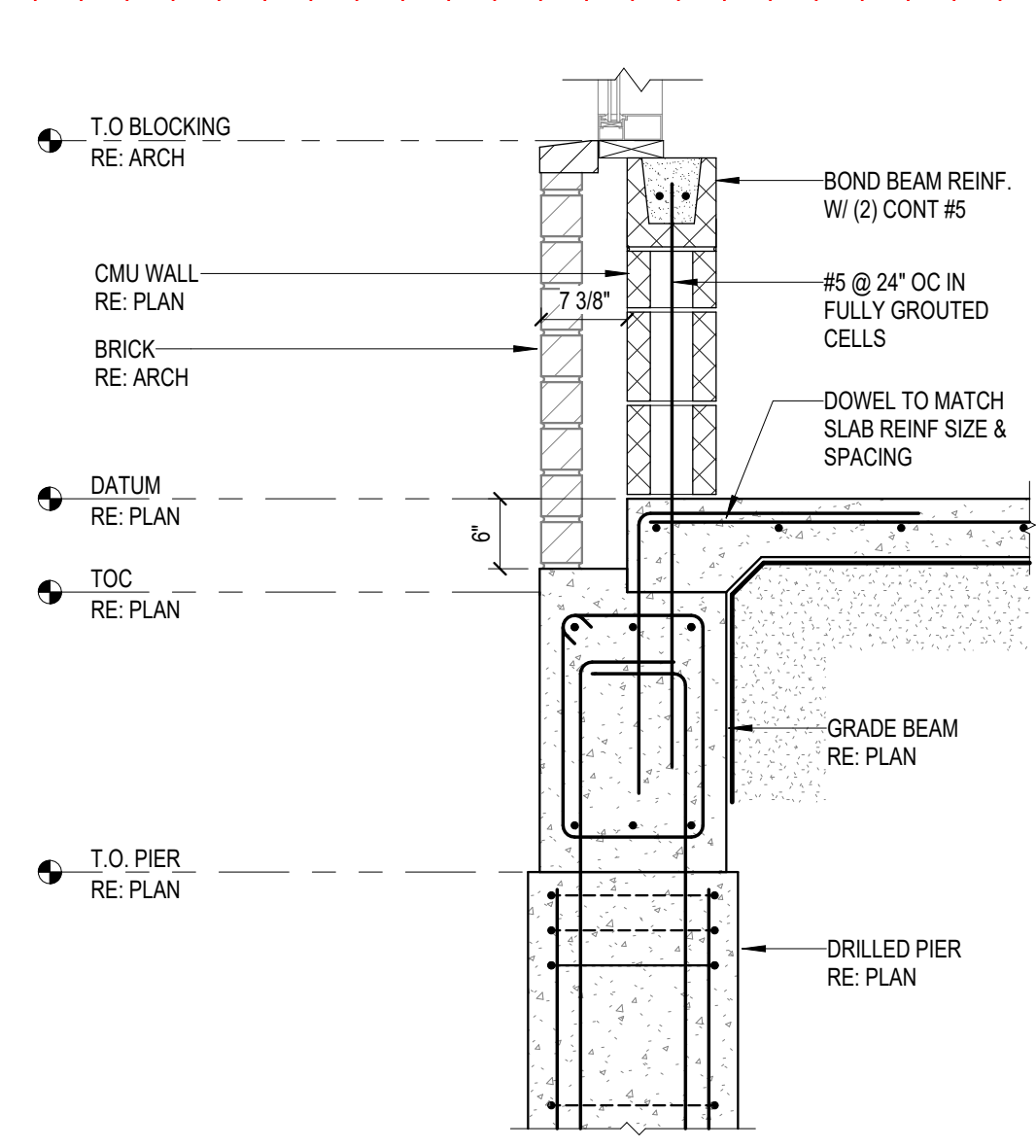
13 SECTION 3/4" = 1'-0"



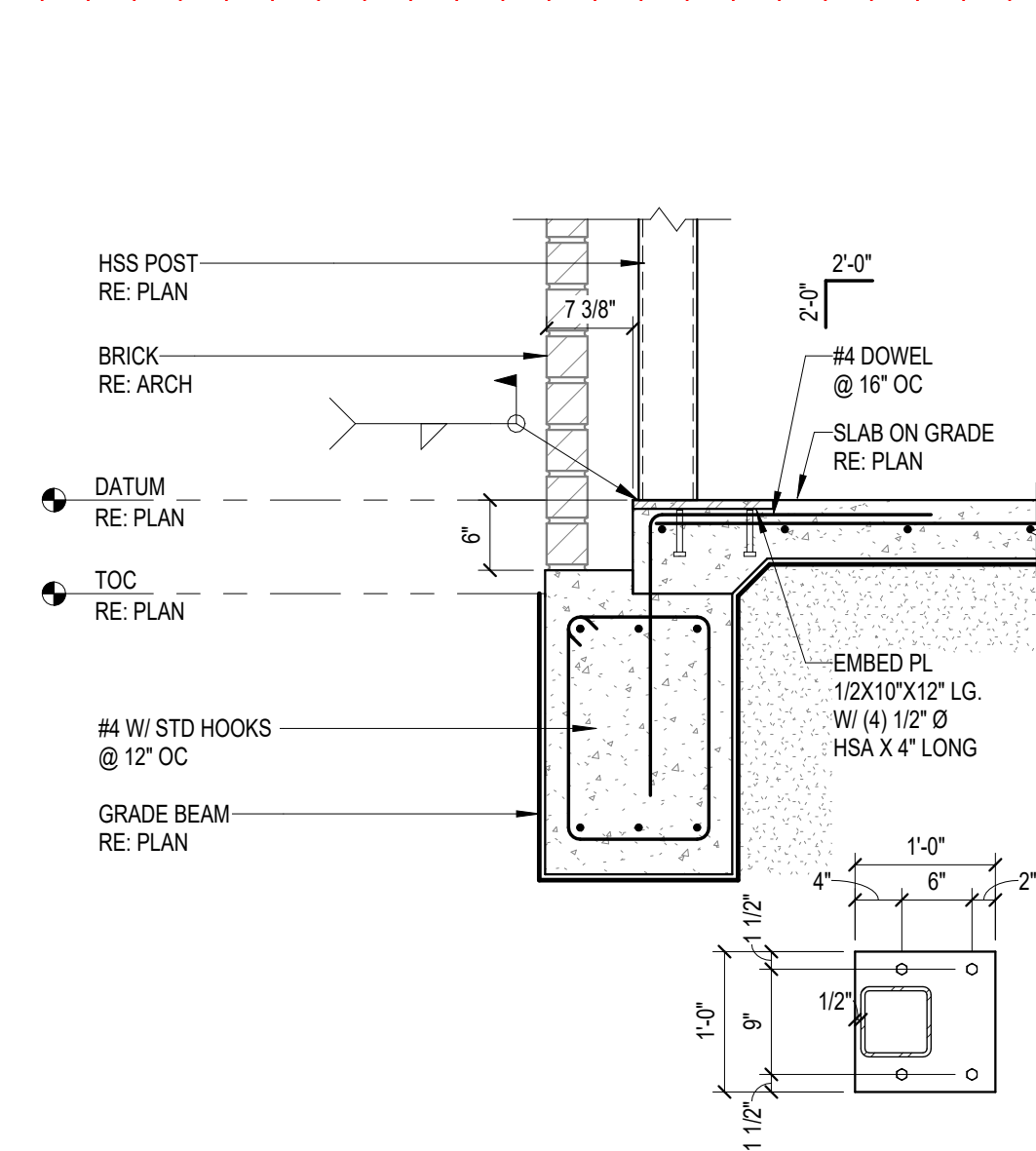
14 SECTION 3/4" = 1'-0"



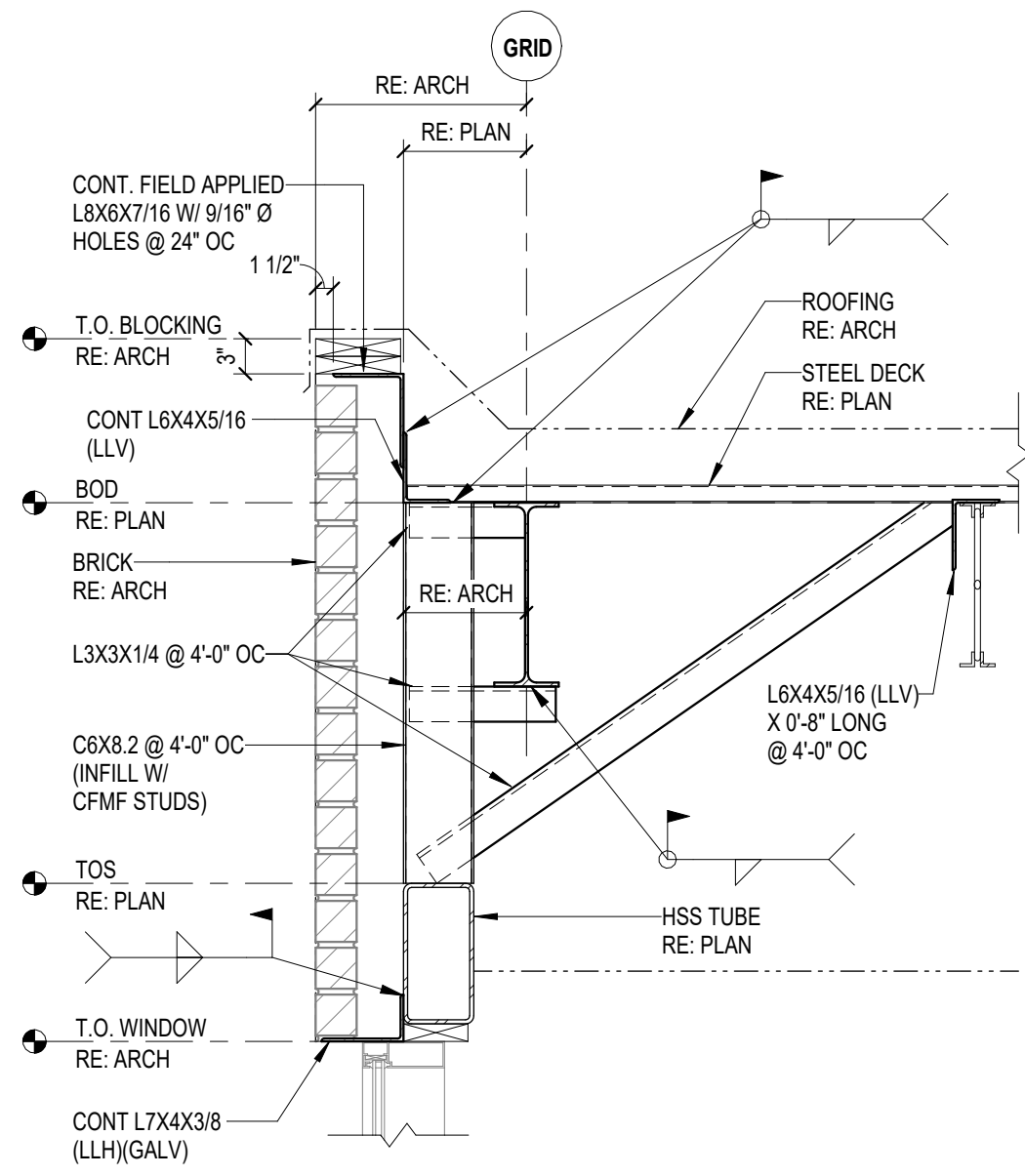
15 SECTION 3/4" = 1'-0"



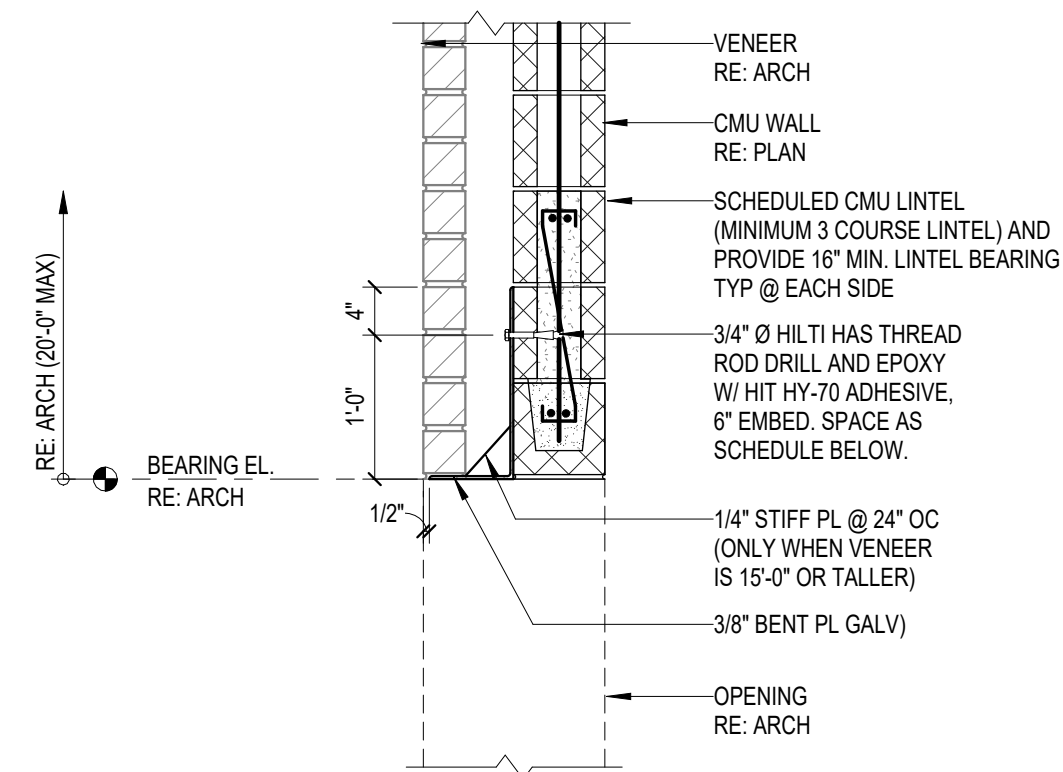
16 SECTION 3/4" = 1'-0"



17 SECTION 3/4" = 1'-0"



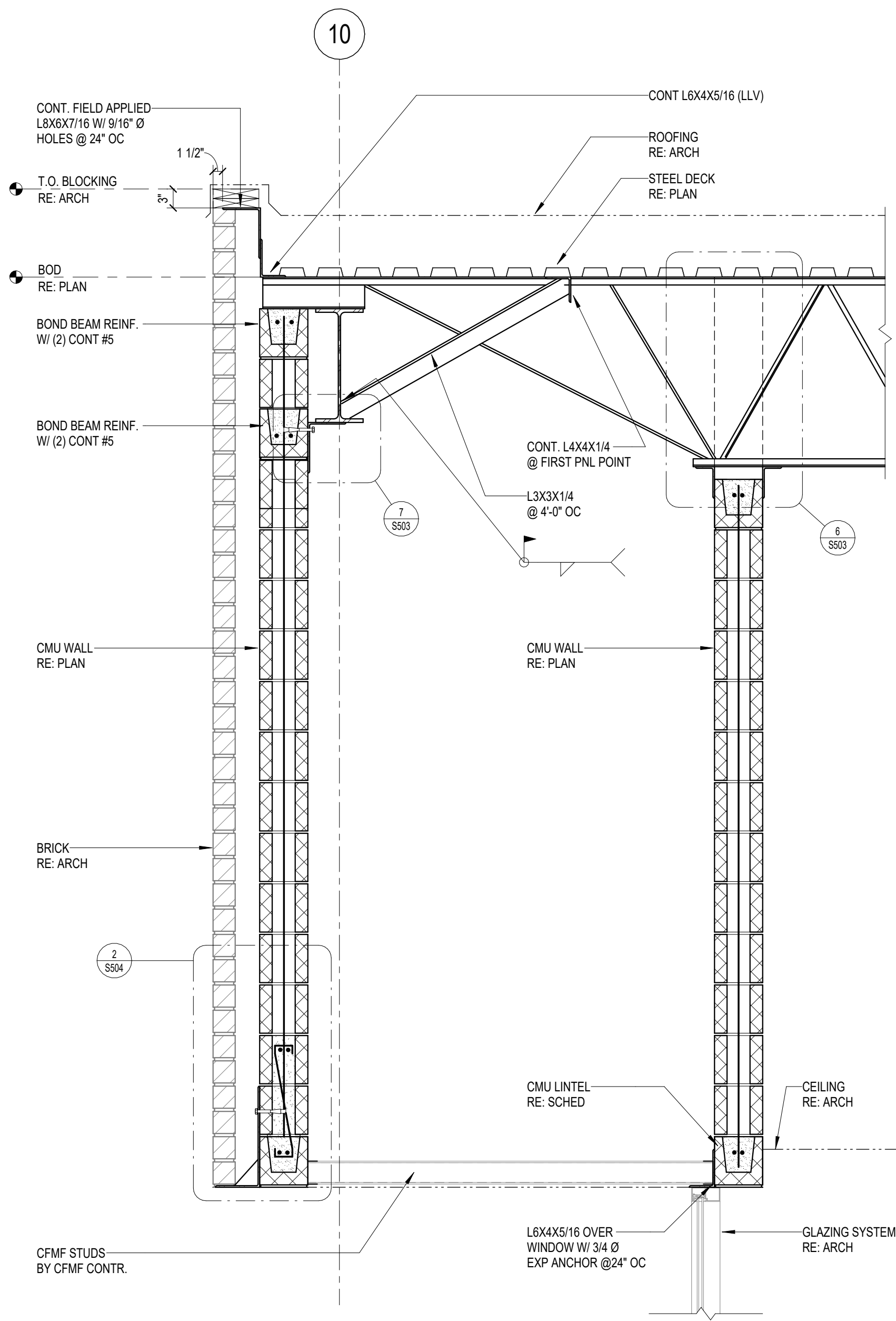
1 SECTION
3/4" = 1'-0"



2 CMU BRICK LINTEL
3/4" = 1'-0"

NOTE:
1. THIS DETAIL ONLY APPLIES AT 8, 10 OR 12" THICK CMU. IT DOES NOT APPLY AT 4" CMU BACKUP.
2. PROVIDE FULL HEIGHT VERTICAL CONTROL JOINT IN MASONRY VENEER AT EACH SIDE OF OPENING IN THE CMU WALL.

ANCHOR SPACING SCHEDULE	
VENEER HEIGHT	ANCHOR SPACING
10'-0" OR LESS	24" OC
10'-1" TO 15'-0"	18" OC
15'-1" TO 18'-0"	8" OC



3 SECTION
3/4" = 1'-0"

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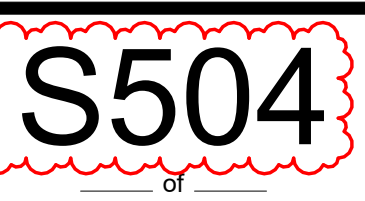
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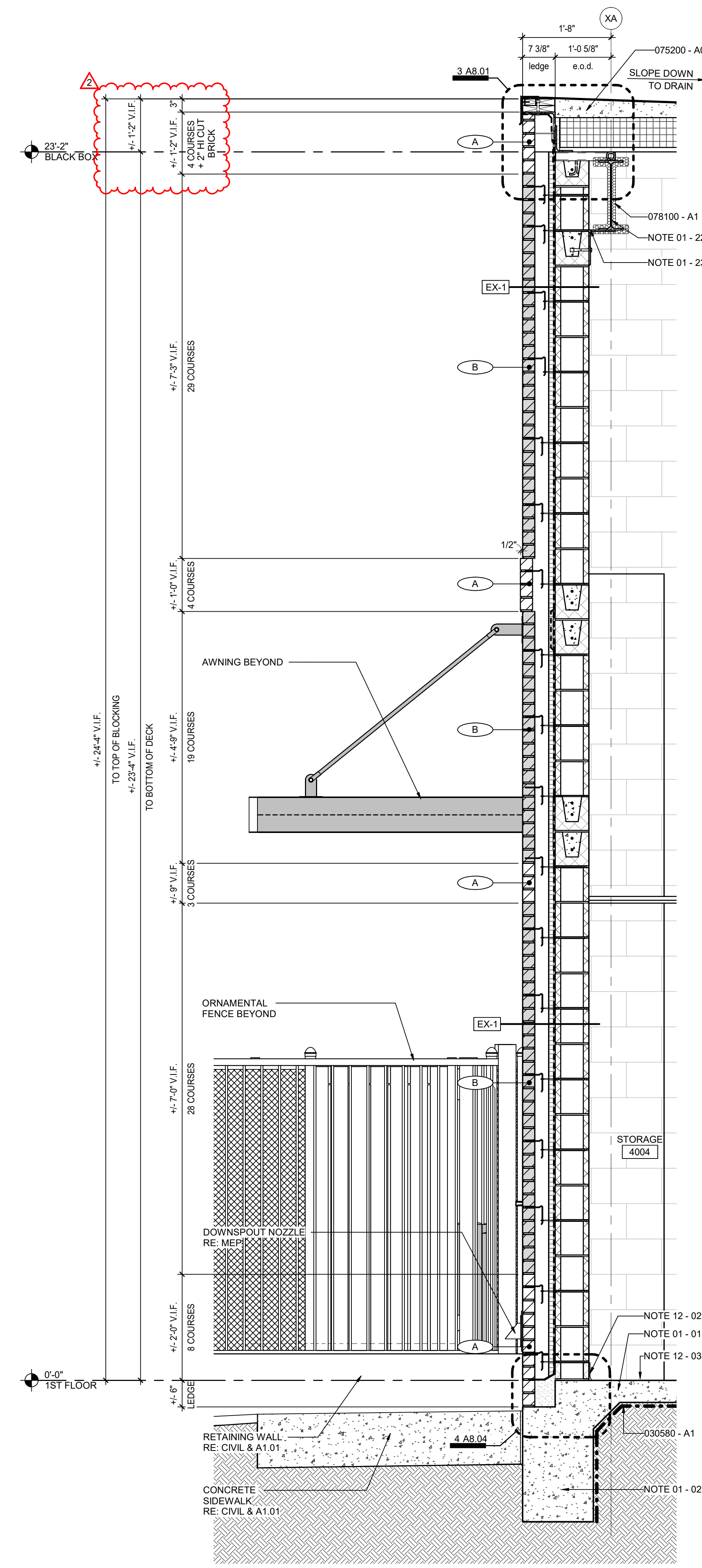
**2024 CY-LAKES HIGH SCHOOL
RENOVATION**
5750 GREENHOUSE RD., KATY, TX 77449
CFISD PROJECT NO. 24-02-5749-R-RFP

T.	ADDENDUM 03	12.13.24	Revision / Submission
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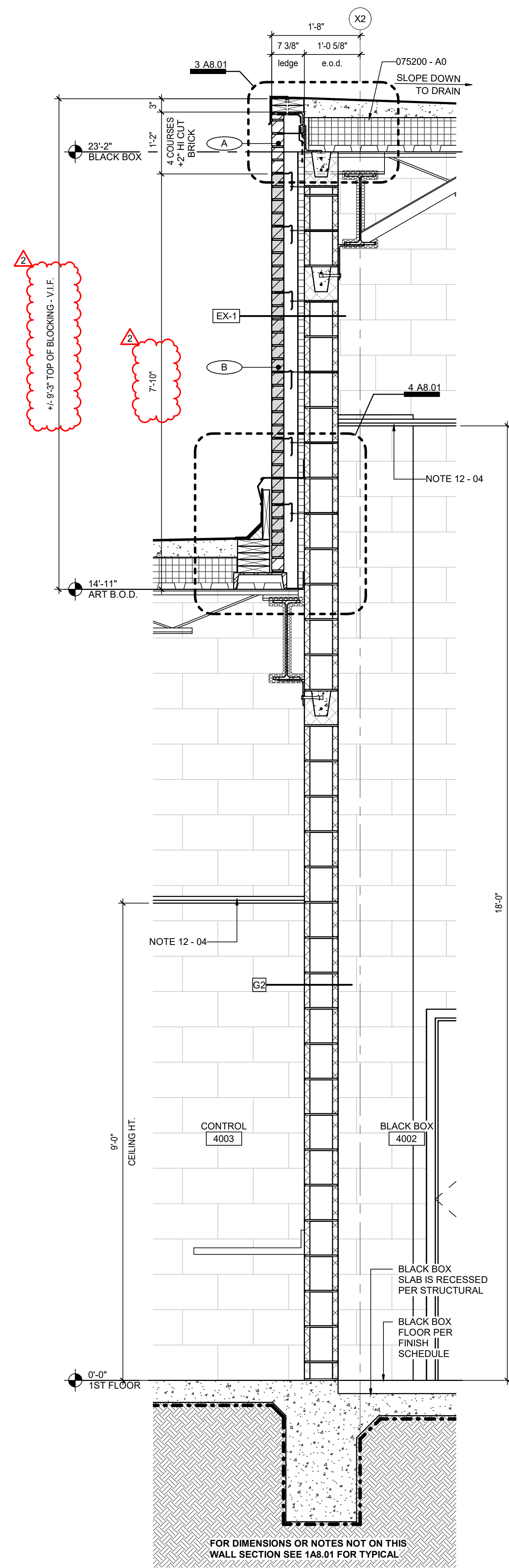
Project Number: 23071
Date: 12-13-2024
Drawn by: JT / AR

CMU & STEEL ROOF
DETAILS

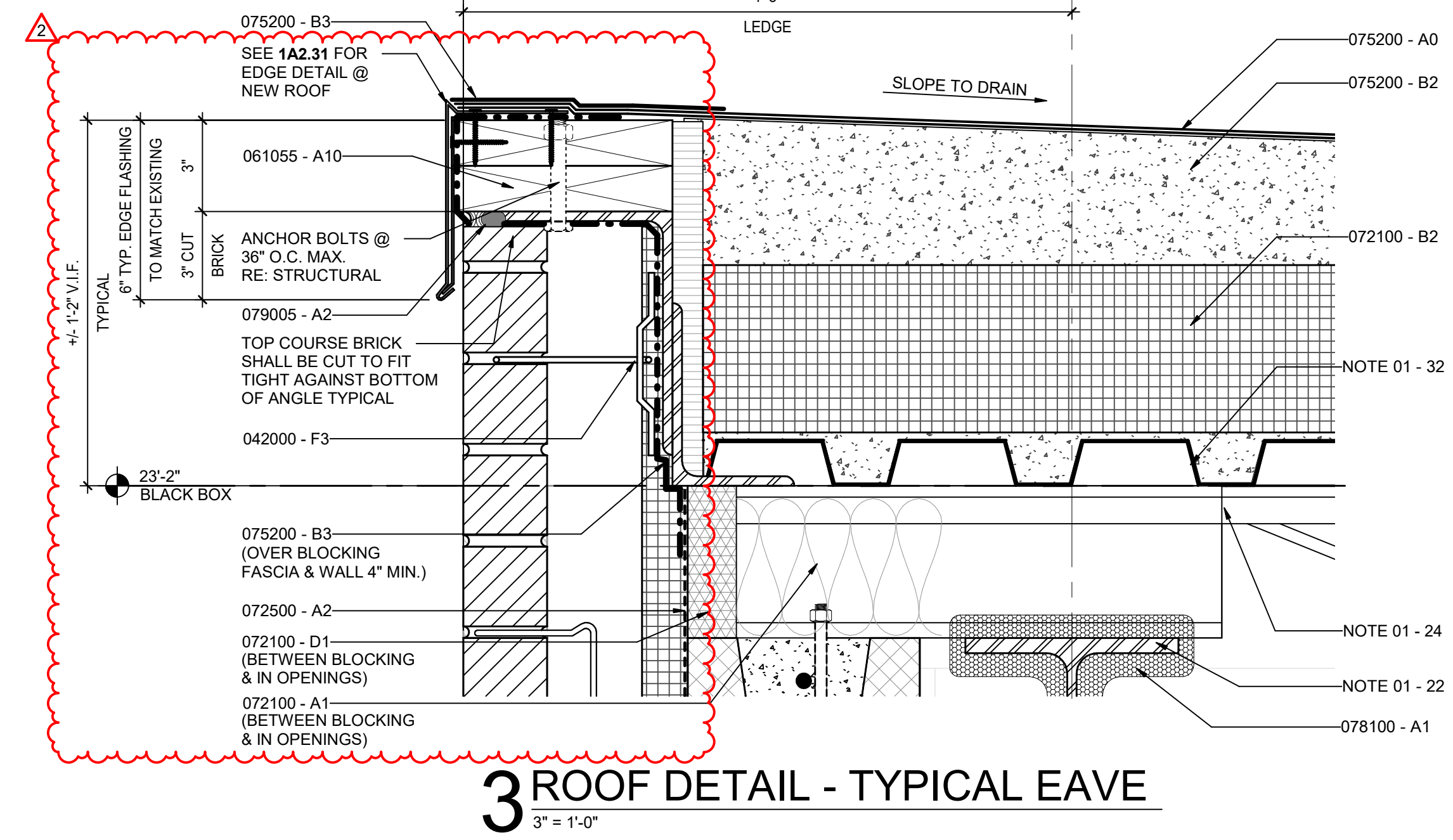




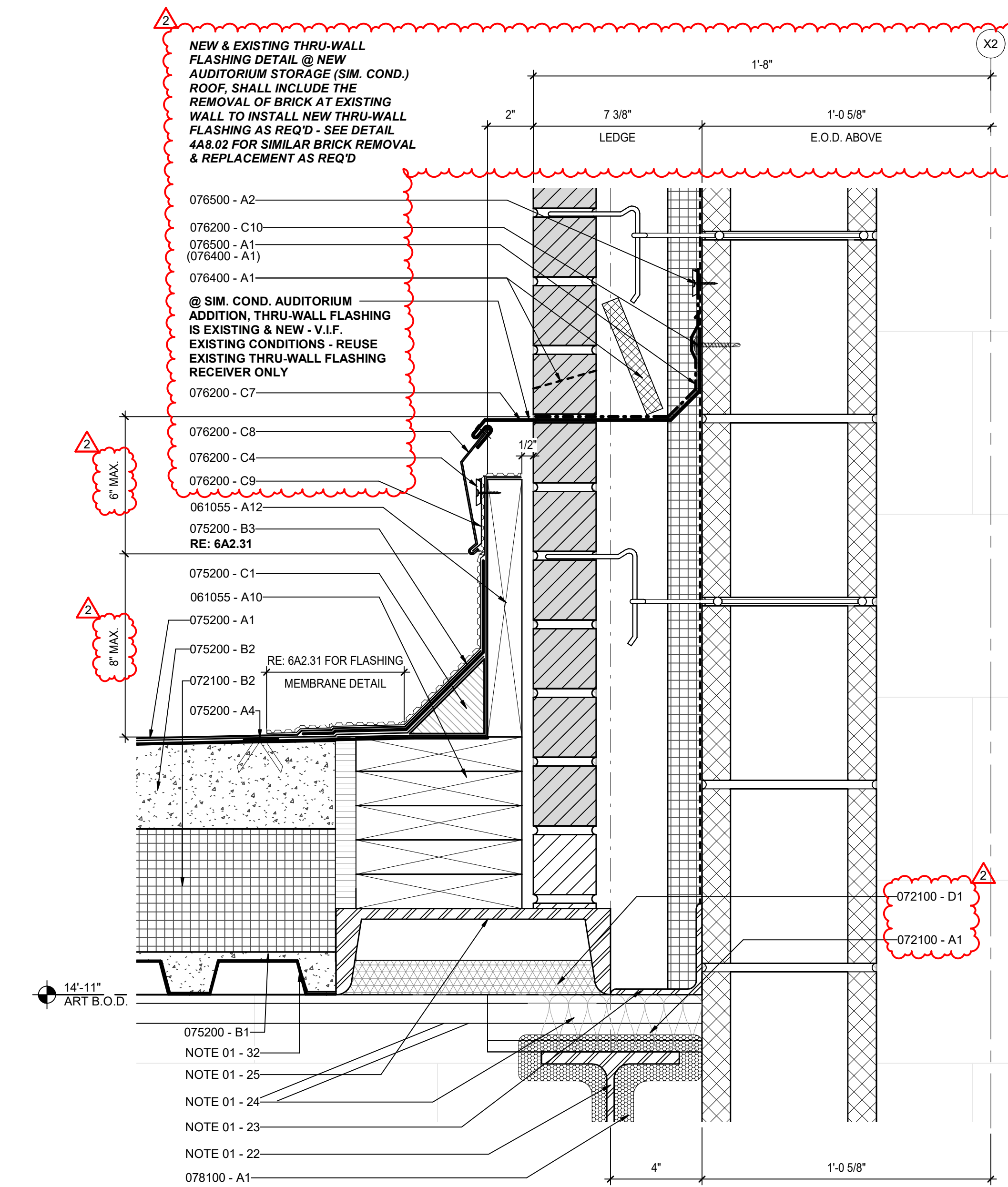
1 WALL SECTION - BLACK BOX STORAGE
3/4" = 1'-0"



2 WALL SECTION - HIGH TO LOW ROOF
3/4" = 1'-0"



3 ROOF DETAIL - TYPICAL EAVE
3/8" = 1'-0"



4 ROOF DETAIL - THRU WALL FLASHING
3/8" = 1'-0"

WALL SECTION NOTES

PRIOR TO SUBMITTING SHOP DRAWINGS, CONTRACTOR SHALL FIELD VERIFY THE FOLLOWING EXISTING CONDITIONS & COMPARE WITH CONSTRUCTION DOCUMENTS:

- TOP OF ROOF EDGE HEIGHT.
- BOTTOM OF ROOF DECK.
- BRICK SIZES.
- METAL FASCIA SIZE.
- BRICK LEDGE DEPTH.

**** NEW WALL SHALL ALIGN WITH ADJACENT EXISTING WALL INCLUDING BUT NOT LIMITED TO TOP OF ROOF, MASONRY COURSE, MASONRY TYPES, BANDING, AND METAL FASCIA.**

NOTE: CONTRACTOR SHALL NOTIFY ARCHITECT OF ANY DISCREPANCIES BETWEEN DOCUMENTS & EXISTING CONDITIONS.

CY-LAKES HIGH SCHOOL BRICK LEGEND

NOTE: FOR VERTICAL HEIGHTS OF BANDING, MATCH EXISTING BUILDING ADJACENT TO NEW ADDITION - SEE WALL SECTIONS FOR DIMENSIONS & DESCRIPTIONS. MATCH BRICK LEDGE DEPTH - GC TO VERIFY IN FIELD.

A KING SIZED BRICK @ BLDG
1/3 RUNNING BOND COURSE
BANDING - LIGHT GRAY
ACME BRICK - DOVE GRAY

B KING SIZED BRICK @ BLDG
1/3 RUNNING BOND COURSE
FIELD COLOR - MEDIUM GRAY
ACME BRICK - PALOMA GRAY

C KING SIZED BRICK @ BLDG
1/3 RUNNING BOND COURSE
FIELD COLOR - WHITE
ACME BRICK - GLACIER WHITE (ONLY @ MAIN ENTRY INT. WALL)

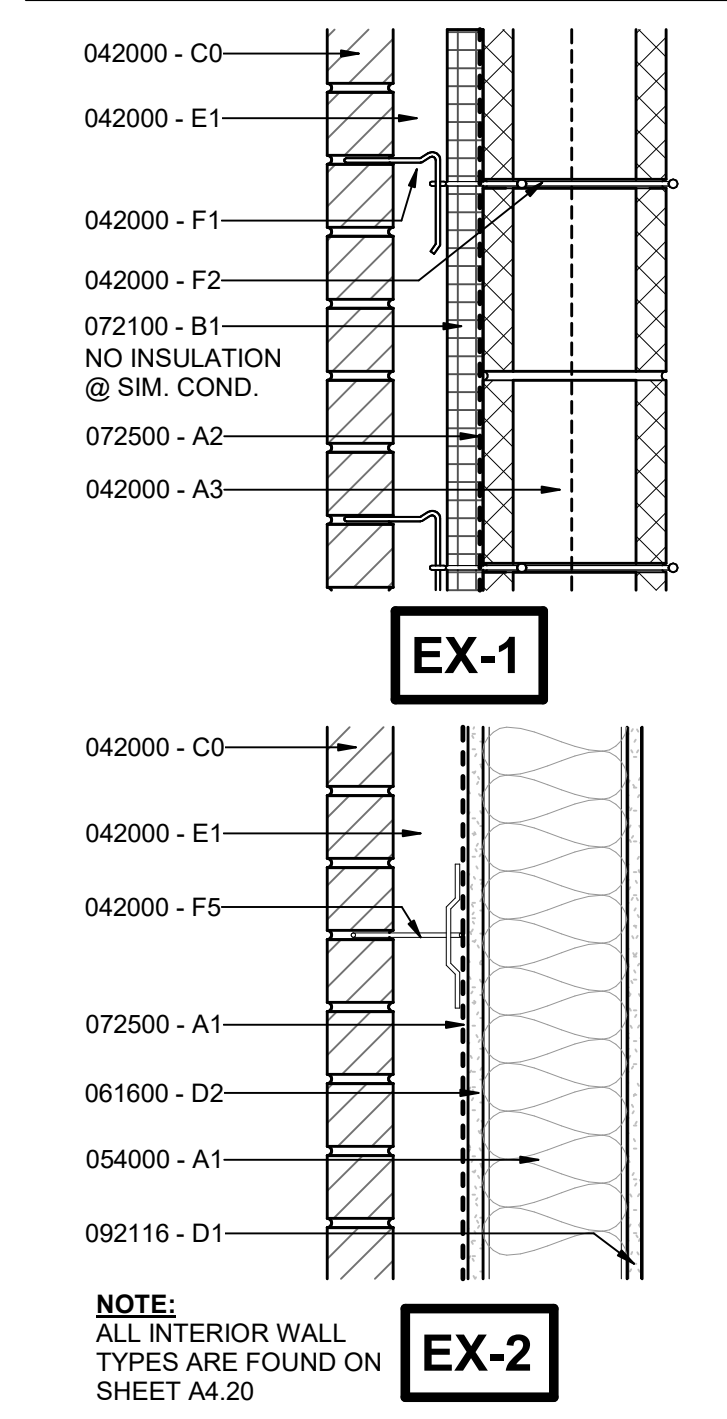
MJ MASONRY JOINTS

CJ WALL CONTROL JOINTS AT NEW TO EXISTING WALL CONNECTION

KEYNOTES

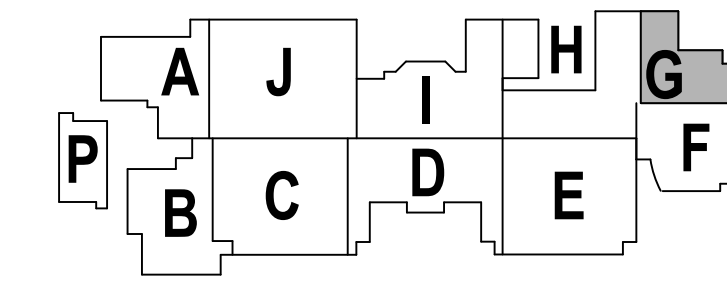
030580 - A3	UNDER-SLAB VAPOR RETARDER / BARRIER - RE: SPECIFICATIONS
042000 - A1	2X6X16 CONCRETE MASONRY UNIT - RE: STRUCT
042000 - C0	KING SIZED VENEER FACE BRICK - STRETCHER COURSES (RUNNING BOND) - SEE ELEVATIONS FOR BANDING & COLOR AIR SPACE
042000 - E1	ADJUSTABLE MASONRY VENEER WALL TIES @ 16" O.C. VERTICALLY MAX (16" O.C. STD BRICK) AND 18" O.C. HORIZONTALLY MAX - FOR UNEVEN WYTHES OF BRICK & CMU
042000 - F1	ADJUSTABLE HORIZONTAL TRUSS REINFORCEMENT WITH EYE-WIRE FOR ADJUSTABLE TIES @ 15" OC VERTICALLY MAX @ CMU - FOR WYTHES OF KING SIZED BRICK & STANDARD CMU
042000 - F2	ADJUSTABLE MASONRY VENEER WALL TIES W/ ANCHORS SCREWED INTO SUBSTRATE, @ 15" OC VERTICALLY MAX & 15" OC HORIZONTALLY MAX @ TOP OF WALLS
042000 - F3	ADJUSTABLE MASONRY WALL ANCHOR 15" OC EA WAY @ METAL STUD WALLS TYPICAL
042000 - F5	6" METAL STUD WALL FRAMING (CFMF) - RE: STRUCTURAL
054000 - A1	2X8 TREATED WOOD BLOCKING OR NAILER
061055 - A10	2X12 TREATED WOOD BLOCKING OR NAILER
061055 - A12	5/8" GLASS-MAT GYPSUM SHEATHING BOARD - TYPE X
072100 - A1	BATT INSULATION - THICKNESS SAME AS WALL FRAMING
072100 - B1	RIGID WALL INSULATION - 1-1/2" THICK IN WALL CAVITY - RE: SPECS
072100 - B2	RIGID ROOF INSULATION RE: ROOFING SPECS
072100 - D1	SPRAY POLYURETHANE FOAM INSULATION
072500 - A1	FLUID APPLIED AIR BARRIER OVER EXTERIOR SHEATHING
072500 - A2	FLUID APPLIED AIR BARRIER OVER EXTERIOR CMU
075200 - A0	SBS-MODIFIED BITUMINOUS MEMBRANE ROOFING OVER LIGHTWEIGHT INSULATED CONCRETE & SLOTTED METAL DECK SYSTEM, SLOPED 1/4" PER FOOT MIN. TO INTERNAL AND OVERFLOW DRAINS - RE: SPECS
075200 - A1	SBS-MODIFIED BITUMINOUS MULTI-PLY MEMBRANE ROOFING WITH GRANULE SURFACED TOP SHEET
075200 - A4	SBS-MODIFIED BITUMINOUS BASE SHEET MECHANICALLY ATTACHED
075200 - B1	LIGHTWEIGHT INSULATING CONCRETE OVER SLOTTED METAL DECK (SPEC 035200)
075200 - B2	TAPERED LIGHTWEIGHT INSULATING CONCRETE, SLOPED TO INTERNAL DRAINS ON ROOF (SPEC 035200)
075200 - B3	FULLY ADHERED MEMBRANE FLASHING
075200 - C1	NON-COMBUSTIBLE CANT
076200 - C4	TERMINATION BAR WITH CONTINUOUS BEAD OF SEALANT (AS REQ'D AT THRU WALL FLASHING)
076200 - C7	STAINLESS STEEL THRU-WALL FLASHING RECEIVER
076200 - C8	STAINLESS STEEL COUNTER-FLASHING
076200 - C9	STAINLESS STEEL WIND CLIPS / CLEATS @ 30" O.C. WITH TERMINATION BAR FASTENED @ 6" O.C. MIN. SEALED CONT.
076200 - C10	STAINLESS STEEL THRU-WALL FLASHING ANCHOR
076400 - A1	COMBINATION FLEXIBLE SHEET FLASHING (076500), MORTAR DEFLECTION, & WEEP AS COMPLETE ONE-STEP SYSTEM RE: SPECS
076500 - A1	FLEXIBLE THRU-WALL FLASHING - STAINLESS STEEL CORE W/ POLYMER FABRIC LAMINATED TO BOTTOM OF SS FACE W/ ADHESIVE
076500 - A2	FLEXIBLE THRU-WALL FLASHING TERMINATION BAR & SEALANT
078100 - A1	APPLIED FIRE-PROOFING TO STRUCTURAL ELEMENTS - RE: SPECIFICATIONS
079005 - A2	JOINT SEALANT AND CYLINDRICAL SEALANT BACKING
092116 - D1	5/8" GYPSUM BOARD FINISH - RE: SPECS
NOTE 01 - 01	CONCRETE SLAB - RE: STRUCTURAL
NOTE 01 - 02	FOUNDATION - RE: STRUCTURAL
NOTE 01 - 22	STEEL BEAM - RE: STRUCTURAL
NOTE 01 - 23	STEEL ANGLE - RE: STRUCTURAL
NOTE 01 - 24	STEEL JOIST - RE: STRUCTURAL
NOTE 01 - 25	STEEL CHANNEL - RE: STRUCTURAL
NOTE 01 - 32	METAL ROOF DECK - RE: STRUCTURAL
NOTE 12 - 02	BASE - RE: FINISH SCHEDULE
NOTE 12 - 03	FLOOR FINISH - RE: FINISH SCHEDULE
NOTE 12 - 04	CEILING FINISH - RE: CEILING PLAN & FINISH SCHEDULE

EXTERIOR WALL TYPE KEY LEGEND



NOTE: ALL INTERIOR WALL TYPES ARE FOUND ON SHEET A4.20

KEY PLAN: CY-LAKES HIGH SCHOOL BUILDING



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CONSTRUCTION DOCUMENT

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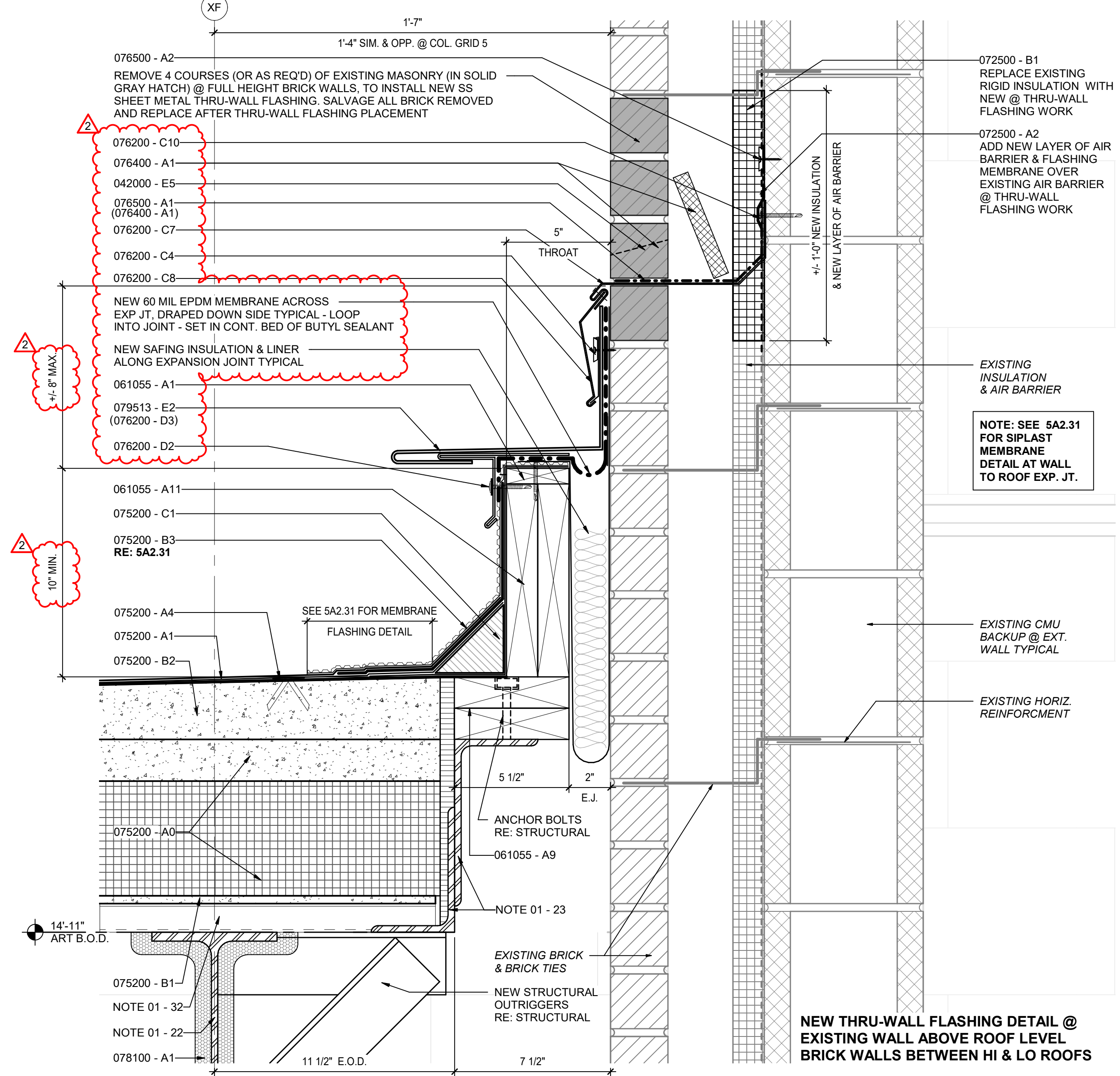
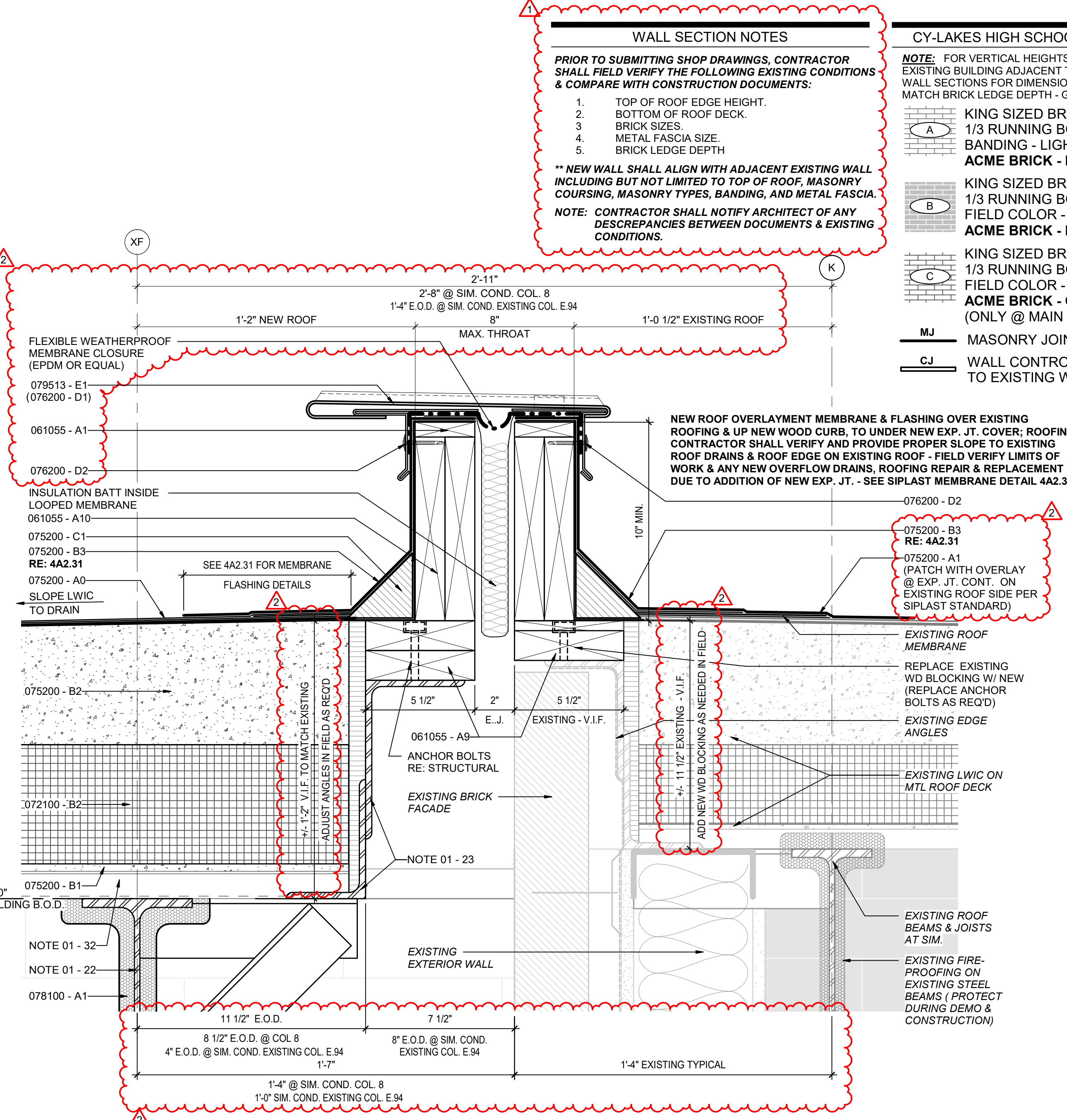
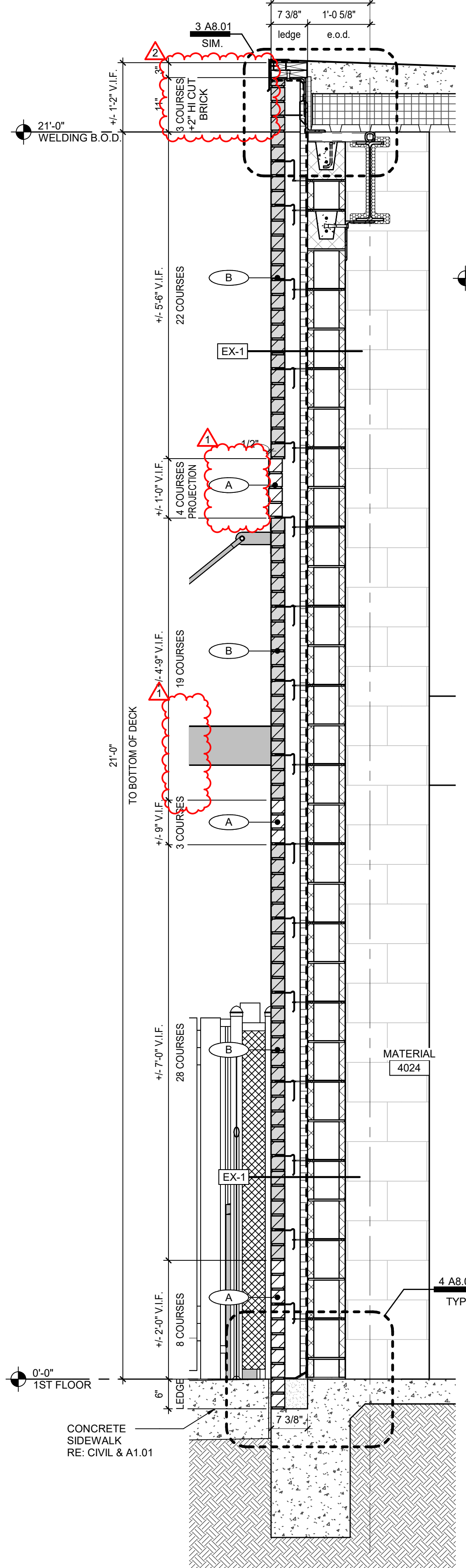
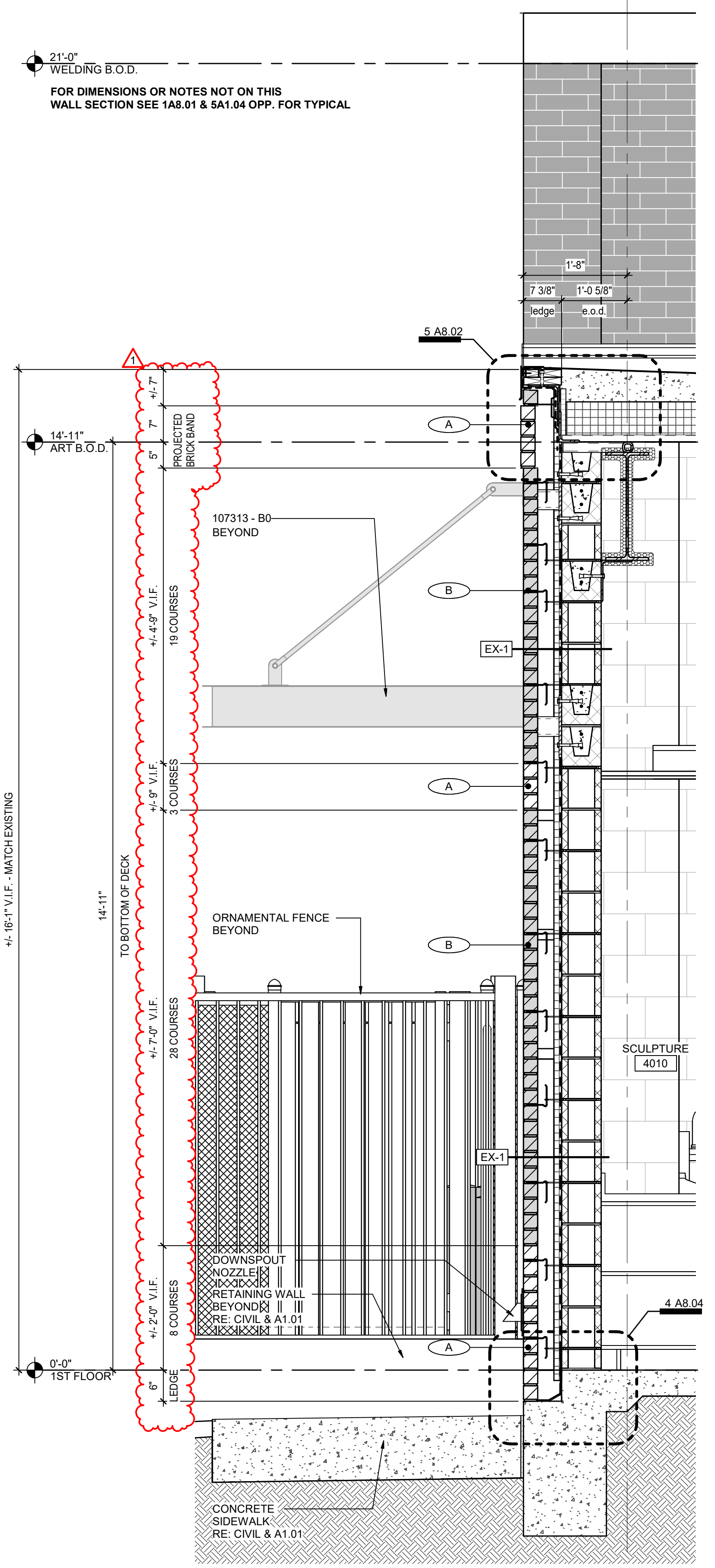
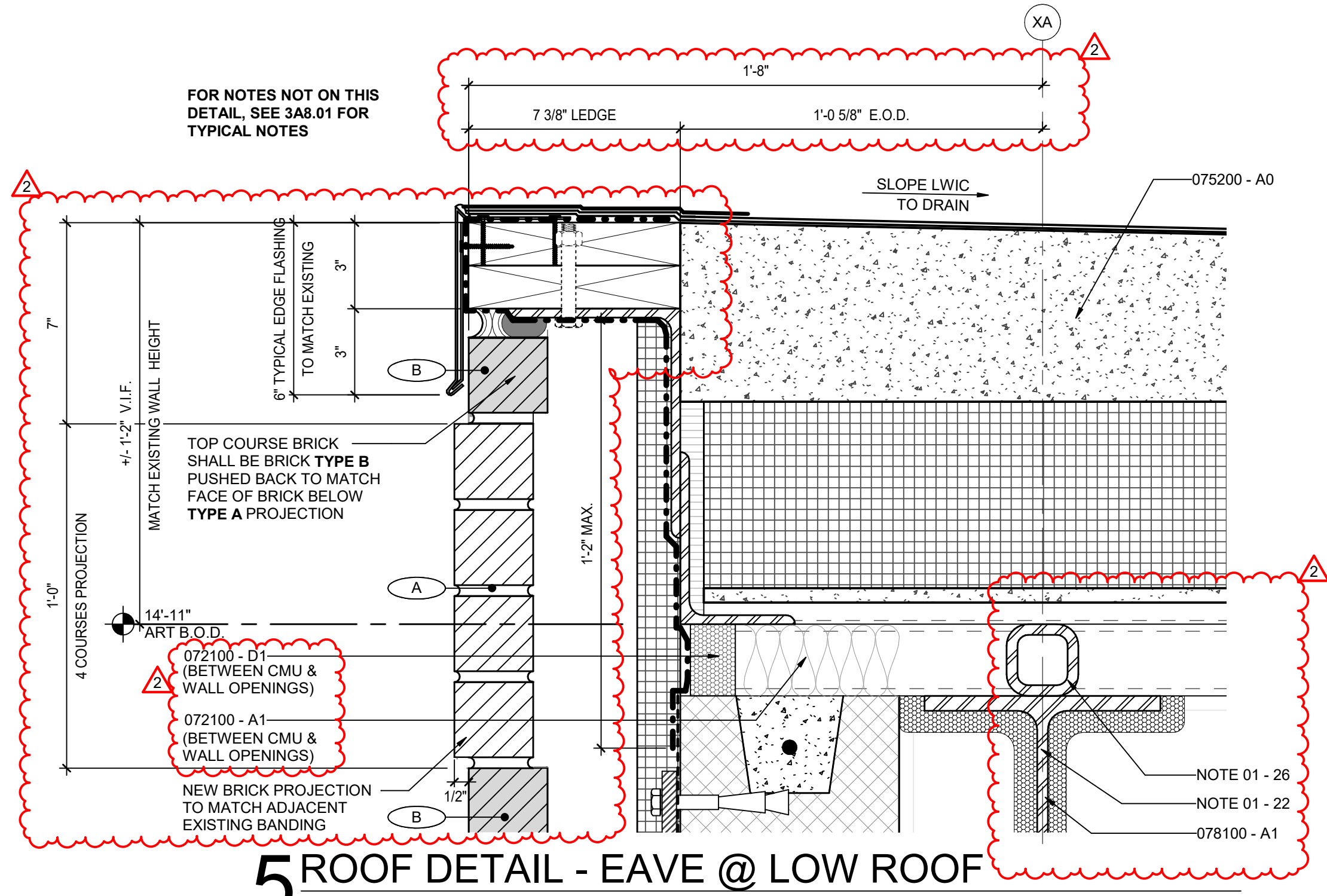
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2024 CY-LAKES HIGH SCHOOL RENOVATION
5750 GREENHOUSE RD., KATY, TX 77449
CFISD PROJECT NO. 24-02-5749-R-RFP

Project Number:	23071	
Date:	11-17-2024	
Drawn by:	WHL / KLO	
Revisions / Submissions:		
1	ADDENDUM 03	12.13.24
2	ADDENDUM 02	12.09.24

WALL SECTIONS & DETAILS

A8.01



WALL SECTION NOTES

PRIOR TO SUBMITTING SHOP DRAWINGS, CONTRACTOR SHALL FIELD VERIFY THE FOLLOWING EXISTING CONDITIONS & COMPARE WITH CONTRACT DOCUMENTS:

1. TOP OF ROOF EDGE HEIGHT.
2. BRICK SIZES.
3. METAL FASCIA SIZE.
4. BRICK LEDGE DEPTH.

** NEW WALL SHALL ALIGN WITH ADJACENT EXISTING WALL INCLUDING BUT NOT LIMITED TO TOP OF ROOF, MASONRY COURSE, MASONRY TYPES, BANDING, AND METAL FASCIA.

NOTE: CONTRACTOR SHALL NOTIFY ARCHITECT OF ANY DISCREPANCIES BETWEEN DOCUMENTS & EXISTING CONDITIONS.

CY-LAKES HIGH SCHOOL BRICK LEGEND

NOTE: FOR VERTICAL HEIGHTS OF BANDING, MATCH EXISTING BUILDINGS ADJACENT TO NEW ADDITION - SEE WALL SECTIONS FOR DIMENSIONS & DESCRIPTIONS. MATCH BRICK LEDGE DEPTH - GC TO VERIFY IN FIELD.

A KING SIZED BRICK @ BLDG
1/3 RUNNING BOND COURSING
BANDING - LIGHT GRAY
ACME BRICK - DOVE GRAY

B KING SIZED BRICK @ BLDG
1/3 RUNNING BOND COURSING
FIELD COLOR - MEDIUM GRAY
ACME BRICK - PALOMA GRAY

C KING SIZED BRICK @ BLDG
1/3 RUNNING BOND COURSING
FIELD COLOR - WHITE
ACME BRICK - GLACIER WHITE (ONLY @ MAIN ENTRY INT. WALL)

MJ MASONRY JOINTS

CJ WALL CONTROL JOINTS AT NEW TO EXISTING WALL CONNECTION

KEYNOTES

042000 - A3	8X8X16 CONCRETE MASONRY UNIT - RE: STRUCT
042000 - C0	KING SIZED VENEER FACE BRICK - STRETCHER COURSES (RUNNING BOND) - SEE ELEVATIONS FOR BANDING & COLOR
042000 - E1	AIR SPACE
042000 - E5	WEEP HOLES @ 24" OC - FILLED WITH MOLDED PVC GRILLE, INSECT RESISTANT
042000 - F1	ADJUSTABLE MASONRY VENEER WALL TIES AT 15" O.C. VERTICALLY MAX (16" O.C. STD BRICK) AND 16" O.C. HORIZONTALLY MAX FOR UNEVEN WYTHES OF BRICK & CMU
042000 - F2	ADJUSTABLE HORIZONTAL TRUSS REINFORCEMENT WITH EYE WIRE FOR ADJUSTABLE TIES. @ 16" OC VERTICALLY MAX @ CMU. FOR WYTHES OF KING SIZED BRICK & STANDARD CMU
042000 - F5	ADJUSTABLE MASONRY WALL ANCHOR 15" OC EA WAY @ METAL STUD WALLS TYPICAL
054000 - A1	6" METAL STUD WALL FRAMING (CMF) - RE: STRUCTURAL
061055 - A1	1X TREATED WOOD BLOCKING OR NAILER
061055 - A9	2X6 TREATED WOOD BLOCKING OR NAILER
061055 - A10	2X8 TREATED WOOD BLOCKING OR NAILER
061055 - A11	2X10 TREATED WOOD BLOCKING OR NAILER
061600 - D2	5/8" GLASS-MAT GYPSUM SHEATHING BOARD - TYPE X
072100 - A1	BATT INSULATION - THICKNESS SAME AS WALL FRAMING
072100 - B1	RIGID WALL INSULATION - 1-1/2" THICK IN WALL CAVITY - RE: SPECS
072100 - B2	RIGID ROOF INSULATION RE: ROOFING SPECS
072100 - D1	SPRAY POLYURETHANE FOAM INSULATION
072500 - A1	FLUID APPLIED AIR BARRIER OVER EXTERIOR SHEATHING
072500 - A2	FLUID APPLIED AIR BARRIER OVER EXTERIOR CMU
072500 - B1	SELF-ADHERING THRU-WALL FLASHING MEMBRANE W/ TERMINATION BAR
072500 - A0	SSB-MODIFIED BITUMINOUS MEMBRANE ROOFING OVER LIGHTWEIGHT INSULATED CONCRETE & SLOTTED METAL DECK SYSTEM. SLOPED 1/4" PER FOOT MIN TO INTERNAL AND OVERFLOW DRAINS - RE: SPECS
072500 - A1	SSB-MODIFIED BITUMINOUS MULTI-PLY MEMBRANE ROOFING WITH GRANULE SURFACE ON TOP SHEET
072500 - A4	SSB-MODIFIED BITUMINOUS BASE SHEET MECHANICALLY ATTACHED
072500 - B1	LIGHTWEIGHT INSULATING CONCRETE OVER SLOTTED METAL DECK (SPEC 035200)
072500 - B2	TAPERED LIGHTWEIGHT INSULATING CONCRETE, SLOPED TO INTERNAL DRAINS ON ROOF (SPEC 035200)
072500 - B3	FULLY ADHERED MEMBRANE FLASHING
072500 - C1	NON-COMBUSTIBLE CANT
072600 - C4	TERMINATION BAR WITH CONTINUOUS BEAD OF SEALANT (AS REQ'D AT THRU WALL FLASHING)
076200 - C7	STAINLESS STEEL THRU-WALL FLASHING RECEIVER
076200 - C8	STAINLESS STEEL COUNTER-FLASHING
076200 - C10	STAINLESS STEEL THRU-WALL FLASHING ANCHOR
076200 - D1	STAINLESS STEEL EXPANSION JOINT COVER W/ STANDING SEAMS & CLEATS - ROOF TO ROOF JOINT COVER - SIMILAR TO SMACNA DETAIL 5-5A
076200 - D2	STAINLESS STEEL CLEAT & GASKETED FASTENERS @ 18" O.C.
076200 - D3	STAINLESS STEEL EXPANSION JOINT COVER W/ STANDING SEAMS & CLEATS - ROOF TO WALL JOINT COVER - SIMILAR TO SMACNA DETAIL 5-6B
076400 - A1	COMBINATION FLEXIBLE SHEET FLASHING (076500). MORTAR DEFLECTION & WEEP AS COMPLETE ONE-STEP SYSTEM RE: SPECS
076500 - A1	FLEXIBLE THRU-WALL FLASHING - STAINLESS STEEL CORE W/ POLYMER FABRIC LAMINATED TO BOTTOM OF SS FACE W/ ADHESIVE
076500 - A2	FLEXIBLE THRU-WALL FLASHING TERMINATION BAR & SEALANT
076100 - A1	APPLIED FIRE-PROOFING TO STRUCTURAL ELEMENTS - RE: SPECIFICATIONS
079513 - E1	EXTERIOR STAINLESS STEEL CURB MOUNTED EXTERIOR EXPANSION JOINT COVER ASSEMBLY AT ROOF TO ROOF CONNECTION PER SMACNA STANDARDS & SPECIFICATIONS - SEE SPEC SECTION 079200
079513 - E2	EXTERIOR STAINLESS STEEL CURB MOUNTED EXTERIOR EXPANSION JOINT COVER ASSEMBLY AT ROOF TO WALL CONNECTION PER SMACNA STANDARDS & SPECIFICATIONS - SEE SPEC SECTION 079200
092116 - D1	5/8" GYPSUM BOARD FINISH - RE: SPECS
107131 - B0	PREFINISHED ALUMINUM AWNING
NOTE 01 - 22	STEEL BEAM - RE: STRUCTURAL
NOTE 01 - 23	STEEL ANGLE - RE: STRUCTURAL
NOTE 01 - 26	STEEL TUBE FRAMING - RE: STRUCTURAL
NOTE 01 - 32	METAL ROOF DECK - RE: STRUCTURAL

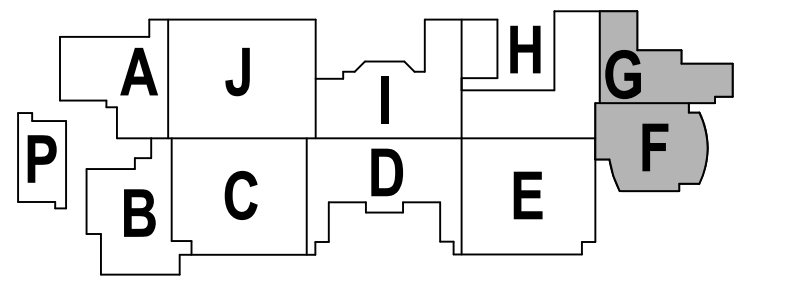
EXTERIOR WALL TYPE KEY LEGEND

042000 - C0	[Diagram]
042000 - E1	[Diagram]
042000 - F1	[Diagram]
042000 - F2	[Diagram]
072100 - B1	[Diagram]
072500 - A2	[Diagram]
042000 - A3	[Diagram]

042000 - C0	[Diagram]
042000 - E1	[Diagram]
042000 - F5	[Diagram]
072500 - A1	[Diagram]
061600 - D2	[Diagram]
054000 - A1	[Diagram]
092116 - D1	[Diagram]

NOTE: ALL INTERIOR WALL TYPES ARE FOUND ON SHEET A4.20

KEY PLAN: CY-LAKES HIGH SCHOOL BUILDING



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CONSTRUCTION DOCUMENT

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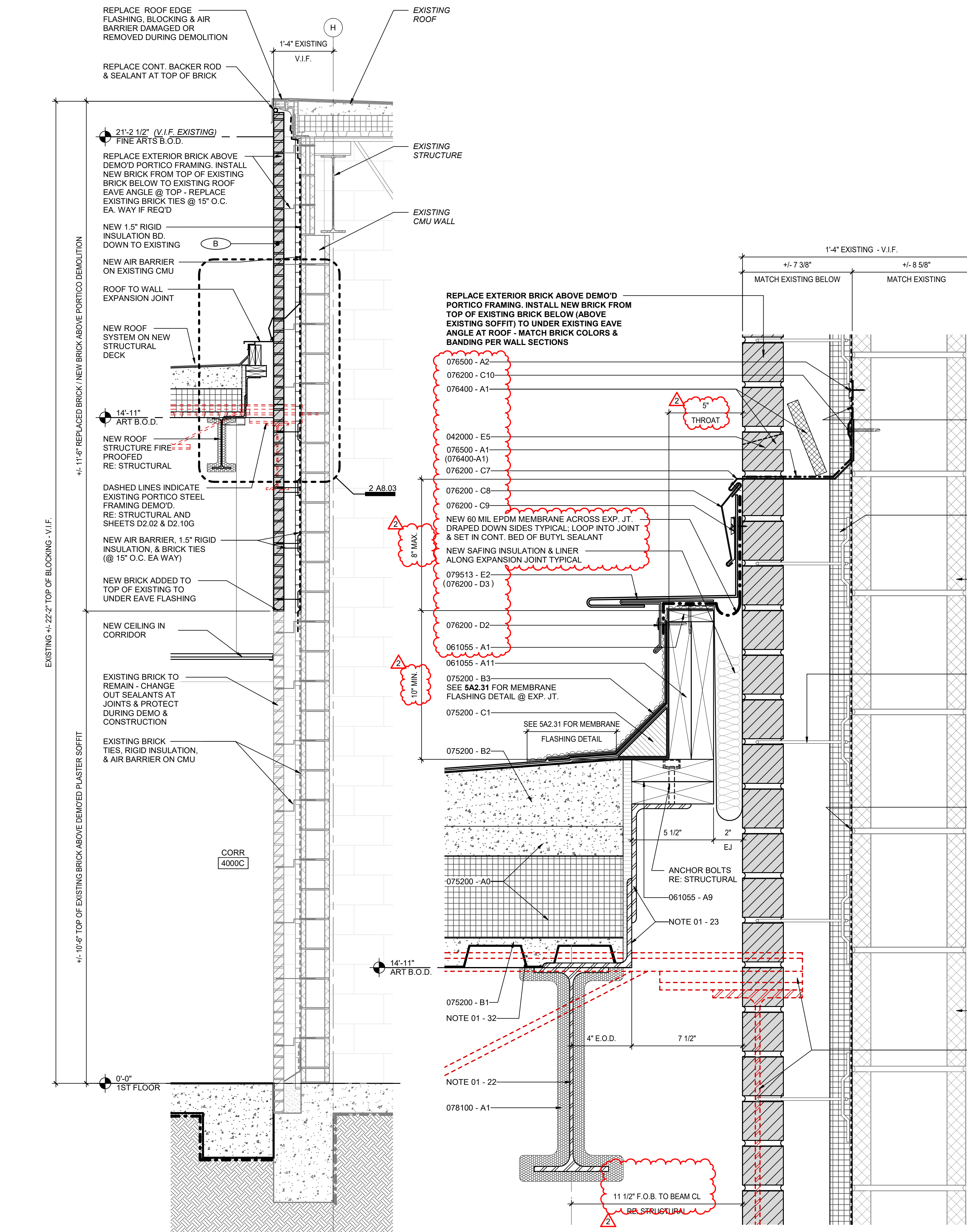
2024 CY-LAKES HIGH SCHOOL RENOVATION
5750 GREENHOUSE RD., KATY, TX 77449
CFISD PROJECT NO. 24-02-5749-R-RFP

1	ADDENDUM 03	12.13.24
2	ADDENDUM 02	12.09.24

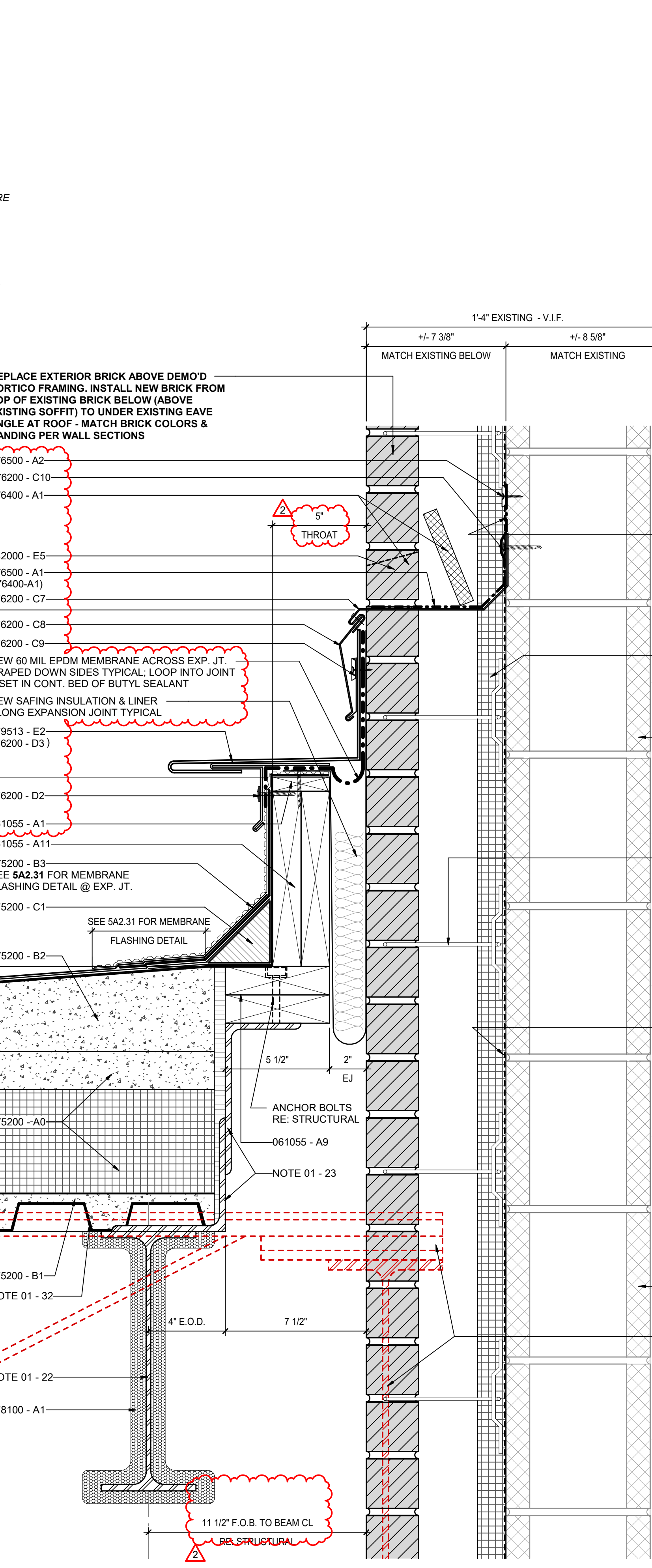
Revisions / Submission

Project Number: 23071
Date: 11-17-2024
Drawn by: WHL / KLO

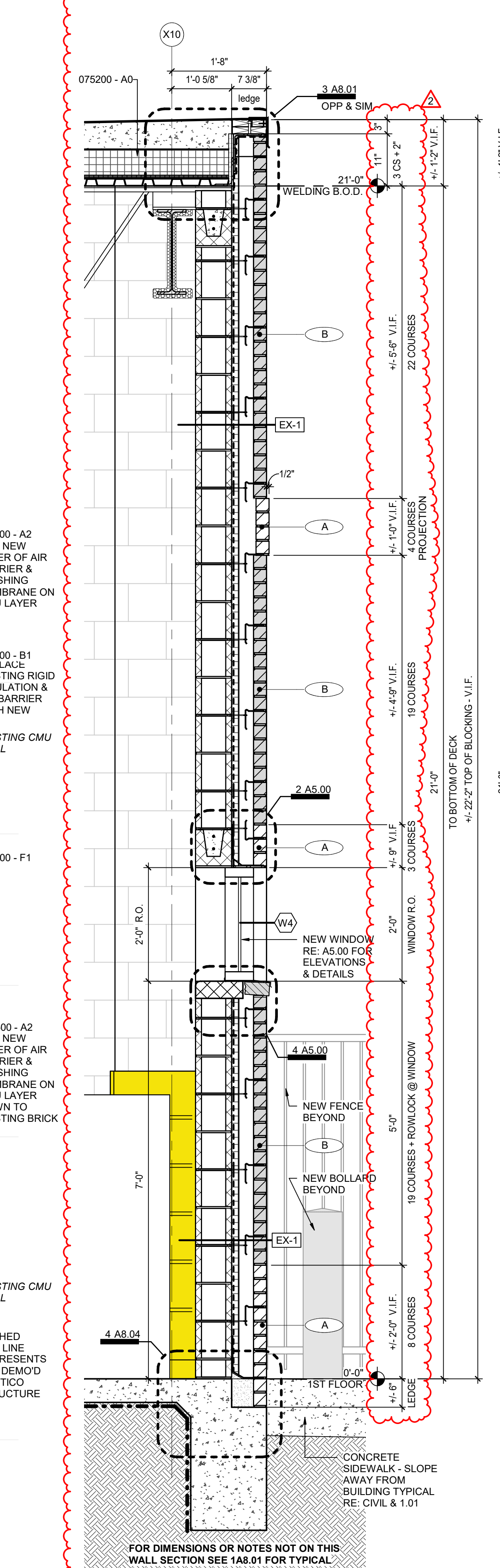
WALL SECTIONS & DETAILS
A8.02



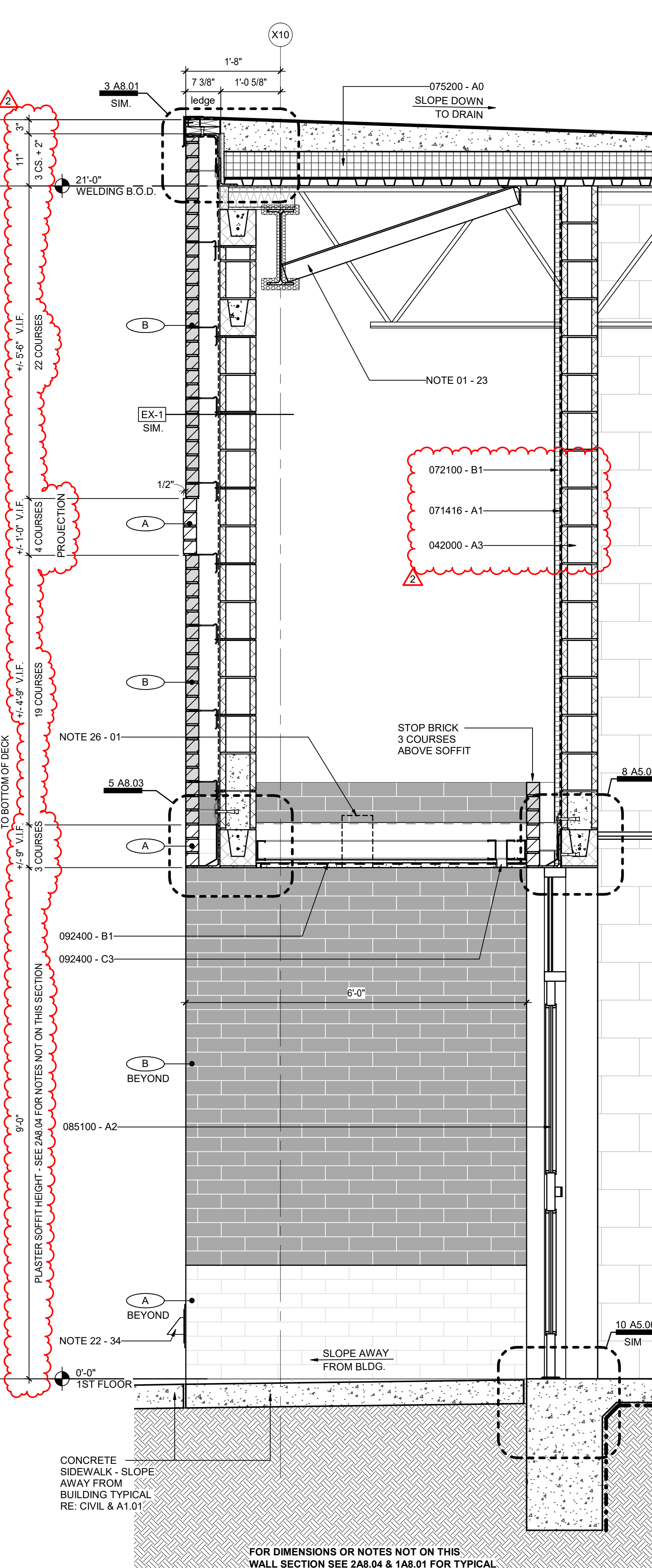
1 WALL SECTION - DEMOLISHED PORTICO
3/4" = 1'-0"



2 ROOF DETAIL - DEMOLISHED PORTICO EXP. JT.
3" = 1'-0"

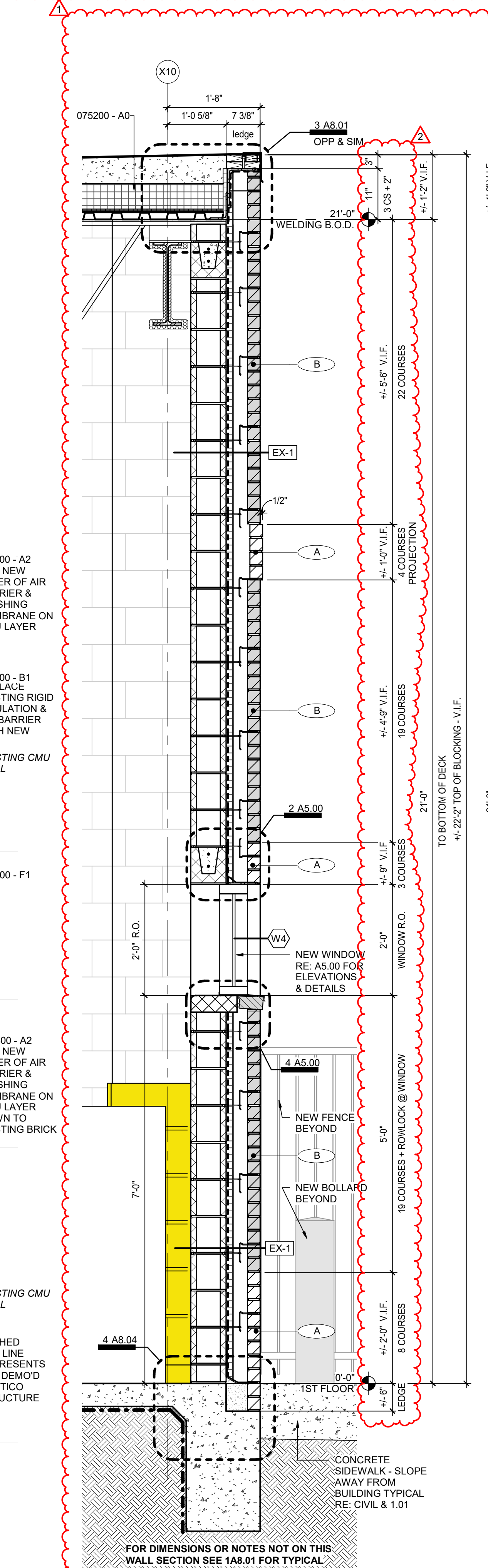


3 WALL SECTION - SHOPS
3/4" = 1'-0"



4 WALL SECTION - DOOR ALCOVE CTE
3/4" = 1'-0"

5 SOFFIT DETAIL @ CTE CORRIDOR



WALL SECTION NOTES

PRIOR TO SUBMITTING SHOP DRAWINGS, CONTRACTOR SHALL FIELD VERIFY THE FOLLOWING EXISTING CONDITIONS & COMPARE WITH CONSTRUCTION DOCUMENTS.

- TOP OF ROOF EDGE HEIGHT.
- BOTTOM OF ROOF DECK.
- BRICK SIZES.
- METAL FASCIA SIZE.
- BRICK LEDGE DEPTH.

**** NEW WALL SHALL ALIGN WITH ADJACENT EXISTING WALL INCLUDING BUT NOT LIMITED TO TOP OF ROOF, MASONRY COURSEING, MASONRY TYPES, BANDING, AND METAL FASCIA.**

NOTE: CONTRACTOR SHALL NOTIFY ARCHITECT OF ANY DISCREPANCIES BETWEEN DOCUMENTS & EXISTING CONDITIONS.

CY-LAKES HIGH SCHOOL BRICK LEGEND

NOTE: FOR VERTICAL HEIGHTS OF BANDING, MATCH EXISTING BUILDING ADJACENT TO NEW ADDITION - SEE WALL SECTIONS FOR DIMENSIONS & DESCRIPTIONS. MATCH BRICK LEDGE DEPTH - GO TO VERIFY IN FIELD.

A KING SIZED BRICK @ BLDG
1/3 RUNNING BOND COURSEING
BANDING - LIGHT GRAY
ACME BRICK - DOVE GRAY

B KING SIZED BRICK @ BLDG
1/3 RUNNING BOND COURSEING
FIELD COLOR - MEDIUM GRAY
ACME BRICK - PALOMA GRAY

C KING SIZED BRICK @ BLDG
1/3 RUNNING BOND COURSEING
FIELD COLOR - WHITE
ACME BRICK - GLACIER WHITE (ONLY @ MAIN ENTRY INT. WALL)

MJ MASONRY JOINTS

CJ WALL CONTROL JOINTS AT NEW TO EXISTING WALL CONNECTION

KEYNOTES

042000 - A3 8X816 CONCRETE MASONRY UNIT - RE: STRUCTURAL

042000 - C0 KING SIZED VENEER FACE BRICK - STRETCHER COURSES (RUNNING BOND) - SEE ELEVATIONS FOR BANDING & COLOR

042000 - E1 AIR SPACE

042000 - E5 WEEP HOLES @ 24" O.C. FILLED WITH MOLDED PVC GRILLE, INSECT RESISTANT

042000 - F1 ADJUSTABLE MASONRY VENEER WALL TIES AT 15" O.C. VERTICALLY MAX (16" O.C. STD BRICK) AND 16" O.C. HORIZONTALLY MAX - FOR UNEVEN WYTHES OF BRICK & CMU

042000 - F2 ADJUSTABLE HORIZONTAL TRUSS REINFORCEMENT WITH EYEWIRE FOR ADJUSTABLE TIES. @ 16" O.C. VERTICALLY MAX @ CMU - FOR WYTHES OF KING SIZED BRICK & STANDARD CMU

042000 - F5 ADJUSTABLE MASONRY WALL ANCHOR 15" O.C. EA WAY @ METAL STUD WALLS TYPICAL

054000 - A1 6" METAL STUD WALL FRAMING (CMF) - RE: STRUCTURAL

054000 - E0 COLD-FORMED METAL SOFFIT FRAMING (CFMF) - RE: STRUCTURAL

061055 - A1 1X TREATED WOOD BLOCKING OR NAILER

061055 - A9 2X8 TREATED WOOD BLOCKING OR NAILER

061055 - A11 2X10 TREATED WOOD BLOCKING OR NAILER

061600 - D2 5/8" GLASS-MAT GYPSUM SHEATHING BOARD - TYPE X

071416 - A1 COLD FLUID-APPLIED WATERPROOFING

072100 - B1 RIGID WALL INSULATION - 1-1/2" THICK IN WALL CAVITY - RE: SPECS

072500 - A1 FLUID APPLIED AIR BARRIER OVER EXTERIOR SHEATHING

072500 - A2 FLUID APPLIED AIR BARRIER OVER EXTERIOR CMU

072500 - B2 SELF-ADHERING FLASHING MEMBRANE @ WALL OPENINGS

072500 - A0 SBS-MODIFIED BITUMINOUS MEMBRANE ROOFING OVER LIGHTWEIGHT INSULATED CONCRETE & SLOTTED METAL DECK SYSTEM. SLOPED 1/4" PER FOOT MIN. TO INTERNAL AND OVERFLOW DRAINS - RE: SPECS

075200 - B1 LIGHTWEIGHT INSULATING CONCRETE OVER SLOTTED METAL DECK (SPEC 035200)

075200 - B2 TAPERED LIGHTWEIGHT INSULATING CONCRETE. SLOPED TO INTERNAL DRAINS ON ROOF (SPEC 035200)

075200 - B3 FULLY ADHERED MEMBRANE FLASHING

075200 - C1 NON-COMBUSTIBLE CANT

076200 - C7 STAINLESS STEEL THRU-WALL FLASHING RECEIVER

076200 - C8 STAINLESS STEEL COUNTER-FLASHING

076200 - C9 STAINLESS STEEL WIND CLIPS / CLEATS @ 30" O.C. WITH TERMINATION BAR FASTENED @ 6" O.C. MIN SEALED CONT.

076200 - C10 STAINLESS STEEL THRU-WALL FLASHING ANCHOR

076200 - D2 STAINLESS STEEL CLEAT & GASKETED FASTENERS @ 18" O.C.

076200 - D3 STAINLESS STEEL EXPANSION JOINT COVER W/ STANDING SEAMS & CLEATS - ROOF TO WALL JOINT COVER - SIMILAR TO SMACNA DETAIL 5-6B

076400 - A1 COMBINATION FLEXIBLE SHEET FLASHING (076500) MORTAR DEFLECTION & WEIR AS COMPLETE ONE-STEP SYSTEM RE: SPECS

076500 - A1 FLEXIBLE THRU-WALL FLASHING - STAINLESS STEEL CORE W/ POLYMER FABRIC LAMINATED TO BOTTOM OF SS FACE W/ ADHESIVE

076500 - A2 FLEXIBLE THRU-WALL FLASHING TERMINATION BAR & SEALANT

078100 - A1 APPLIED FIRE-PROOFING TO STRUCTURAL ELEMENTS - RE: SPECIFICATIONS

079513 - E2 EXTERIOR STAINLESS STEEL CURB MOUNTED EXTERIOR EXPANSION JOINT COVER ASSEMBLY AT ROOF TO WALL CONNECTION PER SMACNA STANDARDS & SPECIFICATIONS - SEE SPEC SECTION 076200

085100 - A2 ALUMINUM STOREFRONT ENTRANCE DOORS AND FRAME - 2" X 6" FRAME PROFILE (EXTERIOR)

092116 - D1 5/8" GYPSUM BOARD FINISH - RE: SPECS

092116 - E3 1/2" GLASS MAT GYPSUM BOARD SHEATHING - RE: SPECS

092400 - B1 7/8" PORTLAND CEMENT PLASTER SOFFIT

092400 - B2 1/2" PORTLAND CEMENT PLASTER CONT ON BOTTOM OF CMU BOND BEAM

092400 - C2 PORTLAND CEMENT PLASTER TRIM - J MOLD EDGE SCREED

092400 - C3 PORTLAND CEMENT PLASTER TRIM - 2" WIDE CONTINUOUS SOFFIT VENT PLACED 4" MIN. FROM SURFACE OF WALL

092400 - C5 PORTLAND CEMENT PLASTER TRIM - F-MOLD DRIP SCREED

NOTE 01 - 07 CMU LINTEL - RE: STRUCTURAL

NOTE 01 - 22 STEEL BEAM - RE: STRUCTURAL

NOTE 01 - 23 STEEL ANGLE - RE: STRUCTURAL

NOTE 01 - 27 STEEL BENT PLATE - RE: STRUCTURAL

NOTE 01 - 32 METAL ROOF DECK - RE: STRUCTURAL

NOTE 22 - 34 OVERFLOW DOWNSPOUT NOZZLE RE: PLUMBING

NOTE 26 - 01 LIGHT FIXTURE - RE: ELECTRICAL

EXTERIOR WALL TYPE KEY LEGEND

042000 - C0

042000 - E1

042000 - F1

042000 - F2

072100 - B1 NO INSULATION @ SIM. COND.

072500 - A2

042000 - A3

042000 - C0

042000 - E1

042000 - F1

042000 - F5

072500 - A1

061600 - D2

054000 - A1

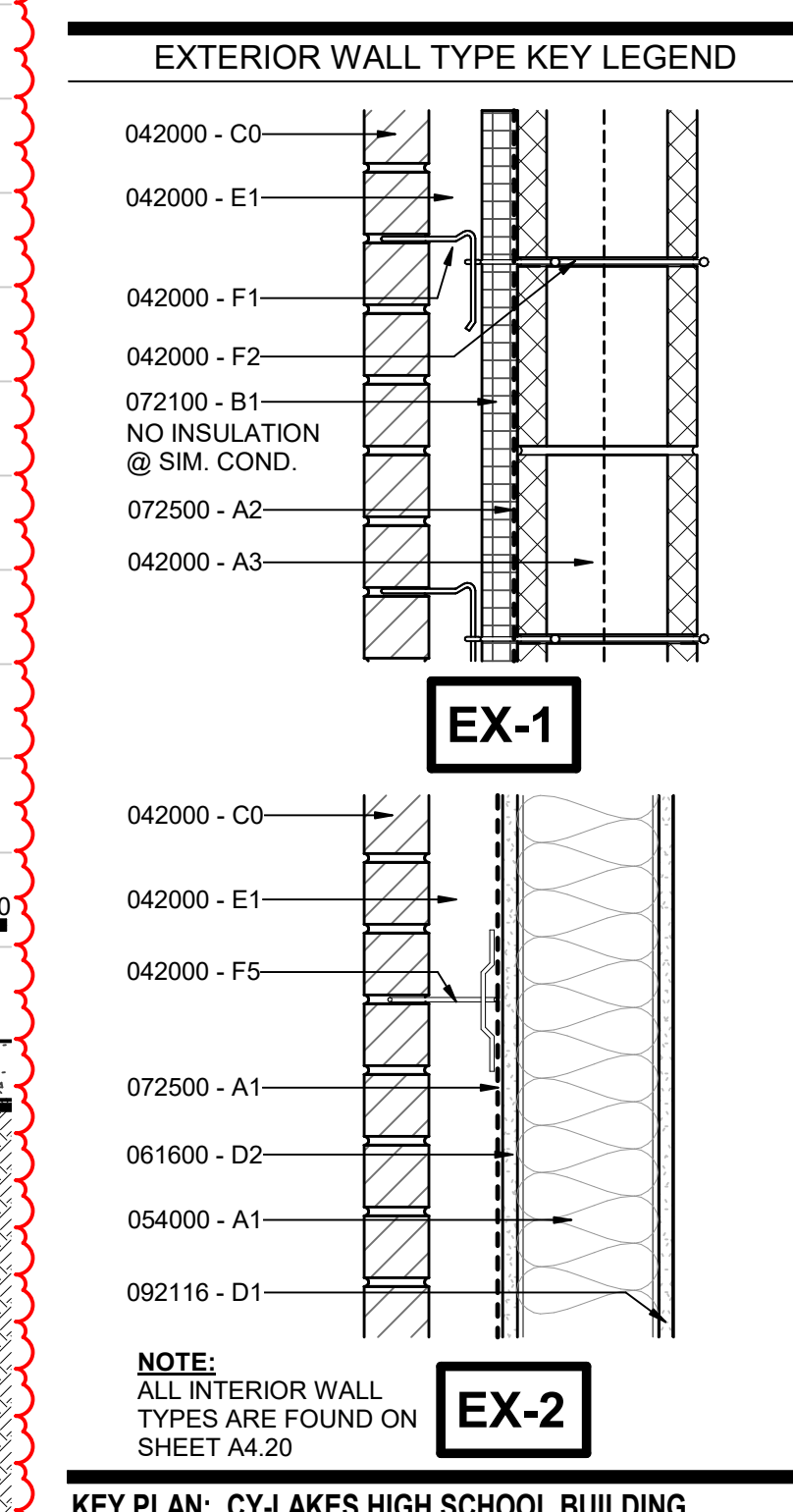
092116 - D1

EX-1

EX-2

NOTE: ALL INTERIOR WALL TYPES ARE FOUND ON SHEET A4.20

KEY PLAN: CY-LAKES HIGH SCHOOL BUILDING



KEY PLAN: CY-LAKES HIGH SCHOOL BUILDING



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LANDSCAPE LANDSCAPE GROUP
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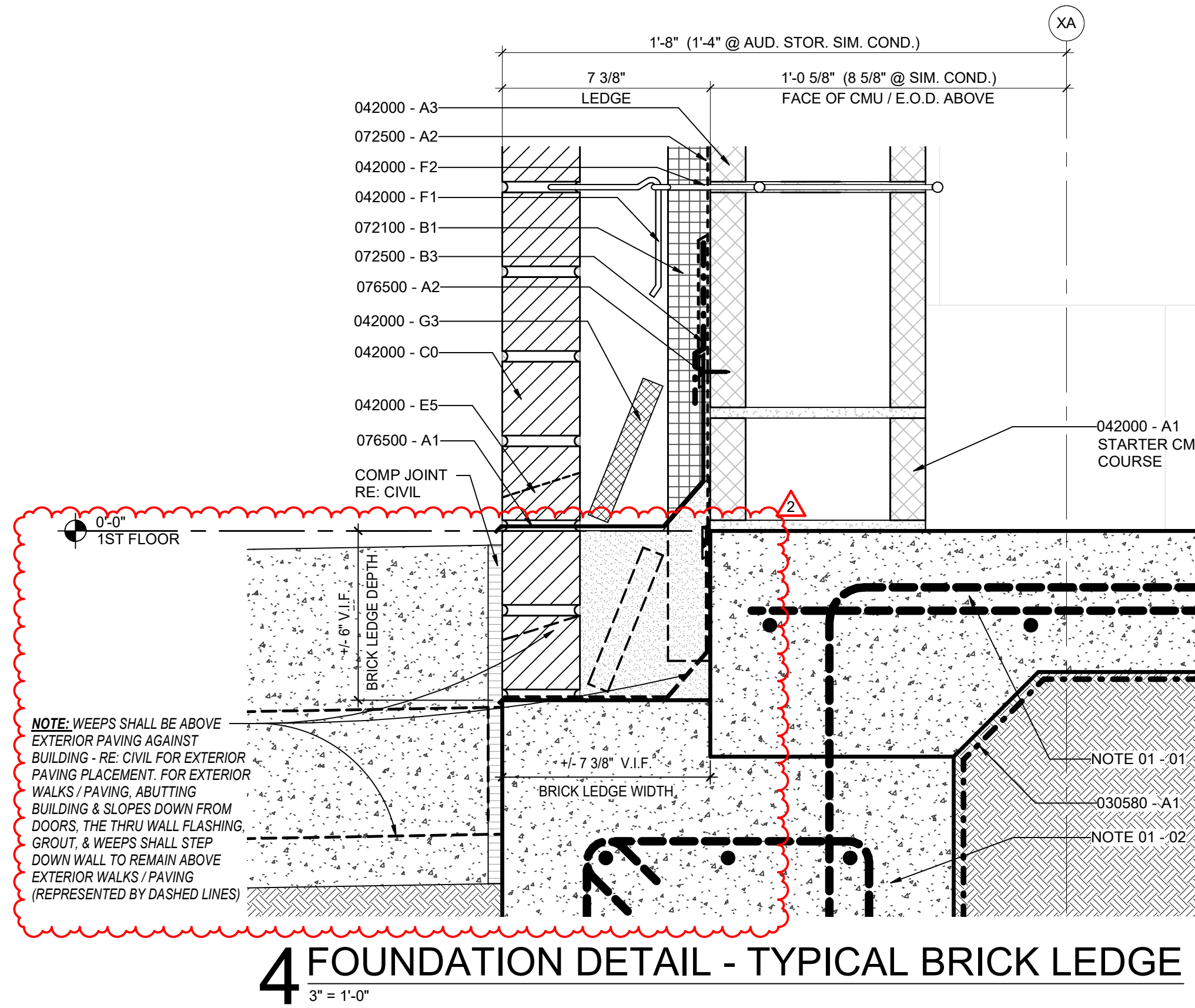
2024 CY-LAKES HIGH SCHOOL RENOVATION
5750 GREENHOUSE RD., KATY, TX 77449
CFISD PROJECT NO. 24-02-5749-R-RFP

NO.	REVISION / SUBMISSION	DATE
1	ADDENDUM 03	12.13.24
2	ADDENDUM 02	12.09.24
1	ADDENDUM 01	12.09.24

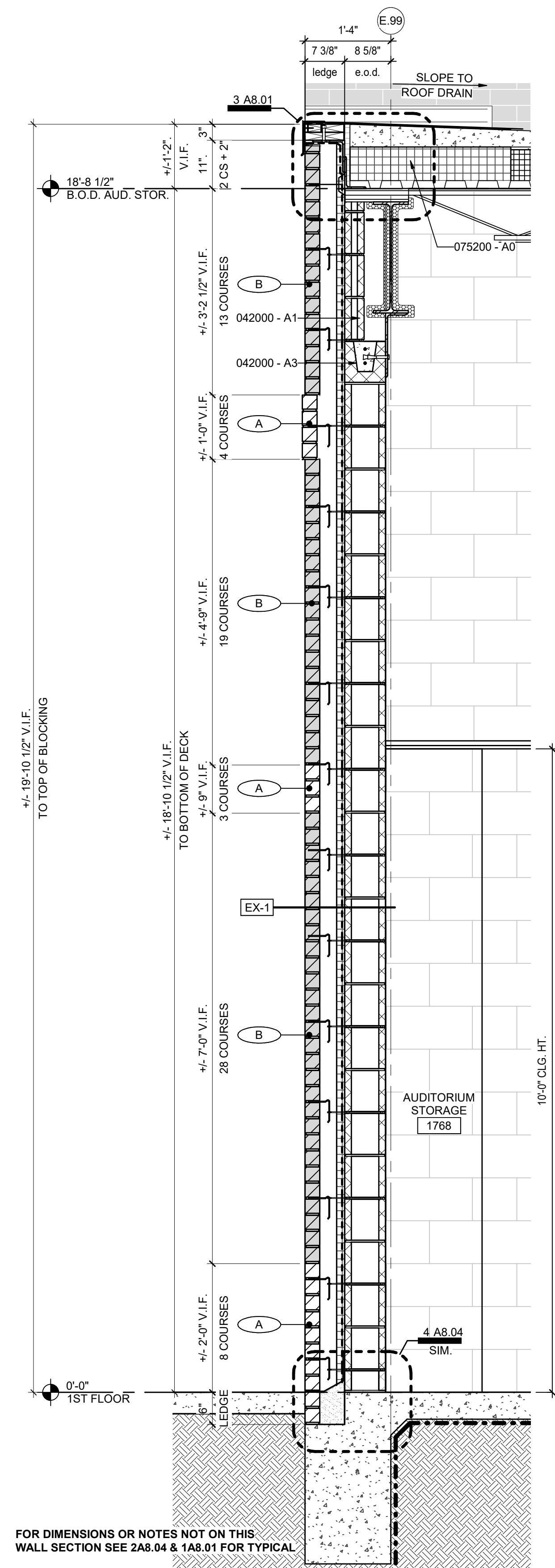
Project Number: 23071
Date: 11-17-2024
Drawn by: WHL / LLO

WALL SECTIONS & DETAILS

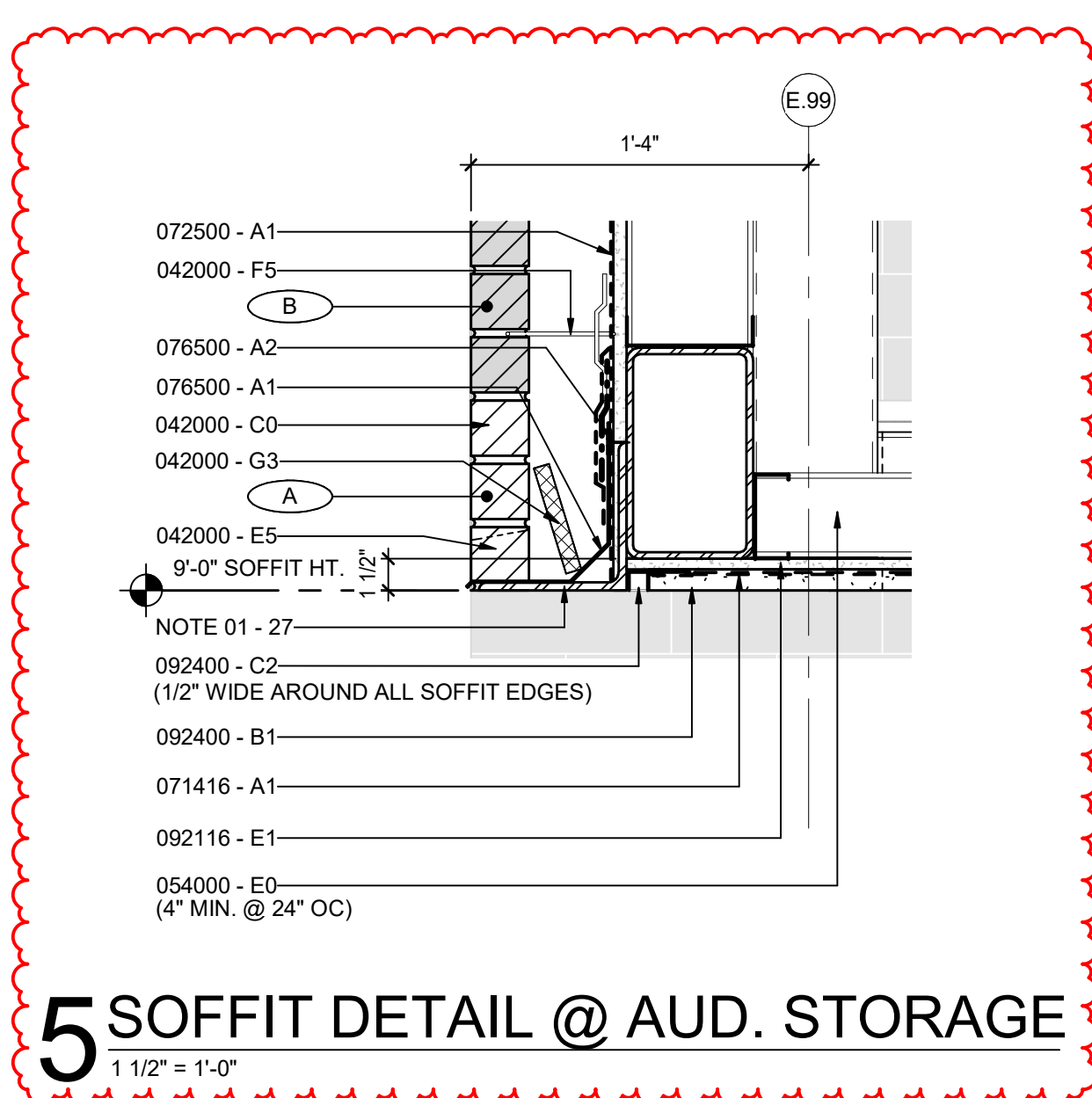
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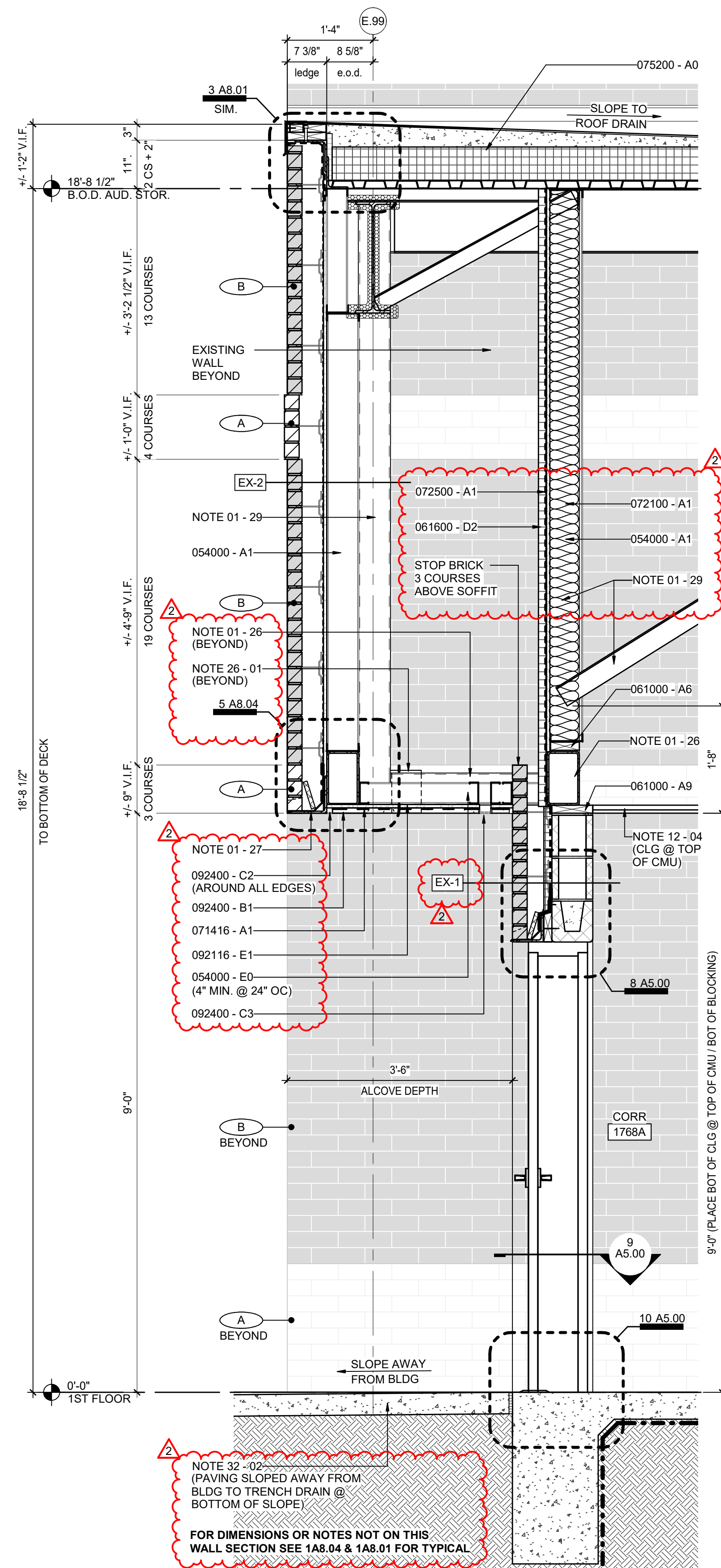
4 FOUNDATION DETAIL - TYPICAL BRICK LEDGE



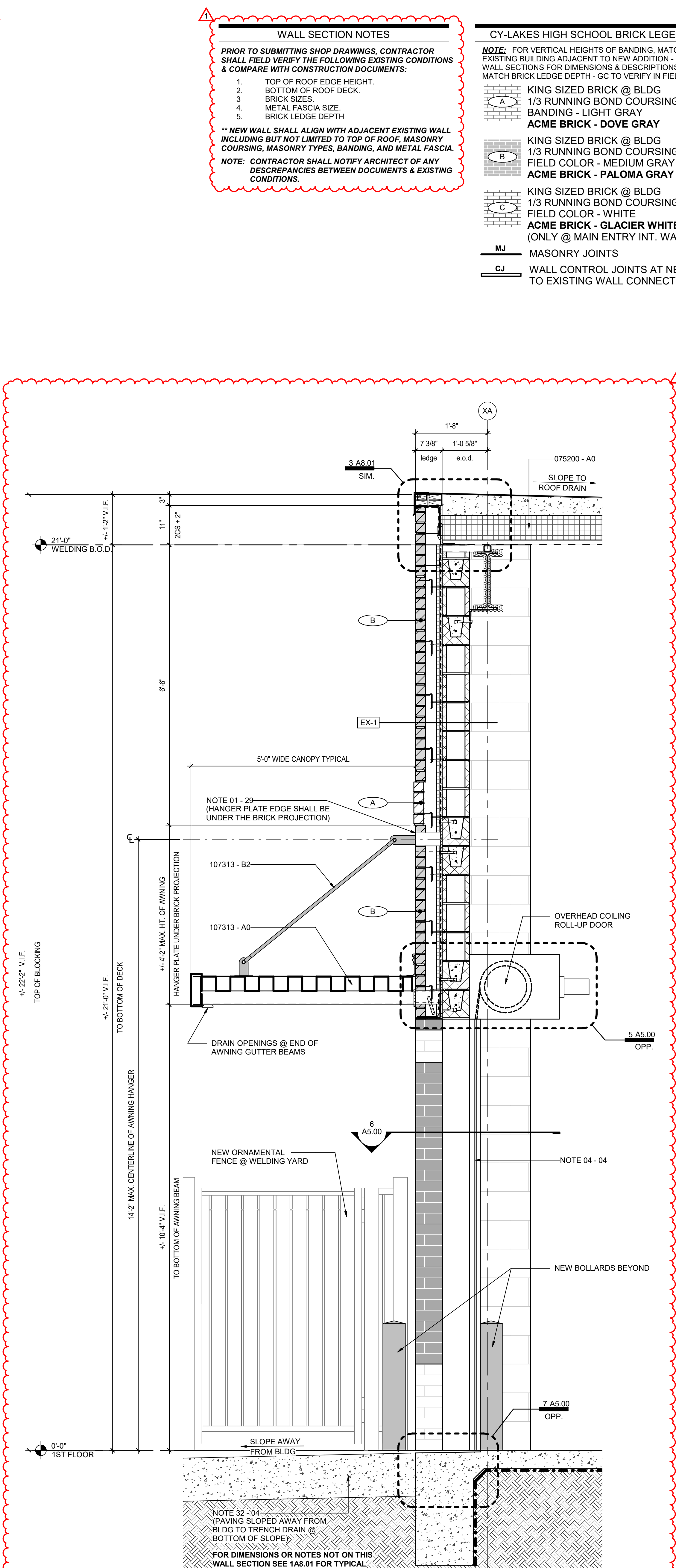
1 WALL SECTION - AUDITORIUM STOR.
3/4" = 1'-0"



5 SOFFIT DETAIL @ AUD. STORAGE
1 1/2" = 1'-0"



2 WALL SECTION - AUD. STOR. ALCOVE
3/4" = 1'-0"



3 WALL SECTION - TYPICAL AWNING
3/4" = 1'-0"

WALL SECTION NOTES
PRIOR TO SUBMITTING SHOP DRAWINGS, CONTRACTOR SHALL FIELD VERIFY THE FOLLOWING EXISTING CONDITIONS & COMPARE WITH CONSTRUCTION DOCUMENTS:
1. TOP OF ROOF EDGE HEIGHT.
2. BOTTOM OF ROOF DECK.
3. BRICK SIZES.
4. METAL FASCIA SIZE.
5. BRICK LEDGE DEPTH.
**NEW WALL SHALL ALIGN WITH ADJACENT EXISTING WALL INCLUDING BUT NOT LIMITED TO TOP OF ROOF, MASONRY COURSING, MASONRY TYPES, BANDING, AND METAL FASCIA.
NOTE: CONTRACTOR SHALL NOTIFY ARCHITECT OF ANY DISCREPANCIES BETWEEN DOCUMENTS & EXISTING CONDITIONS.

CY-LAKES HIGH SCHOOL BRICK LEGEND

NOTE: FOR VERTICAL HEIGHTS OF BANDING, MATCH EXISTING BUILDINGS ADJACENT TO NEW ADDITION - SEE WALL SECTIONS FOR DIMENSIONS & DESCRIPTIONS. MATCH BRICK LEDGE DEPTH - GC TO VERIFY IN FIELD.

A	KING SIZED BRICK @ BLDG 1/3 RUNNING BOND COURSING BANDING - LIGHT GRAY ACME BRICK - DOVE GRAY
B	KING SIZED BRICK @ BLDG 1/3 RUNNING BOND COURSING FIELD COLOR - MEDIUM GRAY ACME BRICK - PALOMA GRAY
C	KING SIZED BRICK @ BLDG 1/3 RUNNING BOND COURSING FIELD COLOR - WHITE ACME BRICK - GLACIER WHITE (ONLY @ MAIN ENTRY INT. WALL)
MJ	MASONRY JOINTS
CJ	WALL CONTROL JOINTS AT NEW TO EXISTING WALL CONNECTION

KEYNOTES

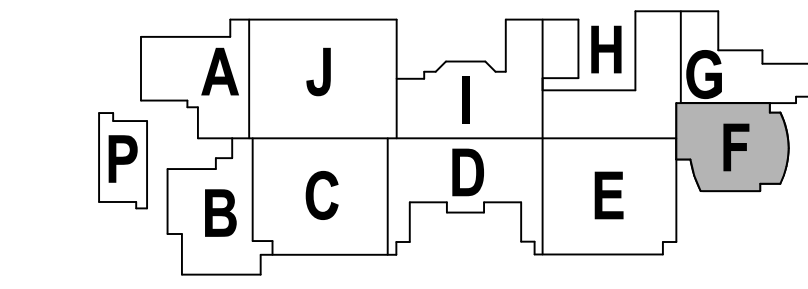
030580 - A1	UNDER-SLAB VAPOR RETARDER / BARRIER - RE: SPECIFICATIONS
042000 - A1	48X16 CONCRETE MASONRY UNIT - RE: STRUCT
042000 - A3	68X16 CONCRETE MASONRY UNIT - RE: STRUCT
042000 - C0	KING SIZED VENEER FACE BRICK - SEE ELEVATIONS FOR BANDING & COLOR
042000 - E1	AIR SPACE
042000 - E5	WEEP HOLES @ 24" OC - FILLED WITH MOLDED PVC GRILLE, INSECT RESISTANT
042000 - F1	ADJUSTABLE MASONRY VENEER WALL TIES AT 15" O.C. VERTICALLY MAX (16" O.C. STD BRICK) AND 16" O.C. HORIZONTALLY MAX - FOR UNEVEN WYTHES OF BRICK & CMU
042000 - F2	ADJUSTABLE HORIZONTAL TRUSS REINFORCEMENT WITH EYE-WIRE FOR ADJUSTABLE TIES @ 16" OC VERTICALLY MAX @ CMU - FOR WYTHES OF KING SIZED BRICK & STANDARD CMU
042000 - F5	ADJUSTABLE MASONRY WALL ANCHOR 15" EA WAY @ METAL STUD WALLS TYPICAL
042000 - G3	MORTAR NET TYPICAL AT ALL THRU WALL FLASHING
054000 - A1	1" METAL STUD WALL FRAMING (CFMF) - RE: STRUCTURAL
054000 - E0	COLD-FORMED METAL SOFFIT FRAMING (CFMF) - RE: STRUCTURAL
061000 - A6	2X TREATED WOOD BLOCKING OR NAILER (@ ROOFING SEE SPEC SECTION 061055)
061000 - A9	2X TREATED WOOD BLOCKING OR NAILER (@ ROOFING SEE SPEC SECTION 061055)
061600 - D2	5/8" GLASS-MAT GYPSUM SHEATHING BOARD - TYPE X
071416 - A1	COLD FLUID-APPLIED WATERPROOFING BATT INSULATION - THICKNESS SAME AS WALL FRAMING
072100 - B1	RIGID WALL INSULATION - 1-1/2" THICK IN WALL CAVITY - RE: SPECS
072500 - A1	FLUID APPLIED AIR BARRIER OVER EXTERIOR SHEATHING
072500 - A2	FLUID APPLIED AIR BARRIER OVER EXTERIOR CMU
072500 - B3	SELF-ADHERING TRANSITION MEMBRANE @ WALL CONNECTIONS
075200 - A0	SBS-MODIFIED BITUMINOUS MEMBRANE ROOFING OVER LIGHTWEIGHT INSULATED CONCRETE & SLOTTED METAL DECK SYSTEM. SLOPED 1/4" PER FOOT MIN. TO INTERNAL AND OVER/LOW DRAINS - RE: SPECS
076500 - A1	FLEXIBLE THRU-WALL FLASHING - STAINLESS STEEL CORE W/ POLYMER FABRIC LAMINATED TO BOTTOM OF SS FACE W/ ADHESIVE
076500 - A2	FLEXIBLE THRU-WALL FLASHING TERMINATION BAR & SEALANT
092116 - D1	5/8" GYPSUM BOARD FINISH - RE: SPECS
092116 - E1	5/8" GLASS-MAT GYPSUM BOARD SHEATHING - RE: SPECS
092400 - B1	7/8" PORTLAND CEMENT PLASTER SOFFIT
092400 - C2	PORTLAND CEMENT PLASTER TRIM - J MOLD EDGE SCHEDULE
092400 - C3	PORTLAND CEMENT PLASTER TRIM - 2" WIDE CONTINUOUS SOFFIT VENT PLACED 4" MIN. FROM SURFACE OF WALL
107313 - A0	PREFINISHED ALUMINUM WALKWAY COVER
107313 - B2	AWNING HANGER ROD - COORDINATE WITH STRUCTURAL
NOTE 01 - 01	CONCRETE SLAB - RE: STRUCTURAL
NOTE 01 - 02	FOUNDATION - RE: STRUCTURAL
NOTE 01 - 26	STEEL TUBE FRAMING - RE: STRUCTURAL
NOTE 01 - 27	STEEL BENT PLATE - RE: STRUCTURAL
NOTE 01 - 29	STRUCTURAL STEEL HANGERS ANCHORED TO STRUCTURE OR WALL - RE: STRUCTURAL
NOTE 04 - 04	OVERHEAD COILING DOOR - RE: DOOR SCHEDULE
NOTE 12 - 04	CEILING FINISH - RE: CEILING PLAN & FINISH SCHEDULE
NOTE 26 - 01	LIGHT FIXTURE - RE: ELECTRICAL
NOTE 32 - 02	CONCRETE SIDEWALK - RE: CIVIL
NOTE 32 - 04	CONCRETE PAVING - RE: CIVIL

EXTERIOR WALL TYPE KEY LEGEND

042000 - C0	
042000 - E1	
042000 - F1	
042000 - F2	
072100 - B1	
072500 - A2	
042000 - A3	
042000 - C0	
042000 - E1	
042000 - F5	
072500 - A1	
061600 - D2	
054000 - A1	
092116 - D1	

NOTE: ALL INTERIOR WALL TYPES ARE FOUND ON SHEET A4.20

KEY PLAN: CY-LAKES HIGH SCHOOL BUILDING



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CONSTRUCTION DOCUMENT



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2024 CY-LAKES HIGH SCHOOL RENOVATION
5750 GREENHOUSE RD., KATY, TX 77449
CFISD PROJECT NO. 24-02-5749-R-RFP

1	ADDENDUM 03	12.13.24
2	ADDENDUM 02	12.09.24

Revisions / Submission

Project Number: 23071
Date: 11-17-2024
Drawn by: WHL / KLO

WALL SECTIONS & DETAILS

A8.04

ELECTRICAL KEYED NOTES	
1	PROVIDE NEW CONTROLS IN THIS SPACE TO ENSURE EXISTING AND NEW LIGHTING FIXTURES ARE CONTROLLED TOGETHER.
2	PROVIDE POWER TO NEW LIGHTS FROM EXISTING LIGHTING CIRCUIT AS SHOWN. EXTEND CONDUIT AND WIRING AS NECESSARY.
3	REMOTE CENTRAL DRIVERS FOR HOUSE LIGHTING. FIELD VERIFY FINAL LOCATION IN THE SPACE. CONNECT NEW HOUSE LIGHTING DRIVERS TO EXISTING CONSTANT 120V CIRCUITS LEFT IN PLACE AFTER DEMOLITION, AND PROVIDE NEW CONTROLLED WIRING FROM EXISTING CONTROL SOURCE WITH ZONING AS SHOWN. EXTEND WIRING WITH MATCHING CONDUCTORS / CONDUIT TO REMOTE DRIVERS. PROVIDE DEDICATED REMOTE DRIVER UNITS FOR EMERGENCY FIXTURES. REFER TO SPECIFICATIONS AND DETAIL SHEETS.
4	PROVIDE POWER TO NEW EMERGENCY FIXTURES FROM CIRCUIT SHOWN. NEW EMERGENCY LIGHTS TO BE CONTROLLED VIA DIMMER/ATS EMERGENCY RELAY.
5	MOUNT NEW WORK LIGHT PENDANT FIXTURES BETWEEN THE EXISTING DUCT AND SUPPLY RETURN GRILLES IN THIS SPACE (DASHED LINE). COORDINATE FIXTURE MOUNTING WITH DUCT AND THEATRICAL RIGGING. FIXTURES TO BE MOUNTED AT A HEIGHT WHERE THE BOTTOM OF FIXTURE IS LEVEL WITH THE BOTTOM OF THE DUCT.
6	PROVIDE LISTED UL924 EMERGENCY LOAD CONTROL RELAY. PROVIDE POWER AND LIGHTING CONTROL TO NEW FIXTURES FROM EXISTING CIRCUIT AS SHOWN. CONDUIT AND WIRING FOR POWER AND CONTROLS TO BE CONCEALED WITHIN BUILDING ENVELOPE. EXTEND CONDUIT AND WIRING AS NECESSARY. NEW FIXTURES TO BE CONTROLLED WITH EXISTING FIXTURES USING EXISTING WATTSTOPPER RELAY.

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LINETYPE LEGEND	
	EXISTING TO REMAIN
	DISCONNECT AND REMOVE
	NEW WORK

PROVIDE NEW LIGHTING DEVICES AND SWITCH BOX EXTENSIONS IN ALL AREAS WHERE GYPSUM BOARD OR OTHER WALL COVERING ADDS TO THE THICKNESS OF WALLS. SEE ARCHITECTURAL DRAWINGS FOR AREAS AFFECTED.

EXISTING RACEWAYS AND LOCATION OF ELECTRICAL OUTLETS ON EXISTING WALLS TO REMAIN SHALL BE RE-USED AS PRACTICAL FOR NEW DEVICES AS PART OF NEW WORK.

PROVIDE (1) MOMENTARY BMCS OVERRIDE TIME-OUT SWITCH FOR BUILDING OCCUPIED/UNOCCUPIED ADJACENT TO OR IN THE BMCS MASTER PANEL, (1) MOMENTARY BMCS OVERRIDE TIME-OUT SWITCH FOR EXTERIOR FACADE LIGHTING ON/OFF AND (1) MOMENTARY BMCS OVERRIDE TIME-OUT SWITCH FOR PARKING LOT LIGHTING ON/OFF IN MAIN ELECTRICAL.

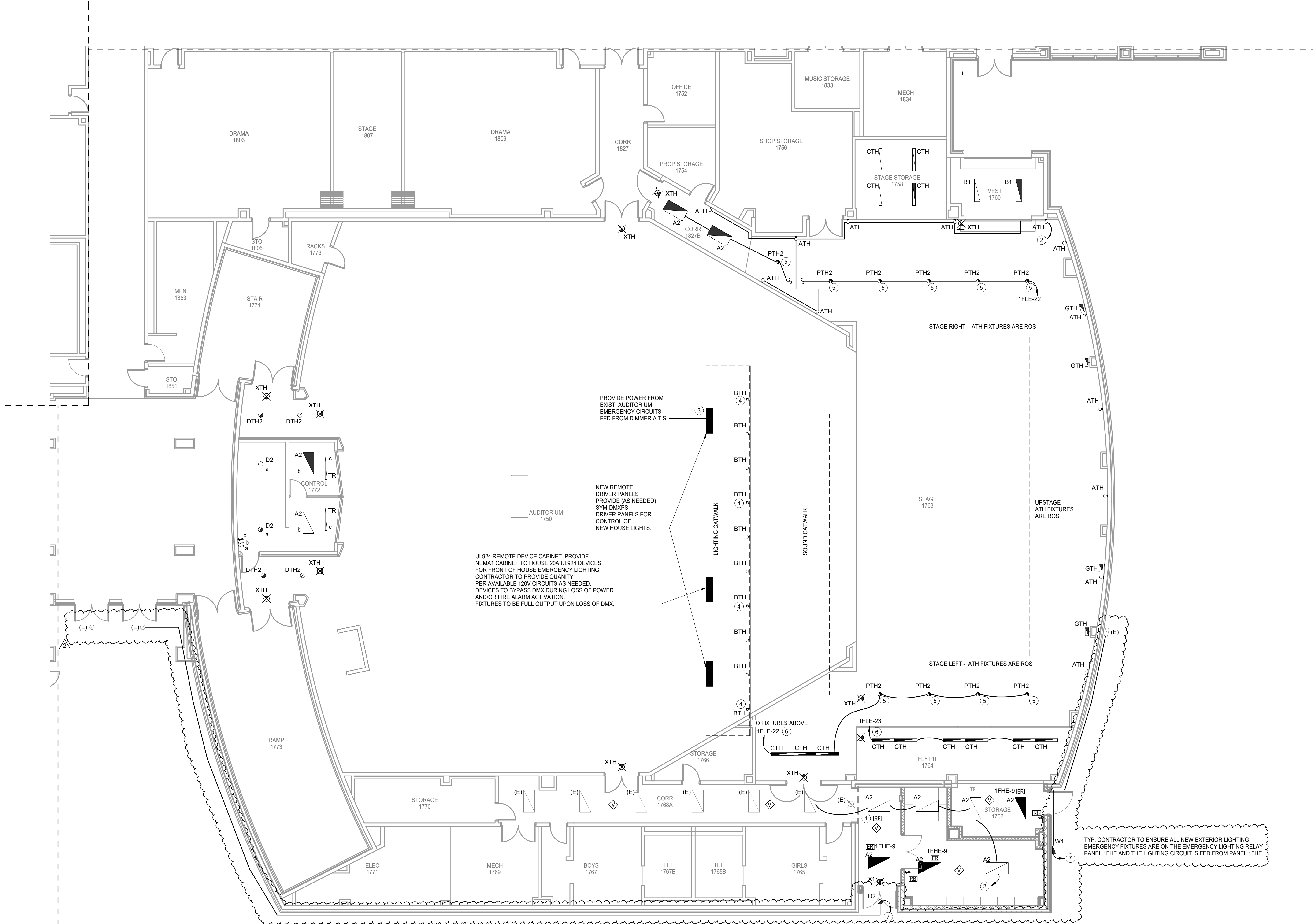
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CONTRACTOR TO PROVIDE NEW DMX CONTROL WIRING TO NEW THEATRICAL FIXTURES. COORDINATE REQUIREMENTS WITH THEATRICAL CONTRACTOR BEFORE INSTALLATION.

CONTRACTOR TO FIELD COORDINATE FINAL LOCATION OF ALL REPLACEMENT AND NEW LIGHTING FIXTURES WITH EXISTING CEILING MOUNTED DEVICES. AND TO NOTIFY ENGINEER IF THERE ARE ANY CONFLICTS BETWEEN EXISTING CONDITIONS AND THE NEW LIGHTING LAYOUT PRIOR TO COMMENCEMENT OF WORK.

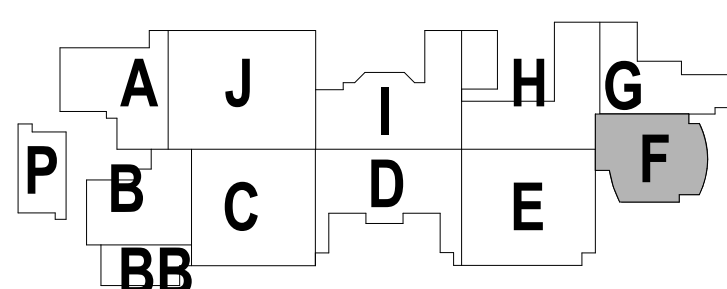
LIGHTING GENERAL NOTES

- REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION & MOUNTING HEIGHTS OF ALL LIGHTING FIXTURES SHOWN ON THIS DRAWING.
- ELECTRICAL CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY PROBLEMS PERTAINING TO CIRCUIT AVAILABILITY OR LOAD CAPACITY PRIOR TO INSTALLATION.
- ELECTRICAL CONTRACTOR SHALL CONFIRM COMPATIBILITY OF ALL LIGHTING CONTROL SYSTEMS.
- PROVIDE A CONSTANT HOT FROM PANEL BOARD DIRECTLY TO ALL EMERGENCY BATTERY PACKS IN EMERGENCY LIGHTING FIXTURES AND EXIT SIGNS. EMERGENCY LIGHTING FIXTURES SHALL TURN ON TO FULL BRIGHTNESS IN CASE OF POWER LOSS.
- ALL CLASSROOMS AND SPACES DO NOT REQUIRE DAYLIGHT HARVESTING CONTROLS, UNLESS NOTED ON PLAN. PER 2015 IECC 408.2.3 WATTAGE REQUIREMENT.
- CORRIDOR LIGHTING DOES NOT REQUIRE OCCUPANCY SENSING DEVICES AND/OR DAYLIGHT HARVESTING CONTROLS PER 2015 IECC 408.2 REGARDING EXIT PASSAGEWAYS AND SAFETY/SECURITY REQUIREMENTS.
- LOWER CASE LETTER INDICATES SWITCHING SCHEME.
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- LOCATION OF NEW / REPLACEMENT LIGHT FIXTURES SHALL RE-USE EXISTING J-BOX AND EXISTING LIGHT FIXTURE WHIPS AS PRACTICAL. EXTEND WIRING WITH MATCHING CONDUCTORS / CONDUIT AND PROVIDE NEW J-BOX ABOVE ACCESSIBLE CEILING WITH 1/2-INCH FLEXIBLE STEEL CONDUIT OR STEEL MC CABLE. LENGTH NOT TO EXCEED 6-FEET. "DAISY CHAINING" LIGHT FIXTURES INSTALLED FOR LAY-IN CEILING AREAS IS NOT ALLOWED. FOR NON-ACCESSIBLE CEILINGS, LIGHT FIXTURE WHIPS SHALL BE 1/2-INCH FLEXIBLE STEEL CONDUIT. LENGTH AS REQUIRED TO MAKE A TAP AT AN ACCESSIBLE J-BOX. RECESSED LIGHT FIXTURES IN NON-ACCESSIBLE CEILINGS MAY BE DAISY CHAINED USING THE LIGHT FIXTURE'S INTEGRAL, UL LISTED J-BOX OR INTERNAL WIRE WAY THAT IS ACCESSIBLE THROUGH FIXTURE FROM BELOW THE CEILING. REFER TO 26 05 33 CONDUIT SYSTEMS.
- LOCATE PLENUM RATED DIGITAL LIGHTING CONTROLLER ABOVE ACCESSIBLE CEILING DIRECTLY ABOVE SWITCH CONTROLLING THE SPACE. IN NON-ACCESSIBLE AND/OR HIGH CEILING AREAS, LOCATE PLENUM RATED DIGITAL LIGHTING CONTROLLER IN ADJACENT ANCILLARY AREA WITH ACCESSIBLE CEILING. IN AREAS WITH NO CEILING AND/OR EXTERIOR APPLICATIONS LOCATE ADJACENT TO PANEL SERVING THE LOAD. PROVIDE LABEL WITH WORDING IDENTIFYING ASSOCIATED SPACE PER SPECIFICATIONS.
- LOCATE PLENUM RATED DIGITAL LIGHTING CONTROLLER FOR CLASSROOMS ABOVE ACCESSIBLE CEILING IN CORRIDOR DIRECTLY OUTSIDE OF ENTRY DOOR. PROVIDE LABEL IDENTIFYING ASSOCIATED SPACE, GRID MARKERS WITH WORDING PER SPECIFICATIONS.
- OCCUPANCY/VACANCY SENSOR AND DAYLIGHTING SENSOR LOCATIONS INDICATE SPACE OR AREA CONTROLLED. CONTRACTOR TO PROVIDE ACTUAL QUANTITIES, TYPES, AND MOUNTING LOCATIONS AS REQUIRED.
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- COORDINATE LOCATION OF LIGHT FIXTURES IN ALL MECHANICAL AND ELECTRICAL ROOMS WITH MECHANICAL EQUIPMENT, PIPING, AND ALL OTHER TRADES.
- PROVIDE SEPARATE RACEWAY SYSTEMS FOR LIGHTING CONTROL SYSTEM. CONTROLS WIRING (DIMMERS OR OTHERWISE) SHALL NOT BE INSTALLED IN THE SAME RACEWAY AS LINE VOLTAGE. REFER TO 26 05 33.



1 ELECTRICAL LIGHTING FLOOR PLAN - LEVEL 1 - AREA F
 Scale: 1/8" = 1'-0"

KEY PLAN: CY-LAKES HIGH SCHOOL BUILDING



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2024 CY-LAKES HIGH SCHOOL RENOVATION
 5750 GREENHOUSE RD., KATY, TX 77449
 CFISD PROJECT NO. 24-02-5749-R-RFP

Revision	Submission
1	12/13/24
2	12/13/24

Project Number: 23071
 Date: 2024-11-17
 Drawn By: KJ

ELECTRICAL LIGHTING FIRST FLOOR PLAN - AREA F
E2.01

LINETYPE LEGEND

---	EXISTING TO REMAIN
- - -	DISCONNECT AND REMOVE
---	NEW WORK

PROVIDE NEW LIGHTING DEVICES AND SWITCH BOX EXTENSIONS IN ALL AREAS WHERE GYPSUM BOARD OR OTHER WALL COVERING ADDS TO THE THICKNESS OF WALLS. SEE ARCHITECTURAL DRAWINGS FOR AREAS AFFECTED.

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CONNECT NEW INTERIOR LIGHT FIXTURES AND/OR EXIT SIGNS TO EXISTING CIRCUITS LEFT IN PLACE AFTER DEMOLITION OR NEW AS SHOWN. EXTEND/RE-ROUTE WIRING WITH MATCHING CONDUCTORS/CONDUIT TO EXISTING LOCATION AND/OR NEW FIXTURES/LIGHTING CONTROLS. FIELD VERIFY CONNECTED LOAD ON EACH 20A BRANCH CIRCUIT NOT TO EXCEED 3500 W @ 277V. TYPICAL.

CONTRACTOR TO PROVIDE NEW DMX CONTROL WIRING TO NEW THEATRICAL FIXTURES. COORDINATE REQUIREMENTS WITH THEATRICAL CONTRACTOR BEFORE INSTALLATION.

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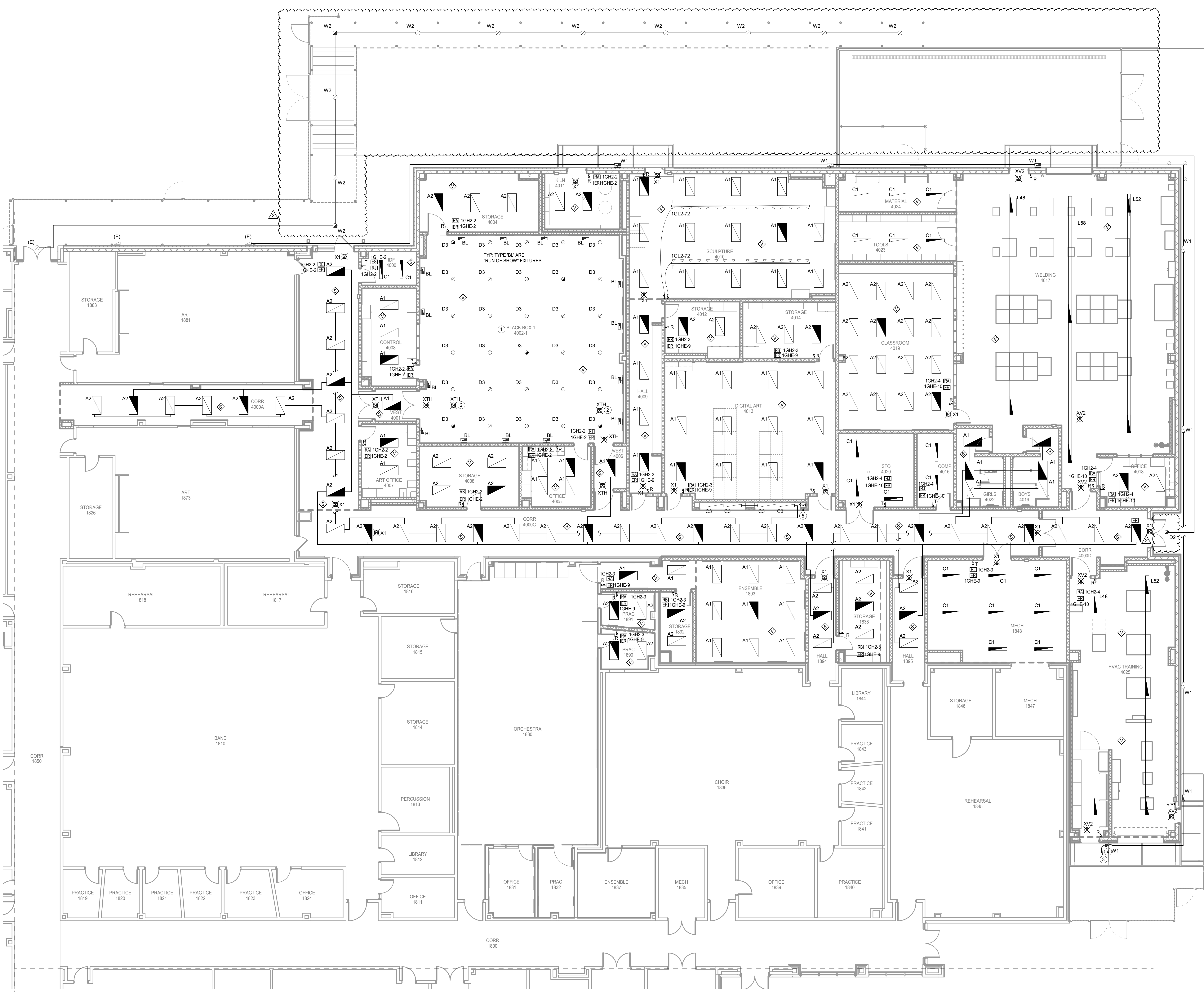
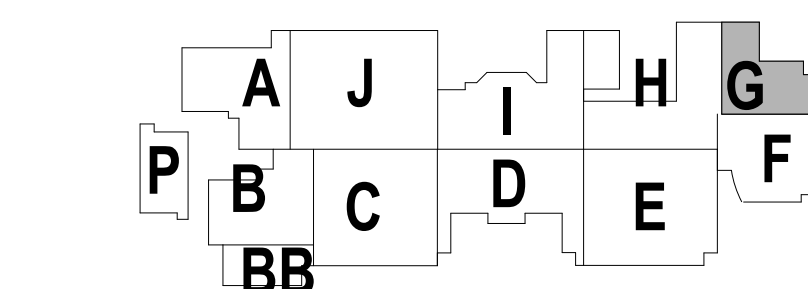
LIGHTING GENERAL NOTES

- REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION & MOUNTING HEIGHTS OF ALL LIGHTING FIXTURES SHOWN ON THIS DRAWING.
- ELECTRICAL CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY PROBLEMS PERTAINING TO CIRCUIT AVAILABILITY OR LOAD CAPACITY PRIOR TO INSTALLATION.
- ELECTRICAL CONTRACTOR SHALL CONFIRM COMPATIBILITY OF ALL LIGHTING CONTROL SYSTEMS.
- PROVIDE A CONSTANT HOT FROM PANEL BOARD DIRECTLY TO ALL EMERGENCY LIGHTING DEVICES AND/OR EXISTING LIGHTING DEVICES AND EXIT SIGNS. EMERGENCY LIGHTING FIXTURES SHALL TURN ON TO FULL BRIGHTNESS IN CASE OF POWER LOSS.
- ALL CLASSROOMS AND SPACES DO NOT REQUIRE DAYLIGHT HARVESTING CONTROLS. UNLESS NOTED ON PLAN, PER 2015 IECC C405.2.3 WATTAGE REQUIREMENT.
- CORRIDOR LIGHTING DOES NOT REQUIRE OCCUPANCY SENSING DEVICES AND/OR DAYLIGHT HARVESTING CONTROLS PER 2015 IECC C405.2 REGARDING EXIT PASSAGEWAYS AND SAFETY/SECURITY REQUIREMENTS.
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- LOCATE PLENUM RATED DIGITAL LIGHTING CONTROLLER ABOVE ACCESSIBLE CEILING DIRECTLY ABOVE SWITCH CONTROLLING THE SPACE. IN NON-ACCESSIBLE AND/OR HIGH CEILING AREAS, LOCATE PLENUM RATED DIGITAL LIGHTING CONTROLLER IN ADJACENT ANULLARY AREA WITH ACCESSIBLE CEILING. IN AREAS WITH NO CEILING AND/OR EXTERIOR APPLICATIONS LOCATE ADJACENT TO PANEL SERVING THE LOAD. PROVIDE LABEL WITH WORDING IDENTIFYING ASSOCIATED SPACE PER SPECIFICATIONS.
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- COORDINATE LOCATION OF LIGHT FIXTURES IN ALL MECHANICAL AND ELECTRICAL ROOMS WITH MECHANICAL EQUIPMENT, PIPING, AND ALL OTHER TRADES.
- PROVIDE SEPARATE RACEWAY SYSTEMS FOR LIGHTING CONTROL SYSTEM, CONTROL WIRING (DIMMERS OR OTHERWISE) SHALL NOT BE INSTALLED IN THE SAME RACEWAY AS LINE VOLTAGE. REFER TO 26 05 33.

ELECTRICAL KEYED NOTES

- MOUNT BOTTOM EDGE OF PENDANT FIXTURES LEVEL WITH PIPE GRID.
- MOUNT EXIT LIGHT FROM PIPE GRID. FIXTURE TO BE MOUNTED WITHIN CURTAIN AREA AND VISIBLE WHEN CURTAIN IS CLOSED.
- PROVIDE POWER AND LIGHTING CONTROL TO NEW FIXTURES FROM EXISTING CIRCUIT AS SHOWN. CONDUIT AND WIRING FOR POWER AND CONTROLS TO BE CONCEALED WITHIN BUILDING ENVELOPE. EXTEND CONDUIT AND WIRING AS NECESSARY. NEW FIXTURES TO BE CONTROLLED WITH EXISTING FIXTURE(S) USING EXISTING WATTSTOPPER RELAY.
- CONTRACTOR TO ENSURE NEW EXTERIOR LIGHTING FIXTURES ARE ON THE EMERGENCY LIGHTING RELAY PANEL 1GR AND THE LIGHTING CIRCUIT IS FED FROM EMERGENCY PANEL 1GHE.
- DISPLAY CASE LIGHTING TO BE CONTROLLED WITH CORRIDOR LIGHTS ON BMCS SYSTEM. CIRCUIT LIGHTING TO CORRIDOR SWITCHED LEG AND WITH ADDITIONAL LINE VOLTAGE KEY SWITCH LABELED AS "CASE LTC".

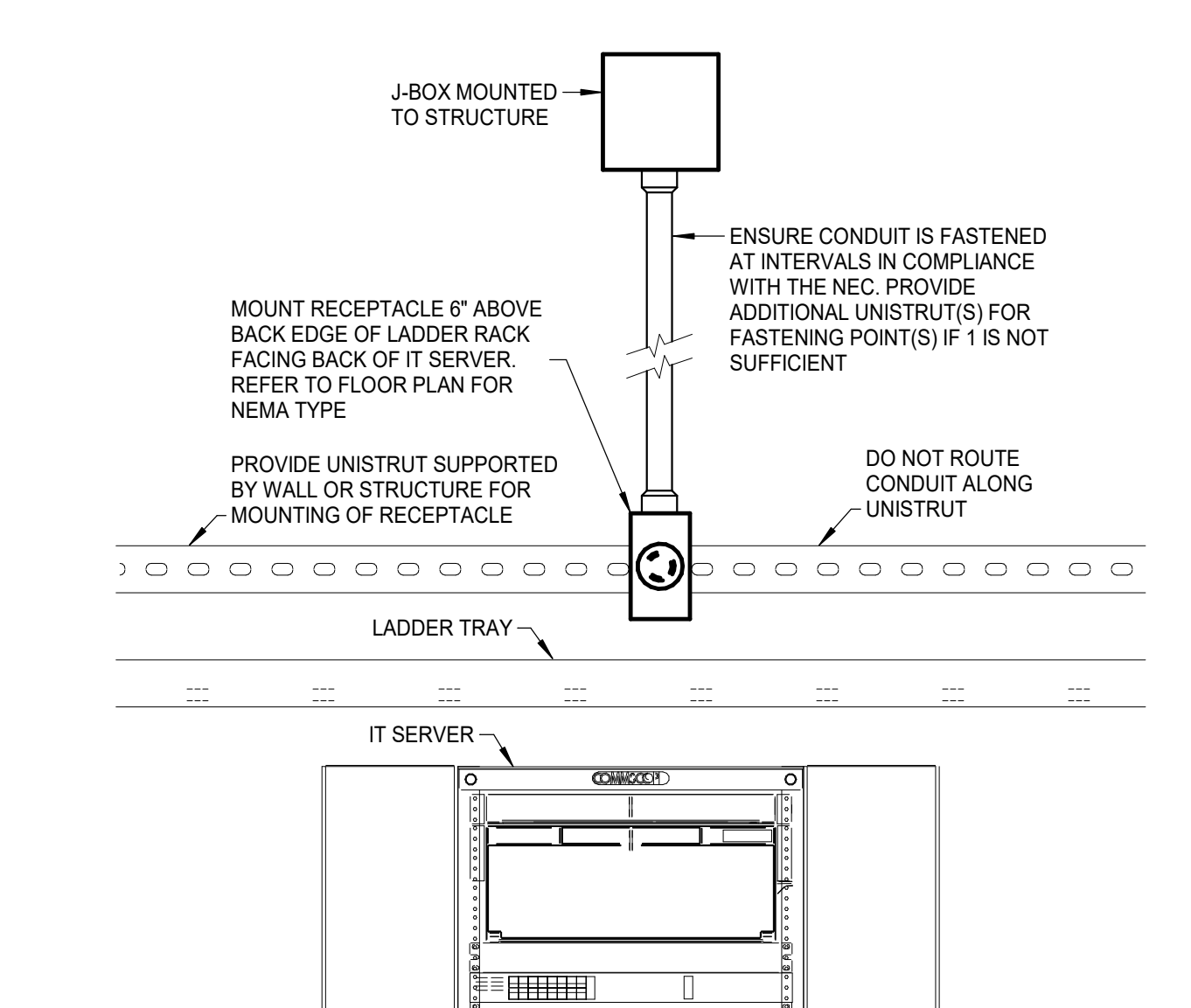
KEY PLAN: CY-LAKES HIGH SCHOOL BUILDING



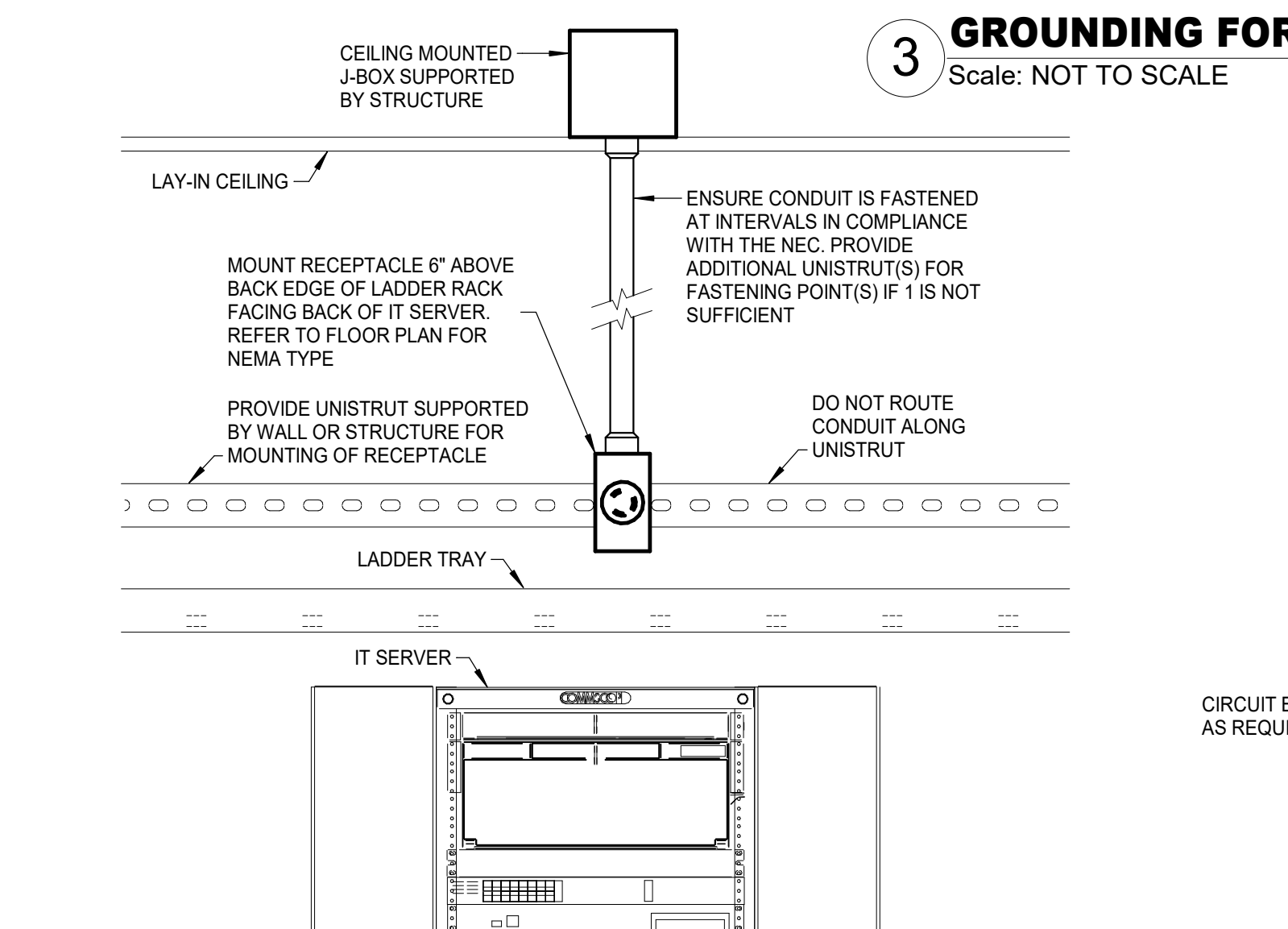
LIGHTING FIXTURE SCHEDULE										
Type Mark	MANUFACTURER	CATALOG NUMBER	MODEL	MOUNTING	LAMP TYPE	CCT	CRI	VOLTAGE	LOAD	REMARKS
A1	DAYBRITE	2-FPZ-48L-840-4-DS-UNV-DIM	RECESSED	4800L LED	4000 K	80	277 V	37 W	30 W	LED 2x4' FLAT PANEL TROFFER, ACRYLIC DIFFUSER, 0-10V DIMMING DRIVER, DLC CERTIFIED.
A2	DAYBRITE	2-FPZ-48L-840-4-DS-UNV-DIM	RECESSED	4300L LED	4000 K	80	277 V	30 W	30 W	LED 2x4' FLAT PANEL TROFFER, ACRYLIC DIFFUSER, 0-10V DIMMING DRIVER, DLC CERTIFIED.
A2L	DAYBRITE	2-FPZ-48L-840-4-DS-UNV-DIM	RECESSED	4300L LED	4000 K	80	120 V	30 W	30 W	LED 2x4' FLAT PANEL TROFFER, ACRYLIC DIFFUSER, 0-10V DIMMING DRIVER, DLC CERTIFIED.
A2LE	DAYBRITE	2-FPZ-48L-840-4-DS-UNV-DIM-BSL10LST	RECESSED	4300L LED	4000 K	80	120 V	30 W	30 W	LED 2x4' FLAT PANEL TROFFER, ACRYLIC DIFFUSER, 0-10V DIMMING DRIVER, DLC CERTIFIED.
A3	DAYBRITE	2-FPZ-36L-840-2-DS-UNV-DIM	RECESSED	3600L LED	4000 K	80	277 V	34 W	30 W	LED 2x4' FLAT PANEL TROFFER, ACRYLIC DIFFUSER, 0-10V DIMMING DRIVER, DLC CERTIFIED.
ATH	ZANIBONI	LARS3-13W-RW-B-C-8K-X0	WALL	944L LED	RGWB	80	120 V	13 W	13 W	LED 5" CYLINDER WALL MOUNT DOWNLIGHT WITH BLACK HOUSING, RGWB WITH DMX CONTROL AND 60 DEGREE BEAM. MOUNTING HEIGHT TO MATCH EXISTING FIXTURES. PROVIDE RGB FIXTURE WITH DMX CONTROLS. FIXTURE USE FOR RUN OF SHOW DEFAULT RGB COLOR SETTINGS TO BE BLUE.
B1	DAYBRITE	1FPZ-36L-840-4-ADS-UNV-DIM	RECESSED	3600L LED	4000 K	80	277 V	0 W	0 W	ECONOMY 1X4 FLAT NESTED TROFFER, ACRYLIC DIFFUSER, 0-10V DIMMING DRIVER, DLC CERTIFIED.
BL	ETC	BLUEDOME-850D-F-8SEL	WALL	870L LED	4000 K	80	277 V	8 W	8 W	BLUEDOME RUN OF SHOW LIGHTS. PROVIDE WITH DMX LOW VOLTAGE POWER SUPPLY AND VEHICLE ACCESSORY. PROVIDE (1) RECESSED RACO 4 SQUARE BACK BOX AT 24" AFF.
BTH	STONCO	VVXL-14-NW-G1-8	WALL	1390L LED	4000 K	80	120 V	14 W	14 W	LED 6" VAPOR TIGHT AIR LIGHT, WALL MOUNT DOWNLIGHT MOUNTING HEIGHT TO MATCH EXISTING FIXTURES. DLC CERTIFIED.
C1	DAYBRITE	FSS4-40L-840-UNV-DIMFKR-126FSSWG4	SURFACE / CHAIN HANG	4000L LED	4000 K	80	277 V	30 W	30 W	LED 4-FEET STRIP, ACRYLIC LENS, 0-10V DIMMING DRIVER, DLC CERTIFIED. PROVIDE WITH WIREGUARD.
C1L	DAYBRITE	FSS4-40L-840-UNV-DIMFKR-126FSSWG4	SURFACE / CHAIN HANG	4000L LED	4000 K	80	120 V	30 W	30 W	LED 4-FEET STRIP, ACRYLIC LENS, 0-10V DIMMING DRIVER, DLC CERTIFIED. PROVIDE WITH WIREGUARD.
C1LE	DAYBRITE	FSS4-40L-840-UNV-DIMFKR-126FSSWG4	SURFACE / CHAIN HANG	4000L LED	4000 K	80	120 V	30 W	30 W	LED 4-FEET STRIP, ACRYLIC LENS, 0-10V DIMMING DRIVER, DLC CERTIFIED. PROVIDE EMERGENCY BATTERY BACKUP. PROVIDE WITH WIREGUARD.
C2L	DAYBRITE	VRV7LED-LD5-9-DR-UNV-L840	SURFACE/SU SPENDED	9000L LED	4000 K	80	120 V	64 W	64 W	LED 1x4' LUMINAIRE, STANDARD 0-10V DIMMING, DLC CERTIFIED, IP65 WET RATED, VANDAL RESISTANT HOUSING.
C2LE	DAYBRITE	VRV7LED-LD5-9-DR-UNV-L840-EL10W	SURFACE/SU SPENDED	9000L LED	4000 K	80	120 V	64 W	64 W	LED 1x4' LUMINAIRE, STANDARD 0-10V DIMMING, DLC CERTIFIED, IP65 WET RATED, VANDAL RESISTANT HOUSING.
C3	INSIGHT	PCM-5-40K-120-SM-48-UNV-DIM-MG-FL	SURFACE	1925L LED	4000 K	80	277 V	64 W	64 W	LED 4' LINEAR DISPLAY CASE STRIP LIGHTING WITH 0-10V DIMMING DRIVER.
CTH	DAYBRITE	FSS4-40L-835-UNV-DIMFKR-126FSSWG4	SURFACE / CHAIN HANG	4000L LED	3500 K	80	120 V	30 W	30 W	LED 4-FEET STRIP, ACRYLIC LENS, 0-10V DIMMING DRIVER, DLC CERTIFIED. PROVIDE WITH WIREGUARD.
D2	LIGHTOLIER	6RN/PR-DL-30-940-M-CC-Z10-U	RECESSED	3000L LED	4000 K	80	277 V	30 W	30 W	LED 6" RECESSED CAN LIGHT 0-10V DIMMING DRIVER, DLC CERTIFIED.
D3	LIGHTOLIER	6RN/PR-DL-30-940-M-CC-BK-Z10-U	RECESSED	5000L LED	4000 K	80	277 V	42 W	42 W	LED 6" RECESSED CAN LIGHT, BLACK REFLECTOR AND BLACK TRIM, 0-10V DIMMING DRIVER, DLC CERTIFIED.
DTH	LIGHTOLIER	6RN/PR-DL-30-835-M-CC-BK-Z10-U	RECESSED	3000L LED	3500 K	80	120 V	30 W	30 W	LED 6" RECESSED CAN LIGHT, BLACK REFLECTOR AND BLACK TRIM, 0-10V DIMMING DRIVER, DLC CERTIFIED.
DTH2	LIGHTOLIER	CALCULITE - C2RPC-DL-15-935-NS-UPZ1-U-B	RECESSED	1500L LED	3500 K	90	120 V	25 W	25 W	LED 2" PENDANT DOWNLIGHT CYLINDER THEATRICAL ACCENT LIGHTING FIXTURE, 0-10V DIMMING DRIVER.
GTH	GARCOO	GVM-407-840-T3M-UNV-BK	WALL	4000L LED	4000 K	80	120 V	23 W	23 W	LED ARCHITECTURAL WALLPAK, BLACK HOUSING, COORDINATE FINISH WITH ARCHITECT, DLC CERTIFIED.
L48	CORELITE	SQ4-F-0U-1000-840-1-D-E-UNV-STD.	PENDANT	983 LUMEN/FT LED	4000 K	80	277 V	400 W	400 W	DIRECT/INDIRECT CONTINUOUS RUN PENDANT FIXTURE. VERIFY EXACT CABLE LENGTH WITH OWNER.
L52	CORELITE	SQ4-F-0U-1000-840-1-D-E-UNV-STD.	PENDANT	983 LUMEN/FT LED	4000 K	80	277 V	600 W	600 W	DIRECT/INDIRECT CONTINUOUS RUN PENDANT FIXTURE. VERIFY EXACT CABLE LENGTH WITH OWNER.
L58	CORELITE	SQ4-F-0U-1000-840-1-D-E-UNV-STD.	PENDANT	983 LUMEN/FT LED	4000 K	80	277 V	500 W	500 W	DIRECT/INDIRECT CONTINUOUS RUN PENDANT FIXTURE. VERIFY EXACT CABLE LENGTH WITH OWNER.
MTH	SSRC	LED-RL-8-1B-1W-2-DIM	SURFACE / CHAIN HANG	4000L LED	4000 K	80	120 V	50 W	50 W	LED 8-FEET INDEX RAIL LIGHT STRIP, (1) WHITE STRIP LIGHT AND (1) BLUE STRIP LIGHT, POLYCARBONATE LENS, WITH IRL DIMMER CONTROL BOX.
PTH	KIRLIN	SSR-0620-4000L-3600K-MFL-38-ASB	PENDANT	4000L LED	3500 K	90	120 V	42 W	42 W	LED 6" PENDANT MOUNT DIRECT LED 48" BLACK HOUSING, DMX CONTROL, MEDIUM BEAM.
PTH2	LIGHTOLIER	CALCULITE - CG-F-DL-35-835-M-DMX-U-BK-B	PENDANT	3500L LED	3500 K	90	120 V	30 W	30 W	LED 6" PENDANT MOUNT DIRECT LED 48" BLACK HOUSING, DMX CONTROL.
T	LIGHTOLIER	6002/9630	SURFACE	TRACK HEAD AS SPECIFIED	4000 K	80	120 V	120 W	120 W	TRACK LIGHTING PROVIDE 16 HEADS PER EACH RUN OF TRACK AS SHOWN ON PLANS. PROVIDE 60 WATT A19 LAMP FOR EACH HEAD. PROVIDE WATSTOPPER MPL-101 LOAD CONTROLLER FOR EACH LENGTH OF TRACK.
TR	LIGHTOLIER	LC-L-10-940-BK-LLM-RF	TRACK	TRACK HEAD AS SPECIFIED	4000 K	80	120 V	30 W	30 W	TRACK LIGHTING PROVIDE THREE HEADS AND NEW 3' TRACK, PROVIDE WITH WIREGUARD.
W1	LUMARK	WPSQLED-7500-840-T3M-UNV	WALL	7500L LED	4000 K	80	277 V	30 W	30 W	LED ARCHITECTURAL WALLPAK, ALUMINUM HOUSING, COORDINATE FINISH WITH EXISTING EXTERIOR FIXTURES. DLC CERTIFIED.
W1L	LUMARK	WPSQLED-7500-840-T3M-UNV	WALL	7500L LED	4000 K	80	120 V	40 W	40 W	LED ARCHITECTURAL WALLPAK, ALUMINUM HOUSING, COORDINATE FINISH WITH EXISTING EXTERIOR FIXTURES. DLC CERTIFIED PROVIDE INTEGRAL EMERGENCY BATTERY PACK.
W1LE	LUMARK	WPSQLED-7500-840-T3M-UNV-EC	WALL	7500L LED	4000 K	80	120 V	40 W	40 W	LED ARCHITECTURAL WALLPAK, ALUMINUM HOUSING, COORDINATE FINISH WITH EXISTING EXTERIOR FIXTURES. DLC CERTIFIED PROVIDE INTEGRAL EMERGENCY BATTERY PACK.
W2	FAILSAFE	TROT1-LD4-28V-40-0PL-X-UNV-EDCT	SURFACE	1895L LED	4000 K	80	277 V	28 W	28 W	LED 11-INCH ARCHITECTURAL ROUND FIXTURE, SURFACE MOUNTED, WET LOCATION LISTED, ALUMINUM HOUSING, POLYCARBONATE LENS, COORDINATE FINISH WITH ARCHITECT, DLC CERTIFIED.
X1	EMERGLITE	PRESTIGE X40	UNIVERSAL	LED	4000 K	80	277 V	3 W	3 W	UNIVERSAL LED EXIT SIGN WITH BLACK HOUSING, RED LETTERING AND EMERGENCY BATTERY BACKUP.
XTH	EMERGLITE	SVX-BB-R	UNIVERSAL	LED	4000 K	80	277 V	3 W	3 W	UNIVERSAL LED EXIT SIGN WITH BLACK VANDAL-RESISTANT HOUSING, RED LETTERING AND EMERGENCY BATTERY BACKUP.
XV2	EMERGLITE	SVX-BB-R	UNIVERSAL	LED	4000 K	80	277 V	3 W	3 W	DOUBLE-FACED VANDAL RESISTANT EXIT SIGN, WHITE HOUSING, RED LETTERING, PROVIDE CHEVRON DIRECTIONAL ARROWS PER PLANS OR AS DIRECTED BY AHJ.

- FIXTURES SHOWN ON THE FLOORPLAN HAVING A DESIGNATION OF "E" FOLLOWING THE BASE DESIGNATION (I.E. A FIXTURE TYPE "AE, CE, FE) AND/OR A HALF SHADED REGION SHALL BE THE BASE FIXTURE TYPE EQUIPPED WITH THE APPROPRIATE BATTERY BACKUP. BATTERY BACK-UPS SHALL BE INTEGRAL TO THE FIXTURE AND REMOTE SHALL BE SELECTED ONLY IN INSTANCES WHERE IT IS SPECIFIED OR WHEN IT IS THE ONLY AVAILABLE EMERGENCY OPTION. THE LOCATION OF REMOTE BATTERY BACKUPS SHALL BE SELECTED BY THE OWNER/ARCHITECT PRIOR TO INSTALLATION BY THE CONTRACTOR.
- REFER TO THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS NOT INDICATED IN THE LIGHTING FIXTURE SCHEDULE. WHERE THERE IS AN INCONSISTENCY BETWEEN THE LIGHTING FIXTURE SCHEDULE AND THE SPECIFICATIONS, THE GREATER QUANTITY OR HIGHER QUALITY OF WORK SHALL BE THE PROPOSAL.
- UNLESS OTHERWISE INDICATED ON THE SCHEDULE ABOVE, THE ARCHITECT/OWNER SHALL SELECT ALL FINISHES, COLORS, AND TRIMS.
- ALL LED FIXTURE BOARDS AND DRIVERS SHALL BE OF THE LATEST GENERATION, BASED UPON THE INDIVIDUAL MANUFACTURERS' STATED LITERATURE. IF A "GEN 5" IS AVAILABLE, "GEN 4" FIXTURES ARE NOT ACCEPTABLE.
- EXIT SIGNS AND EMERGENCY BATTERY BACK-UPS SHALL BE CONNECTED TO THE NEAREST LIGHTING CIRCUIT AHEAD OF ALL SWITCHING AS REQUIRED TO MAINTAIN THE BATTERIES AT FULL CHARGE. THE CONTRACTOR SHALL PROVIDE ALL ADDITIONAL WIRING AS REQUIRED.
- LIGHTING FIXTURE MANUFACTURERS OTHER THAN THOSE LISTED IN THE LIGHTING FIXTURE SCHEDULE AND DESIRING TO BID THIS PROJECT SHALL REQUEST PRIOR APPROVAL OF THE FIXTURES THEY WISH TO SUBSTITUTE. PRIOR APPROVAL REQUEST SHALL INCLUDE FIXTURE CUT SHEETS.
- FOR PRIOR APPROVALS AND SUBMITTALS THAT DEVIATE FROM NOMINAL WATTAGE AND/OR DELIVERED LUMENS, IT SHALL BE UP TO THE ENGINEER'S SOLE DISCRETION TO APPROVE OR DECLINE THESE FIXTURES BASED ON ANY AND ALL FACTORS INCLUDING BUT NOT LIMITED TO INTENDED LIGHTING LEVELS FOR EACH SPACE AND IMPACT ON THE OVERALL ELECTRICAL SYSTEM.
- THE CONTRACTOR SHALL PROVIDE ALL HARDWARE AND ACCESSORIES AS REQUIRED TO INSTALL FIXTURES AS ILLUSTRATED WITH MOUNTING METHODS DESIRED.
- WHEN A UNIVERSAL (120-277V) VOLTAGE OPTION IS AVAILABLE, IT SHALL BE PROVIDED. OTHERWISE PROVIDE AS INDICATED IN SCHEDULE.
- FOR ALL SUSPENDED FIXTURES, COORDINATE THE EXACT MOUNTING ELEVATION ABOVE FINISHED FLOOR WITH ARCHITECT PRIOR TO INSTALLATION. PROVIDE SUSPENSION HARDWARE IN LENGTHS AS REQUIRED.

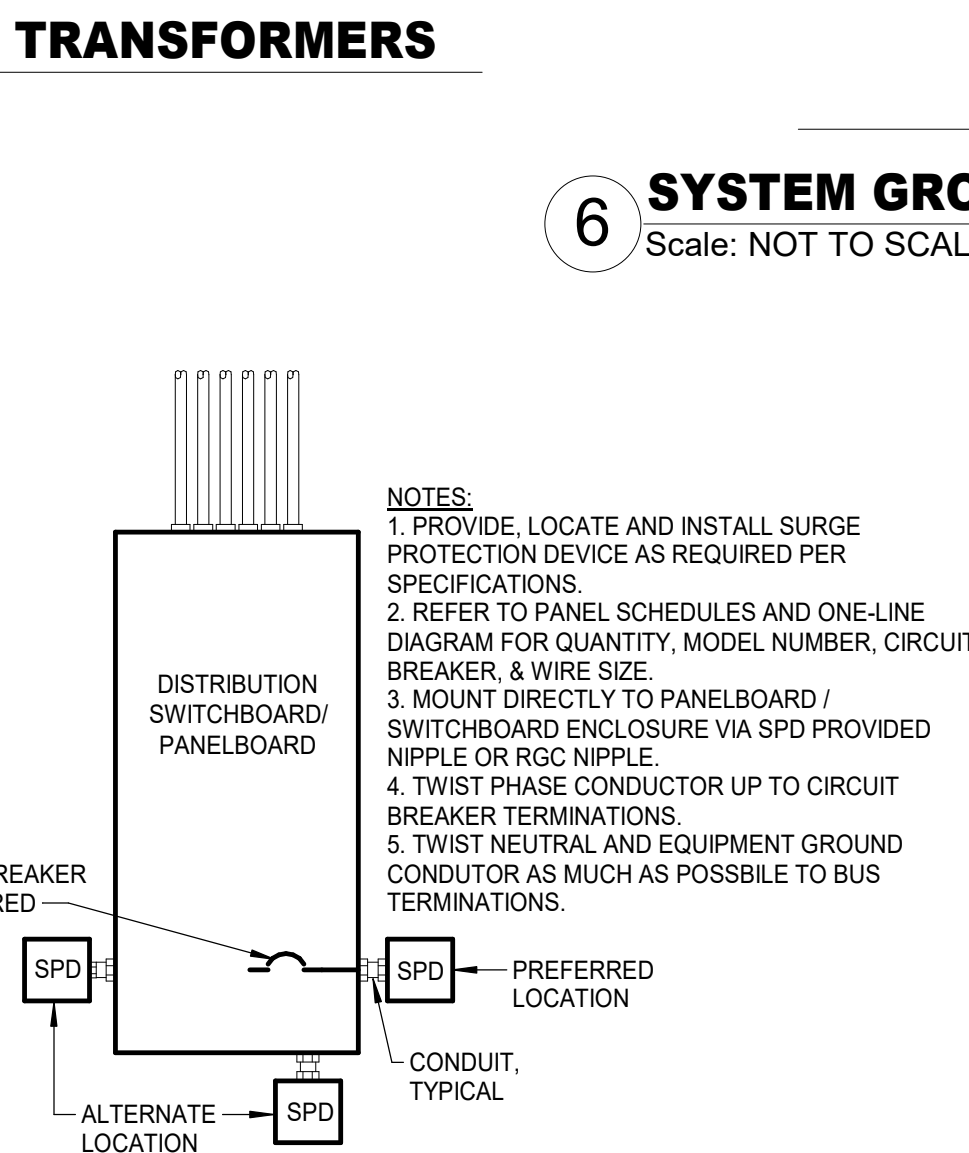
APPROVED LIGHTING MANUFACTURERS:
 SURFACE / RECESSED LIGHTING: SIGNIFY, LITHONIA, METALUX, AXIS, CURRENT, PINNACLE, H.E. WILLIAMS, CREE, NULITE, ALW DOWN / TRACK LIGHTING: GOTHAM, LIGHTOLIER, PORTFOLIO, CREE, CURRENT, INDY, H.E. WILLIAMS
 ARCHITECTURAL WALLPAK: LITHONIA, VISIONAIRE, CURRENT, GARCOO, McGRAW EDISON, HUBBELL, LSI, LUMARK, LIGMAN
 EXIT SIGNAGE: CHLORIDE, LITHONIA, EMERGLITE, DUAL-LITE, SURE-LITES, EVENLITE



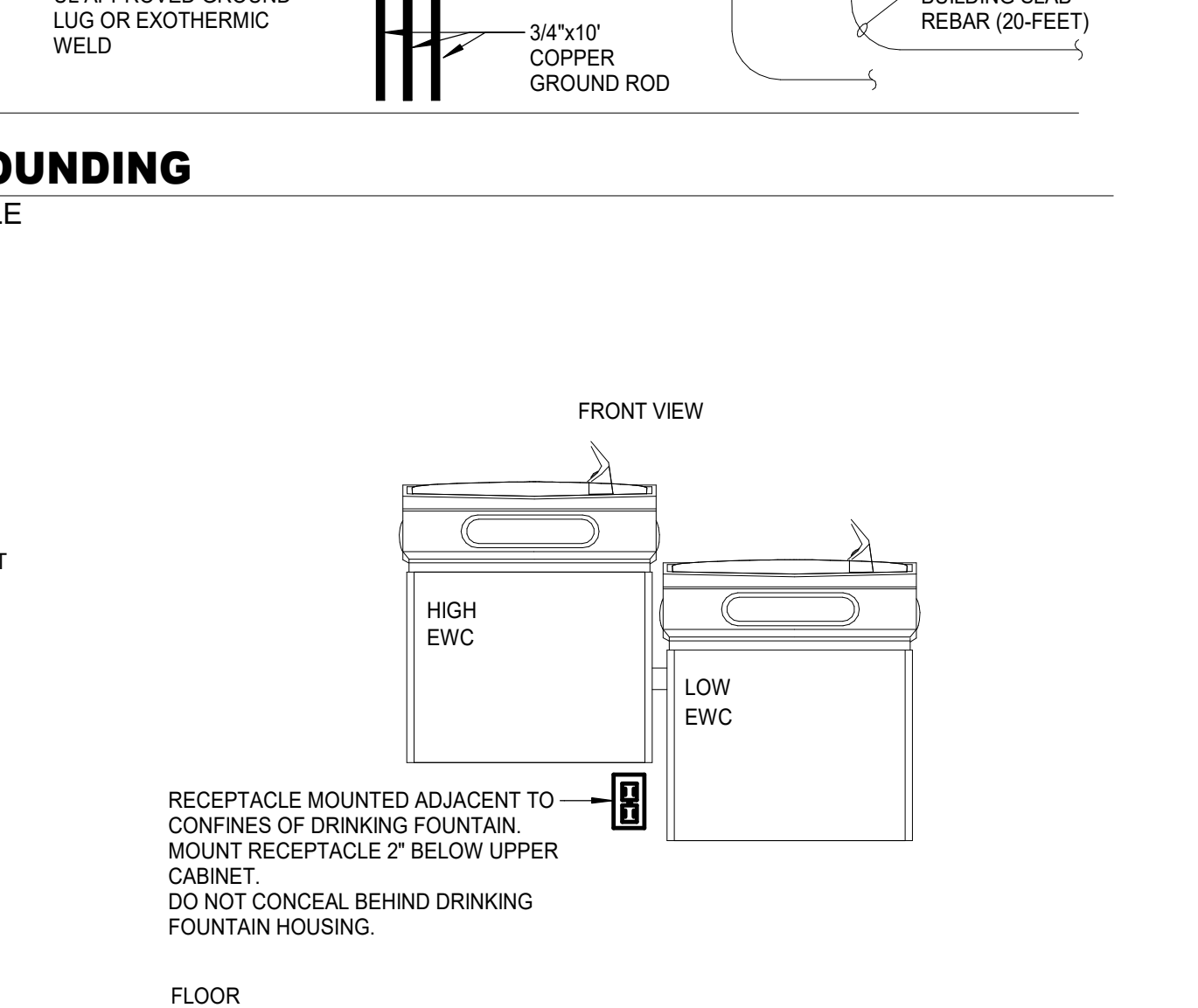
1 EXPOSED CEILING IDF/MDF RACK RECEPTACLE
 Scale: NOT TO SCALE



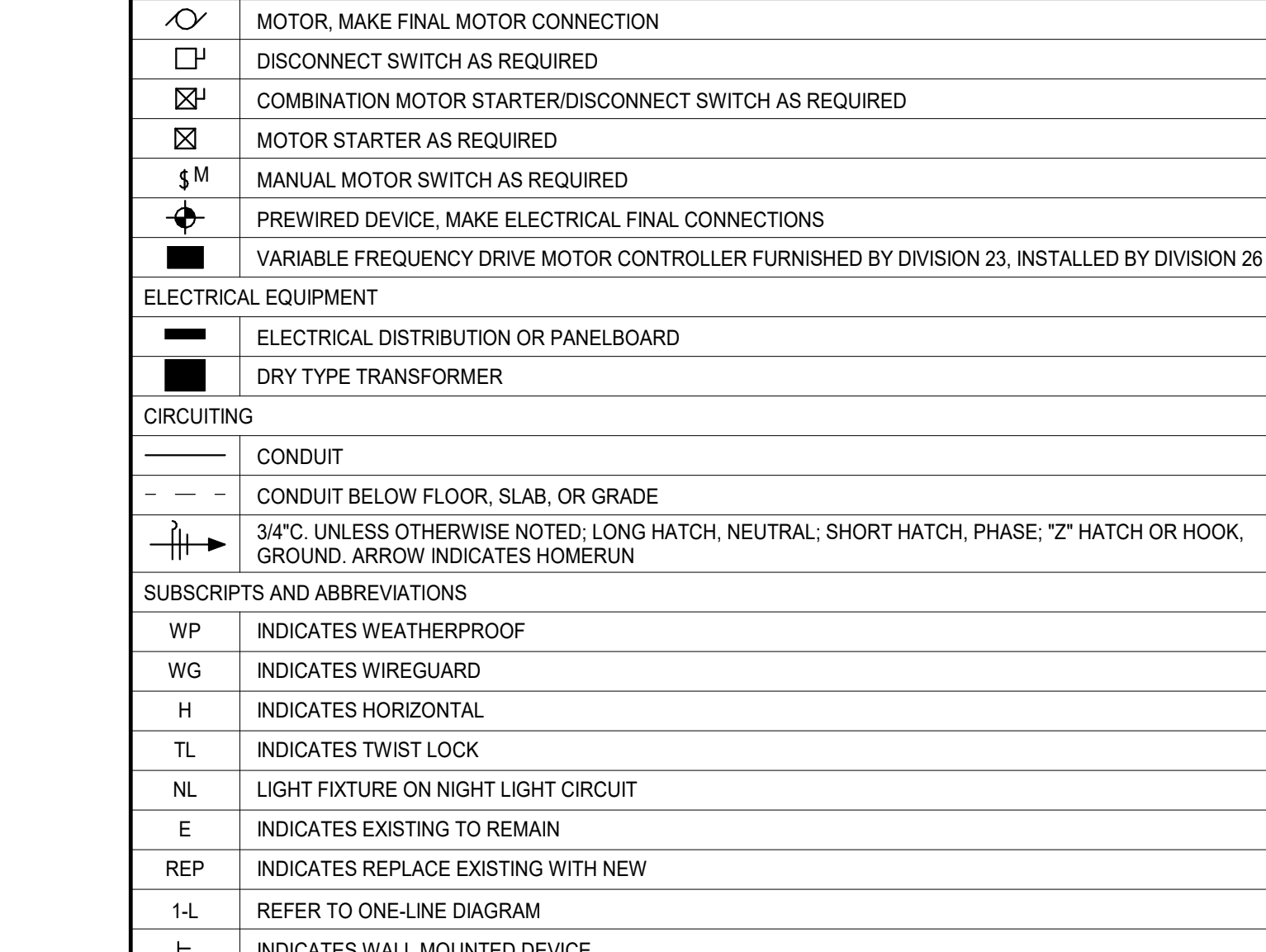
2 LAY-IN CEILING IDF/MDF RACK RECEPTACLE
 Scale: NOT TO SCALE



3 GROUNDING FOR TRANSFORMERS
 Scale: NOT TO SCALE

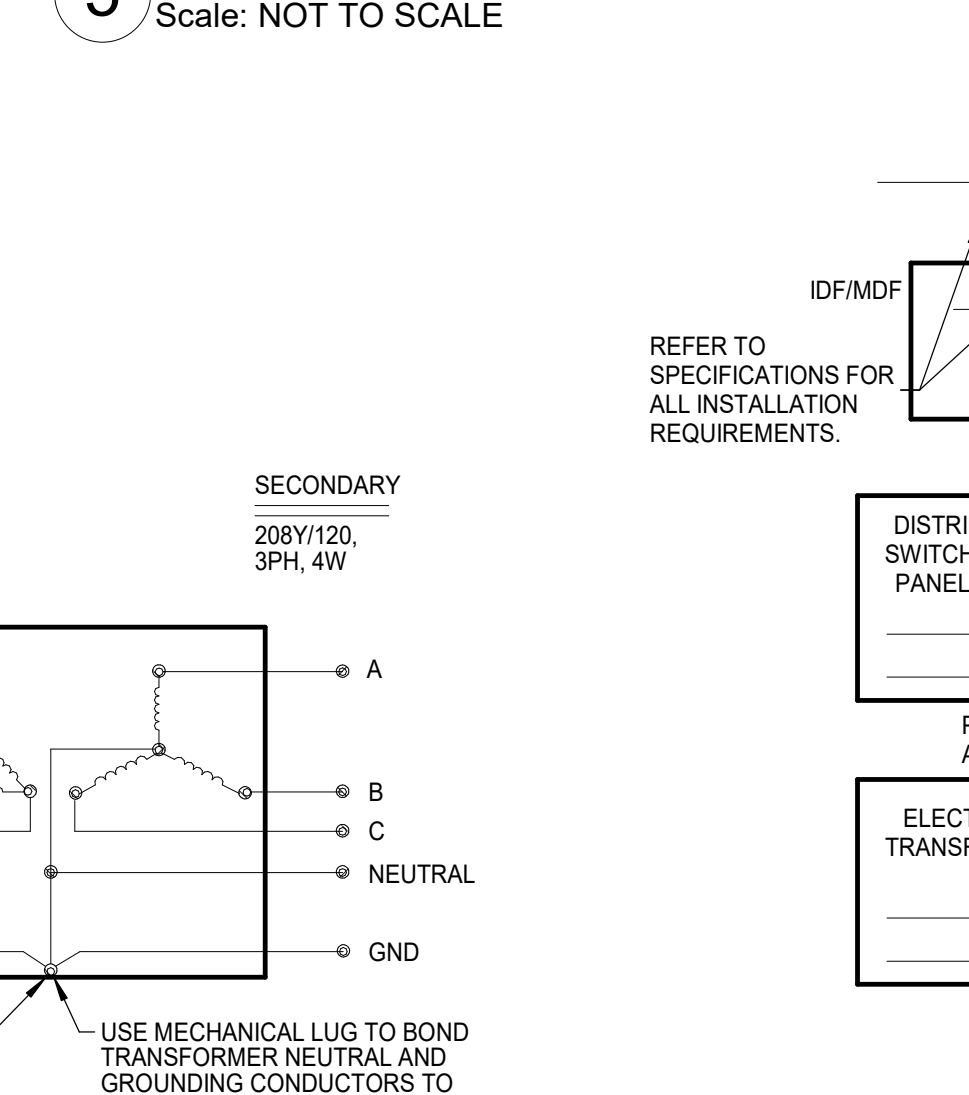


4 SURGE PROTECTION DEVICE
 Scale: NOT TO SCALE

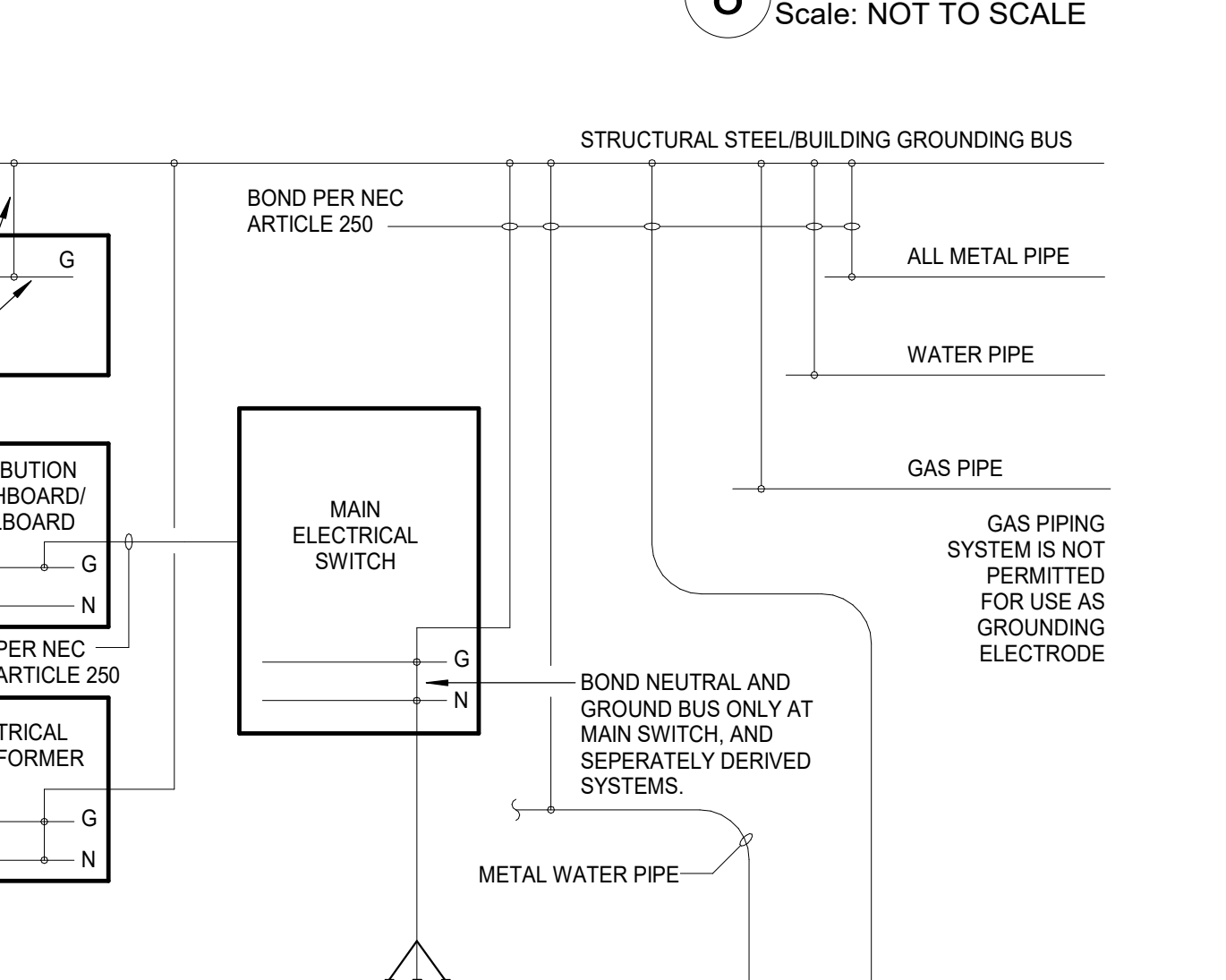


5 DRINKING FOUNTAIN WITH GFCI RECEPTACLE
 Scale: NOT TO SCALE

5 ROOF DMSCU DISCONNECT SUPPORT
 Scale: NOT TO SCALE



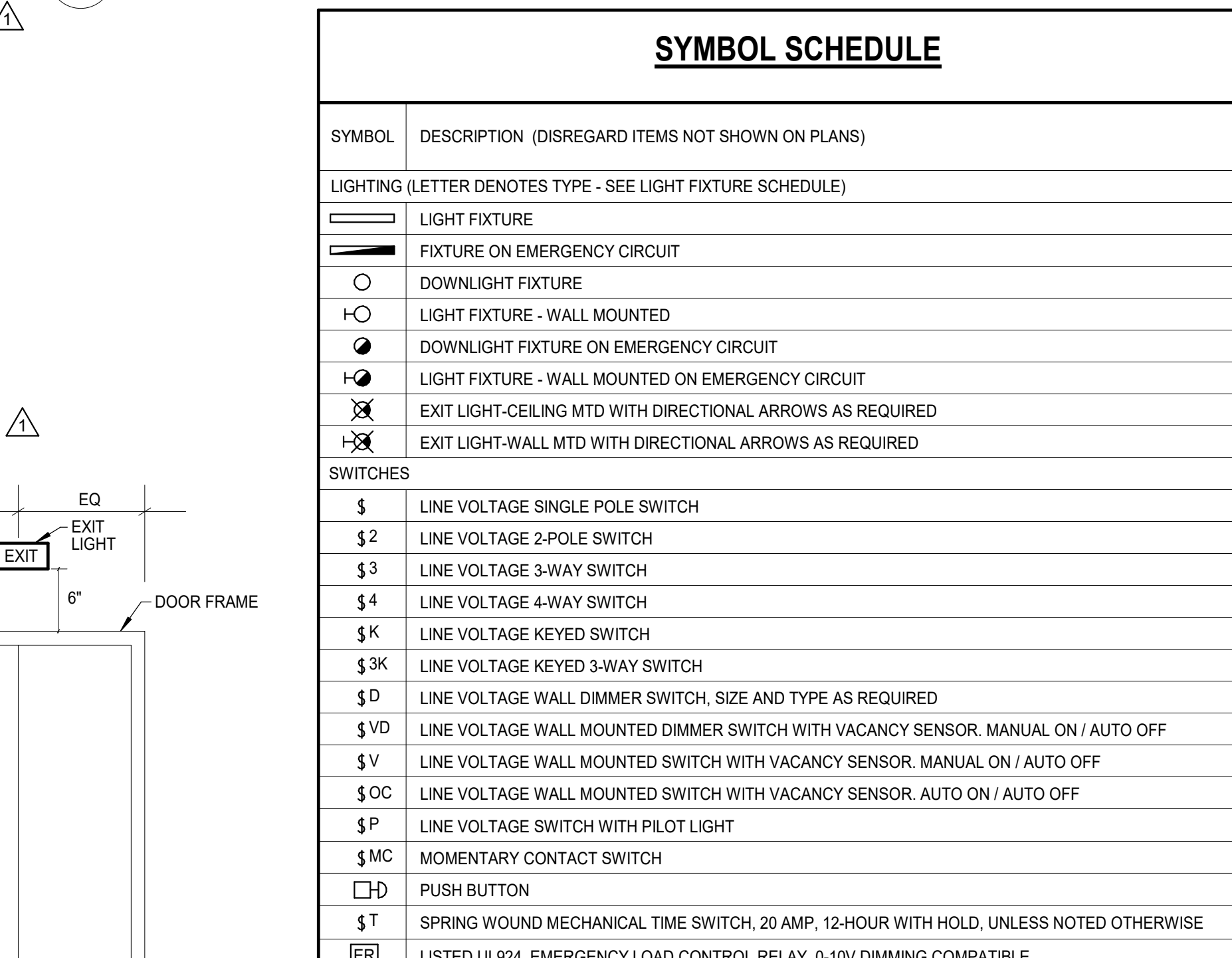
8 EXIT SIGN LOCATION
 Scale: NOT TO SCALE



LIGHTING CONTROLS SCHEDULE				
Type	Sensor Operation	# of Lighting Zones	Description	Remarks
RA	VACANCY - MANUAL ON / AUTO OFF	1	ON/OFF SWITCH WITH RAISE LOWER, 0-10V DIMMING.	
RB	VACANCY - MANUAL ON / AUTO OFF	1	ON/OFF MOMENTARY CONTACT SWITCH.	
RE	OCCUPANCY - AUTO ON / AUTO OFF	1	CORRIDOR ROOM CONTROLLER, NO DIMMING, BMCS ON/OFF INTERFACE FOR OCCUPIED / UNOCCUPIED BUILDING OPERATION. PROVIDE OCCUPANCY BASED SENSORS WHERE SHOWN. LOCATE (1) KEYPAD SWITCH AT MAIN ENTRY DOOR ADJACENT TO SECURITY KEYPAD.	
RJ	NONE	1	MECHANICALLY WOUND TIMER SWITCH, WHERE MULTIPLE SWITCHES ARE USED, THESE SHALL BE LINKED TOGETHER FOR SIMULTANEOUS OPERATION WITHIN THE SPACE.	
RT	NONE	1	DMX CONTROLS. REFER TO THEATRICAL DRAWINGS FOR MORE INFORMATION.	
ER	-	-	UL924 LOAD CONTROL RELAY, PLENUM RATED, 0-10V COMPATIBLE, 16A MINIMUM.	
ES	-	-	UL1008 GENERATOR TRANSFER DEVICE, PLENUM RATED, 0-10V COMPATIBLE, 16A MINIMUM.	

- PER IECC 2015, SECTION C405, AREAS / ROOMS WHERE AUTOMATIC SHUTOFF FOR LIGHTING WOULD ENDANGER OCCUPANT SAFETY ARE EXEMPT FROM AUTOMATIC CONTROLS.
- PROVIDE PHOTOCELL WITHIN DAYLIGHT ZONE ONLY WHERE SHOWN ON FLOORPLANS.
- LOCATE PHOTOSENSOR SURFACE MOUNTED ON THE NORTH SIDE OF THE BUILDING. LOCATION IS TO BE APPROVED BY ARCHITECT/OWNER REPRESENTATIVE.
- CONTRACTOR TO COORDINATE EXACT PROGRAMMING OF TIME-SCHEDULE WITH OWNER REPRESENTATIVE.
- REFER TO LIGHTING CONTROL DETAILS FOR TYPICAL INSTALLATION.

9 ELECTRICAL EQUIPMENT RACK DETAIL
 Scale: NOT TO SCALE



SYMBOL SCHEDULE

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
○	LIGHT FIXTURE
○	FIXTURE ON EMERGENCY CIRCUIT
○	DOWNLIGHT FIXTURE
○	LIGHT FIXTURE - WALL MOUNTED
○	DOWNLIGHT FIXTURE ON EMERGENCY CIRCUIT
○	LIGHT FIXTURE - WALL MOUNTED ON EMERGENCY CIRCUIT
○	EXIT LIGHT-CEILING MTD WITH DIRECTIONAL ARROWS AS REQUIRED
○	EXIT LIGHT-WALL MTD WITH DIRECTIONAL ARROWS AS REQUIRED
SWITCHES	
\$	LINE VOLTAGE SINGLE POLE SWITCH
\$2	LINE VOLTAGE 2-POLE SWITCH
\$3	LINE VOLTAGE 3-WAY SWITCH
\$4	LINE VOLTAGE 4-WAY SWITCH
\$K	LINE VOLTAGE KEYPAD SWITCH
\$3K	LINE VOLTAGE KEYPAD 3-WAY SWITCH
\$D	LINE VOLTAGE WALL DIMMER SWITCH, SIZE AND TYPE AS REQUIRED
\$VD	LINE VOLTAGE WALL MOUNTED DIMMER SWITCH WITH VACANCY SENSOR, MANUAL ON / AUTO OFF
\$V	LINE VOLTAGE WALL MOUNTED SWITCH WITH VACANCY SENSOR, MANUAL ON / AUTO OFF
\$OC	LINE VOLTAGE WALL MOUNTED SWITCH WITH VACANCY SENSOR, AUTO ON / AUTO OFF
\$P	LINE VOLTAGE SWITCH WITH PLOT LIGHT
\$MC	MOMENTARY CONTACT SWITCH
\$D	PUSH BUTTON
\$R	SPRING WOUND MECHANICAL TIME SWITCH, 20 AMP, 12-HOUR WITH HOLD, UNLESS NOTED OTHERWISE
\$T	LISTED UL924, EMERGENCY LOAD CONTROL RELAY, 0-10V DIMMING COMPATIBLE
\$ES	LISTED UL1008 EMERGENCY TRANSFER SWITCH, 0-10V DIMMING COMPATIBLE
LOW VOLTAGE LIGHTING CONTROLS	
\$R	LOW VOLTAGE LIGHTING CONTROLLER WALL SWITCH
\$B	BMCS TIMER LOCAL OVERRIDE SWITCH
◇	CEILING MOUNTED PHOTO SENSOR, HB= HIGH-BAY SENSOR
◇	CEILING MOUNTED VACANCY SENSOR, MANUAL ON / AUTO OFF, HB= HIGH-BAY SENSOR
◇	CEILING MOUNTED OCCUPANCY SENSOR, AUTO ON TO 100% / AUTO OFF, HB= HIGH-BAY SENSOR
\$X	LIGHTING CONTROLLER, X= DENOTES CONTROL SEQUENCE, REFER TO CONTROL SCHEDULE
RECEPTACLES AND OUTLETS	
⊖	SIMPLEX RECEPTACLE
⊖	DUPLEX RECEPTACLE
⊖	POWER POLE
⊖	125/250 VOLT, 1 PHASE, 3-WIRE, 20 AMPS, UNLESS NOTED OTHERWISE
⊖	DOUBLE DUPLEX IN 2-GANG BOX WITH SINGLE COVER PLATE
⊖	DOUBLE DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE IN 2-GANG BOX WITH SINGLE COVER PLATE
⊖	DUPLEX GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE
⊖	CONCEALED SERVICE FLOOR BOX, DUPLEX RECEPTACLE OUTLET
⊖	CONCEALED SERVICE FLOOR BOX, DOUBLE DUPLEX RECEPTACLE OUTLET
⊖	CONCEALED SERVICE MULTI-ACCESS FLOOR BOX WITH WIRING DEVICES AS INDICATED ON DRAWINGS, SIZE TO MATCH DEVICE QUANTITIES
MISCELLANEOUS EQUIPMENT	
[FACP]	FIRE ALARM CONTROL PANEL
[ANNC]	FIRE ALARM REMOTE ANNUNCIATOR
[T]	TRANSFORMER FOR DOOR BELL/BUZZER
[C]	CHIME/BUZZER
[G]	REMOTE BLANK FACE GFCI DEVICE
MOTOR CONTROLLERS AND EQUIPMENT	
⊖	MOTOR, MAKE FINAL MOTOR CONNECTION
⊖	DISCONNECT SWITCH AS REQUIRED
⊖	COMBINATION MOTOR STARTER/DISCONNECT SWITCH AS REQUIRED
⊖	MOTOR STARTER AS REQUIRED
\$M	MANUAL MOTOR SWITCH AS REQUIRED
⊖	PREWIRED DEVICE, MAKE ELECTRICAL FINAL CONNECTIONS
⊖	VARIABLE FREQUENCY DRIVE MOTOR CONTROLLER FURNISHED BY DIVISION 23, INSTALLED BY DIVISION 26
ELECTRICAL EQUIPMENT	
⊖	ELECTRICAL DISTRIBUTION OR PANELBOARD
⊖	DRY TYPE TRANSFORMER
CIRCUITING	
---	CONDUIT
---	CONDUIT BELOW FLOOR, SLAB, OR GRADE
---	3/4\"/>
---	GROUND, ARROW INDICATES HOMERUN
SUBSCRIPTS AND ABBREVIATIONS	
WP	INDICATES WEATHERPROOF
WG	INDICATES WIREGUARD
H	INDICATES HORIZONTAL
TL	INDICATES TWIST LOCK
NL	LIGHT FIXTURE ON NIGHT LIGHT CIRCUIT
E	INDICATES EXISTING TO REMAIN
REP	INDICATES REPLACE EXISTING WITH NEW
1L	REFER TO ONE-LINE DIAGRAM
+	INDICATES WALL MOUNTED DEVICE
+	INDICATES TO PROVIDE COMBINATION USB/RECEPTACLE DEVICE
SR	SWITCH CONTROLLED RECEPTACLE. RECEPTACLE SHALL BE PERMANENTLY FACTORY MARKED AS CONTROLLED
SPD	X = L LOW EXPOSURE SPD, X = M MEDIUM EXPOSURE SPD, X = VH VERY HIGH EXPOSURE SPD.
•	NEXT TO ANY SYMBOL INDICATES FINAL ROUGH-IN FIELD COORDINATION BY CONTRACTOR WITH ARCHITECTURAL MILLWORK DRAWINGS AND OTHER TRADES

GENERAL NOTES:
 -ALL EXTERIOR BUILDING ELECTRICAL EQUIPMENT TO BE WEATHERPROOF NEMA-4X MINIMUM.

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TECHNOLOGY LEGEND - 27 10 00				
SYMBOL	DESCRIPTION	ELEVATION	BACK BOX/RACEWAY	NOTES
W	WALL MOUNTED NETWORK OUTLET DR. NUMBER OF DATA DROPS IN OUTLET AP. WIRELESS ACCESS POINT	+18" AFF. UNLESS OTHERWISE NOTED	4"x4"x2 1/8" BACK BOX WITH 1-G MUD RING, 1" C	
W	COMMUNICATIONS OUTLET	FIELD COORDINATE	FIELD COORDINATE	
W	WALL MOUNTED NETWORK OUTLET	+44" AFF	4"x4"x2 1/8" BACK BOX WITH 1-G MUD RING, 1" C	
B	WALL MOUNTED BOX FOR FUTURE USE	+18" AFF UNO	4"x4"x2 1/8" BACK BOX WITH 1-G MUD RING, 1" C	
F	FLOOR MOUNTED NETWORK OUTLET	N/A	COORDINATE WITH ELECTRICAL CONTRACTOR	FINISHED HARDWARE PROVIDED BY DIV 27
C	CEILING MOUNTED NETWORK OUTLET AP. WIRELESS ACCESS POINT DN. NETWORK OUTLET	ABOVE CEILING	CEILING BRACKET WITH RISQUIT BLOCK	

NOTES:
 1. #G INDICATES BACK BOX SIZE.
 2. #C INDICATES CONDUIT SIZE.
 3. UNO - UNLESS NOTED OTHERWISE.
 4. CONDUIT STUB UP AND SLEEVES SHALL HAVE A SOLID UNCUIT PLASTIC PROTECTIVE BUSHING.
 5. NO CONDUITS SHALL EXCEED FOR 40% MAXIMUM FILL RATIO. CONTRACTOR TO PROVIDE ADDITIONAL CONDUITS REQUIRED.

AUDIO/VIDEO LEGEND - 27 41 16.10				
SYMBOL	DESCRIPTION	ELEVATION	BACK BOX/RACEWAY	NOTES
W	WALL MOUNTED PROJECTOR AUDIO/VISUAL OUTPUT OUTLET	REFERENCE FLOOR PLANS	4 11/16"x4 11/16"x2-1/8" BACK BOX WITH DOUBLE GANG RING TWO(2) 1.25" C	NOTE #5
C	CEILING MOUNTED PROJECTOR AUDIO/VISUAL OUTPUT OUTLET	CEILING MOUNTED	N/A	NOTE #5
A	WALL MOUNTED AUDIO/VIDEO INPUT OUTLET	+18" AFF UNO	4 11/16"x4 11/16"x2-1/8" BACK BOX WITH DOUBLE GANG RING, TWO(2) 1.25" C	
FSD-1	WALL MOUNTED FLAT SCREEN DISPLAY AUDIO/VISUAL OUTPUT OUTLET	REFERENCE FLOOR PLAN	4"x4"x2 1/8" BACK BOX WITH 1-G MUD RING, 1" C	NOTE #5
FSD-2	WALL MOUNTED FLAT SCREEN DISPLAY AUDIO/VISUAL OUTPUT OUTLET ASSOCIATED WITH AV-1 INPUT OUTLET	REFERENCE FLOOR PLAN	4 11/16"x4 11/16"x2-1/8" BACK BOX WITH DOUBLE GANG RING, TWO(2) 1.25" C	NOTE #5
VD	INTERACTIVE VIDEO DISPLAY AUDIO/VISUAL OUTPUT OUTLET	REFERENCE FLOOR PLAN	4 11/16"x4 11/16"x2-1/8" BACK BOX WITH DOUBLE GANG RING, TWO(2) 1.25" C	NOTE #5
CP	AV CONTROL PANEL	+48" AFF TO TOP	4"x4"x2 1/8" BACK BOX WITH 1-G MUD RING, 1" C	
PS	LOCAL INSTRUCTIONAL SPACE PRESENTATION SPEAKER	CEILING	CONTRACTOR PROVIDED CEILING BOX	COORDINATE POWER WITH EC
C	STREAMING CAMERA	CEILING UNO	N/A	NOTE #5

NOTES:
 1. #G INDICATES BACK BOX SIZE.
 2. #C INDICATES CONDUIT SIZE.
 3. UNO - UNLESS NOTED OTHERWISE.
 4. THE SYSTEM INTEGRATOR SHALL COORDINATE ALL BOX AND CONDUIT SIZE REQUIREMENTS PRIOR TO ROUGH-IN BY THE PROJECTS ELECTRICAL CONTRACTOR.
 5. PROVIDE AND INSTALL ONE (1) CATEGORY CABLE TO CONNECT DEVICE TO NETWORK

LOCAL SOUND SYSTEM LEGEND - 27 41 16.20				
SYMBOL	DESCRIPTION	ELEVATION	BACK BOX/RACEWAY	NOTES
S	LOCAL SOUND SYSTEM SPEAKER P. POLE MOUNTED SPEAKER	CEILING MOUNT UNO	CONTRACTOR PROVIDED BACK BOX OR 4"x4"x2 1/8" J BOX WITH COVER, 1" C	
LSC	LOCAL SOUND SYSTEM CONTROL PLATE	+48" AFF TO TOP	4"x4"x2 1/8" BACK BOX WITH 1-G MUD RING, 1" C	
M	MICROPHONE INPUT	+18" AFF UNO	4"x4"x2 1/8" BACK BOX WITH 1-G MUD RING, 1" C	
MA	COMBINATION OUTLET CONSISTING OF ONE (1) MICROPHONE INPUT AND ONE (1) AUXILIARY INPUT	+18" AFF UNO	4"x4"x2 1/8" BACK BOX WITH 1-G MUD RING, 1" C	
A	3.5MM STEREO AUDIO AUXILIARY INPUT	+18" AFF UNO	4"x4"x2 1/8" BACK BOX WITH 1-G MUD RING, 1" C	
H	HANGING MICROPHONE	CEILING MOUNT	N/A	
BM	AUXILIARY INPUT AND BLUETOOTH MIXER	+48" AFF TO TOP	4"x4"x2 1/8" BACK BOX WITH 1-G MUD RING, 1" C	
RACK	VENUE SPECIFIC LOCAL SOUND SYSTEM HEAD END RACK	WALL MOUNT UNO	N/A	
WA	WIRELESS ANTENNA	WALL MOUNT UNO	4"x4"x2 1/8" BACK BOX WITH 1-G MUD RING, 1" C	
ALA	ASSISTED LISTENING ANTENNA	WALL MOUNT UNO	4"x4"x2 1/8" BACK BOX WITH 1-G MUD RING, 1" C	
SUB	SUBWOOFER	CEILING MOUNT UNO		

NOTES:
 1. #G INDICATES BACK BOX SIZE.
 2. #C INDICATES CONDUIT SIZE.
 3. UNO - UNLESS NOTED OTHERWISE.
 4. THE SYSTEM INTEGRATOR SHALL COORDINATE ALL BOX AND CONDUIT SIZE REQUIREMENTS PRIOR TO ROUGH-IN BY THE PROJECTS ELECTRICAL CONTRACTOR.
 5. PROVIDE AND INSTALL ONE (1) CATEGORY CABLE TO CONNECT DEVICE TO NETWORK

INTERCOM LEGEND - 27 50 00				
SYMBOL	DESCRIPTION	ELEVATION	BACK BOX/RACEWAY	NOTES
ICS	INTERCOM COMMUNICATIONS SYSTEM HEAD END UNIT	FLOOR MOUNTED	COORDINATE WITH EC	COORDINATE POWER WITH EC
S	CEILING MOUNT INTERCOM SPEAKER, LAY-IN CEILING	CEILING	CONTRACTOR PROVIDED	
S	CEILING MOUNT INTERCOM SPEAKER, HARD CEILING	CEILING	CONTRACTOR PROVIDED	
S	WALL MOUNT INTERIOR INTERCOM SPEAKER	REFERENCE FLOOR PLANS	CONTRACTOR PROVIDED	
S	WALL MOUNT EXTERIOR INTERCOM SPEAKER	+10" AFF UNO	CONTRACTOR PROVIDED	
S	PENDANT MOUNT INTERCOM SPEAKER	REFERENCE FLOOR PLANS	CONTRACTOR PROVIDED	
S	SURFACE MOUNT INTERCOM SPEAKER, MOUNT TO STRUCTURE	CEILING	CONTRACTOR PROVIDED	
S	CEILING MOUNTED EXTERIOR INTERCOM SPEAKER	CEILING	CONTRACTOR PROVIDED	
IP	IP BASED SPEAKER, # TO BE REPLACED WITH S, S2, S3, S4 INDICATING THE SPECIFIC TYPE OF SPEAKER	REFERENCE FLOOR PLANS	CONTRACTOR PROVIDED	NOTE #5
VC	WALL MOUNTED VOLUME CONTROL	+48" AFF	4"x4"x2 1/8" BACK BOX WITH 1-G MUD RING, 1" C	
CB	INTERCOM CALL BUTTON	+48" AFF	4"x4"x2 1/8" BACK BOX WITH 1-G MUD RING, 1" C	
C	SINGLE FACE CLOCK	REFERENCE FLOOR PLANS	4"x4"x2 1/8" BACK BOX WITH 1-G MUD RING, 1" C	
C	DOUBLE FACE CLOCK	REFERENCE FLOOR PLANS	4"x4"x2 1/8" BACK BOX WITH 1-G MUD RING, 1" C	
RPS	REMOTE PROGRAM SOURCE	DESK TOP	COORDINATE WITH EC	NOTE #5
ACS	ADMINISTRATIVE CALL STATION	DESK TOP	N/A	NOTE #5
LD	LOCKDOWN BUTTON	+48" AFF	4"x4"x2 1/8" BACK BOX WITH 1-G MUD RING, 1" C	

NOTES:
 1. #G INDICATES BACK BOX SIZE.
 2. #C INDICATES CONDUIT SIZE.
 3. UNO - UNLESS NOTED OTHERWISE.
 4. THE SYSTEM INTEGRATOR SHALL COORDINATE ALL BOX AND CONDUIT SIZE REQUIREMENTS PRIOR TO ROUGH-IN BY THE PROJECTS ELECTRICAL CONTRACTOR.
 5. PROVIDE AND INSTALL ONE (1) CATEGORY CABLE TO CONNECT DEVICE TO NETWORK

ACCESS CONTROL LEGEND - 28 10 00 & 28 10 00.05				
SYMBOL	DESCRIPTION	ELEVATION	BACK BOX/RACEWAY	NOTES
ACP	ACCESS CONTROL SYSTEM, CONTROL PANEL	+60" AFF TO CENTER	AS REQUIRED	COORDINATE POWER, NOTE #4
CR	ACCESS CONTROL PROXIMITY CARD READER DEFAULT SYMBOL INDICATES WALL MOUNTED "M" INDICATES MULLION MOUNTED READER	+42" A.F.F.	1-G, 3/4" C	
CR	DOOR MOUNTED ACCESS CONTROL PROXIMITY CARD READER THAT IS INTEGRATED INTO THE DOOR HARDWARE	+42" AFF	N/A	
DS	2-WAY AUDIO/VIDEO INTERCOM DOOR STATION. "DEF" INDICATES WALL MOUNTED "M" INDICATES MULLION MOUNTED DEVICE	+42" AFF	"W" 1-G, 3/4" C "M" 3/4" C	COORDINATE POWER, NOTE #4
DS	DOOR MOUNTED, 2-WAY AUDIO/VIDEO INTERCOM DOOR STATION	+42" AFF, FIELD COORDINATE		COORDINATE POWER, NOTE #4
MS	2-WAY AUDIO/VIDEO INTERCOM MASTER STATION	DESK MOUNTED UNO		COORDINATE POWER, NOTE #4
DR	DOOR RELEASE BUTTON	COORDINATE WITH GC	1-G, 3/4" C	
PRM	PR. MOTION REQUEST TO EXIT DEVICE	CEILING MOUNTED UNO	N/A	N/A
DR	DOOR PROP ALARM	FLUSH MOUNTED IN DOOR FRAME	N/A	PROVIDE BY ACS CONTRACTOR.
DPD	DPD MAGNETIC DOOR CONTACT/DOOR POSITION SENSOR	FLUSH MOUNTED IN DOOR FRAME	N/A	PROVIDE BY ACS CONTRACTOR.
RFID	VEHICLE RFID TAG READER	FIELD COORDINATE RACEWAYS AND BACK BOXES		PROVIDE NECESSARY EQUIPMENT FOR A FULLY FUNCTIONAL VEHICLE ENTRY POINT

NOTES:
 1. #G INDICATES BACK BOX SIZE.
 2. #C INDICATES CONDUIT SIZE.
 3. UNO - UNLESS NOTED OTHERWISE.
 4. PROVIDE AND INSTALL ONE (1) CATEGORY CABLE TO CONNECT DEVICE TO NETWORK

VIDEO SURVEILLANCE LEGEND - 28 20 00				
SYMBOL	DESCRIPTION	ELEVATION	BACK BOX/RACEWAY	NOTES
W	WALL/CORNER MOUNT 4-SENSOR CAMERA	REFERENCE FLOOR PLANS	4"x4"x2 1/8" BACK BOX WITH 1-G MUD RING, 1" C	NOTE #5
C	CEILING MOUNTED 4-SENSOR CAMERA	CEILING		NOTE #5
2	2-SENSOR CAMERA	REFERENCE FLOOR PLANS	4"x4"x2 1/8" BACK BOX WITH 1-G MUD RING, 1" C	NOTE #5
1	1-SENSOR CAMERA	REFERENCE FLOOR PLANS	4"x4"x2 1/8" BACK BOX WITH 1-G MUD RING, 1" C	
V	VIDEO RECORDING SERVER			
MSU	VIDEO SURVEILLANCE MAIN UNIT	ABOVE CEILING		NOTE #5
S	SYMBOL INDICATED THAT A VIDEO SURVEILLANCE DEVICE IS WALL MOUNTED			

NOTES:
 1. #G INDICATES BACK BOX SIZE.
 2. #C INDICATES CONDUIT SIZE.
 3. UNO - UNLESS NOTED OTHERWISE.
 4. THE SYSTEM INTEGRATOR SHALL COORDINATE ALL BOX AND CONDUIT SIZE REQUIREMENTS PRIOR TO ROUGH-IN BY THE PROJECTS ELECTRICAL CONTRACTOR.
 5. PROVIDE AND INSTALL ONE (1) CATEGORY CABLE TO CONNECT DEVICE TO NETWORK

INTRUSION LEGEND - 28 31 00				
SYMBOL	DESCRIPTION	ELEVATION	BACK BOX/RACEWAY	NOTES
DP	INTRUSION DETECTION SYSTEM CONTROL PANEL	+60" AFF	TWO(2) - 1" C TO CONTRACTOR PROVIDED BACK BOX	COORDINATE POWER WITH EC, NOTE #5
KP	INTRUSION DETECTION SYSTEM KEYPAD	+48" AFF TO TOP	4"x4"x2 1/8" BACK BOX WITH 1-G MUD RING, 1" C	
C	CEILING MOUNTED MOTION DETECTOR	CEILING		
W	WALL MOUNTED MOTION DETECTOR LR LONG RANGE	REFERENCE FLOOR PLAN	N/A	
C	CEILING MOUNTED GLASS BREAK DETECTOR	CEILING	N/A	
DPD	DPD MAGNETIC DOOR CONTACT/DOOR POSITION SENSOR	FLUSH MOUNTED IN DOOR FRAME	N/A	DEVICE PROVIDED BY ACS CONTRACTOR
SDC	SURFACE MOUNT MAGNETIC DOOR CONTACT	SURFACE MOUNTED ON DOOR FRAME	N/A	
DDC	OVERHEAD DOOR MOUNT MAGNETIC DOOR CONTACT	SURFACE MOUNTED ON DOOR FRAME	N/A	
DB	DURESS PANIC BUTTON	UNDER DESK UNO	N/A	

NOTES:
 1. #G INDICATES BACK BOX SIZE.
 2. #C INDICATES CONDUIT SIZE.
 3. UNO - UNLESS NOTED OTHERWISE.
 4. REFERENCE DIVISION 28 SPECIFICATION FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
 5. PROVIDE AND INSTALL ONE (1) CATEGORY CABLE TO CONNECT DEVICE TO NETWORK

FIRE ALARM - 28 46 00	
SYMBOL	DESCRIPTION
FACP	FIRE ALARM CONTROL
FAP	FIRE ALARM ANNUNCIATOR PANEL

NOTES:
 1. FIRE ALARM SYSTEM IS PERFORMANCE BASED PER SPECIFICATIONS. CONTRACTOR TO REFERENCE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
 2. A LICENSED FIRE ALARM PLANNING SUPERINTENDENT CERTIFIED TO A MINIMUM LEVEL 3, IN THE SUBFIELD OF FIRE ALARM SYSTEMS THROUGH THE NATIONAL INSTITUTE FOR CERTIFICATION IN ENGINEERING TECHNOLOGIES (NICET), SHALL PROVIDE PLANS AND CALCULATIONS FOR A MANUAL AND AUTOMATIC FIRE DETECTION AND ALARM SYSTEM TO COMPLY WITH THE BUILDING SPACE LAYOUT, BUILDING OCCUPANCY, CURRENT NFPA 72, LOCAL AND STATE CODE REQUIREMENTS, AND THE FIRE ALARM AND DETECTION SYSTEM SPECIFICATIONS.

SUBSCRIPTS AND ABBREVIATIONS	
TEXT	DESCRIPTION
WP	DEVICE SHALL BE WEATHER PROOF AND RATED FOR EXTERIOR CONDITIONS
•	FIELD COORDINATE ELEVATION
▲	ABOVE FINISHED FLOOR
UC	DEVICE IS TO BE MOUNTED ON THE UNDERSIDE OF THE ELEVATED CANOPY.
WM	DEVICE IS TO BE WALL MOUNTED.
WG	WIRE GUARD TO BE PROVIDED AND INSTALLED TO PROTECT ASSOCIATED DEVICE

SUBSCRIPTS LEGEND - EXISTING DEVICES	
TEXT	DESCRIPTION
E	EXISTING TO REMAIN
R	DEVICE IS EXISTING AND IS TO BE REMOVED. CONTRACTOR TO REMOVE THE DEVICE AND RETURN TO OWNER.
IR	REMOVE EXISTING DEVICE AND RELOCATE TO A LOCATION INDICATED ON THE DRAWINGS.

NOTES TO CONTRACTOR	
1.	EVERY SYMBOL SHOWN ON LEGEND MAY NOT APPEAR ON DRAWINGS.
2.	SYSTEM INSTALLERS SHALL COORDINATE LOCATIONS AND CONNECTIONS WITH THE PROJECTS ELECTRICAL CONTRACTOR.
3.	CONTRACTOR TO PROVIDE PROPERLY GROUNDED LIGHTING PROTECTION ON ALL CABLING ENTERING AND EXITING THE BUILDING.

TECH DEMO PLAN GENERAL NOTES	
A	CONTRACTOR SHALL PROVIDE NEW CEILING FILES IN INSTANCES WHERE CEILING DEVICES ARE REMOVED, REPLACED OR ADDED. CONTRACTOR SHALL COORDINATE WITH ARCHITECT ON CORRECT MANUFACTURER AND MODEL PRIOR TO REMOVAL OF EXISTING TILE.
B	CONTRACTOR SHALL HAVE EACH LOW VOLTAGE SYSTEM TESTED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. SYSTEMS SHALL INCLUDE BUT NOT BE LIMITED TO: 1) FIRE ALARM 2) INTERCOM 3) STRUCTURED CABLING 4) INTRUSION DETECTION 5) ACCESS CONTROL 6) AUDIO VIDEO 7) VIDEO SURVEILLANCE TESTING SHALL INCLUDE THE FUNCTIONALITY OF ALL FIELD DEVICES AND EQUIPMENT. ANY FAILURES OR ITEMS FOUND NOT TO BE FUNCTIONING TO SPECIFICATION, SHALL BE REPORTED PRIOR TO CONSTRUCTION. ANY ITEMS FOUND TO BE IMPROPERLY OR NON-FUNCTIONING UPON THE COMPLETION OF THE PROJECT, SHALL BE REPLACED AND/OR REPAIRED, BY THE CONTRACTOR, AT NO ADDITIONAL COST TO THE PROJECT OR THE OWNER.
C	CONTRACTOR SHALL REMOVE ANY DEVICES WHERE CONSTRUCTION OCCURS TO PREVENT POSSIBLE DAMAGE TO THE DEVICE. REMOVAL OF ANY DEVICES WHICH SUPPORT USER CONNECTION OR OTHER SYSTEMS, SHALL BE COORDINATED WITH THE OWNER PRIOR TO REMOVAL AND/OR TAKING OFF LINE. REMOVAL SHALL CONSIST OF BUT NOT BE LIMITED TO THE FOLLOWING DEVICES AND ASSOCIATED SUPPORT INFRASTRUCTURE: 1) FIRE ALARM DEVICES 2) INTERCOM DEVICES 3) WIRELESS ACCESS POINTS 4) TELEPHONES 5) VIDEO SURVEILLANCE CAMERAS 6) INTRUSION DETECTION DEVICES 7) ACCESS CONTROL DEVICES 8) VIDEO PROJECTION DEVICES 9) VIDEO DISPLAY DEVICES ANY DEVICES, NOT BEING REINSTALLED, SHALL BE RETURNED TO THE OWNER.

D	CONTRACTOR SHALL DOCUMENT THE LOCATION AND ANY ID TAG, MAC ADDRESS, IP ADDRESS, OR BAR CODE OF ANY EXISTING DEVICE THAT IS TO BE REMOVED FROM ITS CURRENT LOCATION. DEVICES THAT ARE TO REMAIN, SHALL BE REINSTALLED IN THE EXACT LOCATION THAT THEY RESIDE IN PRIOR TO CONSTRUCTION, UNLESS NOTED OTHERWISE.
E	ANY INDIVIDUAL THAT WILL BE REMOVING, RELOCATING, REINSTALLING, AND/OR TAMPERING WITH ANY EXISTING DEVICES, SHALL BE CERTIFIED BY THE MANUFACTURER OF THE SPECIFIC SYSTEM AND/OR LICENSED AS REQUIRED BY THE STATE TO PERFORM WORK ON THE SYSTEM. THE INDIVIDUAL SHALL BE A FULL-TIME EMPLOYEE OF THE FIRM CONTRACTED TO CONDUCT SUCH WORK ON THE PROJECT AND THAT FIRM SHALL ALSO HOLD ANY CERTIFICATIONS AND/OR LICENSES REQUIRED TO CONDUCT WORK ON THE SPECIFIC SYSTEM.
F	ANY INDIVIDUAL/FIRM THAT WILL BE REMOVING, RELOCATING, REINSTALLING, OR TAMPERING WITH IN ANY DEVICES, SHALL BE LICENSED BY THE STATE, AS APPLICABLE, AND CERTIFIED BY THE MANUFACTURER OF THE SYSTEM.
G	ALL CABLING ASSOCIATED WITH DEVICES THAT ARE TO BE DEMOLISHED, SHALL BE REMOVED FROM THE DEVICE LOCATION TO THE CABLES POINT OF ORIGIN. NO CABLE SHALL BE ABANDONED IN PLACE.
H	ALL EXISTING DEVICES SHOWN ARE EXISTING TO REMAIN. CONTRACTOR TO REMOVE EXISTING DEVICES DURING CONSTRUCTION AND REINSTALL THE DEVICE IN THE SAME LOCATION, UNLESS NOTED OTHERWISE.
I	REFERENCE EXISTING DEVICE SUBSCRIPT LEGEND ON THE NOTES AND LEGENDS SHEET.
J	TOPCAT LIGHTSPEED LOCAL SOUND SPEAKERS SHALL BE BAGGED AND SUSPENDED IN THE CEILING DURING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE WITH THE MANUFACTURER TO NOT VOID THE WARRANTY.
K	CONTRACTOR TO COORDINATE WITH CFSD TECHNOLOGY DEPARTMENT PRIOR TO CONSTRUCTION ON WHICH DEVICES ARE TO BE REMOVED BY THE OWNER'S VENDOR IN ORDER TO PREVENT VOID OF WARRANTY.
L	ALL DEMO DEVICES WITH 'D' SUBSCRIPT SHALL DISCONNECT AND REMOVE EXISTING WIRING DEVICE BACK TO SWITCH, PATCH WALL TO MATCH EXISTING.

RESPONSIBILITY MATRIX				
SCOPE ITEM	RESPONSIBILITY			NOTES
	OFDI	CFCI	DFCI	
COMMUNICATIONS - DIVISION 27				
CATEGORY 6/6A STRUCTURED CABLING SYSTEM (SCS)	✓			
VIDEO DISTRIBUTION SYSTEM - SPECIAL SPACE	✓			SEE NOTE 4
AUDIO DISTRIBUTION SYSTEM - SPECIAL SPACE	✓			SEE NOTE 4
VIDEO DISTRIBUTION SYSTEM - INSTRUCTIONAL SPACE	✓			
AUDIO DISTRIBUTION SYSTEM - INSTRUCTIONAL SPACE	✓			
PROJECTORS	✓			
PROJECTOR MOUNTS	✓			
FLAT PANEL DISPLAYS	✓			
FLAT PANEL DISPLAY MOUNTS	✓			
INTERACTIVE DISPLAYS	✓			
INTERACTIVE DISPLAY MOUNTS	✓			
DIGITAL SIGNAGE	✓			
POWERED PROJECTION SCREENS	✓			SEE NOTE 3
BUILDING INTERCOMPA, BELL, AND CLOCK SYSTEM	✓			
---NETWORK SWITCHES	✓			
NETWORK EQUIPMENT	✓			
--- MDF/IDF NETWORK EQUIPMENT	✓			
--- VOIP TELEPHONES	✓			
--- WIRELESS ACCESS POINTS	✓			
--- UNINTERRUPTIBLE POWER SUPPLIES (UPS)	✓			
STRUCTURED CABLING SYSTEM(SCS) RACEWAY, CONDUIT, BACK BOXES, SLEEVES, ETC	✓			SEE NOTE 6
OTHER RACEWAY, CONDUIT, BACK BOXES, SLEEVES, ETC	✓			SEE NOTE 1
ELECTRICAL POWER	✓			SEE NOTE 1
LIFE SAFETY AND SECURITY - DIVISION 28				
ACCESS CONTROL SYSTEM(ACS)	✓			
INTRUSION DETECTION SYSTEM	✓			
DOOR ACCESS VIDEO INTERCOM SYSTEM	✓			
VIDEO SURVEILLANCE SYSTEM (VSS)	✓			
---VSS SERVERS	✓			
---VSS CAMERAS	✓			
---VSS PROGRAMMING	✓			
---VSS CABLING	✓			SEE NOTE 2
FIRE ALARM SMOKE DETECTION WITH VOICE EVACUATION	✓			
RACEWAY: CONDUIT, BACK BOXES, SLEEVES, ETC	✓			SEE NOTE 1
ELECTRICAL POWER	✓			SEE NOTE 1

OFDI - OWNER FURNISHED AND OWNER INSTALLED
 CFCI - CONTRACTOR FURNISHED AND CONTRACTOR INSTALLED
 DFCI - OWNER FURNISHED AND CONTRACTOR INSTALLED

RESPONSIBILITY MATRIX NOTES:
 1. BY DIVISION 28.
 2. BY DIVISION 27.
 3. BY DIVISION 11.
 4. IF SYSTEM REQUIRES NETWORK SWITCH IT SHALL BE OFDI. CONTRACTOR TO COORDINATE WITH OWNER.
 5. EXPANSION OF EXISTING SYSTEM
 6. ALL CONDUIT, BACKBOXES AND SLEEVES FOR STRUCTURED CABLING WILL BE OWNER FURNISHED, OWNER INSTALLED. NOT TO BE USED BY ANY OTHER TRADE.

