Project No. 25-0056.00

October 22, 2025



10/22/2025

ADDENDUM NO. 4
TO THE
DRAWINGS AND PROJECT MANUAL
FOR
NORTH SHORE MULTI-USE INDOOR FACILITY
GALENA PARK INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

VLK
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4.1 GENERAL

A. This addendum modifies the drawings and project manual, dated October 1, 2025, as noted within and shall become part of the Contract Documents.

B. Each holder of proposal documents registered with the Architec**t** will receive a copy of the addendum. Each prime proposer is responsible for distribution of information conveyed by this addendum to its sub-proposers and suppliers.

C. Proposers shall acknowledge receipt of this addendum in the space provided on the proposal form. Failure to do so may subject proposer to disqualification.

D. THE GEOTECHNICAL REPORT ATTACHED IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY AND IS **NOT** PART OF THE CONTRACT DOCUMENTS. IT HAS BEEN MADE AVAILABLE TO BIDDERS AND CONTRACTORS AS A CONVENIENCE. BY PROVIDING THIS REPORT, VLK AND THE OWNER DO NOT ASSUME ANY RESPONSIBILITY OR LIABILITY FOR THE ACCURACY, COMPLETENESS, OR INTERPRETATION OF THE DATA, CONCLUSIONS, OR RECOMMENDATIONS CONTAINED WITHIN THE GEOTECHNICAL REPORT.

4.2 DOCUMENT - OWNER'S COMPETITIVE SEALED PROPOSAL DOCUMENTS

A. Delete Document "BASE PROPOSAL" and insert attached revised Document "BASE PROPOSAL"

B. Delete Document "ALTERNATES PROPOSAL" and insert attached revised Document "ALTERNATES PROPOSAL.

4.3 SECTION 01 23 00 - ALTERNATES

A. Delete this Section and insert attached revised Section.

4.4 SECTION 03 54 13 - SELF-LEVELING UNDERLAYMENT

A. Delete this Section in its entirety.

4.5 SECTION 08 36 13 - SECTIONAL OVERHEAD DOORS

A. Page 08 36 13 – 2, Subparagraph 2.1, A, 14, Add the following subparagraph:
"a. Provide to meet Florida Building Code Product Approval #FL 17629 Large Missile-Impact."

4.6 SECTION 08 41 13 - ALUMINUM-FRAMED ENTRANCES AND STOREFRONT

A. Page 08 41 13 – 3, Subparagraph 2.3, B, a, 1, delete “Trifab® VG ™ 451T” and insert “IR 501T”

B. Page 08 41 13 – 3, Paragraph 2.3, C, delete “5" intermediate rail (centered on panic device)”.

4.7 SECTION 08 45 23 - INSULATED TRANSLUCENT SANDWICH PANEL WALL

A. This Section, attached hereto, is entirely new and is hereby made a part of this addendum.

4.8 SECTION 08 80 00 - GLAZING

A. Delete Section previously issued in Addendum No. 3 and insert attached revised Section.

4.9 SECTION 09 54 23 - LINEAR METAL CEILINGS

A. Page 09 54 23 – 3, Paragraph 2.1, A, add “CertainTeed/ Saint-Gobain” to acceptable manufacturers.

4.10 SECTION 10 22 39 - FOLDING PANEL PARTITIONS

A. Refer to Section previously issued in Addendum No. 3
   1. Page 10 22 39 – 1, Paragraph 2,1, A, add “Moderco” to acceptable manufacturers.

4.11 SECTION 10 51 13 - METAL LOCKERS

A. Page 10 51 13 – 1, Paragraph 2.1, A, add “LockersMFG” to acceptable manufacturers.

4.12 SECTION 10 82 16 - EQUIPMENT SCREENS

A. Page 10 82 16 – Paragraph 2.1, A, add “Airolite” to acceptable manufacturers.

4.13 SECTION 11 31 00 - APPLIANCES

A. Page 11 31 00 – 2, Article 2.2, add the following Paragraphs:

“C. Undercounter Ice Machine: Accessible Counter Height: Provide Nugget ice Model No. ANB115 SS01A (with gravity drain) as manufactured by U-line. Stainless steel. Produces 90 lbs of ice per day, stores 30 lbs., automatic defrost.

D. Undercounter Beverage Refrigerator; Accessible Counter Height: Provide Model No. U-ADA24R as manufactured by U-Line, 5.3 Cu.Ft., Energy Star, Door reversible in field.”

4.14 SECTION 32 18 13.10 - SYNTHETIC GRASS SURFACING

A. Delete this Section previously issued in Addendum No. 3 and insert attached revised Section.

4.15 REVISED DRAWINGS

A. Sheet Nos. INDEX, CODE2.2, CODE2.3, C0.00, C3.00, C5.00, C6.00, C7.00, C8.00, C10.00, C14.00, C14.01, A1.01, A1.11, A1.22, A1.31, A2.01, A2.01B, A2.01C, A2.01D, A2.11, A2.11.1, A2.11A A2.., A2.31, A2.42, A3.00, A3.00.1, A3.01, A3.02, A3.03, A3.05, A3.06, A3.11, A3.21, A3.22, A3.23, A4.11, ,A4.21, A4.22, A4.31, A4.33, A4.41, A5.21, A5.23.1, A5.24, A5.24.1, A6.11A, A6.11C, A6.11C.1, A6.11D, A6.11D.1, A6.31, A7.01, A7.21, A9.11A, A9.11B, A9.11C, A9.11D, A9.41D, A9.41D.1, S2.01B, S2.02C.1, S2.03D, S2.11B, S2.21B, S2.22D, S3.01, S3.04, S6.02, S7.03, P1.01A, P1.01A.1, P2.05D, P3.02A, P3.02A.1, P3.05D, P3.07, P4.01, P5.02, P5.03, P5.04, P6.01, M2.03A, M2.04B, M2.08D, M2.10, M3.01, M3.02, M6.01, E0.00, E0.03A, E1.01A, E1.02B, E2.01, E2.02A, E2.03B, E2.04C, E2.04C.1, E2.05D, E3.02A, E3.05D, E3.10D, E4.01, E4.02, E4.03, E5.01, E5.02, E5.03, E5.05, T0.00, T1.00, T1.01A, T2.01, T2.02A, T2.02, T2.03B, T2.04C.1, T2.04C, T2.05D, T2.06D, T3.01, dated October 22, 2025 and attached hereto, are revised drawings and are hereby made a part of this addendum.

4.16 NEW DRAWINGS

A. Sheet Nos. C14.01, A1.23, A4.34, S6.03, dated October 22, 2025, attached hereto, are new drawings and are hereby made a part of this addendum.

END OF ADDENDUM NO. 4

North Shore Multi-Use Indoor Facility
Galena Park ISD
Houston, Texas

October 22, 2025

STRUCTURAL ADDENDUM NO. 4 ITEMS

1. SHEET S2.01B– FOUNDATION PLAN UNIT B

A. Building edge dimensions updated

B. Shear wall label updated

2. SHEET S2.02C.1– FOUNDATION PLAN UNIT – C – ALTERNATE BID

A. Section cut updated to 6A

3. SHEET S2.03D – FOUNDATION PLAN - UNIT D

A. Building edge dimensions updated

B. Foundation plan at mechanical yard and storage rooms updated

4. SHEET S2.11B – MEZZANINE FRAMING PLAN – UNIT B

A. Slab edge and building finish dimensions updated

B. Section cut updated at Entrance - Canopy

5. SHEET S2.21B – ROOF FRAMING PLAN UNIT - B

A. Updated to show HVLS fans

B. Building finish dimension updated

C. Section cut on gridline D updated

D. Section cut at beam connecting to shear wall updated on Grid 9

6. SHEET S2.22D – ROOF FRAMING PLAN UNIT D

A. Framing updated to match new layout

B. RTU schedule added

7. SHEET S3.01 – FOUNDATION DETAILS

A. Detail 12,15,17,18,19 added

8. SHEET S3.04 – FOUNDATION DETAILS

A. Detail 18 - Updated

9. SHEET S6.01 – ROOF DETAILS

A. Detail 12 – Added

B. Detail 15 – Updated

C. Detail 20 - Added

10. SHEET S6.02 – ROOF DETAILS

A. Detail 18, 19 – Updated

11. SHEET S7.01 – CMU DETAIL

A. Detail 9 – Updated

12. SHEET S7.03 – CMU DETAIL

A. Detail 17 - Added

END OF MATRIX STRUCTURAL ENGINEER'S ADDENDUM ITEMS

Havish V Reddy
Graduate Engineer
Matrix Structural Engineers

Matrix Structural Engineers
TBPE Firm Registration No. F-2640



10/22/2025

BASE PROPOSAL

Item Notes: The undersigned agrees to perform all work required by the Proposal Documents which is not specifically indicated to be proposed as an Alternate for the sum of:

1.1 BASE PROPOSAL:	**$ _____**
1.2 Owner's Contingency Allowance:	**960,000**
1.3 Post-Construction Texas Accessibility Standards Inspection Compliance	**15,000**
1.4 Super Graphics	**100,000**
1.5 Base Proposal + Owner's Contingency Total:	**$ _____**

_____

(Written Total Amount)

Acknowledge Addendum(s)

Acknowledge receipt of Addendum 1 through _____

Alternate Proposal Lines

ALTERNATES PROPOSAL

Alternate No. 1
(Response required)

1 BASE PROPOSAL REDUCTION: **$** _____

Item Notes: If there is a discount to the Base Proposal enter that amount here.

Alternate No. 2 **$** _____
(Response required)

State in the proposal form the amount to be added to the base proposal for providing a 120-yard indoor practice facility in lieu of an 80-yard indoor practice facility.

Alternate No. 3 **$** _____
(Response required)

State in the proposal form the amount to be added to the base proposal for providing the renovation of the coach's offices and training area in existing field house. Lavatory replacement in these areas are to be provided in the base bid and not to be included in this alternate

Alternate No. 4 **$** _____
(Response required)

State in the proposal form the amount to be added into the base proposal for providing the brick veneer and metal wall panel system in the existing field house.

Alternate No. 5 - State in the proposal form the amount to be added to the base proposal to furnish and install the following Air Handling Units as listed in the specifications. Include estimated lead time/delivery to be assessed as part of the selection process.
(Response required)

5a Carrier **$** _____

5b Temtrol **$** _____

5c Trane **$** _____

Alternate No. 6 - State in the proposal form the amount to be added to the base proposal to furnish and install the following Chillers as shown in the Contract Documents. Include estimated lead time/delivery to be assessed as part of the selection process
(Response required)

6aCarrier Standard Efficiency Chillers **$** _____

6b Carrier High Efficiency Chillers **$** _____

6c Trane Standard Efficiency Chiller **$** _____

6d Trane High Efficiency Chillers **$** _____

6e York Standard Efficiency Chillers **$** _____

6f York High Efficiency Chiller **$** _____

Alternate No. 7 - State in the proposal form the amount to be added to the base proposal to furnish and install the following BMCS system
(Response required)

7a Reliable Controls by Unify Energy Solutions **$** _____

7b Trane Controls by Hunton Group **$** _____

7c ALC by Automated Logic Houston **$** _____

7d Distech Controls by TDI BMCS system **$** _____

Alternate No. 8 - State in the proposal form the amount to be added to the base proposal to furnish and install the paved elastic layer and turf for the indoor and outdoor practice facility.
(Response required)

8a FieldTurf **$** _____

8b Hellas **$** _____

8c Shaw Sports Turf **$** _____

8d SportTurf **$** _____

Alternate No. 9 - State in the proposal form the amount to be added to the base proposal to furnish and install the turf in the new weight room, game day plaza and champions plaza.
(Response required)

9a FieldTurf **$** _____

9b Challenger Turf **$** _____

9c Shaw Sports Turf **$** _____

9d SportTurf **$** _____

Alternate No. 10 - State in the proposal form the amount to be added to the base proposal to furnish and install the rubber flooring in the new weight room.
(Response required)

10a Tarkett **$** _____

10b ProMaxima **$** _____

10c Regupol **$** _____

October 22, 2025



MEPT ADDENDUM NO. ITEMS

1. **SECTION 28 46 00 – FIRE DETECTION AND ALARM SYSTEM**

   A. Add this section in its entirety.

2. **SECTION 28 46 02 – EXPANSION OF EXISTING FIRE DETECTION AND ALARM SYSYTEM**

   A. Delete this section in its entirety.

END OF SALAS O'BRIEN ADDENDUM ITEMS

SECTION 01 23 00

ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY

A. Requirements Included:
   1. Identification and description of alternate work.
   2. The amount shown in the proposal form for each alternate shall include all overhead, profit, insurance and other costs incidental to the performance under the alternate.

B. Related Requirements:
   1. Proposal Form: Quotation of cost of each alternate.
   2. Contract Form: Alternates accepted by Owner for incorporation into the work.
   3. Section of specifications identified in each alternate.

1.2 PROCEDURES

A. Proposers are required to submit alternate amounts to add work or to deduct work from the base proposal as described below. Failure to submit alternate amounts in spaces provided on proposal form shall be basis for disqualification of proposal.

B. The successful proposer shall not modify, withdraw or cancel any of the alternate proposals or any part thereof for 30 days after date of receipt of proposals, unless specifically noted otherwise.

C. Contractor shall be responsible for any changes in the Work affected by acceptance of alternates. Claims for additional costs or time extensions resulting from changes to the Work as a result of the Owner's election of any or all alternates will not be allowed.

D. Refer to drawings and technical specifications sections for items of work affected by alternates.

E. Election of alternates will be exercised at the option of Owner.

F. Coordinate related work and modify or adjust surrounding work as required to complete the Work, including changes under each alternate.
   1. Include as part of each alternate, miscellaneous devices, accessory objects and similar items incidental to, or required for, a complete installation whether or not indicated as part of alternate.
   2. Cost listed for each alternate include cost of related coordination, modification, or adjustment.

G. Notification: Immediately following the award of contract, Contractor shall prepare and distribute to each entity or person to be involved in the performance of the Work, a notification of the status of each alternate scheduled herein. Indicate which alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates, if any.

1.3 SELECTION AND AWARD OF ALTERNATES

A. Indicate variation in base proposal amount as a result of the prices for the alternates described below and listed on the proposal form document or any supplement to it, by adding to, or deducting from, the base proposal amount or by indicating "No Change."

B. Indicating "No Proposal" as an alternate is unacceptable and is reason for rejection of proposal.

1.4 SCHEDULE OF ALTERNATES

A. Alternate No. 1: State in the proposal form the amount to be added to the base proposal for providing a base proposal reduction.

B. Alternate No. 2: State in the proposal form the amount to be added to the base proposal for providing a 120-yard indoor practice facility in lieu of an 80-yard indoor practice facility.

C. Alternate No. 3: State in the proposal form the amount to be added to the base proposal for providing the renovation of the coach's offices and training area in existing field house. Lavatory replacement in these areas are to be provided in the base bid and not to be included in this alternate.

D. Alternate No. 4: State in the proposal form the amount to be added into the base proposal for providing the brick veneer and metal wall panel system in the existing field house.

E. Alternate No. 5: State in the proposal form the amount to be added to the base proposal to furnish and install the following Air Handling Units as listed in the specifications. Include estimated lead time/delivery to be assessed as part of the selection process.
   1. Alternate No. 5a: Carrier Air Handling Units
   2. Alternate No. 5b: Temtrol Air Handling Units
   3. Alternate No. 5c: Trane Air Handling Units

F. Alternate No. 6: State in the proposal form the amount to be added to the base proposal to furnish and install the following Chillers as shown in the Contract Documents. Include estimated lead time/delivery to be assessed as part of the selection process.
   1. Alternate No. 6a: Carrier Standard Efficiency Chillers
   2. Alternate No. 6b: Carrier High Efficiency Chillers
   3. Alternate No. 6c: Trane Standard Efficiency Chillers
   4. Alternate No. 6d: Trane High Efficiency Chillers
   5. Alternate No. 6e: York Standard Efficiency Chillers
   6. Alternate No. 6f: York High Efficiency Chillers

G. Alternate No. 7: State in the proposal form the amount to be added to the base proposal to furnish and install the following BMCS system.
   1. Alternate No. 7a: Reliable Controls by Unify Energy Solutions BMCS system.
   2. Alternate No. 7b: Trane Controls by Hunton Group BMCS system.
   3. Alternate No. 7c: by Automated Logic Houston BMCS system.
   4. Alternate No. 7d: Distech Controls by TDI BMCS system.

H. Alternate No. 8: State in the proposal form the amount to be added to the base proposal to furnish and install the paved elastic layer and turf for the indoor practice facility and outdoor field.
   1. Alternate No. 8a: FieldTurf turf for the indoor practice facility and outdoor field.
   2. Alternate No. 8b: Hellas turf for the indoor practice facility and outdoor field.
   3. Alternate No. 8c: Shaw Sports turf for the indoor practice facility and outdoor field.
   4. Alternate No. 8d: SportTurf for the indoor practice facility and outdoor field.

I. Alternate No. 9: State in the proposal form the amount to be added to the base proposal to furnish and install the turf in the new weight room, game day plaza and champions plaza.
   1. Alternate No. 9a: FieldTurf turf in the new weight room, game day plaza and champions plaza.
   2. Alternate No. 9b: Challenger Turf turf in the new weight room, game day plaza and champions plaza.
   3. Alternate No. 9c: Mammoth turf in the new weight room, game day plaza and champions plaza.
   4. Alternate No. 9d: Sport Turf in the new weight room, game day plaza and champions plaza.

J. Alternate No. 10: State in the proposal form the amount to be added to the base proposal to furnish and install the rubber flooring in the new weight room.
   1. Alternate No. 10a: Tarkett rubber flooring in the new weight room.
   2. Alternate No. 10b: ProMaxima rubber flooring in the new weight room.
   3. Alternate No. 10c: Regupol rubber flooring in the new weight room.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION



10/22/2025

SECTION 08 45 23

INSULATED TRANSLUCENT SANDWICH PANEL WALL

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes the insulated thermally broken translucent sandwich panel system and accessories, factory unitized, as shown and specified. Work includes providing and installing:
   1. Flat factory prefabricated structural insulated translucent sandwich panels
   2. Aluminum installation system
   3. Aluminum sill flashing

B. Related Sections:
   1. Section 04 22 00 - Concrete Unit Masonry.
   2. Section 07 92 00 - Joint Sealants.

1.2 SUBMITTALS

A. Submit manufacturer's product data. Include construction details, material descriptions, profiles and finishes of components.

B. Submit shop drawings. Include elevations and details.

C. Submit manufacturer's color charts showing the full range of colors available for factory-finished aluminum.
   1. When requested, submit samples for each exposed finish required, in same thickness and material indicated for the work and in size indicated below. If finishes involve normal color variations, include sample sets consisting of two or more units showing the full range of variations expected.
      a. Sandwich panels: 14" x 28" units
      b. Factory finished aluminum: 5" long sections

D. Submit Installer Certificate, signed by installer, certifying compliance with project qualification requirements.

E. Submit product reports from a qualified independent testing agency indicating each type and class of panel system complies with the project performance requirements, based on comprehensive testing of current products. Previously completed reports will be acceptable if for current manufacturer and indicative of products used on this project.
   1. Reports required are:
      a. International Code Council Evaluation Report (ICC-ES)
      b. Flame Spread and Smoke Developed (UL 723) – Submit UL Card
      c. Burn Extent (ASTM D 635)
      d. Color Difference (ASTM D 2244)
      e. Impact Strength (UL 972)
      f. Bond Tensile Strength (ASTM C 297 after aging by ASTM D 1037)
      g. Bond Shear Strength (ASTM D 1002)
      h. Beam Bending Strength (ASTM E 72)
      i. Insulation U-Factor (NFRC 100)
      j. NFRC System U-Factor Certification (NFRC 700)
      k. Solar Heat Gain Coefficient (NFRC or Calculations)
      l. Condensation Resistance Factor (AAMA 1503)
      m. Air Leakage (ASTM E 283)
      n. Structural Performance (ASTM E 330)
      o. Water Penetration (ASTM E 331)
      p. 1200F Fire Resistance (SWRI)
      q. ASTM E1886/1996 or TAS 201, 202 and 203
      r. Performance for Windows (AAMA/WDMA/CSA-101/I.S.2/A440-05)

1.3 QUALITY ASSURANCE

A. Manufacturer's Qualifications
   1. Material and products shall be manufactured by a company continuously and regularly employed in the manufacture of specified materials for a period of at least ten consecutive years and which can show evidence of those materials being satisfactorily used on at least six projects of similar size, scope and location. At least three of the projects shall have been in successful use for ten years or longer.
   2. Panel system must be listed by the International Code Council – Evaluation Service, which requires quality control inspections and fire, structural and water infiltration testing of sandwich panel systems by an approved agency.
   3. Quality control inspections shall be conducted at least once each year and shall include manufacturing facilities, sandwich panel components and production sandwich panels for conformance with AC04 “Sandwich Panels” or AC177 “Translucent Fiberglass Reinforced Plastic (FRP) Faced Panel Wall, Roof and Skylight Systems” as regulated by the ICC-ES.

B. Installer’s Qualifications: Installation shall be by an experienced installer, which has been in the business of installing specified panel systems for at least two consecutive years and can show evidence of satisfactory completion of projects of similar size, scope and type.

1.4 PERFORMANCE REQUIREMENTS

A. The manufacturer shall be responsible for the configuration and fabrication of the complete unitized panel system.
   1. When requested, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
   2. Standard panel system shall have less than 0.01 cfm/ft² air leakage by ASTM E 283 at 6.24 PSF (50 mph) and no water penetration by ASTM E 331 at 15 PSF; and structural testing by ASTM E 330.
   3. Structural Loads; Provide system capable of handling the following loads:
      a. Positive Wind Load: 30 PSF

B. Windborne Debris Impact Resistance Performance for translucent panels.
   1. Translucent panels must be impact-resistant meeting the requirements of an approved impact-resisting standard: ASTM E 1996 and ASTM E 1886 or TAS 201, 202 and 203.
   2. Panel System designed to meet Missile Type C per ASTM E 1996.

1.5 DELIVERY STORAGE AND HANDLING

A. Deliver panel system, components and materials in manufacturer's standard protective packaging.

B. Store panels on the long edge; several inches above the ground, blocked and under cover in accordance with manufacturer's storage and handling instructions.

1.6 WARRANTY

A. Submit manufacturer's and installer's written warranty agreeing to repair or replace panel system work, which fails in materials or workmanship within one year of the date of delivery. Failure of materials or workmanship shall include leakage, excessive deflection, deterioration of finish on metal in excess of normal weathering and defects in accessories, insulated translucent sandwich panels and other components of the work.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. The basis for this specification is the “Shoji” panel product manufactured by Kalwall Corporation. Other manufacturers may bid this project provided they comply with all of the performance requirements of this specification and submit evidence thereof. Listing other manufacturers’ names in this specification does not constitute approval of their products or relieve them of compliance with all the performance requirements contained herein. Acceptable Manufacturers: Kingspan Light + Air. Unigrid

B. Kalwall Corporation is furnished and installed by Griesenbeck Architectural Products 5122 Steadmont Dr. Houston, TX 77040 713.781.3287 www.griesenbeck.com

2.2 PANEL COMPONENTS

A. Face Sheets
   1. Translucent faces: Manufactured from glass fiber reinforced thermoset resins, formulated specifically for architectural use.
      a. Thermoplastic (e.g. polycarbonate, acrylic) faces are not acceptable.
      b. Face sheets shall not deform, deflect or drip when subjected to fire or flame.
   2. Interior face sheets:
      a. Flame spread: Underwriters Laboratories (UL) listed, which requires periodic unannounced retesting, with flame spread rating no greater than 50 and smoke developed no greater than 250 when tested in accordance with UL 723.
      b. Burn extent by ASTM D 635 shall be no greater than 1".
   3. Exterior face sheets:
      a. Color stability: Full thickness of the exterior face sheet shall not change color more than 3 CIE Units DELTA E by ASTM D 2244 after 5 years outdoor South Florida weathering at 5° facing south, determined by the average of at least three white samples with and without a protective film or coating to ensure long-term color stability. Color stability shall be unaffected by abrasion or scratching.
      b. Strength: Exterior face sheet shall be uniform in strength, with panel meeting ASTM E1996 and ASTM E1886 or TAS 201, 202 and 203.
   4. Appearance:
      a. Exterior face sheets of south facing panels: Smooth .052" thick and white in color. Exterior face sheets of all other panels: .070" thick and white in color.
      b. Interior face sheets: Smooth .045" thick and crystal in color.
      c. Face sheets shall not vary more than ± 10% in thickness and be uniform in color.

B. Grid Core
   1. Thermally Broken Composite I-beam grid core and temper with provisions for mechanical interlocking of muntin-mullion and perimeter. Width of I-beam shall be no less than 7/16".
   1. I-beam Thermal break: Minimum 1", thermoset fiberglass composite. Poured and de-bridged thermal break is not acceptable.

C. Laminate Adhesive
   1. Heat and pressure resin type adhesive engineered for structural sandwich panel use, with minimum 25-years field use. Adhesive shall pass testing requirements specified by the International Code Council "Acceptance Criteria for Sandwich Panel Adhesives".
   2. Minimum tensile strength of 750 PSI when the panel assembly is tested by ASTM C 297 after two exposures to six cycles each of the aging conditions prescribed by ASTM D 1037.
   3. Minimum shear strength of the panel adhesive by ASTM D 1002 after exposure to four separate conditions:
      a. 50% Relative Humidity at 68° F: 540 PSI
      b. 182° F: 100 PSI
      c. Accelerated Aging by ASTM D 1037 at room temperature: 800 PSI
      d. Accelerated Aging by ASTM D 1037 at 182° F: 250 PSI

2.3 PANEL CONSTRUCTION

A. Provide sandwich panels of flat fiberglass reinforced translucent face sheets laminated to a grid core of mechanically interlocking I-beams. The adhesive bonding line shall be straight, cover the entire width of the I-beam and have a neat, sharp edge.
   1. Thickness: 2-3/4"
   2. Light transmission: 16%
   3. Solar heat gain coefficient 0.22
   4. Panel U-factor by NFRC certified laboratory: 2-3/4" thermally broken grid.
   5. Complete insulated panel system shall have NFRC certified U-factor of 0.42.
   6. Grid pattern: Shoji grid pattern.

B. Standard panels shall deflect no more than 1.9" at 30 PSF in 10' 0" span without a supporting frame by ASTM E 72.

C. Standard panels shall withstand 1200° F fire for minimum one hour without collapse or exterior flaming.

D. Thermally broken panels: Minimum Condensation Resistance Factor of 80 by AAMA 1503 measured on the bond line.

2.4 BATTENS AND PERIMETER CLOSURE SYSTEM

A. Closure system: Thermally Broken-Flat clamp-tite screw type closure system shall be of extruded aluminum alloy and temper as recommended by manufacturer.

B. Sealing tape: Manufacturer's standard, pre-applied to closure system at the factory under controlled conditions.

C. Fasteners: 300 series stainless steel screws for aluminum closures, excluding final fasteners to the building.

D. Finish: Manufacturer's factory applied finish, which meets the performance requirements of AAMA 2604. Custom color to be selected by Architect.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Installer shall examine substrates, supporting structure and installation conditions.

B. Do not proceed with panel installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Metal Protection:
1. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape recommended by manufacturer for this purpose.
2. Where aluminum will contact concrete, masonry or pressure treated wood, protect against corrosion by painting contact surfaces with bituminous paint or method recommended by manufacturer.

3.3 INSTALLATION

A. Install the panel system in accordance with the manufacturer's installation recommendations and approved shop drawings.
1. Anchor component parts securely in place by permanent mechanical attachment system.
2. Accommodate thermal and mechanical movements.
3. Set perimeter framing in a full bed of sealant compound, or with joint fillers or gaskets to provide weather-tight construction.

B. Install joint sealants at perimeter joints and within the panel system in accordance with manufacturer's installation instructions.

3.4 CLEANING

A. Clean the panel system inside and outside, immediately after installation.

B. Refer to manufacturer's written recommendations.

END OF SECTION

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SECTION 08 80 00

GLAZING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Glass and glazing accessories.

B. Related Sections:
   1. Section 07 92 00 - Joint Sealants
   2. Section 08 11 00 - Hollow Metal Doors and Frames.
   3. Section 08 14 23 - Plastic-laminate-faced Wood Doors.
   4. Section 08 41 13 - Aluminum-framed Entrances and Storefronts.

1.2 PERFORMANCE REQUIREMENTS

A. Glass and glazing materials of this section shall provide continuity of building enclosure vapor and air barrier
   1. In conjunction with materials described in SECTION 07 92 00 - JOINT SEALANTS.
   2. Maintain continuous air and vapor barrier throughout glazed assembly from glass pane to heel bead of glazing sealant.

B. Design and size glass to withstand dead loads and live loads caused by pressure and suction of wind as calculated in accordance with building code, and measured in accordance with ASTM E 330.

C. Limit glass deflection to l/200 or flexure limit of glass with full recovery of glazing materials, whichever is less.

D. Windborne-debris-impact Resistance: Provide exterior glazing that passes basic-protection testing requirements in ASTM E 1996 for Wind Zone 1 when tested according to ASTM E 1886. Test specimens shall be no smaller in width and length than glazing indicated for use on the Project and shall be installed in same manner as glazing indicated for use on the Project.
   1. Large-Missile Test: For glazing located within 30 feet of grade.
   2. Small-Missile Test: For glazing located more than 30 feet above grade.

1.3 SUBMITTALS

A. Submit product data and samples under provisions of SECTION 01 33 23 - SHOP DRAWINGS, PRODUCT DATA AND SAMPLES.

B. Provide structural, physical and environmental characteristics, size limitations, special handling or installation requirements.

C. Provide data on glazing sealant. Identify colors available.

D. Samples:
   1. Submit 2 samples of each type of glass (except clear glass), 12" x 12" in size, illustrating glass unit, coloration, design.
   2. Submit 4" long bead of glazing sealant in color selected.

1.4 QUALITY ASSURANCE

A. Glazing Standards: Comply with recommendations of Glass Association of North America (GANA) "Glazing Manual."

B. Source Quality Control: Glass shall be identified by the manufacturer's labels of grade and quality. Temporary labels shall not be removed until final cleaning. Permanent labels on tempered glass shall not be removed.
   1. Safety Glazing Labeling: Where safety glazing is indicated, permanently mark glazing with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.

2. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of the IGCC.

C. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 252.

D. Fire-Rated Window Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 257.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Protect glass and glazing materials during delivery, storage, and handling as required to prevent edge damage to glass, and damage to glass and glazing materials from effects of moisture including condensation, or temperature changes, and other causes.

1.6 WARRANTY

A. Provide written 10-year warranty signed by manufacturer of insulating glass agreeing to furnish replacements for those insulating glass units developing manufacturing defects. Manufacturing defects are defined as failure of hermetic seal of air space (beyond that due to glass breakage) as evidenced by intrusion of dirt or moisture, internal condensation or fogging, and other visual indications of seal failure or performance.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Basis of Design products are Vitro Architectural Glass (PPG): Provide glass as manufactured by one of the following:
AGC Glass North America
Guardian Industries Corp.
Technical Glass Products
Oldcastle Building Envelope
Pilkington North America, Inc. (NSG Group)
Vitro Architectural Glass (formerly PPG Glass)

2.2 GLASS

A. (TI1) Impact-Resistant, Insulated Windborne-Debris Glass: Provide two panes of glass of equal thickness, laminated together with not less than 0.09" thick polyvinyl butyl plastic interlayer.
1. Exterior Pane:
a. Laminate Outboard Lite: Acuity Low Iron float glass as manufactured by Vitro Architectural Glass. Conformance: ASTM C 1036, Type I, Class 2, Quality q3.
1) Thickness: 6mm (1/4")
2) Heat-Treatment: Tempered; ASTM C 1048, Kind FT; Safety Glazing meets ANSI Z97.1 and CPSC 16CFR-1201.
3) Magnetic Sputter Vacuum Deposition Coating (MSVD): ASTM C 1376.
4) Coating: Solarban® 72 on Surface # 2
a) Clear Laminated Interlayer manufactured Solutia Saflex; Eastman Chemical Co. or Trosifol; Kuraray; type: PVB with a thickness of minimum 0.090”.
b. Laminate Inboard Lite: Acuity Tinted float glass as manufactured by Vitro Architectural Glass. Conformance: ASTM C 1036, Type I, Class 2, Quality q3.
1) Thickness: 6mm (1/4")
2) Heat-Treatment: Tempered; ASTM C 1048, Kind FT; Safety Glazing meets ANSI Z97.1 and CPSC 16CFR-1201.
2. 1/2" air space.
3. Interior Pane: Acuity Low Iron float glass as manufactured by Vitro Architectural Glass.
a. Conformance: ASTM C 1036, Type 1, Class 2, Quality q3.
b. Glass Thickness: 6mm (1/4")
c. Magnetic Sputter Vacuum Deposition Coating (MSVD): ASTM C 1376.
d. Coating: Solarban® 72 on Surface # 5

e. Heat-Treatment: Tempered; ASTM C 1048, Kind FT; Safety Glazing meets ANSI Z97.1 and CPSC 16CFR-1201.

B. (CT4) Clear, Tempered Glass: ASTM C 1048, Type I, Class 1 (Clear), Quality q3 (Glazing select). Kind FT - Fully Tempered, Condition A - Uncoated surfaces, 1/4" thickness.

C. Clear Glass Mirrors, Unframed: ASTM C 1503, Mirror Select.
1. Nominal thickness 1/4". Backs shall have two coats of silver hermetically sealed, complying with GS-27, with an impervious protective coating of copper deposited over silver by electrolysis, and finished with a special composition hard, mirror-backing paint. Mirrors shall bear manufacturer's labels. Mirrors shall have ground and polished edges.
2. Mirror Back Safety Tape: ANSI Z97.1.
3. J-Molds: Provide stainless steel continuous "J" clip at bottom and “J” clips around perimeter of mirror to anchor mirror to wall (Approx. Size: 3/8" x 3/8").

2.3 GLAZING MATERIALS

A. Glazing Compound: Comply with ASTM C 1311 or FS TT-S-00230, one-part, non-sag acrylic polymeric sealant. Product/manufacturer; one of the following:
Acryl-R Acrylic Sealant; Schnee-Moorehead, Inc.
Mono 555; Tremco

B. Channel Glazing Strips; Hollow Metal Doors and Frames: Provide black vinyl channel glazing strips, Glazing Vinyl for 990 Sliders Part #6062-01 as manufactured by Kawneer.

C. Accessories: Setting blocks, tape, vinyl gaskets and spacer strips as required for a complete installation.

D. Mirror Mastic: Combination of asphaltic bitumens, fibers and mineral spirits. Product/manufacturer; one of the following:
Gunther Pro®; Gunther Mirror Mastics
7HR4 Mirror Tac®; Pecora Corp.
Mirro-Mastic; Palmer Products Corporation.

PART 3 - EXECUTION

3.1 INSPECTION

A. Examine areas to receive glass for conditions that will adversely affect the execution and quality of work. Do not start this work until unsatisfactory conditions are corrected.

3.2 INSTALLATION

A. Setting Glass: Glazing shall be done at the site by skilled glaziers in conformance with the general conditions governing glazing in the GANA Glazing Manual.
1. Glazing of aluminum windows and storefront shall be done in conformance with the methods recommended by the manufacturer of the aluminum items. Beads or stops furnished with the items to be glazed shall be used to secure the glass in place.
2. For interior hollow metal door and frame glazing, install channel glazing strips and place glass within glazing strips. Install the removable stop and position the channel glazing strip to seal completely the void around the glass.
3. Verify glass sizes for required edge clearances by measuring the openings. Cut each piece accurately and fit to its particular position. Center glass in the opening vertically and horizontally. Use edge blocks in vertical jambs to prevent lateral "walking" of the glass.
4. Glass shall have clean cut edges. Do not seam, nip, stone or strike edges, or scarf corners, and do not install glass with flared edges at the bottom. Do not bump, drag, or rest the edge of a glass light against metal or other hard objects.
5. Set tempered glass with tong marks completely concealed or in as inconspicuous a location as possible.

B. Glass Mirrors:
   1. Apply one additional coat of moisture-resistant paint, type recommended by manufacturer, to back of mirror.
   2. Allow to dry.
   3. Apply safety tape to back of mirror in strips leaving 25% of surface free for application of mastic.
   4. Apply mirror mastic to cover not more than 25% of back mirror, 1/8" to 1/2" thickness of setting bed.
   5. Set mirror on concealed shelf angle.
   6. Press mirror against substrate to bond.
   7. Leave open ventilation space, 1/8" minimum between mirror and substrate.
   8. Do not seal off ventilation space at edge of mirror.

3.3 CLEANING

A. Upon completion of the building, clean glass on both sides and remove labels, paint spots, putty and other defacement. Replace damaged glass with new.

END OF SECTION

SECTION 28 46 00

FIRE DETECTION AND ALARM SYSTEM

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Project scope includes the replacement of the existing fire alarm system with new fire alarm system at existing buildings and expanding the new system to new areas. The existing fire alarm system shall remain fully operational until the new system is fully operational. Do not remove existing field devices until transition to fully operational new system as required by the Fire Marshall.

B. Provide all detailed engineering, documentation, materials and devices, installation, calibration, software programming and check-out necessary for a complete and fully operational fire detection and alarm system in accordance with the full intent and meaning of the drawings and specifications including, but not limited to, the following:
1. Supply, install and connect all hardware necessary to provide a complete and operational fire detection and alarm system.
2. Supply, install and wire all field hardware, fire alarm control panel, power supplies, power circuits, alarm initiating devices, audible and visual alarm devices, auxiliary control relays, signal initiating and signaling devices, conduits, wires, fittings and all accessories required for the system to perform as specified as required.
3. Supply, install, debug and test all software required to provide all software functions described in accordance with the full intent and meaning of the drawings and specifications.
4. Coordinate the work specified under this Section with other trades and contractors to assure a complete and fully operational system.

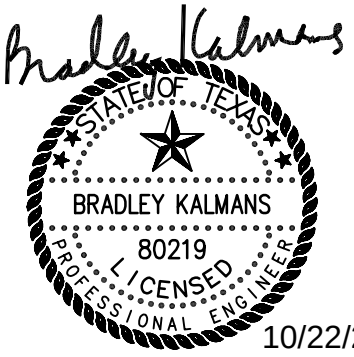
C. The intent of fire detection and alarm system work is specified in this section and indicated on the drawings. The installing contractor shall design and provide a complete system, meeting the requirement of this specification. The Contractor shall provide all fire alarm and initiation devices required for a complete system acceptable to all governing authorities. Provide proper spacing and coverage of all devices.

1.2 RELATED SECTIONS

A. Divisions 22, 23 and 26

B. Sprinkler Systems

C. Food Service



10/22/2025

1.3 CODES / STANDARDS / REFERENCES (LATEST EDITIONS)

A. National Fire Protection Association (NFPA):

1.	NFPA1	Fire Code
2.	NFPA 13	Systems, Installation
3.	NFPA 17	Dry Chemical Extinguishing Systems
4.	NFPA 70	National Electrical Code
5.	NFPA 72	National Fire Alarm and Signaling Code.
6.	NFPA 80	Fire Doors and Fire Windows
7.	NFPA 90A	Standard for the Installation of Air Conditioning and Ventilating Systems.
8.	NFPA 92A	Smoke Control Systems
9.	NFPA 101	Life Safety code.
10.	NFPA 105	Smoke Control Door Assemblies
11.	NFPA 1221	Standard for the Installation, Maintenance and Use of Emergency Services Communications Systems.
12.	NFPA 2001	Fire Extinguishing Systems, Clean Agent

B. UL: Underwriters Laboratories, Inc.

1. 217 Single and Multiple Station Smoke Detectors.
2. 268 Smoke Detectors for Fire Protective Signaling Services.
3. 864 Control Units for Fire Protective Signaling Services, 9th Edition.
4 864 Transient protection
5. 1480 Speakers for Fire Protective Signaling Systems
6. UL Fire Protection Equipment Directory.
7. UL Electrical Construction Materials Directory.

C. Factory Mutual P7825 Approval Guide

D. American National Standards Institute (ANSI).

E. National Electrical Manufacturer's Association (NEMA).

F. Institute of Electrical and Electronic Engineers (IEEE).

G. Electronic Industries Association (EIA-232-C): Interface between Data Terminal Equipment and Data Communication Equipment Employing Serial Binary Data Interchange.

H. Requirements of American Disabilities Act (Public Law 101-336).

I. Local Accessibility Standards

J. State Fire Marshall or Requirements of Local Authorities having Jurisdiction

K. State Insurance Code

L. International Building and Fire Code Adopted by Local Authority Having Jurisdiction

M. Local & State Building Codes

N. In addition the above requirements, comply with all local codes. Where discrepancies exist between codes, drawings or specifications, the more stringent requirement shall prevail. Installation shall be subject to approval, inspection and test of applicable regulatory agencies.

1.4 MANUFACTURER'S, PLANNER'S AND INSTALLER'S QUALIFICATIONS

A. The manufacturer shall regularly and presently produce, as the manufacturer's principle products, the equipment and material of the type and design specified for this project, and shall have manufactured the item for at least 5 years.

B. Manufacturer's product shall have been in satisfactory operation on three installations of similar size, type and design as this project, for approximately 3 years.

C. Manufacturer shall submit at the time of bid a list of installations where the products have been in operation.

D. The installing contractor shall have been actively engaged in the business of designing, selling, installing, and servicing fire alarm systems for at least ten (10) years.

E. The entire Fire Detection and Alarm System shall be installed by an authorized representative of the Fire Alarm Manufacturer and certified by the manufacturer to distribute, sell, and install the specified fire alarm and smoke detection system. Include all components, elements, and testing and acceptance procedures.

F. If the submitted system is being supplied by an authorized distributor of the equipment manufacturer, the distributor shall have been actively engaged in the sale, installation and service of the type of system proposed for this project for a minimum of 10 years.

G. Any proposed installer who cannot show evidence of such qualifications may be rejected. The services of a technician provided and certified by the equipment manufacturer shall be provided to

supervise the installation and tests of the system.

H. Furnish evidence there is an experienced and effective service organization, which carries a stock of repair parts for the system to be furnished.

I. The installing contractor shall be licensed by the State Fire Marshall to design, sell, install, and service fire alarm systems as required by the State Insurance Code.

J. The installing contractor shall have on his staff a minimum of two (2) Fire Alarm Planning Superintendent (APS) licensed by the State Fire Marshall's office for such purpose and under whose supervision installation, final connections, and check out will take place as required by the State Insurance Code.

K. The APS shall be a certified NICET Level III state licensed fire alarm planner under whose supervision system design shall take place. In lieu of a NICET certified state licensed fire alarm planner, the contractor or supplier may provide design supervision by a registered professional engineer, who regularly engages in the design of fire alarm systems as required by the Texas Board of Professional Engineers.

L. The installing contractor shall provide 24-hour, 365 days per year emergency service with factory trained, state licensed service technicians.

M. Material shall be new and in perfect condition when installed.

N. Electrical or electronic equipment provided under this Division which has been damaged, exposed to weather, or is, in the opinion of the Architect/Engineer otherwise unsuitable because of improper fabrication, storage, or installation, shall be removed and replaced with new equipment, at no additional cost to the owner.

O. Quality Control Assurance:
1. All components of the fire alarm system shall be products of an Underwriters Laboratories, Inc. listed fire alarm manufacturer, and shall bear the UL Label. Partial listing shall not be acceptable.
2. All components of the fire alarm systems shall use the most current technology available.
3. Only new parts shall be installed at the time of initial installation and to repair the system during the warranty period. No reconditioned parts shall be used.
4. All devices shall be tested and certified that they meet or exceed the “Service Life Expectancy Rating” as outlined by UL and NFPA.

1.5 COORDINATION

A. It shall be the responsibility of the installing contractor to coordinate all requirements surrounding installation of the fire alarm system with all other trades.

B. Contractor shall schedule a pre-construction meeting with Owner/Architect regarding the Fire Detection and Alarm System.

1.6 DEFINITIONS

A. General: Wherever mentioned in this specification or on the drawings, the equipment, devices and functions shall be defined as follows:
1. Alarm Signal: A signal, which signifies a state of emergency requiring immediate action and immediate notification of the Fire Department. These are signals such as:
   a. The operation of a manual station.
   b. The operation of a fire suppression system switch.
2. Pre-Alarm Signal: A signal, which indicates a detection device, has operated. These signals require and immediate response, but do not require immediate notification of the Fire Department.
3. Supervisory Signal: A signal, which signifies the impairment of fire protection system, which may prevent its normal operation.
4. Trouble Signal: A signal, which indicates that a fault, such as an open circuit or ground,

has occurred in the system.

5. Alarm Zone: An alarm initiating device or combination of devices connected to a single alarm initiating device circuit.
6. Pre-Alarm Zone: A detector or group of detectors connected to a single detector circuit, which can send an alarm to the central control panel.
7. Supervision Zone: A supervisory signal initiating device or combination of such devices connected to a single supervisory signal circuit.
8. Communication Zone: A fire alarm indicating device or series of devices arranged to visually and/or audibly indicate a fire alarm signal.

1.7 SUBMITTALS

A. Contractor shall meet with Owner's Fire Alarm System representative prior to submission of formal/final shop drawings to Architect to allow the Owner and Architect to review a preliminary draft copy of the submittal to verify compliance with the specifications and any detailed requirements of the project. After the draft submittal has been reviewed by the Architect / Owner / Engineer, and formal shop drawings have been reviewed by Architect and returned to the Contractor, the required pre-construction meeting shall take place with Owner / Architect / Engineer.

B. Before the final set of shop drawings are submitted to Architect / Engineer, submit drawings to the jurisdictions for approval. All approvals shall be noted on the drawings or by letter from the authorities having jurisdiction (AHJ).

C. All preliminary and as-built design drawings and supporting documentation shall include: Floor Plan Drawings, riser diagrams, control unit wiring diagrams, point to point wiring diagrams, and typical wiring diagrams as described herein.

1. Name of Owner and Occupant
2. Date
3. Location, including street address.
4. Provide a complete written, item-by-item, line-by-line, specification review stating compliance or deviation in full description.
5. Device Legend
6. Input/output programming matrix
7. Licensed Designer Information – Registered Professional Engineer or Alarm Planning Superintendent (APS)
8. Battery calculations
9. Notification appliance circuit voltage drop calculations
10. Floor Plan
    a. Floor identification
    b. Point of compass
    c. Correct graphic scale
    d. All walls and doors
    e. All partitions extending to within 15 percent of ceiling height
    f. Room descriptions
    g. Fire alarm device / component locations
        1) Signal notification devices
        2) Initiation devices
        3) Smoke control systems
        4) Initiation of automatic extinguishing equipment
        5) Doors that unlock or close automatically
        6) Zone verification for detection devices
        7) Fire/Smoke damper control
        8) Fire alarm panel location
        9) Fire alarm annunciators
        10) Control valves to Fire Protection System
        11) Duct smoke detectors
        12) Supervisory devices
        13) Elevator location
        14) Elevator recall system location
    h. Location of fire alarm primary power connections

i. Location of monitor/control interfaces to other systems
j. Riser locations
k. Methods for compliance with NFPA 72 24.3.13 for survivability (emergency voice systems) as required in NFPA 72 12.4 where applicable.
l. Ceiling height and ceiling construction details
m. Fire alarm system riser diagram
    1) General arrangement of the system, in building cross-section
    2) Number of risers
    3) Type and number of circuits in each riser
    4) Type and number of fire alarm components/devices on each circuit, on each floor or level

11. Control unit wiring diagrams shall be provided for all control equipment, power supplies, battery chargers, and annunciators and shall include the following:
    a. Identification of control equipment depicted
    b. Location(s)
    c. All field wiring terminals and terminal identification
    d. All indicators and manual controls, including the full text of all labels
    e. All field connections to supervising station signaling equipment, releasing equipment, and fire safety control.
    f. Typical Wiring Diagram shall be provided for all initiating devices, notification appliances, remote light emitting diodes (LEDs), remote test stations, and end-of-line and power supervisory devices.
12. Complete system bill of material of all hardware components.
13. Detailed system operational description. Any specification differences and deviations shall be clearly noted and marked.
14. Submittal sheets sequentially numbered with the format: sheet number of number total. For example: 1 of 3.
15. Complete set of manufacturer's operating instructions, circuit diagrams and the information necessary for proper installation, operation and maintenance.
16. Manufacturers catalog cut sheets shall be provide for each piece of equipment with the appropriate model or part number highlighted in cases where multiple model numbers or part numbers are shown.
17. Fire detection and alarm system's panel configuration complete with peripheral devices, batteries, power supplies, and interconnection diagrams.
18. Indicate visual alarm device initial candela setting required for coverage.
19. Sample of proposed graphic/text annunciation.

1.8 OPERATION AND MAINTENANCE MANUALS

A. Submit complete sets of operation and maintenance manuals. Manual, less as-builts, and sign-off sheets, shall be provided upon completion of the work. Approval of the manual will be required prior to substantial completion.

B. The Operation and Maintenance Manual shall consist of the following:
1. The manual shall include the names, addresses and telephone numbers of each Contractor installing products, and of the nearest service representative for each product. The manual shall have a Table of Contents and tab sheets. Update manuals to include modifications made during installation, checkout and acceptance. The manual shall include the sections described in the following paragraphs.
2. The Functional Design Section shall identify the operational requirements for the system and explain the theory of operation, design philosophy, and specific functions. Hardware and software functions, interfaces, and requirements shall be provided for system operating modes.
3. The Hardware Section shall describe equipment provided, including general description and specifications, installation and checkout procedure, electrical schematics and layout drawings. Alignment and calibration procedures, manufacturer's repair parts list indicating source of supply, interface definition, signal identification and wiring diagrams. Also, include a complete parts list of all components as well as a list of recommended spare parts. The spare parts list shall include, for each item, the manufacturer's name, the model of the part, and serial number, if appropriate, and a physical and electrical description of the part.

4. The Software Section shall describe programming and testing, starting with a system overview and proceeding to a detailed description of each software module, to instruct the user on programming or reprogramming any portion of the system and other information necessary to enable proper system usage.
5. The Operation Section shall provide instructions for operation of the system, including system start-up procedures, use of system and applications software, alarm presentation (where applicable), failure and recovery procedures, preventive maintenance schedule, parameter schedules and sequence definition, and system access requirements.
6. The Maintenance Section shall provide descriptions of maintenance for equipment including inspection, periodic preventive maintenance, fault diagnosis, and repair or replacement of defective components.
7. The Shop Drawings section shall include copies of all approved shop drawings and submittal materials updated to “AS BUILT”.

1.9 AS-BUILT DRAWINGS

A. Prepare and submit detailed “As-Built” drawings. The drawings shall include certified test of the system, testing and acceptance sign-off sheets, and other items specified elsewhere to be performed after initial submission of operation and maintenance manuals, complete wiring diagrams showing connections between all devices and equipment, both factory and field wired. Include a riser diagram and drawings showing the as built location of all devices and equipment. The drawings shall show the system as installed, including all deviations from both the project drawings and the approved shop drawings. The drawings shall be prepared on uniform sized sheets, the same size as the project drawings. The plan drawings shall be 11x17 inch and inserted in the specified Operations and Maintenance Manuals. Provide electronic copies in PDF and Autocad.dwg format.

1.10 OPERATIONAL INSTRUCTIONS

A. Provide a typeset printed or a laser jet printed instruction card mounted behind a lexan plastic or glass cover in a stainless steel or aluminum frame. Install the frame in a conspicuous location observable from the Fire Alarm Control Panel (FACP). The card shall show those steps to be taken by an operator when a signal is received as well as the functional operation of the system under all conditions, normal, alarm, and trouble. The instructions shall be approved by the Architect/Engineer before being posted.

1.11 WARRANTY

A. The fire alarm system, including labor and material, shall be free from defects in workmanship and materials, under normal use and service, for a period of one year from the date of substantial completion. Major components including but not limited to the main fire alarm panel, sub-panels, panel extenders, power supplies and emote annunciators. Any equipment or workmanship shown to be defective shall be repaired, replaced or adjusted during normal working hours at no cost to the owner within 4-hour notification. Any equipment replaced shall be complete with full factory warranty for that part beginning on the date of installation.

B. Repair services and replacement parts for the system to be furnished under this Contract shall be available for a period of ten years after the date of final acceptance. Service during the warranty period shall be provided within four hours after notification and all repairs shall be corrected within 24 hours after notification throughout the warranty specified in this section.

C. The installing contractor shall provide 24 hour, 365 days per year emergency service with factory trained, state licensed service technicians.

D. The equipment manufacturer shall be represented by a local service organization and the name of such shall be furnished to the Owner, Architect, and Engineer.

E. Provide a certified fire alarm test of the complete system no earlier than 30 days prior to the end of the warranty period and correct any and all items to bring the system to an approved status at no cost to the Owner. Clean all smoke detectors and replace all defective parts at no cost to the Owner.

F. Guarantee labor, materials, and equipment provided under this contract against all defects for a period of one year after the date of final acceptance and receipt and approval of “As-Built” drawings and schematics of all equipment.

G. All manufacturer’s warranties which extend past final completion shall be fully transferred to the Owner.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Manufacturers acceptable contingent upon Products’ compliance with the specifications:
1. Notifier
a) INSPIRE N16x Control Panel

2.2 SYSTEM DESCRIPTION

A. System shall be a completely multiplexed addressable fire detection and alarm system, tested and left in first class operating condition. Voice evacuation systems where required or specified, shall have voice alarm notification wherever audible notification is required.

B. The system shall provide communication with initiating and control devices individually. All of these devices shall be individually annunciated at the fire alarm control panel. Annunciation shall include the following conditions for each point:
1. Alarm
2. Trouble.
3. Open
4. Short
5. Device missing/failed.

C. System circuits shall be wired as follows: Initiating device circuit (IDCs) shall be Style B, indicating appliance circuit (IACs) shall be Style Y, and signal line circuit (SLCs) shall be Style 4 as describe in NFPA 72.

D. The system shall contain independently supervised initiating device circuits. The alarm activation of any initiation circuit shall not prevent the subsequent alarm operation of any other initiation circuit. All addressable loops shall have loop isolation protection devices to maintain partial fire alarm system integrity should a fault occur. A loop isolation device shall not exceed a maximum of 20 devices.

E. There shall be supervisory service initiation device circuits for connection of all sprinkler water flow switches and valves. Device activation shall cause a general alarm at the fire alarm control panel. Each flow and tamper switch shall have an individual address.

F. There shall be independently supervised and independently fused indicating appliance circuits for all alarm signaling devices. Disarrangement conditions of any circuit shall not affect the operation of other circuits.

G. Auxiliary manual controls shall be supervised so that an “off normal” position of any switch shall cause an “off normal” system trouble.

H. The incoming power to the system shall be supervised so that any power failure must be audibly and visually indicated at the fire alarm control panel. A green “power on” LED shall be displayed continuously while incoming power is present at the building fire alarm control panel.

I. The system batteries shall be supervised so that a low battery condition or disconnection of the battery shall be audibly and visually indicated at the building fire alarm control panel.

J. The system modules shall be electrically supervised for module placement. Should a module become disconnected, the system trouble indicator shall illuminate and the audible trouble signal

shall sound.

K. The system shall have provisions for disabling and enabling all circuits individually for maintenance or testing purposes.

L. The system shall be provided with sufficient battery capacity to operate the entire system upon loss of normal 120 VAC power in a normal or supervisory mode for a period of 24 hours with 20 minutes of alarm operation at the end of this period as a minimum. The system shall automatically transfer to the standby batteries upon power failure. All battery charging and recharging operations shall be automatic. If batteries are fully discharged, the charger shall recharge them back to full charge in four hours.

M. All external circuits requiring system operating power shall be 24 VDC and shall be individually fused at the respective fire alarm control panel.

N. All addressable devices shall have the capability of being disabled or enabled individually from the fire alarm control panel.

O. A maximum of 75 percent capacity of addressable devices shall be multi-dropped from a single pair of wires. Systems that require factory reprogramming to add or delete devices within the capability of the designed system are unacceptable. Expansion of the designed system shall be accomplished by factory reprogramming.

P. The communication format to the addressable devices shall be a completely digital poll/response protocol to allow t-tapping of the circuit wiring. A high degree of communication reliability must be obtained by using parity data bit error checking routines for address codes and check sum routines for the data transmission portion of the protocol.

Q. Each addressable device must be uniquely identified by an address code. The system must verify that proper type device is in place and matches the desired software configuration. All remote or external panels shall have an individual address for monitoring.

R. Wiring type, distances, survivability, and wiring configuration types shall be approved by the equipment manufacturer. The system shall allow a line distance of up to 2,500 feet to the furthest addressable device on a Style Y circuit. Plenum rated fire alarm cable shall have an outer jacket insulation color of red. Minimum wire size shall be #18 AWG.

S. Each panel extender shall have an individual address.

2.3 FIRE ALARM CONTROL PANEL (FACP)

A. The FACP shall be capable of communicating with the types of addressable devices specified below. It shall display only those primary controls and displays essential to operation during a fire alarm condition. Keyboards or keypads shall not be required to operate the system during fire alarm conditions. Panel shall support a minimum of 500 addressable points.

B. The fire alarm control panel (FACP) shall be fully enclosed in a lockable steel enclosure as specified herein. All operations required for testing or for normal care and maintenance of the system shall be performed from the front of the enclosure. If more than a single unit is required to form a complete control panel, the unit enclosures shall match exactly. The system shall operate at 24 VDC.

C. Panel shall be large enough to accommodate all components and also to allow ample gutter space for interconnection of all panels as well as all field wiring. Each enclosure and each component shall be identified by an engraved red laminated phenolic resin nameplate. Lettering on the nameplate shall not be less than 1" high. Individual components and modules within the cabinets shall be identified by engraved laminated phenolic resin nameplates.

D. A local audible device shall sound during alarm, trouble, or supervisory conditions. This audible device shall sound differently during each condition to distinguish one condition from another without having to view the panel. This audible device shall also sound during each key press to

provide an audible feedback to ensure that the key has been pressed properly.

E. The following primary controls shall be visible through a front access panel:
1. Minimum 3-lines, minimum 40 alphanumeric characters per line display.
2. Individual red system alarm LED.
3. Individual yellow supervisory service LED.
4. Individual yellow trouble LED.
5. Green “power on” LED.
6. Alarm acknowledge key.
7. Trouble acknowledge key.
8. Alarm silence key.
9. System reset key.
10. Additional control buttons as directed by Owner.

F. Under normal condition, the front panel shall display a “SYSTEM IS NORMAL” message and the current time and date.

G. Should an abnormal condition be detected, the appropriate LED (Alarm, Supervisory or Trouble) shall flash. The panel audible signal shall pulse for alarm conditions and sound steady for trouble and supervisory conditions.

H. The alphanumeric display shall provide the following information relative to the abnormal condition of a point in the system.
1. 40-character custom location label.
2. Type of device (i.e. smoke, pull station, water flow).
3. Point status (i.e. alarm, trouble).
4. Addressed device physical location to correspond to the actual graphic room numbers.

I. Alarm conditions shall be displayed on the alphanumeric display. The top line of 40 characters shall be the point label and the second line shall be the device type identifier. The system alarm LED shall flash on the control panel until the alarm has been acknowledged. Once acknowledged, this same LED shall latch on. A subsequent alarm received from another zone shall flash the system alarm LED on the control panel. The alphanumeric display shall show the new alarm information.

J. Each independently supervised circuit shall include a discrete readout to indicate disarrangement conditions per circuit.

K. Acknowledgment for each abnormal condition shall be provided. Acknowledge keys shall not be pass code protected. Acknowledge keys shall be protected by the locked enclosure only. After all points have been acknowledged, the LEDs shall glow steady and the audible device be silenced. The total number of alarms, supervisory and trouble conditions shall be displayed, along with a prompt to review each list chronologically. The end of the list shall be indicated by the message, “END of LIST”.

L. Pressing the appropriate acknowledge button shall display the first unacknowledged condition in the appropriate list (either alarm, supervisory or trouble), and shall require another acknowledge button for each subsequent alarm condition. Press to acknowledge shall only silence the displayed point.

M. Alarm silencing:
1. Should the “Alarm Silence” button be pressed, all audible alarm signals shall cease operation.
2. Visual signals shall not be extinguished during alarm silence inhibit mode.

N. System reset:
1. The “System Reset” button shall be used to return the system to its normal state after an alarm condition has been remedied. The alphanumeric display or reset LED shall step the user through the reset process with simple English Language messages.
2. Should an alarm condition continue to exist, the system shall remain in an abnormal state. System control relays shall not reset. The audible device and the alarm LED shall be on.
3. Should the alarm silence inhibit function be active, the System Reset and alarm silence

key shall be ignored.

O. Additional function keys, or their equivalent, shall be provided to access status data and control the function for the following points:
1. HVAC - Bypass
2. Indicating appliance circuits bypass
3. Auxiliary relays points bypass
4. All other input/output points bypass.
5. Additional control buttons as directed by Owner.

P. The following status data or their equivalent shall be available:
1. Primary state of point.
2. Device, PID and card type information.
3. Current priority of outputs.
4. Disable/enable status.
5. Verification tallies of initiating devices.
6. Automatic/manual control status of output points.
7. Acknowledge status.
8. Relay status.

Q. LED supervision: Where provided, all slave module LEDs shall be supervised for burnout or disarrangement. Should a problem occur the alphanumeric display shall display the module and LED location numbers to facilitate location of that LED.

R. System trouble reminder: should a trouble condition be present within the system and the audible trouble signal silenced, the trouble signal shall resound at pre-programmed time intervals to act as a reminder that the fire alarm system is not 100% operational. Both the time interval and the trouble reminder signal shall be programmable.

S. The fire alarm control panel features shall include, but not be limited to:
1. Setting of time and date.
2. LED testing.
3. Alarm, trouble, and abnormal condition listing.
4. Enabling and disabling of each monitor point separately.
5. Activation and deactivation of each control point separately.
6. Changing operator access levels.
7. Walk test enable.
8. Running diagnostic function.
9. Displaying software revision level.
10. Displaying historical logs.
11. Displaying card status.
12. Point listing.
13. For maintenance purposes, the following lists, or their equivalent, shall be available from the system program and/or the point lists menu:
    a. All points list by address.
    b. Monitor point list.
    c. Signal list.
    d. Auxiliary control list.
    e. Feedback point list.
    f. LED/switch status list.
    g. Additional control buttons as directed by Owner.
14. Fire Drill:
    a. Fire drill activation switch shall activate all audio/visual devices only. Fire drill shall not enter into the alarm sequence of operation, shall not close smoke or fire/smoke dampers, shall not deactivate any HVAC systems, kitchen hoods, etc.
    b. Activation of any trouble or alarm condition shall supercede the evacuation drill.
    c. Fire drill shall be canceled by the system reset key, alarm silence, or drill key.
15. Scrolling through menu options or lists shall be accomplished in a self-directing manner. These controls shall be located behind an access door.
16. The alphanumeric display shall have an alpha numeric, back-lighted LCD, LED, or gas plasma display. The display shall support numeric and both upper and lower case letters.

Lower case letters shall be used for soft key titles and prompting the user. Upper case letters shall be used for system status information. A cursor shall be visible when entering information.

17. The system shall be capable of being tested by one person. The actuation of the “enable walk test” program at the fire alarm control panel shall activate the “Walk Test” mode of the system, which shall cause the following to occur:
    a. The remote monitoring circuit connection shall be bypassed.
    b. Control relay functions shall be bypassed.
    c. The control panels shall show a trouble condition.
    d. The panel shall be capable of selecting either: the alarm activation of any initiation device causing the audible signals to activate for two seconds or the alarm activation of any initiation devices causing the audible signals to code a number of pulses to match the zone number.
    e. The panel shall automatically reset itself after signaling is complete.
    f. Any momentary opening of an initiating or indicating appliance circuit wiring shall cause the audible signals to sound for 4 seconds indicating a trouble condition.
    g. The control panel shall be capable of supporting up to 8 separate testing groups whereby one group of points may be in a testing mode and the other (non-testing) groups may be active and operate as programmed per normal system operation. After testing is considered complete, testing data may be retrieved from the system in chronological order to ensure device/circuit activation.
    h. Should the walk test feature be on for an inappropriate amount of time, it shall revert to the normal mode automatically.
18. Provide three (3) access levels with level 3 being the highest level. Level 1 action shall not require a pass code. Pass codes shall consist of up to ten (10) digits. Changes to pass codes shall only be made by Level 3 authorized personnel.
    a. When entering a pass code, the digits entered shall not be displayed. All key presses shall be acknowledged by a local audible sound and/or visual “*” in the 80 character display.
    b. When a correct pass code is entered, the new access level shall be in effect until the operator manually logs out or the keypad has been inactive for ten (10) minutes.
    c. Should an invalid code be input, access shall be denied.
    d. Access to a level shall only allow the operator to perform all actions within that level plus all actions of lower levels, not higher levels.
    e. The following keys/switches, or their equivalent shall have access levels associated with them:
       Set time/date.
       Manual control
       Disable/enable
       Clear historical alarm log
       Clear historical trouble log
       Walk test
       Change alarm verification
    f. The following keys/switches shall not be pass code protected and shall be protected by the lockable enclosure:
       Alarm Silence
       System Reset
       Acknowledge
19. The fire alarm system shall allow for loading and editing special instructions and operating sequences as required. The system shall be capable of being reprogrammed to accommodate system expansion and facilities changes in operation. All software operations shall be stored in a non-volatile programmable memory within the fire alarm control panel. Loss of primary and secondary power shall not erase the instructions stored in memory.
20. Resident software shall allow for full configuration of initiating circuits so that additional hardware shall not be necessary to accommodate changes in, for instance, sensing of normally open contact devices to sensing of normally closed contact devices, or from sensing of normally open contact devices to sensing a combination of current limited and non-current limited devices on the same circuit and being able to differentiate between the two, or changing from a non-verification circuit to a verification circuit or vice-versa.

21. Resident software shall also allow for configuration of indicating appliance and control circuits so that additional hardware shall not be necessary to accommodate change in, for instance changing a non-coded indicating appliance circuit to a coded circuit.
22. The main fire alarm panel shall have the resident ability to store a minimum of 600 system events in chronological order of occurrence. Event history shall include all system alarms, troubles, operator actions, unverified alarms, circuit/point alterations, and component failures. Events shall be time and date stamped. Events shall be stored in non-volatile buffer memory. Access to history buffer shall be secured via 5-digit password security code. The system shall have the capability of recalling alarms and trouble conditions in chronological order for the purpose of recreating an event history. Loss of primary or secondary power shall not erase the events stored in the memory. Each recorded event shall include the time and date of that event's occurrence.
    a. The following Historical Alarm log events shall be stored:
        Alarms
        Alarm acknowledgment
        Alarm silence
        System reset
        Alarm historical log cleared
    b. The following historical trouble log events shall be stored:
        Trouble conditions
        Supervisory alarms
        Trouble acknowledgment
        Supervisory acknowledgment
        Alarm verification tallies
        Walk tests results
        Trouble historical log cleared
23. Alarm verification shall be by device, whereby only verification from the same device will confirm the first activation and cause the alarm sequence to occur.
24. The control panel shall have the capability to display the number of times (tally) a device has gone into a verification mode. Should this verification tally reach a pre-programmed number, a trouble condition shall occur.
25. The control panel shall have a dedicated supervisory service LED and a dedicated supervisory service acknowledge key. Pressing the supervisory service acknowledge key shall silence the supervisory audible signal while maintaining the supervisory service LED "ON" indicating the off-normal condition.
26. Activation of an auxiliary bypass key shall override the selected automatic functions.
27. The system shall have keys that will allow the operator to display all alarms, troubles, and supervisory service conditions including the time of each occurrence.
28. RS-232-C output: the fire alarm control panel shall be capable of operating remote generic consumer type printers; output shall be ASCII from an EIA RS-232-C connection with an adjustable baud rate. Each RS-232-C port shall be capable of supporting and supervising a remote display and printer. Data amplifiers shall be used to increase data line distance when required.
29. Panel shall be sized to accommodate all required equipment. Panel shall be equipped with locks and transparent door, providing freedom from tampering yet allowing full view of the various displays and controls.

T. The fire alarm control panel shall have a 25% spare initiating point and battery capacity for future use.

U. The power supply shall provide all control panel and peripheral power needs with filtered power as well as unregulated 24VDC power for external audio-visual devices. The audio-visual power shall be increased as needed by adding additional modular expansion power supplies. All power supplies shall be designed to meet UL and NFPA requirements for POWER-LIMITED operation on all external signaling lines, including initiating circuits and indicating circuits. Design the system power supplies and power trunk wiring for all annunciation devices required, and to add a minimum of five (5) 110cd visual devices in the future. Individual design loading shall not exceed 70% of power supply and system wiring capacity.
    1. Input power shall be 120VAC 60Hz. The power supply shall provide internal supervised batteries and automatic charger. The power supply shall provide positive and negative ground fault supervision, battery/charger fail condition, AC power fail indicators. The

power supply shall also provide supervision of modular expansion power supplies as may be required.
2. Surge protection shall be integral to the control panels.
3. Each power supply shall be monitored and have an individual address.

V. Digital Fire Alarm Communicator:
1 Two line primary and secondary telephone line connections
2. Automatically seizes telephone line.
3. Automatic verification between panel and receiving station.
4. Transmits common trouble and supervisory conditions.
5. Dialer status LED.
6. Multiple communication formats including Ademco Contact ID.
7. Dual tone multi-frequency (DTMF) or Pulse modes.
8. Programming password protected.
9. UL approved.

W. IP Internet and Digital Cellular Communicator:
1. UL 864 listed
2. Supervise IP Ethernet connection every 90-seconds or less
3. Upload/Download capable
4. Transmit all signals and information from the DTMF communicator

X. Detector sensitivity shall be programmable from the control panel from the following sensitivities: 0.5, 1.0, 1.5, 2.0, 2.5, 3.0 and 3.7% obstruction. Detectors shall be able to be programmed to alert a trouble signal at a lower obstruction and shall report an alarm if the smoke density increases to a predetermined set point. Control Panel and Detectors shall be capable of “Day-Night” automatic sensitivity adjustments.

Y. Control Switches:
1. Acknowledge/step Switch
2. Signal Silence Switch
3. System Reset Switch
4. System Test Switch
5. Lamp Test

Z. Automatic Detector Test: The system shall include a special automatic detector test feature, which permits reading and adjustment of the sensitivity of all intelligent detectors from the main control panel. An automatic detector test shall occur automatically fourteen times each twenty-four hour period or be initiated manually from the FACP as desired. In addition, the automatic test feature shall also permit the functional testing of any "intelligent" detector or addressable interface device individually from the main control panel. Automatic detector test sequencing shall be terminated upon receipt of an alarm condition. Detector test shall report all unprogrammed devices installed and report all programmed devices not installed.

AA. Emergency voice alarm communication system:
1. The emergency voice and tone communication system shall be a pre-built system and shall only require two wires from a polarity reversal circuit or a dry contact for activation. It shall supervise the NO dry contact (if used) and provide a form C trouble relay activation in the event of a system fault. The Voice Communication System shall incorporate minimum 50 watts true RMS amplifiers for both tone and speech amplification. The system shall have a load capacity of up to 100 watts. Optionally, the Voice Communication System shall be capable of providing 50 watts of audio with full backup. The Voice Communication System shall be capable of operating as a stand-alone system or follow the activation of the fire alarm/suppression system. The Voice Communication System shall include a regulated power supply and shall be capable of charging and housing its own batteries. There shall be no need to calculate the load requirements or draw any energy from the fire alarm/suppression system. The Voice Communication System shall come with one speaker supervisory zone as a standard and shall be capable of supervising any combination of up to 11 speaker and/or strobe monitoring modules.
2. A full set of control switches including an all call, tone interrupt, trouble silence and reset shall be available at the Voice Communications System. The Voice Communications

System control panel shall also have a green POWER ON LED, a red ALARM LED, a yellow BROWN OUT LED and a yellow SYSTEM TROUBLE LED.

3. The Voice Communication System shall be able to detect a short on any speaker or strobe zone during the normal and alarm mode. The shorted zone shall be isolated from the system and a dedicated LED on the supervised zone shall indicate the short circuit condition. The system shall produce an audible and visual signal indicating that a trouble condition has occurred. Similarly an open circuit shall create a trouble condition and corresponding LED annunciation at the affected zone and at the main control module. Zones that are not shorted or opened shall remain operational.
4. The Voice Communications System shall be able to detect a brownout condition on the AC supply. In the brownout condition the Voice Communication System shall activate a dedicated LED and an audible trouble signal. Ground faults shall activate the system trouble LED and the audible trouble signal, as well as specific LEDs indicating negative and positive ground faults.
5. The Voice Communication System shall be field configurable for 25 or 70.7 volt RMS audio output via program jumpers.
6. The Voice Communication System shall have a digital message player / recorder. The digital message player / recorder shall be capable of storing alert and evacuation tones as well as an emergency voice message. It shall be possible to modify the digital message and tones in the field using a built-in acoustic microphone or headphone jack connected to an audio device. There shall be no need for the burning of eproms in order to program the digital message player / recorder. The digital message player / recorder shall be supervised by the Voice Communication System. The Voice Communications System shall provide a backup evacuation tone in the event of a digital message player / recorder failure.
7. An alarm condition shall cause an audible signal and a red LED to activate. A Voice Communication System with a digital message player / recorder shall produce an ALERT tone followed by an emergency voice message, and in turn followed by an ALARM tone. The number of tone repetitions shall be configurable by the setting of DIP switches on the digital message player / recorder.
8. The sheet metal enclosure shall include a hinged deadfront allowing easy access to all the Voice Communication System components for the purposes of wiring, setting the system configuration and servicing. A door with a key lock shall be part of the Voice Communication System enclosure.

2.4 FIELD DEVICES

A. All devices shall be supervised for trouble conditions. The fire alarm control panel shall be capable of displaying the type of trouble condition (open, short, device missing/failed). Should a device fail, it shall not hinder the operation of other system devices.

B. Visual Signals:
1. Strobe lights shall be of the electronic flashing strobe type and operate on 24 VDC. The strobe light shall be capable of producing 75 candela on axis to comply with ADA and UL 1638 requirements, and 15, 30, or 110 candela to comply with UL 1971 requirements. Visual signals in common areas of illumination shall have synchronized flash. Provide white with red letters.
2. All wall mounted visual devices installed in gymnasiums, corridors shall have a protective cover.

C. Combination Alarm Signal and High Intensity Visual Signals:
1. Strobe lights shall operate on 24 VDC. The strobe light shall be capable of producing 75 candela on axis to comply with ADA requirements, and 15, 30 or 110 candela to comply with UL 1971 requirements. Visual signals in common areas of illumination shall have synchronized flash. Each unit shall provide a Code 3 Temporal tone. The horn shall be capable of an output of 95dB at 10', and intensity adjusted accordingly for the area of coverage. Electronic Mini-Sounder or horn set on low setting shall be provided in interior rooms 900 square feet or less. Mini-sounder shall not be used in any corridors, mechanical electrical rooms and similar large spaces and areas of high ambient noise level. Provide white with red letters.
2. All combination audio / visual devices mounted in student toilets / restrooms, gymnasiums,

and student locker / dressing rooms shall have a protective cover.

3. The audible emergency alarms shall produce a sound that exceeds the prevailing sound level in the room or space by at least 15 dba or shall exceed any maximum sound level with a duration of 60 seconds by 5 dba, whichever is louder with or without protective cover. Sound levels for alarm signals shall not exceed 110 dba at the minimum hearing distance from the audible appliance.

D. Exterior Audible / Visual Signal:
   1. Provide semi-flush mounted, molded of high impact red thermoplastic and listed for exterior weatherproof locations.

E. Combination Voice Signal and High Intensity Visual Signals:
   1. Strobe lights shall operate on 24 VDC. The strobe light shall be capable of producing 75 candela on axis to comply with ADA requirements, and 15, 30 or 110 candela to comply with UL 1971 requirements. Visual signals in common areas of illumination shall have synchronized flash.
   2. If required to be wall mounted in student toilets, gymnasiums, corridors, student locker / dressing rooms provide wire guard protective cover.
   3. The visual signal lens housing shall be white with red lettered FIRE or as approved by Architect. The speaker and visual signal shall be mounted to a common white speaker baffle. The visual signal shall flash at a rate of minimum of 1 Hz and maximum of 3 Hz, and shall use a strobe type lamp or other high intensity long life light source. The lamp intensity shall be a minimum of 75 candela.
   4. The speaker shall be UL 1480 compatible with the control equipment. Unit shall operate within a temperature range of 150°F to -30°F. High output speakers, UL minimum 87dB at 10 feet with speaker taps of .33.66/1.25/2.5 watts. Standard output speakers, UL 75-81 dB at 10 feet with speaker taps of .5/1/1.75/2.75 watts. Capacitor for line supervision.

F. Ceiling mounted recessed mounted speakers shall be UL 1480 compatible with the control equipment. Unit shall operate within a temperature range of 150°F to -30°F. UL minimum 78-87 dB at 10 feet with speaker taps of .25, .5/1.0/2.0 watts. Round, white baffle in gypboard or plaster ceilings, provide 2x2 lay-in grid with UL enclosure, tile bridge supports when recessed in lay-in ceiling tiles Capacitor for line supervision.

G. Surface mounted speakers shall be UL 1480 compatible with the control equipment. Unit shall operate within a temperature range of 150°F to -30°F UL minimum 100 dB at 15 watts at 10 feet. Speaker taps via 7-position selector switch, 25-vol., .48/.94/1.8/7.5/15 watts. Fully enclosed wiring terminals. Capacitor for line supervision. Raco #911 Series Life Safety Appliance back box and adapter, or appliance manufacturer back box.

H. Manual Pull Station: Addressable pull stations shall contain electronics that communicate the station’s status (alarm, normal) to the control panel over two wires which also provide power to the pull station. They shall be manufactured from high impact red Lexan with white lettering. Station shall mechanically latch upon operation and remain so until manually reset by opening with a key common to all system locks. Pull stations shall be double action without glass rods. The front of the station shall be hinged to a back plate assembly and shall be opened with a key to reset the station. The key shall be common with the control panels. The addressable manual station shall have address setting programmed electronically and automatically from the fire alarm control panel. Manual stations shall be designed for semi-flush (surface) mounting on standard electrical box. All pull stations units shall have a protective cover, STI Stopper II #STI-1130 surface mounted cover with local alarm horn. Provide STI, Weather Stopper II #STI3150 for locations where dampness, water or dust is present, and in Natatoriums, except when mounted next to main FACP, staff supervised locations and remote annunciators. Verify cover does not interfere with the operation or key reset function.

I. Intelligent Photoelectric Smoke Detectors:
   1. The detectors shall use the photoelectric principal to measure smoke density and shall, on command from the control panel, send data to the panel representing the ANALOG level of smoke density. The detector shall provide automatic sensitivity "drift" compensation. The detector shall also provide a "maintenance alert" feature whereby the detector shall initiate a trouble condition should the unit’s sensitivity approach the outside limits of the

normal sensitivity window.

2. The detectors shall provide address-setting means electronically and automatically at the control panel and programmed for alarm verification.
3. The detectors shall provide operational status and alarm state LED. Under normal conditions, the LED shall flash, indicating the detector is operational and in regular communication with the control panel. An output connection shall also be provided in the base for connecting an external remote alarm LED.
4. The detector shall be semi-flush ceiling mounted and be provided with modular detector head with twist-lock base. No radioactive material shall be used.
5. Voltage and RF transient suppression techniques shall be employed as well as smoke signal verification circuit and an insect screen.

J. Duct photoelectric smoke detectors:
1. Detectors shall be analog addressable type.
2. To minimize nuisance alarms, detectors shall have an insect screen and be designed to ignore invisible airborne particles or smoke densities that are below the factory set alarm point. No radioactive material shall be used.
3. Removal of the detector head shall interrupt the supervisory circuit of the fire alarm detection loop and cause a trouble signal at the control panel.
4. Voltage and RF transient suppression techniques shall be employed as well as smoke signal verification circuit and an insect screen.
5. Remote alarm/power LED indicator with test switch shall be provided. Unit shall be wall or ceiling mounted in readily visible and accessible area near the location of detector; exact location of unit to be approved by the Architect/Engineer.
6. Detectors shall operate on the same principles and exhibit the same basic characteristics as area type photoelectric smoke sensors. The detector shall operate in air velocities of 300 FPM to 4,000 FPM. Each detector shall interface directly to the system SLC loop without the requirement of interface zone modules.
7. The unit shall consist of a clear molded plastic enclosure (or remote mounted LED status indicator shall be provided next to the smoke detector) with integral conduit knockouts to provide visual viewing of detector/sensor for monitoring sensor operation and chamber condition. The duct housing shall be provided with gasket seals to insure proper seating of the housing to the associated ductwork. Each unit's sampling tubes shall extend the width of the duct and be provided with porosity filters to reduce sensor/chamber contamination.
8. The detectors shall provide alarm and power status indication by LED. Under normal conditions, the LED shall flash, indicating the detector is operational and in regular communication with the control panel. Steady illumination of the LED shall indicate that the control panel has detected and verified an alarm condition. An output connection shall also be provided in the base for connecting an external remote alarm LED.
9. The detectors shall provide address setting means electronically and automatically from the control panel and programmed for alarm verification.

K. Intelligent Thermal Detectors:
1. The detectors shall use dual electronic thermostats to measure temperature levels in its chamber and shall, on command from the control panel, send data to the panel representing the analog temperature level.
2. The detectors shall provide address-setting means electronically and automatically at the control panel.
3. The detectors shall provide operational status and alarm state LED. Under normal conditions, the LED shall flash, indicating the detector is operational and in regular communication with the control panel. An output connection shall also be provided in the base for connecting an external remote alarm LED.
4. The detector shall be semi-flush ceiling mounted and be provided with modular detector head with twist-lock base.
5. Thermal Detectors shall be combination rate-of-rise and fixed-temperature- rated at 135°F for areas where ambient temperatures do not exceed 100°F and shall be 200°F for areas where ambient temperatures exceed 100°F but not 150°F. The fixed temperature element shall consist of a fusible alloy retainer and actuator shaft. Detectors shall have a smooth ceiling rating of 2,500 square feet. Detectors shall be located as specified and where required by local code authority.
6. Provide fixed temperature 190°F detector in kitchen and kiln room in lieu of combination

rate-of-rise / fixed-temperature type.

L. Addressable Carbon Monoxide Detection:
1. Shall have addressable identification of the CO Detector's alarm and trouble contact status. UL listed to Standard 2075 Standard for Gas and Vapor Detectors and Sensors.
2. Unit to be powered by the fire alarm system non-resettable 24 VDC supervised power supply.
3. Electro-chemical CO detection.
4. Integral 85db local alarm with local hush/test switch for silence or test.
5. Alarm contacts and trouble contacts for detector trouble, loss of power, and end of life.

M. Auxiliary AHU Relays: Air Products model MR-101C relays shall be provided for HVAC and AHU control and interface. Relays shall be heavy-duty type with contacts rated up to 10 amps at 120V AC, 60 HZ. Relays shall be provided with NEMA I dust cover assembly and be provided with DPDT contacts as well as activated LED indicator.

N. Voltage sensing relays: Addressable control modules for voltage sensing relay interface shall be FCM-1.

O. Monitor Module:
1. Addressable monitor modules shall be provided where required to interface to contact alarm devices.
2. The monitor module shall provide address-setting means electronically and automatically at the control panel. A status/alarm LED shall be provided which shall indicate that the monitor module is operational and in regular communication with the control panel, and indicate detection of an alarm condition.

P. Control Module
1. Control/relay modules shall be provided where required to provide audible alarm interface and/or relay control interface. The control module may be optionally wired as dry contact (form C) relay.
2. The control module shall provide address-setting means electronically and automatically at the control panel. A status/alarm LED shall be provided which shall indicate that the control module is operational and in regular communication with the control panel and indicate when the device is actuated via the fire alarm control panel.

Q. Auxiliary Interface Points: All auxiliary input points (fire suppression hoods, water flow, fire pump, AHU shut-down points, tamper switches, fire extinguishing systems etc.) shall be connected as required, and addressed as a separate initiating point of annunciation at the fire alarm panel and any remote annunciator as required.

R. Water flow switches / Valve supervisory switches shall be provided and installed by the fire protection contractor and connected by the fire alarm contractor. Wiring of these field devices to the fire alarm system shall be the responsibility of the fire alarm contractor. It is the responsibility of this contractor to ensure the proper function of the system. Each fire protection zone (flow switch) and (Valve switch) shall be addressed electronically and automatically at the control panel as a separate point of annunciation at the fire alarm panel. Coordinate exact location with fire protection contractor and civil drawings.

S. Beam detectors:
1. Microprocessor based beam detectors, consisting of a separate transmitter and matching receiver.
2. Coverage up to 350 ft. X 60 ft.
3. LED status indicators for normal (green), alarm (red), and trouble (yellow).
4. The detectors shall provide address setting means electronically and automatically at the control panel.

2.5 VESDA – VERY EARLY WARNING ASPIRATING SMOKE DETECTION SYSTEM

A. Approved Manufacturers:
1. System Sensor (FASAST) – Detection devices for Cooler / Freezer areas 200 square feet

or larger, atriums / high ceiling areas with difficult access.

2. Xtralis (VESDA) – Detection devices for Cooler / Freezer areas 200 square feet or larger, atriums / high ceiling areas with difficult access.

B. The system shall consist of highly sensitive LASER-based Smoke Detectors with aspirators connected to networks of sampling pipes, intelligent filtration arrangement with fail-safe operation, sub-sampling probe (inertial separator), built-in clean air zero capability, local USB configuration port and Ethernet networking port. VESDA detection system shall be networked with the specified Notifier Fire Alarm Control Panel.

C. Design Requirements

1. The system shall consist of an air sampling pipe network to transport air to the detection system, supported by calculations from a computer-based design modeling tool.
2. It shall be tested and approved to cover up to 2,000m^2 (20,000 sq.ft).
3. It shall have a built-in simple user interface indicating alarm and fault status and include a reset / disable button.
4. It shall provide absolute smoke detection.
5. It shall be approved to provide very early warning smoke detection and provide four alarm levels corresponding to Alert, Action, Fire 1 and Fire 2. These levels shall be programmable and able to be set at sensitivities ranging from 0.05-20% obs/m (0.016–6.4% obs/ft.).
6. The detector shall be specifically designed for industrial applications.
7. It shall consist of a highly sensitive LASER-based smoke detector with in-field clean air zero capability, aspirator, intelligent filter and secondary filter.
8. It shall be modular, with field replaceable detection chamber, aspirator, intelligent filter and secondary filter.
9. It shall have four pipe inlets for sample air.
10. It shall incorporate per pipe ultrasonic flow monitoring and provide staged airflow faults.
11. It shall have a built-in and field replaceable intelligent filter placed after the flow monitoring circuitry.
12. Intelligent filter shall:
    a. Dilute the sampled air for prolonged detector life.
    b. Combine sample air from all pipe inlets.
    c. Divide sampled air into filtered clean air and unfiltered air before mixing them together.
    d. Use HEPA filter with more than 99% efficiency for filtered clean air i.e. removing more than 99% of contaminant particles of 0.1microns or larger, to provide clean air for dilution.
    e. Use a mesh/screen for the unfiltered air for protection against lint type of particles.
    f. Be fail-safe and supervised for correct operation with built-in capability to alert for when replacement is required.
    g. Maintain consistent detector sensitivity over time.
    h. Have ultrasonic airflow monitoring of the unfiltered sampled air through the intelligent filter.
13. It shall have a field replaceable aspirator after the intelligent filter where the diluted sampled air flows through the aspirator prolonging its life.
14. The aspirator shall be a purpose-designed rotary vane air pump. It shall be capable of allowing for multiple sampling pipe runs up to 360m (1,200ft) in total, (4 pipe runs per detector) with a transport time per applicable local codes.
15. It shall have a sub-sampling probe (inertial separator) after the aspirator for reduced dust intake in to the detection chamber.
16. It shall have a secondary foam filter after the sub-sampling probe (inertial separator) where the sub-sampled air flows through the foam filter prolonging detection chamber life. The foam filter shall be capable of filtering particles in excess of 20 microns from the sampled air.
17. It shall have a field replaceable smoke detection chamber which stores the calibration values with the chamber assembly.
18. It shall have capability for in-field clean air zero to provide absolute smoke detection.

19. It shall have capability to measure blockages in the air path in to or out of the detection chamber.
20. It shall have an enclosure rating of IP54.
21. The detector shall allow for direct wall mounting or using a supplied mounting plate.
22. It may be inverted as required in specific applications.
23. It shall be self-monitoring for filter contamination.
24. It shall be configured via local USB port with Ethernet port for remote monitoring.
25. It shall have Fire and Fault relay outputs in addition to three configurable relays. The relays shall be software programmable to the required functions and must be rated at 2 AMP at 30 VDC.
26. It shall have at least one general purpose input (GPI).
27. It shall have Power In and Power Out connections to allow powering more than one detector from one power supply.
28. Optional equipment may include a dedicated Xtralis VSM graphics package.
29. It shall report any fault on the unit by using configurable fault relay outputs or via PC based configuration and monitoring system.
30. The detector shall have built-in event and smoke logging. It shall store smoke levels, alarm conditions, operator actions and faults. The date and time of each event shall be recorded. Each detector (zone) shall be capable of storing up to 18,000 events.

D. Programming Requirements

Using either USB or Ethernet port the detector shall allow programming of:

1. IP address and related fields to support Ethernet based networking
2. Four smoke threshold alarm levels
3. Time delays
4. Configurable relay outputs for remote indication of detector conditions
5. Holidays and day/night changeover times
6. Major and minor airflow fault limits
7. Aspirator speed
8. General purpose input function
9. Alarm and fault latching

E. Sampling Pipe

1. The sampling pipe shall be smooth bore. Normally, pipe with an outside diameter (OD) of 25mm or 1.05” and internal diameter (ID) of 21mm or ¾” should be used.
2. The pipe material should be suitable for the environment in which it is installed. VESDA pipe material shall be UL 1887 Plenum rated CPVC).
3. All joints in the sampling pipe must be air tight and made by using solvent cement, except at entry to the detector.
4. The pipe shall be identified as Air Sampling/Aspirating Smoke Detector Pipe along its entire length at regular intervals not exceeding the manufacturer’s recommendation or that of local codes and standards.
5. All pipes shall be supported at not less than 1.5m (5ft) centres, or that of the local codes or standards.
6. The far end of each trunk or branch pipe shall be fitted with an end-cap and made air-tight by using solvent cement. Use of an end-cap will be dependent on ASPIRE2 calculations.

F. Sampling Holes

1. Sampling holes shall not be separated by more than allowed for conventional point detectors as required by 30 feet as local codes and standards. Intervals may vary according to calculations. For NFPA the maximum allowable distance is 30ft.
2. Each sampling point port shall be identified in accordance with Codes or Standards.
3. Provide per manufacturer’s recommendations and standards in relation to the number of sampling points and the distance of the sampling points from the ceiling or roof structure and forced ventilation systems.
4. Sample port size shall be as specified by ASPIRE2 calculations.

G. Detection Alarm Levels:

The laser based ASD system shall have four (4) independently programmable alarm thresholds. The four alarm levels may be used as follows:

Alarm Level 1 (Alert)
Activate a visual and audible alarm in the fire risk area.
Alarm Level 2 (Action)
Activate the electrical/electronic equipment shutdown relay and activate visual and audible alarms in the Security Office or other appropriate location.
Alarm Level 3 (Fire 1)
Activate an alarm condition in the Fire Alarm Control Panel to call the Fire Monitoring Service and activate all warning systems.
Alarm Level 4 (Fire 2)
Activate a suppression system and/or other suitable countermeasures.
The alarm level functions as listed are possible scenarios. Program as directed by Owner to the best utilization of these facilities for each application and the requirements of local A.H.J.

H. Initial Detection Alarm Settings
1. Alarm Level 1 (Alert) 0.2% obs/m (0.064% obs/ft.)
2. Alarm Level 2 (Action) 0.3% obs/m (0.096% obs/ft.)
3. Alarm Level 3 (Fire 1) 0.40% obs/m (0.128% obs/ft.)
4. Alarm Level 4 (Fire 2) 2.0% obs/m (0.64% obs/ft.)

I. Initial (factory default) Alarm Delay Thresholds
Initial (factory default) settings for the alarm delay threshold shall be:
1. Alarm Level 1 (Alert) 10 seconds
2. Alarm Level 2 (Action) 10 seconds
3. Alarm Level 3 (Fire 1) 10 seconds
4. Alarm Level 4 (Fire 2) 10 seconds

J. Fault Alarms: The Detector Fault relay shall be connected to the appropriate alarm zone on the Fire Alarm Control Panel (FACP) in such a way that a Detector Fault would register a fault condition on the FACP. The Minor Fault and Isolate relays shall also be connected to the appropriate control system. Provide as required by local Codes, Standards or Regulations.

K. Power Supply and Batteries: The system shall be powered from a regulated supply of nominally 24V DC. The battery charger and battery shall comply with the relevant Codes, Standards or Regulations. Typically 24 hours standby battery backup is required followed by 30 minutes in an alarm condition.
1. UL 1481 Listed -provided the power supply and standby batteries have been appropriately sized / rated to accommodate the system's power requirements.
2. Provide 120-volt 20-amp circuit from the life safety branch panel to each power supply.

2.6 AUXILIARY EQUIPMENT MONITORING

A. The fire alarm system shall monitor for alarm, supervisory, and trouble conditions; and annunciate the status of the following equipment when provided, or is existing to remain, as part of this project. A failed status shall activate the trouble alarm.
1. Emergency Generator: Run Status
2. Emergency Generator: Trouble Signal
3. Fire Pump: Run Status
4. Fire Pump: Trouble Signal
5. Emergency Service Communications Systems, as required by NFPA 72 and NFPA 1221.

2.7 MAGNETIC DOOR HOLDERS, AUTOMATIC FIRE DOORS / SHUTTERS, AND SECURITY GRILLES AND INTERIOR SPACE CONTROLLED ACCESS EGRESS DOORS WITH AUTOMATIC EMERGENCY EGRESS ELECTRIC LOCK EMERGENCY RELEASE

A. Magnetic fire door hold open devices, interface for automatic roll down fire doors/shutters, and interface for security grilles and controlled access egress doors with emergency egress shall be provided. Coordinate with Division 8 and Architectural Drawings for exact location.

B. The operation of any alarm in the fire alarm system shall cause the following:
1. Release of the magnetic fire door holding devices, permitting the fire doors to be closed by the door closer.

2. Permit the automatic roll down fire doors/shutters to close automatically.
3. Permit the security grilles with emergency egress to open automatically.
4. Unlock the electrically controlled access doors in all interior spaces.

C. The magnetic door holders, automatic roll down fire doors/shutters, security grilles, and interior electrically controlled access doors with emergency egress, shall be associated with two smoke detectors located on the ceiling with one on either side of the fire door/shutter, security grille opening, or interior egress path electrically controlled door. The operation of either of these detectors shall also cause the magnetic holder to release the fire door, the automatic fire door/shutter to close, and the security grille with emergency egress to open.

D. The operation of smoke detectors associated with a magnetic door holder, automatic roll down fire door, security grille, or electrically controlled access door shall transmit a pre-alarm signal to the fire alarm panel.

2.8 REMOTE ALPHA-NUMERIC DISPLAY ANNUNCIATORS

A. Remote alpha-numeric annunciator(s) to annunciate all system events and duplicate the displayed status at the main FACP. The annunciator(s) shall be an alphanumeric display similar to the main FACP and operate via the system RS485 or RS232 serial output terminal from the main FACP. The unit shall operate from FACP 24VDC power and function during system power failure while the system resides on standby batteries. The remote annunciator(s) shall include:
1. Integral time-date clock
2. System reset
3. System silence
4. System acknowledge
5. Display/step switch
6. Integral trouble buzzer
7. LCD contrast adjust
8. Fire Drill Operation
9. Owner’s list of all additional remote annunciator control buttons.

B. Annunciator shall upon command display the first system alarm, last alarm, and system alarm count. The following primary controls shall be visible through a front access panel:
1. 80 character alphanumeric display, LCD, LED, or gas plasma
2. Individual red system alarm LED
3. Individual yellow supervisory service LED
4. Individual yellow trouble LED
5. Green “POWER ON” LED
6. Alarm acknowledge key
7. Trouble acknowledge key
8. Alarm silence key
9. System reset key
10. LED test

2.9 REMOTE PAGING UNIT

A. Remote all-call paging unit or to activate one of the pre-recorded messages over the speaker circuits.

2.10 PRINTER AND PRINTER STAND

A. A high impact dot matrix printer shall be provided. The printer shall provide hard-copy printout of all changes in status of the system and shall time-stamp such printouts with the current time-of day and date. The printer shall be wide carriage with 80-characters per line and shall use standard pin-feed paper. The printer shall communicate with the control panel using as interface complying with EIA standard RS-232. Printer shall be capable of operating on parallel or serial outputs. Power to the printer shall be 120VAC at 60Hz. The printer shall print all status information including status, address, event history and programmed custom ID message.
1. High speed, bi-directional.
2. Serial or parallel interface.

3. Front panel interface.
4. Supports modems for remote installation.
5. LED status indicators.
6. RS-232 direct cable supervised.
7. Printer self test mode.
8. 9-Pin, impact, dot matrix printer with minimum speed of 232 characters per second.

B. Printer Stand:
1. Steel and laminate construction
2. Two shelves for paper storage
3. 28H x 26W x 20 Inches deep
4. Locking casters

2.11 REMOTE PAGING UNIT

A. Remote all-call paging unit or to activate one of the pre-recorded messages over the speaker circuits.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS

A. Installation shall include the delivery, storage, setting in place, fastening to the building structure, interconnection of the system components, alignment, adjustment and all other work, whether or not expressly specified, which is necessary to result in a tested and operational system.

B. All installation practices shall be in accordance with, but not limited to, the specifications and drawings. Installation shall be performed in accordance with the applicable standards, requirements and recommendations of NFPA 72 and the National Electrical Code and any authorities having jurisdiction. Proper protection against corrosion shall be provided on all electrical equipment in accordance with the requirements of the National Electrical Code. The installation shall conform to all manufacturers' recommendations.

C. All equipment shall be firmly secured in place unless requirements of portability dictate otherwise. Fastenings and support shall be adequate to support their loads with a safety factor of at least three.

D. All boxes, equipment, etc., shall be plumb and square. The contractor must take such precautions as are necessary to prevent and guard against electrostatic hum, to supply adequate ventilation, and to install the equipment to provide reasonable safety for the operator.

E. Visual displays, GUIs, or other indicators for main fire alarm panel and all remote annunciators shall be at maximum 66 inches AFF.

F. All remote booster and associated equipment panels shall be mounted with top of enclosure maximum 66 inches AFF.

G. In the installation of equipment and cables, coordinate with Architectural drawings for possible conflicts with millwork, casework, marker boards, furniture, lockers, etc., and notify the architect of any discrepancies. Verify modifications before proceeding with installation.

H. Mount end-of-line resistor for each box circuit in backbox located at the last manual alarm station or automatic initiating device in a circuit. Mark device accordingly in the field.

I. Provide three dedicated Cat 6 cables from MDF/IDF to fire alarm panel. Cable shall be installed in 3/4" conduit. Two cables for phone POT lines and one Ethernet data connection.

J. Upright and/or Wall Post-Indicating Valve: Provide conduit and wiring from fire alarm control panel to post-indicating valve if electronically supervised, coordinate exact location of PIV with fire sprinkler contractor prior to rough-in. Coordinate final location with Civil Drawings and Fire Protection Contractor. Where equipment is located inside a vault, stub required conduit inside vault,

turn up and cap.

K. Contractor shall submit on completion of system verification, a point-by-point check list indicating the date and time of each item inspected and issue a certificate confirming that the inspection has been completed and the system is installed and functioning in accordance with the Specifications prior to date of substantial completion.

L. Provide remote alphanumeric display annunciators in the administrative area in constantly attended area, as required by the local AHJ, and additional annunciators where indicated on the drawings as directed by Architect / Owner.

M. Alarm devices shall be ceiling mounted unless indicated specifically otherwise. Alarm devices in Mechanical, Electrical, Communications, IDF / MDF Rooms and Central Plant shall be wall mounted and coordinated with other equipment, piping and ductwork.

N. Provide combination speaker strobes. Provide strobe only alarms when additional speaker placement will compromise voice intelligibility. Provide horn/strobes in coolers and freezers.

O. Detectors shall be installed per NFPA 90A and be listed with the fire alarm control panel.

P. Auxiliary Equipment Monitoring Wiring and connection to equipment shall be the responsibility of the fire alarm contractor.

Q. Power for magnetic door holders shall be provided from the nearest receptacle circuit wired through fire alarm relay.

R. Smoke detectors shall be mounted to a 4-inch octagon box with hanger bar or with box secured to building structure.

S. Provide power via 120-volt, 20-Amp dedicated circuits with lock-on provisions at the respective circuit breaker for the main fire alarm control panel, each panel extender and each remote power supply at no additional cost to the Owner. The complete fire alarm system shall be powered under emergency power when emergency life safety power is available at the project site. When emergency life safety power is not available at the project site, power shall originate from the nearest available 120-volt panel. Label 120V circuit origination (i.e.: “120-Volt Circuit ELA-3”)

T. Provide smoke detectors in the following locations:
1. All paths of egress and adjoining spaces within the same HVAC envelope including but not limited to: corridors, hallways, stairs, lobbies, and elevator landings.
2. At each electrical room, telecommunications/data room, elevator machine room, kiln room, and mechanical room not subject to un-treated or un-filtered outside air.
3. At each computer lab/room.
4. At each library, library office and library ancillary areas.
5. At each storage room, stock room, or warehouse space.
6. At each pre-K and kindergarten classrooms.
7. At nurse’s area/clinic and patient care/cot areas.
8. At each men’s and women’s restroom/toilet
9. At each administrative work room or copy room.
10. At each student toilet / restroom. Provide STI protective cover. Do not locate over plumbing fixtures or near partitions.
11. At each special needs, life skills, adaptive behavior, developmental classrooms or similar designated areas without food preparation or cooking equipment.

U. Provide heat/thermal detectors in the following locations:
1. At each electrical room, telecommunications/data room, elevator machine room and mechanical room subject to un-treated or un-filtered outside air.
2. At each janitor’s/custodial closets and laundry rooms.
3. At each commercial kitchen and adjoining storage rooms; at each food preparation area.
4. At each employee break room/lounge.
5. At each vocational shop.
6. At each science, physics, chemistry, or biology classroom and their associated

preparation and storage rooms.

7. At each special needs, life skills, adaptive behavior, developmental classrooms or similar designated areas with food preparation or cooking equipment.

V. Provide carbon monoxide detection and smoke detection devices in all areas designated as day-care for minors.

W. Provide duct smoke detectors in all air handling units with air volumes of 2,000 cfm or larger. Where duct smoke detectors are installed above ceilings, provide external remote status/alarm LED mounted flush with ceiling in close proximity to the duct detector location. If space is open without ceiling, wall mount remote status/alarm LED in close proximity to the detector between 96 and 108-inches AFF, or as directed by Owner.

X. Provide duct smoke detectors on outside air units only as required by local Code and / or A.H.J.

Y. Provide VESDA type detectors at the following locations when appropriate:
1. Atriums to avoid exposed conduits.
2. High ceiling areas 25 feet and higher where maintenance of spot type detectors will be difficult.
3. Skylights to avoid exposed conduits.
4. Coolers/Freezers 200 square feet and larger.

Z. Provide manual pull stations at each exterior exit and at each exit from all floors only if required by local AHJ or if the building is not fully sprinklered. Provide one manual pull station at the central reception area as directed by Owner.

AA Provide weatherproof exterior audio/visual alarm devices mounted on the building at the exact location as directed by Architect:
1. Main entry.
2. Courtyards and outdoor assembly areas adjacent to the building.
3. Mechanical yards adjacent to the building.
4. Covered playgrounds or covered assembly areas adjacent to the building.
5. Additional locations where indicated on drawings.
6. Outdoor paved play areas.

BB. Provide audio and visual alarm devices in all areas normally occupied by students or minors and all common use areas.

CC. Provide carbon monoxide detection in classrooms and other instructional spaces served by a fuel-burning appliance, fuel-burning HVAC equipment (including roof mounted equipment), or with gas fuel outlets for connection to portable fuel-burning space heaters and appliances such as Bunsen burners which are typically used in laboratories or science classrooms.

3.2 CABLE AND BOXES INSTALLATION

A. All fire alarm wiring to be red. All fire alarm circuits shall be identified at each termination and at each 25 feet between terminations. Minimum 18 AWG wire size for data communications, minimum 14 AWG wire size for alarm circuits. Provide minimum 24 inch service loop for every device.

B. All circuits shall be protected to avoid interruption of service due to short-circuiting or other conditions, which might adversely affect the connected devices. Each individual signaling circuit shall be classified as a circuit pair.

C. All cabling in racks, cabinets and junction boxes shall be neatly strapped, dressed and adequately supported. Cable installation shall conform to good engineering practices and to the standards of the National Electrical Code.

D. Cables shall be terminated with the proper connector required for the associated operation of the equipment to which it is connected. Screw terminal blocks shall be furnished for all cables, which interface with racks, cabinets, consoles or equipment modules.

E. All cables within a rack, console or junction box shall be grouped according to the signals being carried to reduce signal contamination.

F. Where shielded conductors enter a panel or enclosure, and where power wiring exists, provision shall be made to provide physical isolation of signal and power conductors.

G. Supply and install all fittings and accessories whether or not they are specified, required for proper, safe and reliable operation of the system.

H. All wire shall be installed in an approved conduit/raceway system (except where permitted by NEC and the local authority having jurisdiction). Maximum conduit fill shall not exceed 40%.

I. Minimum conduit size shall be 3/4" EMT with insulated bushings. Install conduit per engineered shop drawings. All conduit terminations in all boxes shall have insulated bushings, and shall enter or exit the panel from the top only.

J. Systems utilizing open wiring techniques with low smoke plenum cable shall provide conduit in all inaccessible locations, inside concealed walls, all mechanical/electrical rooms, or other areas where wiring might be exposed to view and or subject to damage.

K. All vertical wiring and all main trunk/riser wiring shall be installed in a complete raceway/conduit system. All riser boxes shall be adequately sized for the number of conductors transversing the respective box as well as the number of terminations required.

L. All junction boxes containing fire alarm wiring are to be painted red and labeled.

M. All plenum wiring is to be installed parallel and perpendicular to the building structure. Cable shall be bundled with plenum rated cable zip ties on a maximum of 2'-6". Install cable in D-ring hangers, secured to the structure at a maximum of 5' on center. Cable shall not lie on ceiling grid or ceiling tiles, light fixtures, piping, ductwork, or foreign equipment.

N. The system ground is to be connected to the local ground bus. Under no conditions shall the AC neutral either in a power panel or in receptacle outlets be used for a reference ground.

O. All wiring shall be in accordance with NFPA 72, the National Electrical Code, and Local Codes. All wiring sizes shall conform to recommendations of the equipment manufacturer, and as indicated on the engineered shop drawings.

P. All wire shall be UL Listed FPL for limited energy (300V) and fire alarm applications and shall be installed in conduit. Limited energy FPLP or MPP wire may be run open in return air ceiling plenums provided such wire is UL Listed for such applications and is of the low smoke producing fluorocarbon type and complies with NEC Article 760 and approved by the local authority having jurisdiction.

Q. No other wiring shall be bundled with or run in the same conduit as fire alarm wiring.

3.3 FINISHES

A. Main Fire Alarm Panel color shall be approved by Owner / Architect.

3.4 ALARM SYSTEM SEQUENCE OF OPERATION

A. General:
1. All fire alarm circuits shall be electrically supervised.
2. Automatic response functions shall be accomplished by the first device initiated. Alarm functions resulting from initiation by the first device shall not be altered by subsequent alarms. An alarm signal shall be the highest priority. A pre-alarm signal shall have second priority and supervisory or trouble signals shall have third and fourth level priority. Signals of a higher level priority shall take precedence over signals of lower priority even though the lower priority condition occurred first.

B. Fire alarm operating sequences shall be as follows:

1. Activation of any automatic detector, manual station, fire suppression system, sprinkler flow switch or any other system required by NFPA 72 to be monitored to initiate an alarm condition shall cause the location of the alarm to be identified in an audible and visual manner at the building fire alarm control panel (FACP), and shall initiate the following events:
   a. The system common alarm LED on the CPU Module shall flash. The internal audible trouble device shall sound. Acknowledging the alarm condition shall silence the audible trouble device and revert the flashing common alarm LED to a steady state.
   b. The alphanumeric display shall indicate all applicable information associated with the alarm/trouble condition including: device location based on actual room graphic name and number (not architectural plan names and numbers), device type, and time of alarm. Location and zoning messages shall be custom field programmed to respective premises. Provide abbreviations when required to fit the alarm panel's display format (verify exact requirements with Owner). Below are some examples which first indicate the physical location of the device hardware – then the TYPE of device at the end of the descriptor label:
      1) "Corr 1100 at Rm 1102 - SMOKE" (at Room number shall be the nearest room door to the device).
      2) "Corr 1200 at Rm 1203 - PULL STATION" (at Room number shall be the nearest room door to the device).
      3) "Mech Rm 1352 AHU-11 - DUCT SMOKE"
      4) "Mech Rm 1467 - WATERFLOW SWITCH"
      5) "Mech Rm 1589 - TAMPER SWITCH"
      6) "Kitchen 1623 - HOOD FIRE SUPPRESSION SYSTEM"
      7) "MDF 1733 - DAS RADIO POWER SUPPLY"
      8) "Mech 1855 for Atrium 1863 - VESDA SMOKE"
   c. Any remote or local annunciator LED's associated with the alarm point shall be illuminated as herein specified.
   d. The remote signaling connection shall be activated relaying the alarm signal to an approved central station (central station connection and service provided by Owner). Point ID and descriptor must be sent and received.
   e. All automatic events programmed to the alarm point shall be executed and the associated indicating devices and/or outputs activated.
   f. De-activate local sound reinforcement systems that are not UL listed nor integrated with the fire alarm system control panel for providing fire alarm or mass notification instructions. Building wide public address systems shall remain active only for manual mass notification. Public address system auxiliary audio inputs used for background music or other remote non-emergency audio sources shall be silenced to only allow priority level manual mass notification using the public address system.
   g. Activate all audible/visual alarm devices. Where prerecorded voice announcement is required or specified, the prerecorded announcement shall be preceded with attention tone(s), followed by the approved prerecorded announcement and continue in a cycle until the system is reset. Manual voice announcement shall interrupt the prerecorded cycle and the prerecorded cycle shall resume automatically after three minutes.
   h. De-activate all HVAC systems including low speed high volume (LSHV) circulating blade type fans.
   i. De-energize the kitchen hood supply/exhaust fans as required by local authority having jurisdiction.
   j. Close all related smoke dampers.
   k. Close all related smoke/fire dampers.
   l. Release all magnetic door hold open devices.
   m. Release the electric strike, unlocking, but not unlatching, locked doors controlled by an access control system.
   n. Release Counter Shutters and hold-open devices on all fire and smoke doors.
   o. Open all security grilles with emergency egress.
   p. Activate to close all related fire and smoke doors and shutters.
   q. Activate signaling connection to the elevator as required by the local authority

having jurisdiction.

r. Signal the building automation system and Owner's security/police personnel as directed by Owner/Architect. The audible alarms shall be inhibited from being silenced for a period of 3 minutes after commencing operation unless alarm is acknowledged, and appropriate action has been taken.

s. Activate automatic recall operation of elevators as required by local authority having jurisdiction.

t. Record all events on the system printer.

2. Activation of duct mounted smoke detector on the HVAC equipment, or a smoke detector mounted in the return/supply air stream of any fan shall shut down all units as required by NFPA. The activation of one of these detectors shall send an alarm signal to the control panel and also initiate the Alarm Sequence of Operation.

3. Activation of a control valve supervisory switch shall initiate the following events:

a. The activation of any sprinkler valve supervisory (tamper) switch shall activate the system supervisory service audible signal and illuminate the LED at the building fire alarm control panel (FACP). Differentiation between valve tamper activation and opens and/or grounds on the initiation circuit wiring shall be provided.

b. Activation of a sprinkler system control valve supervisory switch shall not prevent the events listed under Article 3.4.

c. Restoring the valve to the normal position shall cause the supervisory service audible signal to pulse, indicating the restoration to normal position. The supervisory service reset key shall be provided to silence the audible signal.

4. Activation of the smoke detector and heat detector in the elevator machine room and at top of elevator shaft shall cause the elevators' controllers to be tripped by way of the shut trip breaker, and shall also initiate the events listed under Article 3.4.

5. Any subsequent fire alarm shall reactivate the alarm indicating appliances and activate the respective control sequences described above.

6. Upon silencing the alarm, all visible alarm devices shall remain active until system reset and all local sound reinforcement systems de-activated by the fire alarm system shall resume normal operation.

7. Upon reset of the fire alarm control panel, HVAC units shall be capable of being started, and resume normal operation.

C. Activation of the manual evacuation (drill) switch shall operate the alarm indicating appliances and de-activate local sound reinforcement system without causing other control circuits to be activated. However, should true alarm occur, all alarm functions should occur as described.

D. ALARM VERIFICATION shall be field programmed for each respective detector. Global verification will not be acceptable. The verification sequence is activated after a "check" procedure and the panel will wait a field programmable delay period (0-50 seconds) then proceed to re-sample the detector for continued presence of smoke. If the alarm condition still exists or a non-verified device is actuated during the verification period, the system will then initiate all alarm sequences specified herein. The system shall incorporate the ability to log in memory the number of verification events that have occurred for each selected device.

3.5 EQUIPMENT IDENTIFICATION

A. Each panel or equipment enclosure shall be provided with a permanently engraved or embossed or silkscreen identification and information tags. The tags shall include the following information:

1. Name of manufacturer.
2. Manufacturer's equipment description.
3. Serial number and model number.
4. Voltage and current rating.
5. Power circuit source identification with panel name and circuit number.
6. Additional labeling inside panels: Provide stick-on label with white background indicating installation date (MM/DD/YY) on each battery.

B. All addressable devices shall be labeled with point and module number. Provide label maker style label on base of device. Provide additional address label on exterior of duct detector housings in addition to label on the duct detector component inside. Verify exact requirements with Owner.

C. All alarm notification devices and end of line resistors shall be labeled with their alarm circuit number and panel name.

3.6 SPARE PARTS AND TOOLS

A. Interchangeable Parts: All spare parts furnished shall be directly interchangeable with the corresponding components of the installed system. Spare parts shall be packaged and identified by nameplate, tagging, or stamping. Spare parts shall be delivered to the site in unopened cartons for storage as directed by the Owner.

B. Spare Parts: Provide minimum of two, or 5% of building total, whichever is greater unless noted otherwise.
1. Spare shut down modules
2. Spare detectors of each type in the system
3. Spare alarm indicating devices of each type in the system
4. Spare manual pull stations
5. Spare protective covers of each type in the system.
6. Spare relays/controls required for connection to smoke and fire/smoke dampers
7. Devices listed above are to be installed as directed by Architect/Engineer or local code authorities at no additional cost to the Owner. Unused spare parts are to be parts for Owner's cabinet.

C. Provide two copies of the final software programmed into the fire alarm system.

D. Parts list: Furnish a list, in duplicate, of all other parts and accessories the manufacturer of the system recommends to be stocked for maintenance.

3.7 KEYS

A. Keys and locks for all equipment shall be identical. Provide not less than six keys of each type required. Identify keys by an appropriate number stamped on each key or on a metal tag attached thereto. Provide a key numbering chart in each operation and maintenance manual furnished.

3.8 SMOKE DAMPERS AND FIRE/SMOKE DAMPERS

A. Smoke dampers and combination fire/smoke dampers shall be controlled by an automatic alarm initiating device. Smoke dampers installed to isolate the air handling system shall be arranged to close automatically when the system is in alarm.

B. Coordinate motor operator voltage with supplier.

C. Open all dampers prior to starting air handling equipment.

D. Provide 120V power from nearest general purpose 20A receptacle circuit as required, or as noted otherwise.

3.9 GRAPHIC FLOOR PLANS FOR AHJ SITE PERMITTING INSPECTION AND OWNER USE

A. It is the intent of these specifications that the fire alarm system shall pass AHJ inspection on the first try. The fire alarm system shall be fully functional, commissioned, and mapped both on fire alarm graphic maps and fire alarm annunciator device descriptions to fully and correctly described the device type and detailed location. Provide color coded floor plans detailed with project name, actual room names, actual graphic room numbers as directed by the Owner and adequate information to direct people to the fire alarm devices in alarm and to exits with non-fading floor plan media. Do not use architectural plan room names and numbers. Fire alarm maps shall include all relevant building information and fire alarm device information as required for the local AHJ permitting site walk-through inspection.

B. Each plan shall clearly relate the room numbers on the annunciator to the area description on the floor plan. All fire alarm devices located to correspond with the annunciator. Indicate location of all

end-of-line resistors.

C. Provide two color coded floor plans for Owner's use that shall be solvent welded in acrylic plastic.
1. Mount in an extruded aluminum frame next to the main fire alarm control panel and annunciator in main office. Minimum size 30x42 inches. Coordinate exact location with Architect / Owner.
2. Provide a minimum 11 x 17 inch graphic print of building showing all rooms by graphic room numbers. Print shall show all detectors, major equipment and active detection devices. Print shall be framed in an extruded aluminum frame (24"x36") with clear plastic cover. Graphic shall be prepared in AutoCad version 2014 or newer. Data file (xxx.dwg) of graphic shall be provided as a part of the project.

D. Install graphic floor plans as directed by Architect/Owner prior to substantial completion. Each area or room designation shall be verified with the fire alarm device during testing.

3.10 OPERATING INSTRUCTIONS

A. Coordinate with Owner for appropriate off-site monitoring service and communication technology to be used. Provide all necessary programming for interfacing with the Owner's on-site and off-site remote signaling receiving station, including programming of descriptors and addresses at the receiving station.

B. Provide Fire Alarm System Operating Instructions for the following items including, but not limited to:
1. Alarm Signal
   a. How to open panel door
   b. What to read and follow the instruction on display
   c. How to acknowledge alarm
   d. How to silence the signals
   e. How and when to reset the system
   f. How to return system to normal operation
2. Trouble / Supervisory
   a. How to open panel door.
   b. What to read and follow the instruction on display
   c. How to acknowledge trouble condition
   d. Appropriate personnel to respond

C. Provide laminated instructions in extruded aluminum frame. Mount adjacent to the Fire Alarm Control Panel and remote annunciator panel(s) for ready reference.

3.11 ADDITIONAL REQUIREMENTS

A. The contractor is to ensure all areas of the building are covered with visual and audio alarm devices for occupant notification of a fire alarm, including remote portable or temporary buildings.

B. Coordinate door hold devices with door and door hardware.

C. Provide interface with and coordinate shunt-trip circuit breakers and control devices with kitchen hood fire control systems and elevator equipment.

D. Alarm circuit power supplies and circuiting shall be designed and installed to accept an additional five (5) 110cd visual devices for future expansion. The initial design shall not exceed 70% of the rated power supply and circuit capability.

E. Install system event printer as directed by Owner/Architect.

F. Provide programming or re-programming of all hot keys as directed by Owner including, but not limited to, fire drill, AHU shutdown bypass, horn/strobe disable, elevator test.

G. Provide one dedicated alarm circuit booster panel and audio amplifier for (future) portable (temporary) building(s) at designated portable building location, at exit door to portable building

location.

H. Provide one dedicated addressable initiating device circuit with a minimum capacity of 50 devices for (future) portable (temporary) building(s) to the nearest man building egress discharge to the designated portable building location. Provide 100 feet of cable coiled and marked “FACP-INITIATING PORTABLES” above an accessible ceiling.

I. Provide printer and printer stand at main FACP; exact location as directed by Owner / Architect.

J. Replace the existing fire alarm system with new fire alarm system at existing buildings: The existing fire alarm system shall remain fully operational until the new system is fully operational. Do not remove existing field devices until transition to fully operational new system as required by the Fire Marshall. The existing system shall be fully tested by the contractor prior to construction and a written report given to Owner indicating any operational deficiencies in the existing system. Owner will, or provide direction to correct any operational deficiencies, and afterwards, the contractor will take responsibility of maintain the existing system full functionality until the new fire alarm system is fully operational and accepted by the AHJ.

3.12 COMMISSIONING THE SYSTEM

A. The installing contractor shall be responsible for verifying that each component of the system is fully operational and in conformity with the specifications. He shall also be responsible for insuring that all elements function together as a system in accordance with the specifications.

B. A state licensed NICET II minimum and factory trained technical representative of the manufacturer shall supervise the final control panel connections and testing of the system. Upon completion of the acceptance tests, the owner and/or his representatives shall be instructed in the proper operation of the system.

C. The installing contractor shall functionally test each and every device in the entire system for proper operation and response. Field testing shall include voice intelligibility as required by the latest edition of NFPA 72 Any items found not properly installed or non-functioning shall be replaced or repaired and retested. The final test indicating a fully functional fire alarm system shall be recorded and an electronic Excel and printed copy submitted to the Architect, Engineer and Owner.

D. The installing contractor shall provide a complete written report in electronic form and printout of the functional test and intelligibility test of the entire system. A copy of the test report shall be provided with the Maintenance and Operation Manuals. The test report shall be signed and dated by the licensed fire alarm superintendent responsible for supervising the final system test and checkout. This test shall be witnessed and accepted by the Owner two weeks prior to testing for the local Fire Marshall to allow time to make corrections, prior to testing for the AHJ.

E. After the Owner has accepted the fire alarm system, the installing contractor's fire alarm superintendent shall test the entire system in the presence of the local authorities having jurisdiction. The contractor shall be responsible for making any changes, adjustments, or corrections, as may be required by the local authorities. The Contractor shall affix his certification label and installation certificate to the interior of the main fire alarm control panel. This test shall not be used to de-bug or correct deficiencies of the system.

F. The testing and Owner’s acceptance shall be performed within 30 days after the fire alarm installation is completed. The test shall be performed by a minimum of two qualified fire alarm system technicians acceptable to the authority having jurisdiction. The test which is a comprehensive 100 percent inspection and test of all fire alarm system equipment shall include the following:
   1. Fire alarm control equipment: a visual and functional test of the fire alarm control and auxiliary control equipment.
   2. A visual inspection shall be conducted to establish that all electrical connections and equipment, as required, are properly installed and operating.
   3. A functional fault simulation test shall be conducted on all relevant field wiring terminations to ensure that wiring is properly supervised as required.
   4. Indicators shall be tested to ensure proper function and operation.

5. Control panel auxiliary functions shall be functionally tested to verify proper operation.
6. Control panel supervisory and alarm current readings shall be taken to verify that the control panel has the appropriate power supplies and standby batteries to operate the system as required. A three-minute general alarm stress test, both under AC power and standby power, shall be conducted to further ensure complete operation of the system.
7. Fire alarm peripheral devices; All fire alarm peripheral devices shall be functionally tested and the location and testing information recorded for each device.
8. Manual initiating devices:
   a. Each manual fire alarm station shall be functionally tested for alarm operation.
   b. Each manual fire alarm station shall be functionally tested for proper wiring supervision.
9. Automatic initiating devices:
   a. Each automatic initiating device shall be activated in accordance with manufacturer's instructions to ensure proper operation.
   b. Each automatic initiating device shall be functionally tested for proper wiring supervision.
   c. Each automatic initiating device shall be inspected to ensure proper placement and mounting as required by specifications.
10. Alarm signaling devices:
    a. Each alarm signaling device shall be tested and decibel reading taken at 10' from the device and recorded to ensure proper operation. Each area's voice alarm signaling devices shall be tested for intelligibility.
    b. Each alarm signaling device shall be functionally tested for proper wiring supervision.
    c. Decibel reading shall be taken to ensure that the alarm signal level can be clearly heard in all areas of the facility.
    d. All visual alarm indicators shall be functionally tested to ensure proper operation and that they are clearly visible.
11. Elevators: Each elevator shall be tested and automatic recall function verified.
12. Reporting: Upon completion of the initial verification audit, a report shall be sent to the Architect/Engineer indicating that all fire alarm equipment has been tested and is in 100 percent operation. The report shall also contain the audit testing information as to the location and operational status of each peripheral device. The 100 percent audit shall be performed by a factory-trained representative. The report shall include the voice intelligibility performance in each area and indicate compliance with NFPA and local AHJ requirements.

G. It is the intent of these specifications and of the Architect/Engineer that a continued program of system maintenance is to be provided by the Owner in compliance with NFPA 72. It is mandatory that the installing Contractor provide such services and make available these services to the Owner upon completion of the project.

H. Upon completion of installation and full acceptance testing, submit NFPA 72 certificate of compliance that the total fire alarm system, including any subsystems, is fully functional and that the components are UL listed for function intended.

3.13 SUBSTANTIAL COMPLETION

A. Final acceptance of the FIRE ALARM SYSTEM by the owner, local code authorities and Occupancy Permit has been issued.

B. All fire alarm system shop drawings, test reports, operating and maintenance manuals, maps and as-built drawings shall be submitted in electronic format to and accepted by the Architect / Owner prior to date of substantial completion.

C. Acceptance by County or Local Fire Marshall.

3.14 TRAINING

A. Provide training course to all fire personnel assigned by Owner's Representative. The training shall include a course syllabus and hands-on participation. Training shall be conducted on a system

identical to the one being installed on this project. The system shall be able to perform all system operations and simulate all types or forms of alarm conditions.

B. Provide a video of the training program to the Owner's Representative to be used for periodic refresher course, training of the local fire department and for training of new employees.

C. The training course shall include, in addition to the above, a system overview, and a review of the operation and maintenance manual.

D. The instructor shall be factory trained and shall be thoroughly familiar with all parts of the installation on which instruction is to be given. The instructor shall be trained in operating theory as well as in practical operation and maintenance work.

END OF SECTION

SECTION 32 18 13.10

SYNTHETIC GRASS SURFACING

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Section Includes: Furnish all labor, materials, tools and equipment necessary to install, in place, all synthetic turf material as indicated on the plans and as specified herein. The installation of all materials shall be performed in strict accordance with the manufacturer's written installation instruction, and in accordance with all approved shop drawings.

B. Related Sections:
1. Section 01 23 00 - Alternates.
2. Section 11 68 00 - Play Field Equipment and Structures
3. Section 32 11 16 - Graded Stone Base.
4. Section 32 18 14 - Paved Elastic Layer

1.2 SUBMITTALS

A. Shop drawings shall be prepared at the scale of the construction documents and contain all pertinent information regarding installation. These drawings shall be submitted to the Architect/Owner for approval prior to the manufacturing and shipment of materials.

B. Submit drawings for:
1. Installation details; edge detail, goal post detail, other inserts and covers, etc.
2. Striping plan; layouts showing any field lines, markings and boundaries, and field logos per project drawings.

C. Prior to order of materials, the Turf Contractor shall submit the following:
1. Product Data including Independent Test Lab Results
2. Installation details
3. Sample Warranty
4. Field layout and striping plans
5. Details on construction, especially any details that may deviate from plans and specifications.

D. Prior to the beginning of installation, the manufacturer/installer of the synthetic turf shall inspect the subbase and supply a Certificate of Subbase Acceptance for the purpose of obtaining manufacturer's warranty for the finished synthetic playing surface.

E. Prior to Final Acceptance, the Contractor shall submit to the Owner three (3) copies of Maintenance Manuals, which will include necessary instructions for the proper care and preventative maintenance of the synthetic turf system, including painting and striping.

1.3 QUALITY ASSURANCE

A. Manufacturer/Installer's Experience: The synthetic turf installer/manufacturer shall have the experience of at least ten (10) acceptable installations of full-size football or soccer fields (minimum of 70,000 SF) in the United States within the past five (5) years of tufted, mono-fiber grass-like fabric that are infilled with a layered system of pea gravel and rubber. Provide this listing with the bid. The Turf Contractor shall employ only qualified, experienced supervisors and technicians skilled in the installation of the specified system.

B. Turf Contractor shall meet the following criteria:
1. Have proper license, in good standing, and have never had a license revoked.
2. Have not had a Surety or Bonding Company finish work on any contract within the last five (5) years.
3. Have not been disqualified or barred from performing work for any public Owner or other contracting entity.

1.4 EXISTING CONDITIONS

A. The Synthetic Turf Contractor will be responsible for any damage to the subbase during installation of the synthetic turf system after the deficiencies (if any) have been corrected as noted on the Certificate of Subbase Acceptability. New football goal posts and/or infield dirt mix backfill within the contiguous turf limits or immediately adjacent thereto are not to be installed by the Owner/Prime Contractor until after the new synthetic turf system has been completed.

1.5 SCHEDULE

A. Turf Contractor shall complete all work on the synthetic turf system in accordance with the published project schedule.

B. The Turf Contractor will require unencumbered use of an area within 30 feet of the synthetic turf area(s) being installed in order to complete his work. Turf Contractor shall also be afforded unencumbered access through the construction site to reach the turf field area being installed.

1.6 SURFACE AREA

A. The Turf Contractor is to verify all measurements.

1.7 UTILITIES

A. Owner/Prime Contractor will supply necessary water, adequate lighting and electricity for installation.

1.8 WARRANTY

A. Warranty: The Contractor shall submit its Manufacturer's Warranty with (3rd party) verification manufacturing was to standards. The warranty guarantees the usability and playability of the synthetic turf system for its intended uses for an eight (8) year period commencing with the date of Substantial Completion.
   1. The warranty submitted must have the following characteristics:
      a. Must provide coverage for eight (8) years from the date of Substantial Completion.
      b. Must warrant materials and workmanship.
      c. Must verify through a (3rd party) that the materials installed meet or exceed the product specifications.
      d. Must have a provision to either make a cash refund or repair or replace such portions of the installed materials that are no longer serviceable to maintain a serviceable and playable surface.
      e. Must be a manufacturer’s warranty from a single source covering workmanship and all self-manufactured or procured materials.
      f. Warranty shall cover the designated uses enumerated, including, but not limited to:
         1) Athletics/Sports/Practice activities or competitions.
         2) Marching band
         3) Physical exercises
         4) Physical education activities
         5) Pneumatic rubber-tired maintenance and service vehicles
         6) Pedestrian traffic and other similar uses
         7) Ceremonial and Entertainment Events
         8) Wheelchairs.
   2. NOTE: Prior to the final pay application being approved, the warranty documents must be received.

B. Guarantee that throughout the 8-year warranty period, the synthetic turf system shall have a maximum "G" value according to ASTM F1936-98 and Procedure A, ASTM F355, not to exceed 130G's at any location upon installation and shall not exceed 175G's throughout life of the warranty period. This shall be determined by conducting dynamic cushioning tests at the locations designated in ASTM F1936-98 and at corners of the soccer penalty boxes at opposite sides of the field. Any increase from 130G's to allowable 175G's maximum shall be at a relative uniform rate not to exceed 15 G's in any single yearly period. Manufacturer will be responsible for testing and documenting the result every year of the warranty period.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Refer to SECTION 32 18 14 - PAVED ELASTIC LAYER for e-layer pad at Practice Fields.

B. Practice Fields:
1. Basis of Design: “Matrix 46 oz Helix” as manufactured Hellas Construction. Material shall be a tufted, mono-fiber grass-like fabric coated with a secondary backing of high grade polyurethane. The fibers shall be tufted to a finished pile height of approximately 54mm. The turf fabric shall be filled with a layered system of silica pea gravel and rubber granules.
2. All components and their installation method shall be designed and manufactured for use on outdoor athletic fields. The materials as hereinafter specified, should be able to withstand full climatic exposure in all climates, be resistant to insect infestation, rot, fungus and mildew; to ultra-violet light and heat degradation, and shall have the basic characteristic of flow through-drainage allowing free movement of surface run-off through the turf fabric where such water may flow to the existing subbase and into the field drainage system.
3. The finished playing surface shall appear as mowed grass with no irregularities and shall afford excellent traction for conventional athletic shoes of all types. The finished surface shall resist abrasion and cutting from normal use.
4. Pile yarn (Polyethylene) shall be a proven athletic caliber yarn designed specifically for outdoor use and stabilized to resist the effect of ultraviolet degradation, heat, foot traffic, water and airborne pollutants. The pile fiber shall possess the following physical characteristics:
5. Infill: Infill material shall be a layered system of pea gravel and rubber in accordance with the manufacturer’s recommendations and the Owner’s preference.
6. Perimeter and interior edge details, underground storm sewer piping and connections, and goal post foundations required for the system shall be as detailed and recommended by the manufacturer, and as approved by the Owner.
7. Product Characteristics:

	Standard	**Property**	**Specification**
1	ASTM D418/D5848	Pile Weight	46 oz. /Sq. Yd.
2	ASTM D5848	Primary and Secondary Backing Weight	9.2 oz. /Sq. Yd.
3	ASTM D5848	Secondary Coating Weight	26 oz. /Sq. Yd.
4	ASTM D5848	Total Weight	81.2 oz. /Sq. Yd.
5	ASTM D1907	Yarn Denier	4 single monofilament yarn ends in 1,710 denier lime green 4 single monofilament yarn ends in 1,450 denier dark green
6	ASTM D5848	Pile Height	Finished 2 1/4"
7	ASTM D5793	Tufting Gauge	1/2”
8	ASTM D5848	Primary Backing	Tri-layer woven Polypropylene
9	ASTM D5848	Secondary Coating	Polyurethane
10	ASTM D1335	Tuft Bind without Infill	8 lbs. +/-
11	ASTM D5034	Grab Tear (width)	250.1 - 273.1 lbs. Force
12	ASTM D5034	Grab Tear (length)	197.6 - 236.1 lbs. Force
13	ASTM D4991	Carpet Permeability	10 - 15 inches/hour
14	ASTM D2859	Flammability (Pill Burn)	Pass

15	ASTM F355	G-max (Impact Attenuation)	<130 at installation <190 over warranty life
16	ASTM E-11	Realfill™ Infill	6 -7 lbs +/- per square foot
17		Fabric Width	15’
18		Perforation	3/16” Holes 4” X 4”
19	Yarn		160 microns x 1.6 mm (lime green) 170 microns x 1.2 mm (grass green)

All Characteristics listed above nominal +/- 5%

C. Practice Fields Alternate Product: Provide “Powerblade NXT 2.25” as manufactured by Shaw Sports Turf
1. The turf fabric shall be filled with a layered system of silica pea gravel and rubber granules.
2. All components and their installation method shall be designed and manufactured for use on outdoor athletic fields. The materials as hereinafter specified, should be able to withstand full climatic exposure in all climates, be resistant to insect infestation, rot, fungus and mildew; to ultra-violet light and heat degradation, and shall have the basic characteristic of flow through-drainage allowing free movement of surface run-off through the turf fabric where such water may flow to the existing subbase and into the field drainage system.
3. The finished playing surface shall appear as mowed grass with no irregularities and shall afford excellent traction for conventional athletic shoes of all types. The finished surface shall resist abrasion and cutting from normal use.
4. Pile yarn shall be a proven athletic caliber yarn designed specifically for outdoor use and stabilized to resist the effect of ultraviolet degradation, heat, foot traffic, water and airborne pollutants. The pile fiber shall possess the following physical characteristics:
5. Infill: Infill material shall be a layered system of pea gravel and rubber in accordance with the manufacturer’s recommendations and the Owner’s preference.
6. Perimeter and interior edge details, underground storm sewer piping and connections, and goal post foundations required for the system shall be as detailed and recommended by the manufacturer, and as approved by the Owner.
7. Product Characteristics:

	Standard	**Property**	**Specification**
1	ASTM D418/D5848	Pile Weight**	48 oz. /Sq. Yd.
2	ASTM D5848	Primary Backing Weight**	8 oz. /Sq. Yd.
3	ASTM D5848	Secondary Backing Weight	20 oz. /Sq. Yd.
4	ASTM D5848	Total Weight****	76 oz. /Sq. Yd.
5	ASTM D1577	Linear Density – Total Denier	14,000 denier
6	ASTM D5848	Pile Height**	Finished 2.25"
7	ASTM D5793	Tufting Gauge	1/2”
8	ASTM D1335	Tuft Bind Strength	> 10 lbs. +/-
9	ASTM D5034	Grab Tear Strength	> 200
10	ASTM D2859	Flammability (Pill Burn)	Pass
11	ASTM F355	G-max (Impact Attenuation)	<165

All Characteristics listed above nominal. ** All values are ± 5% **** All values are ± 10%.

D. Practice Fields Alternate Product: Provide “XM360” UV-resistant rigid monofilament 1.75” as manufactured by FieldTurf, a Tarkett Sports Company with sand and SBR rubber infill.
1. The turf fabric shall be filled with a layered system of sand and rubber granules.

2. All components and their installation method shall be designed and manufactured for use on outdoor athletic fields. The materials as hereinafter specified, should be able to withstand full climatic exposure in all climates, be resistant to insect infestation, rot, fungus and mildew; to ultra-violet light and heat degradation, and shall have the basic characteristic of flow through-drainage allowing free movement of surface run-off through the turf fabric where such water may flow to the existing subbase and into the field drainage system.
3. The finished playing surface shall appear as mowed grass with no irregularities and shall afford excellent traction for conventional athletic shoes of all types. The finished surface shall resist abrasion and cutting from normal use.
4. Pile yarn shall be a proven athletic caliber yarn designed specifically for outdoor use and stabilized to resist the effect of ultraviolet degradation, heat, foot traffic, water and airborne pollutants. The pile fiber shall possess the following physical characteristics:
5. Infill: Infill material shall be a layered system of sand and rubber in accordance with the manufacturer's recommendations and the Owner's preference.
6. Perimeter and interior edge details, underground storm sewer piping and connections, and goal post foundations required for the system shall be as detailed and recommended by the manufacturer, and as approved by the Owner.

7. Product Characteristics:

	Standard	**Property**	**Specification**
1	ASTM D418/D5848	Pile Weight	50 oz. /Sq. Yd.
2	ASTM D5848	Primary Backing Weight	8 oz. /Sq. Yd.
3	ASTM D5848	Secondary Backing Weight (Perforated)	16 oz. /Sq. Yd.
4	ASTM D5848	Total Weight	74 oz. /Sq. Yd.
5	ASTM D1577	Linear Density – Total Denier	14,500 denier
6	ASTM D5848	Pile Height	Finished 1.75"
7	ASTM D5793	Tufting Gauge	3/8"
8	ASTM D1335	Tuft Bind without Infill	8 lbs. +/-
9	ASTM D5034	Grab Tear Strength	> 200
10	ASTM D2859	Flammability (Pill Burn)	Pass
11	DIN 18-035	Water permeability	> 40

Variation of +/-5% on above listed property values is within normal manufacturing tolerances

E. Practice Fields Alternate Product Option: Provide polyethylene monofilament with polyethylene monofilament flit film "NRF 34 Elite" as manufactured by SportTurf.
   1. The turf fabric shall be filled with a layered system of silica pea gravel and rubber granules or manufacturer recommended infill.
   2. All components and their installation method shall be designed and manufactured for use on outdoor athletic fields. The materials as hereinafter specified, should be able to withstand full climatic exposure in all climates, be resistant to insect infestation, rot, fungus and mildew; to ultra-violet light and heat degradation, and shall have the basic characteristic of flow through-drainage allowing free movement of surface run-off through the turf fabric where such water may flow to the existing subbase and into the field drainage system.
   3. The finished playing surface shall appear as mowed grass with no irregularities and shall afford excellent traction for conventional athletic shoes of all types. The finished surface shall resist abrasion and cutting from normal use.
   4. Pile yarn shall be a proven athletic caliber yarn designed specifically for outdoor use and stabilized to resist the effect of ultraviolet degradation, heat, foot traffic, water and airborne pollutants. The pile fiber shall possess the following physical characteristics:
   5. Infill: Infill material shall be a layered system in accordance with the manufacturer's recommendations and the Owner's preference.

6. Perimeter and interior edge details, underground storm sewer piping and connections, and goal post foundations required for the system shall be as detailed and recommended by the manufacturer, and as approved by the Owner.
7. Product Characteristics:

	Standard	Property	Specification
1	ASTM D418/D5848	Pile Height	1.625 to 2.5”
2	ASTM D5848	Face Weight	40 to 50 /Sq. Yd.
3	ASTM D5848	Primary Backing Weight	ArmorLoc 3L PP/PET 7 oz. /Sq. Yd.
4	ASTM D5848	Total Weight (Silverback)	769 to 81 oz. /Sq. Yd.
5	ASTM D1577	Secondary Coating Weight	22 oz/Sq.yd
6	ASTM D1335	Tuft Bind	>10 lbs
7	ASTM D2256	Grab Tear Strength (Average)	>200
8	ASTM D1557	Total Yarn Linear Density	12,200 Denier
9	ASTM D5034	Tensile Strength	18 lbs
10	ASTM D5793	Machine Gauge	0.375”
11	ASTM D2859	Flammability (Pill Burn)	Pass
12	ASTM F355	G-max (Impact Attenuation)	<165

All Characteristics listed above nominal. ** All values are ± 5% **** All values are ± 10%.

F. Weight Room Turf and Plaza:
1. Basis of Design: Slit_Film/Thatch 0.75” UV-resistant polyethylene with 5-millimeter pad as provided by Field Turf.
2. Product Characteristics:

	Standard	Property	Specification
1	ASTM D418/D5848	Pile Weight	40 oz. /Sq. Yd.
2	ASTM D5848	Primary Backing Weight	8 oz. /Sq. Yd.
3	ASTM D5848	Secondary Backing Weight	20 oz/Sq. Yd.
4	ASTM D5848	Total Weight	132 oz. /Sq. Yd.
5	ASTM D5793	Stitch gauge	3/16 inch centers
6	ASTM D1577	Yarn Denier	10,000 denier
7	ASTM D5848	Pile Height	0.75”
8	ASTM D5793	Tufting Gauge	1/4”
9	ASTM D2859	Flammability (Pill Burn)	Pass

G. Weight Room Turf and Plaza Alternative Product:
1. Provide polyethylene/Nylon “Elevate 48” with 5-millimeter pad as provided by Mammoth.
2. Product Characteristics:

	Standard	Property	Specification

1	ASTM D418/D5848	Pile Weight	48 oz. /Sq. Yd.
2	ASTM D5848	Backing Matrix	84 oc./Sq. Yd Stabilized dual layered woven polypropylene/urethane with 5mm attached pad
3		Fiber Mass	8,000 denier PE 4,400 denier Nylon
4	ASTM D5848	Total Weight	132 oz. /Sq. Yd.
5	ASTM D1577	Linear Density – Total Denier	14,500 denier
6	ASTM D5848	Pile Height	Finished 0.75"
7	ASTM D5793	Tufting Gauge	1/4”
8	ASTM D2859	Flammability (Pill Burn)	Pass

H. Weight Room Turf and Plaza Alternative Product:
1. Provide TXT polyethylene “Duraplay Arena Pro-5mm Foam (DPPE1-5W)” as provided by Challenger Turf, Envylawn.
2. Product Characteristics:

	Standard	**Property**	**Specification**
1	ASTM D418/D5848	Face Weight	40 oz. /Sq. Yd.
2		Total Weight	123.5 oc./Sq. Yd TXT polyethylene with 5mm attached pad
3		Fiber Mass	8,000 denier PE 4,400 denier Nylon
4		Total Weight	132 oz. /Sq. Yd.
5	ASTM D1577	Primary Yarn Denier	5600 denier
6	ASTM D5848	Pile Height	Finished 7/16”
7	ASTM D5793	Tufting Gauge	3/16”
8		Primary Backing	K-29
9		Primary Weight	7.5 oz/Sq. Yd.
10		Secondary Coating	5W
11		Secondary Coating Weight	76 oz/Sq. Yd.

A. Weight Room Turf and Plaza Alternative Product:
1. Provide polyethylene slit-film, texturized nylon “Fast Grass 40” with 5mm foam as provided by SportTurf.
2. Product Characteristics:

	Standard	**Property**	**Specification**
1	ASTM D418/D5848	Face Weight	40 oz. /Sq. Yd.
2	ASTM D5823	Pile Height	.75”

3	ASTM D5823	Total Fabric Weight	160 oz./Sq.Yd
4	ASTM D5823	Primary Backing Weight	7.4. /Sq. Yd.
5	ASTM D5823	Secondary Coating Wight	113 oz./Sq.Yd
6	ASTM D1335	Tuft Bind	>8 lbs
7	ASTM D2256	Grab Tear Strength (Average)	>200
8	ASTM D1557	Total Yarn Linear Density	9,400 Denier
9	ASTM D5034	Tensile Strength	80 lbs
10	ASTM D5793	Stitch Rate	13 per 3”
11	ASTM D5793	Machine Gage	¼”
12	ASTMD2859	Flammability (Pill Burn)	Pass

B. Provide infill per each manufacturer’s recommendations and as needed per location.

PART 3 - EXECUTION

3.1 GENERAL

A. The installation shall be performed in full compliance with approved shop drawings.

B. Only factory-trained technicians, skilled in the installation of athletic caliber synthetic turf systems working under the direct supervision of the synthetic turf manufacturer’s installation supervisors shall undertake the placement of the system.

C. The surface to receive the synthetic turf shall be inspected and certified by the turf manufacturer as ready for the installation of the synthetic turf system and must be perfectly clean as installation commences and shall be maintained in that condition throughout the process.

3.2 INSTALLATION

A. The subbase and curbs shall be inspected by means of a laser level and plotted on a 10-foot grid. Based upon the Contractor’s inspection of the topological survey, the Sitework Contractor shall fine grade the subbase suitably, including properly rolling and compacting the base to achieve a surface planarity within 1/4” in 10 feet (+0, -1/4”). OWNER, ENGINEER OR PRIME CONTRACTOR SHALL NOT APPROVE THE SUBBASE FOR TOLERANCE TO GRADE WITHOUT OBTAINING THE TOPOLOGICAL SURVEY.

B. The Turf Project Superintendent shall thoroughly inspect all materials delivered to the site both for quality and quantity to assure that the entire installation shall have sufficient materials to maintain the schedule and proper mixing ratios.

C. Synthetic turf shall be loose laid across the field and attached to the perimeter edge detail. Turf shall be of sufficient length to permit full cross-field installation. No head or cross seams will be allowed, except as required for inlaid fabric striping or to accommodate programmed cut-outs.

D. All seams shall be flat, tight, and permanent with no separation or fraying. All seams and markings shall be adhered to a special tape with a two-part, high strength polyurethane adhesive applied per the Turf Supplier’s standard procedures for outdoor applications.

E. Refer to manufacturer’s recommendations for infill material per turf.

F. Infill materials shall be properly applied in numerous thin lifts using special broadcasting equipment to produce a layered system of pea gravel and SBR rubber particles or manufacturer's recommended layering system. The turf shall be raked and brushed properly as the mixture is applied. The infill material shall be installed to a depth of about 1.75 inches. The layered system of pea gravel and rubber infill materials can only be applied when the turf fabric is dry.

G. Should the ambient outdoor temperature fall below 45 degrees F, the Contractor and Owner will discuss available options and/or stoppage of work.

3.3 FIELD MARKINGS AND DECORATIONS

A. The field will have the lines tufted or inlaid according to NCAA or National Federation standards, as applicable.

B. Line width tolerance is (+) 1/4 inch. Alignment tolerance on any one line (sideline, goal line, end line, yard line) is (+) 1/2 inch. Any incorrectly installed line shall be immediately removed. If such as line permanently discolors the synthetic turf, that section shall be removed and replaced at the Contractor's expense. All line marking and numbers, etc., shall be per the current University Interscholastic League (U.I.L), NCAA, NFSHSA, and Owner's recommendations and approval.

3.4 CLEANING

A. Protect installed turf from subsequent construction operations.

B. Do not permit traffic over unprotected turf surface.

C. Contractor shall provide the labor, supplies, and equipment as necessary for final cleaning of surfaces and installed items.

D. All usable remnants of new material shall become the property of the Owner.

E. The Contractor shall keep the area clean throughout the project and clear of debris.

F. Surfaces, recesses, enclosures, etc., shall be cleaned as necessary to leave the work area in a clean, immaculate condition ready for immediate occupancy and use by the Owner.

3.5 OTHER MATERIALS AND EQUIPMENT

A. Maintenance Equipment: Provide one (1) Clean Sweep Jr., towed, non-powered Turf Sweeper with hitch, excluding prime mover vehicle. The sweeper attachment shall be of sufficient size to cover a 36" wide swath in a single pass. The sweeper attachment shall be fitted with synthetic bristle brushes as recommended by the synthetic turf manufacturer and shall be used primarily to collect surface debris.

END OF SECTION

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Galena Park ISD North Shore High School Multi-Use Indoor Facility

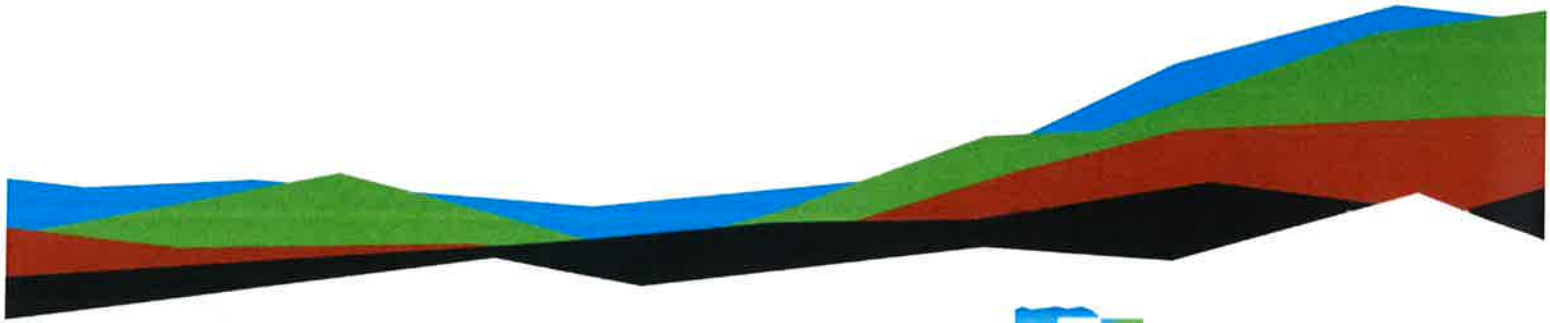
Geotechnical Engineering Report

Houston, Texas

July 22, 2025 | Terracon Project No. 92255219

Prepared for:

Galena Park Independent School District
14700 Woodforest Boulevard
Houston, Texas 77015



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July 22, 2025

Galena Park Independent School District
14700 Woodforest Boulevard
Houston, Texas 77015

Attn: Mr. Jesse Garcia
Project Manager

Re: Geotechnical Engineering Report
Galena Park ISD North Shore High School Multi-Use Indoor Facility
353 North Castlegory Road
Houston, Texas
Terracon Project No. 92255219

Dear Mr. Garcia:

Terracon Consultants, Inc. (Terracon) is pleased to submit our geotechnical engineering report for the project referenced above in Houston, Texas. We trust that this report is responsive to your project needs.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,

Terracon Consultants, Inc.
(Texas Firm Registration No.: F-3272)

Jonathan N. Han, E.I.T.
Senior Staff Engineer

Ranadeep Ravula, P.E.
Group Manager



Kierstyn M. Burrell, P.E.
Geotechnical Services Manager

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Exploration and Testing Procedures
Site Location and Exploration Plans
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Supporting Information

Note: This report was originally delivered in a web-based format. **Blue Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the Terracon logo will bring you back to this page. For more interactive features, please view your project online at **client.terracon.com**.

Refer to each individual Attachment for a listing of contents.

Introduction

Terracon Consultants, Inc. (Terracon) is pleased to submit our Geotechnical Engineering report for the proposed construction of a single-story building and a future two-story building addition planned within the existing Northshore High School campus located at 353 North Castlegory Road in Houston, Texas. This project was authorized by Mr. Edgardo Martir, Director of Planning and Construction of Galena Park Independent School District (GPISD) through issuance of Purchase Order No. 93308, dated June 9, 2025. This project was performed in general accordance with Terracon Document No. P92255219, dated June 4, 2025.

The purpose of these services was to provide information and geotechnical engineering recommendations relative to:

- Boring logs with field and laboratory data;
- Description of subsurface conditions;
- Groundwater levels observed during drilling;
- Site and boring location plans;
- Description of subsurface conditions;
- Earthwork recommendations including site/subgrade preparation;
- Foundation design parameters and construction recommendations;
- Utility construction considerations; and
- Pavement design guidelines.

The geotechnical engineering Scope of Services for this project included the advancement of seven test borings, laboratory testing, engineering analysis, and preparation of this report.

Maps showing the site and boring locations are shown on the **Site Location** and **Exploration Plan**, respectively. The results of the laboratory testing performed on soil samples obtained from the site during our field exploration are included on the boring logs in the **Exploration and Laboratory Results** section.

Site Conditions

The following description of site conditions is derived from our site visit in association with the field exploration.

Item	Description
Project Location	The project is within the existing North Shore High School campus located at 353 North Castlegory Road in Houston, Texas. See **Site Location**.
Existing Improvements[1]	The site was occupied by an existing two-story field house and associated parking lot with light poles at the time of our field program.
Current Ground Cover	Grass, weeds, and concrete.
Existing Topography	Relatively level.

1. We understand that the existing light poles within the area of the proposed improvements are planned to be demolished and completely removed as part of the construction.

Project Description

Our initial understanding of the project was provided in our proposal and was discussed during project planning. A period of collaboration has transpired since the project was initiated, and our final understanding of the project conditions is as follows:

Item	Description
Proposed Improvements[1]	▪ A new single-story multi-use indoor facility with an approximate footprint area of 68,800 square feet (sf.). ▪ A two-story future building addition planned north of the existing field house with an approximate footprint area of 11,700 sf. ▪ New utilities to be installed on the east and west portions of the proposed multi-use indoor facility with a maximum depth of 6 feet. The utilities will be placed using open-cut construction methods and will be designed and constructed in accordance with Harris County guidelines ▪ Associated pavements in the east and west portions of the proposed multi-use indoor facility.

Item	Description
Building Construction	Either steel-frame or concrete masonry unit (CMU) construction with either a structurally suspended and supported floor slab or a grade supported floor slab system.
Finished Floor Elevation	**Multi-Use Indoor Facility:** ▪ Within approximately one to two feet above existing grade. **Building Addition:** ▪ Within approximately one feet above existing grade and to match the finished floor elevation of the existing field house.
Maximum Loads[1]	▪ **Columns:** 100 to 200 kips ▪ **Floor Slab Pressure:** 125 pounds per square foot (psf)
Planned Foundation System	Drilled-and-underreamed footings.
Pavements	We assume rigid (concrete) pavement sections are being considered.
Anticipated Traffic	Consists primarily of passenger vehicles in the parking areas and passenger vehicles combined with garbage trucks and large multi-axle delivery trucks from time-to-time in driveway areas.

1. Based on the information provided by GPISD.

Geotechnical Characterization

Geology

Based on the geologic maps published by the Bureau of Economic Geology, the site for the proposed construction is located on the Beaumont formation, a deltaic nonmarine Pleistocene deposit. The Beaumont formation is heterogeneous containing thick interbedded layers of clay, fine sand, and silt.

The clay fraction is primarily composed of montmorillonite, illite, kaolinite, and finely ground quartz. The clay present in the formation has been preconsolidated by a process of desiccation. Numerous wetting and drying cycles have produced a network of small randomly oriented, closely-spaced joints within some depth zones. These small joints frequently have a shiny appearance and the clays are called slickensided in these cases. The joint pattern may have an influence on the construction and engineering behavior of the soil.

The coastal plain in this region has a complex tectonic geology, several major features of which are: Gulf Coastal geosyncline, salt domes, and major sea level fluctuations during the glacial stages, subsidence and geologic faulting activities. Most of these geologic faulting activities have ceased for millions of years, but some are still active. A detailed geologic fault investigation and study of the site geology are beyond the scope of this report.

GeoModel

We have developed a general characterization of the subsurface conditions based upon our review of the subsurface exploration, laboratory data, geologic setting and our understanding of the project. This characterization, termed GeoModel, forms the basis of our geotechnical calculations and evaluation of the site. Conditions observed at each exploration point are indicated on the individual logs. The individual logs can be found in the **Exploration and Laboratory Results** and the GeoModel can be found in the **Figures** attachment of this report.

Concrete pavement was observed at the ground surface at borings B-1 through B-4, B-6, and B-7 and was measured to be approximately 4 to 7 inches thick.

As part of our analyses, we identified the following model layers within the subsurface profile. For a more detailed view of the model layer depths at each boring location, refer to the GeoModel.

Model Layer	Layer Name	General Description
1	**Fill: Fat Clay**	dark gray, gray, and tan, with ferrous stains and nodules
2	**Fat Clay and Sandy Fat Clay**	dark gray, light gray, reddish brown, and tan, medium stiff to very stiff, with ferrous stains, calcareous nodules, slickensides, and silt and sand pockets
3	**Lean Clay and Sandy Lean Clay**	light gray, tan, reddish brown, and dark gray, soft to very stiff, with calcareous nodules and ferrous stains

Groundwater Conditions

Borings B-1 through B-7 were advanced using dry drilling techniques to their termination depths (about 10 to 25 feet) in an effort to evaluate groundwater conditions at the time of our field program. Upon reaching groundwater, drilling was suspended for a period of about 15 minutes to allow the groundwater to rise and the groundwater levels to be recorded. The water levels observed in the boreholes can be found on the boring logs in **Exploration and Laboratory Results** and are summarized below.

Summary of Groundwater Level Observations[1]				
Boring No.	Approximate Boring Depth (feet)[2]	Approximate Depth of Groundwater (feet)[2]		
		Initial/ During Dry Drilling	After 5 Minutes	After 15 Minutes
B-1	25	20	---	---
B-2	25	20	16	13½
B-3	25	No free water observed.		
B-4	25	20	17	15
B-5	25	18	16	14
B-6	10	No free water observed.		
B-7	10	No free water observed.		

1. Groundwater readings were obtained on June 18, 2025.
2. Below existing grade.

Groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the borings were performed. Therefore, groundwater levels during construction or at other times in the life of the structures may be higher or lower than the levels indicated on the boring logs. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project and should be evaluated prior to construction.

Geotechnical Overview

Based on the information obtained from our subsurface exploration, the site can be developed for the proposed project. A summary of our findings and recommendations is provided below.

- Fill soils were observed beneath the existing pavement at boring B-1 and extended to a depth of about 8 feet. Fill soils may be present at varying depths and at other locations not explored during our field program. Support of the foundation elements, slabs, flatworks, and pavements on or above fill soils is discussed in this report. However, even with the recommended construction testing services, an inherent risk exists for the owner that compressible fill or unsuitable material within or buried by the fill will not be discovered. This risk of unforeseen conditions cannot be eliminated without completely removing the existing fill.

- Due to the amount of fill observed at boring B-1, the fill soils should be over-excavated and completely removed within the proposed multi-use indoor facility building area to expose the underlying native subsurface soils. Select fill soils should be used to raise grade up in the proposed building area.

- Expansive soils were observed at this site. This report provides recommendations to help reduce the effects of soil shrinkage and expansion. However, even if these procedures are followed, some movement and distress in the structures should be anticipated. The severity of distress will increase if any modification of the site results in excessive wetting or drying of the expansive soils. Eliminating the risk of movement associated with expansive soils may not be feasible. However, this risk can be significantly reduced if the structures are designed as a structural slab over a void space with the structural loads supported by a foundation system terminated below the active zone. Terracon can provide recommendations for this option, if requested.

- Demolition of the existing light poles, utilities (if any), pavements, etc. will be performed to facilitate the construction of the proposed structures planned at this site. Special care should be exercised to demolish and remove the existing structure, foundations elements, pavements, utilities, and any buried structure to minimize disturbance of the subgrade and potential detrimental effects on construction of the proposed development at this site. Recommendations of demolition and removal of existing foundations, utilities, etc. are provided in the **Demolition Considerations** section of this report.

- A foundation system consisting of drilled-and-underreamed footings may be utilized to support the proposed structures planned at this site.

- For a grade supported floor slab, a minimum 60-inch thick select fill pad should be placed under the proposed structures to provide uniform support to the floor slab and reduce the estimated Potential Vertical Rise (PVR) of the subgrade to approximately one inch or less.

- For a structurally suspended floor slab system at this site, we recommend a 8-inch void space be provided beneath the floor slab and grade beams, and that the drilled footing foundation system be designed to carry additional loads.

- Based on the soil and groundwater information obtained during our field program, we anticipate that excavations for the utilities that extend into the clay soils may occur without advanced dewatering, seepage from the clay soils is expected to be minor and likely can be handled utilizing a system of sumps and pumps positioned at the bottom of the excavation.

- Rigid pavement sections vary from 5.0 to 7.0 inches of reinforced concrete with chemically treated subgrade.

This summary should be used in conjunction with the entire report for design purposes. Details were not included or fully developed in this section, and the report must be read in its entirety for a comprehensive understanding of the items contained herein. The section titled **General Comments** should be read for an understanding of the report limitations.

Earthwork

Earthwork is anticipated to include clearing and grubbing, excavations, and fill placement. The following sections provide recommendations for use in the preparation of specifications for the work. Recommendations include critical quality criteria, as necessary, to render the site in the state considered in our geotechnical engineering evaluation for foundation, floor slabs, utilities, and pavements.

Site Preparation

Construction areas should be stripped of vegetation, topsoil, existing pavements and other debris/unsuitable surface material. Proper site drainage should be maintained during construction so that ponding of surface runoff does not occur and cause construction delays and/or inhibit site access.

Due to the amount of the fill observed at boring B-1, we recommend that the fill soils be over-excavated and completely removed within the proposed multi-use indoor facility building area to expose the underlying native subsurface soils. Select fill soils should be used to raise grade up in the proposed multi-use indoor facility building area.

Demolition of existing light poles, pavements/flatwork, utilities, etc. should be addressed as recommended in **Demolition Considerations**. Once final subgrade elevations have been achieved, the exposed subgrade should be carefully proofrolled with a 20-ton pneumatic roller or equivalent equipment, such as a fully loaded dump truck, to detect weak zones in the subgrade. Special care should be exercised when proofrolling areas containing fill soils in an attempt to observe soft/weak zones within the fill soils. Weak areas detected during proofrolling, as well as zones of fill containing organic matter and/or debris, should be removed and replaced with soils exhibiting similar classification, moisture content, and density as the adjacent in-situ soils. Proofrolling should be performed under the direct observation of the Geotechnical Engineer or his/her representative.

Proofrolling in the structure areas are not required if a structurally suspend and supported floor slab system is utilized for the proposed structure areas.

Subsequent to proofrolling, and just prior to placement of fill, the exposed subgrade within the construction area should be evaluated for moisture and density. If the

moisture and/or density do not meet the criteria described in **Fill Compaction Requirements** for on-site soils, the subgrade should be scarified to a minimum depth of 6 inches, moisture adjusted, and compacted to at least 95 percent of the Standard Effort (ASTM D698) maximum dry density.

Fill Material Types

Select fill and on-site soils to be used at this site for grade adjustments should meet the following criteria:

Fill Type	USCS Classification	Acceptable Location for Placement
Select Fill Soils	CL and/or SC (10≤PI≤20)	Must be used to construct the select fill pad under the grade-supported slabs and for all grade adjustments within the structure areas.
On-site Soils	Varies	The on-site soils, including the undocumented fill soils, appear suitable for use as fill within the pavement areas, provided they are free of organics and debris.

If blended or mixed soils are intended for use as select fill, Terracon should be contacted to provide additional recommendations. Blended or mixed soils do not occur naturally. These soils are a blend of sand and clay and will require mechanical mixing at the site with a pulvimixer. If these soils are not mixed thoroughly to break down the clay clods and blend-in the sand to produce a uniform soil matrix, the fill material may be detrimental to the performance of the foundations. If blended soils are used, we recommend that additional samples of the blended soils as well as the clay clods, be obtained prior to and during earthwork operations to evaluate if the blended soils can be used in lieu of select fill. The actual type and amount of mechanical mixing at the site will depend on the amount of clay and sand, and properties of the clay.

Fill Compaction Requirements

Item	Description
Fill Lift Thickness	The fill soils should be placed on prepared surfaces in lifts not to exceed 8 inches loose measure, with compacted thickness not to exceed 6 inches.

Item	Description
Compaction Requirements	▪ The select fill and on-site soils placed below 5 feet below final grade should be compacted to at least 100 percent of the Standard Effort (ASTM D 698) maximum dry density. ▪ The select fill and on-site soils placed within 5 feet below final grade should be compacted to at least 95 percent of the Standard Effort (ASTM D 698) maximum dry density. ▪ The select fill soils should be moisture adjusted to within 2 percent of the optimum moisture content. ▪ The on-site clay soils should be moisture conditioned to between optimum and +4 percent of the optimum moisture content.

If a structurally suspended and supported floor slab is desired for the proposed structure areas, clean on-site soils may be used for grade adjustments under the floor slabs. The on-site soils should be compacted to at least 90 to 92 percent of the Standard Effort (ASTM D698) maximum dry density to aid in earth-forming of grade beams, etc. for the structurally suspended floor slab. For pavement areas and soils beneath a grade-supported floor slabs, the recommendations in the table above should be followed.

Prior to any filling operations, samples of the proposed borrow and on-site materials should be obtained for laboratory moisture-density testing. The tests will provide a basis for evaluation of fill compaction by in-place density testing. A qualified soil technician should perform sufficient in-place density tests during the filling operations to evaluate that proper levels of compaction, including dry unit weight and moisture content, are being attained.

Utility Trench Backfill

Utility trenches are a common source of water infiltration and migration. All utility trenches that penetrate beneath the structures should be effectively sealed to restrict water intrusion and flow through the trenches that could migrate below the structures. We recommend constructing an effective clay "trench plug" that extends at least 5 feet out from the face of the building exterior. The plug material should consist of clay compacted at a water content at or above the soils optimum water content. The clay fill should be placed to completely surround the utility line and be compacted in accordance with recommendations in this report.

Grading and Drainage

All grades must provide effective drainage away from the structures during and after construction. Water permitted to pond next to the structures can result in distress in the structures. These greater movements can result in unacceptable differential floor slab

movements, cracked slabs and walls, and roof leaks. Building slab and foundation performances described in this report are based on effective drainage for the life of the structures and cannot be relied upon if effective drainage is not maintained.

Exposed ground should be sloped away from the structures for at least 10 feet beyond the perimeter of the structures. After building construction and landscaping, we recommend verifying final grades to document that effective drainage has been achieved. Grades around the structures should also be periodically inspected and adjusted as necessary, as part of the structures' maintenance program.

Planters located within 10 feet of the proposed structures should be self-contained to prevent water accessing the building and pavement subgrade soils. Locate sprinkler mains and spray heads a minimum of 5 feet away from the building lines. Low-volume, drip-style landscaped irrigation should not be used near the structures. Collect roof runoff in drains or gutters. Discharge roof drains and downspouts onto pavements and/or flatworks which slope away from the proposed structures or extend down spouts a minimum of 10 feet away from structures.

Flatworks and pavements will be subject to post construction movement. Maximum grades practical should be used for paving and flatwork to prevent water from ponding. Allowances in final grades should also consider post-construction movement of flatwork, particularly if such movement would be critical. Where paving or flatwork abuts the building, effectively seal and maintain joints to prevent surface water infiltration.

Wet Weather/Soft Subgrade Considerations

Construction operations may encounter difficulties due to wet or soft surface soils becoming a general hindrance to equipment, especially following periods of wet weather. If the subgrade cannot be adequately compacted to the minimum densities as described previously, one of the following measures will be required: 1) removal and replacement with select fill, 2) chemical treatment of the soil to dry and improve the condition of the subgrade, or 3) drying by natural means if the schedule allows. Based on our experience with similar soils in this area, chemical treatment is generally an efficient and effective method to improve the condition of wet and weak subgrade. Terracon should be contacted for additional recommendations if chemical treatment is planned to be utilized due to soft and wet subgrade.

Demolition Considerations

We understand that the site is currently occupied by an existing concrete parking lot and light poles. We understand that these structures are planned to be demolished and removed as part of the construction. Special care should be exercised to demolish and/or remove any existing foundations, pavements, utilities, and buried structures to

help reduce the disturbance of the subgrade and potential detrimental effects on construction of the proposed development at this site.

Geophysical methods can be employed on site to help locate and identify foundations, other buried structures, and utilities. This information can be compared to the proposed plans for the site to help avoid conflicts, as well as identify buried structures/utilities not previously known to exist on site. Terracon should be contacted for additional services if geophysical methods are desired to be utilized to aid in the demolition and re-development of the site.

We anticipate that the existing light poles are supported on drilled footings. If drilled footings are observed, we recommend that the shaft should be broken off at an elevation about 24 to 36 inches below the bottom of the proposed grade beam depth. The remainder of the drilled footing should be left in place. Remnants of the foundation elements to remain should be surveyed. The existing foundations should be superimposed on the proposed development plans to evaluate the potential for obstructions with the new construction. If drilled footings are planned to be excavated and completely removed, Terracon should be contacted for additional recommendations. Complete removal of drilled footings will require significant earthwork activities to backfill the resulting excavations in such a manner as to make the site suitable for new construction.

All utilities and associated bedding material that are planned to be abandoned should be completely removed from within the proposed building areas. As an alternate to complete removal, the existing utilities may be abandoned in-place if they do not interfere with the planned development. If the utilities are abandoned in-place, they should be properly pressure grouted to completely fill the utility.

The excavations resulting from the utilities or other buried structures should be backfilled in accordance with the recommendations provided in the **Fill Compaction Requirements** section. If situations are encountered where compaction of fill would not be efficient because of the size or location of an excavation, the use of cement stabilized sand or flowable fill may be considered as a suitable alternative to select fill. The compressive strength of the cement stabilized sand or flowable fill utilized should be between 50 and 100 pounds per square inch (psi).

Although not observed during our field activities, the potential exists that other types of buried structures (wells, cisterns, etc.) could exist on this site. These buried structures will need to be addressed on an individual basis if encountered during construction.

Foundation System

Based on the subsurface conditions observed during our field and laboratory programs, a foundation system consisting of drilled-and-underreamed footings may be utilized to support the proposed structures planned at this site, provided the subgrade is properly prepared as described in this report. Recommendations for this type of foundation system are provided in the following sections, along with other geotechnical considerations for this project.

Design Recommendations – Drilled-and-Underreamed Footings

Item	Description
Minimum Embedment Depth [1]	10 feet below existing grade (grade at the time of our field program)
Allowable Bearing Pressures [2]	Net dead plus sustained live load – 3,000 psf Net total load – 4,500 psf
Maximum Underream-to-Shaft Diameter Ratio	3:1
Minimum Underream-to-Shaft Diameter Ratio [3]	2:1
Estimated Uplift Pressure Due to Post-Construction Heave of the Clay Soils [4]	1,000 psf
Minimum Percentage of Steel [5]	0.5 percent
Approximate Post-Construction Settlement [6]	one inch or less
Estimated Differential Settlement [7]	Approximately ½ of post-construction settlement
Allowable Passive Pressure [8]	1,000 psf
Uplift Resistance [9]	Foundation Weight (150 pcf) & Soil Weight (120 pcf)

1. The footings should extend through the fill soils and bear within the native undisturbed clay soils.
2. Whichever condition yields a larger bearing area.
3. This minimum underream-to-shaft diameter ratio should result in a large enough diameter of the underream to overcome uplift forces on the footing without causing local soil failure to the overlying soils.
4. The magnitude of uplift is difficult to predict and will vary with in-situ moisture contents. This uplift pressure can be approximated over the entire perimeter of the shaft above the top of the underream.

Item	Description

5. The footings should contain sufficient vertical reinforcing steel throughout the entire shaft length to resist uplift (tensile) forces due to post-construction heave of the clay soils. The amount of reinforcing steel required can be computed by assuming that the dead load of the structure surcharges the footing, that the above estimated tensile force acts vertically on the shaft, and that the underream acts as a rigid anchor.
6. This estimated post-construction settlement of the drilled-and-underreamed footings is without considering the effect of stress distribution from adjacent foundations and assuming proper construction practices are being followed. A clear distance between the footings of one underream diameter of the larger footing (new and existing) should be provided between the underreams to develop the recommended bearing pressures and to control settlements. If a clearance of one diameter cannot be maintained in every case, the above bearing capacities should be reduced by 20 percent for a clearance between one half and one underream diameters. Underreams closer than a clearance of one half of an underream diameter are not recommended.
7. The differential settlement will result from variances in subsurface conditions, loading conditions and construction procedures, such a cleanliness of the bearing area or flowing water in the shaft.
8. For footings placed against an undisturbed vertical face of the in-situ soils. Lateral resistance of the drilled-and-underreamed footings is primarily developed by passive resistance of the soils against the side of the footing. Due to surface effects and the presence of fill and expansive soils, the lateral resistance of the upper 4 feet of the soils at the surface for exterior footings should be neglected unless area paving is provided up to the edge of the structures.
9. Structural uplift loads on the drilled-and-underreamed footings will be resisted by the dead weight of the footings and supported structure plus the weight of a soil wedge above the footing. The soil wedge can be assumed to extend upward from the bottom of the underream at a slope of 4 vertical to 1 horizontal.

Construction Considerations – Drilled-and-Underreamed Footings

Drilled excavations to a depth of 10 feet below existing grade will be necessary for installation of drilled-and-underreamed footings for the proposed structures planned at this site. The excavations should be performed with equipment capable of providing a relatively clean bearing area. The presence of secondary structures such as silt and sand pockets, and calcareous nodules, etc., can cause sloughing during footing excavation. Thus, the drilling contractor should have casing available in the event that sloughing causes improperly formed shafts.

Based on our groundwater observations (refer to **Groundwater Conditions**), groundwater is not expected to be a major concern during construction at the recommended bearing depth. However, depending on climatic conditions, groundwater levels may vary from the levels observed during our field program. Water must not be allowed to accumulate in the bottom of the footing excavations. The contractor should be prepared to remove water from the drilled footings, if necessary. To reduce the potential for water seepage into the footing excavation and to minimize disturbance to the bearing area, we recommend that concrete and steel be placed as soon as possible after footing

excavations are completed. Preferably, footing excavations should be backfilled with concrete within about 2 to 4 hours of completion of the drilling and in no case should an excavation be left open overnight. The concrete placed in the excavations should have a 6-inch slump with a plus or minus one inch tolerance. The bottom of each footing excavation should be free of all loose materials and/or water, and the bearing surface should be evaluated immediately prior to placing concrete.

Based on the available field and laboratory data, the underreams constructed as described in this report should remain stable for a short period of time. However, if underreams are marginally stable due to water seepage and/or the presence of sloughing soils, successful construction of underreamed footings may be possible by performing the sequence of construction without interruption, that is, each footing drilled, underreamed, and backfilled with concrete in one continuous operation. The contractor must coordinate the operation very closely to have concrete on site at the time each footing is drilled and underreamed so that no shaft or underream is drilled without concrete standing by, ready to be placed. Additional measures to reduce the potential for caving of the underream would be to limit the underream-to-shaft diameter ratio to 2.5:1 or 2:1 or to install straight shaft footings in isolated problem areas. If straight-shaft footings are planned at the site, Terracon should be contacted for additional recommendations.

Grade Beams – Drilled-and-Underreamed Footings

Structurally Suspended Floor Slab System

A structurally suspended and supported floor slab system may be considered for this project. For a structurally suspended floor slab system at this site, we recommend a minimum 10-inch void space be provided beneath the grade beams.

Grade-Supported Floor Slab System

Grade beams associated with the drilled-and-underreamed footings and a grade-supported floor slab should be designed to span between the footings without subgrade support. We understand the grade beams are planned to be constructed without a void space. However, due to the underlying clay soils, nominal upward movement of the grade beams may occur during moisture variations of the subgrade.

Backfill against the outside face of the grade beams should consist of select fill used to prepare the building pad. The select fill should be uniformly compacted to at least 95 percent of the Standard Effort (ASTM D 698) maximum dry density at a moisture content within 2 percent of optimum moisture content.

Foundation Construction Monitoring

The performance of the foundation system for the proposed structures will be highly dependent upon the quality of construction. Thus, we recommend that fill pad compaction and foundation installation be observed full time by an experienced Terracon soil technician under the direction of our geotechnical engineer. During foundation installation, the base of the foundation excavations should be observed to evaluate the condition of the subgrade. We would be pleased to develop a plan for compaction and foundation installation observation to be incorporated in the overall quality control program.

Connection of Building Addition to Existing Building

Based on the information provided to us, we understand that the new building addition is planned to be built immediately adjacent and connected to the existing building. Due to the independence of the existing and proposed foundations systems, differential movements may occur between the foundation systems. The magnitude of the differential movement will be primarily dependent upon the stability of the moisture content of the near-surface soils, the quality of foundation construction and subgrade preparation utilized for the building addition, and the performance of the foundation system of the existing structure. Therefore, any members or connections of the new building addition which are common to the adjacent existing structure should be designed such that they are tolerant to differential movements whenever possible.

Floor Slabs

Planned finished grades for the proposed structures were not available at the time of this report. We anticipate that the finished floor elevation of the for the proposed multi-use indoor facility building is planned to be within about one to two feet above the existing grade. We anticipate that the finished floor elevation of the for the proposed building addition is planned to be within about one feet above the existing grade and to match the finished floor elevation of the existing field house. If the grading is planned to be altered from what has been previously described, Terracon should be notified to review and/or modify our recommendations given in this subsection.

The near surface soils observed at this site generally exhibit a high expansion potential. These soils can subject the interior floor slab of the building to significant movements (due to shrinking and swelling) with fluctuations in their moisture content. This movement potential is influenced primarily by the properties of the subgrade soils, as well as the moisture content of the subgrade at the time of construction, overburden pressures, and the stability of the moisture contents throughout the life of the building. Based on the information developed from our field and laboratory programs and on

method TEX-124-E in the Texas Department of Transportation (TxDOT) Manual of Testing Procedures, we estimate that the subgrade soils at this site exhibit a Potential Vertical Rise (PVR) of up to approximately 3½ inches. Therefore, we highly recommend that the near-surface soils be prepared as stated below to reduce the potential for slab movement associated with volumetric changes of the near-surface clay soils due to moisture variations to a more acceptable level. The actual movements could be greater if poor drainage, ponded water, and/or other sources of moisture are allowed to infiltrate beneath the structure after construction.

Structurally Suspended Floor Slab System

A structurally suspended and supported floor slab system may be considered for this project. Due to the presence of high plasticity clay soils and deep fill soils observed at this site, the most effective means of reducing the effects of floor slab movements resulting from volume changes of the soils and consolidation of undocumented fill soils would be to structurally suspend the floor slab above grade. For a structurally suspended floor slab system at this site, we recommend a minimum 10-inch void space be provided beneath the floor slab and grade beams and that the drilled footing foundation system be designed to carry the additional loads.

We also recommend that measures be taken to reduce the possibility of water accumulation in the void space areas below the floor slab and grade beams. In addition, proper ventilation should be provided to minimize the possibility that a high humidity environment could develop in the void space areas.

Proper construction of void space and soils retainers is very important. If a cardboard carton system is used on this project, we recommend that the carton form supplier provide, during initial concrete operations, a representative to instruct the work force on the proper installation methods for both the form and the concrete.

Furthermore, we recommend that at ingress/egress areas (entrances, exits, emergency exits, etc.) around the perimeter of the proposed building the structurally suspended slab be extended at least 5 to 10 feet away from the building to help prevent slab movements from affecting the opening and closing of doors. Flatwork areas located immediately adjacent to the structurally suspended slab may be affected by differential movements between the structural slab and on-site soils. To reduce the potential for differential movement in these areas, we recommend constructing a select fill pad beneath areas considered sensitive to movement. Recommendations to reduce the estimated PVR in these areas are located in the **Grade-Supported Floor Slab System** section of this report.

Grade-Supported Floor Slab System

If a structurally suspended floor slab is not desired, methods exist which reduce the expansive potential of the subgrade such that a grade supported floor slab could be considered. While the grade supported floor slab option is not as effective as a suspended floor slab in reducing slab movements, they do represent a compromise between economics and risk of slab distress. Therefore, we highly recommend that the near-surface soils be prepared as stated below to reduce the potential for slab movement associated with volumetric changes of the near-surface clay soils due to moisture variations to a more acceptable level. The actual movements could be greater if poor drainage, ponded water, and/or other sources of moisture are allowed to infiltrate beneath the structure after construction.

Due to the amount of fill observed at boring B-1, the fill soils should be over-excavated and completely removed within the proposed multi-use indoor facility building area to expose the underlying native subsurface soils. Select fill soils should be used to raise grade up in the proposed structure areas.

The most common method of subgrade preparation to reduce potential expansion of the subgrade for a grade supported floor slab would be to provide a pad of properly placed and compacted select fill beneath the building. The corresponding decrease in the potential soil movements is primarily a function of the fill pad thickness and the moisture levels of the underlying clay subgrade. While the indicated preparations do not eliminate the potential for soil movement, the magnitude of such movements should be reduced to more acceptable levels. To provide uniform support to the floor slab and to reduce the estimated PVR to approximately one inch or less, we recommend that a minimum 60 inches of properly placed and compacted select fill material be constructed immediately beneath the building. The select fill pad should extend a minimum of 5 feet beyond the edge of the building area. This overbuild requirement may be omitted where the building addition is located immediately adjacent to the existing building. The final exterior grade adjacent to the structure should be sloped to promote effective drainage away from the structure.

The subgrade and select fill beneath the floor slab should be prepared as outlined in the **Earthwork** section of this report, which contains material and placement requirements for select fill, as well as other subgrade preparation recommendations.

The subgrade soils for flatwork outside of the building which will be sensitive to movement should be prepared as discussed previously. This preparation will be important on surrounding sidewalks and paving immediately adjacent to the building. If these adjacent flatwork areas are not prepared as stated above for the floor slab area, the estimated PVR for these areas could approach those indicated previously for in-situ conditions. If the soils swell in these areas, this movement could result in significant

distress to the adjacent sidewalks and paving and possibly result in reversed drainage (flow of runoff toward the building) around the perimeter of the building.

Utility Construction Considerations

As previously stated, we understand open-cut construction methods are planned for the proposed underground utilities and that the maximum embedment depth is planned to be 6 feet below the existing grade. The utility construction considerations provided below are based on the soil and groundwater conditions observed during our field and laboratory programs.

Groundwater Control

Based on the soil and groundwater information obtained during our field activities (refer to section **Groundwater Conditions**), we anticipate that excavations for the proposed utilities that extend into the near-surface clay soils may occur without advance dewatering. Seepage from the clay soils is expected to be minor and can likely be managed by pumping water collected with sumps positioned in the bottom of the excavation. Care should be taken to slope the excavation towards the sumps such that water can be collected and removed from the excavation.

The suggested methods given above serve as a guideline for groundwater control; other appropriate means may be required for groundwater control during construction. Control of groundwater should be accomplished in a manner that will preserve the strength of the soils, will not cause instability of the excavation, and will not result in damage to existing structures, if any.

As stated previously, the groundwater levels will fluctuate with seasonal and climatic changes and should be evaluated just prior to construction. To evaluate the groundwater conditions in the area of the proposed building, piezometers may be installed, or trenches/test pits may be excavated to the planned excavation depth. Based on the observed water levels, the contractor should determine effective methods of groundwater management prior to starting excavation operations.

Excavation Considerations

Based on our understanding of the project, we understand that excavations up to 6 feet below existing grade are planned for this project. The sides of excavations may either be sloped or formed with vertical cuts. For vertical sided excavations greater than 5 feet in depth, the excavations will require the use of shoring, bracing or some form of retention to prevent sloughing and caving of the soil into the excavation.

In lieu of shoring, bracing, or trench boxes for excavations greater than 5 feet, OSHA standards provide recommendations for the design of temporary sloped excavations with a depth less than 20 feet. The OSHA standards provide maximum allowable slopes contingent on three designated soil types: Type A, Type B, or Type C. According to OSHA standards, temporary sloped excavations should be no steeper than 0.75-horizontal on 1-vertical (0.75H:1V) for Type A soils, 1H:1V for Type B soils, and 1.5H:1V for Type C soils. The surface slopes should be protected from deterioration and weathering if they are left open for significant periods of time.

Excavations must be performed and evaluated under the supervision of the contractor's designated Competent Person. The Competent Person, (as defined by the OSHA Standard, 29 CFR Part 1926.650 to .652, Subpart P - Excavations), must evaluate the excavations at the time of construction activity to safeguard workers.

We recommend that no equipment should be operated within a horizontal distance equal to the excavation depth from the edge of the excavation and no materials should be stockpiled within this distance. Excavations should not approach closer than a horizontal distance equivalent to the excavation depth from existing structures or buried utilities without some form of protection for the facilities. The maximum height of stockpiled material should not be greater than 4 feet. Proper berming or ditching should be done to divert any surface runoff away from the excavations.

Excavations should be performed with equipment capable of providing a relatively clean bearing area. Excavating equipment should not disturb the soil beneath the design excavation bottom and should not leave loose soil in the excavation. The bearing surface should be protected against disturbance and deterioration by completing the utility line installation and backfilling operations as quickly as possible. The excavation bottom should be properly sloped to allow water infiltrating into the excavation to be collected at a convenient location along the edge of the excavation. Water should not be allowed to stand within the bearing area.

Uplift Pressures

Uplift forces on below-grade structures will be generated by a difference in water level in the soil adjacent to the structure and inside the structure. If the backfill around any buried structure is a sand or silt material, the backfill will approach saturation during periods of heavy rainfall and the effective static water level will be at the surface. The uplift pressures will be resisted by adhesion or skin friction of the soil to the wall and by the dead weight of the structure. An allowable skin friction for an engineered clay fill compacted to a minimum of 95 percent of the Standard Effort (ASTM D698) maximum dry density may be considered to be 300 psf. The upper 4 feet of skin friction should be neglected for a clay backfill due to potential for soil shrinkage away from the structure. Sand backfill, compacted to at least 70 percent of the maximum relative density (ASTM D4253 and 4254), may be considered to have an

allowable skin friction of zero at the surface varying linearly to 40 psf at a depth of 6 feet below grade.

An alternate design method would be to place a heel extending out from the utility foundation into the backfill and rely on the weight of the soil above the heel on a 4-vertical to 1-horizontal slope to resist the uplift forces. The unit weight of soil above and below the water table for a properly compacted backfill will be 120 pcf and 60 pcf, respectively. The preparation of the upper 3 feet of soil immediately above the heel is critical to reduce the possibility of an upward bearing failure. The entire thickness of fill should be compacted to the above recommended values.

If the underground structures are installed by excavating from the inside and allowing the structure to sink under its own weight, the soil contact may be very low immediately after construction due to the annulus created during construction. In this case, the uplift pressure must be resisted by structural dead weight or by restoring the contact between the soil and the structure. If the annulus is open, grouting would be one means to restore skin frictional resistance. If grouted, a nominal allowable skin friction of 100 psf may be used to compute uplift resistance.

Lateral Earth Pressures

Backfill around embedded structures will impose active to at-rest earth pressures against the embedded walls. Design lateral earth pressures for backfill are estimated to be equivalent to a fluid pressure of 90 pounds per cubic foot (pcf) for clean sand backfill and 110 pcf for in-situ native clay backfill. These pressures include hydrostatic pressures but do not include surcharge forces imposed by construction or vehicular loading. The lateral pressure produced by surcharge may be computed as 50 percent of the vertical surcharge pressure applied as a constant pressure over the full depth of the buried structure. A 2-foot compacted clay seal should be placed at the top of sand backfill to reduce the amount of infiltration of surface water.

Utility Bedding

The subgrade and bedding should conform to the Harris County or other appropriate standards for pipeline bedding details. If the utility lines are placed in the dry, above groundwater, we anticipate that the pipes should be placed in accordance with Harris County Specification Item 430.

Where wet sand conditions are encountered, the contractor should use the bedding detail for wet sand construction consisting of crushed stone wrapped by filter fabric or as in bedding details outlined on Harris County Specification Item 430. Since the groundwater level is variable, the decision should be made in the field based on actual

conditions at the time of construction and the response of the soil and water to open trenching.

The excavations should be monitored to detect any variation in soil conditions from those found in the borings drilled for this report. Any changes noted in the soil stratigraphy should be brought to the attention of Terracon so that the conditions may be assessed and changes to the required bedding details and/or recommendations made, as necessary.

Utility Backfill

The type of fill placed above the utility bedding will depend on whether the surface above the utilities are paved or unpaved ground. If the surface is outside of the pavement areas, then the backfill should consist of the excavated, native soils provided they are free of debris and organics. The in-situ soils used as backfill should be placed in thin lifts not exceeding 8 inches loose measure, moisture conditioned to within 4 percent wet of the optimum moisture content and compacted to at least 95 percent of the Standard Effort (ASTM D 698) maximum dry density.

Within pavement areas or within 3 horizontal feet of pavement, the backfill should consist of cement stabilized sand to within 12 inches of the top of the subgrade compacted to at least 95 percent of the Standard Effort (ASTM D 558) maximum dry density. On-site clean soils compacted to at least 95 percent of the Standard Effort (ASTM D 698) maximum dry density should be placed above the cement stabilized sand.

Prior to any filling operations, samples of the proposed borrow materials should be obtained for laboratory moisture-density testing. The tests will provide a basis for evaluation of fill compaction by in-place density testing. A qualified soil technician should perform sufficient in-place density tests during the filling operations to evaluate that proper levels of compaction are being attained.

Pavements

Once the subgrade is properly prepared, a rigid pavement system may be considered for this project. Detailed traffic loads and frequencies were not available. However, we anticipate that traffic will consist primarily of passenger vehicles in the parking areas and passenger vehicles combined with garbage trucks and large multi-axle delivery trucks/buses from time-to-time in driveway areas.

Tabulated in the following table are the assumed traffic frequencies and loads used to design pavement sections for this project. When actual traffic conditions have been determined Terracon should be contacted to review the information to consider a need for revision of the pavement designs and related recommendations.

Pavement Area	Traffic Design Index [1]	Description
Automobile Parking Areas	DI-1	Light traffic (Few vehicles heavier than passenger cars, no regular use by heavily loaded two axle trucks/buses.) (EAL [2] < 6)
Driveways (Light Duty)	DI-2	Medium to light traffic (Similar to DI-1 including not over 50 loaded two axle trucks/buses or lightly loaded larger vehicles per day. No regular use by heavily loaded trucks with three or more axles.) (EAL = 6-20)
Driveways and Truck Traffic Areas (Medium Duty)	DI-3	Medium traffic (Including not over 300 heavily loaded two axle trucks/buses plus lightly loaded trucks with three or more axles and no more than 30 heavily loaded trucks with more than three axles per day.) (EAL = 21-75)

1. Based on NSSGA traffic design indices.
2. Equivalent daily 18-kip single-axle load applications.

The top 6 inches of the finished subgrade soils directly beneath the pavements should be chemically treated with lime. Chemical treatment will increase the supporting value of the subgrade and decrease the effect of moisture on subgrade soils. These 6 inches of treatment is a required part of the pavement design and is not a part of the site and subgrade preparation for wet/soft subgrade conditions.

Listed below are pavement component thicknesses, which may be used as a guide for pavement systems at the site for the traffic classifications stated herein. These systems were derived based on general characterization of the subgrade. Specific testing (such as CBR's, resilient modulus tests, etc.) was not performed for this project to evaluate the support characteristics of the subgrade.

Rigid Pavement System			
Component	Material Thickness, Inches		
	DI-1	DI-2	DI-3
Reinforced concrete	5.0	6.0	7.0
Treated subgrade	6.0	6.0	6.0

Waste dumpster areas should be constructed of at least 7 inches of reinforced concrete pavement. The concrete pad areas should be designed so that the vehicle wheels of the collection truck are supported on the concrete while the dumpster is being lifted to support the large wheel loading imposed during waste collection.

Presented below are our recommended material requirements for the various pavement sections.

Reinforced Concrete Pavement – The materials and properties of reinforced concrete pavement should meet applicable requirements in the ACI Manual of Concrete Practice. The portland cement concrete mix should have a minimum 28-day compressive strength of 3,500 psi.

If river gravel is planned to be utilized in the portland cement concrete mix, Terracon should be contacted for additional services. The presence of river gravel in the portland cement concrete mix can result in excessive cracking and distress to the concrete pavement as a result of differing thermal expansion properties between the river gravel and cement paste. Special care should be taken in developing the project's portland cement concrete mix design, joint layout, and placement to help reduce the potential for excessive cracking and distress if river gravel is planned to be utilized for the project.

Reinforcing Steel – ACI recommendations indicate that distributed steel reinforcement is not necessary when the pavement is properly jointed to form short panel lengths that will help reduce intermediate cracking. Provided the concrete pavement is designed and constructed as stated herein, the installation of reinforcing steel is optional and should be evaluated by the design team. Proper layout and installation of the joints within the pavement is critical to help control intermediate cracking.

If reinforcing steel is planned to be utilized in the concrete pavement by the design team, the following amount of reinforcing steel should be used as a guideline:

- DI-1: #3 bars spaced at 18 inches or #4 bars spaced at 24 inches on centers in both directions.
- DI-2: #3 bars spaced at 12 inches or #4 bars spaced at 18 inches on centers in both directions.
- DI-3: #4 bars spaced at 18 inches on centers in both directions.

Control Joint Spacing – ACI recommendations indicate that control joints should be spaced at a maximum spacing of 30 times the thickness of the pavement for unreinforced parking lot pavements. Furthermore, ACI recommends a maximum control joint spacing of 12.5 feet for 5-inch pavements and a maximum control joint spacing of 15 feet for 6-inch or thicker pavements. Sawcut control joints should be cut within 4 to 12 hours of concrete placement to help control the formation of plastic shrinkage cracks as the concrete cures. The depth of the joint should be at least one-quarter of the slab depth when using a conventional saw or one inch when using early entry saws. The

width of the cut should be in accordance with the joint sealant manufacturer recommendations.

Expansion Joint Spacing – ACI recommendations indicate that regularly spaced expansion joints may be deleted from concrete pavements. Therefore, the installation of expansion joints is optional and should be evaluated by the design team.

Construction Joints – When concrete is planned to be placed at different times, we recommend the use of a construction joint between paving areas. The construction joint should consist of a butt joint (not a keyway joint).

Concrete Curing Compound – A concrete curing compound, such as a Type 2 membrane curing compound conforming to TxDOT DMS-4650, "Hydraulic Cement Concrete Curing Materials and Evaporation Retardants" or equivalent, should be applied to the concrete surface immediately after placement of the concrete in accordance with TxDOT 2014 Standard Specifications Item 360.

Dowels at Expansion/Construction Joints – The smooth dowels at expansion/construction joints should be spaced at 12-inch centers and consist of the following:

- DI-1: 5/8-inch diameter, 12-inches long with 5-inch embedment.
- DI-2: 3/4-inch diameter, 14-inches long with 6-inch embedment.
- DI-3: 7/8-inch diameter, 14-inches long with 6-inch embedment.

One end of the dowels should either be greased or sleeved to allow for lateral movement to occur.

Lime Treated Subgrade – The on-site soils should be treated with lime in accordance with the TXDOT 2014 Standard Specifications Item 260. The amount of lime should be determined for subgrade soils by conducting laboratory tests just prior to construction. Based on the classification test results, we recommend that about 6 to 8 percent lime by dry weight be used for estimating and planning. The percentages are given as application by dry weight and are typically equivalent to about 30 to 40 pounds of lime per square yard per 6-inch depth. The actual quantity of lime should be determined at the time of construction based on lime determination tests conducted using bulk samples of the subgrade soils. The pulverization, mixing and curing of the lime treated subgrade is of particular importance in these clays. The subgrade should be compacted to a minimum of 95 percent of the Standard Effort (ASTM D 698) maximum dry density at a moisture content between optimum and 4 percent wet of the optimum moisture content.

Preferably, traffic should be kept off the treated subgrade for 7 days to facilitate curing of the soil-chemical mixture. In addition, the subgrade is not suitable for heavy construction traffic prior to paving.

The pavement design methods described above are intended to provide structural sections with adequate thickness over a particular subgrade such that wheel loads are reduced to a level the subgrade can support. The support characteristics of the subgrade for pavement design do not account for shrink/swell movements of an expansive clay subgrade such as the soils encountered at this site. Thus, the pavement may be adequate from a structural standpoint, yet still experience cracking and deformation due to shrink/swell related movement of the subgrade. Post-construction subgrade movements and some cracking of pavements are not uncommon for clay subgrade conditions such as those observed at this site. Reducing moisture changes in the subgrade is important to reduce shrink/swell movements. Although chemical treatment will help to reduce such movement/cracking, this movement/cracking cannot be feasibly eliminated.

Related civil design factors such as subgrade drainage, shoulder support, cross-sectional configurations, surface elevations and environmental factors which will significantly affect the service life must be included in the preparation of the construction drawings and specifications. Normal periodic maintenance will be required.

Long-term pavement performance will be dependent upon several factors, including maintaining subgrade moisture levels and providing for preventative maintenance. The following recommendations should be implemented to help promote long-term pavement performance:

- The subgrade and the pavement surface should be designed to promote proper surface drainage, preferably at a minimum grade of 2 percent;
- Install joint sealant and seal cracks immediately;
- Extend curbs into the treated subgrade for a depth of at least 4 inches to help reduce moisture migration into the subgrade soils beneath the pavement section; and
- Place compacted, low permeability clayey backfill against the exterior side of the curb and gutter.

Preventative maintenance should be planned and provided for the pavements at this site. Preventative maintenance activities are intended to slow the rate of pavement deterioration, and consist of both localized maintenance (e.g. crack and joint sealing and patching) and global maintenance (e.g. surface sealing). Prior to implementing any maintenance, additional engineering observations are recommended to determine the type and extent of preventative maintenance.

General Comments

Our work is conducted with the understanding of the project as described in the proposal and incorporates collaboration with the design team as we completed our services to

verify assumptions. Revision of our understanding to reflect actual conditions important to our work was based on these verifications and it is reflected in this report. The design team should collaborate with Terracon to confirm these assumptions and to prepare the final design plans and specifications. This facilitates the incorporation of our opinions related to implementation of our geotechnical recommendations. Any information conveyed prior to the final report is for informational purposes only and should not be considered or used for decision-making purposes.

Our analysis and opinions are based upon our understanding of the geotechnical conditions in the area, the data obtained from our site exploration and from our understanding of the project. Variations will occur between exploration point locations, across the site, or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in the final report, to provide observation and testing services during grading, excavation, foundation construction and other earth-related construction phases of the project. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other services should be undertaken.

Our services and any correspondence are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third party beneficiaries intended. Any third party access to services or correspondence is solely for information purposes only. Reliance upon the services and any work product is limited to our client, and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly impact excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing.

Figures

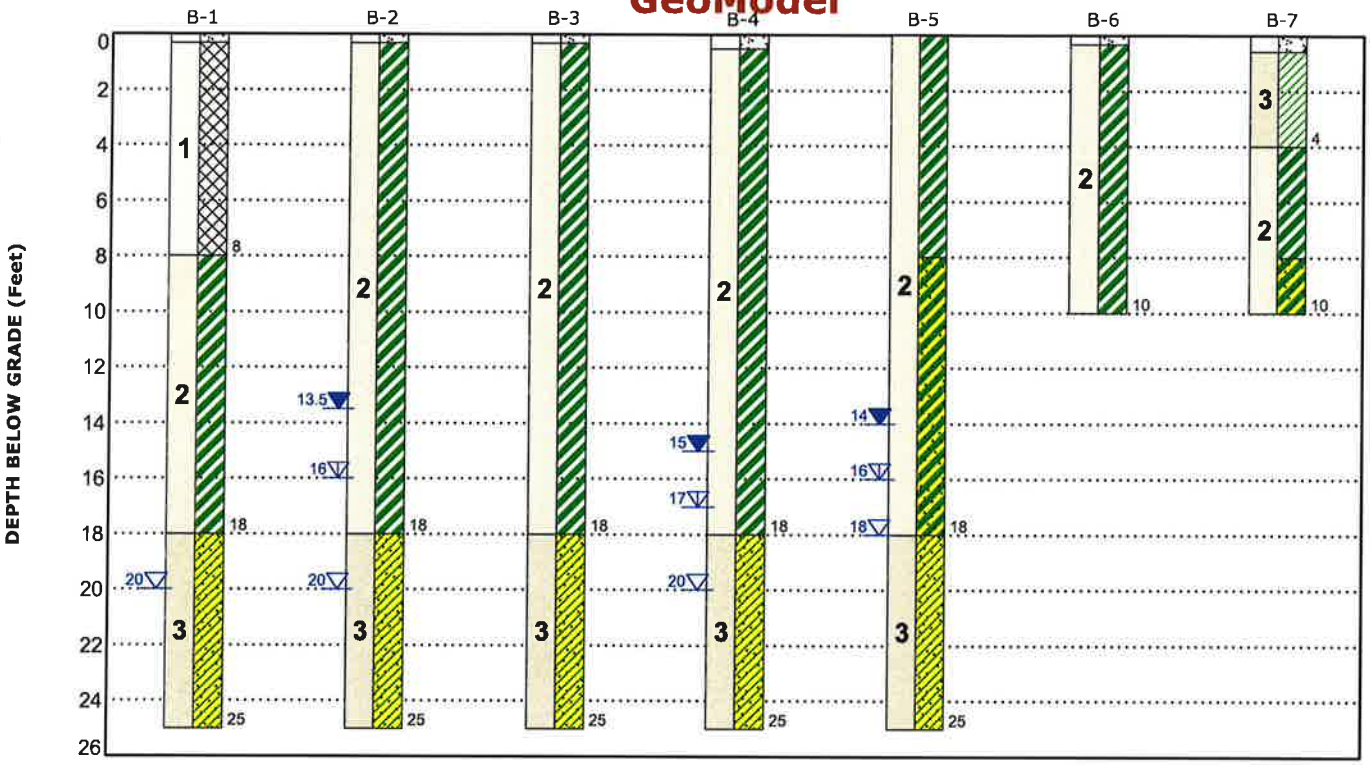
Contents:

GeoModel

Galena Park ISD North Shore High School Multi-Use Indoor Facility
353 North Castlegory Road | Houston, Texas
Terracon Project No. 92255219

Terracon
11555 Clay Rd, Ste 100
Houston, TX

GeoModel



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description	Legend	
1	**Fill: Fat Clay**	dark gray, gray, and tan, with ferrous stains and nodules	Pavement	Fill
2	**Fat Clay and Sandy Fat Clay**	dark gray, light gray, reddish brown, and tan, medium stiff to very stiff, with ferrous stains, calcareous nodules, slickensides, and silt and sand pockets	Fat Clay	Sandy Lean Clay
3	**Lean Clay and Sandy Lean Clay**	light gray, tan, reddish brown, and dark gray, soft to very stiff, with calcareous nodules and ferrous stains	Sandy Fat Clay	Lean Clay

▽ First Water Observation
▽ Second Water Observation
▼ Third Water Observation

Groundwater levels are temporal. The levels shown are representative of the date and time of our exploration. Significant changes are possible over time.
Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

NOTES:
Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project.
Numbers adjacent to soil column indicate depth below ground surface.

Attachments

Exploration and Testing Procedures

Field Exploration

Number of Borings	Approximate Boring Depth (feet)[1]	Location
5 (B-1 through B-5)	25	Proposed building and future addition areas
2 (B-6 and B-7)	10	Proposed pavement and utility areas

1. Below existing grade at the time of our field program.

Boring Layout and Elevations: We used handheld Global Positioning System (GPS) equipment to locate the approximate latitude and longitude of the borings with an accuracy of +/-25 feet. The boring depths were measured from the existing ground surface at the time of our field activities.

Subsurface Exploration Procedures: We advanced soil borings with a standard truck-mounted drill rig using solid stem continuous flight augers. Samples were obtained at 2-foot intervals in the upper 12 feet of each boring and at intervals of 5 feet thereafter. Soil sampling was typically performed using open-tube and/or split-barrel sampling procedures.

Soil samples were generally recovered using open-tube samplers. Hand penetrometer tests were performed on samples of cohesive soils in the field to serve as a general measure of consistency.

The samples were placed in appropriate containers, taken to our soil laboratory for testing, and classified by a geotechnical engineer. In addition, we observed and recorded groundwater levels during drilling and sampling.

Our exploration team prepared field boring logs as part of standard drilling operations including sampling depths, penetration distances, and other relevant sampling information. Field logs include visual classifications of materials observed during drilling, and our interpretation of subsurface conditions between samples. Final boring logs, prepared from field logs, represent an interpretation of the field logs by a geotechnical engineer and include modifications based on laboratory observation and tests on select samples.

Property Disturbance: We cored through the existing pavement in order to access the underlying subgrade soils, as applicable. We backfilled the borings with auger cuttings and patched at the surface with ready-mixed concrete upon completion. Excess auger cuttings were dispersed in the general vicinity of the boring. Our services do not include

repair of the site beyond backfilling our borings, and cold patching the existing pavements. Because backfill material often settles below the surface after a period, we recommend borings be periodically checked and backfilled, if necessary. We can provide this service for additional fees at your request.

Laboratory Testing

The project engineer reviewed the field data and assigned laboratory tests to understand the engineering properties of the various soil strata, as necessary, for this project. Procedural standards noted below are for reference to methodology in general. In some cases, variations to methods were applied because of local practice or professional judgment. Standards noted below include reference to other, related standards. Such references are not necessarily applicable to describe the specific test performed.

- ASTM D2216 Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
- ASTM D7263 Standard Test Methods for Laboratory Determination of Density (Unit Weight) of Soil Specimens
- ASTM D4318 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
- ASTM D1140 Standard Test Method for Determining the Amount of Materials Finer than No. 200 Sieve in Soils by Washing
- ASTM D2166/D2166M Standard Test Method for Unconfined Compressive Strength of Cohesive Soil

The laboratory testing program included observation of soil samples by an engineer. Based on the results of our field and laboratory programs, we described and classified the soil samples in accordance with the Unified Soil Classification System (USCS).

Samples not tested in the laboratory will be stored for a period of 30 days subsequent to submittal of this report and will be discarded after this period, unless we are notified otherwise.

Site Location and Exploration Plans

Contents:

Site Location
Exploration Plan

Note: All attachments are one page unless noted above.

Site Location

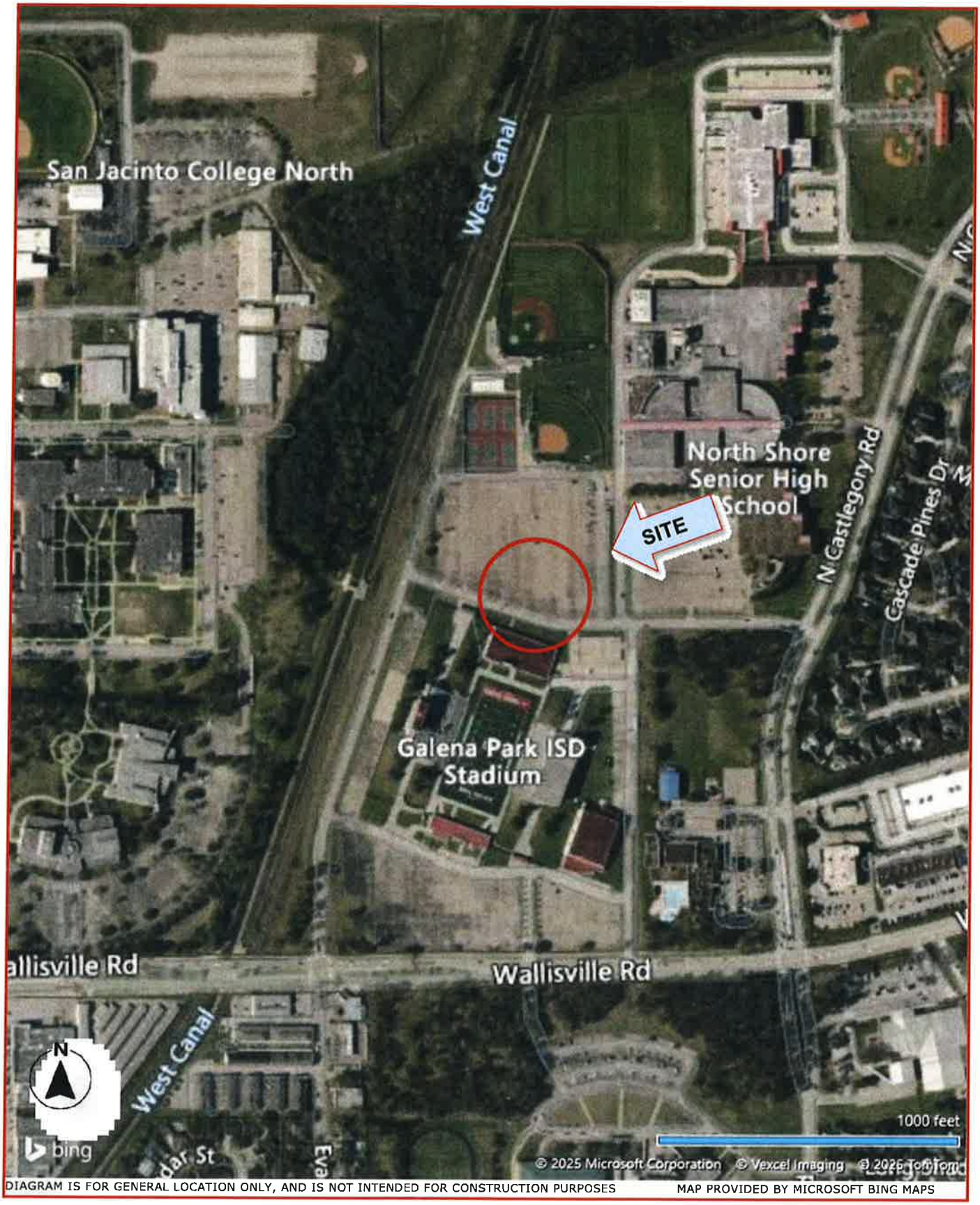


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

Exploration Plan

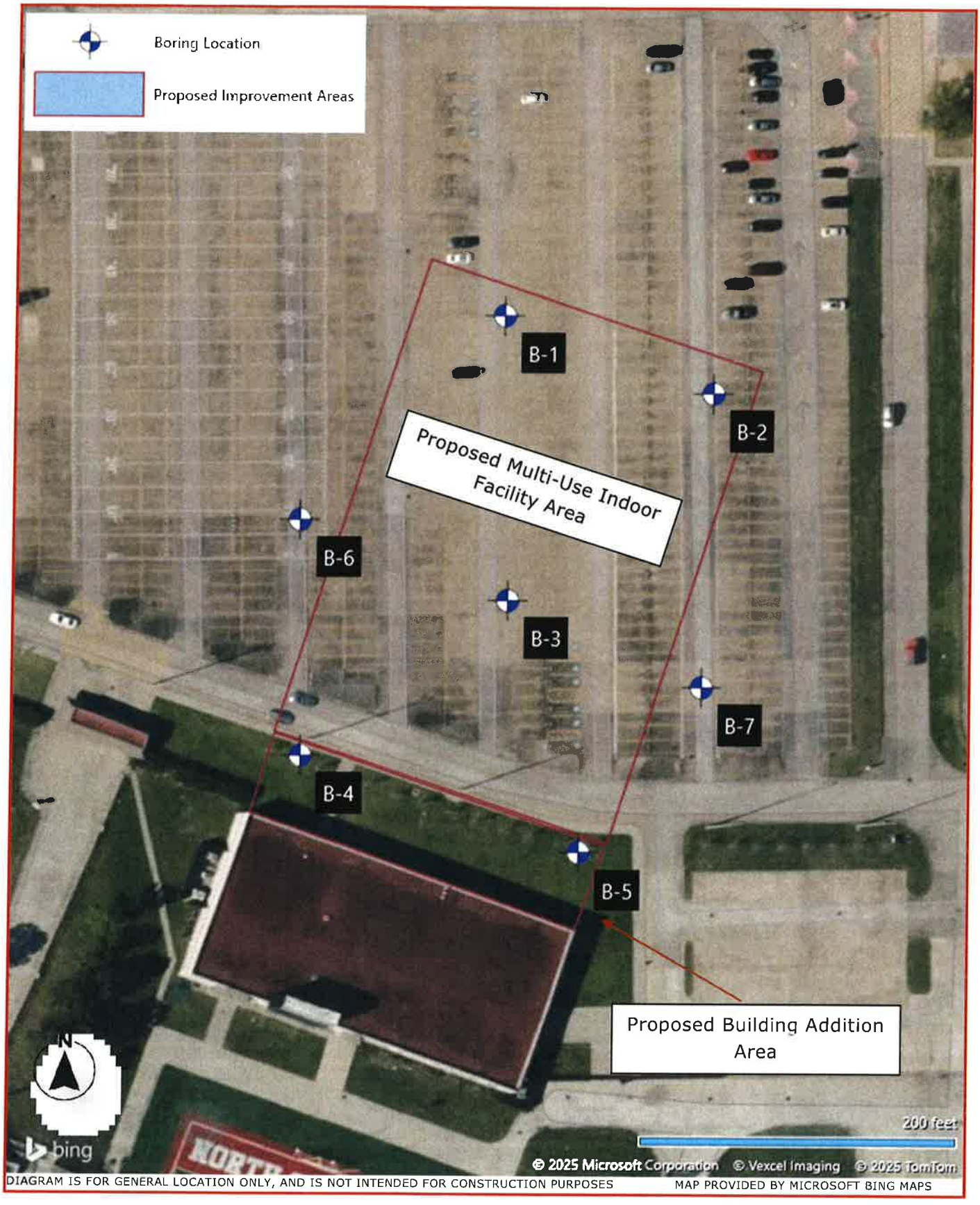


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

Exploration and Laboratory Results

Contents:

Boring Logs (B-1 through B-7)

Note: All attachments are one page unless noted above.

Galena Park ISD North Shore High School Multi-Use Indoor Facility
353 North Castlegory Road | Houston, Texas
Terracon Project No. 92255219

Terracon
11555 Clay Rd, Ste 100
Houston, TX

Boring Log No. B-1

Location: See Exploration Plan

Latitude: 29.8102° Longitude: -95.1759°

Model Layer	Depth (Ft.)	Description	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
	0.3	**PAVEMENT**, approximately 4 inches of concrete								
1		**FILL - FAT CLAY (CH)**, dark gray and gray, with ferrous stains and nodules	0.5 (HP)				27.6		59-18-41	
			1.0 (HP)							
		- tan 4 to 8 feet	1.5 (HP)				26.4		60-19-41	
			0.75 (HP)							
	8.0									
2		**FAT CLAY (CH)**, light gray and reddish brown, stiff to very stiff, with ferrous stains, silt pockets, and calcareous nodules	1.25 (HP)	UC	1.03	5	27.1	98		
			2.0 (HP)							
		- with slickensides 13 to 18 feet	3.25 (HP)							
	18.0									
3		**SANDY LEAN CLAY (CL)**, light gray and tan, very stiff	3.25 (HP)							
		- with calcareous nodules below 23 feet	3.5 (HP)							
	25.0	***Boring Terminated at 25 Feet***								

Depth (Ft.) markers: 5, 10, 15, 20, 25

Water Level Observations: ▽ While drilling

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Drill Rig
Truck

Driller
Herman Drilling

Logged by
K. Wright

Boring Started
06-18-2025

Boring Completed
06-18-2025

Notes

Advancement Method
Dry augered to 25 feet.

Abandonment Method
Boring backfilled with auger cuttings and patched at the surface with concete upon completion.

Galena Park ISD North Shore High School Multi-Use Indoor Facility
353 North Castlegory Road | Houston, Texas
Terracon Project No. 92255219

Terracon
11555 Clay Rd, Ste 100
Houston, TX

Boring Log No. B-2

Location: See Exploration Plan

Latitude: 29.8101° Longitude: -95.1755°

Model Layer	Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
	0.3	**PAVEMENT**, approximately 4 inches of concrete											
2		**FAT CLAY (CH)**, dark gray, medium stiff to very stiff, with ferrous stains				1.0 (HP)							
						1.0 (HP)				26.9		60-20-40	
		- with slickensides 4 to 6 feet	5			1.0 (HP)	UC	0.58	2.3	31.2	92		
		- light gray and reddish brown 6 to 18 feet				1.25 (HP)				28.6		69-20-49	
		- with calcareous nodules and silt pockets 8 to 18 feet				1.5 (HP)							
			10			0.75 (HP)	UC	1.12	4.7	27.0	97		99
				▼		2.25 (HP)							
			15	▽									
	18.0												
3		**SANDY LEAN CLAY (CL)**, light gray and tan, soft to medium stiff				1.0 (HP)							
			20	▽									
						0.5 (HP)							
	25.0		25										
		Boring Terminated at 25 Feet											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
▽ While drilling
▽ After 5 minutes
▼ After 15 minutes

Drill Rig
Truck

Driller
Herman Drilling

Logged by
H. Zamudio

Boring Started
06-18-2025

Boring Completed
06-18-2025

Notes

Advancement Method
Dry augered to 25 feet.

Abandonment Method
Boring backfilled with auger cuttings and patched at the surface with concete upon completion.

Galena Park ISD North Shore High School Multi-Use Indoor Facility
353 North Castlegory Road | Houston, Texas
Terracon Project No. 92255219

Terracon
11555 Clay Rd, Ste 100
Houston, TX

Boring Log No. B-3

Location: See Exploration Plan

Latitude: 29.8097° Longitude: -95.1759°

Model Layer	Depth (Ft.)	Graphic Log	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
	0.3											
2					1.0 (HP)				27.6		61-21-40	
					1.0 (HP)							
	5				1.5 (HP)				26.5		70-20-50	
					1.5 (HP)							
					2.0 (HP)							
	10				2.5 (HP)	UC	1.99	5.3	22.0	107		
					3.0 (HP)							
	15											
3					3.0 (HP)							
	20											
					0.5 (HP)							
	25											

PAVEMENT, approximately 4 inches of concrete

FAT CLAY (CH), dark gray, medium stiff to very stiff, with ferrous stains

- light gray and reddish brown 6 to 18 feet

- with calcareous nodules 8 to 18 feet

18.0

SANDY LEAN CLAY (CL), light gray and tan, soft to very stiff, with calcareous nodules and ferrous stains

25.0

Boring Terminated at 25 Feet

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
No free water observed.

Drill Rig
Truck

Driller
Herman Drilling

Logged by
K. Wright

Boring Started
06-18-2025

Boring Completed
06-18-2025

Notes

Advancement Method
Dry augered to 25 feet.

Abandonment Method
Boring backfilled with auger cuttings and patched at the surface with concete upon completion.

Galena Park ISD North Shore High School Multi-Use Indoor Facility
353 North Castlegory Road | Houston, Texas
Terracon Project No. 92255219

Terracon
11555 Clay Rd, Ste 100
Houston, TX

Boring Log No. B-4

Location: See Exploration Plan

Latitude: 29.8095° Longitude: -95.1763°

Model Layer	Depth (Ft.)	Description	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
	0.5	**PAVEMENT**, approximately 6 inches of concrete								
2		**FAT CLAY (CH)**, dark gray, stiff to very stiff, with ferrous stains	2.0 (HP)							
2			1.5 (HP)				28.4		74-21-53	
2		- light gray and tan 4 to 8 feet	2.0 (HP)				26.7			99
2			1.75 (HP)				25.4		65-21-44	
2		- reddish brown, with sand pockets and calcareous nodules 8 to 18 feet	3.0 (HP)							
2		- with slickensides 10 to 13 feet	2.75 (HP)	UC	1.37	3.1	22.3	104		
2	18.0		3.25 (HP)							
3		**SANDY LEAN CLAY (CL)**, light gray and tan, medium stiff to very stiff, with calcareous nodules and ferrous stains	1.0 (HP)							
3			3.5 (HP)							
	25.0	***Boring Terminated at 25 Feet***								

Depth (Ft.): 5, 10, 15, 20, 25

Water Level Observations: ▽ While drilling; ▽ After 5 minutes; ▼ After 15 minutes

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Advancement Method
Dry augered to 25 feet.

Abandonment Method
Boring backfilled with auger cuttings and patched at the surface with concete upon completion.

Drill Rig
Truck

Driller
Herman Drilling

Logged by
B. Abboud

Boring Started
06-18-2025

Boring Completed
06-18-2025

Galena Park ISD North Shore High School Multi-Use Indoor Facility
353 North Castlegory Road | Houston, Texas
Terracon Project No. 92255219

Terracon
11555 Clay Rd, Ste 100
Houston, TX

Boring Log No. B-5

Location: See Exploration Plan

Latitude: 29.8093° Longitude: -95.1758°

Model Layer	Depth (Ft.)	Material Description	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
2	0.0	**FAT CLAY (CH)**, dark gray, medium stiff to very stiff, with ferrous stains	1.0 (HP)				27.4		64-17-47	
			1.5 (HP)							
		- light gray and tan 4 to 8 feet	2.0 (HP)				22.1		60-19-41	
			2.25 (HP)							
	8.0	**SANDY FAT CLAY (CH)**, light gray and reddish brown, medium stiff to very stiff	2.0 (HP)	UC	0.76	5.8	24.3	96		
			2.5 (HP)							
			0.75 (HP)							
3	18.0	**SANDY LEAN CLAY (CL)**, light gray and reddish brown, very stiff, with calcareous nodules	3.0 (HP)							
			3.0 (HP)							
	25.0	***Boring Terminated at 25 Feet***								

Water Level Observations: ▽ While drilling; ▽ After 5 minutes; ▼ After 15 minutes

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Advancement Method
Dry augered to 25 feet.

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
Truck

Driller
Herman Drilling

Logged by
H. Zamudio

Boring Started
06-18-2025

Boring Completed
06-18-2025

Galena Park ISD North Shore High School Multi-Use Indoor Facility
353 North Castlegory Road | Houston, Texas
Terracon Project No. 92255219

Terracon
11555 Clay Rd, Ste 100
Houston, TX

Boring Log No. B-6

Location: See Exploration Plan

Latitude: 29.8099° Longitude: -95.1763°

Model Layer	Graphic Log	Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
		0.3	**PAVEMENT**, approximately 4 inches of concrete											
2			**FAT CLAY (CH)**, dark gray, stiff to very stiff, with ferrous stains				1.25 (HP)				23.8		63-21-42	
							2.0 (HP)							
			- light gray and tan, with sand pockets 4 to 8 feet	5			2.0 (HP)	UC	1.52	4.6	23.3	106		
							2.25 (HP)							
			- reddish brown, with calcareous nodules below 8 feet				2.0 (HP)							
		10.0	***Boring Terminated at 10 Feet***	10										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
No free water observed.

Drill Rig
Truck

Driller
Herman Drilling

Logged by
H. Zamudio

Boring Started
06-18-2025

Boring Completed
06-18-2025

Notes

Advancement Method
Dry augered to 10 feet.

Abandonment Method
Boring backfilled with auger cuttings and patched at the surface with concete upon completion.

Galena Park ISD North Shore High School Multi-Use Indoor Facility
353 North Castlegory Road | Houston, Texas
Terracon Project No. 92255219

Terracon
11555 Clay Rd, Ste 100
Houston, TX

Boring Log No. B-7

Location: See Exploration Plan

Latitude: 29.8096° Longitude: -95.1755°

Model Layer	Graphic Log	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
		0.6 **PAVEMENT**, approximately 7 inches of concrete										
3		**LEAN CLAY (CL)**, dark gray, medium stiff to stiff			1.0 (HP)				22.6		48-17-31	
					1.5 (HP)							
		4.0										
2		**FAT CLAY (CH)**, light gray and tan, stiff, with ferrous stains			1.75 (HP)	UC	1.68	9	22.8	103		
		8.0			2.0 (HP)							
		SANDY FAT CLAY (CH), light gray and tan, stiff			2.0 (HP)							
		10.0										
		Boring Terminated at 10 Feet										

5

10

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
No free water observed.

Drill Rig
Truck

Driller
Herman Drilling

Logged by
B. Abboud

Boring Started
06-18-2025

Boring Completed
06-18-2025

Notes

Advancement Method
Dry augered to 10 feet.

Abandonment Method
Boring backfilled with auger cuttings and patched at the surface with concete upon completion.

Supporting Information

Contents:

General Notes
Unified Soil Classification System

Note: All attachments are one page unless noted above.

Terracon
11555 Clay Rd, Ste 100
Houston, TX

General Notes

Sampling



Water Level


Water Initially Encountered


Water Level After a Specified Period of Time


Water Level After a Specified Period of Time


Cave In Encountered

Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.

Field Tests

N	Standard Penetration Test Resistance (Blows/Ft.)
(HP)	Hand Penetrometer
(T)	Torvane
(DCP)	Dynamic Cone Penetrometer
UC	Unconfined Compressive Strength
(PID)	Photo-Ionization Detector
(OVA)	Organic Vapor Analyzer

Descriptive Soil Classification

Soil classification as noted on the soil boring logs is based Unified Soil Classification System. Where sufficient laboratory data exist to classify the soils consistent with ASTM D2487 "Classification of Soils for Engineering Purposes" this procedure is used. ASTM D2488 "Description and Identification of Soils (Visual-Manual Procedure)" is also used to classify the soils, particularly where insufficient laboratory data exist to classify the soils in accordance with ASTM D2487. In addition to USCS classification, coarse grained soils are classified on the basis of their in-place relative density, and fine-grained soils are classified on the basis of their consistency. See "Strength Terms" table below for details. The ASTM standards noted above are for reference to methodology in general. In some cases, variations to methods are applied as a result of local practice or professional judgment.

Location And Elevation Notes

Exploration point locations as shown on the Exploration Plan and as noted on the soil boring logs in the form of Latitude and Longitude are approximate. See Exploration and Testing Procedures in the report for the methods used to locate the exploration points for this project. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

Strength Terms

Relative Density of Coarse-Grained Soils
(More than 50% retained on No. 200 sieve.)
Density determined by Standard Penetration Resistance

Relative Density	Standard Penetration or N-Value (Blows/Ft.)
Very Loose	0 - 3
Loose	4 - 9
Medium Dense	10 - 29
Dense	30 - 50
Very Dense	> 50

Consistency of Fine-Grained Soils
(50% or more passing the No. 200 sieve.)
Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance

Consistency	Unconfined Compressive Strength Qu (tsf)	Standard Penetration or N-Value (Blows/Ft.)
Very Soft	less than 0.25	0 - 1
Soft	0.25 to 0.50	2 - 4
Medium Stiff	0.50 to 1.00	4 - 8
Stiff	1.00 to 2.00	8 - 15
Very Stiff	2.00 to 4.00	15 - 30
Hard	> 4.00	> 30

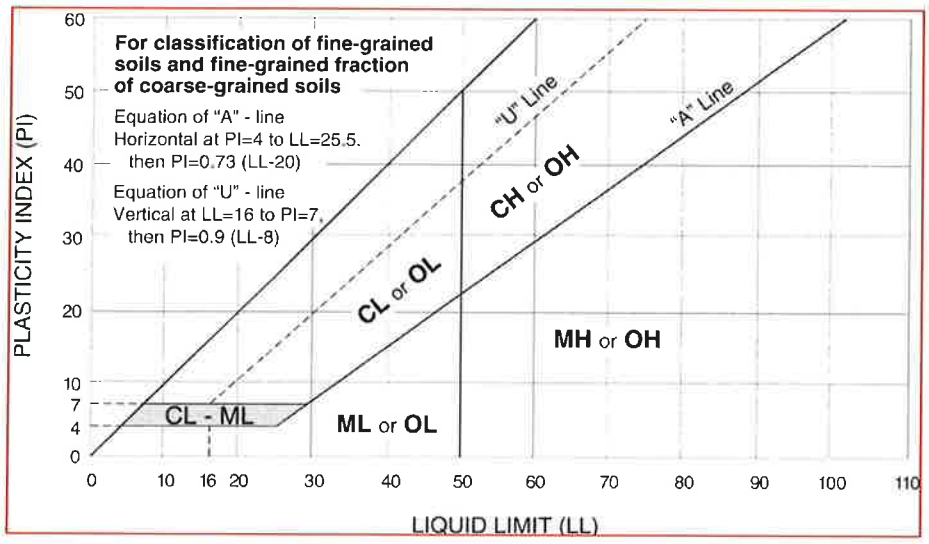
Relevance of Exploration and Laboratory Test Results

Exploration/field results and/or laboratory test data contained within this document are intended for application to the project as described in this document. Use of such exploration/field results and/or laboratory test data should not be used independently of this document.

Unified Soil Classification System

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]				Soil Classification	
				Group Symbol	Group Name [B]
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	**Gravels:** More than 50% of coarse fraction retained on No. 4 sieve	**Clean Gravels:** Less than 5% fines [C]	Cu≥4 and 1≤Cc≤3 [E]	GW	Well-graded gravel [F]
			Cu<4 and/or [Cc<1 or Cc>3.0] [E]	GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH	GM	Silty gravel [F, G, H]
			Fines classify as CL or CH	GC	Clayey gravel [F, G, H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	**Clean Sands:** Less than 5% fines [D]	Cu≥6 and 1≤Cc≤3 [E]	SW	Well-graded sand [I]
			Cu<6 and/or [Cc<1 or Cc>3.0] [E]	SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH	SM	Silty sand [G, H, I]
			Fines classify as CL or CH	SC	Clayey sand [G, H, I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	**Silts and Clays:** Liquid limit less than 50	**Inorganic:**	PI > 7 and plots above "A" line [J]	CL	Lean clay [K, L, M]
			PI < 4 or plots below "A" line [J]	ML	Silt [K, L, M]
		Organic:	$\frac{LL\ oven\ dried}{LL\ not\ dried} < 0.75$	OL	Organic clay [K, L, M, N] / Organic silt [K, L, M, O]
	Silts and Clays: Liquid limit 50 or more	**Inorganic:**	PI plots on or above "A" line	CH	Fat clay [K, L, M]
			PI plots below "A" line	MH	Elastic silt [K, L, M]
		Organic:	$\frac{LL\ oven\ dried}{LL\ not\ dried} < 0.75$	OH	Organic clay [K, L, M, P] / Organic silt [K, L, M, Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor			PT	Peat

[A] Based on the material passing the 3-inch (75-mm) sieve.
[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.
[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.
[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.
[E] $Cu = D_{60}/D_{10}$ $Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$
[F] If soil contains ≥ 15% sand, add "with sand" to group name.
[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.
[H] If fines are organic, add "with organic fines" to group name.
[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.
[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.
[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.
[L] If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.
[N] PI ≥ 4 and plots on or above "A" line.
[O] PI < 4 or plots below "A" line.
[P] PI plots on or above "A" line.
[Q] PI plots below "A" line.



North Shore Multi-Use Indoor Facility

GALENA PARK ISD

HOUSTON, TEXAS

ABBREVIATIONS

A

AFF	ABOVE FINISH FLOOR
ACT	ACOUSTICAL CEILING TILE
ADDL	ADDITIONAL
AB	AIR BARRIER
ACM	ALUMINUM COMPOSITE PANEL
ADA	AMERICANS WITH DISABILITIES ACT
AL/ALUM	ALUMINUM
APPROX	APPROXIMATE OR APPROXIMATELY
ARCH	ARCHITECT OR ARCHITECTURAL

B

BD	BOARD
BOW	BOTTOM OF WALL
BUR	BUILT-UP ROOFING
BLDG	BUILDING

C

℄	CENTER LINE
CR	CLASSROOM
CFS	COLD-FORMED STEEL
CONC	CONCRETE
CMU	CONCRETE MASONRY UNIT
CM	CONSTRUCTION MANAGER
CONT	CONTINUOUS
CI	CONTINUOUS INSULATION
CJ	CONTROL JOINT
COORD	COORDINATE
CORR	CORRIDOR

D

DIA	DIAMETER
DO	DOOR OPENING
DN	DOWN
DS	DOWNSPOUT

E

EA	EACH
EW	EACH WAY
ELEC	ELECTRICAL
EWC	ELECTRIC WATER COOLER
ELEV	ELEVATION
EQ	EQUAL
EQPT	EQUIPMENT
EXIST	EXISTING
EJ	EXPANSION JOINT
EXT	EXTERIOR
EIFS	EXTERIOR INSULATION & FINISH SYSTEM

F

FT	FEET or FOOT
FRP	FIBERGLASS REINFORCED PLASTIC
FV	FIELD-VERIFY
FIN	FINISH
FF	FINISH FLOOR
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER & CABINET
FHC	FIRE HOSE CABINET
FHCS	FLAT-HEAD COUNTERSUNK
FL	FLOOR
FD	FLOOR DRAIN
FLR	FLUORESCENT

G / H

GALV	GALVANIZED
GA	GAGE
GC	GENERAL CONTRACTOR
GO	GLAZED OPENING
GYP	GYPSUM
HT	HEIGHT
HP	HIGH POINT
HM	HOLLOW METAL
HORZ	HORIZONTAL
HB	HORIZONTAL BLINDS
HDG	HOT-DIP GALVANIZED
HR	HOUR

I / J / K

ID	INSIDE DIAMETER
INSUL	INSULATION
IFP	INTERACTIVE FLAT PANEL
IMB	INTERACTIVE MARKERBOARD
INT	INTERIOR
IBC	INTERNATIONAL BUILDING CODE

L

LAV	LAVATORY
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LP	LOW POINT
LVT	LUXURY VINYL TILE

M

MFR	MANUFACTURER
MFG	MANUFACTURING
MB	MARKER BOARD
MO	MASONRY OPENING
MAX	MAXIMUM
MECH	MECHANICAL

M (CONT.)

MOD BIT	MODIFIED BITUMEN
MULL	MULLION
MEP	MECHANICAL-ELECTRICAL-PLUMBING
MCM	METAL COMPOSITE MATERIAL
MIN.	MINIMUM
MISC	MISCELLANEOUS

N

NOM	NOMINAL
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
NO. / #	NUMBER

O

OC	ON CENTER
OD	OUTSIDE DIAMETER
OPP HAND	OPPOSITE HAND
OH	OVERHEAD
OFCI	OWNER-FURNISHED, CONTRACTOR-INSTALLED
OFOI	OWNER-FURNISHED, OWNER INSTALLED

P / Q

PR	PAIR
P.LAM.	PLASTIC LAMINATE
PLT	PLATE
PLMB	PLUMBING
PT	POINT
PCF	POUNDS PER CUBIC FOOT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PREFAB	PREFABRICATED
PROJ	PROJECTOR or PROJECTION
QT	QUARRY TILE

R

R.	RADIUS
REBAR	REINFORCING BAR
REF.	REFERENCE or REFER TO
RCP	REFLECTED CEILING PLAN
RE:	REGARDING
REFG	REFRIGERATOR
REINF	REINFORCE or REINFORCING
REQD	REQUIRED
R.	RISER (STAIR)
	ROLLING WINDOW SHADES
RD	ROOF DRAIN
RO	ROUGH OPENING

S

SIM.	SIMILAR
SC	SOLID CORE
SAB	SOUND ATTENUATION BLANKET
SAFB	SOUND ATTENUATION FIRE BLANKET
STC	SOUND TRANSMISSION CLASS
SPEC	SPECIFICATION
SQ	SQUARE
SF	SQUARE FOOT
SS	STAINLESS STEEL
STRUC.	STRUCTURAL
SUSP.	SUSPENDED

T

TB	TACKBOARD
TS	TACKSTRIP
TW	TACK WALL
TC	TEACHER'S CABINET
TAS	TEXAS ACCESSIBILITY STANDARDS
T.	TREAD (STAIR)
T&B	TOP & BOTTOM
TO.	TOP OF
TC	TOP OF CURB
TOD	TOP OF DECK
TOJ	TOP OF JOIST
TOS	TOP OF STEEL
TOW	TOP OF WALL
TYP.	TYPICAL

U / V

U/C	UNDER COUNTER
U.L.	UNDERWRITERS LABORATORY
UNO	UNLESS NOTED OTHERWISE
VIF	VERIFY IN FIELD
VERT	VERTICAL
VCT	VINYL COMPOSITION TILE
VWC	VINYL WALL COVERING

W / X / Y / Z

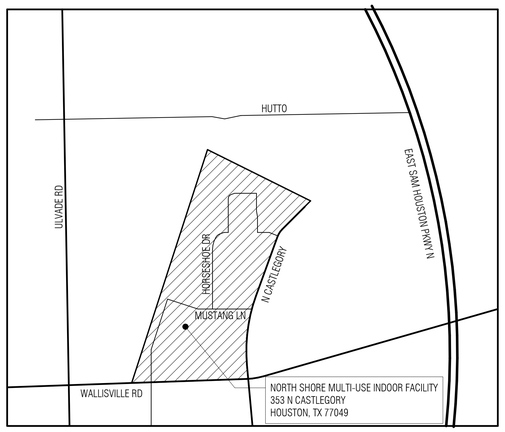
WC	WATER CLOSET
WRB	WATER-RESISTIVE BARRIER
WT	WEIGHT
W	WIDE
W/	WITH
W/O	WITHOUT
WP	WORKING POINT
WWF	WELDED WIRE FABRIC

SYMBOLS LEGEND

ROOM NAME 101	ROOM NAME & NUMBER	SXX	ALUMINUM-FRAMED GLAZED OPENING SYSTEM
101	DOOR NUMBER	SXX	HOLLOW METAL-FRAMED GLAZED OPENING SYSTEM
AC	ACCESS CONTROL	X1	PARTITION TYPE
X	SIGNAGE TAG	X1	TOILET ACCESSORY
HB	HORIZONTAL BLINDS	X1	SPECIALTY EQUIPMENT
1	DEMO/PLAN NOTE		
XXX-01	ROOF TYPE MARK	XXX-01	FLOOR TYPE MARK
XXX-01	ASSEMBLY TYPE	1ft 1" - 0"	CEILING TAG
1/ A101	DETAIL SECTION MARKER	X HR	FIRE RESISTANCE TAG
X1	PLUMBING TAG	←C→	FLOOR TRANSITION TAG
1 A101 SIM	BUILDING SECTION MARKER	1 Ref ←Ref A101 →Ref 1 Ref	BUILDING ELEVATION MARKER
1 A101 SIM	WALL SECTION MARKER	1/ A101 Ref	INTERIOR/ CASEWORK ELEVATION MARKER
1 A101 SIM	CALLOUT HEAD	N	PLAN NORTH/ TRUE NORTH MARKER
		Name Elevation	DATUM ELEVATION

MATERIAL LEGEND

EARTH	CERAMIC TILE
POROUS FILL	GLASS (LARGE SCALE)
CONCRETE/ GROUT	INSULATION (RIGID FOAM BOARD)
BRICK	INSULATION (EPS FOAM BOARD)
CMU (LARGE SCALE)	INSULATION (BATT/ BLANKET)
MARBLE	INSULATION (SEMI-RIGID BOARD)
METAL (LARGE SCALE)	WOOD, ROUGH (CONTINUOUS)
METAL (SMALL SCALE)	WOOD, ROUGH (BLOCKING)
RESILIENT FLOORING	WOOD, FINISH
ACOUSTICAL TILE	PLYWOOD (LARGE SCALE)
TERRAZZO	FIBER CEMENT PANEL
PLASTER, SAND, GROUT, GYPSUM BOARD	METAL LATH
	GYPSUM BOARD



SITE LOCATION MAP

PROJECT INFORMATION

TDLR PROJECT REGISTRATION NUMBER: TABSXXXXXXXX

APPROXIMATE BUILDING AREAS

GROUND LEVEL AREA.:	92,856 S.F.
UPPER LEVEL AREA.:	1,598 S.F.
TOTAL BLDG AREA.:	94,454 S.F.
LEGAL DESCRIPTION:	RES A BLK 1 SENIOR HIGH SCHOOL COMPLEX GALENA PARK ISD NORTHSHORE

BUILDING CONSTRUCTION INFORMATION

TYPE OF CONSTRUCTION (TABLE 601 - IBC):	TYPE II-B
FIRE PROTECTION SYSTEM:	AUTOMATIC SPRINKLER SYSTEM THROUGHOUT

GENERAL NOTES

1. Refer to the CODE-series sheets for Code Information, Design Criteria and Fire Protection Requirements.
2. Verify and document existing dimensions and conditions at the site before beginning construction. Notify the Architect of conflicts or variations prior to commencement of construction.
3. Based on the applicable design criteria, submit Shop Drawings of the proposed pattern of control joints in masonry veneer, CMU, gypsum board, plaster and stucco to the Architect for review and approval prior to construction.
4. In case of discrepancies in or between the Contract Documents, the greater quantity or better quality shall be bid. Clarifications regarding the discrepancies shall be requested from the Architect prior to construction, and the resulting interpretations implemented in accordance with the Contract Documents.

INDEX OF DRAWINGS

SHEET NUMBER	SHEET TITLE
COVER, INDEX, CODE	
COVER	COVER
INDEX	INDEX, GENERAL NOTES AND ABBREVIATIONS
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CODE1.2	FIRE CODE REVIEW - ALTERNATE
CODE2.1	CODE REVIEW
CODE2.2	LIFE SAFETY PLAN
CODE2.3	LIFE SAFETY PLAN - ALTERNATE
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C0.00	COVER SHEET
C1.00	GENERAL NOTES
C2.00	TOPOGRAPHIC SURVEY (1 OF 2)
C2.10	TOPOGRAPHIC SURVEY (2 OF 2)
C3.00	OVERALL SITE LAYOUT PLAN
C4.00	DEMOLITION PLAN
C5.00	SITE DIMENSION PLAN
C6.00	SITE UTILITY PLAN
C7.00	GRADING & DRAINAGE PLAN
C8.00	PAVING PLAN
C9.00	DRAINAGE AREA MAP
C10.00	FIRE ACCESS LANE
C11.00	STORM WATER POLLUTION PREVENTION PLAN
C12.00	STORM WATER POLLUTION PREVENTION DETAILS
C13.00	PAVING AND GRADING DETAILS
1 C14.00	MISCELLANEOUS DETAILS (1 OF 2)
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T2.06D	TECHNOLOGY FLOOR PLAN - LEVEL TWO - UNIT D
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DW-300.1	CASEWORK ELEVATIONS
DW-400.1	INTERSECTION DETAILS AND DOOR SCHEDULE
DW-500.1	WALL DETAILS

Sheet Count: 231

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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT MONIKA C. CASTILLO 26508 STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 1	10/08/2025
2	Addendum 3	10/17/2025
3	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Todd Hangar
Drawn By	VLK

PROJECT NO.

25-0056.00

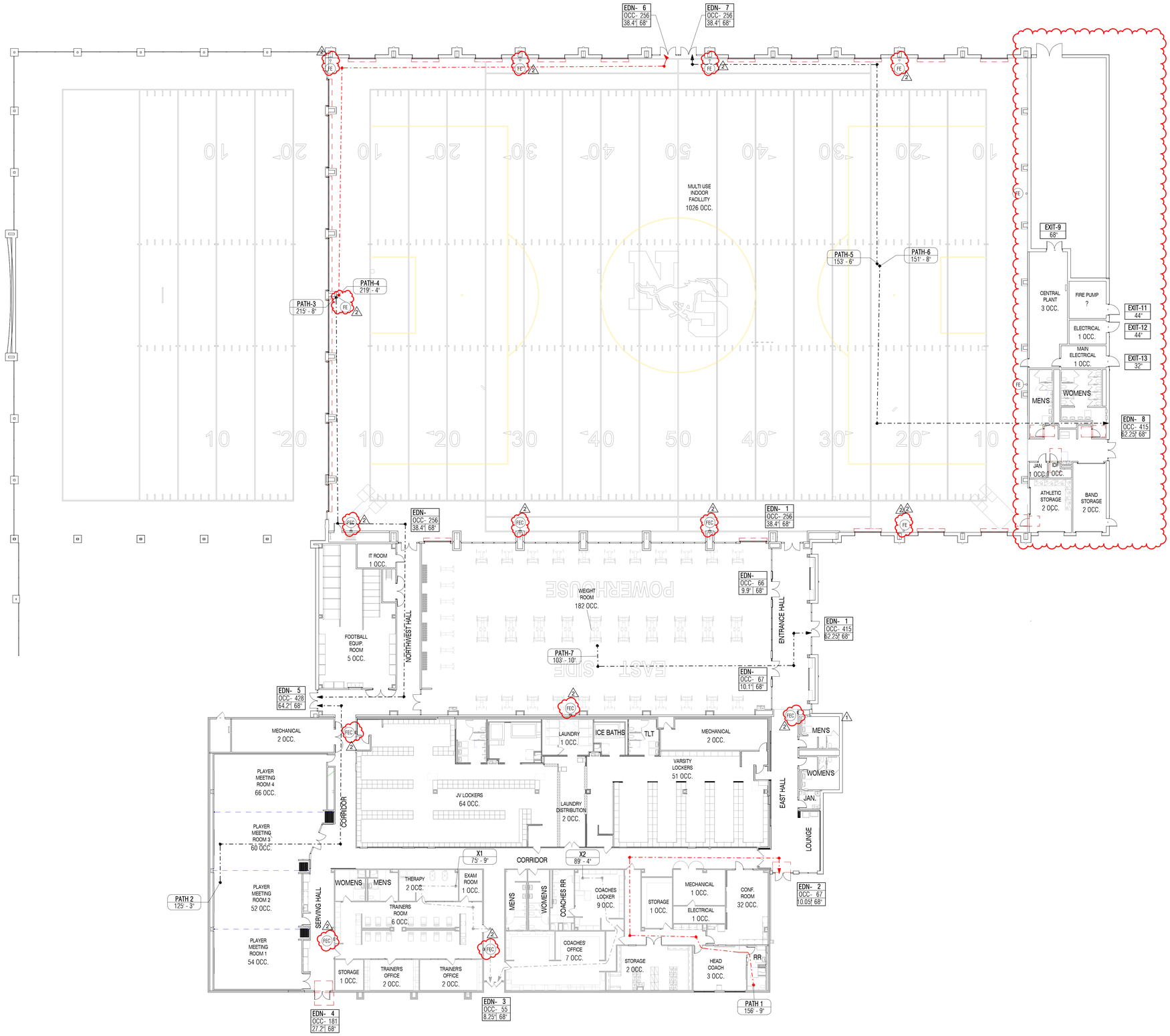
SHEET TITLE

INDEX, GENERAL NOTES AND ABBREVIATIONS

SHEET NO.

INDEX

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1 OVERALL LIFE SAFETY FLOOR PLAN - LEVEL ONE
SCALE: 1/16" = 1'-0"

LIFE SAFETY PLAN LEGEND

- EXIT ACCESS PATH
- EXISTING EXIT ACCESS PATH
- EXIT ACCESS PATH NUMBER / TRAVEL DISTANCE — PATH-00 / Length — EXIT ACCESS PATH NUMBER & TRAVEL DISTANCE
- EXIT ACCESS PATH NUMBER / TRAVEL DISTANCE — PATH-X00 / Length — EXISTING EXIT ACCESS PATH NUMBER & TRAVEL DISTANCE
- EXIT NUMBER / EGRESS WIDTH PROVIDED — EXIT-00 / XX" — MEANS OF EGRESS EXIT
- EXIT DOOR NUMBER / NUMBER OF OCCUPANTS THRU EXIT / EGRESS WIDTH REQUIRED/PROVIDED — EDN- 00 / OCC- ## / XX" | XX" — MEANS OF EGRESS EXIT AT DOOR (w/ Occupant Load)
- ROOM NAME / OCCUPANT LOAD — ROOM NAME / # — ROOM NAME & OCCUPANT LOAD
- FEC — FIRE EXTINGUISHER W/ CABINET & BRACKET
- FE — FIRE EXTINGUISHER W/ BRACKET
- FHC — FIRE HOSE CABINET
- KB — KNOX BOX
- FIRE RISER — FIRE RISER LOCATION

NOTES:
1. All CODE1 sheets to be printed in color.

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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT — MONIKA C. CASTILLO — 28555 — STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

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1	Addendum 3	10/17/2025
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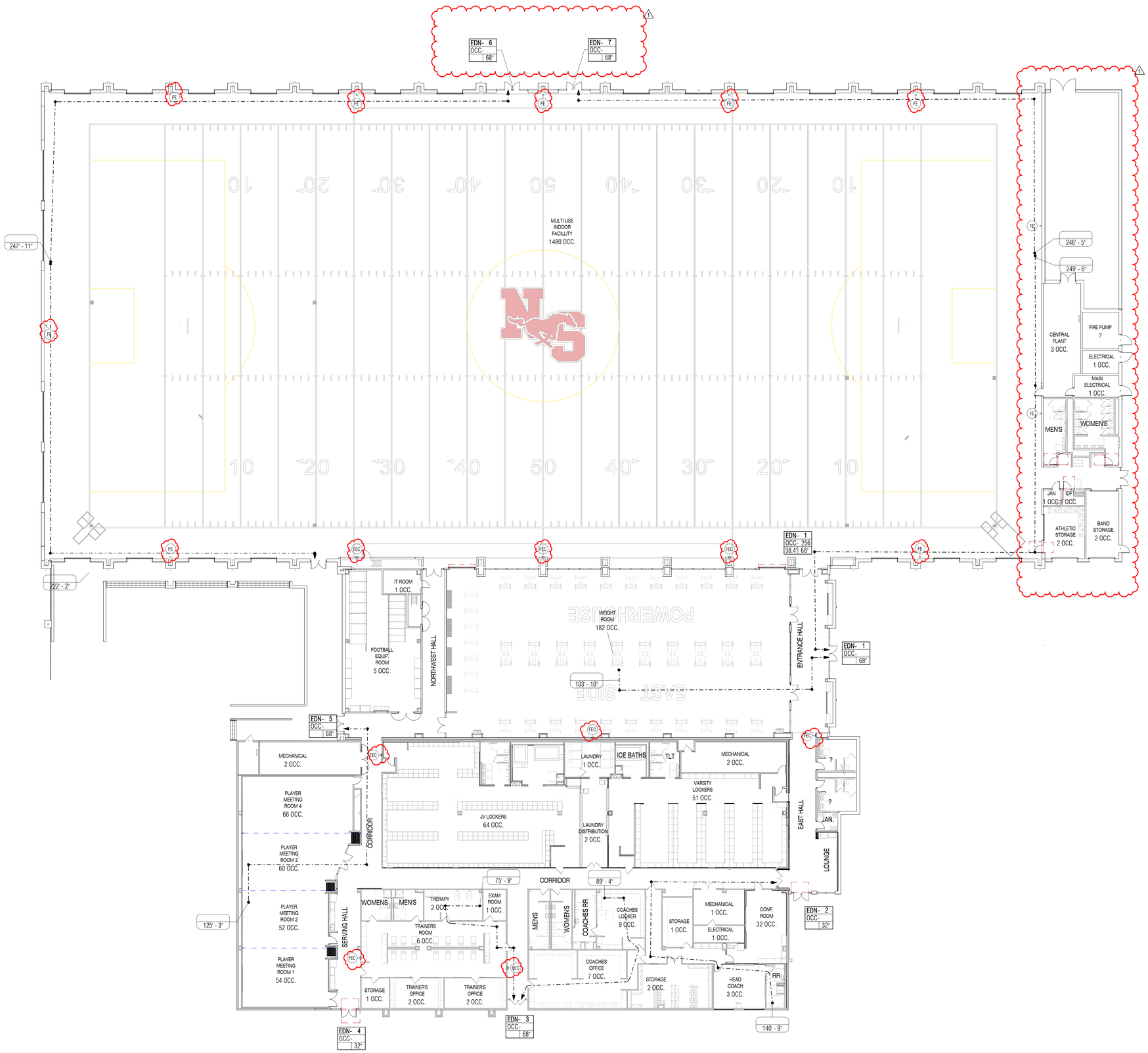
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
LIFE SAFETY PLAN

SHEET NO.
CODE2.2

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1 OVERALL LIFE SAFETY FLOOR PLAN - LEVEL ONE

SCALE: 1/16" = 1'-0"

LIFE SAFETY PLAN LEGEND

- EXIT ACCESS PATH
- EXISTING EXIT ACCESS PATH
- EXIT ACCESS PATH NUMBER / TRAVEL DISTANCE → PATH-00 / Length — EXIT ACCESS PATH NUMBER & TRAVEL DISTANCE
- EXIT ACCESS PATH NUMBER / TRAVEL DISTANCE → PATH-X00 / Length — EXISTING EXIT ACCESS PATH NUMBER & TRAVEL DISTANCE
- EXIT NUMBER / EGRESS WIDTH PROVIDED → EXIT-00 / XX" — MEANS OF EGRESS EXIT
- EXIT DOOR NUMBER / NUMBER OF OCCUPANTS THRU EXIT / EGRESS WIDTH REQUIRED/PROVIDED → EDN- 00 / OCC- ## / XX" | XX" — MEANS OF EGRESS EXIT AT DOOR (w/ Occupant Load)
- ROOM NAME / OCCUPANT LOAD → ROOM NAME / # — ROOM NAME & OCCUPANT LOAD
- FEC — FIRE EXTINGUISHER W/ CABINET & BRACKET
- FE — FIRE EXTINGUISHER W/ BRACKET
- FHC — FIRE HOSE CABINET
- KB — KNOX BOX
- FIRE RISER — FIRE RISER LOCATION

NOTES:
1. All CODE1 sheets to be printed in color.

ARCHITECT

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GALENA PARK ISD
HOUSTON, TEXAS

REGISTERED ARCHITECT
IRVING C. CASTILLO
28868
STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
1 Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.

25-0056.00

SHEET TITLE

LIFE SAFETY PLAN - ALTERNATE

SHEET NO.

CODE2.3

North Shore Multi-Use Indoor Facility

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CONSTRUCTION PLAN FOR PRIVATE WATER, SANITARY SEWER, STORM SEWER AND PAVING

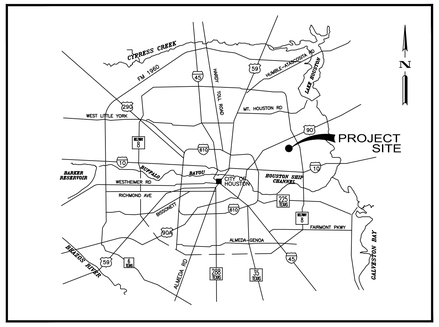
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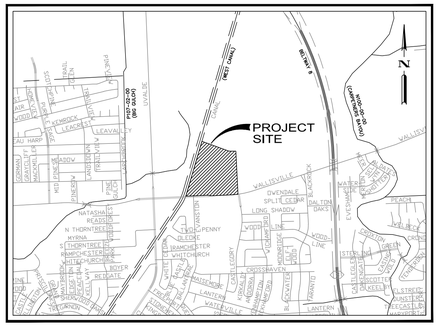
NORTH SHORE MULTI-USE INDOOR FACILITY"

353 N CASTLEGORY RD, HOUSTON, TX 77049

(INSIDE HARRIS COUNTY)

JOB No.: 207-25-003-01 DATE: OCTOBER 2025





PROJECT ADDRESS:
353 N CASTLEGORY RD
HOUSTON, TX 77049

KEY MAP # 457 T
ZIP CODE 77049

SHEET	DESCRIPTION
C0.00	COVER SHEET
C1.00	GENERAL NOTES
C2.00	TOPOGRAPHIC SURVEY (1 OF 2)
C2.10	TOPOGRAPHIC SURVEY (2 OF 2)
C3.00	OVERALL SITE LAYOUT PLAN
C4.00	DEMOLITION PLAN
C5.00	SITE DIMENSION PLAN
C6.00	SITE UTILITY PLAN
C7.00	GRADING & DRAINAGE PLAN
C8.00	PAVING PLAN
C9.00	DRAINAGE AREA MAP
C10.00	FIRE ACCESS LANE
C11.00	STORM WATER POLLUTION PREVENTION PLAN
C12.00	STORM WATER POLLUTION PREVENTION DETAILS
C13.00	PAVING AND GRADING DETAILS
C14.00	MISCELLANEOUS DETAILS (1 OF 2)
C14.01	MISCELLANEOUS DETAILS (2 OF 2)
C15.00	HCED REVIEW SHEET
C16.00	HCFCD REVIEW SHEET

48 HOUR NOTICE:

CONTRACTOR SHALL NOTIFY HARRIS COUNTY PRIOR TO COMMENCING CONSTRUCTION AND/OR BACKFILLING ANY UTILITIES. CONTRACTOR(S) TO CONTACT PUBLIC REVIEW DEPARTMENT @ (713-274-3931) OR (public.review@hcpid.org)

STOP - CALL BEFORE YOU DIG!!

CONTRACTOR SHALL VERIFY LOCATION OF UNDERGROUND UTILITY LINES BY CONTACTING "TEXAS ONE CALL" AT 1-800-245-4545 AT LEAST 48 HOURS BEFORE YOU DIG, DRILL OR BLAST.

EXISTING, WATER, SANITARY, GAS, ELECTRICAL, TELECOMMUNICATIONS AND ALL OTHER UTILITY LINES ARE SHOWN PER RECORD DRAWINGS. CONTRACTOR SHALL VERIFY LOCATION AT THE SITE PRIOR TO CONSTRUCTION.

AUTHORIZATION NOTICE ISSUED BY HARRIS COUNTY ENGINEERING AND PUBLIC INFRASTRUCTURE DEPARTMENT, PERMIT OFFICE, REQUIRED PRIOR TO CONSTRUCTION OF UTILITIES OR LEFT TURN LANES WITHIN HARRIS COUNTY PUBLIC RIGHTS-OF-WAY.

CONTRACTOR AND OWNER SHALL COMPLY WITH THE REGULATIONS OF CITY OF HOUSTON AND HARRIS COUNTY, TEXAS FOR FLOODPLAIN MANAGEMENT.

HARRIS COUNTY MAY HAVE EXISTING UNDERGROUND / OVERHEAD UTILITIES WITHIN THE PROPOSED PROJECT LIMITS. PLEASE CONTACT THE CALL CENTER AT 713-881-3210, OR SUBMIT A WORK ORDER REQUESTS THROUGH http://www.eng.hctx.net/SignalOut TO OBTAIN FIELD LOCATES.

HARRIS COUNTY MUD 285

1. CONTRACTOR SHALL CONTACT HARRIS COUNTY MUD 285 (DISTRICT OPERATOR, CONTACT: CALVIN BROWNE WITH MUNICIPAL DISTRICT SERVICES, LLC AT 281-290-3133) AT LEAST 48 HOURS BEFORE STARTING CONSTRUCTION. ONLY THE DISTRICT'S OPERATOR CAN OPERATE THE DISTRICT'S WATER DISTRIBUTION FACILITIES. ALL WATER TAPS ARE TO BE MADE BY AND THE METER SHALL BE INSTALLED BY THE DISTRICT'S OPERATOR. ALL SANITARY SEWER CONNECTIONS SHALL BE INSPECTED BY THE DISTRICT'S OPERATOR. ALL CONSTRUCTION SHALL COMPLY WITH THE DISTRICT'S RATE ORDER.

2. CONTRACTOR SHALL CONTACT THE DISTRICT ENGINEER'S CONSTRUCTION OFFICE, MARK H. SWANSON WITH LJA ENGINEERING AND SURVEYING, INC. AT 713-953-5205 AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION AND PRIOR TO ANY FINAL INSPECTIONS.

WARNING:

CONTRACTOR SHALL VERIFY LOCATION OF UNDERGROUND UTILITY LINES BY CONTACTING "TEXAS 811" AT 811 OR 713-223-4567 AT LEAST 48 HOURS BEFORE YOU DIG, DRILL OR BLAST.

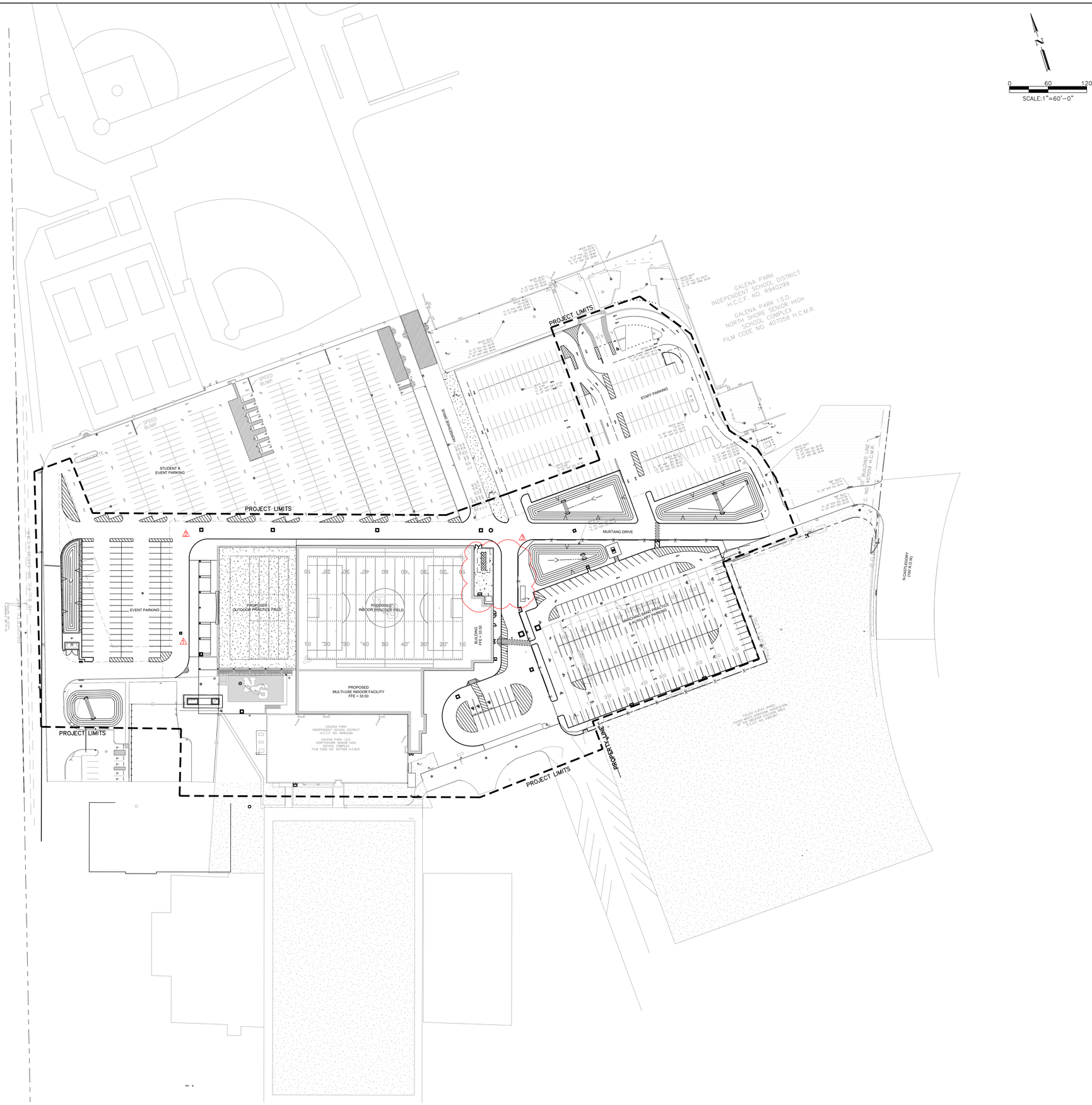
EXISTING, WATER, SANITARY, GAS, ELECTRICAL, TELECOMMUNICATIONS AND ALL OTHER UTILITY LINES ARE SHOWN PER RECORD DRAWINGS. CONTRACTOR SHALL VERIFY LOCATION AT THE SITE PRIOR TO CONSTRUCTION.

ADICO
CONSULTING ENGINEERS
205 E. EDGEWOOD DRIVE, FRIENDSWOOD, TX 77546
PHONE: 832-895-1093 WWW.ADICO-LLC.COM
TBPE FIRM NO. 16423

100% CONSTRUCTION DOCUMENTS REVIEW

STATE OF TEXAS — NANTHAVONGNHANGSY — 99284 — LICENSED PROFESSIONAL ENGINEER
10-22-2025

SHEET NO. C0.00



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GALENA PARK ISD
HOUSTON, TX

North Shore Multi-use Indoor Facility

ADICO, LLC
TBPE FIRM NO. F-16423

STATE OF TEXAS
NANTHAVONG HANSEN
99284
LICENSED
PROFESSIONAL ENGINEER
10-22-2025

ISSUED: SEPTEMBER 22, 2025

REVISIONS

Revision No.	Revision Date
⚠1 ADDENDUM 1	10-08-25
⚠3 ADDENDUM 3	10-17-25
⚠4 ADDENDUM 4	10-22-25

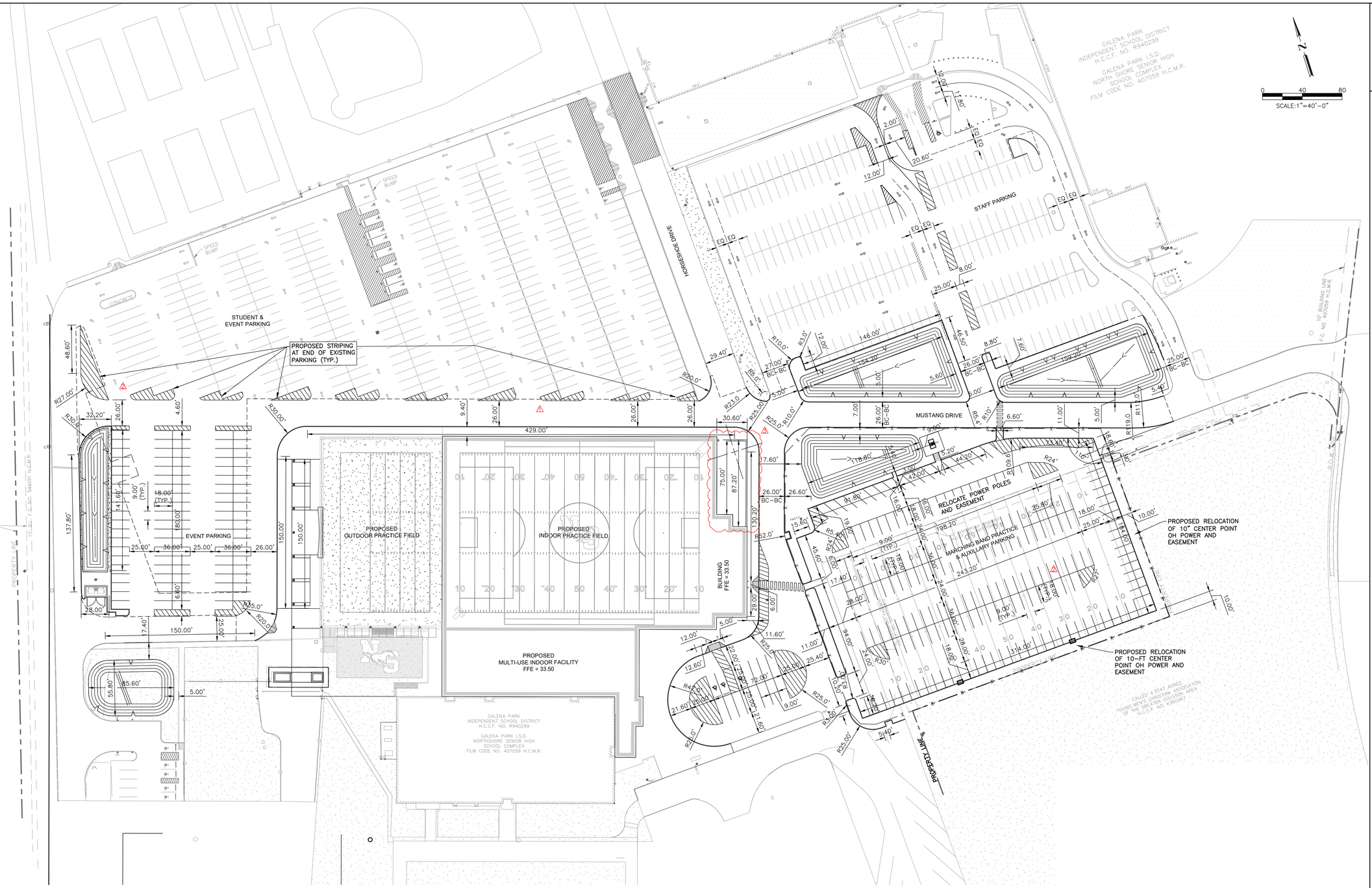
Principal DH
Proj. Eng. SN

PROJECT NO.
25-0056.00

SHEET TITLE
OVERALL SITE LAYOUT PLAN

SHEET NO.
C3.00 ⚠

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SITE PLAN NOTES

1. ALL WORK AND MATERIALS SHALL COMPLY WITH ALL CITY/COUNTY REGULATIONS AND CODES AND O.S.H.A. STANDARDS.
2. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF VESTIBULES, SLOPE PAVING, SIDEWALKS, EXIT PORCHES, PRECISE BUILDING DIMENSIONS AND EXACT BUILDING UTILITY ENTRANCE LOCATIONS.
3. ALL DISTURBED AREAS ARE TO RECEIVE FOUR INCHES OF TOPSOIL, SEED, MULCH AND WATER UNTIL A HEALTHY STAND OF GRASS IS ESTABLISHED.
4. ALL ISLANDS WITH CURB SHALL BE LANDSCAPED PER LANDSCAPE PLAN.
5. NOT ALL DIMENSIONS ARE SHOWN ON THIS PLAN, SEE ARCHITECTURAL SITE PLAN FOR DETAILED DIMENSIONS.
6. ALL DIMENSIONS AND RADII ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATIONS, INCLUDING BUT NOT LIMITED TO, ALL UTILITIES, STORM DRAINAGE, SIGNS, TRAFFIC SIGNALS & POLES, ETC. AS REQUIRED. ALL WORK SHALL BE IN ACCORDANCE WITH GOVERNING AUTHORITIES SPECIFICATIONS AND SHALL BE APPROVED BY SUCH. ALL COST SHALL BE INCLUDED IN BASE BID.
8. REFER TO TOPOGRAPHICAL SURVEY ON SHEET C2 FOR EXISTING CONDITIONS, REFER TO PLAT FOR PROPERTY BOUNDARIES.
9. THE SITE WORK FOR THIS PROJECT SHALL MEET OR EXCEED THE STANDARD SITE WORK SPECIFICATION.
10. PROVIDE SOLID SOD AT ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES.

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GALENA PARK ISD
HOUSTON, TX

North Shore Multi-use Indoor Facility

ADICO, LLC
TBPE FIRM NO. F-16423

STATE OF TEXAS
NATHANIEL WAGNER
99264
LICENSED
PROFESSIONAL ENGINEER
10-22-2025

ISSUED: SEPTEMBER 22, 2025

REVISIONS

Revision No.	Revision Date
1 ADDENDUM 1	10-08-25
3 ADDENDUM 3	10-17-25
4 ADDENDUM 4	10-22-25

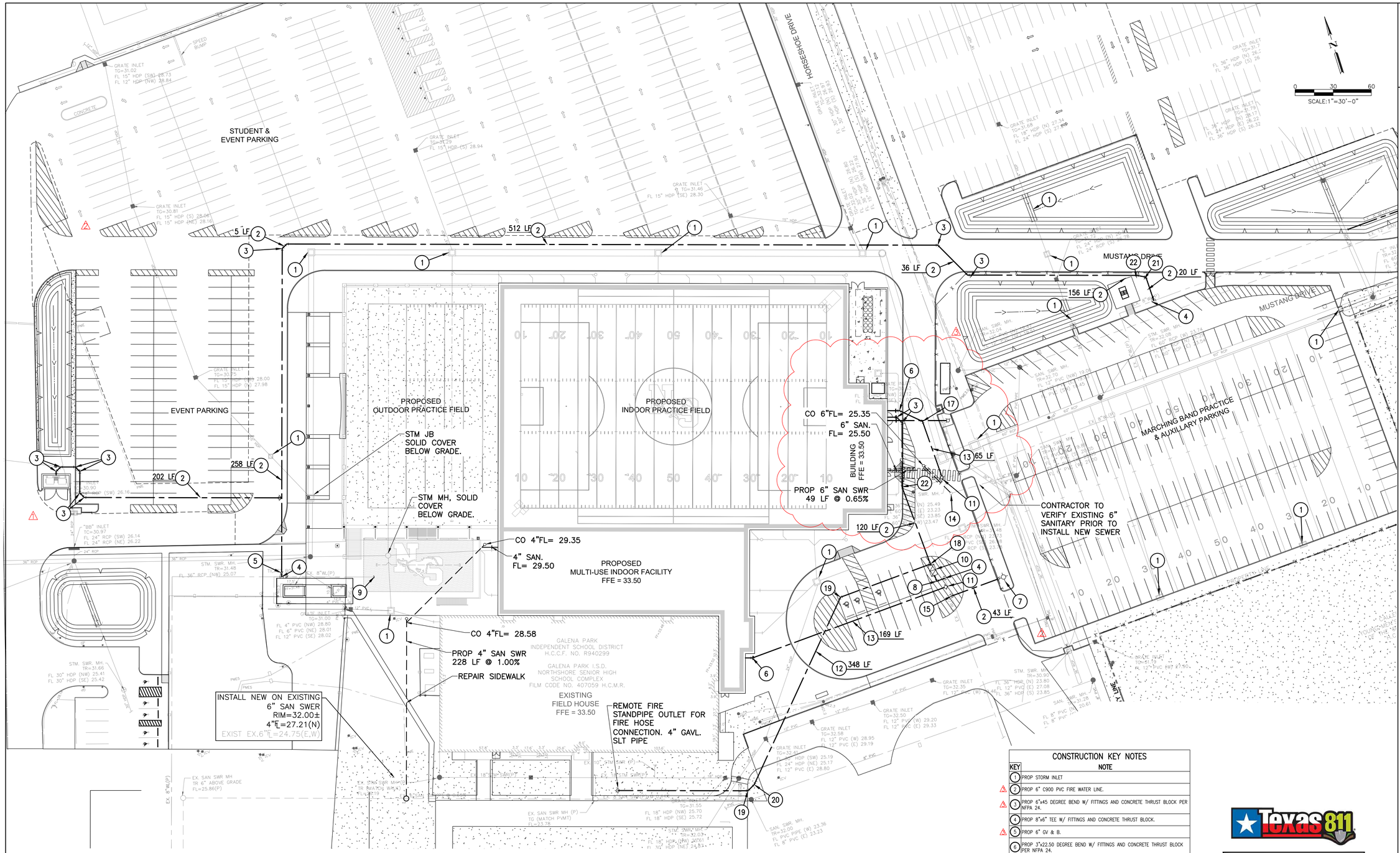
Principal DH
Proj. Eng. SN

PROJECT NO.
25-0056.00

SHEET TITLE
SITE DIMENSION PLAN

SHEET NO.
C5.00

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WATER LINE AND SANITARY SEWER NOTES:

1. CONTRACTOR TO ALLOW A MINIMUM OF 12 INCHES VERTICAL CLEARANCE BETWEEN PROPOSED WATER LINE AND OTHER EXISTING OR PROPOSED UTILITIES. MINIMUM 2 FT CLEAR FROM SANITARY SEWER.
2. ALL WATER LINES TO HAVE A MINIMUM COVER OF 4' BELOW FINISHED GRADE. VARY THE FLOWLINE UNIFORMLY FROM DEPTH AND LOCATION SHOWN TO ACHIEVE COVER.
3. ALL WATER LINE FITTINGS TO BE EITHER: BRONZE, PVC, OR DUCTILE IRON.
4. ALL WATER LINE FITTINGS TO BE INSTALLED WITH ADEQUATE CONCRETE THRUST BLOCKS.
5. ALL WATER LINES TO BE TESTED AS PER THE CITY OF PEARLAND SPECIFICATIONS, DETAILS AND FIRE MARSHALL AS APPLICABLE.
6. ALL WATER LINES TO BE WRAPPED IN A MINIMUM OF 12-INCHES OF CLEAN BANK SAND, OR ONSITE SUITABLE FILL MATERIAL, UNLESS OTHERWISE NOTED. REMAINING BACKFILL TO BE MADE WITH COMPACTED SELECT MATERIAL UNLESS OTHERWISE NOTED.
7. WHENEVER NEW WATER LINES CROSS SANITARY SEWER LINES WITH LESS THAN TWENTY FOUR (24) INCHES OF VERTICAL CLEARANCE, THE SEWER LINE SHALL BE CONSTRUCTED IN A CONTINUOUS CAST IRON CASING FOR A DISTANCE OF NINE (9) FEET EACH SIDE OF THE WATER LINE. MINIMUM VERTICAL CLEARANCE TO BE SIX (6) INCHES WITH THE SEWER LINE LOCATED LOWER THAN THE WATER LINE.
8. ALL SANITARY SEWERS CROSSING WATER LINES WITH A 6 INCHES TO 9 FEET CLEARANCE SHALL HAVE A MINIMUM OF 18' JOINT OF 150 P.S.I. SDR 26 PVC PIPE MEETING ASTM SPECIFICATION D2241 CENTERED ON WATER LINE. WHEN WATER LINE IS BELOW SANITARY SEWER PROVIDE MINIMUM 2 FOOT SEPARATION.
9. REFER TO GENERAL NOTES SHEET C1 FOR WATER AND SANITARY SEWER PIPE MATERIAL AND SPECIFICATIONS REQUIRED BY CITY OF PEARLAND.

UTILITY NOTES:

1. UTILITIES SHOWN ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY EXISTING UTILITY LOCATIONS PRIOR TO CONSTRUCTION AND IMMEDIATELY NOTIFY ENGINEER OF ANY CONFLICT OR DISCREPANCIES.
2. CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES FOR SERVICE ORIGINATION AND CONNECTION.
3. CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE ANY EXISTING ITEMS ONSITE.
4. CONTRACTOR SHALL KEEP THE SITE CLEAN OF DEBRIS AND ANY EROSION CONTROL MEASURES ARE ADEQUATELY PLACED.
5. CONTRACTOR TO COORDINATE LOCATIONS OF UNDERGROUND IRRIGATION SLEEVING PRIOR TO PAVING. SEE LANDSCAPE PLANS.
6. CONTRACTOR TO COORDINATE LOCATIONS OF UNDERGROUND CONDUIT FOR SITE LIGHTING PRIOR TO PAVING.
7. ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION. COPIES OF OSHA STANDARDS MAY BE PURCHASED FROM THE U.S. GOVERNMENT PRINTING OFFICE. INFORMATION AND RELATED REFERENCE MATERIALS MAY BE PURCHASED FROM OSHA, 903 SAN JACINTO, RM 319, AUSTIN, TX. 78701. TEL: (512) 916-5783.
8. REFERENCE MEP PLANS FOR UTILITY CONDUIT LOCATIONS.
9. GAS LINE SHALL BE POLYETHYLENE (PE) PIPE ASTM D 2513, SDR 11 WITH FITTINGS POLYETHYLENE ASTM D 2683, SOCKET FUSION TYPE OR ASTM D 3261 BUTT FUSION TYPE WITH DIMENSIONS MATCHING PE PIPE. PE TRANSITION FITTINGS: FACTORY FABRICATED FITTINGS WITH PE PIPE COMPLYING WITH ASTM D 2513, SDR 11; AND STEEL PIPE COMPLYING WITH ASTM A 53/A 53M, BLACK STEEL, SCHEDULE 40 TYPE E OR S, GRADE B. TRANSITION SERVICE RISER: PE TRANSITION FITTING WITH CORROSION PROTECTIVE COATING FOR ABOVE GROUND STEEL PIPE.

CONSTRUCTION KEY NOTES

KEY	NOTE
1	PROP STORM INLET
2	PROP 6" C900 PVC FIRE WATER LINE.
3	PROP 6"x45 DEGREE BEND W/ FITTINGS AND CONCRETE THRUST BLOCK PER NFPA 24.
4	PROP 8"x6" TEE W/ FITTINGS AND CONCRETE THRUST BLOCK.
5	PROP 6" GV & B.
6	PROP 3"x22.50 DEGREE BEND W/ FITTINGS AND CONCRETE THRUST BLOCK PER NFPA 24.
7	PROP FIRE HYDRANT ASSEMBLY INCLUDING, 8"x6" TEE, 6" 90 DEGREE ELBOW 6" G.V. W/ BOX. SEE DETAILS SHEET C14
8	PROP 6"x90 DEGREE BEND W/ FITTINGS AND CONCRETE THRUST BLOCK PER NFPA 24.
9	CUT AND CAP EXISTING 8" WL, MECH. RESTRAIN
10	6" DOUBLE CHECK BACKFLOW PREVENTER IN VAULT
11	PROP 8"x3" T.S&V
12	PROP 4" C900 PVC FIRE WATER LINE FROM FDC TO REMOTE FIRE HOSE CONNECTION.
13	PROP 3" SCH 40 PVC WATER LINE.
14	PROP 6" SAN. DROP CONNECTION TO EXISTING 6" SS. FIELD TO VERIFY LOCATION OF EXISTING 6" SAN. SWR
15	PROP 8"x6" TEE W/ FITTINGS AND CONCRETE THRUST BLOCK.
16	NOT USED.
17	PROP 3"x45 DEGREE BEND W/ FITTINGS AND CONCRETE THRUST BLOCK PER NFPA 24.
18	PROP 6"x4" TEE W/ FITTINGS AND CONCRETE THRUST BLOCK.
19	PROP 4"x45 DEGREE BEND W/ FITTINGS AND CONCRETE THRUST BLOCK PER NFPA 24.
20	PROP 4"x22.5 DEGREE BEND W/ FITTINGS AND CONCRETE THRUST BLOCK PER NFPA 24.
21	PROP 6"x60 DEGREE BEND W/ FITTINGS AND CONCRETE THRUST BLOCK PER NFPA 24.
22	PROP 6"x22.5 DEGREE BEND W/ FITTINGS AND CONCRETE THRUST BLOCK PER NFPA 24.

Texas 811

WARNING:

CONTRACTOR SHALL VERIFY LOCATION OF UNDERGROUND UTILITY LINES BY CONTACTING "TEXAS 811" AT 811 OR 713-223-4567 AT LEAST 48 HOURS BEFORE YOU DIG, DRILL OR BLAST.

EXISTING, WATER, SANITARY, GAS, ELECTRICAL, TELECOMMUNICATIONS AND ALL OTHER UTILITY LINES ARE SHOWN PER RECORD DRAWINGS. CONTRACTOR SHALL VERIFY LOCATION AT THE SITE PRIOR TO CONSTRUCTION.

LEGEND:

- PROPOSED STORM SEWER LINE
- PROPOSED SANITARY SEWER LINE
- PROPOSED WATER LINE
- PROPOSED FIRE HYDRANT
- PROPOSED GATE VALVE
- PROPOSED SANITARY MANHOLE
- PROPOSED SANITARY/ STORM CLEAN OUT
- PROPOSED STORM MANHOLE
- PROPOSED STORM INLET
- PROPOSED WATER TAP SLEEVE AND VALVE

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ADICO, LLC
TBPE FIRM NO. F-16423

ISSUED: SEPTEMBER 22, 2025

REVISIONS

Revision No.	Revision Date
⚠ ADDENDUM 1	10-08-25
⚠ ADDENDUM 3	10-17-25
⚠ ADDENDUM 4	10-22-25

Principal	DH
Proj. Eng.	SN

PROJECT NO.
25-0056.00

SHEET TITLE
SITE UTILITY PLAN

SHEET NO.
⚠ C6.00

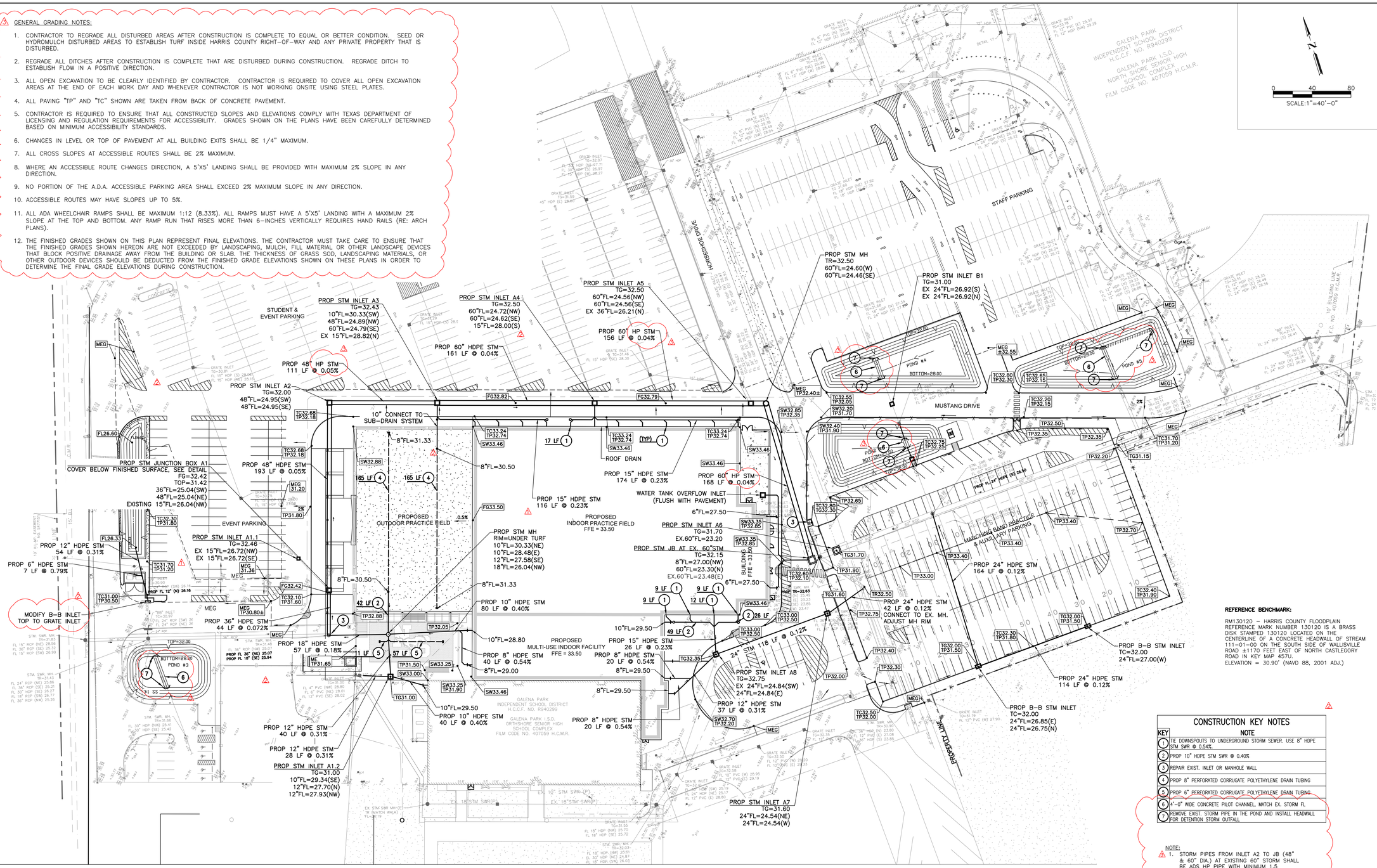
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HOUSTON, TX

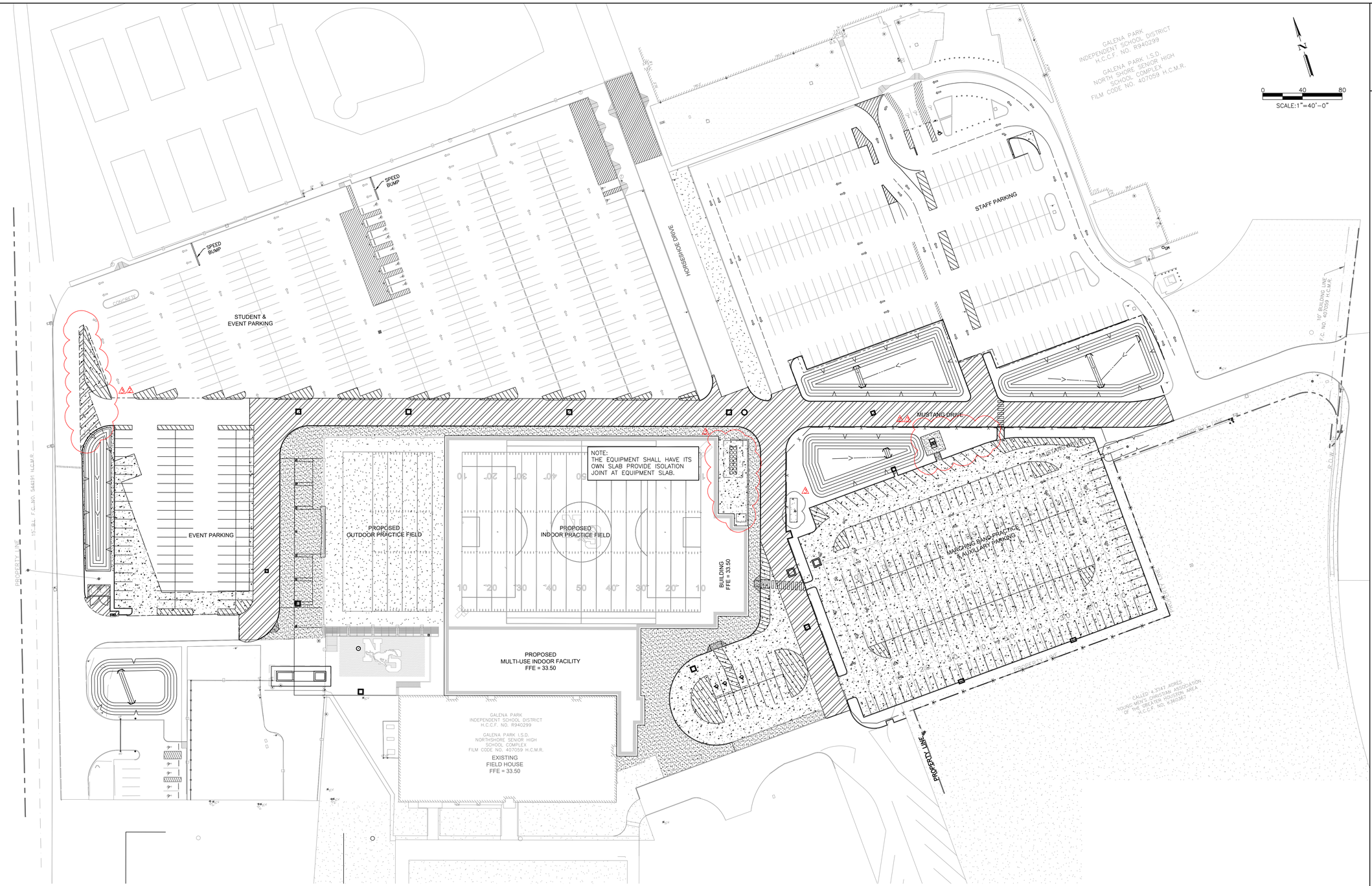
North Shore Multi-use Indoor Facility

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GENERAL GRADING NOTES:

1. CONTRACTOR TO REGRADE ALL DISTURBED AREAS AFTER CONSTRUCTION IS COMPLETE TO EQUAL OR BETTER CONDITION. SEED OR HYDROMULCH DISTURBED AREAS TO ESTABLISH TURF INSIDE HARRIS COUNTY RIGHT-OF-WAY AND ANY PRIVATE PROPERTY THAT IS DISTURBED.
2. REGRADE ALL DITCHES AFTER CONSTRUCTION IS COMPLETE THAT ARE DISTURBED DURING CONSTRUCTION. REGRADE DITCH TO ESTABLISH FLOW IN A POSITIVE DIRECTION.
3. ALL OPEN EXCAVATION TO BE CLEARLY IDENTIFIED BY CONTRACTOR. CONTRACTOR IS REQUIRED TO COVER ALL OPEN EXCAVATION AREAS AT THE END OF EACH WORK DAY AND WHENEVER CONTRACTOR IS NOT WORKING ONSITE USING STEEL PLATES.
4. ALL PAVING "TP" AND "TC" SHOWN ARE TAKEN FROM BACK OF CONCRETE PAVEMENT.
5. CONTRACTOR IS REQUIRED TO ENSURE THAT ALL CONSTRUCTED SLOPES AND ELEVATIONS COMPLY WITH TEXAS DEPARTMENT OF LICENSING AND REGULATION REQUIREMENTS FOR ACCESSIBILITY. GRADES SHOWN ON THE PLANS HAVE BEEN CAREFULLY DETERMINED BASED ON MINIMUM ACCESSIBILITY STANDARDS.
6. CHANGES IN LEVEL OR TOP OF PAVEMENT AT ALL BUILDING EXITS SHALL BE 1/4" MAXIMUM.
7. ALL CROSS SLOPES AT ACCESSIBLE ROUTES SHALL BE 2% MAXIMUM.
8. WHERE AN ACCESSIBLE ROUTE CHANGES DIRECTION, A 5'X5' LANDING SHALL BE PROVIDED WITH MAXIMUM 2% SLOPE IN ANY DIRECTION.
9. NO PORTION OF THE A.D.A. ACCESSIBLE PARKING AREA SHALL EXCEED 2% MAXIMUM SLOPE IN ANY DIRECTION.
10. ACCESSIBLE ROUTES MAY HAVE SLOPES UP TO 5%.
11. ALL ADA WHEELCHAIR RAMPS SHALL BE MAXIMUM 1:12 (8.33%). ALL RAMPS MUST HAVE A 5'X5' LANDING WITH A MAXIMUM 2% SLOPE AT THE TOP AND BOTTOM. ANY RAMP RUN THAT RISES MORE THAN 6-INCHES VERTICALLY REQUIRES HAND RAILS (RE: ARCH PLANS).
12. THE FINISHED GRADES SHOWN ON THIS PLAN REPRESENT FINAL ELEVATIONS. THE CONTRACTOR MUST TAKE CARE TO ENSURE THAT THE FINISHED GRADES SHOWN HEREON ARE NOT EXCEEDED BY LANDSCAPING, MULCH, FILL MATERIAL OR OTHER LANDSCAPE DEVICES THAT BLOCK POSITIVE DRAINAGE AWAY FROM THE BUILDING OR SLAB. THE THICKNESS OF GRASS SOD, LANDSCAPING MATERIALS, OR OTHER OUTDOOR DEVICES SHOULD BE DEDUCTED FROM THE FINISHED GRADE ELEVATIONS SHOWN ON THESE PLANS IN ORDER TO DETERMINE THE FINAL GRADE ELEVATIONS DURING CONSTRUCTION.


HORSESHORE DRIVE
STAFF PARKING
MUSTANG DRIVE
PROJECT LINE
STUDENT & EVENT PARKING
EVENT PARKING
MARCHING BAND PRACTICE & AUXILIARY PARKING
PROPOSED OUTDOOR PRACTICE FIELD
PROPOSED INDOOR PRACTICE FIELD FFE = 33.50
PROPOSED MULTI-USE INDOOR FACILITY FFE = 33.50
BUILDING FFE = 33.50
GALENA PARK INDEPENDENT SCHOOL DISTRICT H.C.C.F. NO. R940299
GALENA PARK I.S.D. NORTHSHORE SENIOR HIGH SCHOOL COMPLEX FILM CODE NO. 407059 H.C.M.R.
POND #3
POND #4
POND #5
PROP STM INLET A3 TG=32.43 10"FL=30.33(SW) 48"FL=24.89(NW) 60"FL=24.79(SE) EX 15"FL=28.82(N)
PROP STM INLET A4 TG=32.50 60"FL=24.72(NW) 60"FL=24.62(SE) 15"FL=28.00(S)
PROP STM INLET A5 TG=32.50 60"FL=24.56(NW) 60"FL=24.56(SE) EX 36"FL=26.21(N)
PROP STM MH TR=32.50 60"FL=24.60(W) 60"FL=24.46(SE)
PROP STM INLET B1 TG=31.00 EX 24"FL=26.92(S) EX 24"FL=26.92(N)
PROP 60" HP STM 156 LF @ 0.04%
PROP 60" HDPE STM 161 LF @ 0.04%
PROP 48" HP STM 111 LF @ 0.05%
PROP STM INLET A2 TG=32.00 48"FL=24.95(SW) 48"FL=24.95(SE)
10" CONNECT TO SUB-DRAIN SYSTEM
PROP STM JUNCTION BOX A1 COVER BELOW FINISHED SURFACE, SEE DETAIL FG=32.42 TOP=31.42 36"FL=25.04(SW) 48"FL=25.04(NE) EXISTING 15"FL=26.04(NW)
PROP 48" HDPE STM 193 LF @ 0.05%
PROP STM INLET A1.1 TG=32.46 EX 15"FL=26.72(NW) EX 15"FL=26.72(SE)
PROP 12" HDPE STM 54 LF @ 0.31%
PROP 6" HDPE STM 7 LF @ 0.79%
MODIFY B-B INLET TOP TO GRATE INLET
PROP 36" HDPE STM 44 LF @ 0.072%
PROP 18" HDPE STM 57 LF @ 0.18%
PROP 12" HDPE STM 40 LF @ 0.31%
PROP 12" HDPE STM 28 LF @ 0.31%
PROP STM INLET A1.2 TG=31.00 10"FL=29.34(SE) 12"FL=27.70(N) 12"FL=27.93(NW)
PROP 15" HDPE STM 116 LF @ 0.23%
PROP 15" HDPE STM 174 LF @ 0.23%
PROP 60" HP STM 168 LF @ 0.04%
WATER TANK OVERFLOW INLET (FLUSH WITH PAVEMENT)
PROP STM INLET A6 TG=31.70 EX.60"FL=23.20
PROP STM JB AT EX. 60"STM TG=32.15 8"FL=27.00(NW) 60"FL=23.30(N) EX.60"FL=23.48(E)
PROP 10" HDPE STM 80 LF @ 0.40%
PROP 8" HDPE STM 40 LF @ 0.54%
PROP 8" HDPE STM 20 LF @ 0.54%
PROP 15" HDPE STM 26 LF @ 0.23%
PROP 8" HDPE STM 20 LF @ 0.54%
PROP STM INLET A8 TG=32.75 EX 24"FL=24.84(SW) 24"FL=24.84(E)
PROP 12" HDPE STM 37 LF @ 0.31%
PROP STM INLET A7 TG=31.60 24"FL=24.54(NE) 24"FL=24.54(W)
24" STM 118 LF @ 0.12%
PROP 24" HDPE STM 42 LF @ 0.12% CONNECT TO EX. MH. ADJUST MH RIM
PROP 24" HDPE STM 164 LF @ 0.12%
PROP 24" HDPE STM 114 LF @ 0.12%
PROP B-B STM INLET TC=32.00 24"FL=27.00(W)
PROP B-B STM INLET TC=32.00 24"FL=26.85(E) 24"FL=26.75(N)
PROP STM INLET B2 TG=32.00
PROP STM INLET B3 TG=32.00
PROP STM INLET B4 TG=32.00
PROP STM INLET B5 TG=32.00
PROP STM INLET B6 TG=32.00
PROP STM INLET B7 TG=32.00
PROP STM INLET B8 TG=32.00
PROP STM INLET B9 TG=32.00
PROP STM INLET



NOTE:
CONTROL JOINT OR SAW JOINT NOT SHOWN. SEE TYPICAL PAVING DETAIL SHEET C13 FOR DETAILS

LEGEND

- PROPOSED 4.5"-INCH THICK CONCRETE PAVING W/ #3 REBAR @ 18" OC EA WAY
- PROPOSED 6"-INCH THICK CONCRETE PAVING W/ #3 REBAR @ 12" OC EA WAY OR #4 REBAR @ 18" OC EA WAY
- PROPOSED 7"-INCH THICK CONCRETE PAVING W/ #4 REBAR @ 18" OC EA WAY
- EJ — EXPANSION JOINT

Texas 811

WARNING:

CONTRACTOR SHALL VERIFY LOCATION OF UNDERGROUND UTILITY LINES BY CONTACTING "TEXAS 811" AT 811 OR 713-223-4567 AT LEAST 48 HOURS BEFORE YOU DIG, DRILL OR BLAST.

EXISTING, WATER, SANITARY, GAS, ELECTRICAL, TELECOMMUNICATIONS AND ALL OTHER UTILITY LINES ARE SHOWN PER RECORD DRAWINGS. CONTRACTOR SHALL VERIFY LOCATION AT THE SITE PRIOR TO CONSTRUCTION.

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GALENA PARK ISD
HOUSTON, TX

North Shore Multi-use Indoor Facility

ADICO, LLC
TBPE FIRM NO. F-16423

STATE OF TEXAS — DAVID HOLLOWAY — 99254 — LICENSED PROFESSIONAL ENGINEER — 10-22-2025

ISSUED: SEPTEMBER 22, 2025

REVISIONS

Revision No.	Revision Date
ADDENDUM 1	10-08-25
ADDENDUM 3	10-17-25
ADDENDUM 4	10-22-25

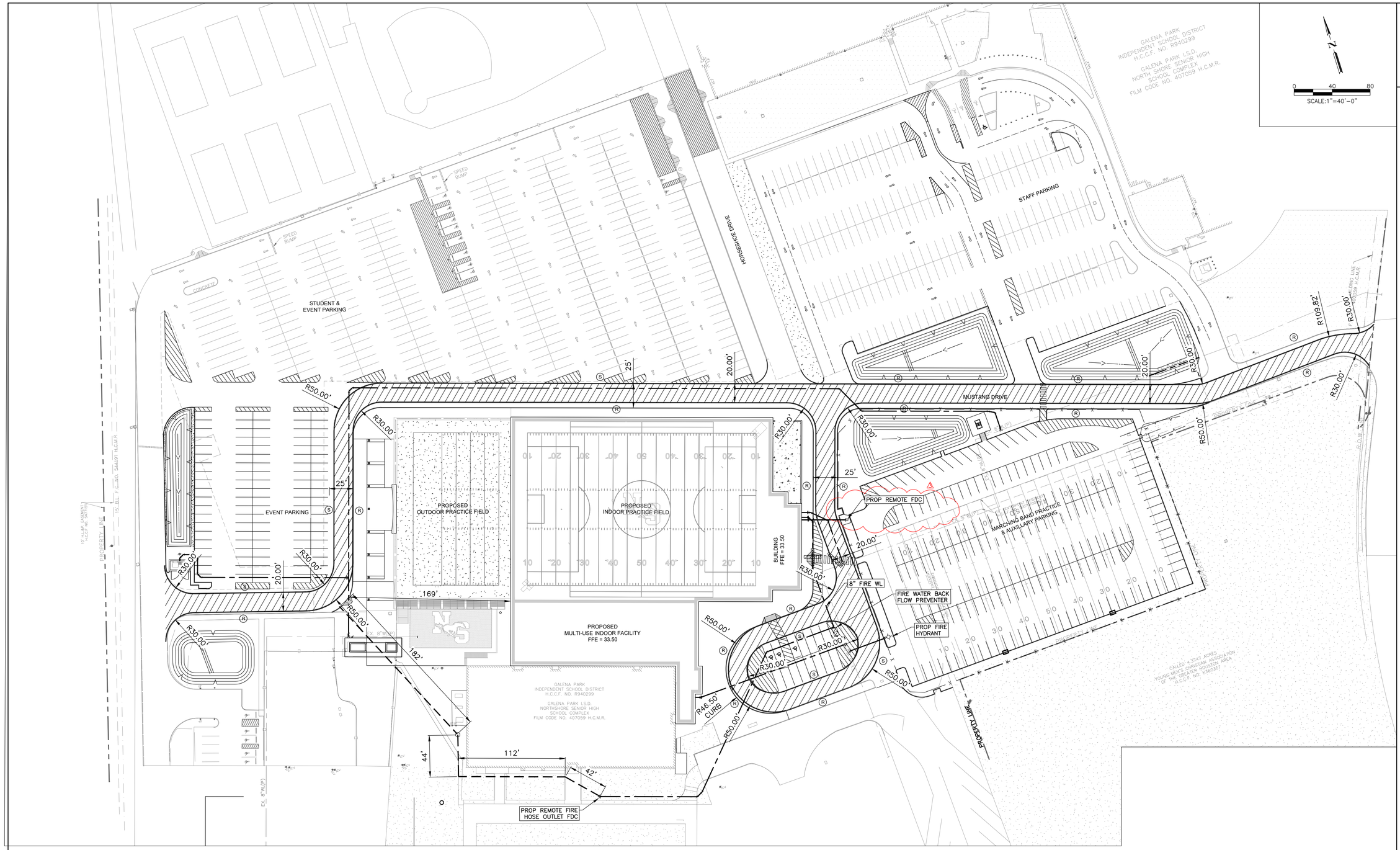
Principal DH
Proj. Eng. SN

PROJECT NO.
25-0056.00

SHEET TITLE
PAVING PLAN

SHEET NO.
C8.00

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FIRE ACCESS ROAD/FIRE LANE NOTES:

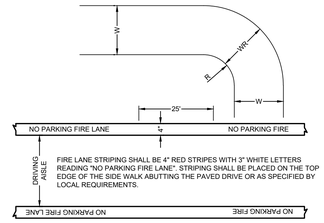
1. ANY COLOR OTHER THAN RED MAY BE USED IN "NO PARKING" AREAS THAT ARE NOT APPROVED FIRE LANES.
2. RED COLORED CURBS, PAVEMENT STRIPING OR WHEEL STOPS SHALL BE USED ONLY TO DESIGNATE APPROVED FIRE LANES.
3. WHERE FIRE LANES ARE CLEARLY DEFINED BY CURB/PAVEMENT STRIPING, FIRE LANE SIGNS ARE NOT REQUIRED.
4. ALL CURBS LOCATED ON EITHER SIDE OF A FIRE LANE SHALL BE PAINTED RED OR A RED STRIPE SHALL BE PLACED ALONE THE PAVEMENT WHERE THERE IS NO CURB. PAINTED CURBS AND FIRE LANE STRIPED SHALL ALSO BE CONSPICUOUSLY AND LEGIBLY MARKER WITH THE WARNING "FIRE LANE–TOW AWAY ZONE" IN WHITE LETTERS AT LEAST THREE (3) INCHES IN HEIGHT, AT INTERVALS NOT EXCEEDING (50) FEET.

FIRE LANE/ACCESS LEGEND:

- DESIGNATED FIRE LANE AREA FOR PERMIT APPROVAL PURPOSES. VERIFY FINAL APPROVED LOCATION WITH ARCHITECTURAL PLANS.
- (R) PAINT CURBS WITH RED PAINT TO SIGNIFY FIRE LANE.
- (S) (S) PAVEMENT SHALL BE PAINTED WITH RED STRIPED TO SIGNIFY FIRE LANE.

W	R	WR
20'	30'	30' MIN.
25'	20'	30' MIN.
30'	10'	30' MIN.

W = WIDTH (FEET) OF FIRE LANE
R = RADIUS NECESSARY TO ACCOMMODATE FIRE VEHICLES
WR = TURNING RADIUS PAVEMENT WIDTH



FIRE LANE STRIPING DETAIL

VLK

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ADICO, LLC
TBPE FIRM NO. F-16423

STATE OF TEXAS · 99284 · LICENSED · PROFESSIONAL ENGINEER
10-22-2025

ISSUED: SEPTEMBER 22, 2025

REVISIONS

Revision No.	Revision Date
1 ADDENDUM 1	10-08-25
3 ADDENDUM 3	10-17-25
4 ADDENDUM 4	10-22-25

Principal DH
Proj. Eng. SN

PROJECT NO.
25-0056.00

SHEET TITLE
FIRE ACCESS LANE

SHEET NO.
C10.00

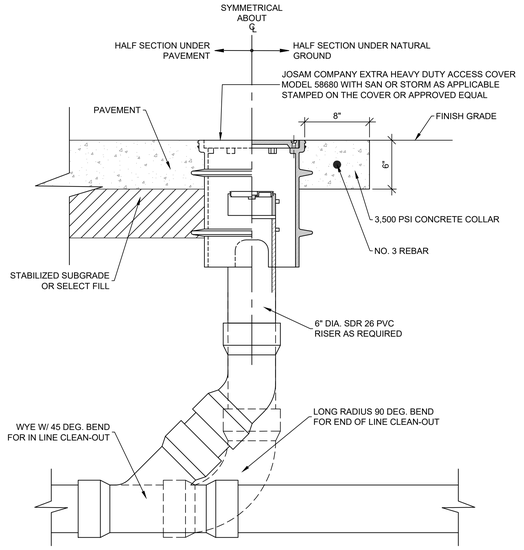
GALENA PARK ISD
HOUSTON, TX

North Shore Multi-use Indoor Facility

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STORM SEWER CLEAN OUT

N.T.S.

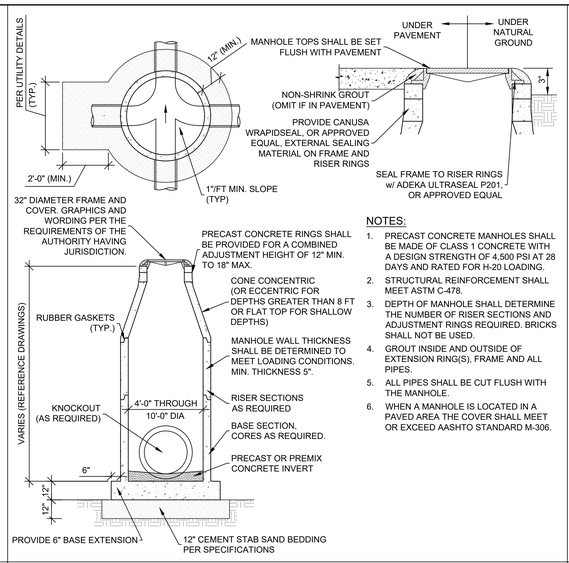


NOTES:

1. THIS DETAIL MAY BE USED ONLY FOR BEDDING AND BACKFILLING OF MANHOLES, CLEAN-OUTS AND OTHER STRUCTURES IN DRY STABLE TRENCH CONDITIONS. WHERE WET SAND CONDITIONS ARE ENCOUNTERED STRUCTURES SHALL BE BACKFILLED PER THE REQUIREMENTS OF THE WET CONDITION BEDDING AND BACKFILLING DETAIL.
2. ALL BACKFILL SHALL SHALL BE PLACED IN 8-INCH THICK LOOSE LIFTS AND COMPACTED TO AN IN-PLACE DENSITY EQUAL TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY AT A MOISTURE CONTENT WITHIN +/-2% OF THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698.

TYPE "C" STORM SEWER MANHOLE

N.T.S.

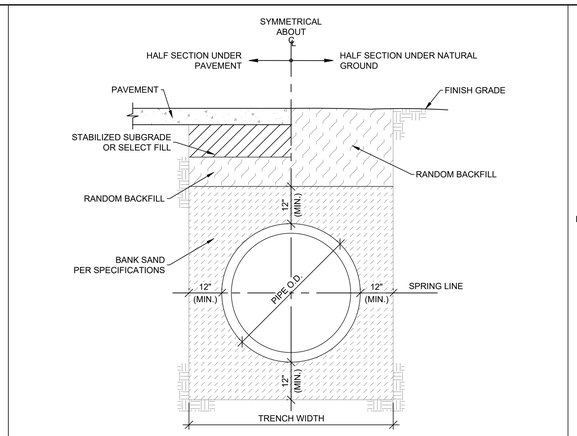


NOTES:

1. PRECAST CONCRETE MANHOLES SHALL BE MADE OF CLASS 1 CONCRETE WITH A DESIGN STRENGTH OF 4,500 PSI AT 28 DAYS AND RATED FOR H-20 LOADING.
2. STRUCTURAL REINFORCEMENT SHALL MEET ASTM C-478.
3. DEPTH OF MANHOLE SHALL DETERMINE THE NUMBER OF RISER SECTIONS AND ADJUSTMENT RINGS REQUIRED. BRICKS SHALL NOT BE USED.
4. GROUT INSIDE AND OUTSIDE OF EXTENSION RING(S), FRAME AND ALL PIPES.
5. ALL PIPES SHALL BE CUT FLUSH WITH THE MANHOLE.
6. WHEN A MANHOLE IS LOCATED IN A PAVED AREA THE COVER SHALL MEET OR EXCEED AASHTO STANDARD M-306.

WATER LINE BEDDING & BACKFILL

N.T.S.

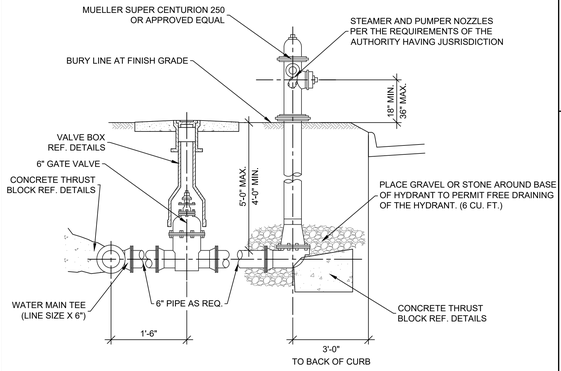


NOTES:

1. THIS DETAIL MAY BE USED ONLY FOR DRY STABLE TRENCH CONDITIONS. WHERE WET SAND CONDITIONS ARE ENCOUNTERED SEWERS SHALL BE BACKFILLED PER THE REQUIREMENTS OF THE WET CONDITION BEDDING AND BACKFILLING DETAIL.
2. ALL BACKFILL SHALL SHALL BE PLACED IN 8-INCH THICK LOOSE LIFTS AND COMPACTED TO AN IN-PLACE DENSITY EQUAL TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY AT A MOISTURE CONTENT WITHIN +/-2% OF THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698.
3. MIN. TRENCH WIDTH SHALL BE PIPE O.D. PLUS 24-INCHES FOR PIPES WITH A NOMINAL SIZE OF 30-INCHES OR LESS AND O.D. PLUS 36-INCHES FOR PIPES WITH A NOMINAL SIZE GREATER THAN 30-INCHES.

FIRE HYDRANT

N.T.S.

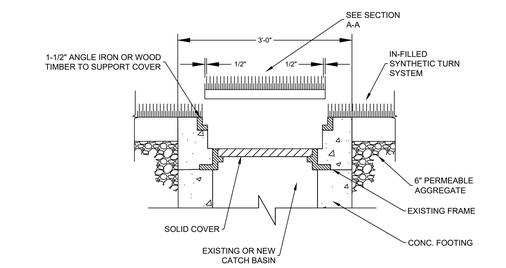


NOTES:

1. 5/8" ALL-THREAD IS TO BE USED TO TIE VALVE TO TEE AND VALVE TO HYDRANT.
2. PROVIDE MECHANICAL RESTRAINED JOINTS (EBBA IRON, SERIES 2000PV, OR APPROVED EQUAL).
3. PAINT ALL FIRE HYDRANTS PER THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE.

SANITARY STRUCTURE BEDDING & BACKFILL

N.T.S.



NOTES:

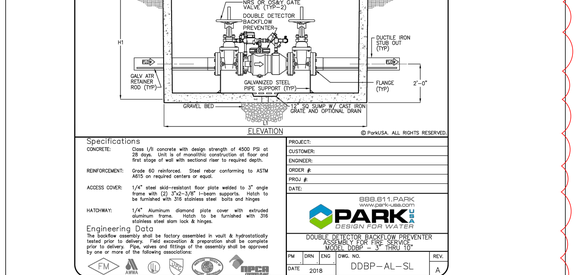
1. THIS DETAIL MAY BE USED ONLY FOR BEDDING AND BACKFILLING OF MANHOLES, CLEAN-OUTS AND OTHER STRUCTURES IN DRY STABLE TRENCH CONDITIONS. WHERE WET SAND CONDITIONS ARE ENCOUNTERED STRUCTURES SHALL BE BACKFILLED PER THE REQUIREMENTS OF THE WET CONDITION BEDDING AND BACKFILLING DETAIL.
2. ALL BACKFILL SHALL SHALL BE PLACED IN 8-INCH THICK LOOSE LIFTS AND COMPACTED TO AN IN-PLACE DENSITY EQUAL TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY AT A MOISTURE CONTENT WITHIN +/-2% OF THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698.

SANITARY STRUCTURE BEDDING & BACKFILL

N.T.S.

SANITARY SEWER MANHOLE

N.T.S.



NOTES:

1. PRECAST CONCRETE MANHOLES SHALL BE MADE OF CLASS 1 CONCRETE WITH A DESIGN STRENGTH OF 4,500 PSI AT 28 DAYS AND RATED FOR H-20 LOADING.
2. STRUCTURAL REINFORCEMENT SHALL MEET ASTM C-478.
3. DEPTH OF MANHOLE SHALL DETERMINE THE NUMBER OF RISER SECTIONS AND ADJUSTMENT RINGS REQUIRED. BRICKS SHALL NOT BE USED.
4. GROUT INSIDE AND OUTSIDE OF EXTENSION RING(S) AND FRAME.
5. REFER TO SPECIFICATIONS FOR INTERIOR LINER MATERIALS. AS A MINIMUM, MANHOLE INTERIOR TO BE COATED WITH THANE-COAT OR PRE-ARROVED EQUIVALENT, UNLESS NOTED OTHERWISE.
6. WHEN A PIPE ENTERS THE MANHOLE MORE THAN 24" ABOVE THE INVERT AN EXTERNAL DROP SHALL BE PROVIDED.
7. WHEN A MANHOLE IS LOCATED IN A PAVED AREA THE COVER SHALL MEET OR EXCEED AASHTO STANDARD M-306.
8. ALL MANHOLES SHALL BE PROVIDED WITH A STAINLESS STEEL DISH INSERT.
9. WHEN CONNECTING TO AN EXISTING MANHOLE THE CONNECTION SHALL BE MADE BY CORING.
10. MANHOLES SHALL CONFORM TO ALL TCEQ REQUIREMENTS.

GATE VALVE

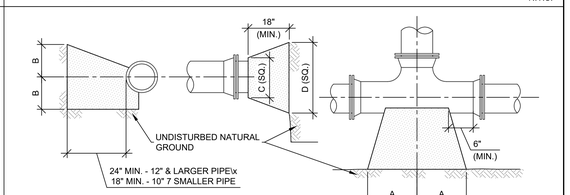
N.T.S.

NOTES:

1. PROVIDE OPERATING NUT EXTENSION, AS NEEDED, TO APPROXIMATELY THREE (3) FEET BELOW FINISHED GRADE.
2. VALVE BOX SHALL NOT TRANSMIT ANY LOAD DIRECTLY TO THE VALVE OR PIPE.
3. GATE VALVES SHALL BE COUNTER-CLOCKWISE OPEN.
4. SECURE TRACER WIRE INSIDE OF VALVE BOX.

THRUST BLOCKING

N.T.S.



90° BEND		45° BEND		22½° BEND		TEES			PLUGS	
A	B	A	B	A	B	A	B	C	D	
12"	7"	6"	7"	6"	6"	7"	8"	8"	14"	
14"	8"	7"	9"	6"	6"	8"	11"	8"	18"	
16"	10"	9"	10"	6"	8"	10"	12"	10"	21"	
22"	13"	12"	13"	8"	10"	13"	16"	12"	29"	
29"	21"	16"	21"	11"	16"	18"	24"	16"	41"	
38"	27"	21"	27"	12"	24"	24"	30"	20"	54"	

NOTES:

1. THRUST BLOCKS AT TRENCH FACE MUST HAVE A MINIMUM BEARING SURFACE OF 1.0 SF AND THE LEAST DIMENSION SHALL BE NO SMALLER THAN 1.5 TIMES PIPE DIAMETER, BUT NOT LESS THAN 1.0 FT.
2. THRUST BLOCKS SHALL BE PACKED AT ALL FITTINGS.
3. ALL FITTINGS SHALL BE M.J. RESTRAINED JOINT (EBAA IRON, SERIES 2000PV, OR APPROVED EQUAL).

TURF COVER FOR CATCH BASIN COVER

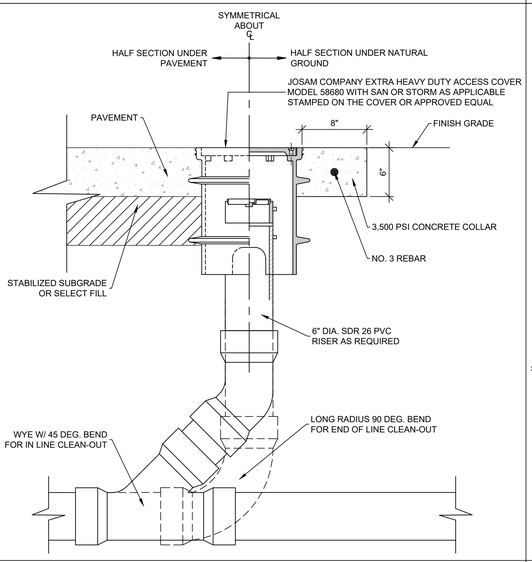
N.T.S.

6" DOUBLE CHECK BACKFLOW PREVENTER

N.T.S.

SANITARY SEWER CLEAN OUT

N.T.S.



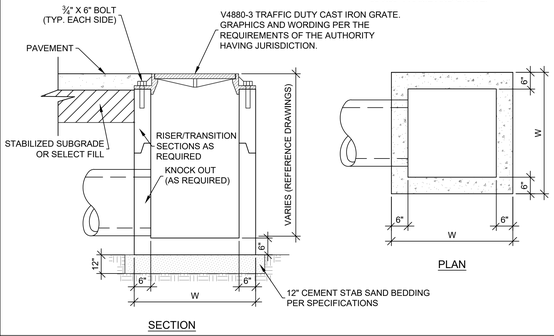
KNOCK OUT	W	GRATE SIZE
30"	42"	30"X30"X2"
36"	48"	30"X30"X2"
48"	60"	30"X30"X2"
60"	72"	30"X30"X2"
72"	84"	30"X30"X2"
84"	96"	30"X30"X2"

NOTES:

1. PRECAST CONCRETE MANHOLES SHALL BE MADE OF CLASS II CONCRETE WITH A DESIGN STRENGTH OF 4,500 PSI AT 28 DAYS AND RATED FOR H-20 LOADING.
2. STRUCTURAL REINFORCEMENT SHALL BE GRADE 60 CONFORMING TO ASTM A-615.
3. DEPTH OF INLET SHALL DETERMINE THE NUMBER OF RISER SECTIONS AND ADJUSTMENT RINGS REQUIRED. BRICKS SHALL NOT BE USED.
4. GROUT INSIDE AND OUTSIDE OF EXTENSION RING(S) AND ALL PIPES.
5. ALL PIPES SHALL BE CUT FLUSH WITH THE INLET.
6. IF BOTTOM SECTION INSIDE DIMENSIONS ARE GREATER THAN 30"X30", PROVIDE A TRANSITION SECTION TO ACCEPT A 30"X30" FRAME AND GRATE.

GRATE INLET (ALL PAVED AREAS)

N.T.S.



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GALENA PARK ISD
HOUSTON, TX

ADICO, LLC
TBPE FIRM NO. F-16423

STATE OF TEXAS
DAVID HOSKINS
NANTHAVONGDOUANGSY
99284
LICENSED
PROFESSIONAL
ENGINEER
10-22-2025

ISSUED: SEPTEMBER 22, 2025

REVISIONS

Revision No.	Revision Date
ADDENDUM 1	10-08-25
ADDENDUM 3	10-17-25
ADDENDUM 4	10-22-25

Principal DH
Proj. Eng. SN

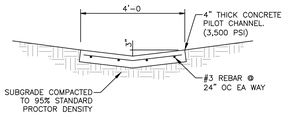
PROJECT NO.
25-0056.00

SHEET TITLE
MISCELLANEOUS DETAILS (1 OF 2)

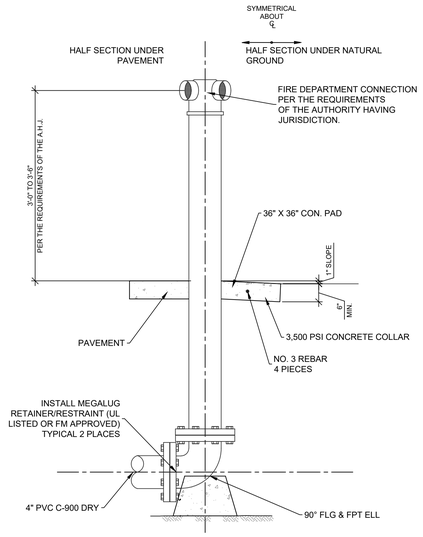
SHEET NO.
C14.00

North Shore Multi-use Indoor Facility

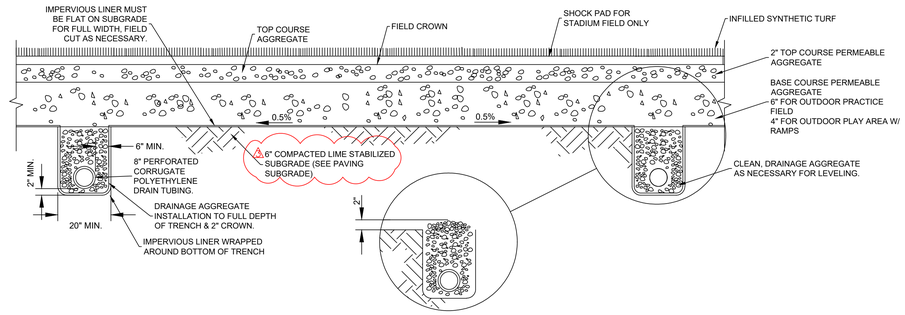
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1 CONCRETE PILOT CHANNEL NTS

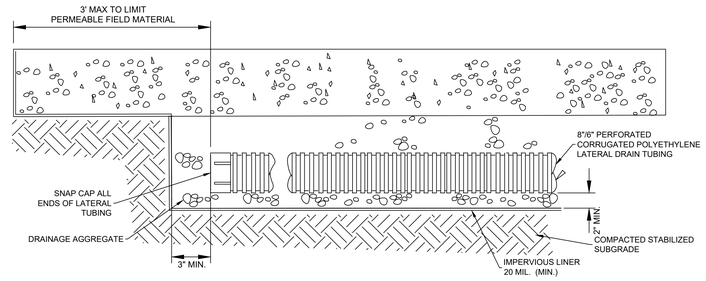


2 FDC CONNECTION ASSEMBLY NTS



3 SYNTHETIC FIELD SECTION

SCALE: NTS



4 ROUND SUBSURFACE DRAINAGE LATERAL

SCALE: NTS

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GALENA PARK ISD
HOUSTON, TX

North Shore Multi-use Indoor Facility

ADICO, LLC
TBPE FIRM NO. F-16423



ISSUED: SEPTEMBER 22, 2025

REVISIONS

Revision No.	Revision Date
1 ADDENDUM 1	10-08-25
2 ADDENDUM 3	10-17-25
3 ADDENDUM 4	10-22-25

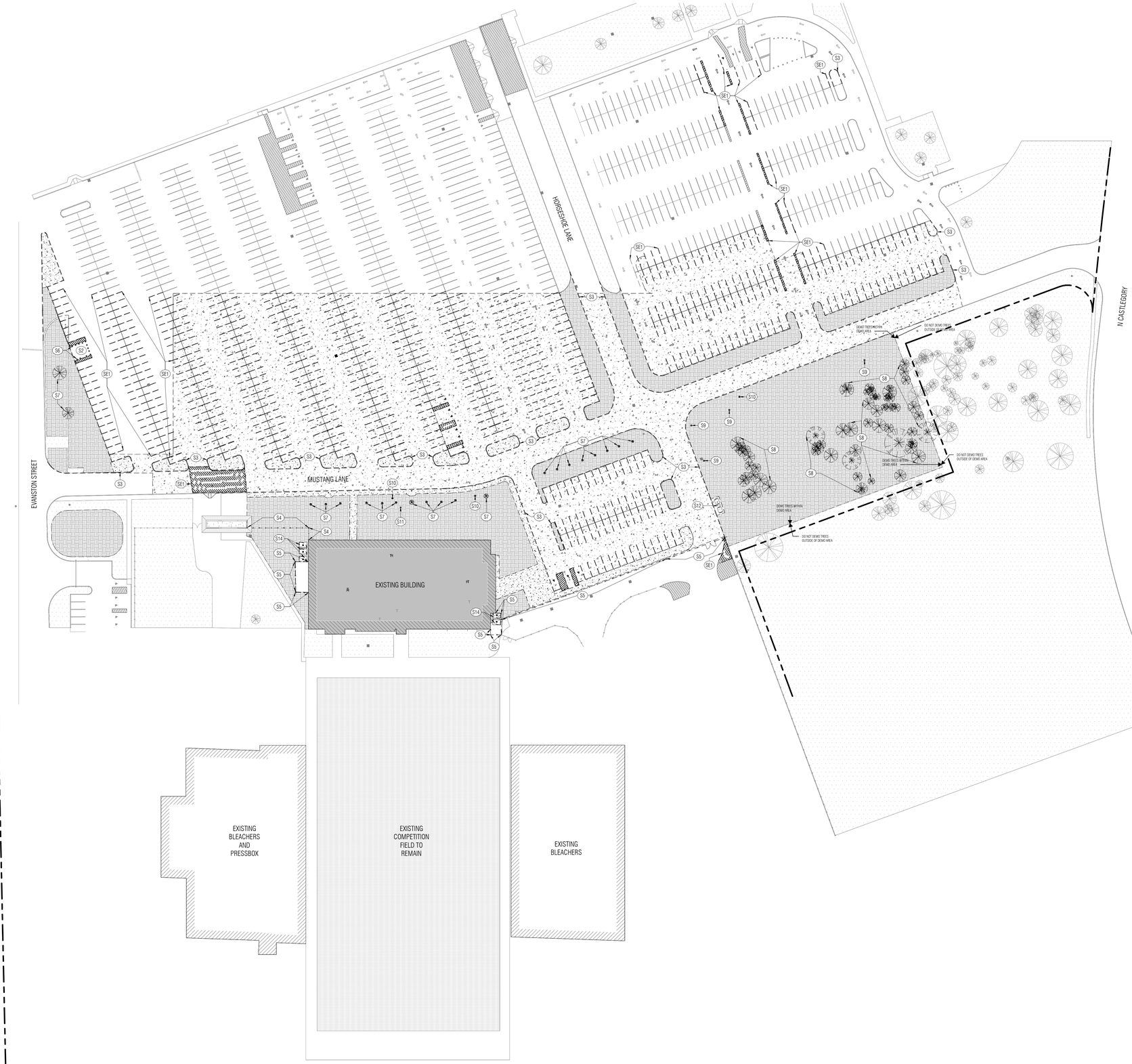
Principal DH
Proj. Eng. SN

PROJECT NO.
25-0056.00

SHEET TITLE
MISCELLANEOUS DETAILS (2 OF 2)

SHEET NO.
C14.01

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SITE PLAN NOTES

1. Verify and document existing dimensions and conditions at the site before beginning construction. Notify the Architect of conflicts or variations prior to commencement of construction.
2. To prevent damage to existing trees and shrubs in proximity to the Work, provide and maintain protective barriers around those items in accordance with the specified procedures, or in the absence of those procedures, with recognized landscaping and horticultural practices.

SITE PLAN LEGEND

- FIRE LANE (PER CITY STANDARDS)
- CHAIN LINK FENCE, See Plan for Heights
- EXISTING CHAIN LINK FENCE, See Plan for Heights
- ORNAMENTAL FENCE, See Plan for Heights
- EXISTING ORNAMENTAL FENCE, See Plan for Heights
- EXISTING BUILDING TO REMAIN
- NEW PAVING
- NEW VEGETATION
- EXISTING PAVING TO REMAIN
- EXISTING VEGETATION TO REMAIN
- EXISTING VEGETATION TO BE REMOVED
- DEDICATION PAVERS
- ITEM TO BE REMOVED
- PROPERTY LINE

SITE DEMO KEYNOTE SCHEDULE

NUMBER	NOTE TEXT
S2	EXISTING BAND TOWER TO BE RELOCATED BY OWNER
S3	DEMO EXISTING CURB AS SHOWN ON CIVIL PLANS.
S4	DEMO ORNAMENTAL FENCING
S5	DEMO CHAINLINK FENCING
S6	DEMO BOLLARDS
S7	DEMO TREES
S8	DEMO CLUSTER OF TREES
S9	DEMO UTILITY POLE; REF. CIVIL
S10	DEMO MAN HOLE
S11	RELOCATE FIRE HYDRANT
S12	DEMO PAD AND RELOCATE DUMPSTERS. COORDINATE PHASING AND LOCATION OF DUMPSTERS WITH OWNER DURING CONSTRUCTION
S14	REMOVE EXISTING CONDENSING UNIT; REF. TO MEP DEMOLITION
SE1	REMOVE EXISTING STRIPING

PLAN NORTH TRUE NORTH

1 OVERALL DEMO SITE PLAN
SCALE: 1" = 50'-0"

VLK

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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT
MONIKA C. CASTILLO
STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 3	10/17/2025
2	Addendum 4	10/22/2025

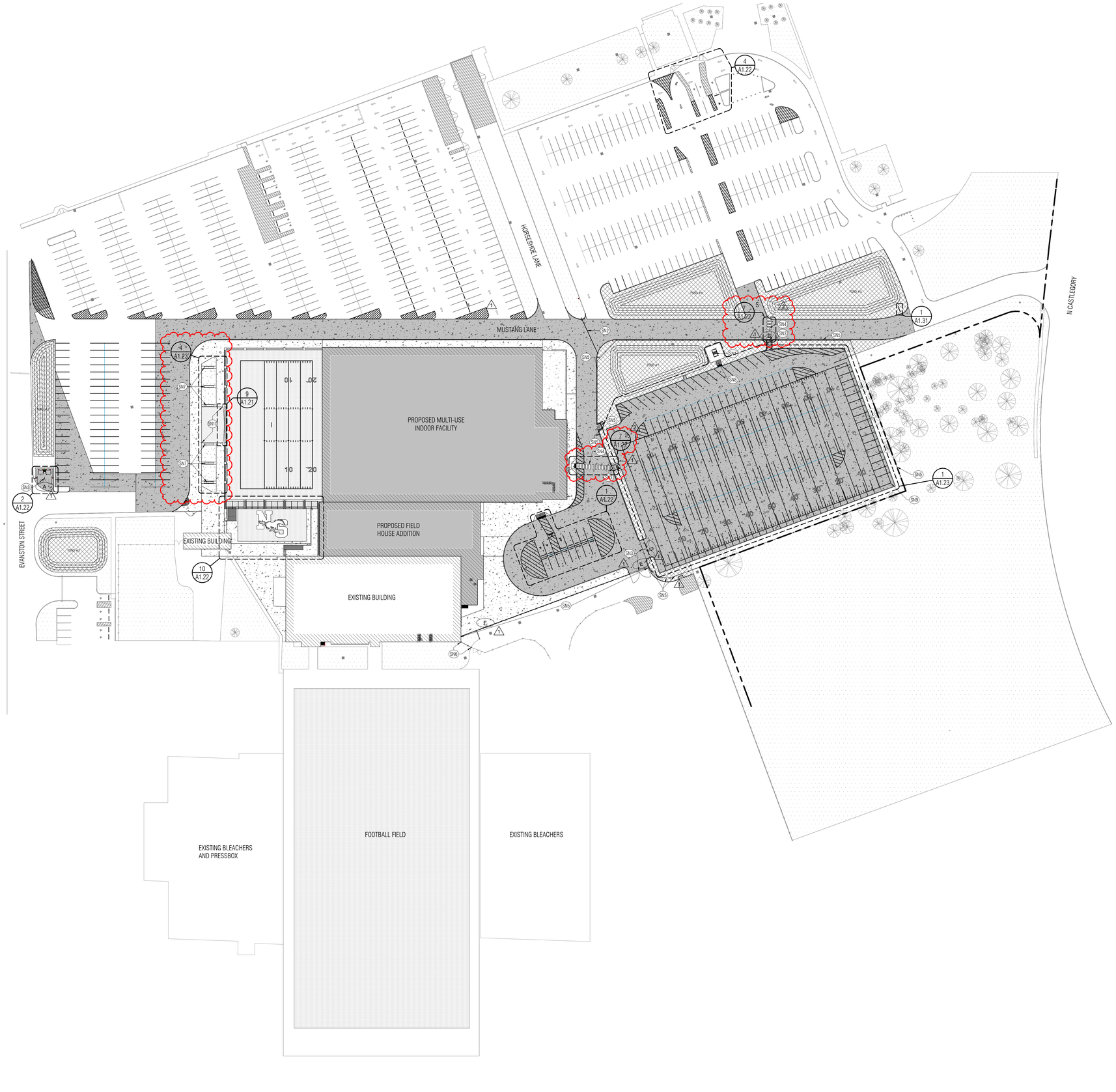
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
OVERALL DEMO SITE PLAN

SHEET NO.
A1.01

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1 OVERALL SITE PLAN
SCALE: 1" = 50'-0"

SITE PLAN NOTES

1. Verify and document existing dimensions and conditions at the site before beginning construction. Notify the Architect of conflicts or variations prior to commencement of construction.
2. To prevent damage to existing trees and shrubs in proximity to the Work, provide and maintain protective barriers around those items in accordance with the specified procedures, or in the absence of those procedures, with recognized landscaping and horticultural practices.

SITE PLAN LEGEND

- FIRE LANE (PER CITY STANDARDS)
- CHAIN LINK FENCE, See Plan for Heights
- EXISTING CHAIN LINK FENCE, See Plan for Heights
- ORNAMENTAL FENCE, See Plan for Heights
- EXISTING ORNAMENTAL FENCE, See Plan for Heights
- EXISTING BUILDING TO REMAIN
- NEW PAVING
- NEW VEGETATION
- EXISTING PAVING TO REMAIN
- EXISTING VEGETATION TO REMAIN
- EXISTING VEGETATION TO BE REMOVED
- DEDICATION PAVERS
- ITEM TO BE REMOVED
- PROPERTY LINE

SITE KEYNOTE SCHEDULE

NUMBER	NOTE TEXT
SN1	RELOCATED BAND TOWER AND NEW BASE
SN2	50' DOUBLE TRAFFIC GATE
SN3	DOUBLE GATE. REF. DOOR SCHEDULE
SN4	CROSSWALK STRIPING
SN5	8'H BLACK VINYL CHAINLINK FENCE
SN6	BLACK VINYL CHAINLINK FENCE. MATCH EXISTING HEIGHT
SN7	BUILT-IN CONCRETE BENCHES
SN8	RAMP WITH TRUNCATED DOMES
SN9	BAND FIELD STRIPING; 4-INCH WIDE, WHITE
SN10	SAND BED FOR 12" x 12" GRANITE DEDICATION PAVERS 2 1

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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT MONIKA C. CASTILLO 28555 STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 3	10/17/2025
2	Addendum 4	10/22/2025

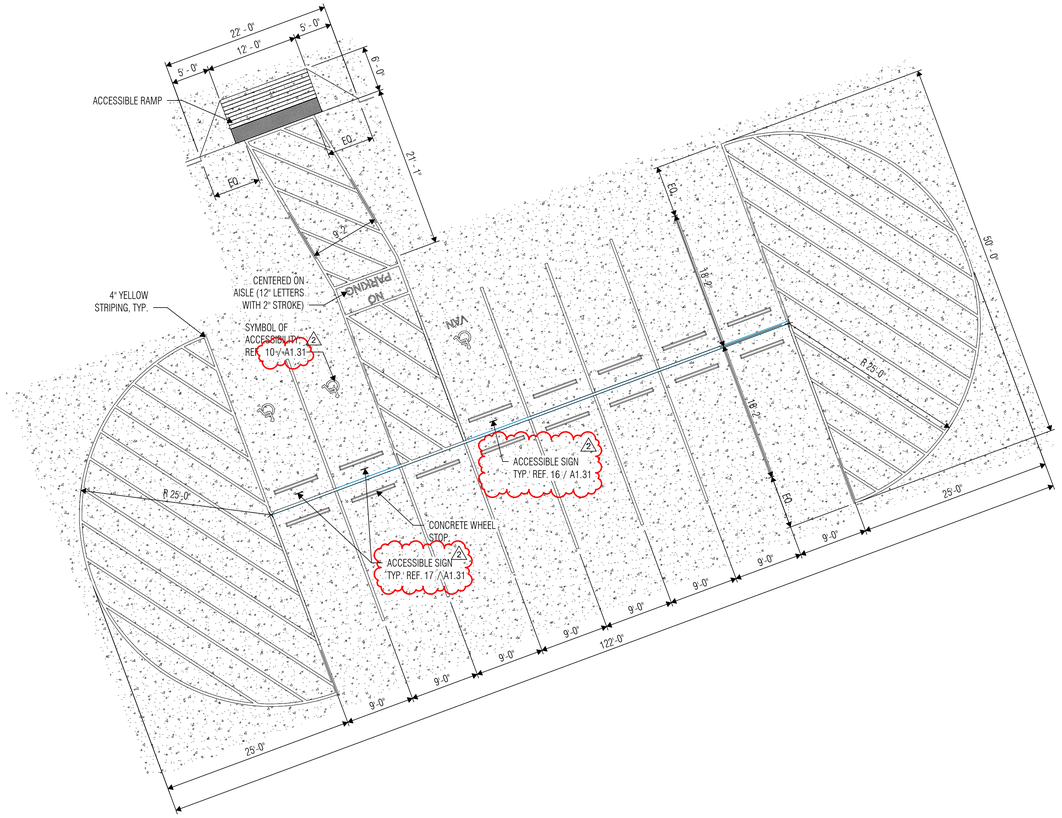
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

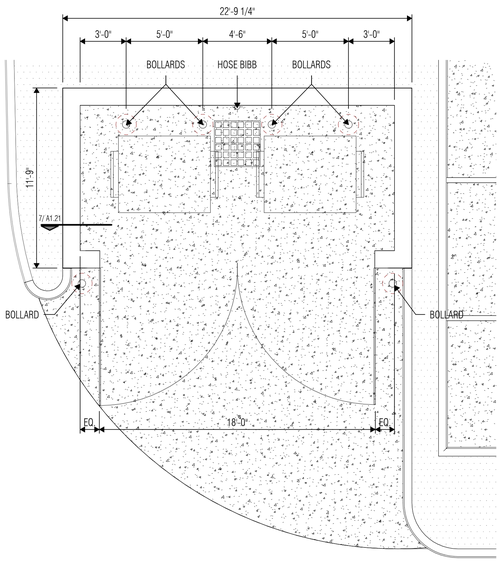
SHEET TITLE
OVERALL SITE PLAN

SHEET NO.
A1.11

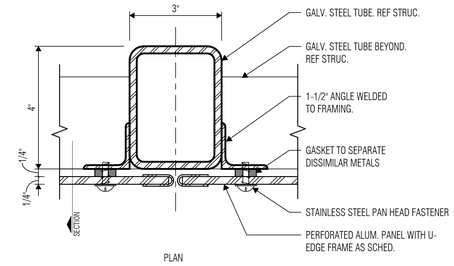
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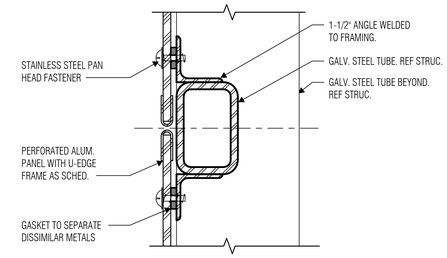
1 STRIPING SPACE 1
SCALE: 1/8" = 1'-0"



2 DUMPSTER LAYOUT
SCALE: 1/4" = 1'-0"

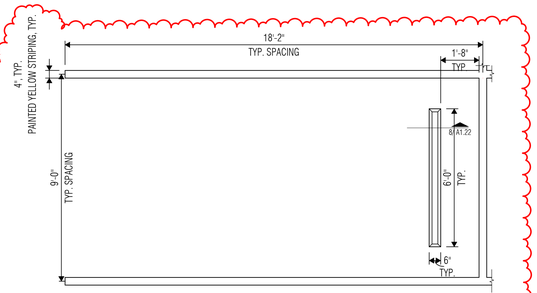


PLAN



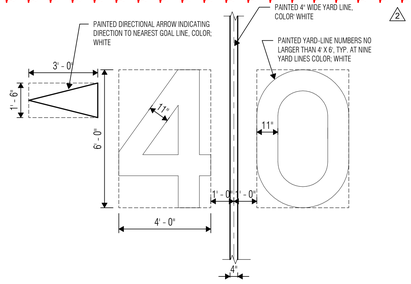
SECTION

3 PERFORATED PANEL ATTACHMENT
SCALE: 6" = 1'-0"

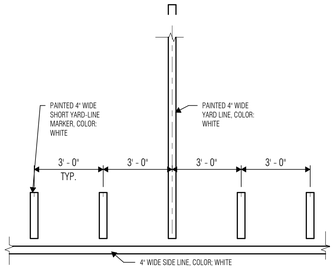


8 PRECAST CONC. WHEELSTOP
SCALE: 1 1/2" = 1'-0"

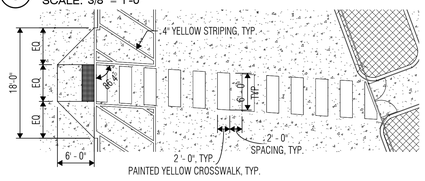
9 TYPICAL PARKING SPACE
SCALE: 3/8" = 1'-0"



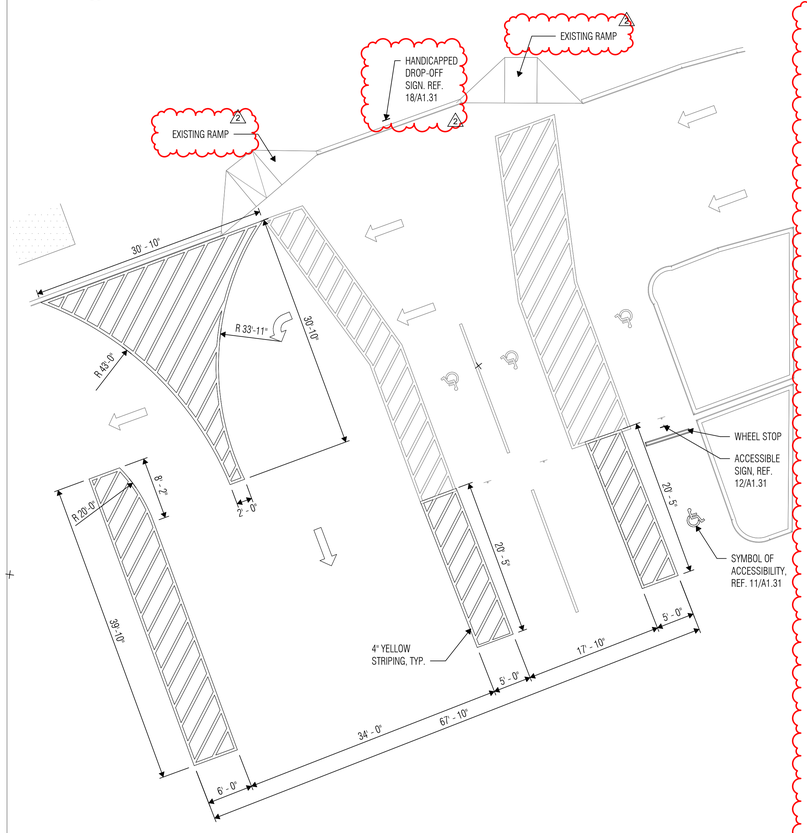
5 DETAIL AT YARD-LINE NUMBERS
SCALE: 3/8" = 1'-0"



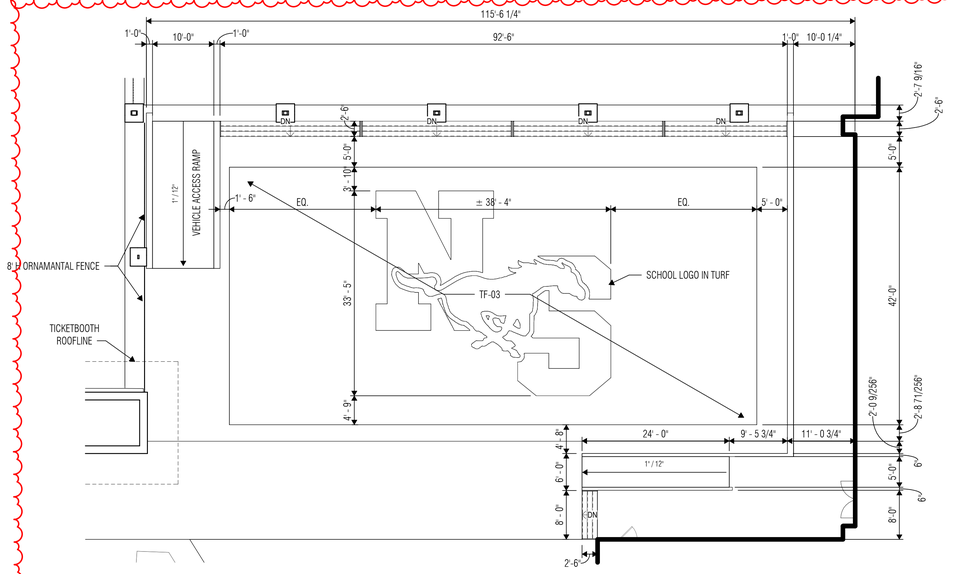
6 DETAIL AT SIDELINES
SCALE: 3/8" = 1'-0"



7 CROSSWALK DETAIL
SCALE: 1" = 10'-0"



4 STRIPING SPACE 2
SCALE: 1/8" = 1'-0"



10 GAME DAY PLAZA
SCALE: 1" = 10'-0"

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North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT MONIKA C. CASTILLO 26558 STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 3	10/17/2025
2	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.

25-0056.00

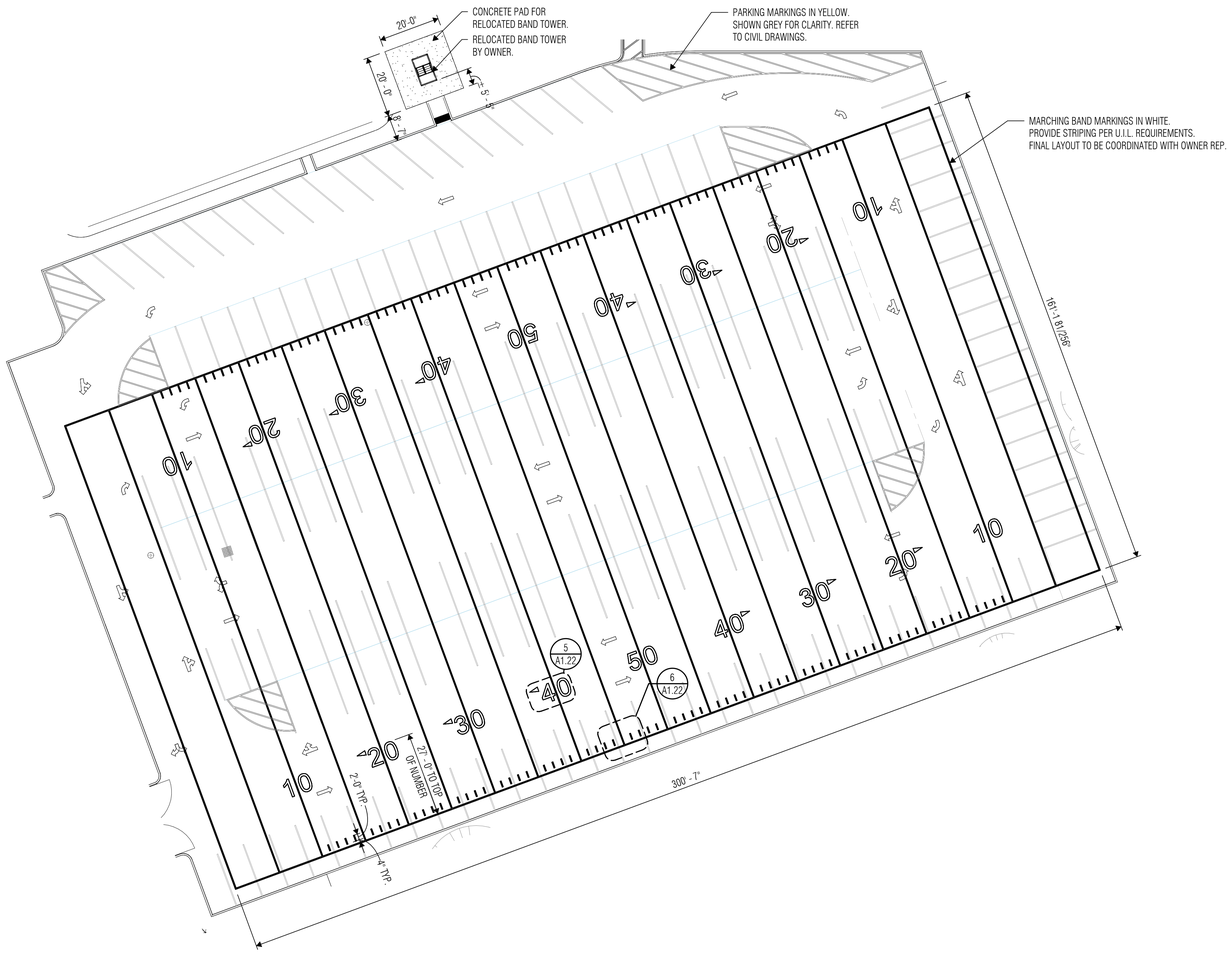
SHEET TITLE

ENLARGED ARCHITECTURAL SITE PLANS AND DETAILS

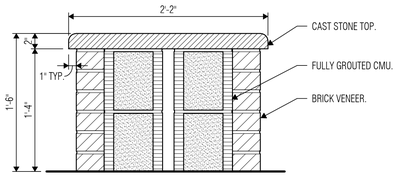
SHEET NO.

A1.22

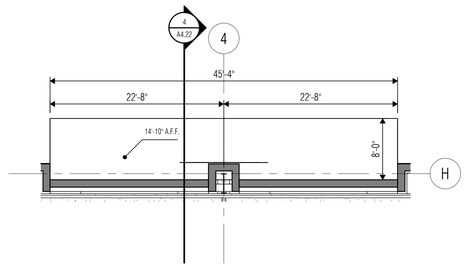
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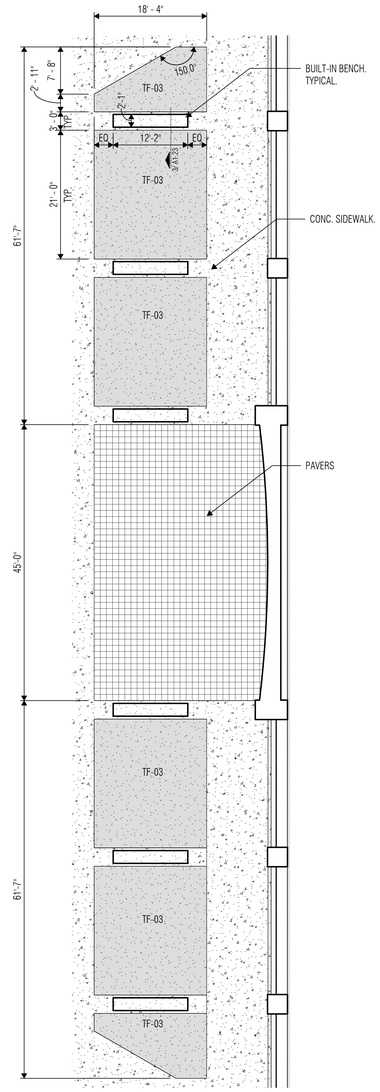
1 MARCHING BAND LOT
SCALE: 1" = 20'-0"



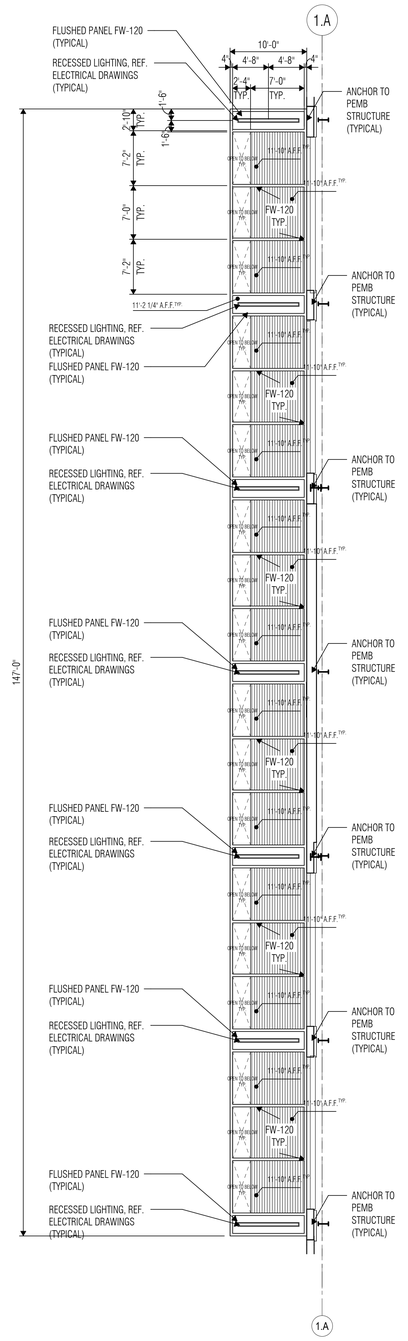
2 TYPICAL CHAMPION PLAZA BENCH
SCALE: 1 1/2" = 1'-0"



3 CANOPY - ALTERNATE
SCALE: 1/8" = 1'-0"



4 ENL SITE PLAN CHAMPION'S PLAZA
SCALE: 1" = 10'-0"



5 CANOPY D (ALTERNATE)
SCALE: 1/8" = 1'-0"

ARCHITECT

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HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT MONIKA C. CASTILLO 28555 STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 22, 2025

REVISIONS

Revision No.	Revision Date

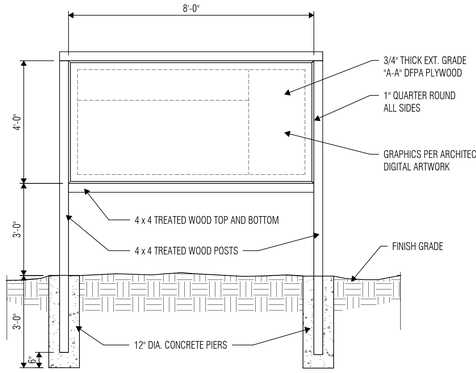
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
ENLARGED ARCHITECTURAL SITE PLANS AND DETAILS

SHEET NO.
A1.23

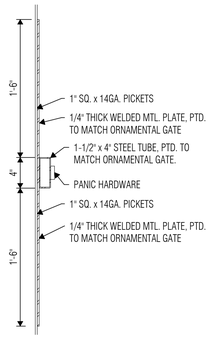
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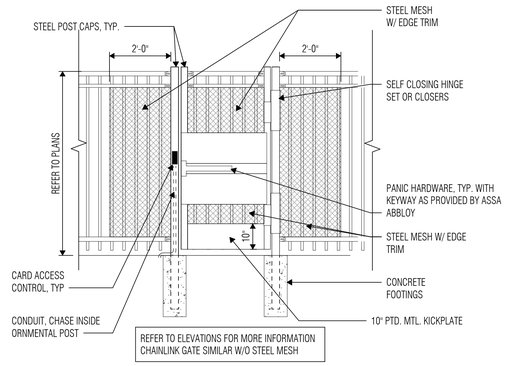
NOTES:
1. Sign shall be two-sided. Both sides of sign shall be identical.
2. All exposed surfaces shall be painted.
3. G.C. shall erect project sign within 30 days of start of work at jobsite.
4. G.C. shall remove sign upon substantial completion.
5. Submit shop drawing of proposed sign for approval prior to fabrication.

MC602

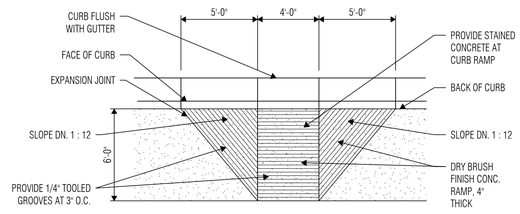
1 MC602 - PROJECT SIGN ELEVATION
SCALE: 1/2" = 1'-0"



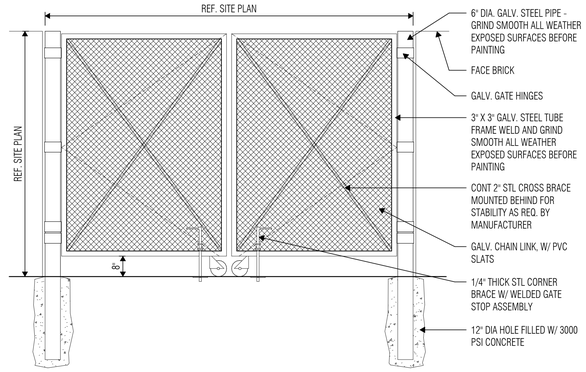
2 ORNAMENTAL EGRESS GATE
SCALE: 1 1/2" = 1'-0"



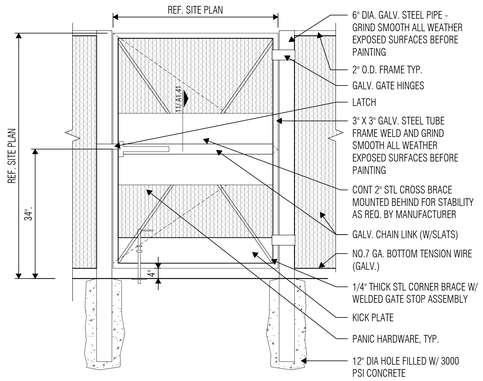
3 ORNAMENTAL GATE
SCALE: 1/2" = 1'-0"



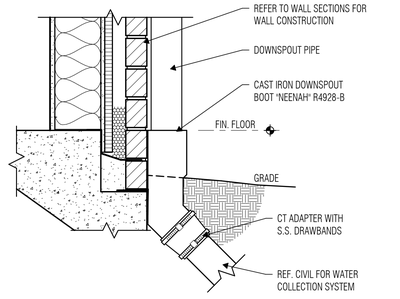
4 CURB RAMP PLAN
SCALE: 1/4" = 1'-0"



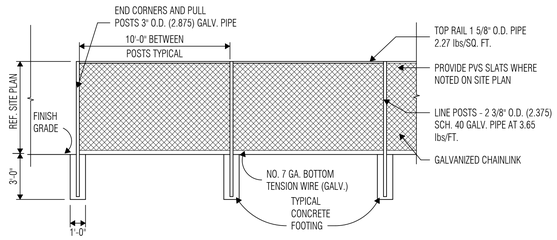
6 CHAINLINK FENCE DOUBLE GATE
SCALE: 1/2" = 1'-0"



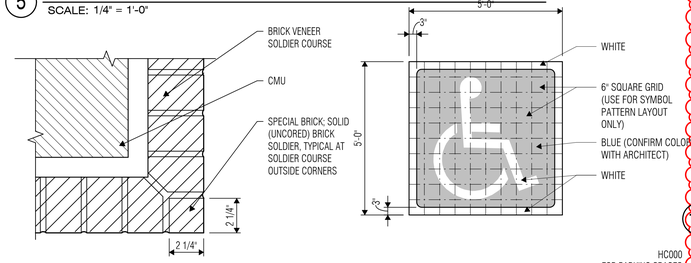
7 CHAINLINK FENCE GATE
SCALE: 1/2" = 1'-0"



8 MC611 - DOWNSPOUT BOOT
SCALE: 1 1/2" = 1'-0"

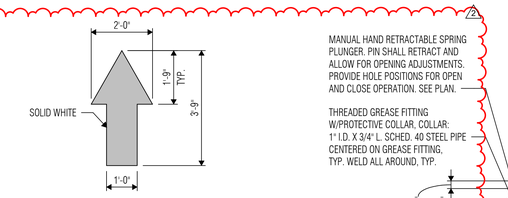


5 CHAINLINK FENCE
SCALE: 1/4" = 1'-0"



9 SOLDIER COURSE OUTSIDE CORNER
SCALE: 3" = 1'-0"

10 SYMBOL OF ACCESSIBLITY
SCALE: 1/2" = 1'-0"

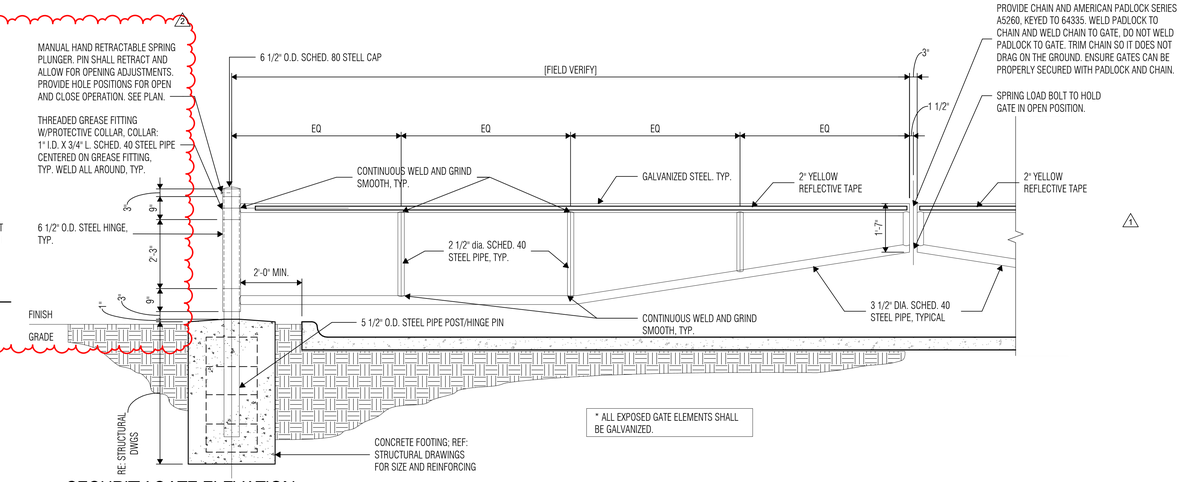


MANUAL HAND RETRACTABLE SPRING PLUNGER. PIN SHALL RETRACT AND ALLOW FOR OPENING ADJUSTMENTS. PROVIDE HOLE POSITIONS FOR OPEN AND CLOSE OPERATION. SEE PLAN.

THREADED GREASE FITTING W/PROTECTIVE COLLAR, COLLAR: 1"I.D. X 3/4" L. SCHED. 40 STEEL PIPE CENTERED ON GREASE FITTING, TYP. WELD ALL AROUND, TYP.

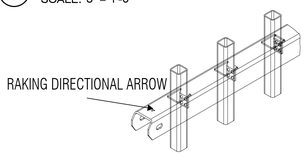
NOTE:
APPLY PAINT WITH MECHANICAL EQUIPENT TO PRODUCE UNIFORM STRAIGHT EDGES. APPLY IN 4" WIDE PASSES AT A SPREADING RATE NO GREATER THAN 100 SF PER GALLON TO PROVIDE MINIMUM 5 TO 8 MIL DRY THICKNESS.

11 DIRECTIONAL ARROW DETAIL
SCALE: 1/2" = 1'-0"

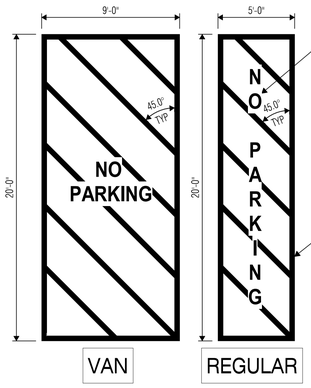


* ALL EXPOSED GATE ELEMENTS SHALL BE GALVANIZED.

12 SECURITY GATE ELEVATION
SCALE: 1/2" = 1'-0"



13 RAKING DIRECTION
SCALE: 3/8" = 1'-0"



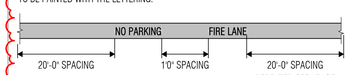
THE WORDS "NO PARKING" PAINTED ON ANY ACCESS AISLE ADJACENT TO THE PARKING SPACE. THE WORDS MUST BE PAINTED:
- IN ALL CAPITAL LETTERS
- WITH A LETTER HEIGHT OF AT LEAST TWELVE INCHES, AND A STROKE WIDTH OF AT LEAST TWO INCHES
- CENTERED WITHIN EACH ACCESS AISLE ADJACENT TO THE PARKING SPACE

4" WIDE PAINTED YELLOW STRIPING. REFER TO SPECIFICATIONS FOR PAVEMENT MARKINGS FOR PAINT TYPE INFORMATION

NOTE: PARKING SPACES AND ACCESS AISLE SLOPE NOT TO EXCEED 2% IN ANY DIRECTION

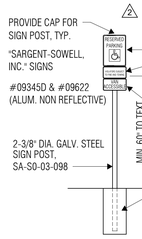
NOTE:
WHERE RED STRIPE INTERSECTS WITH A CURB LINE, PAINT FACE AND TOP OF CURB RETURN. PAINT 4 INCH HIGH LETTERING WITH A 1 INCH STROKE CENTERED ON RED STRIPE SHALL READ: "NO PARKING" - "FIRE LANE". THIS LETTERING SHALL BE PAINTED EVERY 20 FEET AS MEASURED FROM THE END OF ONE LETTERING GROUP TO THE BEGINNING OF THE NEXT GROUP WITH A 1 FOOT SPACE BETWEEN 'NO PARKING' AND 'FIRE LANE'.

DISCLAIMER: QUOTES THAT ARE USED IN THIS DESCRIPTION IS FOR EMPHASIS ONLY AND ARE NOT TO BE PAINTED WITH THE LETTERING.

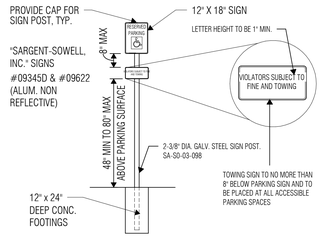


14 FIRE LANE STRIPING
SCALE: 1/2" = 1'-0"

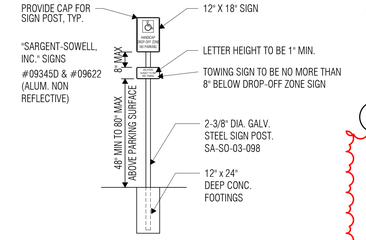
15 ACCESS STRIPING DETAIL
SCALE: 1/4" = 1'-0"



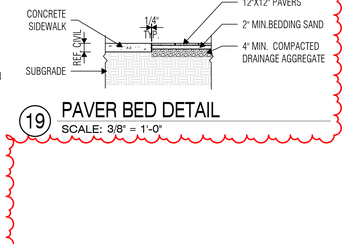
16 ADA PARKING SIGN - VAN
SCALE: 3/8" = 1'-0"



17 ADA PARKING SIGN
SCALE: 3/8" = 1'-0"



18 HANDICAP DROP-OFF ZONE
SCALE: 3/8" = 1'-0"



19 PAVER BED DETAIL
SCALE: 3/8" = 1'-0"

PROVIDE CHAIN AND AMERICAN PADLOCK SERIES A5260, KEYED TO 64335. WELD PADLOCK TO CHAIN AND WELD CHAIN TO GATE. DO NOT WELD PADLOCK TO GATE. TRIM CHAIN SO IT DOES NOT DRAG ON THE GROUND. ENSURE GATES CAN BE PROPERLY SECURED WITH PADLOCK AND CHAIN.

SPRING LOAD BOLT TO HOLD GATE IN OPEN POSITION.

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GALENA PARK ISD
HOUSTON, TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 3	10/17/2025
2	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
ARCHITECTURAL SITE DETAILS

SHEET NO.
A1.31

North Shore Multi-Use Indoor Facility

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KEY NOTE SCHEDULE

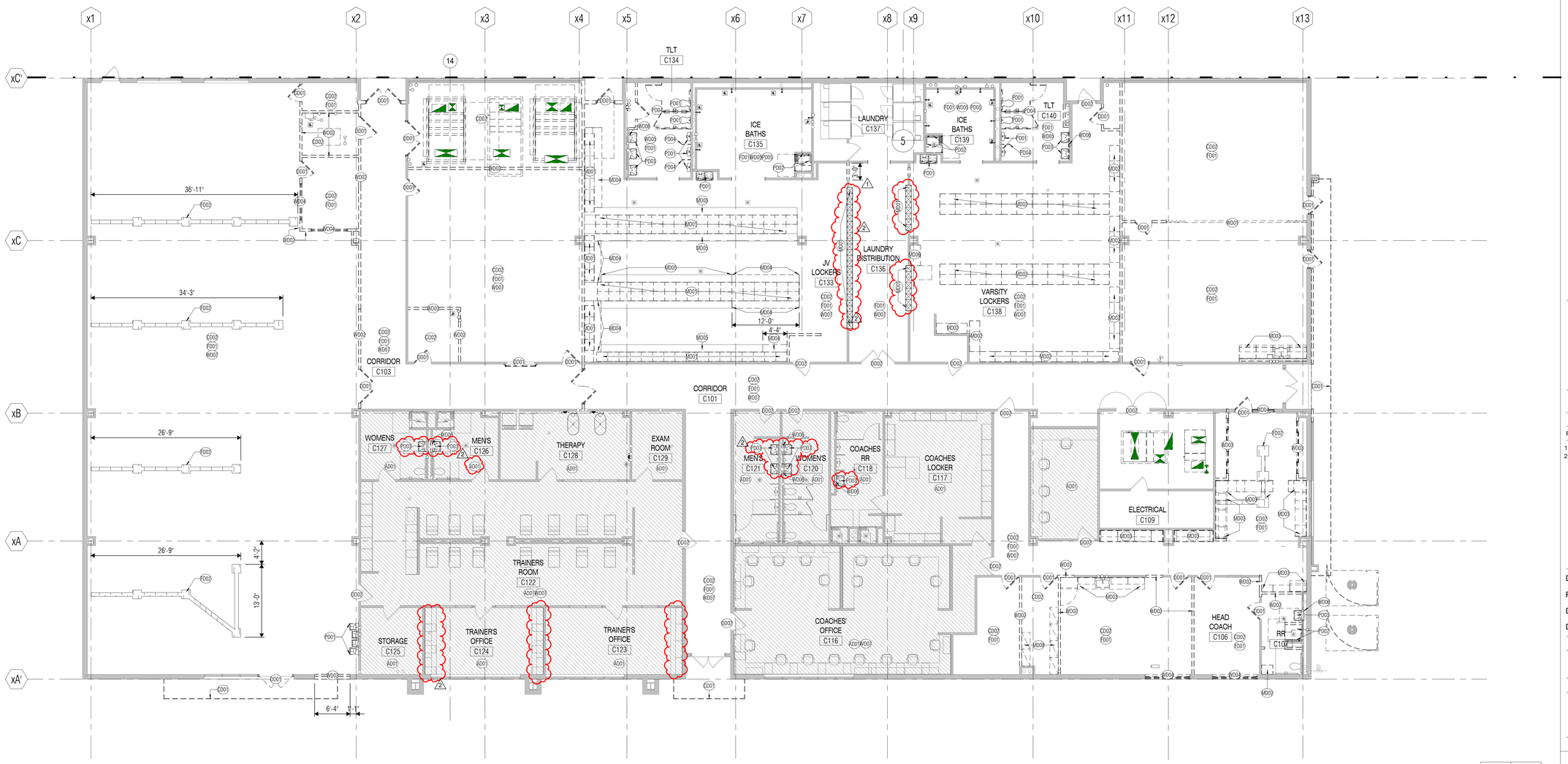
NUMBER	NOTE TEXT
AD01	ALTERNATE: REMOVE EXISTING FLOOR FINISH, BASE AND CASEWORK. REMOVE ALL PLUMBING FIXTURES, SHOWERS, TOILET PARTITIONS, AND ALL ACCESSORIES. REMOVE LOCKERS. REMOVE EXSITING CEILING SYSTEM, LIGHTS, AND DEVICES. PREPARE WALLS AND DOOR FRAMES TO RECEIVE PAINT. PREPARE FLOORS TO RECEIVE NEW FINISHES AND CASEWORK. PREPARE TO RECEIVE NEW CEILING SYSTEM, LIGHTS, AND DEVICES.
CD01	REMOVE CANOPY
CD02	REMOVE EXISTING CEILING SYSTEM, LIGHTS AND DEVICES
DD01	CAREFULLY REMOVE AND PROPERLY DISPOSE OF DOOR, HARDWARE, AND FRAME. PREPARE AREA TO RECEIVE NEW CONSTRUCTION.
DD02	PREPARE EXISTING DOOR FRAME AND VISION LITES TO RECEIVE PAINT.
FD01	REMOVE EXISTING FLOOR FINISH AND BASE. CLEAN AND PREPARE EXISTING CONCRETE FOR INSTALLATION OF NEW FINISH AS SCHEDULED
FD02	TRENCH THROUGH EXISTING FLOOR FOR NEW ELECTRICAL WORK. REF: ELEC DWGS.
MD01	EXISTING LOCKERS TO BE REMOVED; CONCRETE BENCHES TO BE SALVAGED.
MD02	CAREFULLY REMOVE AND PROTECT LOCKERS IN PREPARATION FOR RELOCATION. RE: RESPECTIVE UNIT FLOOR PLAN FOR NEW LOCATION.
MD03	REMOVE CASEWORK AND PREPARE AREA FOR NEW CONSTRUCTION.
MD04	REMOVE EXISTING CONCRETE BENCH & PATCH FLOOR TO MATCH EXISTING
MD05	EXISTING CONCRETE BENCH TO REMAIN
MD06	REMOVE ADA BENCH AND PREPARE FLOOR FOR NEW CONSTRUCTION
MD08	SALVAGE METAL SHELVING AND PREPARE AREA FOR NEW CONSTRUCTION.
PD01	REMOVE EXISTING PLUMBING FIXTURE.
PD02	REMOVE SHOWER FIXTURE, GRAB BAR AND BENCH TO PREPARE FOR NEW CONSTRUCTION
PD03	REMOVE SINK AND MIRROR PREPARE FOR NEW CONSTRUCTION
PD04	REMOVE EXISTING PARTITION AND PLUMBING ACCESSORIES.
PD05	REMOVE EXISTING SHOWER FIXTURES.
WD01	REMOVE PARTITION WALL AND PREPARE AREA FOR NEW CONSTRUCTION.
WD02	REMOVE STUD WALL AND PREPARE AREA FOR NEW CONSTRUCTION.
WD03	REMOVE DISPLAY CASE AND WALL. PREPARE AREA FOR NEW CONSTRUCTION.
WD04	REMOVE STOREFRONT AND PREPARE AREA FOR NEW CONSTRUCTION.
WD05	REMOVE EXISTING WALL TILE. PATCH AND REPAIR WALL AS NEEDED TO RECEIVE NEW FINISHES.
WD06	REMOVE PORTION OF WET WALL AS NEEDED TO COMPLETE PLUMBING SCOPE OF WORK.
WD07	REMOVE EXISTING WALL FINISHES AND ROOM SIGNAGE. LEAVE SUBSTRATE SUITABLE FOR NEW FINISH.

DEMOLITION NOTES

1. Drawings show the general extent of demolition work, however it is impractical to indicate or note every item of demolition. Any items shown dashed are to be removed to make way for new construction, unless noted otherwise.
2. Existing materials containing asbestos to be removed under separate contract prior to construction by Owner's asbestos abatement contractor.
3. Contact the Owner prior to the start of demolition to determine items to be salvaged and returned to Owner.
4. Protect items to remain from damage during demolition.
5. Repair or replace at no cost to the Owner any damages to the existing building and site as a result of construction activities.
6. Refer to electrical and mechanical demolition plan for additional information.
7. Patch/repair flooring to match existing at all removed or demolished doors, windows, walls, millwork, lockers and similar items.

DEMOLITION LEGEND

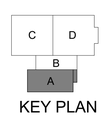
A ALTERNATE



TRUE NORTH

1 DEMO FLOOR PLAN - LEVEL ONE - UNIT A

SCALE: 1/8" = 1'-0"



KEY PLAN

VLK

ARCHITECT

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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT MONIKA C. CASTILLO 26508 STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 3	10/17/2025
2	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.

25-0056.00

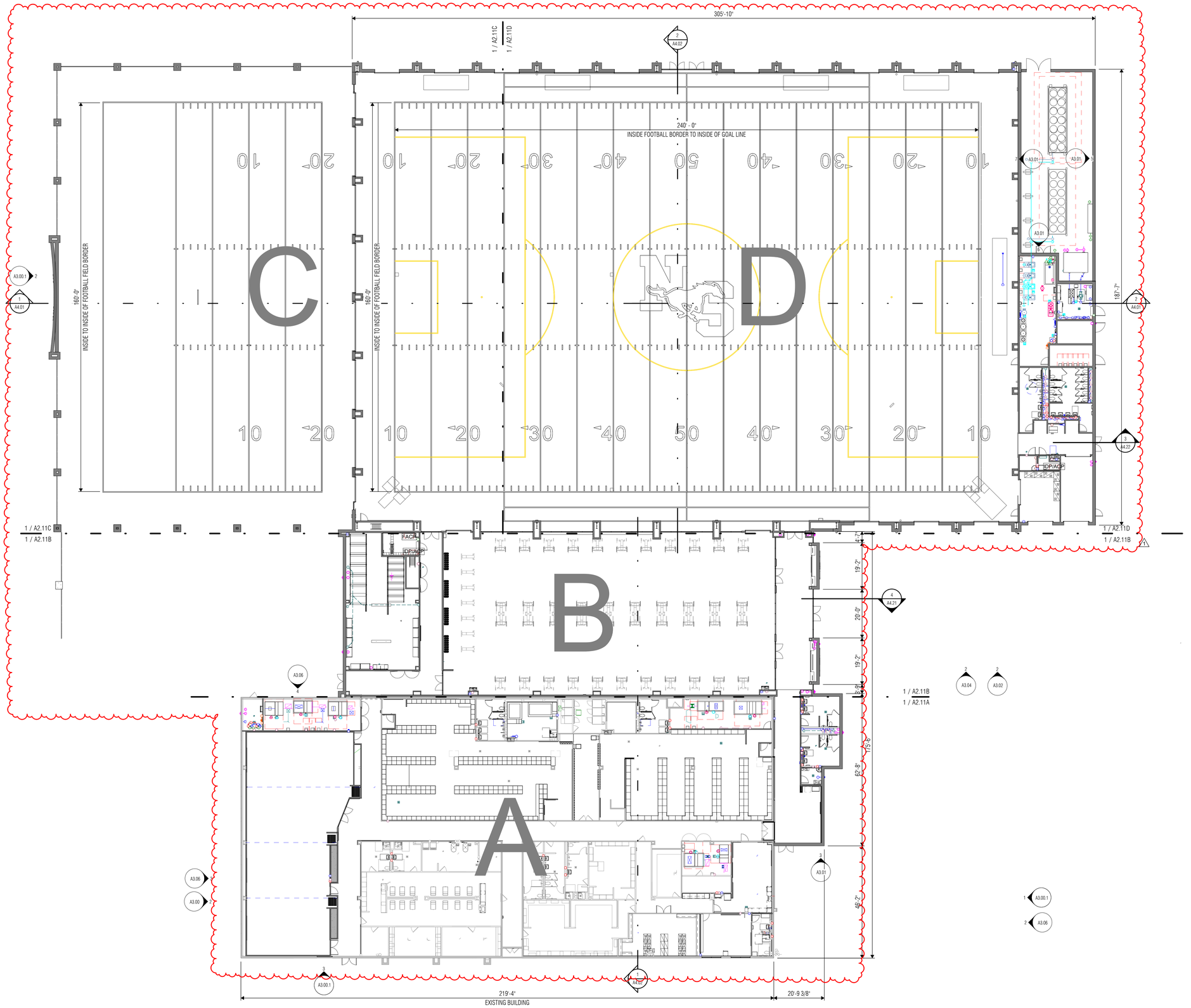
SHEET TITLE

DEMO FLOOR PLAN - LEVEL ONE - UNIT A

SHEET NO.

A2.01

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1 OVERALL FLOOR PLAN - LEVEL ONE

SCALE: 1/16" = 1'-0"

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STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.

25-0056.00

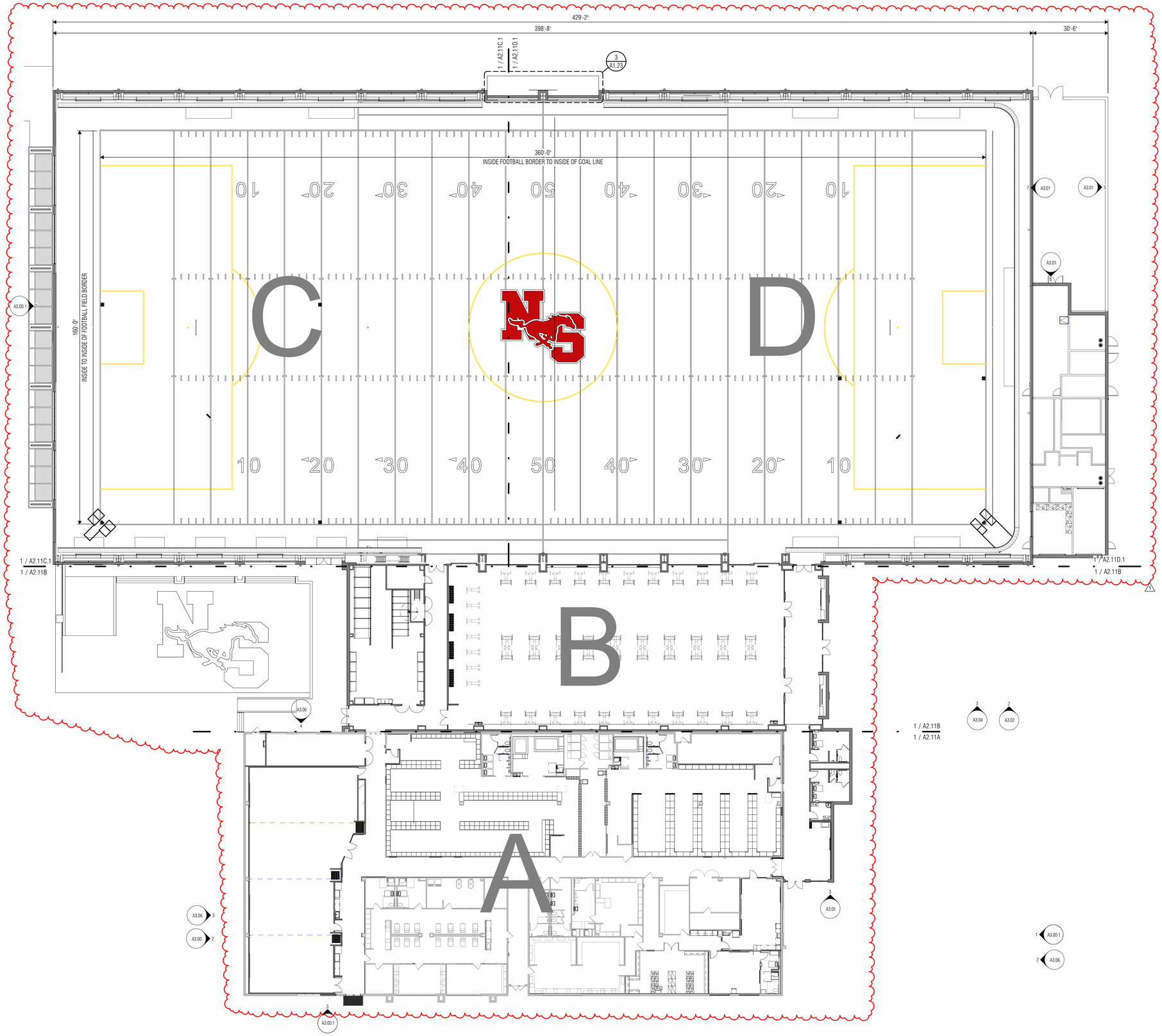
SHEET TITLE

ORIENTATION PLAN - LEVEL ONE

SHEET NO.

A2.11

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1 OVERALL FLOOR PLAN - LEVEL ONE - ALTERNATE
SCALE: 1/16" = 1'-0"

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10/22/2025

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REVISIONS

Revision No.		Revision Date
1	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.

25-0056.00

SHEET TITLE

ORIENTATION PLAN - LEVEL ONE - ALTERNATE

SHEET NO.

A2.11.1

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KEY NOTE SCHEDULE

NUMBER	NOTE TEXT
F01	SALVAGED LOCKERS RELOCATION
F02	22" X 44" ADA BENCH
F03	EXISTING CONCRETE BENCH
F04	CONCRETE BENCH TO MATCH EXISTING
F05	2 REFRIGERATOR, OFOI
F06	MICROWAVE ABOVE, OFOI
F07	WHIRLPOOL, MODEL 6206 1
F08	WARMING CABINET, OFOI
F09	COOLER, OFOI
F10	LOW PROFILE GARBAGE DISPOSAL
F11	UNDERCOUNTER BEVERAGE COOLER
F12	LAUNDRY CHUTE
F13	ALTERNATE: PAINT ALL WALLS AND DOOR FRAMES. REPLACE PLUMBING FIXTURES, FLOORING, AND CASEWORK
F14	ALTERNATE: PREFABRICATED CASEWORK; REF. DW-100.1 THRU DW-400.1
F15	RELOCATED EXISTING LOCKER
F16	RELOCATED EXISTING METAL SHELVING UNITS
F17	DOUBLE TIER CLOTHES ROD W/SHELF
F18	2 1 INFILL EXISTING OPENING WITH 6" CMU AND METAL STUDS. REF WALL SECTION DETAIL
F19	DIGITAL EMPLOYEE TIME CLOCK, OFCI
F20	PREFABRICATED WALL SYSTEM; REF. DW-100.1 THRU DW-400.1
F21	PREFABRICATED CASEWORK; REF. DW-100.1 THRU DW-400.1
F22	2 TV DISPLAY, OFCI
F23	PATCH HOLE AT EXISTING GYP. WALL
F24	PROVIDE PRIVACY FILM FOR STOREFRONT
F25	PREFABRICATED WALKWAY COVER ABOVE; REF. 15/A1.21
F26	UNDERCOUNTER ICE MAKER
F27	PAPER TOWEL DISPENSER; OFCI
F28	SOAP DISPENSER; OFCI 1
F29	WHIRLPOOL, MODEL 6204
F30	LOCKER FILLER PANEL
F31	1 INFILL EXISTING TRENCH WITH CONCRETE
F32	FOLDING PARTITION. COORDINATE STRUCTURE ABOVE.
F33	DRINKING FOUNTAIN WITH BOTTLE FILLER
F34	INTERACTIVE MARKER BOARD. PROVIDE POWER AND DATA. REF: CONSULTANT DWGS.
F35	2 20" X 42" ADA BENCH

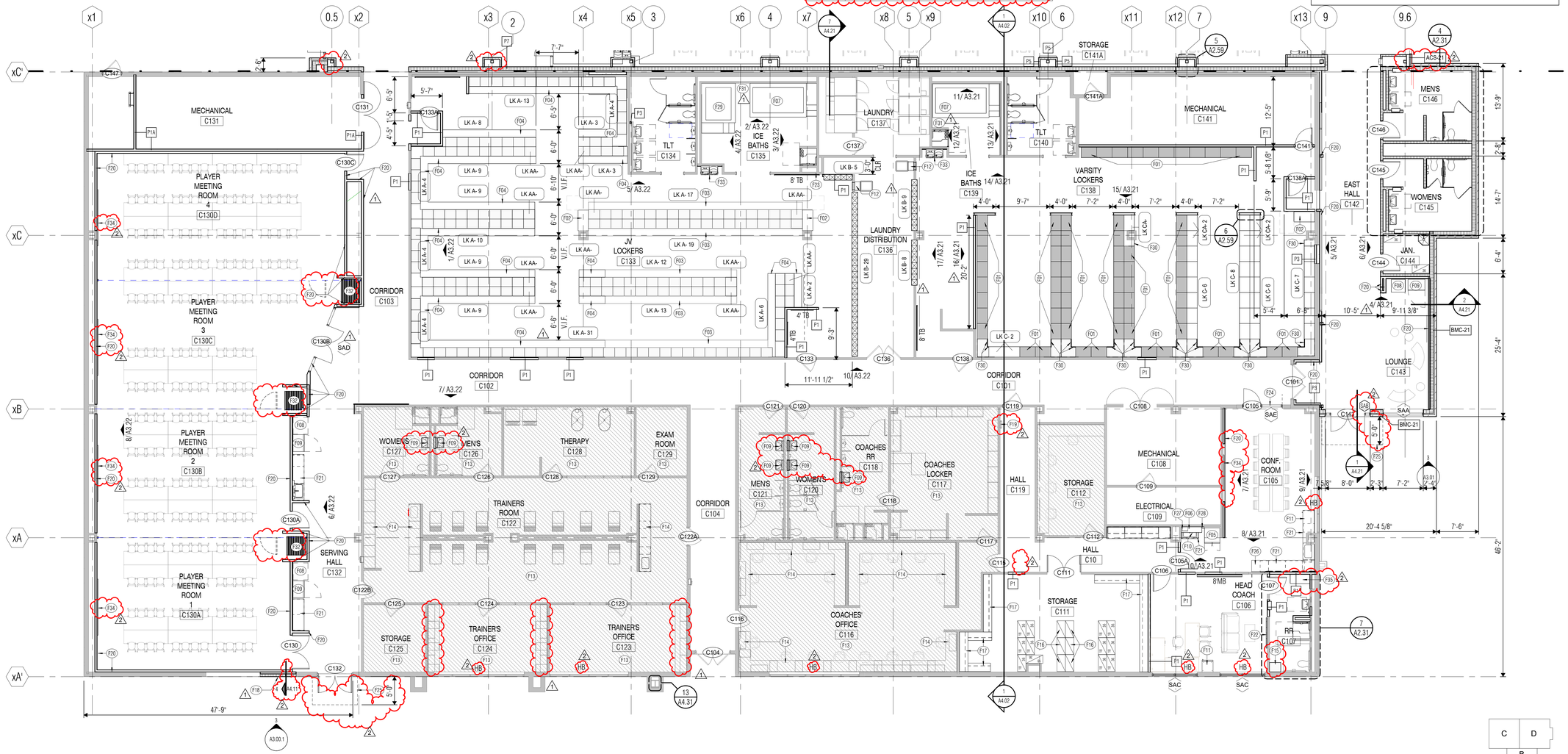
FLOOR PLAN LEGEND

- METAL STUD PARTITION. Extend 4" above highest ceiling plane and brace to structure above as noted in Floor Plan Notes. Refer to Life Safety and Floor Plan sheets for fire, smoke and sound-conditioned partitions that extend to deck above.
- CMU PARTITION. Extend 4" above highest ceiling plane and brace to structure above as detailed. Refer to Life Safety and Floor Plan sheets for fire, smoke and sound-conditioned partitions that extend to deck above.
- LKA-4 — LOCKER TYPE; For locker types, ref. 1 / A2.23; LOCKER QUANTITY
- FURNITURE, FIXTURE OR EQUIPMENT BY OWNER. Coordinate with adjacent electrical devices, casework, etc.
- 18 / 36 — METAL SHELVING UNIT. Depth/width as shown.
- ALTERNATE

MB	MARKERBOARD. Preceding number is length, in feet.
GMB	GLASS MARKERBOARD. Preceding number is length, in feet.
TB	TACKBOARD. Preceding number is length, in feet.
MW	MARKERWALL. Refer to Finish Plans for dimensions.
FE	FIRE EXTINGUISHER WITH CABINET AND BRACKET
HB	HORIZONTAL BLINDS; EXCLUDE ALL TRANSOMS 2
DS	DOWNSPOUT

FLOOR PLAN NOTES

1. Primary Ground Level floor elevation is 33.50' (Mean Sea Level), which equals to 100'-0" datum.
2. Dimensions on Floor Plans are to face of stud or CMU unless noted otherwise.
3. Coordinate the location of electrical devices with casework, millwork, lockers, etc. Any electrical device that is not properly coordinated shall be relocated at no additional cost.
4. Exterior wall construction is identified on the Wall Sections. Refer to the A4 series sheets for Wall Sections, and to Sheet A4.11 for Exterior Wall Assemblies.
5. Refer to Exterior Elevation Notes for control joint requirements at all inside corners of masonry veneer.
6. Refer to Sheet A2.21 for Partition Types.
7. Interior partitions are Type "P6" unless noted otherwise.
8. Refer to Detail 4 / A0.21 for Typical Door Maneuvering Clearances. All new doors shall meet the requirements of that detail. If any door is found that does not comply with these requirements, request clarification from the Architect prior to construction.
9. Refer to Sheet 10 / A2.22 for Typical Gypsum Board Control Joint Details at all CFS and light-gage steel stud partition openings.
10. Refer to Sheet A2.22 for Typical Partition Penetration Details, including pipe, conduit and ductwork penetrations.
11. Refer to Sheet A2.22 for Typical Bracing at Non-Loadbearing CMU Partitions.
12. Refer to Exterior Elevations for exact locations of downspouts.
13. Provide factory bullnose units at all interior exposed vertical edges of CMU, except at starter course with applied base material where square-edge units shall be provided in lieu of bullnose units.
14. Provide 8" starter courses at all CMU walls and partitions unless noted otherwise.
15. Provide steel or masonry lintels over all openings in CMU walls, including those required for mechanical ductwork and dampers, whether specifically indicated on the drawings or not.
16. Provide minimum 20 gage (33 mils) light-gage steel studs at all interior partitions scheduled to receive ceramic tile, plaster, abuse-resistant gyp board or impact-resistant gyp board.
17. Provide minimum 18 (43 mils) gage cold-formed steel studs at all interior partitions scheduled to receive anchored masonry or stone veneer as well as interior partitions with steel plate or steel sheet X-bracing.
18. Provide minimum 18 gage (43 mils) cold-formed steel studs as designed by stud engineer for all interior partiti1ons scheduled to receive adhered masonry or stone veneer.
19. At light-gage steel stud partitions that extend above the ceiling, provide diagonal 20 (30 mils) gage stud braces at 4'-0" o.c. to structure above (not to steel deck) as required to provide rigid anchorage and support of partitions.
20. Provide minimum 2 X 6 fire-retardant treated wood blocking in both new and existing stud walls and partitions, at mounting locations for wall-mounted accessories, handrails, casework, markerboards, tackboards, folding partitions, toilet partitions, and all other wall-mounted items. Refer to Sheet 12 / A2.22for typical blocking requirements at various conditions.
21. At Mechanical, Electrical and Boiler Room partitions, seal tightly around all penetrations. Utilize fire safing material at rated partitions.
22. Provide sealant and/or fire safing at all floor penetrations, as applicable.



1 FLOOR PLAN - LEVEL ONE - UNIT A
SCALE: 1/8" = 1'-0"

TRUE NORTH

KEY PLAN

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MONIKA C. CASTILLO — REGISTERED ARCHITECT — 26598 — STATE OF TEXAS
10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
1 Addendum 3	10/17/2025
2 Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.

25-0056.00

SHEET TITLE

FLOOR PLAN - LEVEL ONE - UNIT A

SHEET NO.

A2.11A

North Shore Multi-Use Indoor Facility

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FLOOR PLAN NOTES

1. Primary Ground Level floor elevation is 33.50' (Mean Sea Level), which equals to 100'-0" datum.
2. Dimensions on Floor Plans are to face of stud or CMU unless noted otherwise.
3. Coordinate the location of electrical devices with casework, millwork, lockers, etc. Any electrical device that is not properly coordinated shall be relocated at no additional cost.
4. Exterior wall construction is identified on the Wall Sections. Refer to the A4 series sheets for Wall Sections, and to Sheet A4.11 for Exterior Wall Assemblies.
5. Refer to Exterior Elevation Notes for control joint requirements at all inside corners of masonry veneer.
6. Refer to Sheet A2.21 for Partition Types.
7. Interior partitions are Type "P6" unless noted otherwise.
8. Refer to Detail 4 / A0.21 for Typical Door Maneuvering Clearances. All new doors shall meet the requirements of that detail. If any door is found that does not comply with these requirements, request clarification from the Architect prior to construction.
9. Refer to Sheet 10 / A2.22 for Typical Gypsum Board Control Joint Details at all CFS and light-gage steel stud partition openings.
10. Refer to Sheet A2.22 for Typical Partition Penetration Details, including pipe, conduit and ductwork penetrations.
11. Refer to Sheet A2.22 for Typical Bracing at Non-Loadbearing CMU Partitions.
12. Refer to Exterior Elevations for exact locations of downspouts.
13. Provide factory bullnose units at all interior exposed vertical edges of CMU, except at starter course with applied base material where square-edge units shall be provided in lieu of bullnose units.
14. Provide 8" starter courses at all CMU walls and partitions unless noted otherwise.
15. Provide steel or masonry lintels over all openings in CMU walls, including those required for mechanical ductwork and dampers, whether specifically indicated on the drawings or not.
16. Provide minimum 20 gage (33 mils) light-gage steel studs at all interior partitions scheduled to receive ceramic tile, plaster, abuse-resistant gyp board or impact-resistant gyp board.
17. Provide minimum 18 (43 mils) gage cold-formed steel studs at all interior partitions scheduled to receive anchored masonry or stone veneer as well as interior partitions with steel plate or steel sheet X-bracing.
18. Provide minimum 18 gage (43 mils) cold-formed steel studs as designed by stud engineer for all interior partiti1ons scheduled to receive adhered masonry or stone veneer.
19. At light-gage steel stud partitions that extend above the ceiling, provide diagonal 20 (30 mils) gage stud braces at 4'-0" o.c. to structure above (not to steel deck) as required to provide rigid anchorage and support of partitions.
20. Provide minimum 2 X 6 fire-retardant treated wood blocking in both new and existing stud walls and partitions, at mounting locations for wall-mounted accessories, handrails, casework, markerboards, tackboards, folding partitions, toilet partitions, and all other wall-mounted items. Refer to Sheet 12 / A2.22for typical blocking requirements at various conditions.
21. At Mechanical, Electrical and Boiler Room partitions, seal tightly around all penetrations. Utilize fire safing material at rated partitions.
22. Provide sealant and/or fire safing at all floor penetrations, as applicable.

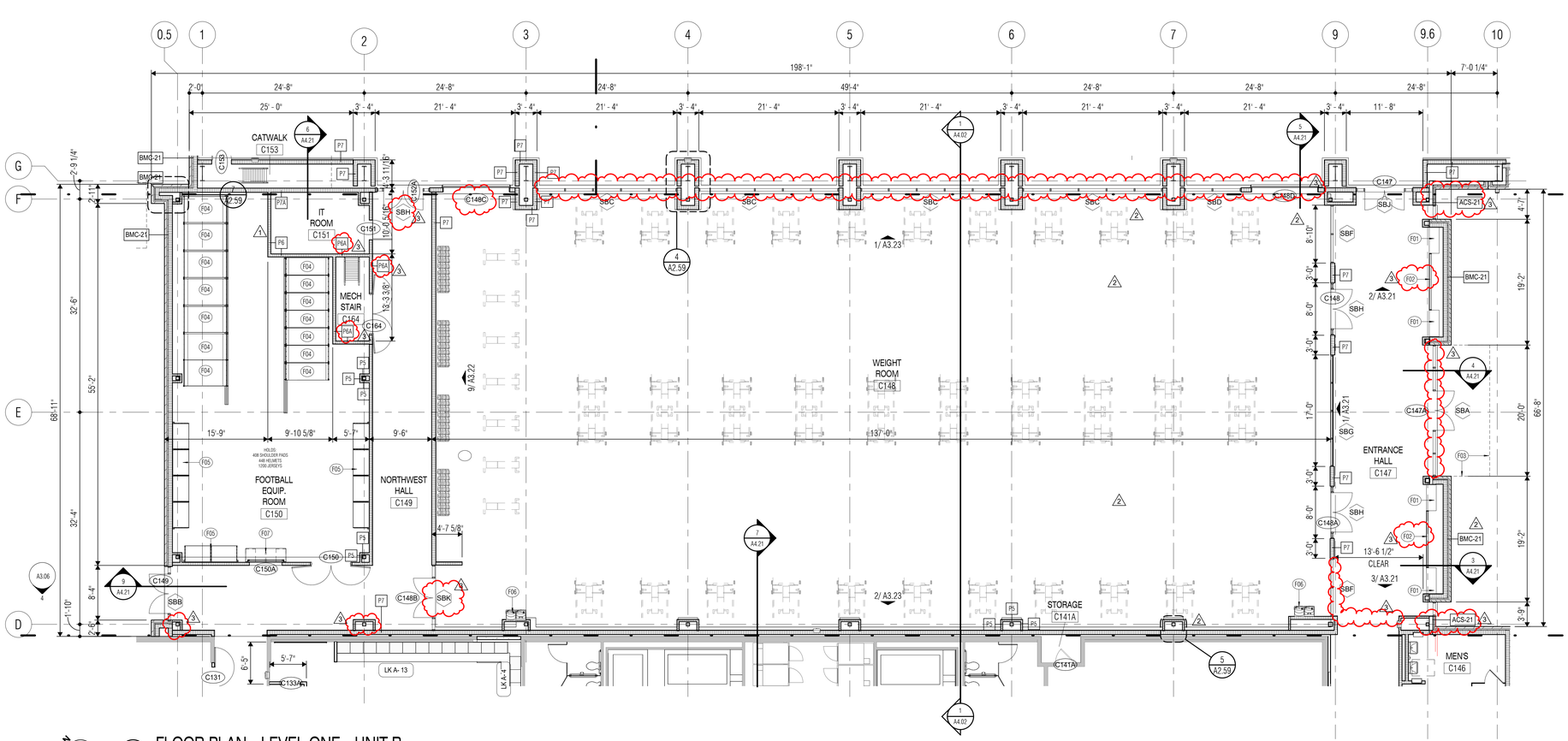
FLOOR PLAN LEGEND

- METAL STUD PARTITION. Extend 4" above highest ceiling plane and brace to structure above as noted in Floor Plan Notes. Refer to Life Safety and Floor Plan sheets for fire, smoke and sound-conditioned partitions that extend to deck above.
- CMU PARTITION. Extend 4" above highest ceiling plane and brace to structure above as detailed. Refer to Life Safety and Floor Plan sheets for fire, smoke and sound-conditioned partitions that extend to deck above.
- LOCKER TYPE (LKA-4) — For locker types, ref. 1 / A2.23 — LOCKER QUANTITY
- FURNITURE, FIXTURE OR EQUIPMENT BY OWNER. Coordinate with adjacent electrical devices, casework, etc.
- 18 / 36 — METAL SHELVING UNIT. Depth/width as shown.

MB	MARKERBOARD. Preceding number is length, in feet.
GMB	GLASS MARKERBOARD. Preceding number is length, in feet.
TB	TACKBOARD. Preceding number is length, in feet.
MW	MARKERWALL. Refer to Finish Plans for dimensions.
FEC	FIRE EXTINGUISHER WITH CABINET AND BRACKET
HB	HORIZONTAL BLINDS; EXCLUDE ALL TRANSOMS
RS	ROLLING WINDOW SHADES
DS	DOWNSPOUT

KEY NOTE SCHEDULE

NUMBER	NOTE TEXT
F01	DISPLAY CASE; REF. DW-100.1 THRU DW-400.1
F02	TV RECESSED INTO PREFAB WALL. TV TO BE OFCI; REF. CONSULTANT DWGS
F03	CANOPY ABOVE
F04	HIGH DENSITY STORAGE
F05	WALL MOUNTED ATHLETIC SHELVING
F06	DRINKING FOUNTAIN WITH BOTTLE FILLER
F07	PREFABRICATED CASEWORK; REF. DW-100.1 THRU DW-400.1



TRUE NORTH

1 FLOOR PLAN - LEVEL ONE - UNIT B
SCALE: 1/8" = 1'-0"

KEY PLAN

VLK

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North Shore Multi-Use Indoor Facility

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10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 1	10/08/2025
2	Addendum 3	10/17/2025
3	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.

25-0056.00

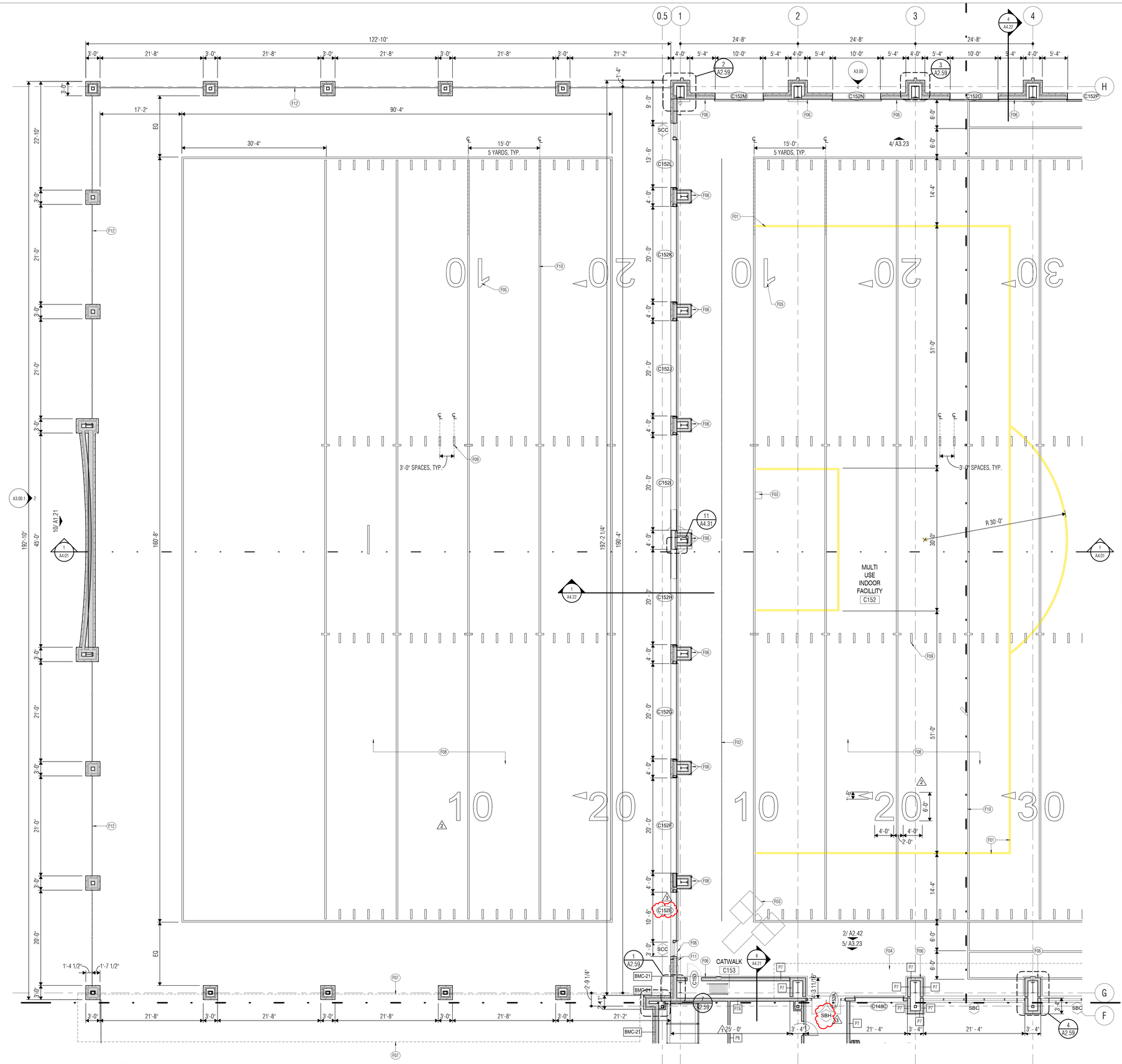
SHEET TITLE

FLOOR PLAN - LEVEL ONE - UNIT B

SHEET NO.

A2.11B

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1 FLOOR PLAN - LEVEL ONE - UNIT C
SCALE: 1/8" = 1'-0"

TRUE NORTH

FLOOR PLAN NOTES

1. Primary Ground Level floor elevation is 33.50' (Mean Sea Level), which equals to 100'-0" datum.
2. Dimensions on Floor Plans are to face of stud or CMU unless noted otherwise.
3. Coordinate the location of electrical devices with casework, millwork, lockers, etc. Any electrical device that is not properly coordinated shall be relocated at no additional cost.
4. Exterior wall construction is identified on the Wall Sections. Refer to the A4 series sheets for Wall Sections, and to Sheet A4.11 for Exterior Wall Assemblies.
5. Refer to Exterior Elevation Notes for control joint requirements at all inside corners of masonry veneer.
6. Refer to Sheet A2.21 for Partition Types.
7. Interior partitions are Type "P6" unless noted otherwise.
8. Refer to Detail 4 / A0.21 for Typical Door Maneuvering Clearances. All new doors shall meet the requirements of that detail. If any door is found that does not comply with these requirements, request clarification from the Architect prior to construction.
9. Refer to Sheet 10 / A2.22 for Typical Gypsum Board Control Joint Details at all CFS and light-gage steel stud partition openings.
10. Refer to Sheet A2.22 for Typical Partition Penetration Details, including pipe, conduit and ductwork penetrations.
11. Refer to Sheet A2.22 for Typical Bracing at Non-Loadbearing CMU Partitions.
12. Refer to Exterior Elevations for exact locations of downspouts.
13. Provide factory bullnose units at all interior exposed vertical edges of CMU, except at starter course with applied base material where square-edge units shall be provided in lieu of bullnose units.
14. Provide 8" starter courses at all CMU walls and partitions unless noted otherwise.
15. Provide steel or masonry lintels over all openings in CMU walls, including those required for mechanical ductwork and dampers, whether specifically indicated on the drawings or not.
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FLOOR PLAN LEGEND

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- CMU PARTITION. Extend 4" above highest ceiling plane and brace to structure above as detailed. Refer to Life Safety and Floor Plan sheets for fire, smoke and sound-conditioned partitions that extend to deck above.
- LOCKER TYPE (LK4-4) — For locker types, ref. 1 / A2.23 — LOCKER QUANTITY
- FURNITURE, FIXTURE OR EQUIPMENT BY OWNER. Coordinate with adjacent electrical devices, casework, etc.
- 18 / 36 — METAL SHELVING UNIT. Depth/width as shown.

MB	MARKERBOARD. Preceding number is length, in feet.
GMB	GLASS MARKERBOARD. Preceding number is length, in feet.
TB	TACKBOARD. Preceding number is length, in feet.
MW	MARKERWALL. Refer to Finish Plans for dimensions.
FEC	FIRE EXTINGUISHER WITH CABINET AND BRACKET
HB	HORIZONTAL BLINDS; EXCLUDE ALL TRANSOMS
RS	ROLLING WINDOW SHADES
DS	DOWNSPOUT

KEY NOTE SCHEDULE

NUMBER	NOTE TEXT
F01	4" WIDE INLAID SOCCER STRIPING (YELLOW)
F02	MOTORIZED DROP DOWN NETTING
F03	BASEBALL INFIELD STRIPING (BLACK)
F04	CATWALK ABOVE
F05	INLAID YARDAGE BLOCK NUMBERS, (WHITE) TYP.
F06	7' TALL WALL PADS AT ALL EXPOSED WALLS, TYP.
F07	PREFABRICATED WALKWAY COVER ABOVE
F08	SYNTHETIC TURF
F09	INBOUND LINES INLAID (WHITE) TYP.
F10	INLAID YARDLINE MARKERS, (WHITE) TYP.
F11	TIME CLOCK; SYNC WITH ALL TIMERS, COORDINATE MOUNTING HEIGHT WITH OWNER
F12	8'H ORNAMENTAL FENCE

KEY PLAN

C D B A

VLK

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HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT — JUSTIN C. CASTILLO — 26558 — STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 1	10/08/2025
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3	Addendum 4	10/22/2025

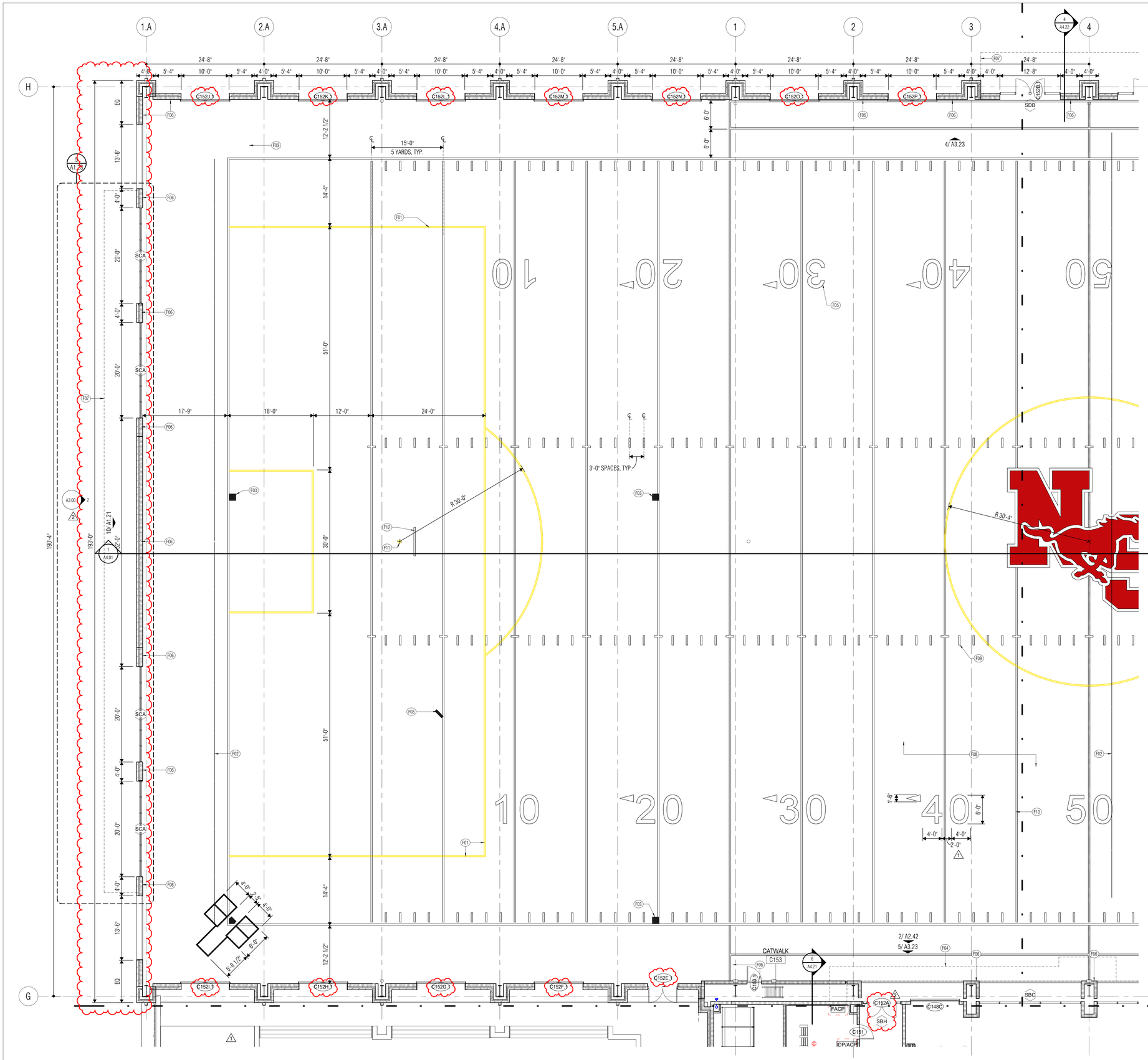
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
FLOOR PLAN - LEVEL ONE - UNIT C

SHEET NO.
A2.11C

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FLOOR PLAN NOTES

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3. Coordinate the location of electrical devices with casework, millwork, lockers, etc. Any electrical device that is not properly coordinated shall be relocated at no additional cost.
4. Exterior wall construction is identified on the Wall Sections. Refer to the A4 series sheets for Wall Sections, and to Sheet A4.11 for Exterior Wall Assemblies.
5. Refer to Exterior Elevation Notes for control joint requirements at all inside corners of masonry veneer.
6. Refer to Sheet A2.21 for Partition Types.
7. Interior partitions are Type "P6" unless noted otherwise.
8. Refer to Detail 4 / A0.21 for Typical Door Maneuvering Clearances. All new doors shall meet the requirements of that detail. If any door is found that does not comply with these requirements, request clarification from the Architect prior to construction.
9. Refer to Sheet 10 / A2.22 for Typical Gypsum Board Control Joint Details at all CFS and light-gage steel stud partition openings.
10. Refer to Sheet A2.22 for Typical Partition Penetration Details, including pipe, conduit and ductwork penetrations.
11. Refer to Sheet A2.22 for Typical Bracing at Non-Loadbearing CMU Partitions.
12. Refer to Exterior Elevations for exact locations of downspouts.
13. Provide factory bullnose units at all interior exposed vertical edges of CMU, except at starter course with applied base material where square-edge units shall be provided in lieu of bullnose units.
14. Provide 8" starter courses at all CMU walls and partitions unless noted otherwise.
15. Provide steel or masonry lintels over all openings in CMU walls, including those required for mechanical ductwork and dampers, whether specifically indicated on the drawings or not.
16. Provide minimum 20 gage (33 mils) light-gage steel studs at all interior partitions scheduled to receive ceramic tile, plaster, abuse-resistant gyp board or impact-resistant gyp board.
17. Provide minimum 18 (43 mils) gage cold-formed steel studs at all interior partitions scheduled to receive anchored masonry or stone veneer as well as interior partitions with steel plate or steel sheet X-bracing.
18. Provide minimum 18 gage (43 mils) cold-formed steel studs as designed by stud engineer for all interior partiti1ons scheduled to receive adhered masonry or stone veneer.
19. At light-gage steel stud partitions that extend above the ceiling, provide diagonal 20 (30 mils) gage stud braces at 4'-0" o.c. to structure above (not to steel deck) as required to provide rigid anchorage and support of partitions.
20. Provide minimum 2 X 6 fire-retardant treated wood blocking in both new and existing stud walls and partitions, at mounting locations for wall-mounted accessories, handrails, casework, markerboards, tackboards, folding partitions, toilet partitions, and all other wall-mounted items. Refer to Sheet 12 / A2.22for typical blocking requirements at various conditions.
21. At Mechanical, Electrical and Boiler Room partitions, seal tightly around all penetrations. Utilize fire safing material at rated partitions.
22. Provide sealant and/or fire safing at all floor penetrations, as applicable.

FLOOR PLAN LEGEND

- METAL STUD PARTITION. Extend 4" above highest ceiling plane and brace to structure above as noted in Floor Plan Notes. Refer to Life Safety and Floor Plan sheets for fire, smoke and sound-conditioned partitions that extend to deck above.
- CMU PARTITION. Extend 4" above highest ceiling plane and brace to structure above as detailed. Refer to Life Safety and Floor Plan sheets for fire, smoke and sound-conditioned partitions that extend to deck above.
- LOCKER TYPE (LKA-4)
  For locker types, ref. 1 / A2.23
  LOCKER QUANTITY
- FURNITURE, FIXTURE OR EQUIPMENT BY OWNER. Coordinate with adjacent electrical devices, casework, etc.
- METAL SHELVING UNIT. Depth/width as shown.

MB	MARKERBOARD. Preceding number is length, in feet.
GMB	GLASS MARKERBOARD. Preceding number is length, in feet.
TB	TACKBOARD. Preceding number is length, in feet.
MW	MARKERWALL. Refer to Finish Plans for dimensions.
FEC	FIRE EXTINGUISHER WITH CABINET AND BRACKET
HB	HORIZONTAL BLINDS; EXCLUDE ALL TRANSOMS
RS	ROLLING WINDOW SHADES
DS	DOWNSPOUT

KEY NOTE SCHEDULE

NUMBER	NOTE TEXT
F01	4" WIDE INLAID SOCCER STRIPING (YELLOW)
F02	MOTORIZED DROP DOWN NETTING
F03	BASEBALL INFIELD STRIPING (BLACK)
F04	CATWALK ABOVE
F05	INLAID YARDAGE BLOCK NUMBERS, (WHITE) TYP.
F06	7' TALL WALL PADS AT ALL EXPOSED WALLS, TYP.
F07	PREFABRICATED WALKWAY COVER ABOVE
F08	SYNTHETIC TURF
F09	INBOUND LINES INLAID (WHITE) TYP.
F10	INLAID YARDLINE MARKERS, (WHITE) TYP.
F11	INLAID SOCCER PENALTY MARK (YELLOW)
F12	3 YARD LINE INLAID (WHITE)

TRUE NORTH

1 FLOOR PLAN - LEVEL ONE - UNIT C - ALTERNATE
SCALE: 1/8" = 1'-0"

KEY PLAN

VLK

ARCHITECT

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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT
MONIKA C. CASTILLO
26508
STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 3	10/17/2025
2	Addendum 4	10/22/2025

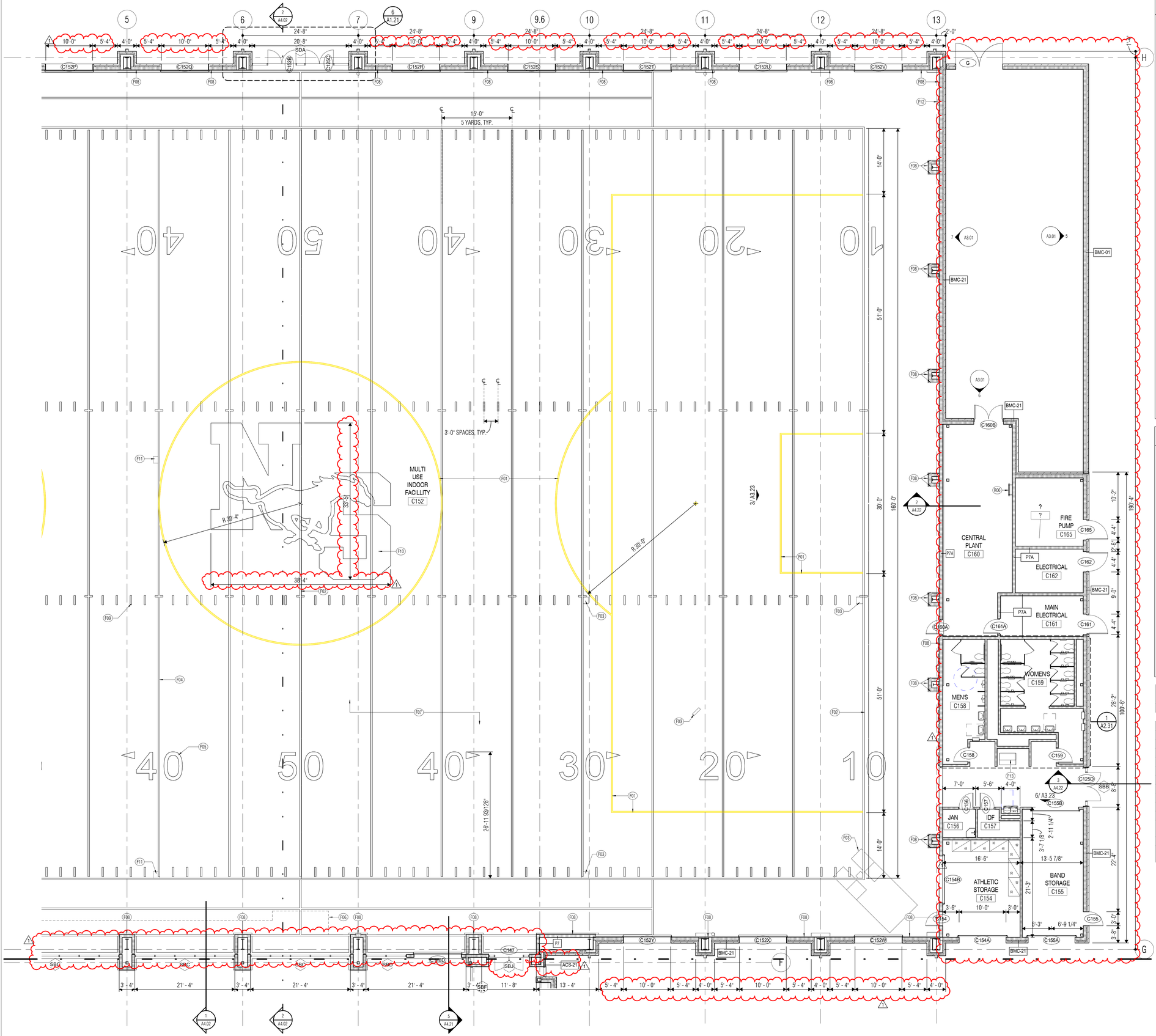
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
FLOOR PLAN - LEVEL ONE - UNIT C - ALTERNATE BID

SHEET NO.
A2.11C.1

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FLOOR PLAN NOTES

1. Primary Ground Level floor elevation is 33.50' (Mean Sea Level), which equals to 100'-0" datum.
2. Dimensions on Floor Plans are to face of stud or CMU unless noted otherwise.
3. Coordinate the location of electrical devices with casework, millwork, lockers, etc. Any electrical device that is not properly coordinated shall be relocated at no additional cost.
4. Exterior wall construction is identified on the Wall Sections. Refer to the A4 series sheets for Wall Sections, and to Sheet A4.11 for Exterior Wall Assemblies.
5. Refer to Exterior Elevation Notes for control joint requirements at all inside corners of masonry veneer.
6. Refer to Sheet A2.21 for Partition Types.
7. Interior partitions are Type "P6" unless noted otherwise.
8. Refer to Detail 4 / A0.21 for Typical Door Maneuvering Clearances. All new doors shall meet the requirements of that detail. If any door is found that does not comply with these requirements, request clarification from the Architect prior to construction.
9. Refer to Sheet 10 / A2.22 for Typical Gypsum Board Control Joint Details at all CFS and light-gage steel stud partition openings.
10. Refer to Sheet A2.22 for Typical Partition Penetration Details, including pipe, conduit and ductwork penetrations.
11. Refer to Sheet A2.22 for Typical Bracing at Non-Loadbearing CMU Partitions.
12. Refer to Exterior Elevations for exact locations of downspouts.
13. Provide factory bullnose units at all interior exposed vertical edges of CMU, except at starter course with applied base material where square-edge units shall be provided in lieu of bullnose units.
14. Provide 8" starter courses at all CMU walls and partitions unless noted otherwise.
15. Provide steel or masonry lintels over all openings in CMU walls, including those required for mechanical ductwork and dampers, whether specifically indicated on the drawings or not.
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21. At Mechanical, Electrical and Boiler Room partitions, seal tightly around all penetrations. Utilize fire safing material at rated partitions.
22. Provide sealant and/or fire safing at all floor penetrations, as applicable.

FLOOR PLAN LEGEND

- METAL STUD PARTITION. Extend 4" above highest ceiling plane and brace to structure above as noted in Floor Plan Notes. Refer to Life Safety and Floor Plan sheets for fire, smoke and sound-conditioned partitions that extend to deck above.
- CMU PARTITION. Extend 4" above highest ceiling plane and brace to structure above as detailed. Refer to Life Safety and Floor Plan sheets for fire, smoke and sound-conditioned partitions that extend to deck above.
- LOCKER TYPE (LKA-4) — For locker types, ref. 1 / A2.23 — LOCKER QUANTITY
- FURNITURE, FIXTURE OR EQUIPMENT BY OWNER. Coordinate with adjacent electrical devices, casework, etc.
- METAL SHELVING UNIT. Depth/width as shown.

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GMB	GLASS MARKERBOARD. Preceding number is length, in feet.
TB	TACKBOARD. Preceding number is length, in feet.
MW	MARKERWALL. Refer to Finish Plans for dimensions.
FEC	FIRE EXTINGUISHER WITH CABINET AND BRACKET
HB	HORIZONTAL BLINDS; EXCLUDE ALL TRANSOMS
RS	ROLLING WINDOW SHADES
DS	DOWNSPOUT

KEY NOTE SCHEDULE

NUMBER	NOTE TEXT
F01	4" WIDE INLAID SOCCER STRIPING (YELLOW)
F02	MOTORIZED DROP DOWN NETTING
F03	SOFTBALL INFIELD STRIPING (BLACK)
F04	INLAID YARDLINE MARKERS, (WHITE) TYP.
F05	INLAID YARDAGE BLOCK NUMBERS, (WHITE) TYP.
F06	CATWALK ABOVE
F07	SYNTHETIC TURF
F08	7' TALL WALL PADS AT ALL EXPOSED WALLS, TYP.
F09	INBOUND LINES INLAID (WHITE) TYP.
F10	INLAID CUSTOM LOGO
F11	BASEBALL INFIELD STRIPING (BLACK)
F12	TIME CLOCK; SYNC WITH ALL TIMERS, COORDINATE MOUNTING HEIGHT WITH OWNER
F13	ICE MAKER
R06	WALL MOUNTED ROOF LADDER. COORDINATE LOCATION WITH ROOF HATCH ABOVE.

TRUE NORTH

1 FLOOR PLAN - LEVEL ONE - UNIT D
SCALE: 1/8" = 1'-0"

KEY PLAN

VLK

ARCHITECT

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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT — KEVIN C. CASTILLO — 10/22/2025 — STATE OF TEXAS

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
1 Addendum 4	10/22/2025

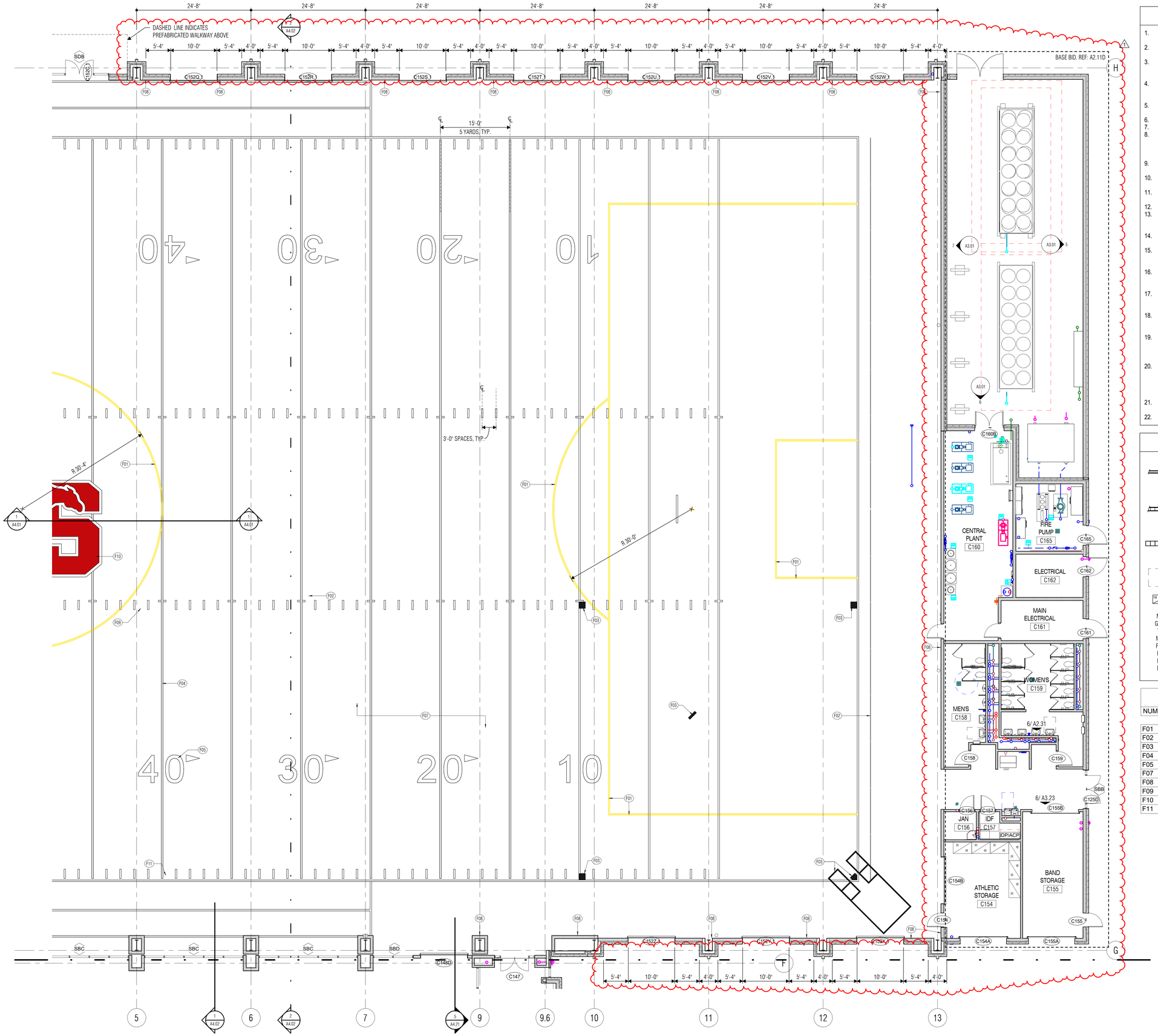
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
FLOOR PLAN - LEVEL ONE - UNIT D

SHEET NO.
A2.11D

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FLOOR PLAN NOTES

1. Primary Ground Level floor elevation is 33.50' (Mean Sea Level), which equals to 100'-0" datum.
2. Dimensions on Floor Plans are to face of stud or CMU unless noted otherwise.
3. Coordinate the location of electrical devices with casework, millwork, lockers, etc. Any electrical device that is not properly coordinated shall be relocated at no additional cost.
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  For locker types, ref. 1 / A2.23
  LOCKER QUANTITY
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MW	MARKERWALL. Refer to Finish Plans for dimensions.
FEC	FIRE EXTINGUISHER WITH CABINET AND BRACKET
HB	HORIZONTAL BLINDS; EXCLUDE ALL TRANSOMS
RS	ROLLING WINDOW SHADES
DS	DOWNSPOUT

KEY NOTE SCHEDULE

NUMBER	NOTE TEXT
F01	4" WIDE INLAID SOCCER STRIPING (YELLOW)
F02	MOTORIZED DROP DOWN NETTING
F03	SOFTBALL INFIELD STRIPING (BLACK)
F04	INLAID YARDLINE MARKERS, (WHITE) TYP.
F05	INLAID YARDAGE BLOCK NUMBERS, (WHITE) TYP.
F07	SYNTHETIC TURF
F08	7' TALL WALL PADS AT ALL EXPOSED WALLS, TYP.
F09	INBOUND LINES INLAID (WHITE) TYP.
F10	INLAID CUSTOM LOGO
F11	BASEBALL INFIELD STRIPING (BLACK)

TRUE NORTH

1 FLOOR PLAN - LEVEL ONE - UNIT D - ALTERNATE
SCALE: 1/8" = 1'-0"

KEY PLAN

VLK

ARCHITECT

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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT MONIKA C. CASTILLO 26555 STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
1 Addendum 4	10/22/2025

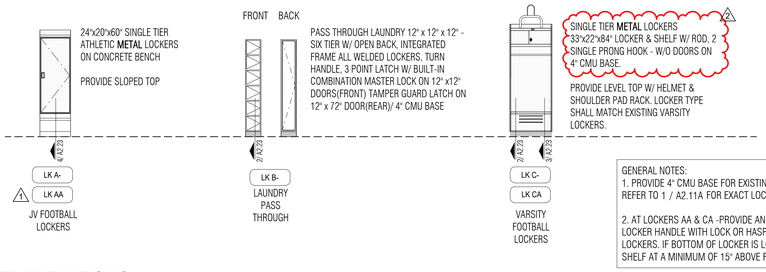
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
FLOOR PLAN - LEVEL ONE - UNIT D - ALTERNATE BID

SHEET NO.
A2.11D.1

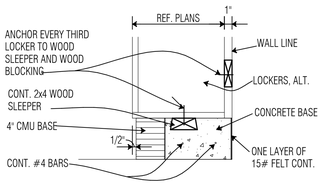
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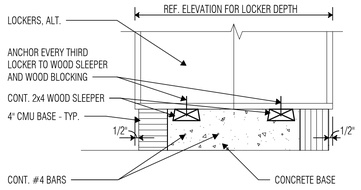
GENERAL NOTES:
1. PROVIDE 4" CMU BASE FOR EXISTING RELOCATED VARSITY LOCKERS. REFER TO 1 / A2.11A FOR EXACT LOCATIONS.

2. AT LOCKERS AA & CA -PROVIDE AN ACCESSIBLE INTERIOR SHELF, HOOKS & LOCKER HANDLE WITH LOCK OR HASP AT 48" MAX A.F.F. NO BENCH AT THESE LOCKERS. IF BOTTOM OF LOCKER IS LOWER THAN 15" A.F.F., PROVIDE INTERNAL SHELF AT A MINIMUM OF 15" ABOVE FINISH FLOOR.

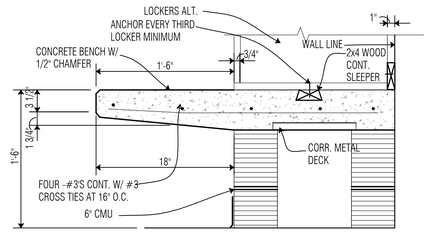
1 LOCKER ELEVATIONS
SCALE: 1/4" = 1'-0"



2 LOCKER BASE DETAIL
SCALE: 1 1/2" = 1'-0"



3 REAR ADJOINING LOCKER BASE DETAIL
SCALE: 1 1/2" = 1'-0"



4 LOCKER BENCH DETAIL
SCALE: 1 1/2" = 1'-0"

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STATE OF TEXAS

10/22/2025

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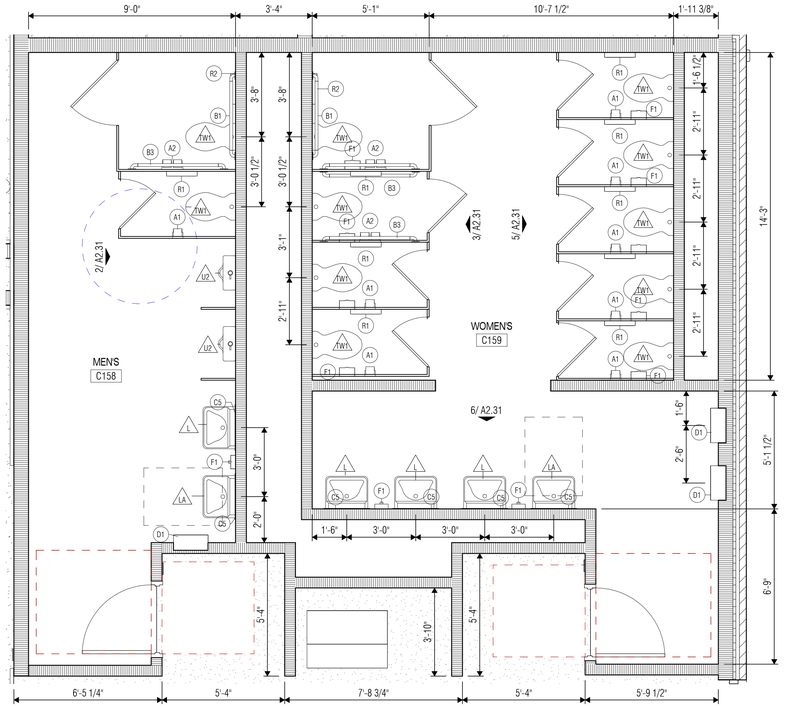
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
LOCKER DETAILS

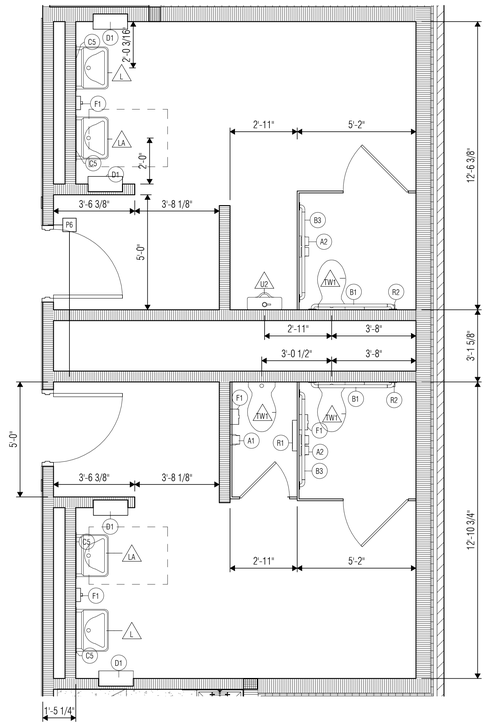
SHEET NO.
A2.23

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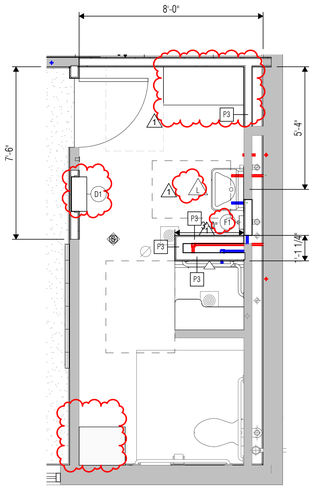
1 ENLARGED TOILET PLAN - UNIT D

SCALE: 3/8" = 1'-0"



4 ENLARGED TOILET PLAN - UNIT A

SCALE: 3/8" = 1'-0"



7 HEAD COACH ROOM

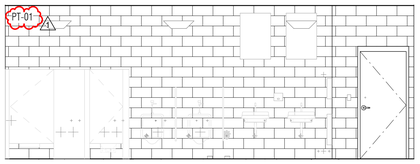
SCALE: NTS

ENLARGED FLOOR PLAN NOTES

1. Dimensions on Enlarged Floor Plans are to face of wall finish material unless noted otherwise.
2. Dashed lines shown on Enlarged Floor Plans indicate accessibility requirements and are indicated for information only.
3. Install all accessible plumbing fixtures and toilet accessories in accordance with the Texas Accessibility Standards and as indicated on Sheets A0.31, Sheet A2.38, and Sheet A2.39.
4. Install all non-accessible plumbing fixtures and toilet accessories at manufacturers' recommended mounting heights, unless noted otherwise.
5. Refer to Toilet Accessory Legend on Sheet A2.38 for Toilet Accessory information and mounting heights.
6. At accessible toilet compartments, install water closets with the centerline of fixture at 1'-5" off the side wall finish material. At both ambulatory-accessible and non-accessible toilet compartments, install water closets at the centerline of the compartment.
7. Install hand-operated flush controls for wheelchair accessible water closets on the open side of the water closet. Flush control assembly shall not extend above grab bar, and top of flush control assembly shall be held a minimum of 1-1/2" below the grab bar.
8. Provide pipe protection for all exposed piping at both accessible and non-accessible lavatories.
9. Floor drains are indicated for location purposes only. Refer to Plumbing Drawings for floor drain sizes and plumbing information.

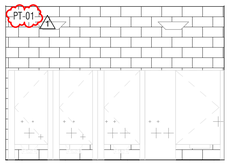
PLUMBING FIXTURE LEGEND

TYPE MARK	FAMILY AND TYPE	MOUNTING HEIGHT
L	Sink_Wall: Lavatory - ADULT	
LA	Sink_Wall: Lavatory - ADULT Access	
MS	Sink - Mop: 24"x24"	
TW1	Water Closet: Wall Mounted	16" Top of Seat
U2	Urinal: Accessible (Adult/Child)	17" to Rim
WA	22-Toilet_Wall Mounted_2D_Nested: HC-Adult Accessible	



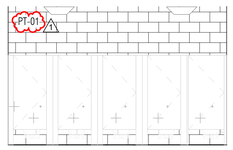
2 MEN'S - UNIT D - EAST

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



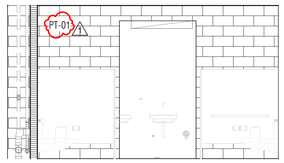
3 WOMEN'S - UNIT D - WEST

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



5 WOMEN'S - UNIT D - EAST

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



6 WOMEN'S - UNIT D - SOUTH

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

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10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.

25-0056.00

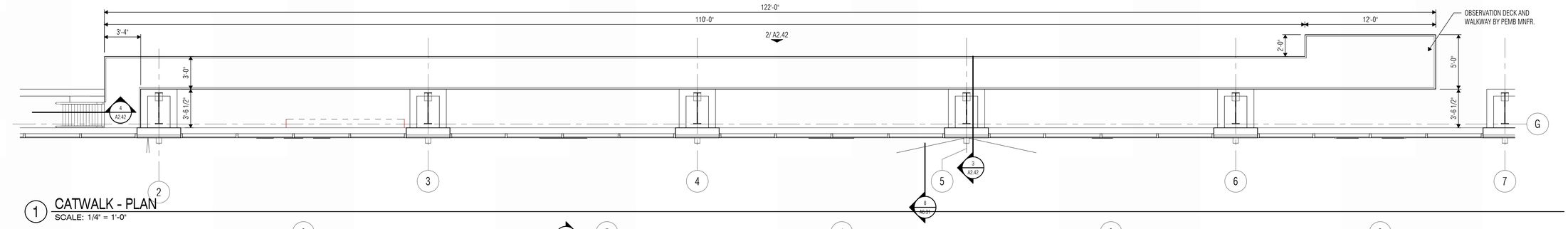
SHEET TITLE

ENLARGED TOILET PLANS AND ELEVATIONS

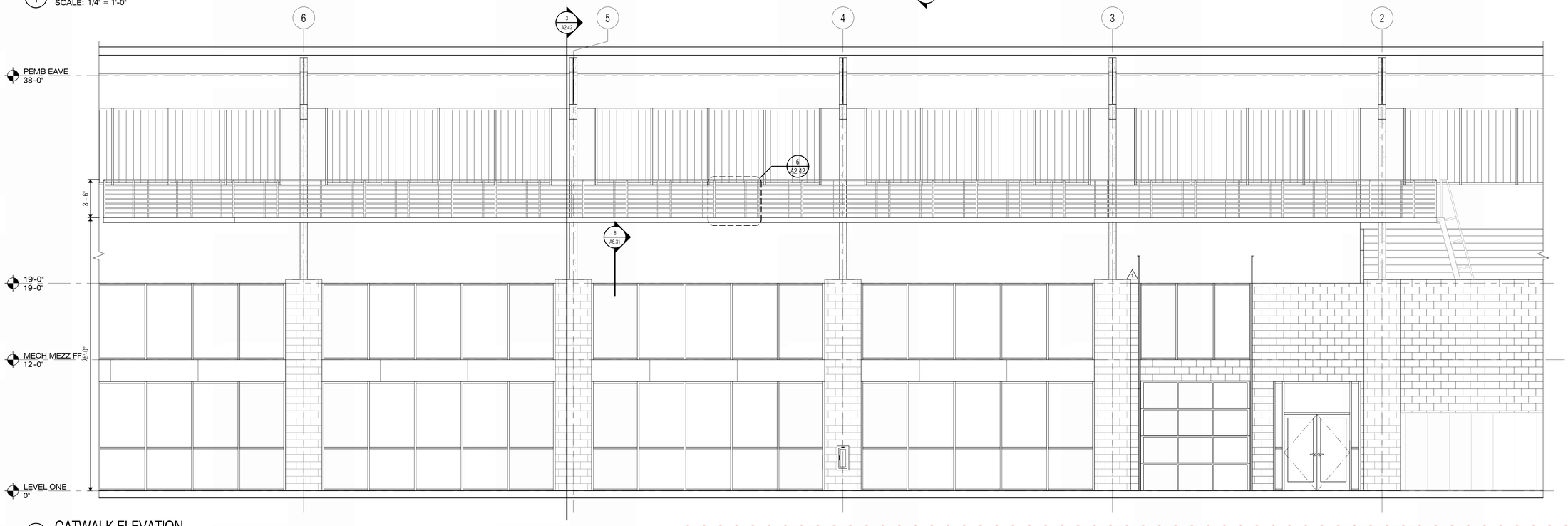
SHEET NO.

A2.31

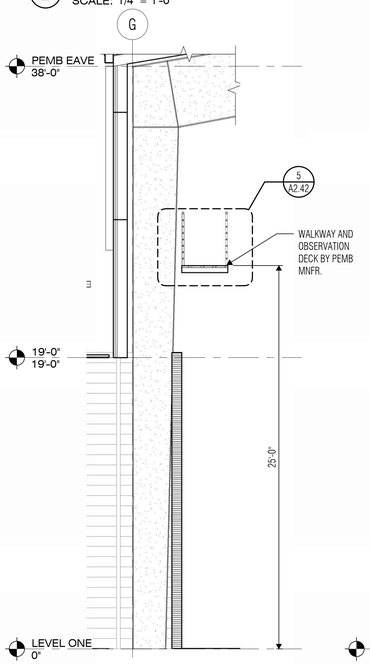
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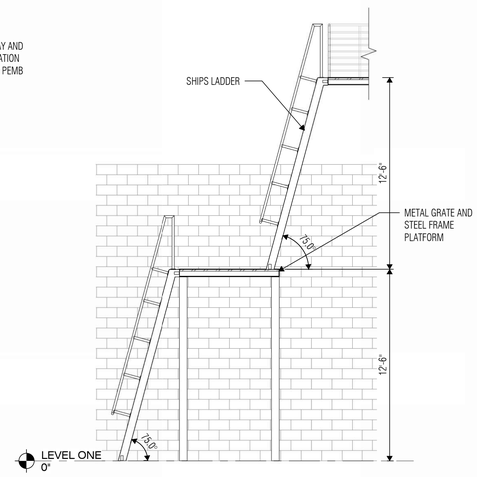
1 CATWALK - PLAN
SCALE: 1/4" = 1'-0"



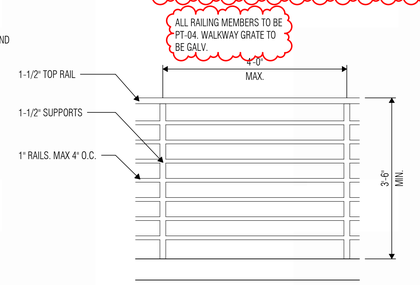
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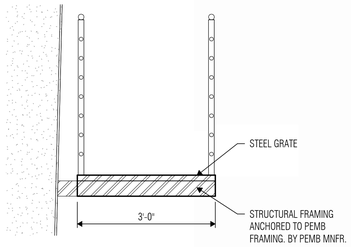
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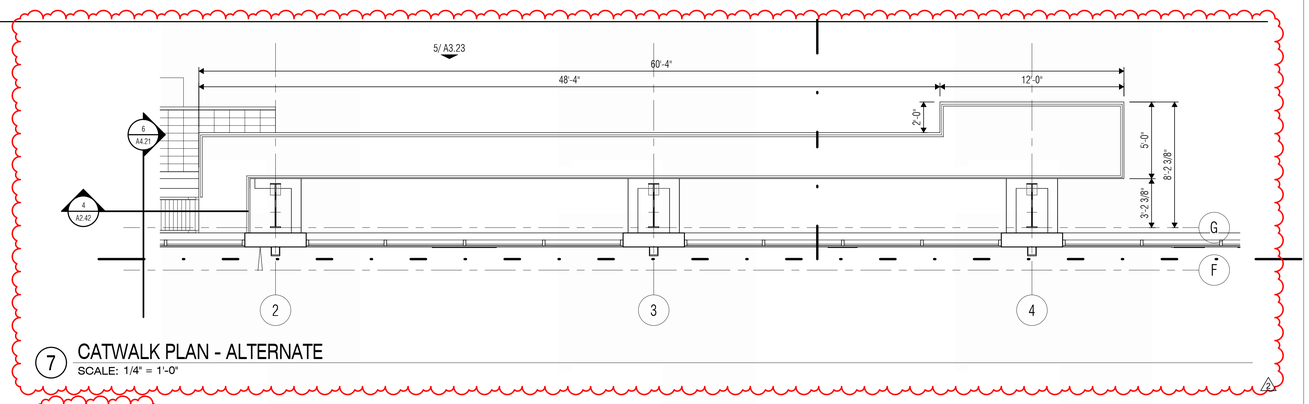
4 Section 6
SCALE: 1/4" = 1'-0"



6 CATWALK - RAIL ELEVATION
SCALE: 3/4" = 1'-0"



5 CATWALK DETAIL
SCALE: 3/4" = 1'-0"



7 CATWALK PLAN - ALTERNATE
SCALE: 1/4" = 1'-0"

ARCHITECT

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20445 State Hwy 249, Suite 350
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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT
MONIKA C. CASTILLO
26559
STATE OF TEXAS
10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 1	10/08/2025
2	Addendum 4	10/22/2025

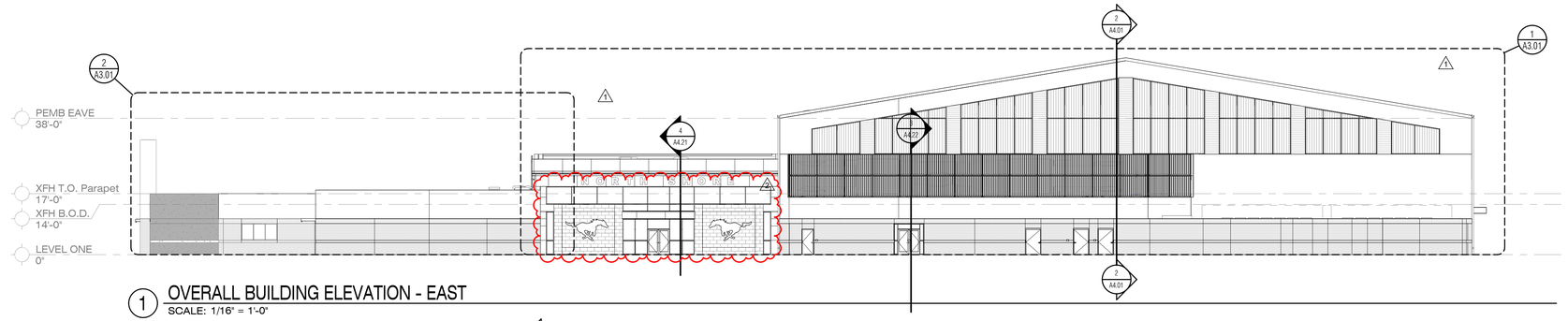
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

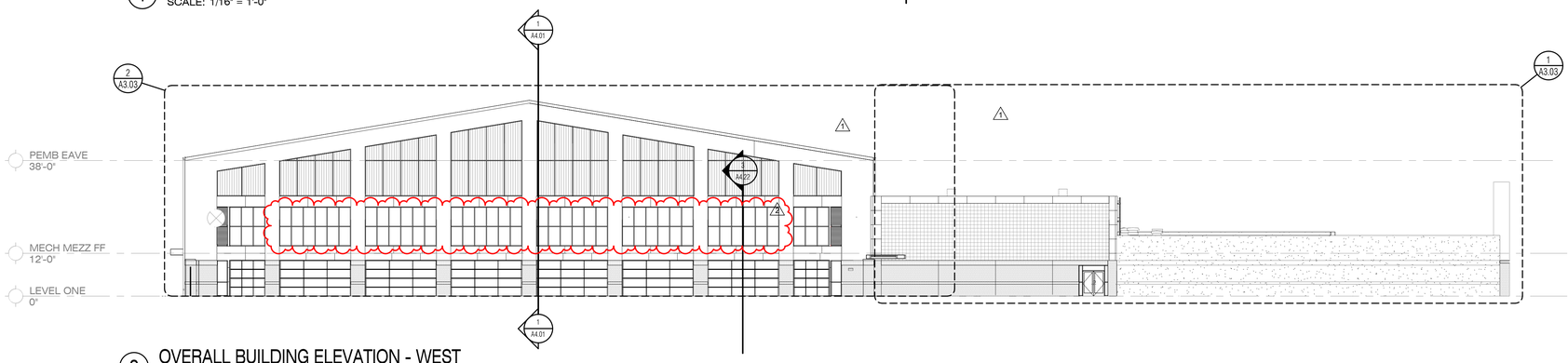
SHEET TITLE
ENLARGED CATWALK PLANS & SECTIONS

SHEET NO.
A2.42

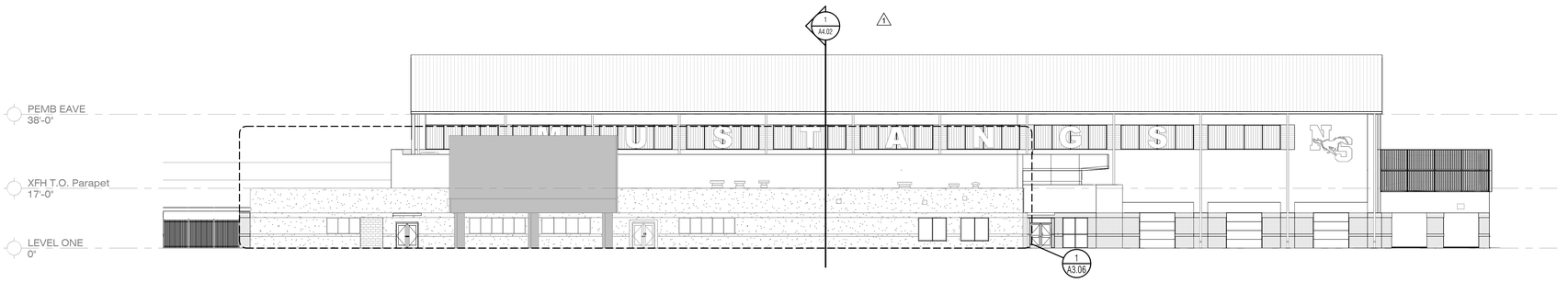
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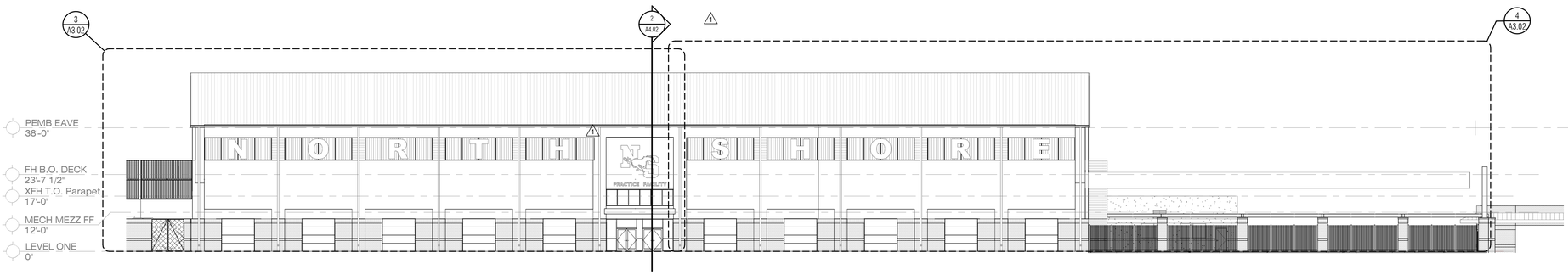
1 OVERALL BUILDING ELEVATION - EAST
SCALE: 1/16" = 1'-0"



2 OVERALL BUILDING ELEVATION - WEST
SCALE: 1/16" = 1'-0"



5 OVERALL BUILDING ELEVATION - SOUTH
SCALE: 1/16" = 1'-0"



4 OVERALL BUILDING ELEVATION - NORTH
SCALE: 1/16" = 1'-0"

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10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 3	10/17/2025
2	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

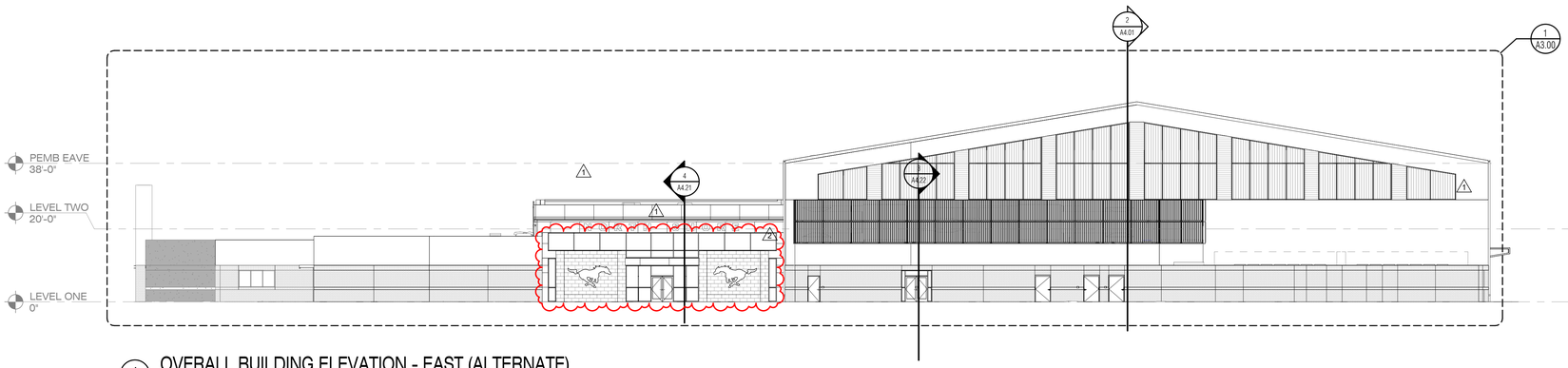
PROJECT NO.
25-0056.00

SHEET TITLE
OVERALL EXTERIOR ELEVATIONS

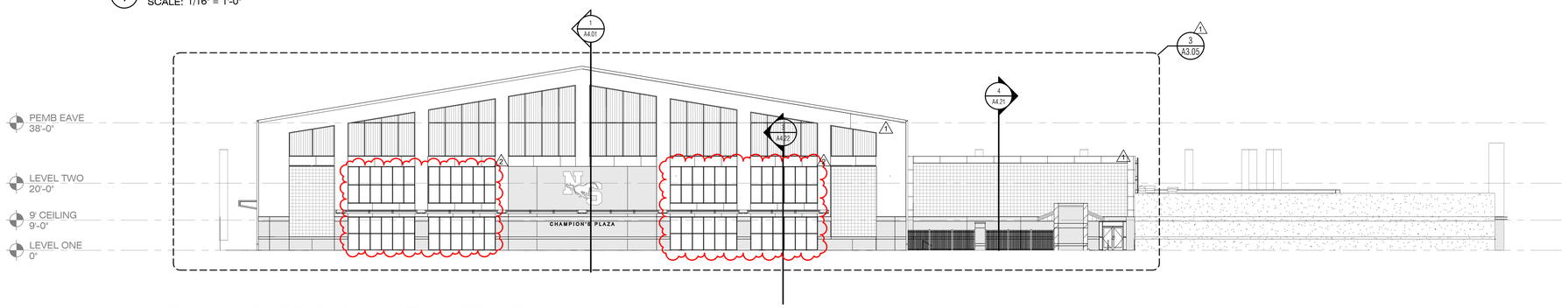
SHEET NO.
A3.00

North Shore Multi-Use Indoor Facility

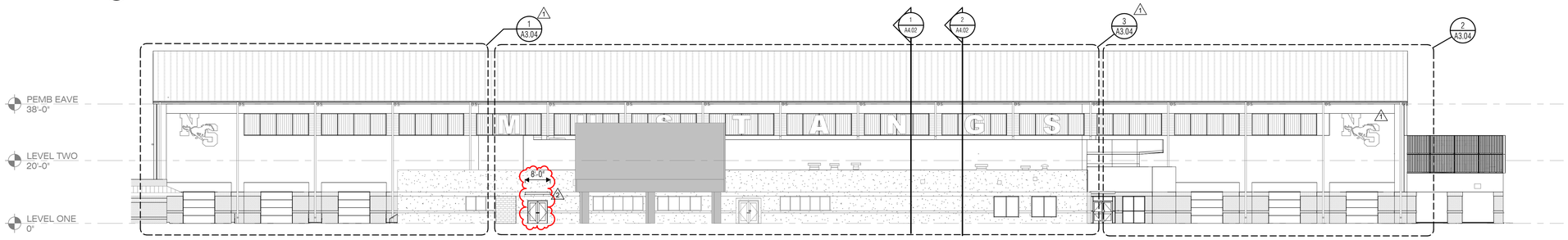
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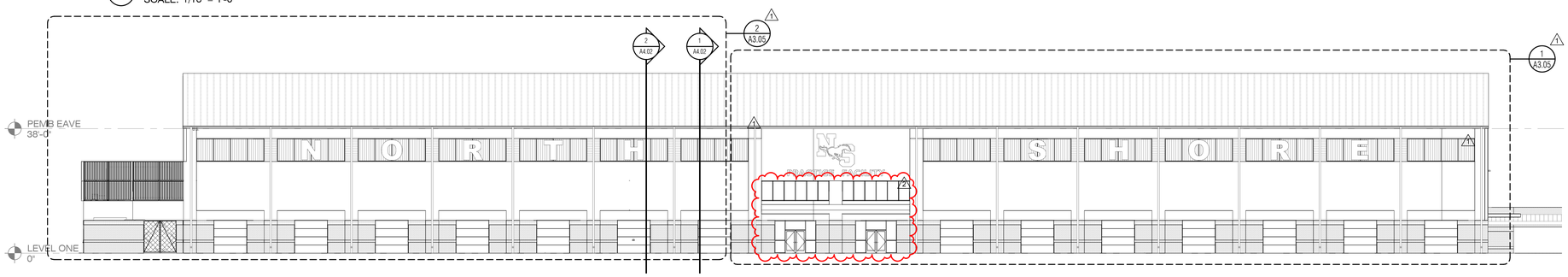
1 OVERALL BUILDING ELEVATION - EAST (ALTERNATE)
SCALE: 1/16" = 1'-0"



2 OVERALL BUILDING ELEVATION - WEST (ALTERNATE)
SCALE: 1/16" = 1'-0"



3 OVERALL BUILDING ELEVATION - SOUTH (ALTERNATE)
SCALE: 1/16" = 1'-0"



4 OVERALL BUILDING ELEVATION - NORTH (ALTERNATE)
SCALE: 1/16" = 1'-0"

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North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT
MONIKA C. CASTILLO
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STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 3	10/17/2025
2	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
OVERALL EXTERIOR ELEVATIONS - (ALTERNATE)

SHEET NO.
A3.00.1

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KEY NOTE SCHEDULE

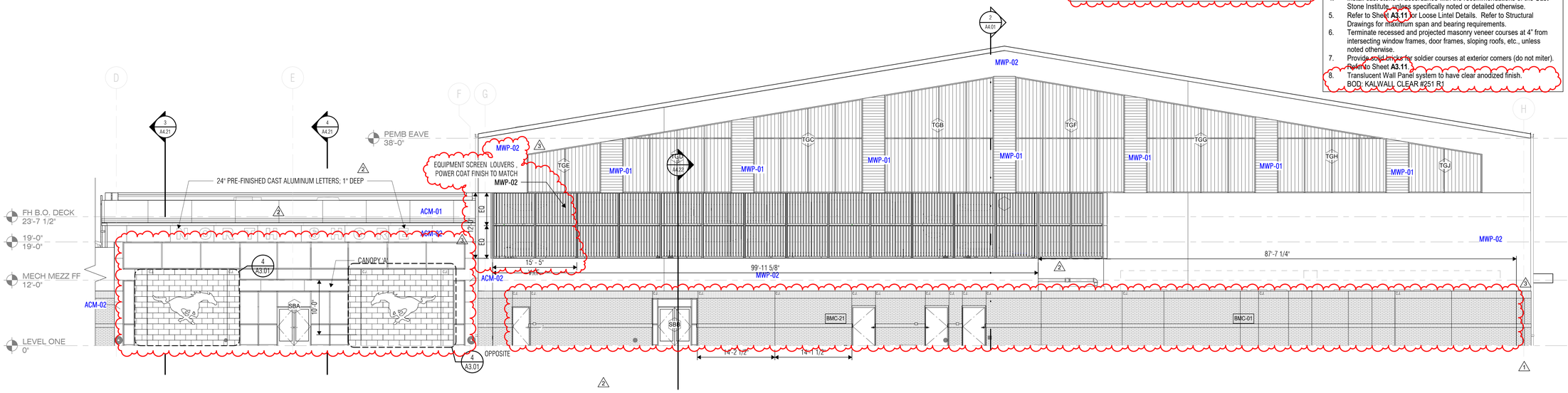
NUMBER	NOTE TEXT
MC01	PROVIDE METAL CAP

EXTERIOR ELEVATION LEGEND

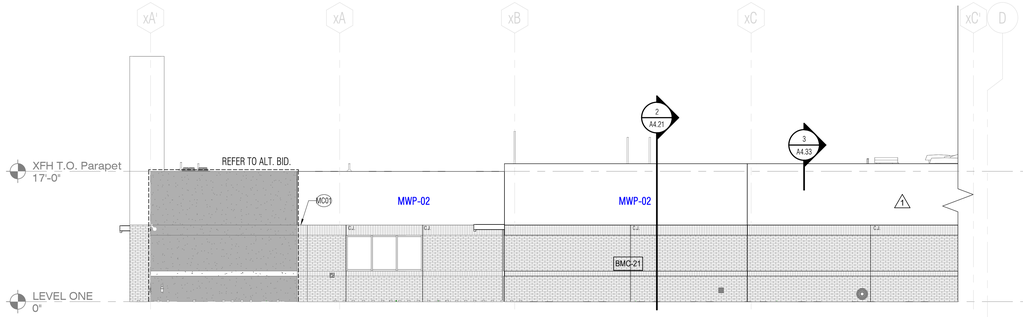
DS	DOWNSPOUT	
CJ	CONTROL JOINT, REF.	**1/A3.11, 3/A3.11, 4/A3.11**
EJ	EXPANSION JOINT, REF.	**3/A4.33**
SXX	ALUMINUM STOREFRONT, REF. SHEET **A7.21**	
TGX	TRANSLUCENT WALL PANEL SYSTEM, REF. SHEET **A7.22**	

EXTERIOR ELEVATION NOTES

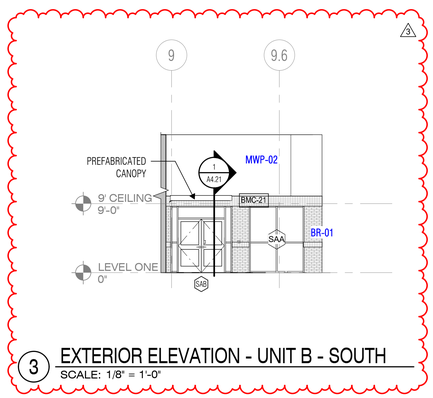
1. Refer to Sheet **A3.11, A4.31, A4.33** for Typical Control Joint and Building Expansion Joint Details.
2. Based on the applicable design criteria, submit the proposed pattern of control joints in masonry veneer, CMU and stucco/cement plaster to the Architect for review and approval prior to construction.
3. Verify mounting heights of all Electrical and Mechanical items on the exterior of the building prior to construction, whether specifically indicated on the Exterior Elevations or not.
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5. Refer to Sheet **A3.11** for Loose Lintel Details. Refer to Structural Drawings for maximum span and bearing requirements.
6. Terminate recessed and projected masonry veneer courses at 4" from intersecting window frames, door frames, sloping roofs, etc., unless noted otherwise.
7. Provide solid bricks for soldier courses at exterior corners (do not miter). Refer to Sheet **A3.11**.
8. Translucent Wall Panel system to have clear anodized finish. BOD: KALWALL CLEAR #251 R1



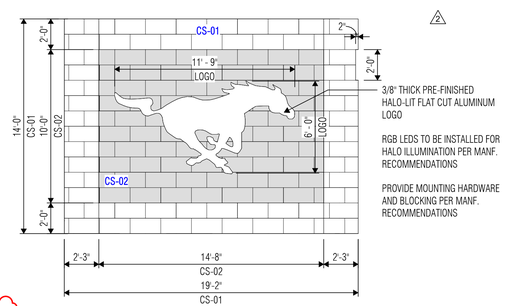
1 EXTERIOR ELEVATION - UNIT B & D - EAST
SCALE: 1/8" = 1'-0"



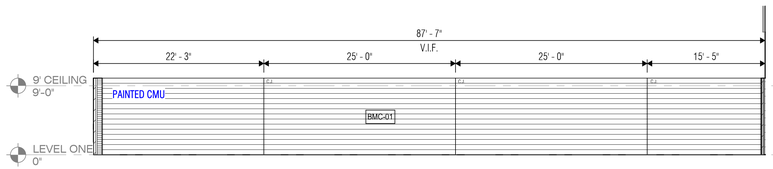
2 EXTERIOR ELEVATION - UNIT A - EAST
SCALE: 1/8" = 1'-0"



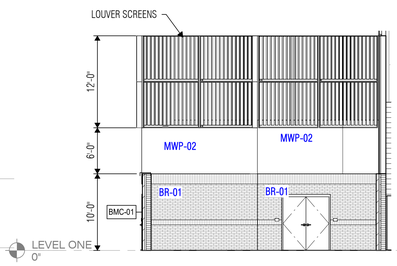
3 EXTERIOR ELEVATION - UNIT B - SOUTH
SCALE: 1/8" = 1'-0"



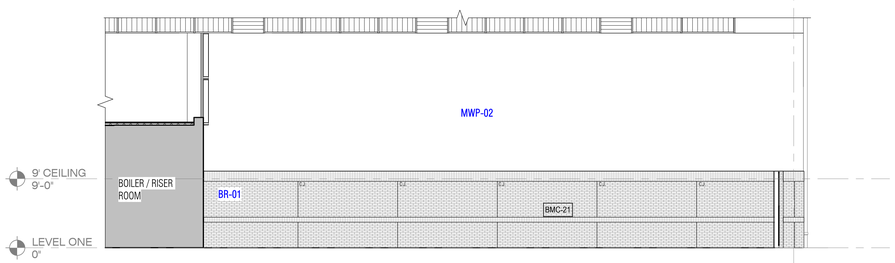
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SCALE: 1/4" = 1'-0"



5 EXTERIOR ELEVATION - MECHANICAL YARD - WEST
SCALE: 1/8" = 1'-0"



6 MECH YARD SOUTH
SCALE: 1/8" = 1'-0"



7 EXTERIOR ELEVATION - MECHANICAL YARD - EAST
SCALE: 1/8" = 1'-0"

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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT MONIKA C. CASTILLO 26558 STATE OF TEXAS
10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 1	10/08/2025
2	Addendum 3	10/17/2025
3	Addendum 4	10/22/2025

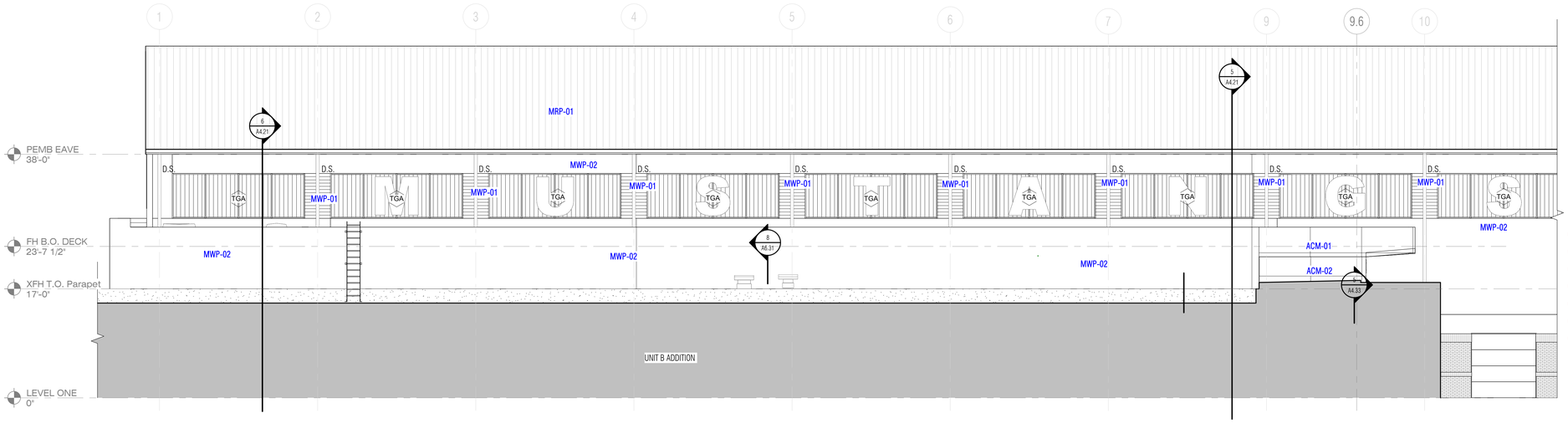
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
EXTERIOR ELEVATIONS

SHEET NO.
A3.01

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EXTERIOR ELEVATION NOTES

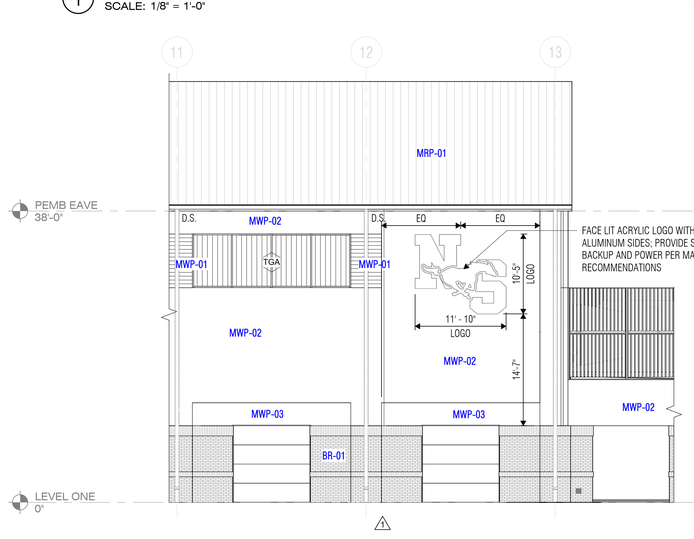
1. Refer to Sheet **A3.11**, **A4.31**, **A4.33** for Typical Control Joint and Building Expansion Joint Details.
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7. Provide soldier bricks for soldier courses at exterior corners (do not miter). Refer to Sheet **A3.11**.
8. Translucent Wall Panel system to have clear anodized finish. BOD: KALWALL CLEAR #251.01

EXTERIOR ELEVATION LEGEND

DS	DOWNSPOUT	
CJ	CONTROL JOINT, REF.	**1/A3.11, 3/A3.11, 4/A3.11**
EJ	EXPANSION JOINT, REF.	**3/A4.33**
SXX	ALUMINUM STOREFRONT, REF. SHEET **A7.21**	
TGA	TRANSLUCENT WALL PANEL SYSTEM, REF. SHEET **A7.22**	

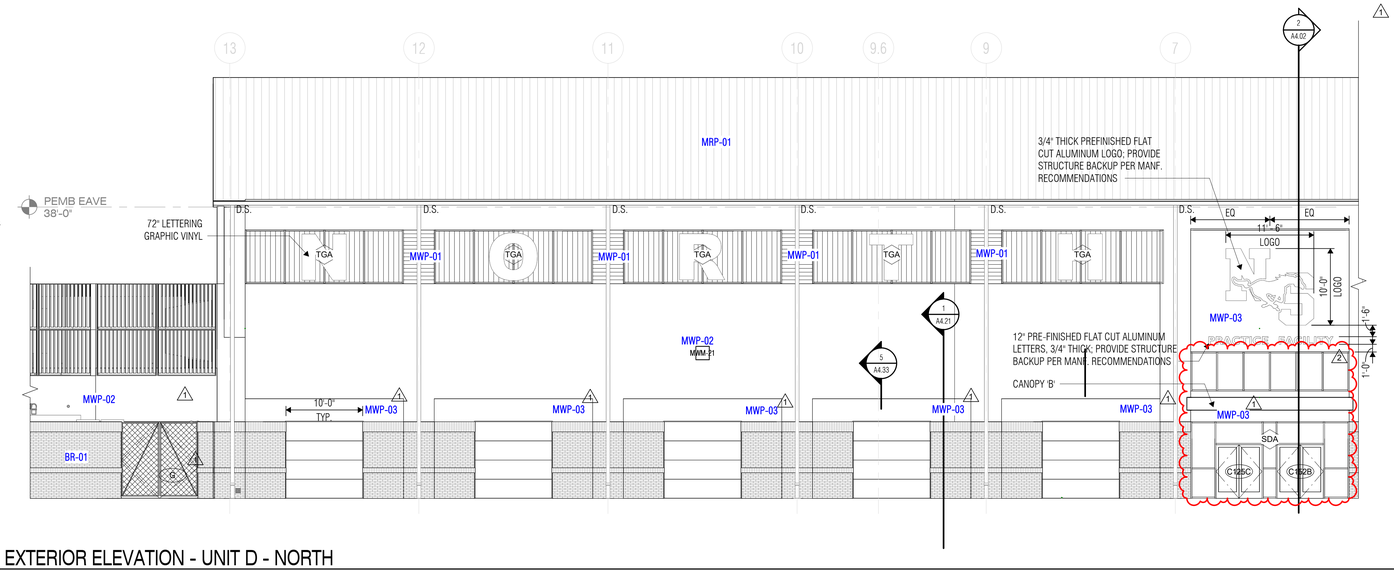
1 EXTERIOR ELEVATION - UNIT D - SOUTH A

SCALE: 1/8" = 1'-0"



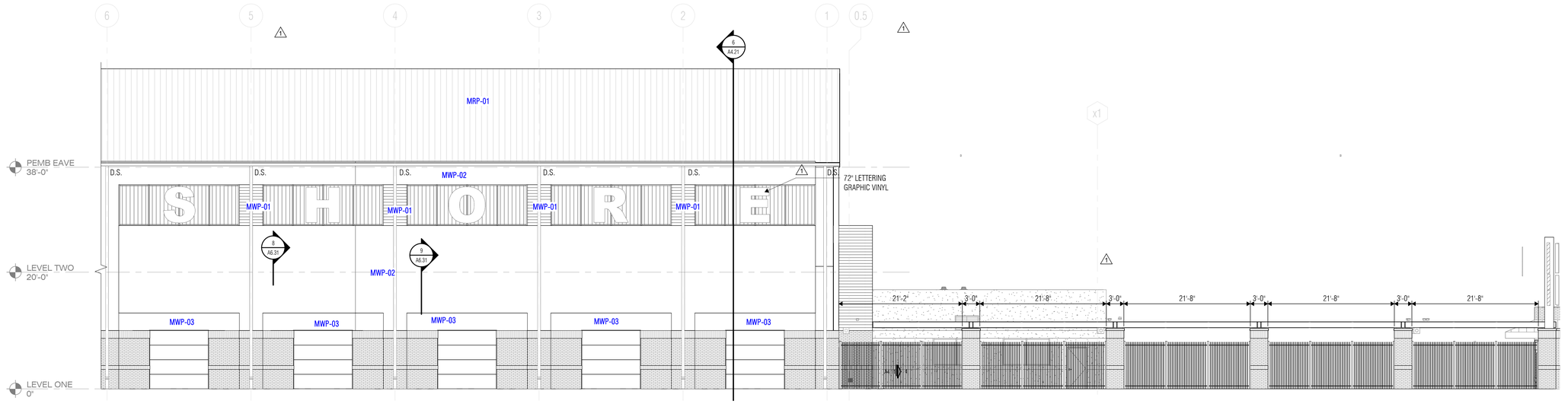
2 EXTERIOR ELEVATION - UNIT D - SOUTH B

SCALE: 1/8" = 1'-0"



3 EXTERIOR ELEVATION - UNIT D - NORTH

SCALE: 1/8" = 1'-0"



4 EXTERIOR ELEVATION - UNIT C & D - NORTH

SCALE: 1/8" = 1'-0"

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GALENA PARK ISD
HOUSTON, TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 3	10/17/2025
2	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.

25-0056.00

SHEET TITLE

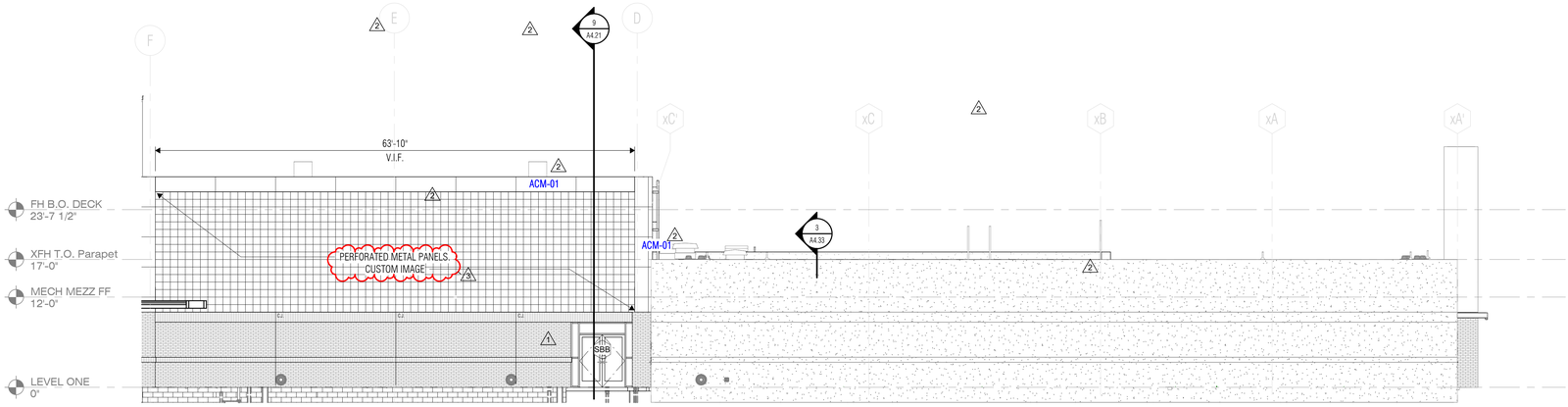
EXTERIOR ELEVATIONS

SHEET NO.

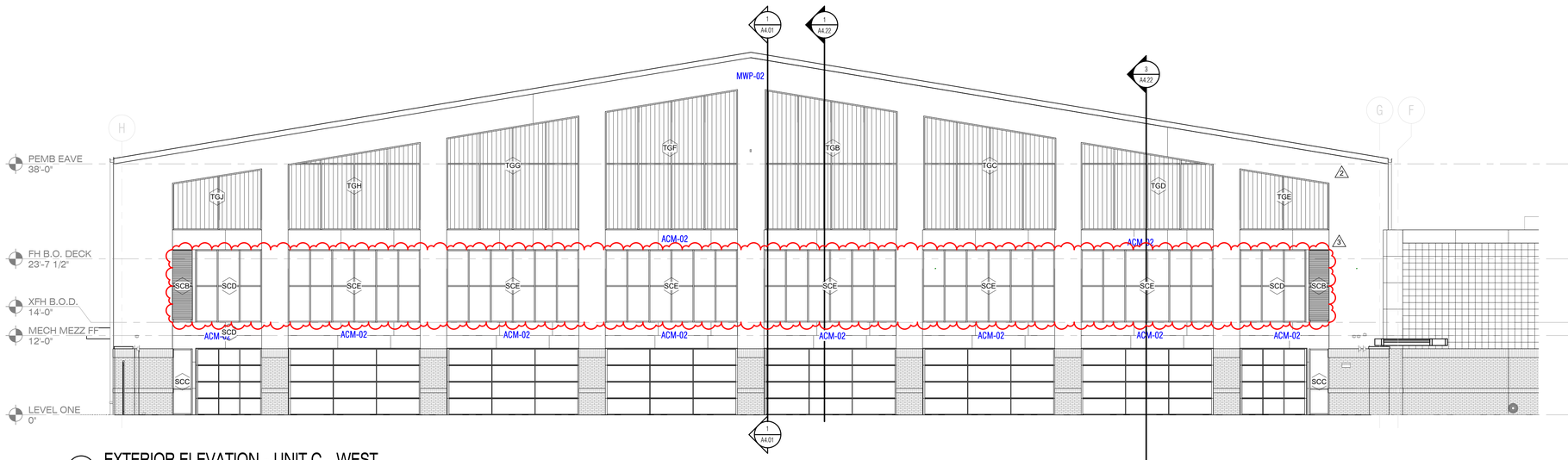
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North Shore Multi-Use Indoor Facility

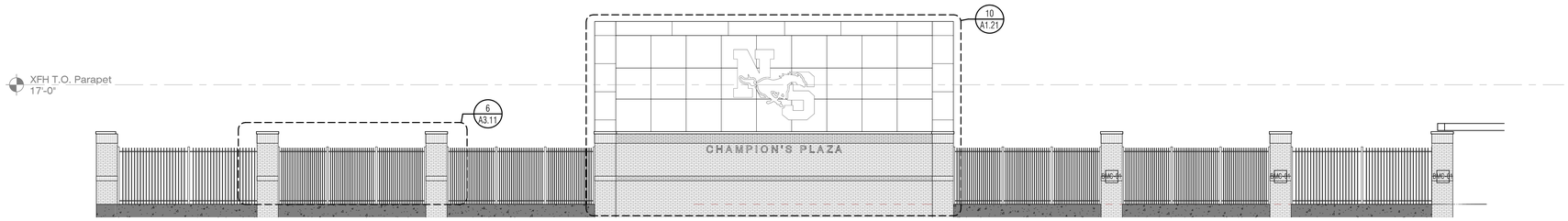
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1 EXTERIOR ELEVATION - UNIT B & A - WEST
SCALE: 1/8" = 1'-0"



2 EXTERIOR ELEVATION - UNIT C - WEST
SCALE: 1/8" = 1'-0"



3 EXTERIOR ELEVATION - CHAMPIONS PLAZA
SCALE: 1/8" = 1'-0"

EXTERIOR ELEVATION NOTES

1. Refer to Sheet **A3.11, A4.31, A4.33** for Typical Control Joint and Building Expansion Joint Details.
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7. Provide solid bricks for soldier courses at exterior corners (do not miter). Refer to Sheet **A3.11**.
8. Translucent Wall Panel system to have clear anodized finish.
9. DOR: KAWNEER (OR EQUAL).

EXTERIOR ELEVATION LEGEND

DS	DOWNSPOUT	
CJ	CONTROL JOINT, REF.	**1/A3.11, 3/A3.11, 4/A3.11**
EJ	EXPANSION JOINT, REF.	**3/A4.33**
SXX	ALUMINUM STOREFRONT, REF. SHEET **A7.21**	
TGX	TRANSLUCENT WALL PANEL SYSTEM, REF. SHEET **A7.22**	

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HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT
MONIKA C. CASTILLO
26508
STATE OF TEXAS
10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
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3	Addendum 4	10/22/2025

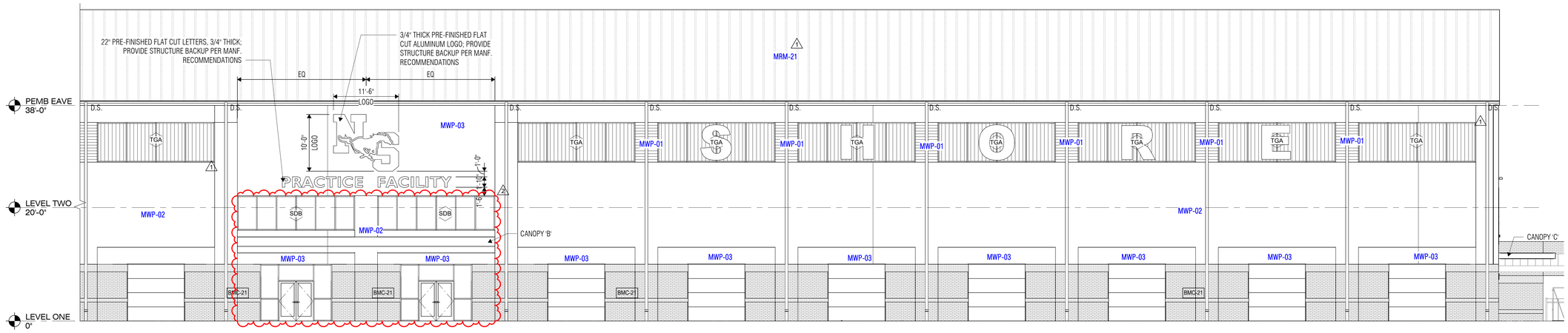
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

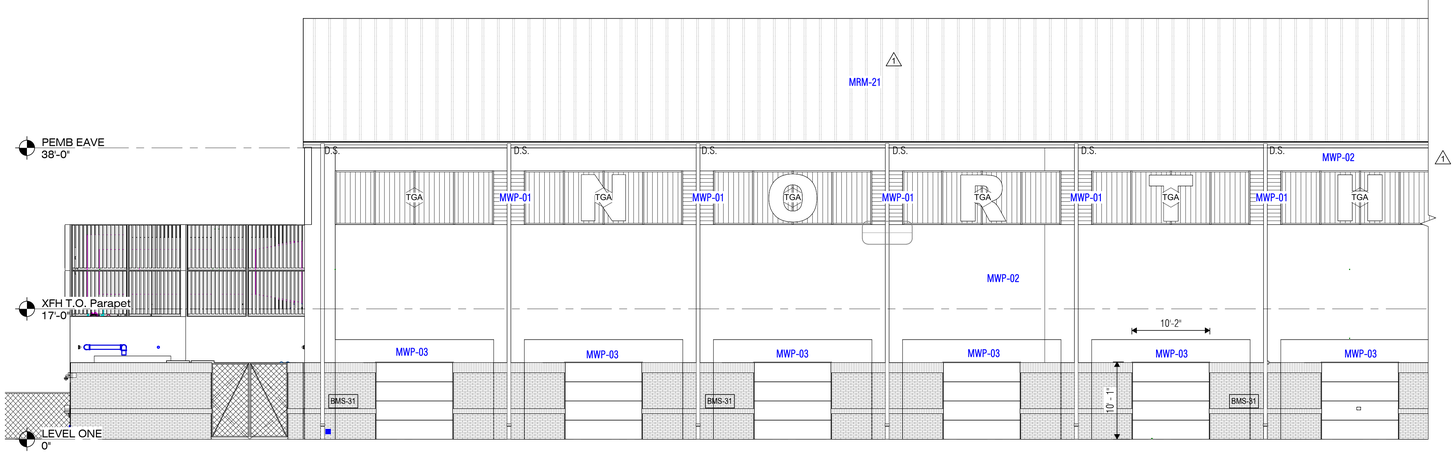
SHEET TITLE
EXTERIOR ELEVATIONS

SHEET NO.
A3.03

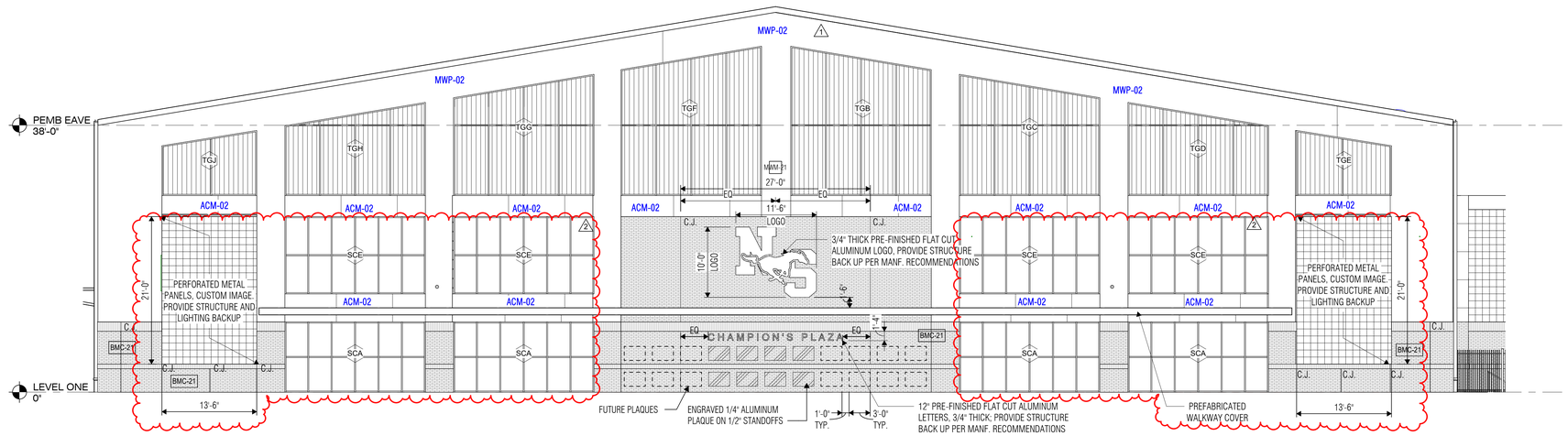
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1 EXTERIOR ELEVATION - UNIT C & D - NORTH A (ALTERNATE)
SCALE: 1/8" = 1'-0"



2 EXTERIOR ELEVATION - UNIT D - NORTH B (ALTERNATE)
SCALE: 1/8" = 1'-0"



3 EXTERIOR ELEVATION - CHAMPIONS PLAZA (ALTERNATE)
SCALE: 1/8" = 1'-0"

ARCHITECT

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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

MONIKA C. CASTILLO — REGISTERED ARCHITECT — 26508 — STATE OF TEXAS
10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 3	10/17/2025
2	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

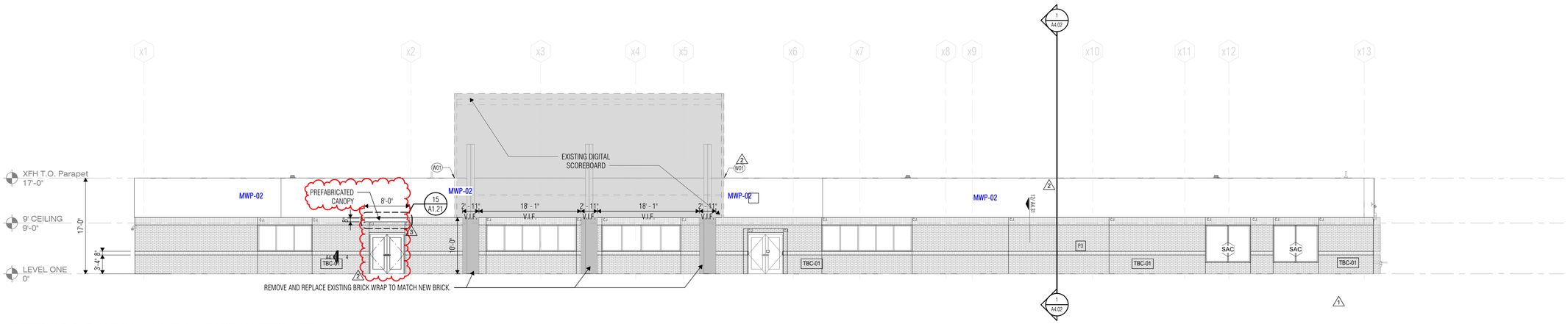
SHEET TITLE
EXTERIOR ELEVATIONS - (ALTERNATE)

SHEET NO.
A3.05

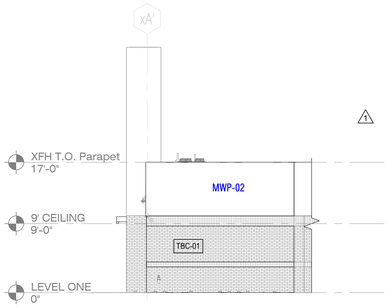
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ALTERNATE: PROVIDE THIN BRICK CLADDING AND METAL PANEL OVER HAT CHANNELS ON EXISTING TILT-UP WALLS.

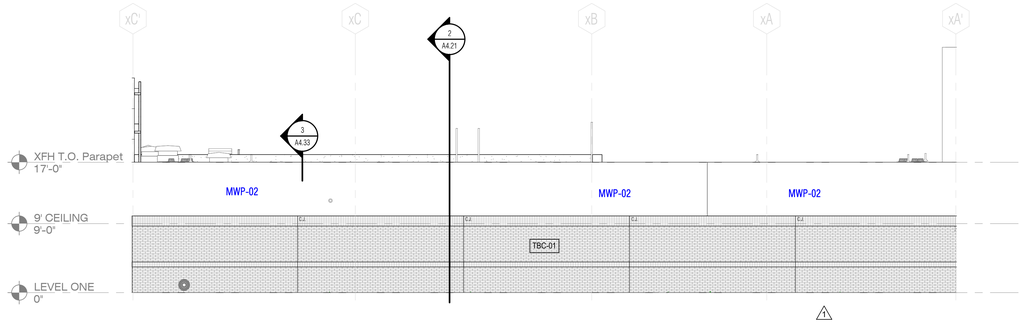
KEY NOTE SCHEDULE	
NUMBER	NOTE TEXT
W01	END TRIM AS REQUIRED



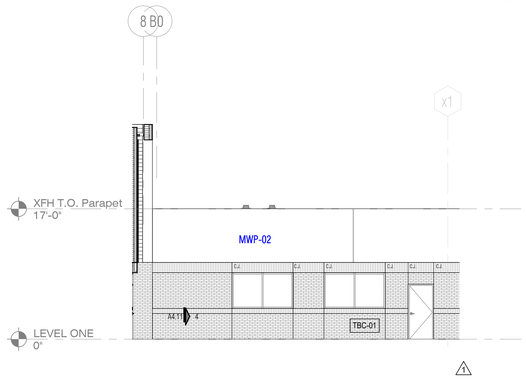
1 EXTERIOR ELEVATION - UNIT A - EAST (ALTERNATE)
SCALE: 1/8" = 1'-0"



2 EXTERIOR ELEVATION - UNIT A - SOUTH (ALTERNATE)
SCALE: 1/8" = 1'-0"



3 EXTERIOR ELEVATION - UNIT A - NORTH (ALTERNATE)
SCALE: 1/8" = 1'-0"



4 EXTERIOR ELEVATION - UNIT A - WEST (ALTERNATE)
SCALE: 1/8" = 1'-0"

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10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 1	10/08/2025
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3	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

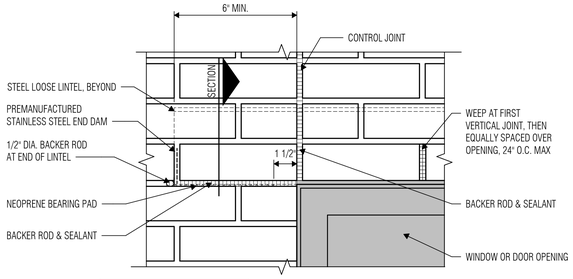
PROJECT NO.
25-0056.00

SHEET TITLE
EXTERIOR ELEVATIONS - (RECLAD ALTERNATE)

SHEET NO.
A3.06

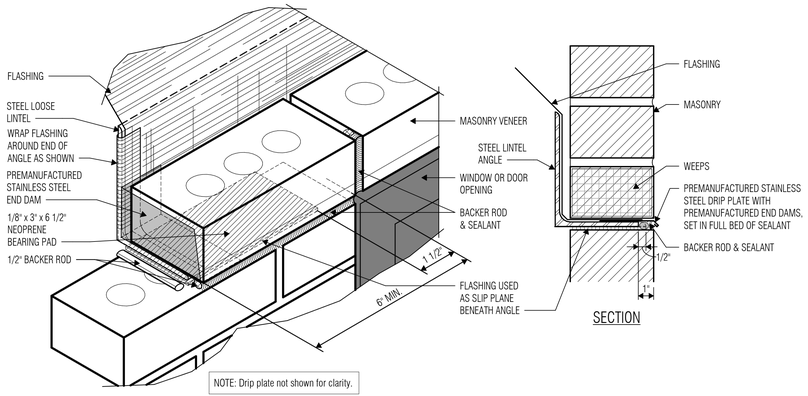
North Shore Multi-Use Indoor Facility

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NOTE: Drip plate not shown for clarity.

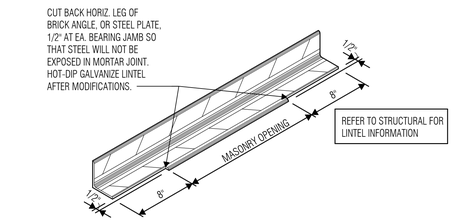
ELEVATION



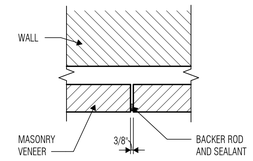
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SECTION

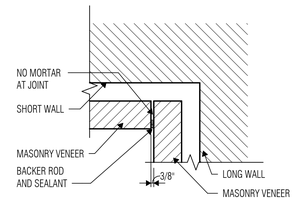
1 MASONRY VENEER CONTROL JOINT AT LOOSE LINTEL
SCALE: 3" = 1'-0"



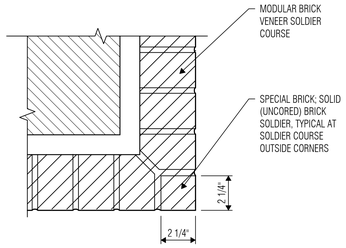
2 LOOSE LINTEL DETAIL, TYP.
SCALE: 1 1/2" = 1'-0"



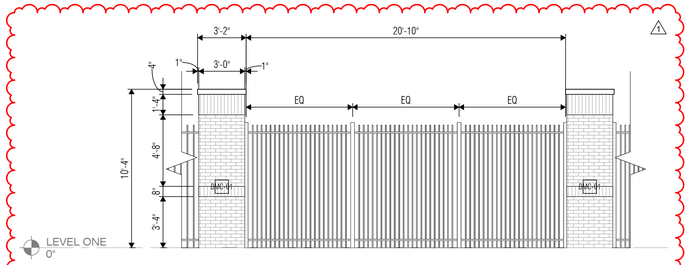
3 EXT. CONTROL JOINT
SCALE: 1 1/2" = 1'-0"



4 CONTROL JOINT INSIDE CORNER
SCALE: 1 1/2" = 1'-0"



5 PLAN FOR SOLDIER COURSE OUTSIDE CORNER
SCALE: 3" = 1'-0"



6 EXTERIOR ELEVATION - CHAMPIONS PLAZA - FENCING
SCALE: 1/4" = 1'-0"

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GALENA PARK ISD
HOUSTON, TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.

25-0056.00

SHEET TITLE

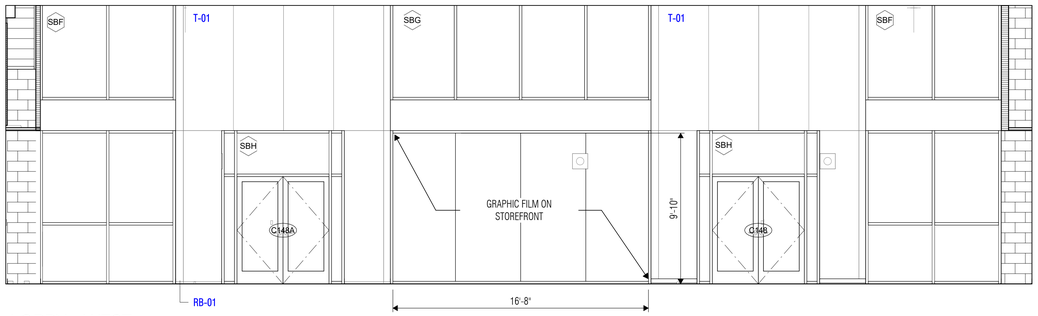
EXTERIOR ELEVATION DETAILS

SHEET NO.

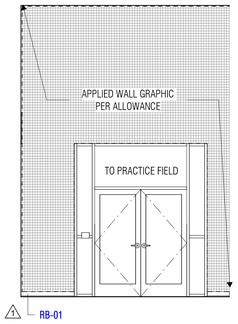
A3.11

North Shore Multi-Use Indoor Facility

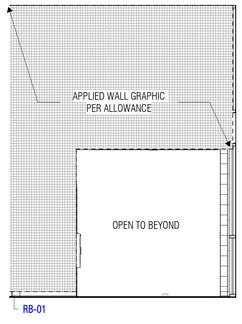
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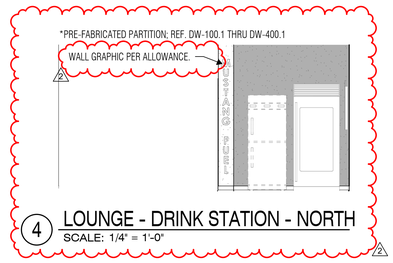
1 LOBBY - WEST
SCALE: 1/4" = 1'-0"

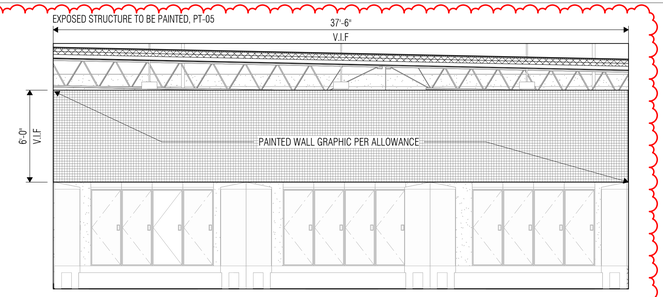


2 LOBBY - NORTH TO PRACTICE FIELD
SCALE: 1/4" = 1'-0"

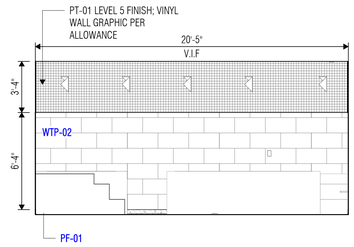


3 LOBBY - EAST TO LOUNGE
SCALE: 1/4" = 1'-0"

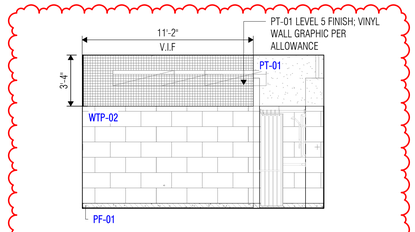

*PRE-FABRICATED PARTITION; REF. DW-100.1 THRU DW-400.1
WALL GRAPHIC PER ALLOWANCE.
2
PT-01
PT-01
PT-01



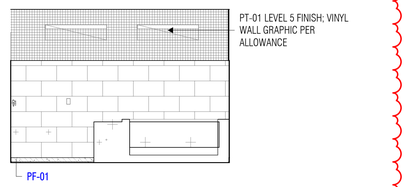
1 JUNIOR VARSITY LOCKER ROOM - WEST
SCALE: 1/4" = 1'-0"



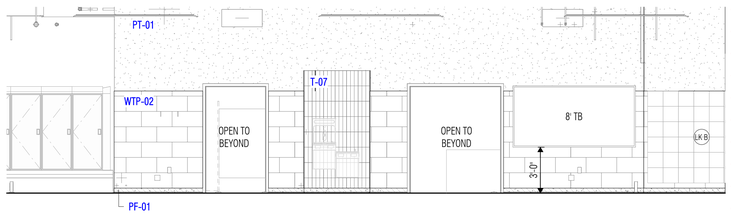
2 ICE BATH C135 - NORTH
SCALE: 1/4" = 1'-0"



3 ICE BATH C135 - EAST
SCALE: 1/4" = 1'-0"



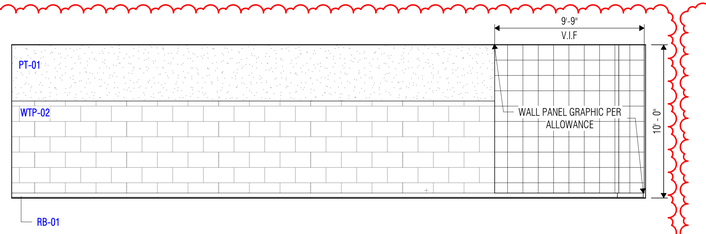
4 ICE BATH C135 - WEST
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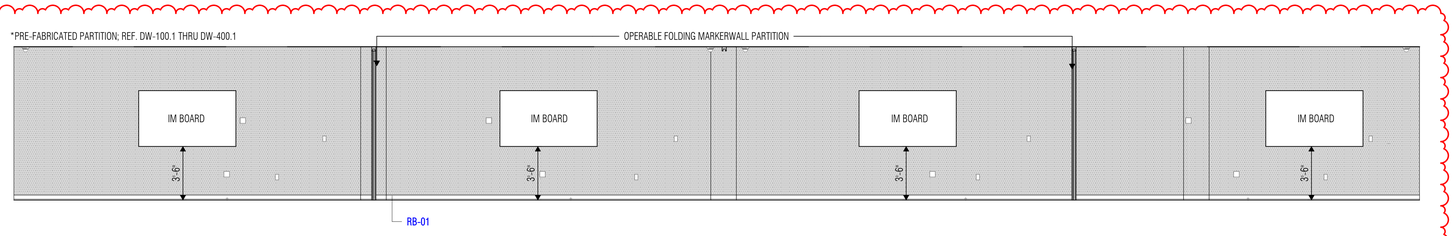
5 JUNIOR VARSITY LOCKER ROOM - NORTH
SCALE: 1/4" = 1'-0"



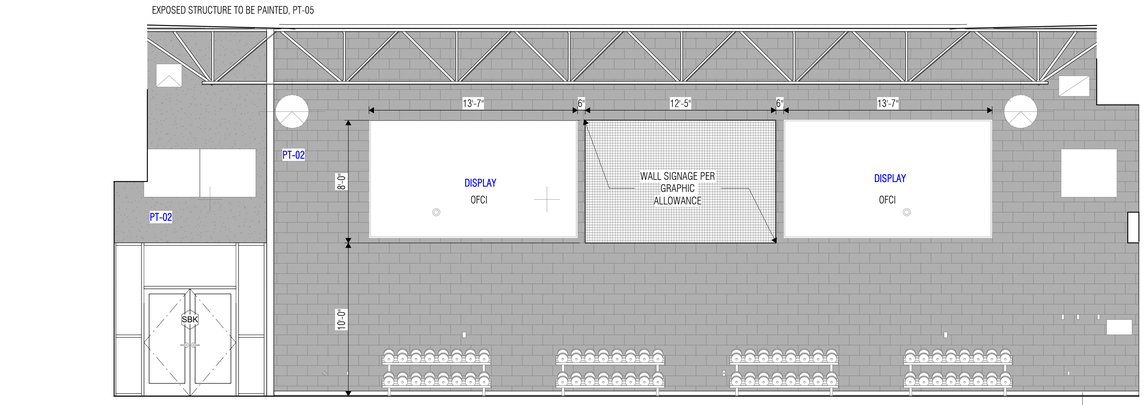
6 SERVING HALL CORRIDOR - WEST
SCALE: 1/4" = 1'-0"



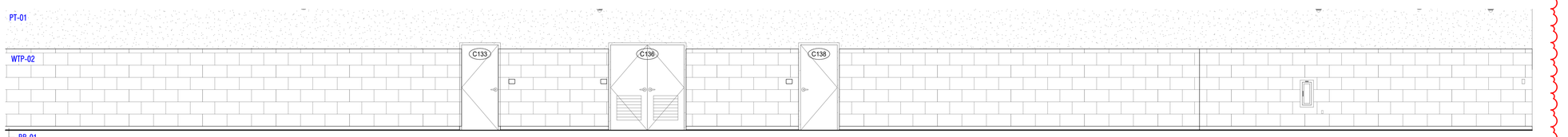
7 CORRIDOR C102 - SOUTH
SCALE: 1/4" = 1'-0"



8 PLAYER MEETING ROOMS - WEST
SCALE: 1/4" = 1'-0"



9 WEIGHT ROOM - WEST
SCALE: 1/4" = 1'-0"



10 TYPICAL CORRIDOR
SCALE: 1/4" = 1'-0"

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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT
JOHN C. CASTILLO III
28605
STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 4	10/22/2025

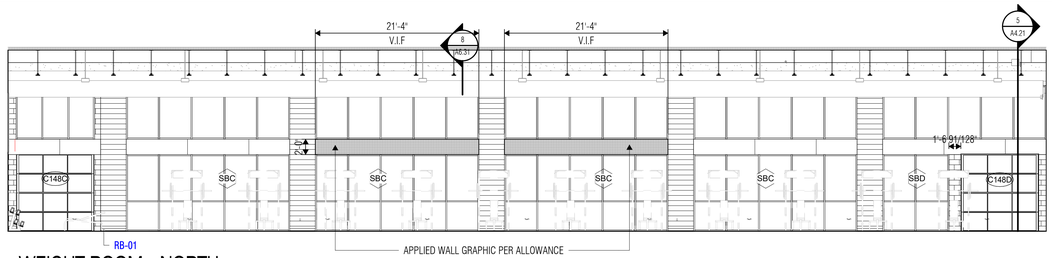
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

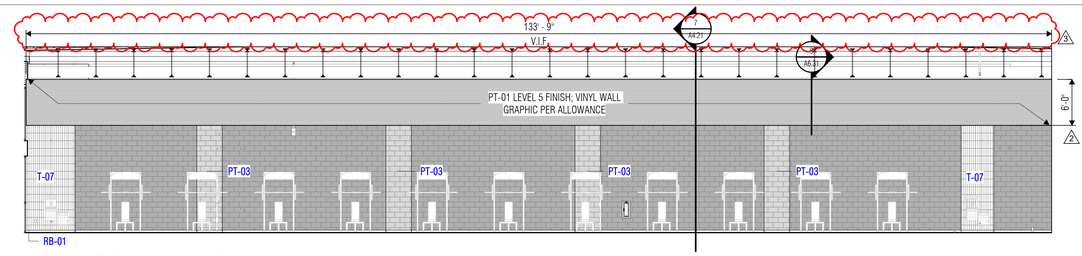
SHEET TITLE
INTERIOR ELEVATIONS

SHEET NO.
A3.22

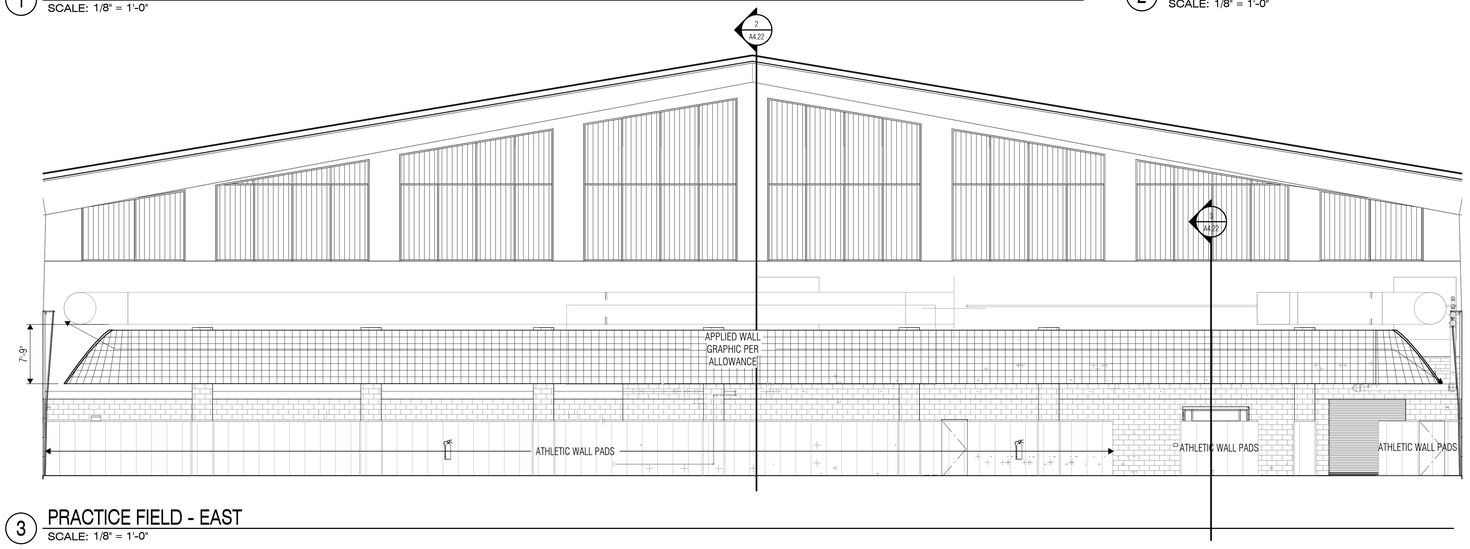
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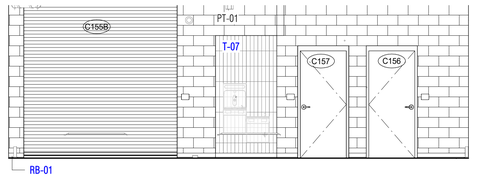
1 WEIGHT ROOM - NORTH
SCALE: 1/8" = 1'-0"



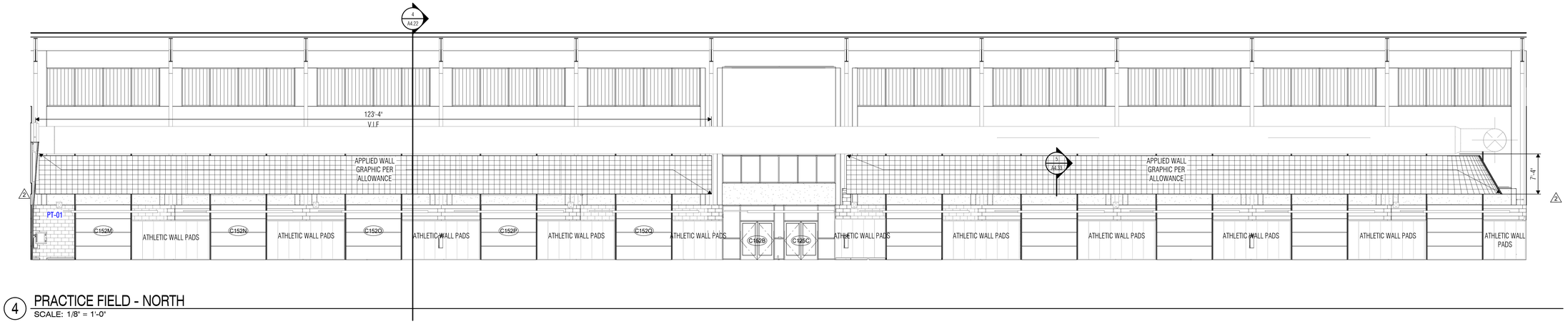
2 WEIGHT ROOM - SOUTH
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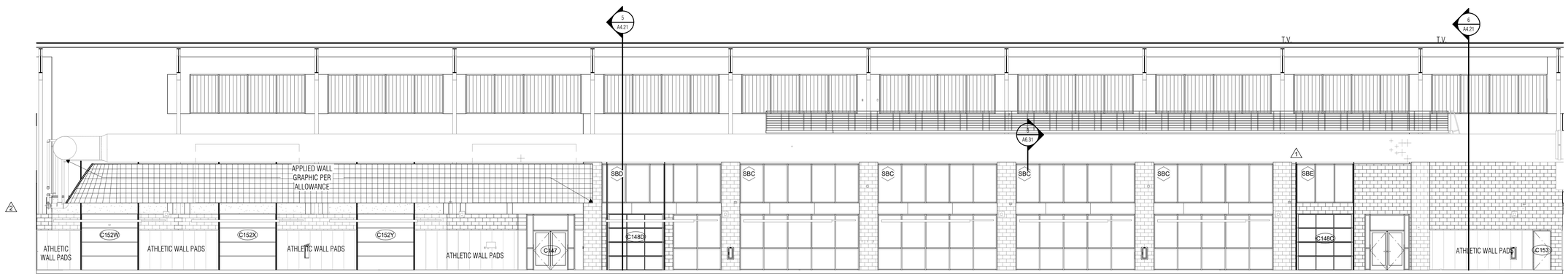
3 PRACTICE FIELD - EAST
SCALE: 1/8" = 1'-0"



6 PRACTICE FIELD - ENTRY
SCALE: 1/4" = 1'-0"



4 PRACTICE FIELD - NORTH
SCALE: 1/8" = 1'-0"



5 PRACTICE FIELD - SOUTH
SCALE: 1/8" = 1'-0"

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MONIKA C. CASTILLO
REGISTERED ARCHITECT
26559
STATE OF TEXAS

10/22/2025

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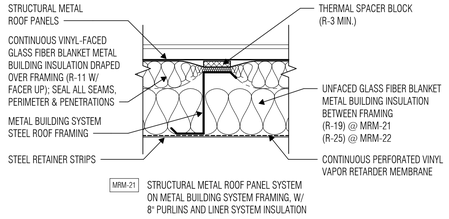
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

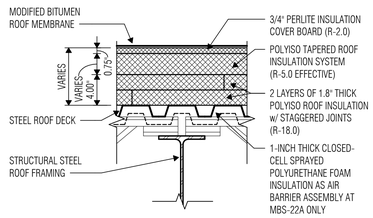
SHEET TITLE
INTERIOR ELEVATIONS

SHEET NO.
A3.23

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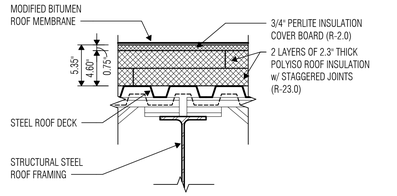


MRM-21 STRUCTURAL METAL ROOF PANEL SYSTEM ON METAL BUILDING SYSTEM FRAMING, W/ 8" PURLINS AND LINER SYSTEM INSULATION



MBS-22 MODIFIED BITUMEN ROOF SYSTEM ON STEEL DECK & FRAMING, NON-SLOPING

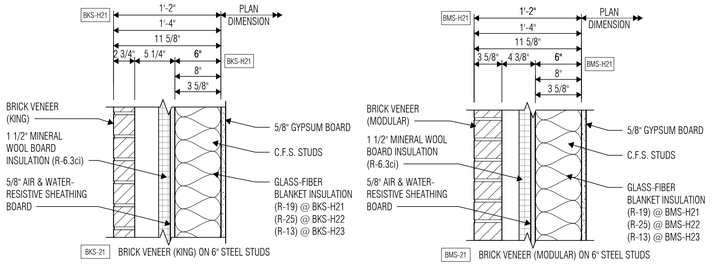
MBS-22A MODIFIED BITUMEN ROOF SYSTEM ON STEEL DECK & FRAMING, NON-SLOPING (OVER EXTERIOR VENTILATED SOFFIT)



MBS-21 MODIFIED BITUMEN ROOF SYSTEM ON EXISTING STEEL DECK & FRAMING, SLOPING

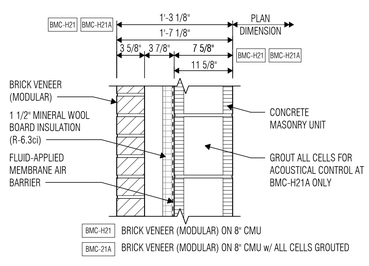
MBS-21A MODIFIED BITUMEN ROOF SYSTEM ON EXISTING STEEL DECK & FRAMING, SLOPING (OVER EXTERIOR VENTILATED SOFFIT)

1 ROOF ASSEMBLIES
SCALE: 1 1/2" = 1'-0"



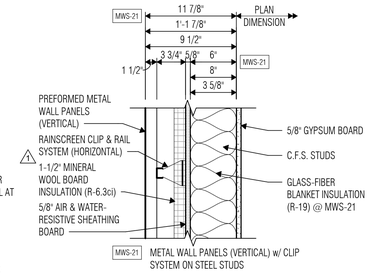
BKS-21 BRICK VENEER (KING) ON 6" STEEL STUDS

BMS-21 BRICK VENEER (MODULAR) ON 6" STEEL STUDS

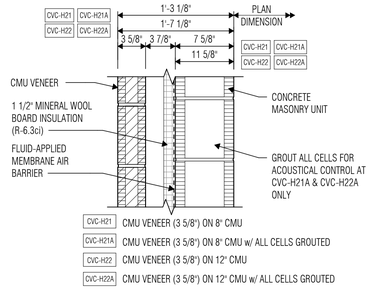


BMC-H21 BRICK VENEER (MODULAR) ON 8" CMU

BMC-21A BRICK VENEER (MODULAR) ON 8" CMU w/ ALL CELLS GROUTED



MWS-21 METAL WALL PANELS (VERTICAL) w/ CLIP SYSTEM ON STEEL STUDS

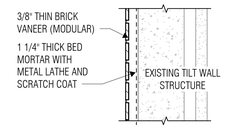


CVC-H21 CMU VENEER (3 5/8") ON 8" CMU

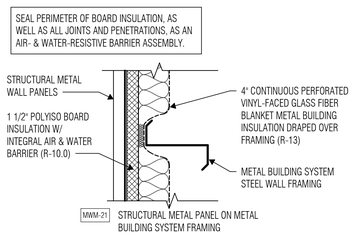
CVC-H21A CMU VENEER (3 5/8") ON 8" CMU w/ ALL CELLS GROUTED

CVC-H22 CMU VENEER (3 5/8") ON 12" CMU

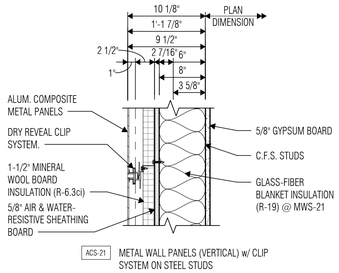
CVC-H22A CMU VENEER (3 5/8") ON 12" CMU w/ ALL CELLS GROUTED



TBK-21 MODULAR THIN BRICK VENEER APPLIED ON EXISTING TILT WALL STRUCTURE



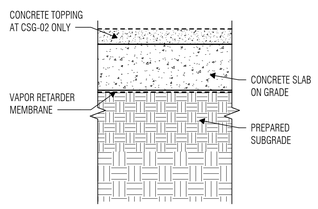
MWM-21 STRUCTURAL METAL PANEL ON METAL BUILDING SYSTEM FRAMING



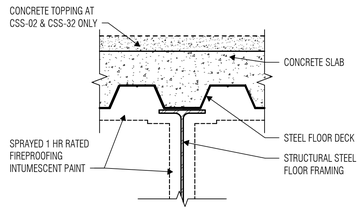
ACS-21 METAL WALL PANELS (VERTICAL) w/ CLIP SYSTEM ON STEEL STUDS

1

2 BUILDING ENVELOPE ASSEMBLY WALL TYPES
SCALE: 1 1/2" = 1'-0"

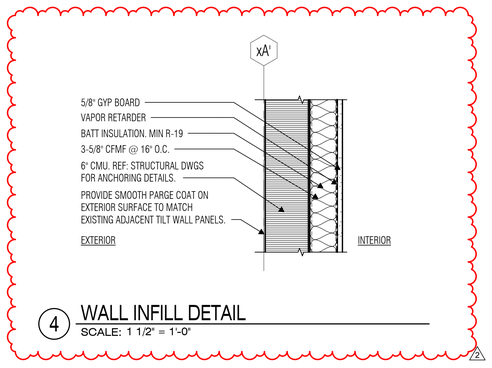


CSG-01 CONCRETE SLAB ON GRADE



CSS-01 CONCRETE SLAB ON STEEL DECK & FRAMING

3 FLOOR TYPES
SCALE: 1 1/2" = 1'-0"



4 WALL INFILL DETAIL
SCALE: 1 1/2" = 1'-0"

2

BUILDING ASSEMBLY MASTER LIST

TYPE MARK	DESCRIPTION
Wall	
TBC-01	
Floor	
CSG-01	Concrete Slab on Grade
CSS-01	Concrete Slab on Steel Deck & Framing
SW-1	Sidewalk
TF-03	
TZ-01	
TZ-02	Concrete Slab on Grade
Wall	
ACS-21	ACM Wall Panel w/ Clip System on 6" Steel Studs
BKS-21	Brick Veneer (King Size) on 6" Steel Studs
BMC-01	Brick Veneer (Modular) on 8" CMU (screen wall; non-conditioned building)
BMC-21	Brick Veneer (Modular) on 8" CMU
BMS-31	Brick Veneer (Modular) on 6" Steel Studs
MWS-21	Metal Wall Panel (Vertical) w/ Clip System on 6" Steel Studs
MWS-31	Metal Wall Panel (Vertical) w/ Clip System on 6" Steel Studs
Roof	
MBS-02	Modified Bitumen Roof System on Steel Deck & Framing, Non-Sloping (Unconditioned Bldg)
MBS-21	Modified Bitumen Roof System on Steel Deck & Framing, Sloping

CLADDING BACKUP CLIMATE ZONE MARK
BMS-21

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GALENA PARK ISD
HOUSTON, TEXAS

REGISTERED ARCHITECT MONIKA C. CASTILLO 26568 STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 1	10/08/2025
2	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

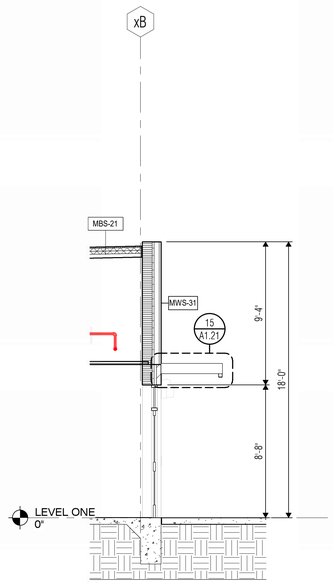
PROJECT NO.
25-0056.00

SHEET TITLE
BUILDING ASSEMBLY TYPES

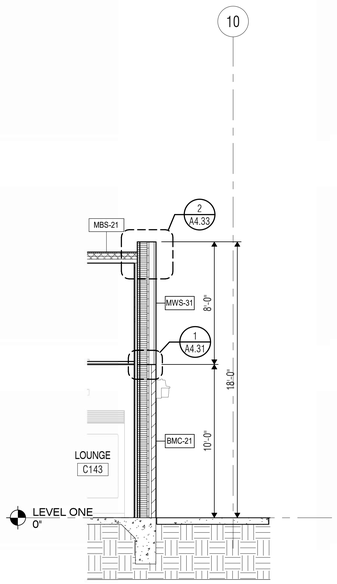
SHEET NO.
A4.11

North Shore Multi-Use Indoor Facility

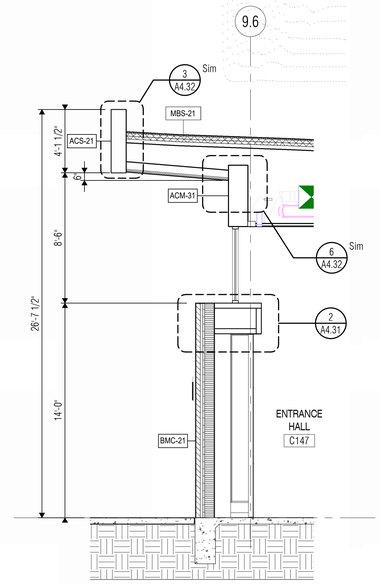
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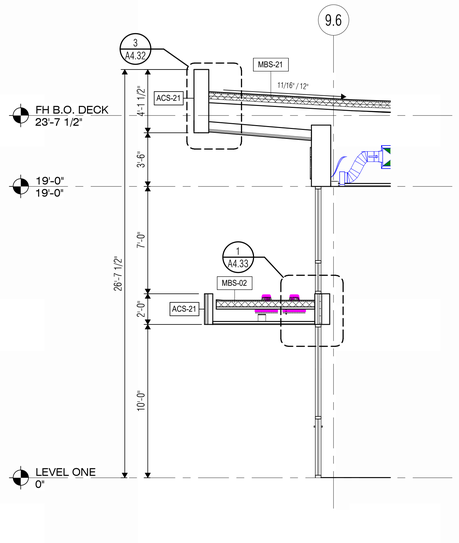
1 WALL SECTION
SCALE: 1/4" = 1'-0"



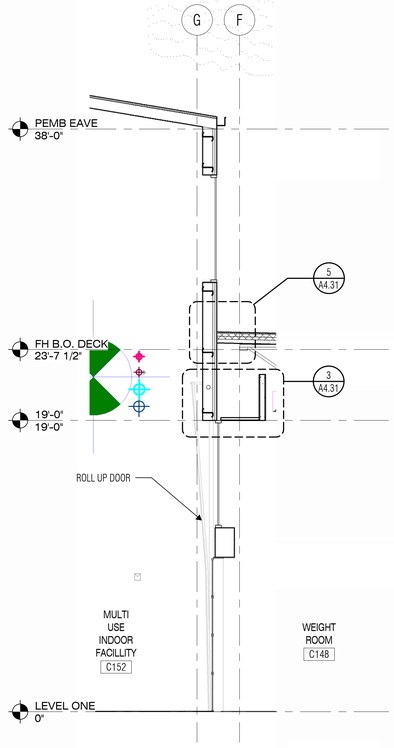
2 WALL SECTION
SCALE: 1/4" = 1'-0"



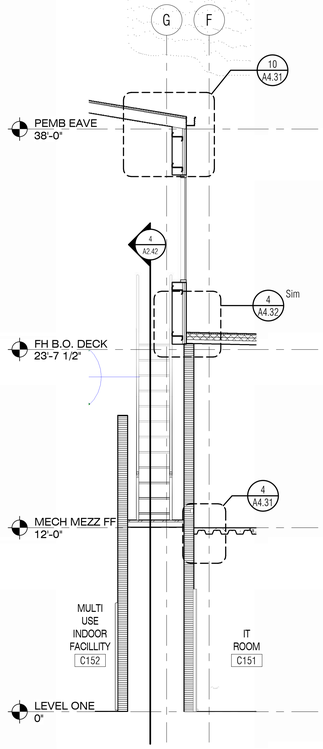
3 WALL SECTION
SCALE: 1/4" = 1'-0"



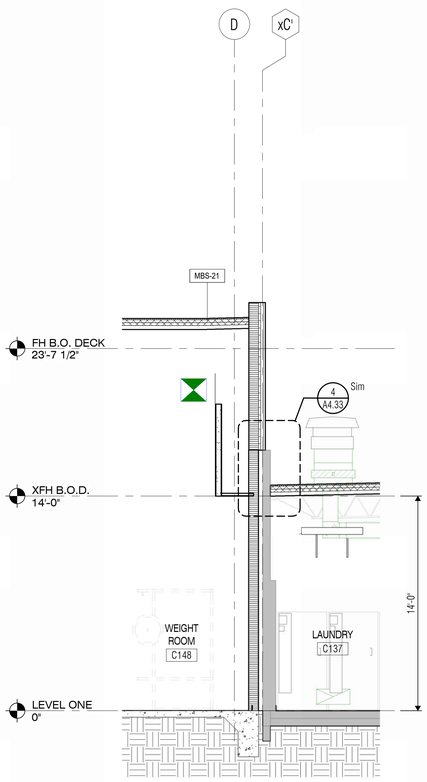
4 WALL SECTION
SCALE: 1/4" = 1'-0"



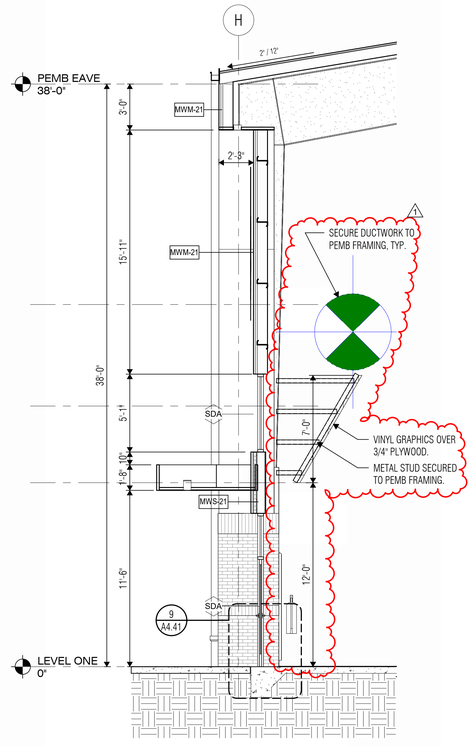
5 WALL SECTION
SCALE: 1/4" = 1'-0"



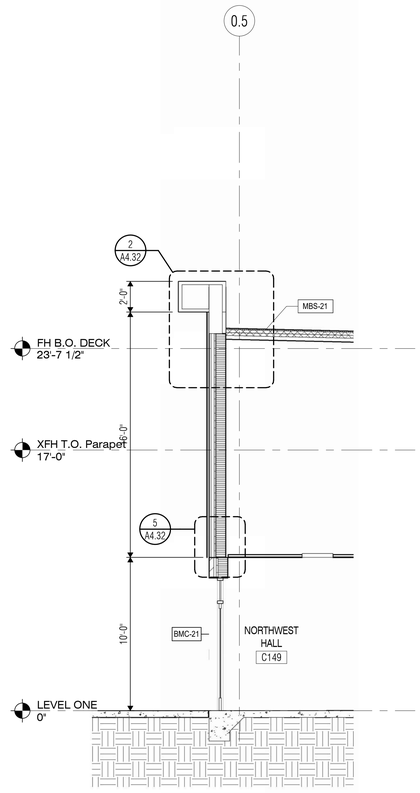
6 WALL SECTION
SCALE: 1/4" = 1'-0"



7 WALL SECTION
SCALE: 1/4" = 1'-0"



8 WALL SECTION
SCALE: 1/4" = 1'-0"



9 WALL SECTION
SCALE: 1/4" = 1'-0"

CLADDING BACKUP CLIMATE ZONE MARK
BMS-21

BUILDING ASSEMBLY LEGEND

TYPE MARK	DESCRIPTION
Floor	
CSG-01	Concrete Slab on Grade
CSS-01	Concrete Slab on Steel Deck & Framing
SW-1	Sidewalk
TF-03	
TZ-01	
TZ-02	Concrete Slab on Grade
Wall	
ACS-21	ACM Wall Panel w/ Clip System on 6" Steel Studs
BMC-21	Brick Veneer (Modular) on 8" CMU
BMS-31	Brick Veneer (Modular) on 6" Steel Studs
MWS-21	Metal Wall Panel (Vertical) w/ Clip System on 6" Steel Studs
Roof	
MBS-02	Modified Bitumen Roof System on Steel Deck & Framing, Non-Sloping (Unconditioned Bldg)
MBS-21	Modified Bitumen Roof System on Steel Deck & Framing, Sloping
MRM-21	Structural Metal Roof Panel System on Metal Building System Framing, w/8" Purlins and Liner System Insulation

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North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT
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STATE OF TEXAS
10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
1 Addendum 4	10/22/2025

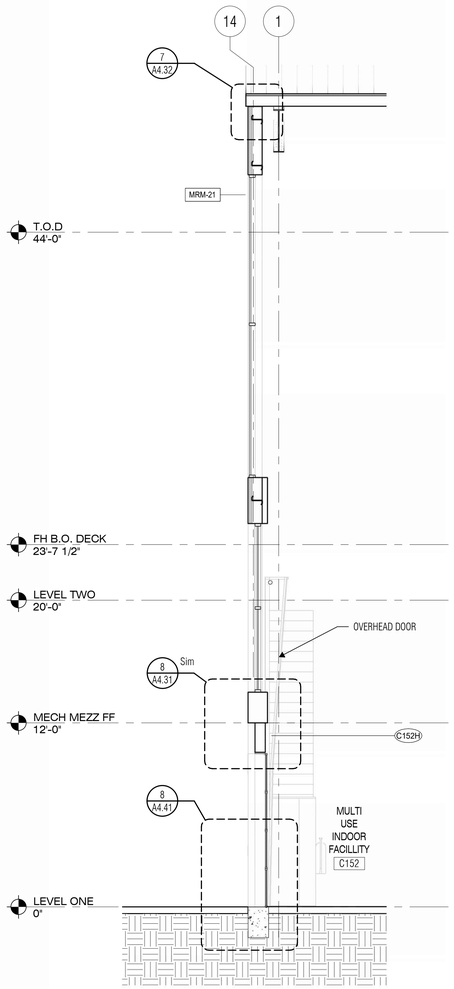
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

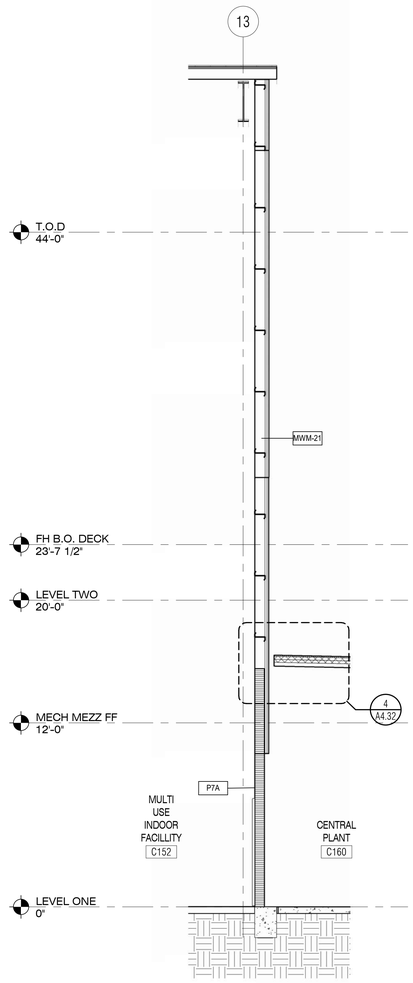
SHEET TITLE
WALL SECTIONS

SHEET NO.
A4.21

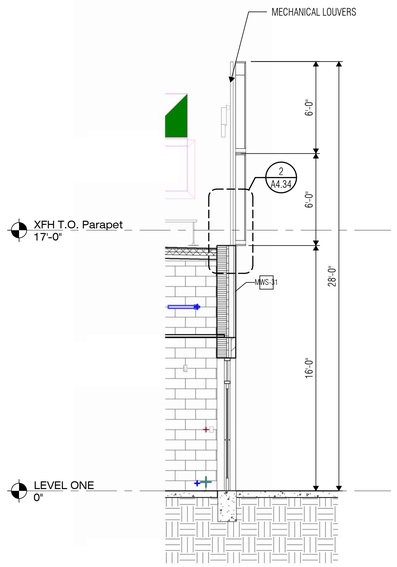
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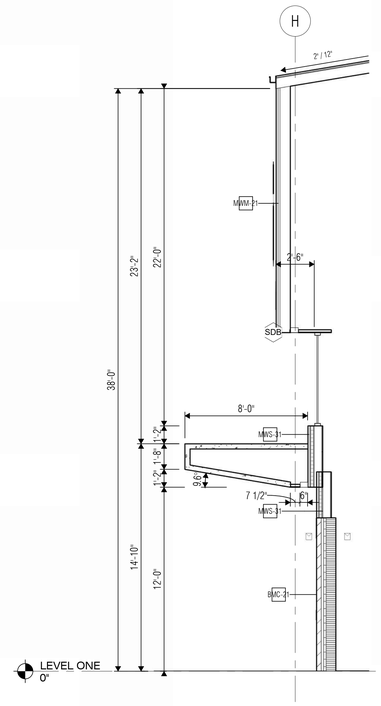
1 WALL SECTION 7
SCALE: 1/4" = 1'-0"



2 WALL SECTION 8
SCALE: 1/4" = 1'-0"



3 WALL SECTION
SCALE: 1/4" = 1'-0"



4 WALL SECTION - ALTERNATE
SCALE: 1/4" = 1'-0"

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1	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

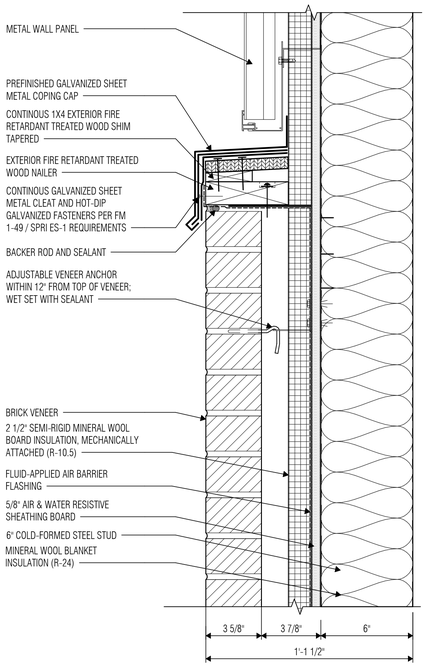
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SHEET TITLE
WALL SECTIONS

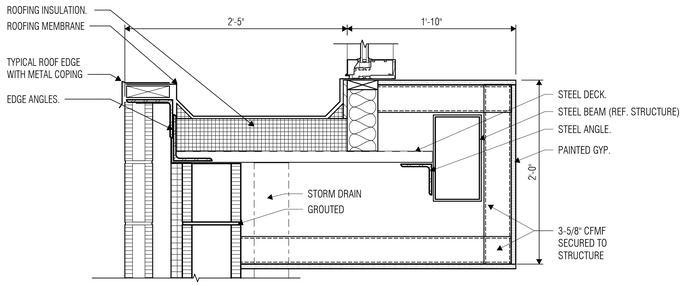
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North Shore Multi-Use Indoor Facility

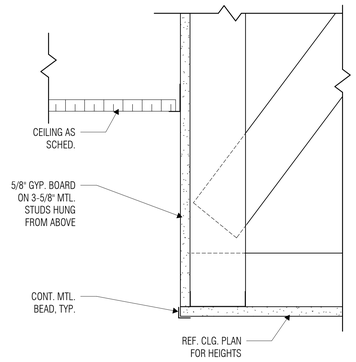
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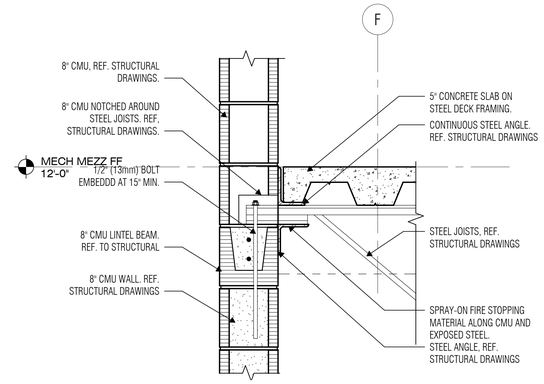
1 METAL WALL PANEL - BRICK TRANSITION DETAIL
SCALE: 3" = 1'-0"



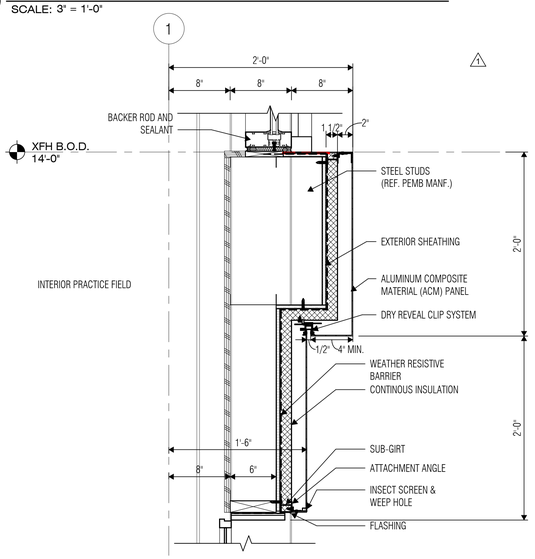
2 SECTION DETAIL - LOBBY LOW ROOF
SCALE: 1 1/2" = 1'-0"



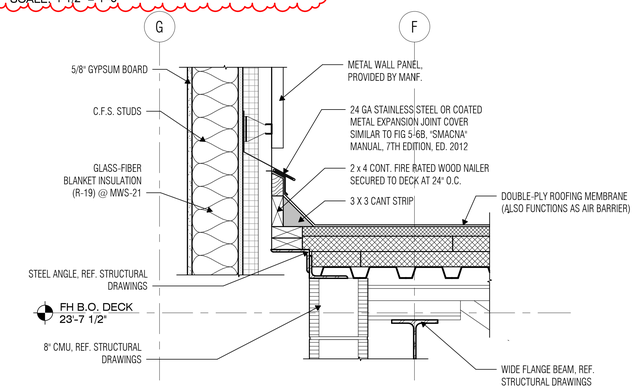
3 DETAIL AT FURR DOWN
SCALE: 3" = 1'-0"



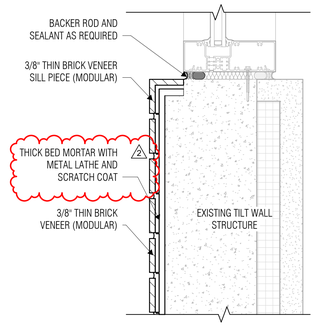
4 SECTION DETAIL @ MEZZ FOOR - CMU WALL
SCALE: 1 1/2" = 1'-0"



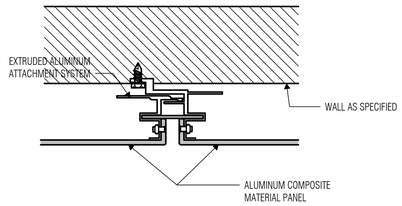
5 SECTION DETAIL @ PEMB WALL - STUD ROOF EXPAN. JOINT
SCALE: 1 1/2" = 1'-0"

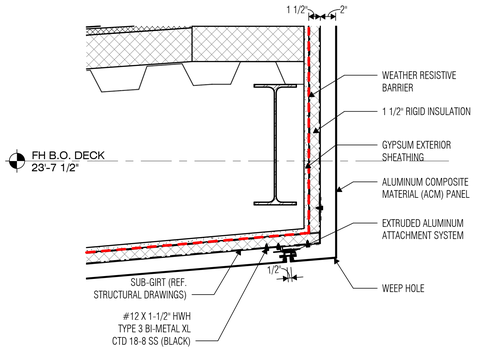


6 THIN BRICK MASONRY DETAIL (ALTERNATE)
SCALE: 3" = 1'-0"

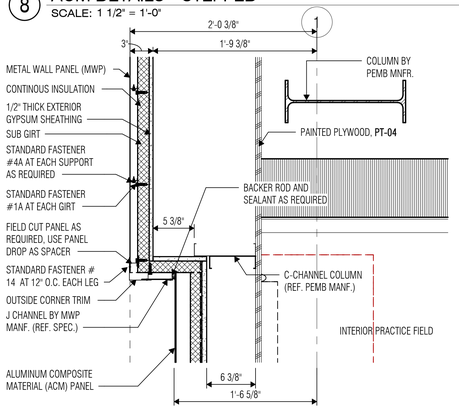


7 ACM PANEL DETAIL - TYPICAL SEAM
SCALE: 6" = 1'-0"

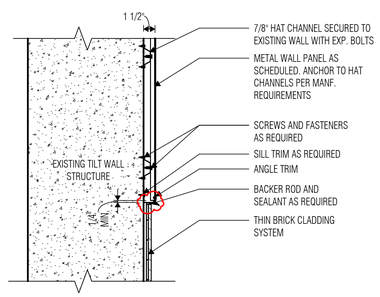




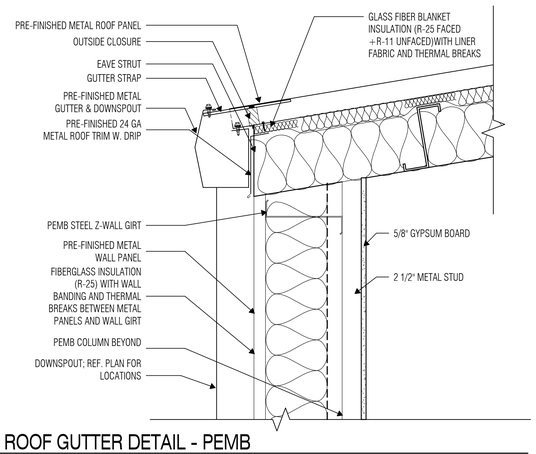
8 ACM DETAILS - STEPPED
SCALE: 1 1/2" = 1'-0"



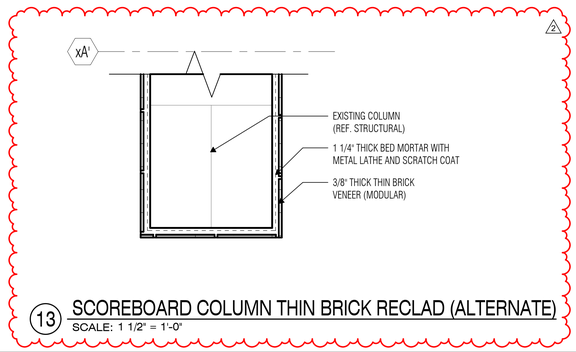
9 ACM DETAIL - WALL TO PARAPET TRANSITION
SCALE: 1 1/2" = 1'-0"



10 ROOF GUTTER DETAIL - PEMB
SCALE: 1 1/2" = 1'-0"



11 MWP - ACM DETAIL
SCALE: 1 1/2" = 1'-0"



12 METAL WALL PANEL-THIN BRICK DETAIL (ALTERNATE)
SCALE: 1 1/2" = 1'-0"

13 SCOREBOARD COLUMN THIN BRICK RECLAD (ALTERNATE)
SCALE: 1 1/2" = 1'-0"

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10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 1	10/08/2025
2	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.

25-0056.00

SHEET TITLE

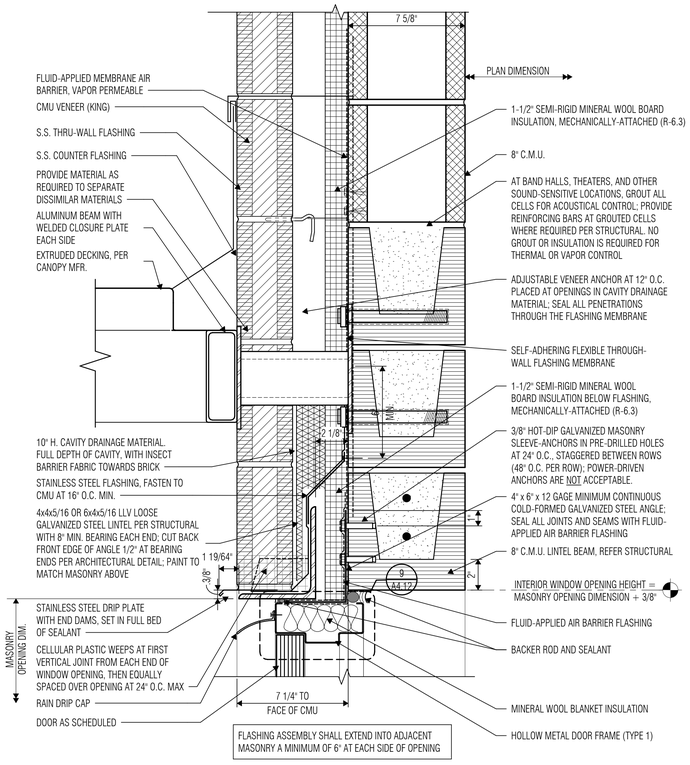
WALL ASSEMBLY DETAILS

SHEET NO.

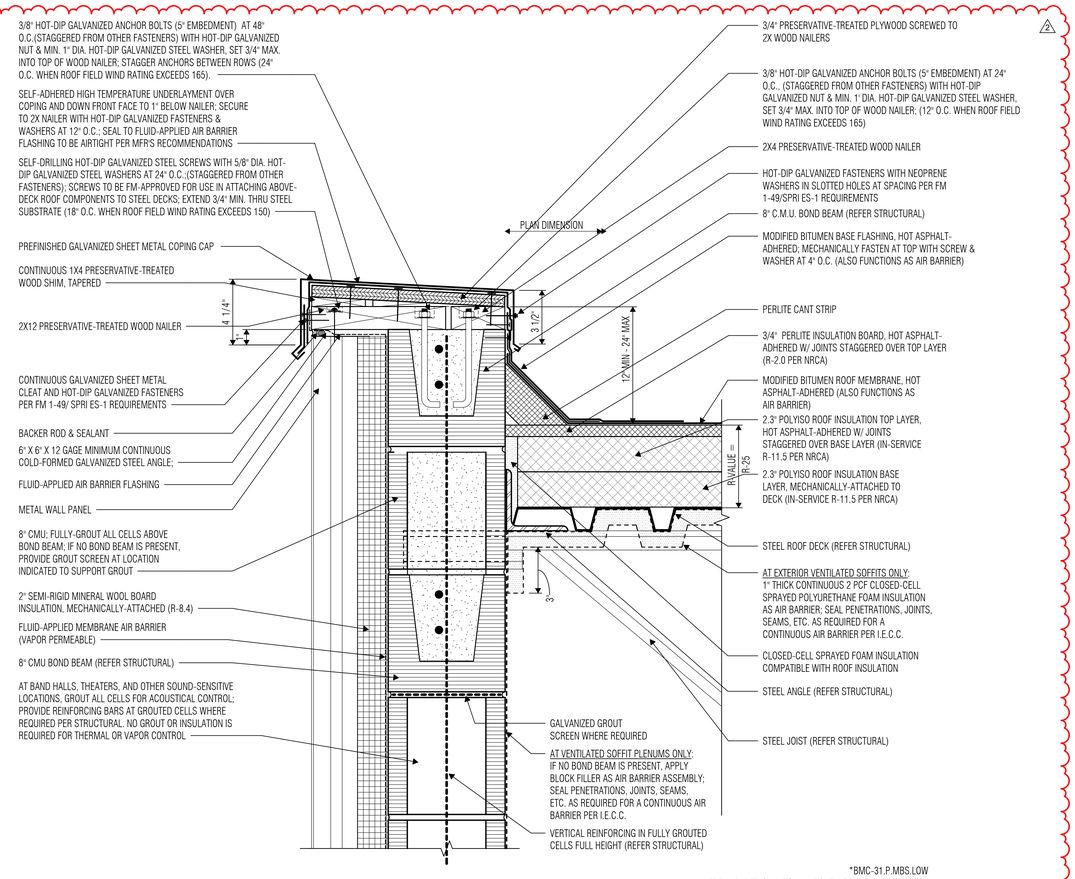
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North Shore Multi-Use Indoor Facility

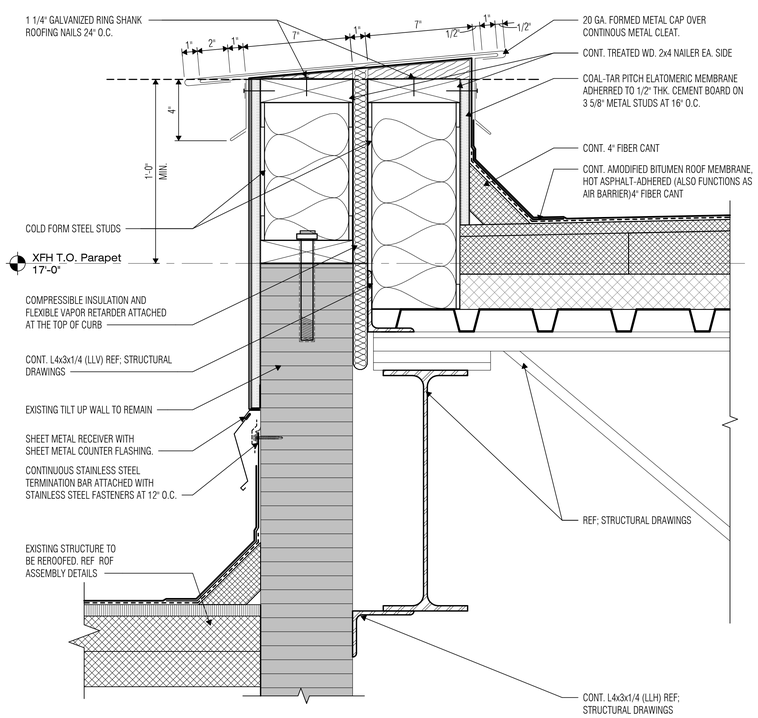
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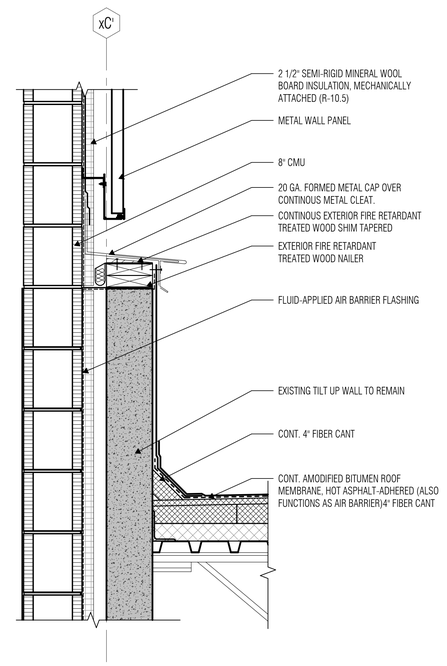
1 CANOPY AT CMU H.M. HEAD
SCALE: 3" = 1'-0"



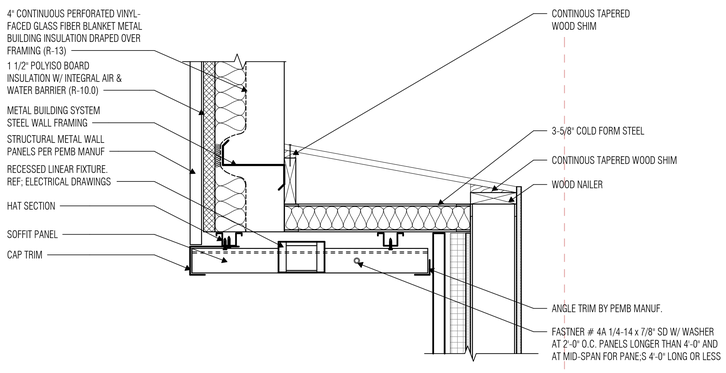
2 METAL PANEL/ CMU WALL LOW PARAPET (ROOF SUPPORTED BY WALL)
SCALE: 3" = 1'-0"



3 EXPANSION JOINT AT EXISTING TILT UP WALL
SCALE: 3" = 1'-0"



4 SECTION DETAIL @ TILT WALL & NEW METAL ON CMU WALL
SCALE: 1 1/2" = 1'-0"



5 EXTERIOR SOFFIT DETAIL
SCALE: 1 1/2" = 1'-0"

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GALENA PARK ISD
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North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT MONIKA C. CASTILLO 26558 STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 1	10/08/2025
2	Addendum 4	10/22/2025

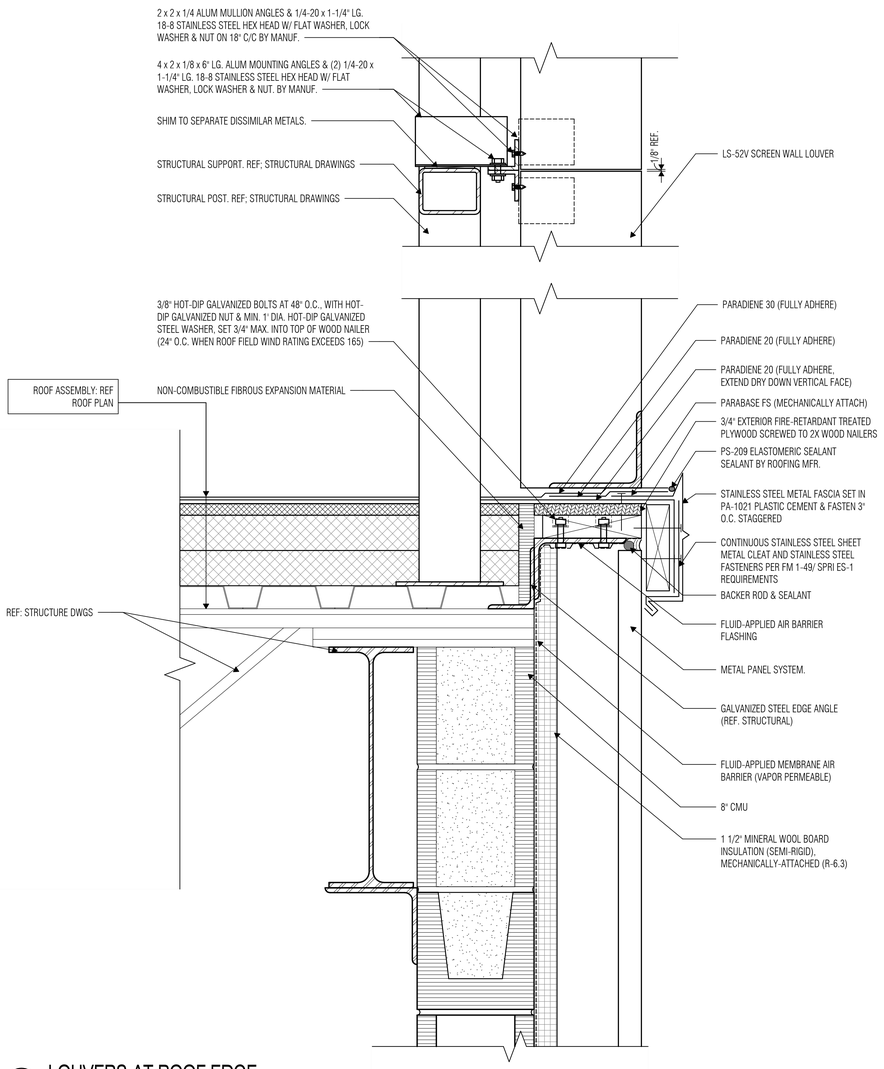
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
WALL ASSEMBLY DETAILS

SHEET NO.
A4.33

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2 LOUVERS AT ROOF EDGE
SCALE: 3" = 1'-0"

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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT
MONIKA C. CASTILLO
28555
STATE OF TEXAS

10/22/2025

ISSUED: October 22, 2025

REVISIONS

Revision No.	Revision Date

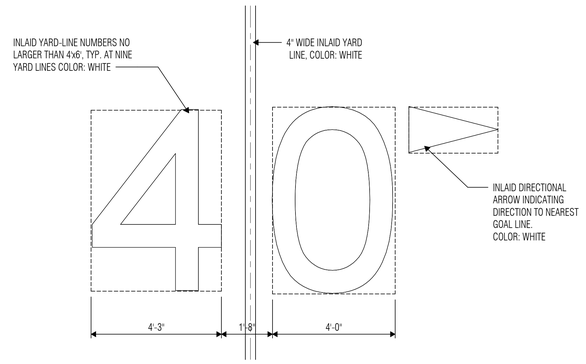
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

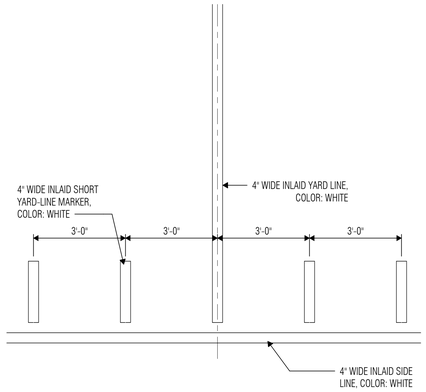
SHEET TITLE
WALL ASSEMBLY DETAILS

SHEET NO.
A4.34

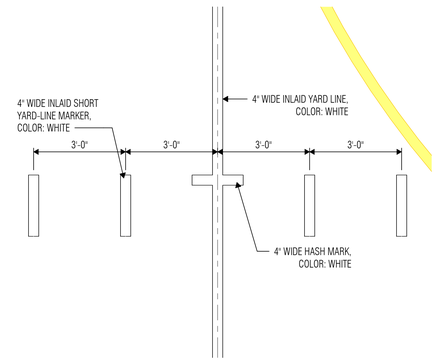
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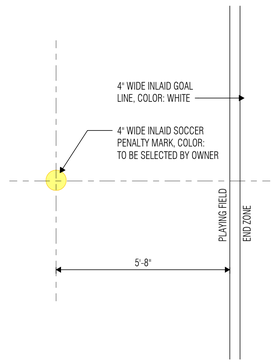
1 DETAIL AT YARD-LINE NUMBERS
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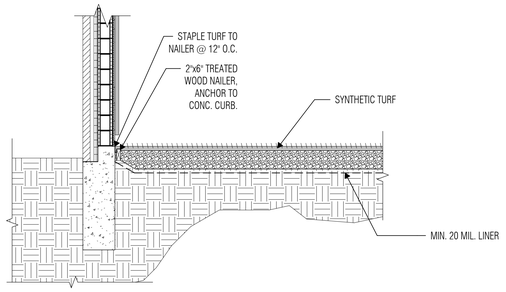
2 DETAIL AT SIDE LINE
SCALE: 1/2" = 1'-0"

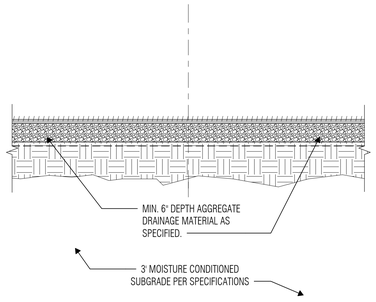


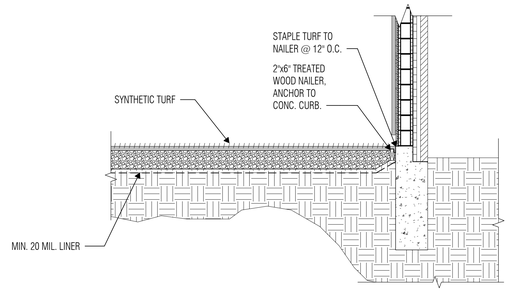
3 DETAIL AT INBOUND LINES
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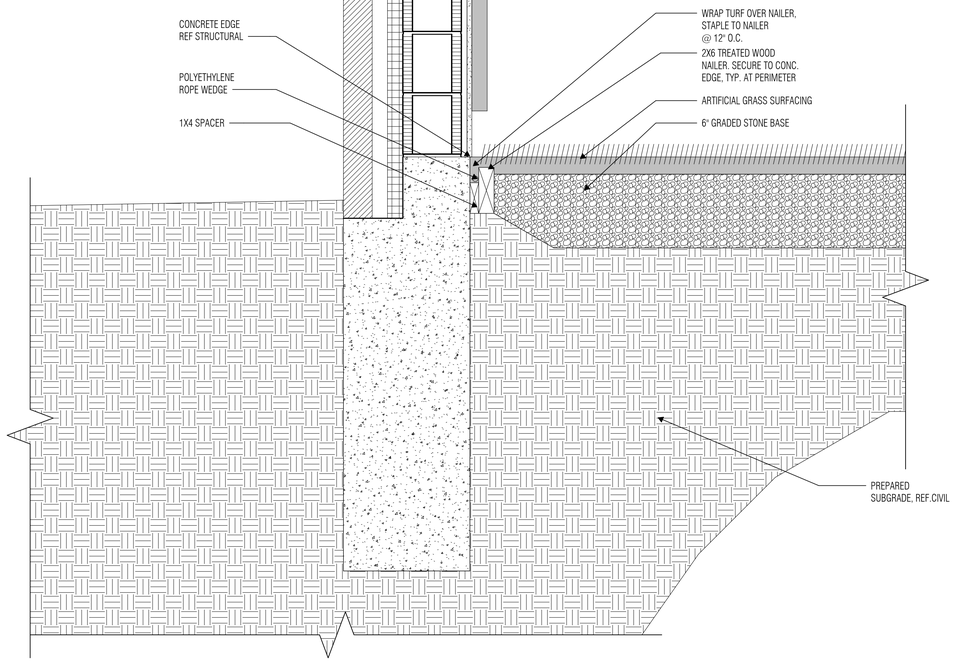
4 DETAIL AT PENALTY MARK
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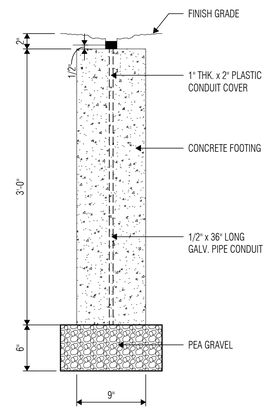




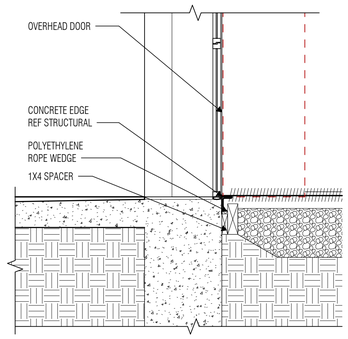
6 SECTION THROUGH FIELD
SCALE: 3/8" = 1'-0"



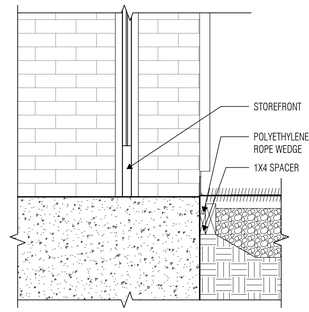
5 DETAIL @ EDGE OF TURF1
SCALE: 1 1/2" = 1'-0"



7 FIELD CORNER/RADIUS MARKER
SCALE: 1 1/2" = 1'-0"



8 TURF TERMINATION DETAIL @ OH DOOR
SCALE: 1" = 1'-0"



9 TURF TERMINATION DETAIL @ STOREFRONT
SCALE: 1" = 1'-0"

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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT — MONIKA C. CASTILLO — 26558 — STATE OF TEXAS
10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 1	10/08/2025
2	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
FIELD DETAILS

SHEET NO.
A4.41

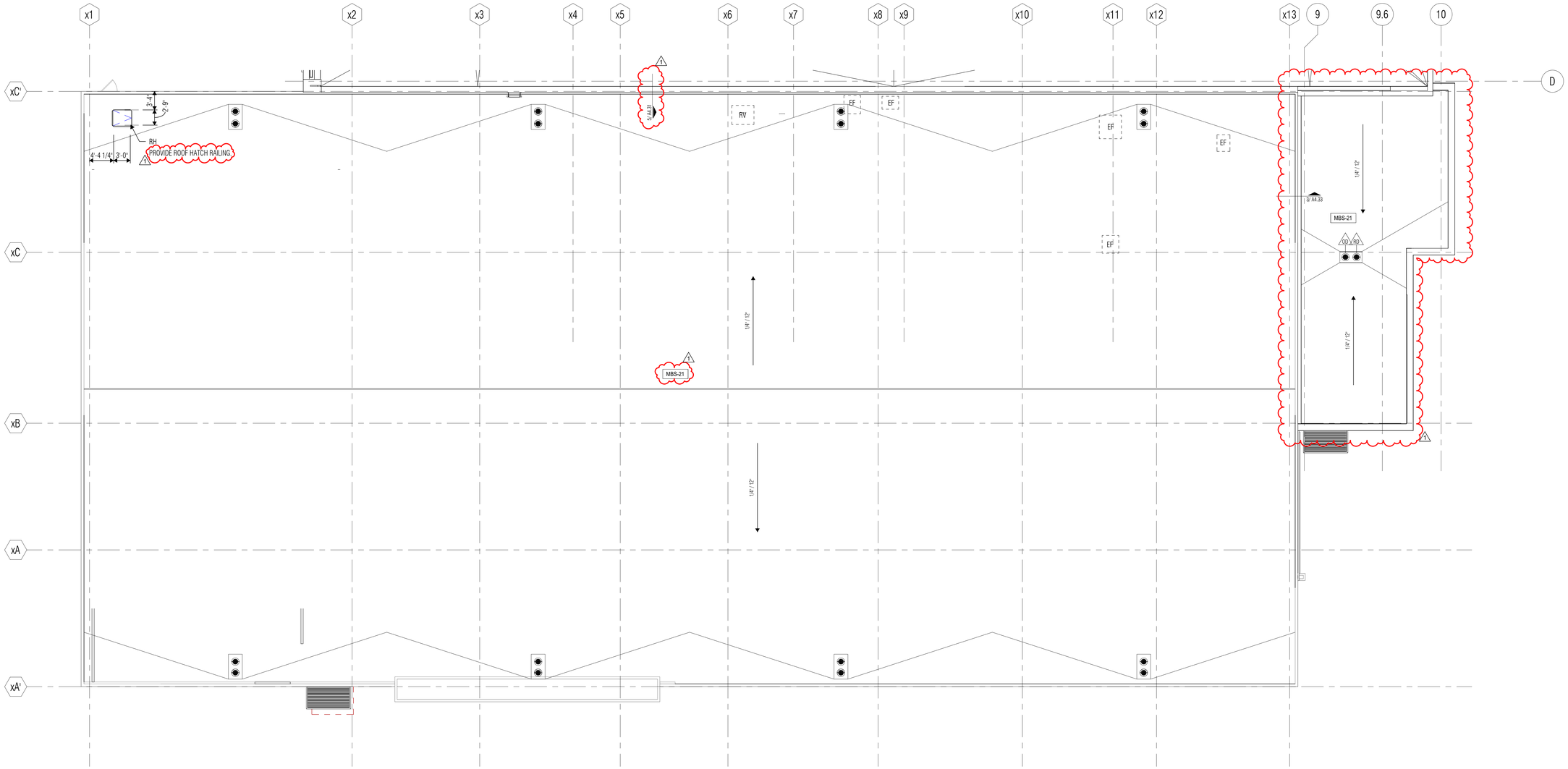
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ROOF PLAN NOTES

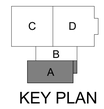
1. Provide tapered insulation crickets at the high side of all rooftop curbs, mounting rails, and other miscellaneous roof penetrations as required to shed water around them and to ensure positive roof drainage, whether indicated on the drawings or not.
2. Crickets shall slope 1/2" per foot, unless noted otherwise.
3. Locate overflow scuppers per Building Elevations. If conflicts occur, contact Architect prior to construction.
4. Provide roof walkway protection at base of all roof ladders, around all sides of roof hatches, on all sides of rooftop units and condensing units, and on paths leading from roof access points to rooftop units and condensing units, whether indicated on drawings or not.
5. Provide layer of roof walkway protection under all pipe and conduit supports, fully-adhered to roof membrane.
6. Provide additional layer of single-ply roof membrane at the discharge point of downspouts, where splash pans are not provided.
7. Provide metal end closure at the ends of expansion joints, flashings and counterflashings.
8. Paint all exposed galvanized metal flashings, miscellaneous steel, piping, conduits, etc. that are not prefinished.

ROOF PLAN LEGEND

T.O.M.	TOP OF MASONRY ELEVATION
T.O.D.	TOP OF DECK ELEVATION
T.O.S.	TOP OF STEEL ELEVATION
RD	ROOF DRAIN, REF. 2 / A5.31
OD	OVERFLOW DRAIN WITH DOWNSPOUT NOZZLE, REF. 3 / A5.31
DS	DOWNSPOUT, REF. 5 / A5.31
SB	SPLASH BLOCK, CONCRETE, REF. - / ---
SP	SPLASH PAN, REF. 10 / A5.31
MC	MANUFACTURED COPING, REF. 12 / A5.31
RH	ROOF HATCH, REF. 1 / A5.31
RL	ROOF LADDER, REF. 1 / A5.31
RTU	ROOFTOP UNIT, REF. MECHANICAL
CU	CONDENSING UNIT, REF. M.E.P.
GP	GAS PIPE PENETRATION, REF. M.E.P. & 7 / A5.31
RV	RELIEF VENT, REF. M.E.P.
EF	EXHAUST FAN, REF. M.E.P.



1 ROOF PLAN UNIT A
SCALE: 1/8" = 1'-0"



KEY PLAN

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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT
MONIKA C. CASTILLO
26559
STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 4	10/22/2025

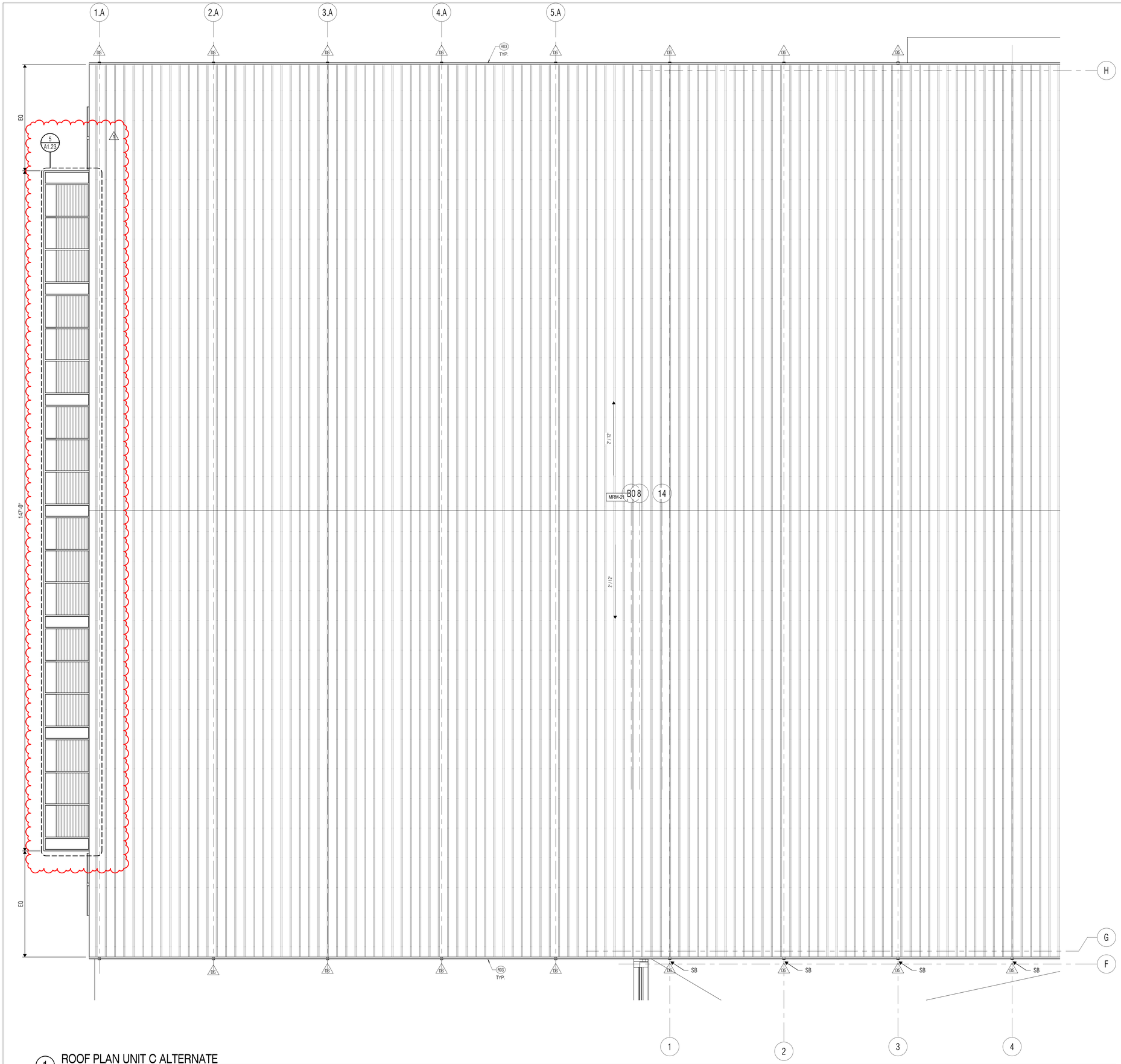
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
ROOF PLAN - UNIT A

SHEET NO.
A5.21

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1 ROOF PLAN UNIT C ALTERNATE
SCALE: 1/8" = 1'-0"

ROOF PLAN NOTES

1. Provide tapered insulation crickets at the high side of all rooftop curbs, mounting rails, and other miscellaneous roof penetrations as required to shed water around them and to ensure positive roof drainage, whether indicated on the drawings or not.
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7. Provide metal end closure at the ends of expansion joints, flashings and counterflashings.
8. Paint all exposed galvanized metal flashings, miscellaneous steel, piping, conduits, etc. that are not prefinished.

ROOF PLAN LEGEND

T.O.M.	TOP OF MASONRY ELEVATION
T.O.D.	TOP OF DECK ELEVATION
T.O.S.	TOP OF STEEL ELEVATION
RD	ROOF DRAIN, REF. 2 / A5.31
OD	OVERFLOW DRAIN WITH DOWNSPOUT NOZZLE, REF. 3 / A5.31
DS	DOWNSPOUT, REF. 5 / A5.31
SB	SPLASH BLOCK, CONCRETE, REF. - / ---
SP	SPLASH PAN, REF. 10 / A5.31
MC	MANUFACTURED COPING, REF. 12 / A5.31
RH	ROOF HATCH, REF. 1 / A5.31
RL	ROOF LADDER, REF. 1 / A5.31
RTU	ROOFTOP UNIT, REF. MECHANICAL
CU	CONDENSING UNIT, REF. M.E.P.
GP	GAS PIPE PENETRATION, REF. M.E.P. & 7 / A5.31
RV	RELIEF VENT, REF. M.E.P.
EF	EXHAUST FAN, REF. M.E.P.

KEY NOTE SCHEDULE

NUMBER	NOTE TEXT
R03	GUTTER AND DOWNSPOUTS. TYP.

KEY PLAN

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North Shore Multi-Use Indoor Facility

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MONIKA C. CASTILLO
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STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.

25-0056.00

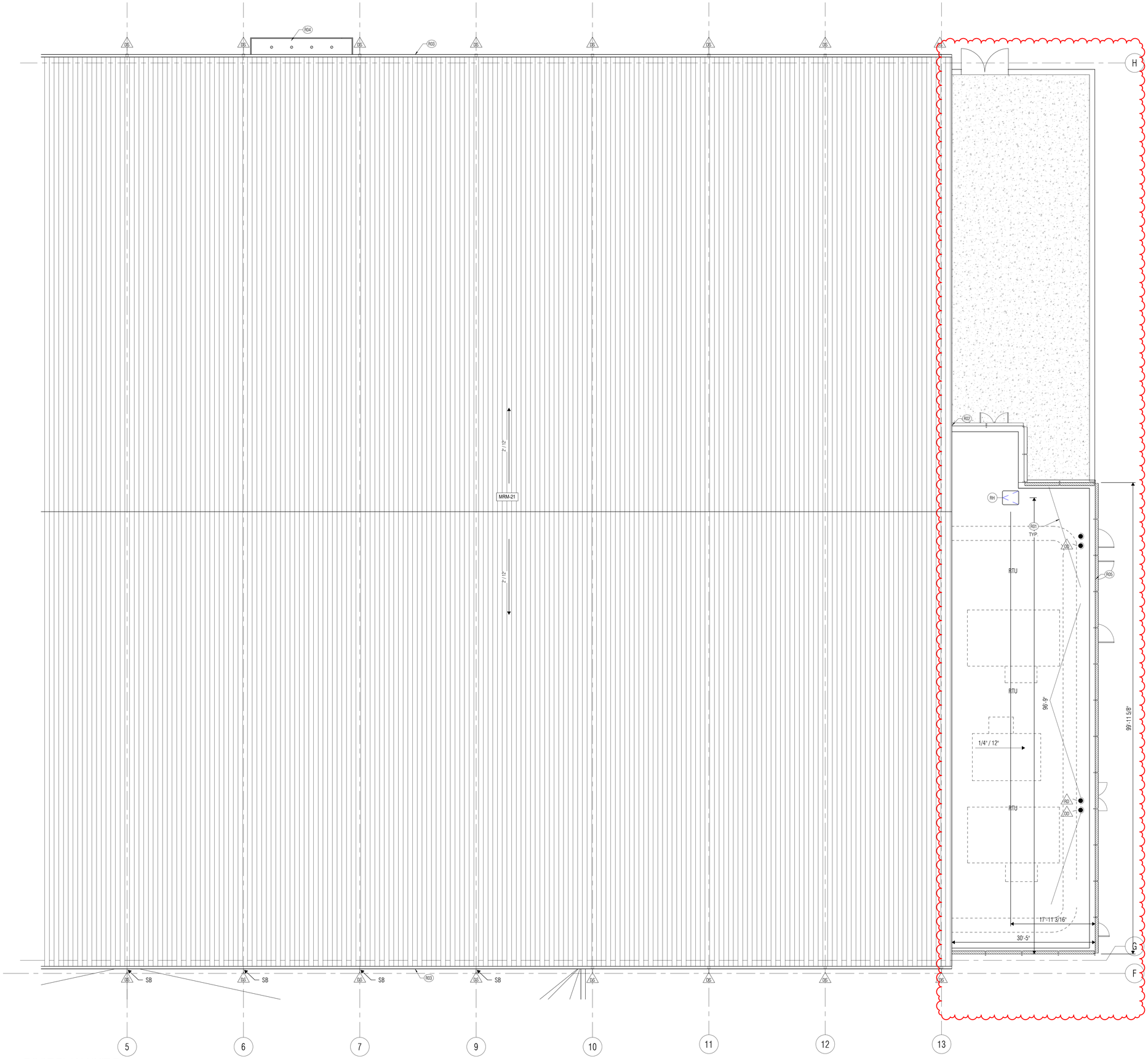
SHEET TITLE

ROOF PLAN - UNIT C - ALTERNATE

SHEET NO.

A5.23.1

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1 ROOF PLAN UNIT D
SCALE: 1/8" = 1'-0"

ROOF PLAN NOTES

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8. Paint all exposed galvanized metal flashings, miscellaneous steel, piping, conduits, etc. that are not prefinished.

ROOF PLAN LEGEND

T.O.M.	TOP OF MASONRY ELEVATION
T.O.D.	TOP OF DECK ELEVATION
T.O.S.	TOP OF STEEL ELEVATION
RD	ROOF DRAIN, REF. 2 / A5.31
OD	OVERFLOW DRAIN WITH DOWNSPOUT NOZZLE, REF. 3 / A5.31
DS	DOWNSPOUT, REF. 5 / A5.31
SB	SPLASH BLOCK, CONCRETE, REF. - / ---
SP	SPLASH PAN, REF. 10 / A5.31
MC	MANUFACTURED COPING, REF. 12 / A5.31
RH	ROOF HATCH, REF. 1 / A5.31
RL	ROOF LADDER, REF. 1 / A5.31
RTU	ROOFTOP UNIT, REF. MECHANICAL
CU	CONDENSING UNIT, REF. M.E.P.
GP	GAS PIPE PENETRATION, REF. M.E.P. & 7 / A5.31
RV	RELIEF VENT, REF. M.E.P.
EF	EXHAUST FAN, REF. M.E.P.

KEY NOTE SCHEDULE

NUMBER	NOTE TEXT
R01	ROOF CRICKET. PROVIDE POSITIVE DRAINAGE TO ROOF DRAINS.
R02	RAKE TRIM
R03	GUTTER AND DOWNSPOUTS. TYP.
R04	CANOPY BELOW
R05	ROOF MOUNTED LOUVER SCREENS.

KEY PLAN
C D B A

VLK

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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT
MONIKA C. CASTILLO
26508
STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 4	10/22/2025

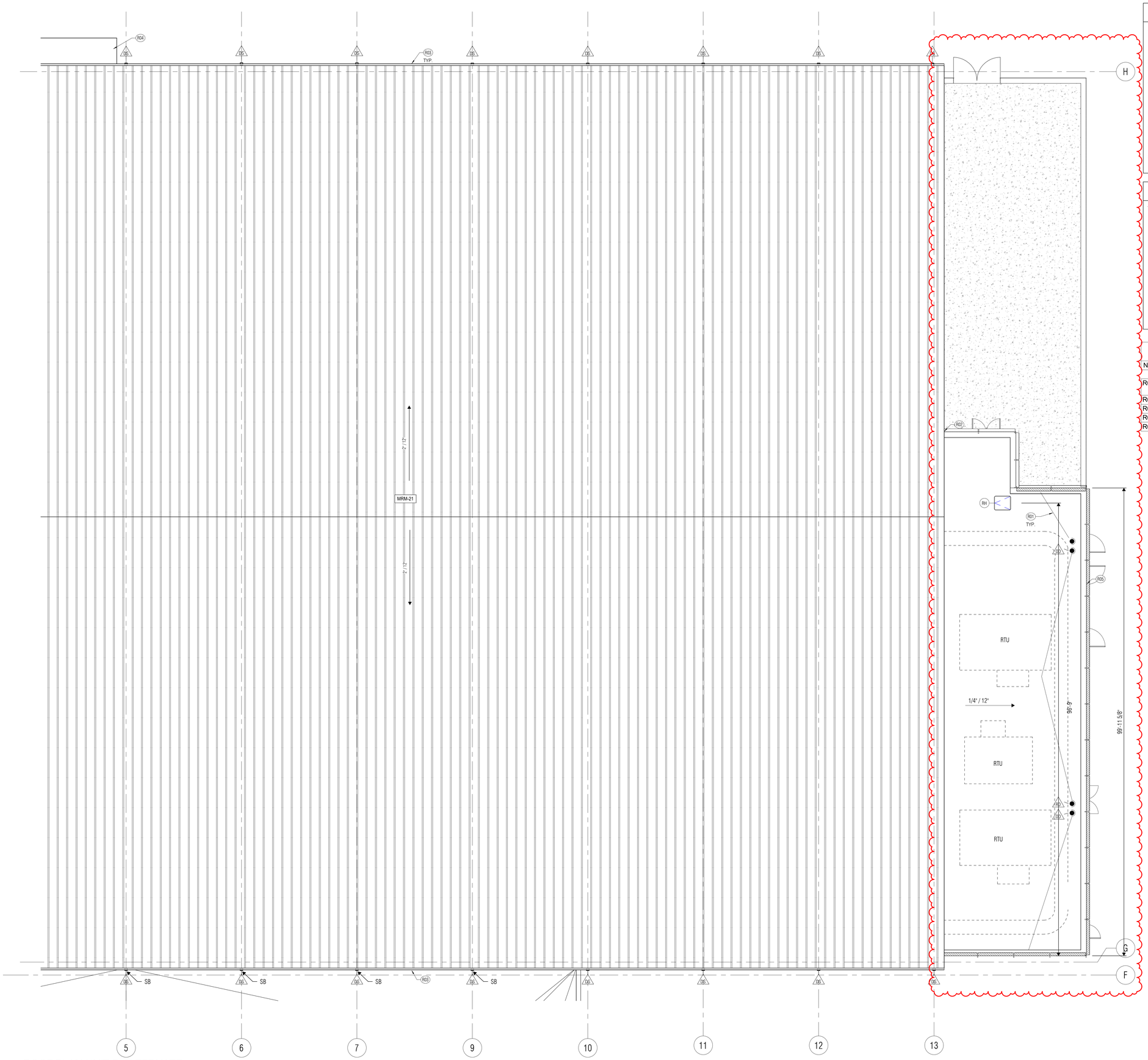
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
ROOF PLAN - UNIT D

SHEET NO.
A5.24

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1 ROOF PLAN UNIT D ALTERNATE
SCALE: 1/8" = 1'-0"

ROOF PLAN NOTES

1. Provide tapered insulation crickets at the high side of all rooftop curbs, mounting rails, and other miscellaneous roof penetrations as required to shed water around them and to ensure positive roof drainage, whether indicated on the drawings or not.
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ROOF PLAN LEGEND

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RD	ROOF DRAIN, REF. 2 / A5.31
OD	OVERFLOW DRAIN WITH DOWNSPOUT NOZZLE, REF. 3 / A5.31
DS	DOWNSPOUT, REF. 5 / A5.31
SB	SPLASH BLOCK, CONCRETE, REF. - / ---
SP	SPLASH PAN, REF. 10 / A5.31
MC	MANUFACTURED COPING, REF. 12 / A5.31
RH	ROOF HATCH, REF. 1 / A5.31
RL	ROOF LADDER, REF. 1 / A5.31
RTU	ROOFTOP UNIT, REF. MECHANICAL
CU	CONDENSING UNIT, REF. M.E.P.
GP	GAS PIPE PENETRATION, REF. M.E.P. & 7 / A5.31
RV	RELIEF VENT, REF. M.E.P.
EF	EXHAUST FAN, REF. M.E.P.

KEY NOTE SCHEDULE

NUMBER	NOTE TEXT
R01	ROOF CRICKET. PROVIDE POSITIVE DRAINAGE TO ROOF DRAINS.
R02	RAKE TRIM
R03	GUTTER AND DOWNSPOUTS. TYP.
R04	CANOPY BELOW
R05	ROOF MOUNTED LOUVER SCREENS.

KEY PLAN
C D B A

VLK

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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT MONIKA C. CASTILLO 26559 STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 4	10/22/2025

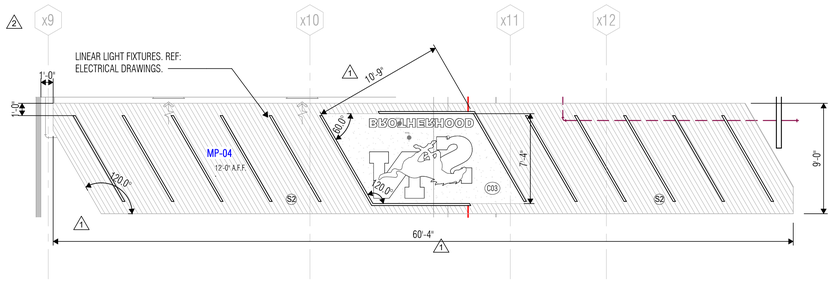
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
ROOF PLAN - UNIT D - ALTERNATE

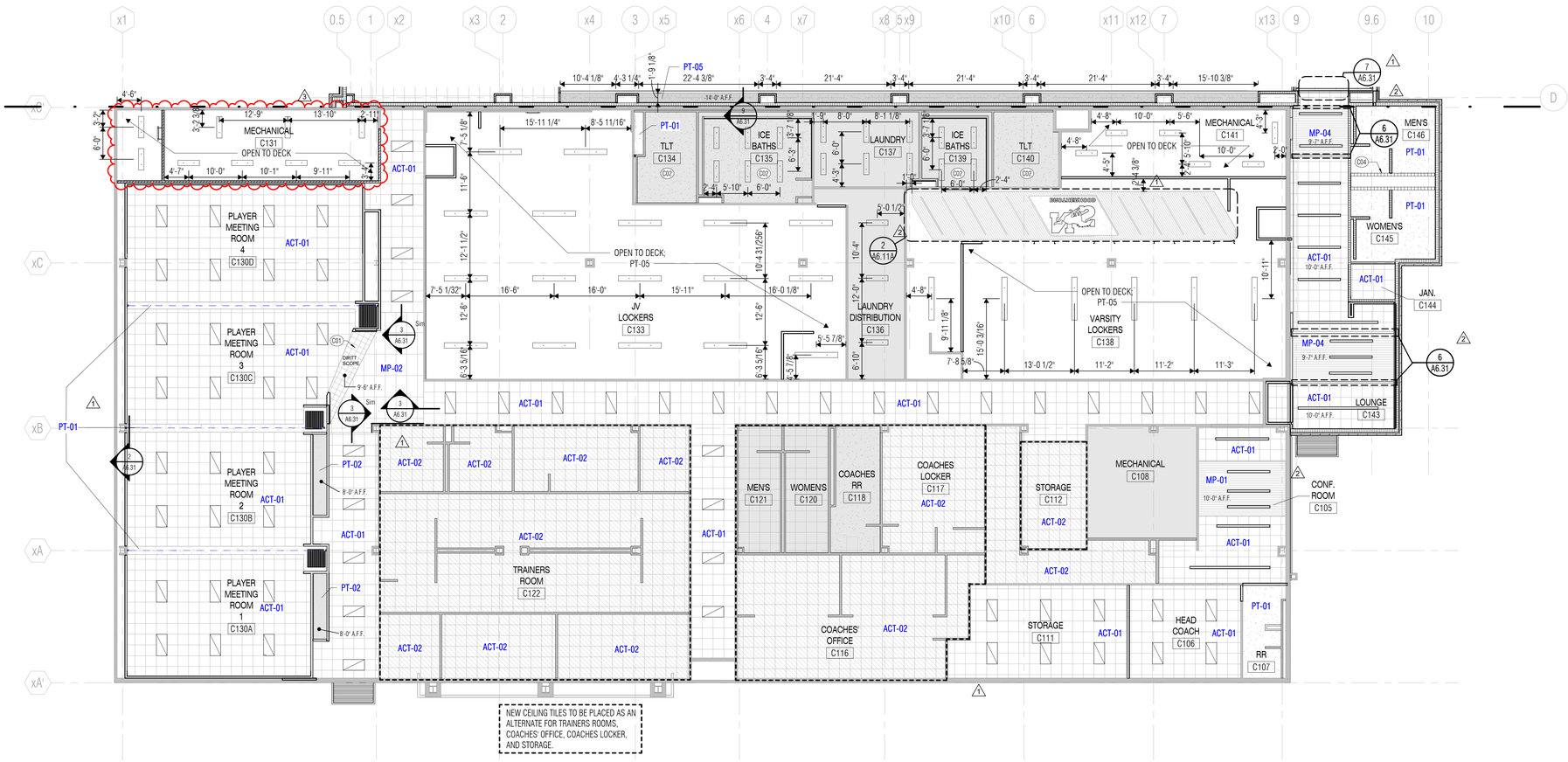
SHEET NO.
A5.24.1

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2 ENLARGED CEILING PLAN

SCALE: 1 : 60



1 REFLECTED CEILING PLAN - LEVEL ONE - UNIT A

SCALE: 1" = 10'-0"

KEY NOTE SCHEDULE

NUMBER	NOTE TEXT
C01	EXTEND CEILING GRID IN THIS AREA WITHOUT CEILING TILES.
C02	PAINT EXISTING GYPSUM BOARD CEILING PT-01
C03	FACE LIT ACRYLIC SIGN. PROVIDE POWER PER MANUFACTURERS RECOMENDATIONS. SECURE TO STRUCTURE ABOVE WITH THREADED RODS. COORDINATE WITH ELECTRICAL DRAWINGS.
C04	18" X 18" ACCESS PANEL ON WALL.

REFLECTED CEILING PLAN NOTES

1. All ceiling heights shall be [10'-00"] A.F.F. unless noted otherwise.
2. Refer to Detail 1 / A6.31 for Typical Gypsum Board Ceiling Control Joint Detail.
3. Refer to Detail - / --- for Typical Plaster Ceiling Control Joint Detail.
4. Provide vented reveals at perimeter of all non-insulated exterior plaster soffits. Provide venting strips or perforated panels at perimeter of all non-insulated metal panel soffits (refer to Detail - / ---). Venting at non-insulated soffits shall be provided whether specifically indicated on the drawings or not.
5. Provide partition to deck (PTD) at walls surrounding spaces with exposed structure. Refer to Reflected Ceiling Plan Legend for PTD requirements.
6. Provide hold-down clips for all acoustic lay-in ceiling panels at vestibules, at sloped ceilings, at fire-rated ceilings, and within 6 feet of exterior doors without vestibules.
7. At ceiling furring details, the suspended assemblies, bracing, blocking, etc. shown on the details are for schematic representation only. Provide stable, secure and permanent assemblies at these locations in accordance with recommended light-gage steel framing installation practices.
8. At partitions that do not extend to deck above, extend partition 4" minimum above highest adjacent ceiling and brace per Floor Plan Legend and Floor Plan Notes.

REFLECTED CEILING PLAN LEGEND

EXISTING TO REMAIN WITH LIMITED OR NO ARCHITECTURAL WORK REQUIRED IN THIS AREA. REFER TO CIVIL, MEPT AND STRUCTURAL DRAWINGS FOR ANY ADDITIONAL WORK IN AREA.

CEILINGS:

- ACT-01 — ACOUSTIC LAY-IN CEILING TILE 24" X 24"
- ACT-02 — EXISTING GRID TO REMAIN, NEW ACOUSTIC LAY-IN CEILING TILE 24" X 24"
- EXISTING ACOUSTIC LAY-IN CEILING TILE TO REMAIN
- MP-01 — LINEAR METAL CEILING
- MP-02 — PERFORATED METAL CEILING WITH BACK LIGHTING. BASIS OF DESIGN: ARKTURA VAPOR FREQUENCY. 48" X 24"
- MP-03 — PERFORATED METAL CEILING WITH BACK LIGHTING. BASIS OF DESIGN: ARKTURA VAPOR TRAIL WITH CUSTOM DESIGN. 48" X 24"
- MP-04 — LINEAR METAL CEILING
- EXISTING GYPSUM BOARD CEILING TO REMAIN
- PT-01 — 5/8" GYPSUM BOARD CEILING PAINTED PT-01, U.N.O.
- HVAC SUPPLY AND RETURN GRILLES Shown for location purposes only. Refer to Mechanical Drawings.
- 1 Hour Fire Barrier Partition
- 2 Hour Fire Barrier Partition
- Smoke Partition
- Sound Partition
- Non-rated Partition to Deck

1-HOUR FIRE BARRIER PARTITION. Extend partition to deck above and seal with firestopping as required for fire-resistance requirements. Paint stenciled label on partitions above ceiling at 15'-0" o.c. as follows: *'1-HOUR FIRE AND SMOKE BARRIER - PROTECT ALL OPENINGS'*. Brace partitions per Floor Plan General Notes.

2-HOUR FIRE BARRIER PARTITION. Extend partition to deck above and seal with firestopping as required for fire-resistance requirements. Paint stenciled label on partitions above ceiling at 15'-0" o.c. as follows: *'2-HOUR FIRE AND SMOKE BARRIER - PROTECT ALL OPENINGS'*. Brace partitions per Floor Plan General Notes.

SMOKE PARTITION. Extend partition to deck above and seal with sealant as required to resist the passage of smoke. Paint stenciled label on partitions above ceiling at 15'-0" o.c. as follows: 'SMOKE BARRIER - PROTECT ALL OPENINGS'. Seal all joints and penetrations. Brace partitions per Floor Plan General Notes.

ACOUSTICAL DRYWALL PARTITION / SOUND-CONDITIONED CMU PARTITION. Extend partition to deck above and seal with acoustical sealant. Seal all joints and penetrations with acoustical sealant. Brace partitions per Floor Plan General Notes.

NON-RATED PARTITION TO DECK. Extend partition to deck above. Brace partitions per Floor Plan General Notes.

CEILING SCHEDULE

TYPE MARK	TYPE
	Generic
ACT-01	2' x 2' ACT System
ACT-02	2' x 2' ACT (NEW TILES ONLY)
LMC-01	<varies>
PT-01	<varies>

KEY PLAN

VLK

ARCHITECT

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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT — MONIKA C. CASTILLO — 26558 — STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 1	10/08/2025
2	Addendum 3	10/17/2025
3	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.

25-0056.00

SHEET TITLE

REFLECTED CEILING PLAN - LEVEL ONE - UNIT A

SHEET NO.

A6.11A

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KEY NOTE SCHEDULE

NUMBER	NOTE TEXT
F02	MOTORIZED DROP DOWN NETTING
W03	GRAPHICS BY ALLOWANCE. PROVIDE PLYWOOD OVER STUDS.

REFLECTED CEILING PLAN NOTES

1. All ceiling heights shall be [10'-00"] A.F.F. unless noted otherwise.
2. Refer to Detail 1 / A6.31 for Typical Gypsum Board Ceiling Control Joint Detail.
3. Refer to Detail - / --- for Typical Plaster Ceiling Control Joint Detail.
4. Provide vented reveals at perimeter of all non-insulated exterior plaster soffits. Provide venting strips or perforated panels at perimeter of all non-insulated metal panel soffits (refer to Detail - / ---). Venting at non-insulated soffits shall be provided whether specifically indicated on the drawings or not.
5. Provide partition to deck (PTD) at walls surrounding spaces with exposed structure. Refer to Reflected Ceiling Plan Legend for PTD requirements.
6. Provide hold-down clips for all acoustic lay-in ceiling panels at vestibules, at sloped ceilings, at fire-rated ceilings, and within 6 feet of exterior doors without vestibules.
7. At ceiling furring details, the suspended assemblies, bracing, blocking, etc. shown on the details are for schematic representation only. Provide stable, secure and permanent assemblies at these locations in accordance with recommended light-gage steel framing installation practices.
8. At partitions that do not extend to deck above, extend partition 4" minimum above highest adjacent ceiling and brace per Floor Plan Legend and Floor Plan Notes.

REFLECTED CEILING PLAN LEGEND

EXISTING TO REMAIN WITH LIMITED OR NO ARCHITECTURAL WORK REQUIRED IN THIS AREA. REFER TO CIVIL, MEPT AND STRUCTURAL DRAWINGS FOR ANY ADDITIONAL WORK IN AREA.

CEILINGS:

- ACT-01 — ACOUSTIC LAY-IN CEILING TILE 24" X 24"
- ACT-02 — EXISTING GRID TO REMAIN, NEW ACOUSTIC LAY-IN CEILING TILE 24" X 24"
- EXISTING ACOUSTIC LAY-IN CEILING TILE TO REMAIN
- MP-01 — LINEAR METAL CEILING
- MP-02 — PERFORATED METAL CEILING WITH BACK LIGHTING. BASIS OF DESIGN: ARKTURA VAPOR FREQUENCY. 48" X 24"
- MP-03 — PERFORATED METAL CEILING WITH BACK LIGHTING. BASIS OF DESIGN: ARKTURA VAPOR TRAIL WITH CUSTOM DESIGN. 48" X 24"
- MP-04 — LINEAR METAL CEILING
- EXISTING GYPSUM BOARD CEILING TO REMAIN
- PT-01 — 5/8" GYPSUM BOARD CEILING PAINTED PT-01, U.N.O.
- HVAC SUPPLY AND RETURN GRILLES Shown for location purposes only. Refer to Mechanical Drawings.
- 1 Hour Fire Barrier Partition
- 2 Hour Fire Barrier Partition
- Smoke Partition
- Sound Partition
- Non-rated Partition to Deck

1-HOUR FIRE BARRIER PARTITION. Extend partition to deck above and seal with firestopping as required for fire-resistance requirements. Paint stenciled label on partitions above ceiling at 15'-0" o.c. as follows: *'1-HOUR FIRE AND SMOKE BARRIER - PROTECT ALL OPENINGS'*. Brace partitions per Floor Plan General Notes.

2-HOUR FIRE BARRIER PARTITION. Extend partition to deck above and seal with firestopping as required for fire-resistance requirements. Paint stenciled label on partitions above ceiling at 15'-0" o.c. as follows: *'2-HOUR FIRE AND SMOKE BARRIER - PROTECT ALL OPENINGS'*. Brace partitions per Floor Plan General Notes.

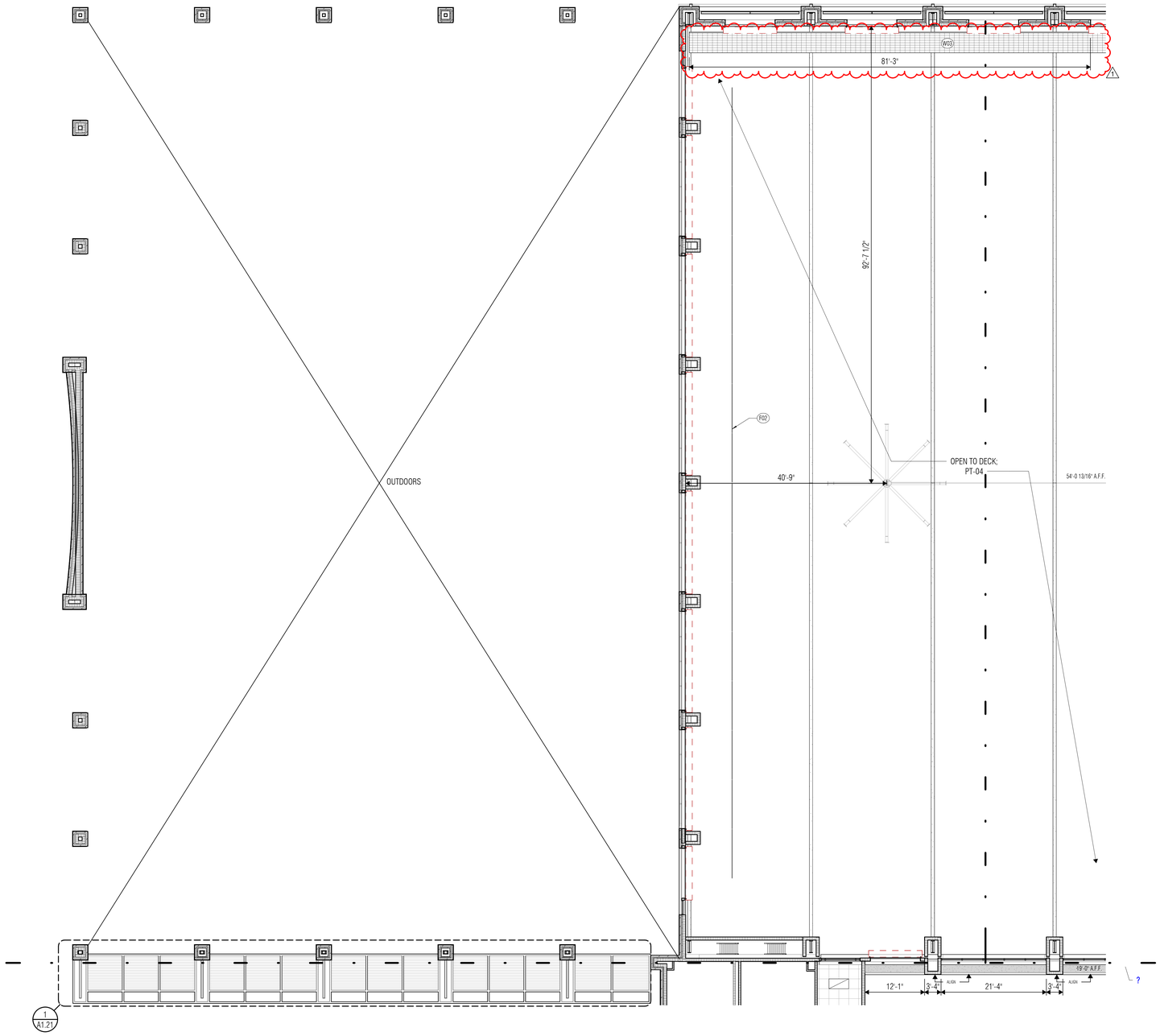
SMOKE PARTITION. Extend partition to deck above and seal with sealant as required to resist the passage of smoke. Paint stenciled label on partitions above ceiling at 15'-0" o.c. as follows: 'SMOKE BARRIER - PROTECT ALL OPENINGS'. Seal all joints and penetrations. Brace partitions per Floor Plan General Notes.

ACOUSTICAL DRYWALL PARTITION / SOUND-CONDITIONED CMU PARTITION. Extend partition to deck above and seal with acoustical sealant. Seal all joints and penetrations with acoustical sealant. Brace partitions per Floor Plan General Notes.

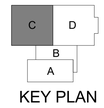
NON-RATED PARTITION TO DECK. Extend partition to deck above. Brace partitions per Floor Plan General Notes.

CEILING SCHEDULE

TYPE MARK	TYPE
	Generic
ACT-01	2' x 2' ACT System
ACT-02	2' x 2' ACT (NEW TILES ONLY)
LMC-01	<varies>
PT-01	<varies>



1 REFLECTED CEILING PLAN - LEVEL ONE - UNIT C
SCALE: 1" = 10'-0"



KEY PLAN

ARCHITECT

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GALENA PARK ISD
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North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT — MONIKA C. CASTILLO — 28555 — STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 4	10/22/2025

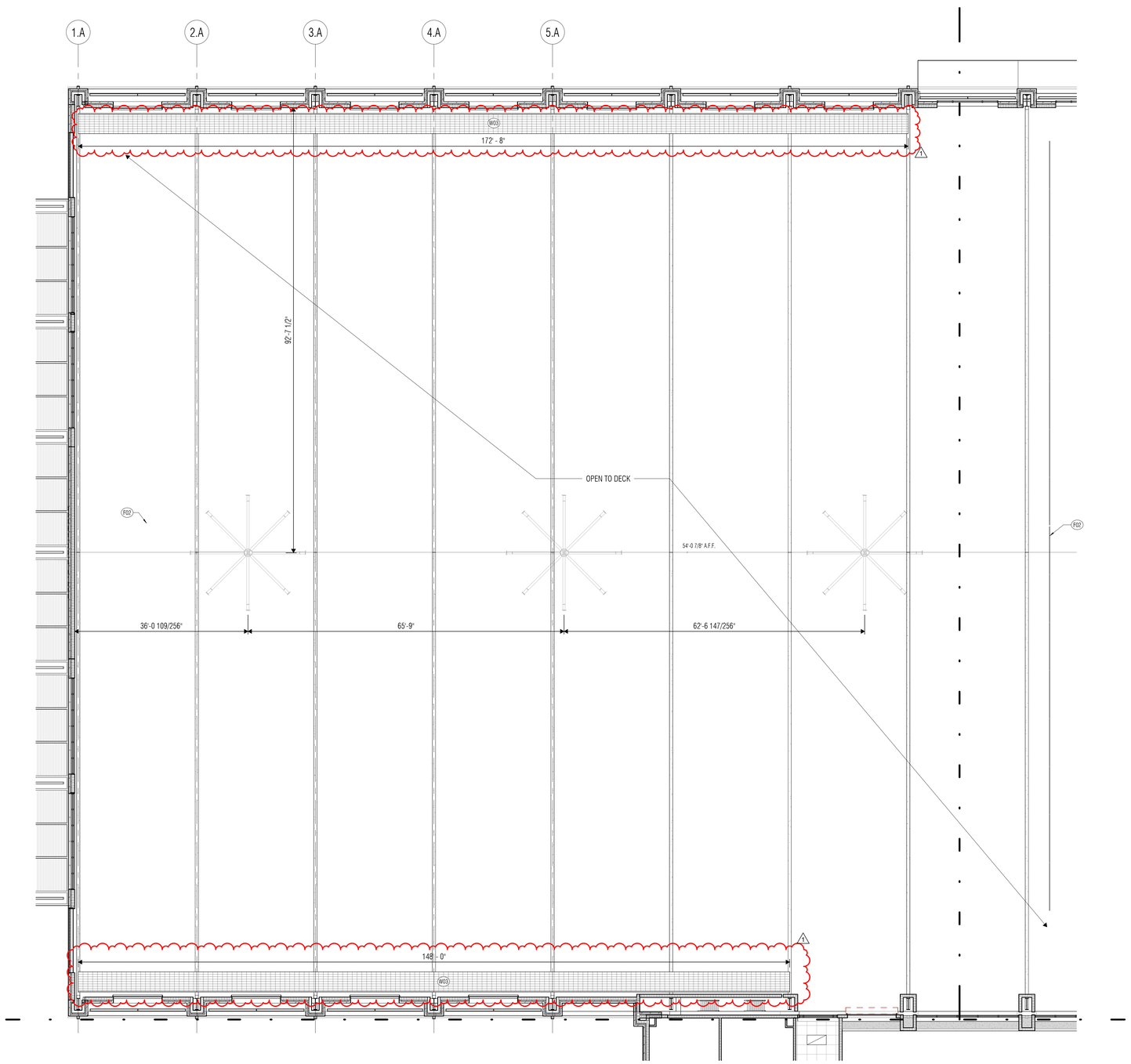
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
REFLECTED CEILING PLAN - LEVEL ONE - UNIT C

SHEET NO.
A6.11C

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1 REFLECTED CEILING PLAN - LEVEL ONE - UNIT C - ALTERNATE
SCALE: 1" = 10'-0"

KEY NOTE SCHEDULE

NUMBER	NOTE TEXT
F02	MOTORIZED DROP DOWN NETTING
W03	GRAPHICS BY ALLOWANCE. PROVIDE PLYWOOD OVER STUDS.

REFLECTED CEILING PLAN NOTES

1. All ceiling heights shall be [10'-00"] A.F.F. unless noted otherwise.
2. Refer to Detail 1 / A6.31 for Typical Gypsum Board Ceiling Control Joint Detail.
3. Refer to Detail - / --- for Typical Plaster Ceiling Control Joint Detail.
4. Provide vented reveals at perimeter of all non-insulated exterior plaster soffits. Provide venting strips or perforated panels at perimeter of all non-insulated metal panel soffits (refer to Detail - / ---). Venting at non-insulated soffits shall be provided whether specifically indicated on the drawings or not.
5. Provide partition to deck (PTD) at walls surrounding spaces with exposed structure. Refer to Reflected Ceiling Plan Legend for PTD requirements.
6. Provide hold-down clips for all acoustic lay-in ceiling panels at vestibules, at sloped ceilings, at fire-rated ceilings, and within 6 feet of exterior doors without vestibules.
7. At ceiling furring details, the suspended assemblies, bracing, blocking, etc. shown on the details are for schematic representation only. Provide stable, secure and permanent assemblies at these locations in accordance with recommended light-gage steel framing installation practices.
8. At partitions that do not extend to deck above, extend partition 4" minimum above highest adjacent ceiling and brace per Floor Plan Legend and Floor Plan Notes.

REFLECTED CEILING PLAN LEGEND

EXISTING TO REMAIN WITH LIMITED OR NO ARCHITECTURAL WORK REQUIRED IN THIS AREA. REFER TO CIVIL, MEPT AND STRUCTURAL DRAWINGS FOR ANY ADDITIONAL WORK IN AREA.

CEILINGS:

- ACT-01 — ACOUSTIC LAY-IN CEILING TILE 24" X 24"
- ACT-02 — EXISTING GRID TO REMAIN, NEW ACOUSTIC LAY-IN CEILING TILE 24" X 24"
- EXISTING ACOUSTIC LAY-IN CEILING TILE TO REMAIN
- MP-01 — LINEAR METAL CEILING
- MP-02 — PERFORATED METAL CEILING WITH BACK LIGHTING. BASIS OF DESIGN: ARKTURA VAPOR FREQUENCY. 48" X 24"
- MP-03 — PERFORATED METAL CEILING WITH BACK LIGHTING. BASIS OF DESIGN: ARKTURA VAPOR TRAIL WITH CUSTOM DESIGN. 48" X 24"
- MP-04 — LINEAR METAL CEILING
- EXISTING GYPSUM BOARD CEILING TO REMAIN
- PT-01 — 5/8" GYPSUM BOARD CEILING PAINTED PT-01, U.N.O.

HVAC SUPPLY AND RETURN GRILLES Shown for location purposes only. Refer to Mechanical Drawings.

- 1 Hour Fire Barrier Partition
- 2 Hour Fire Barrier Partition
- Smoke Partition
- Sound Partition
- Non-rated Partition to Deck

1-HOUR FIRE BARRIER PARTITION. Extend partition to deck above and seal with firestopping as required for fire-resistance requirements. Paint stenciled label on partitions above ceiling at 15'-0" o.c. as follows: *'1-HOUR FIRE AND SMOKE BARRIER - PROTECT ALL OPENINGS'*. Brace partitions per Floor Plan General Notes.

2-HOUR FIRE BARRIER PARTITION. Extend partition to deck above and seal with firestopping as required for fire-resistance requirements. Paint stenciled label on partitions above ceiling at 15'-0" o.c. as follows: *'2-HOUR FIRE AND SMOKE BARRIER - PROTECT ALL OPENINGS'*. Brace partitions per Floor Plan General Notes.

SMOKE PARTITION. Extend partition to deck above and seal with sealant as required to resist the passage of smoke. Paint stenciled label on partitions above ceiling at 15'-0" o.c. as follows: 'SMOKE BARRIER - PROTECT ALL OPENINGS'. Seal all joints and penetrations. Brace partitions per Floor Plan General Notes.

ACOUSTICAL DRYWALL PARTITION / SOUND-CONDITIONED CMU PARTITION. Extend partition to deck above and seal with acoustical sealant. Seal all joints and penetrations with acoustical sealant. Brace partitions per Floor Plan General Notes.

NON-RATED PARTITION TO DECK. Extend partition to deck above. Brace partitions per Floor Plan General Notes.

CEILING SCHEDULE

TYPE MARK	TYPE
	Generic
ACT-01	2' x 2' ACT System
ACT-02	2' x 2' ACT (NEW TILES ONLY)
LMC-01	<varies>
PT-01	<varies>

KEY PLAN
C D B A

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HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT — IRVING C. CASTILLO — 28505 — STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 4	10/22/2025

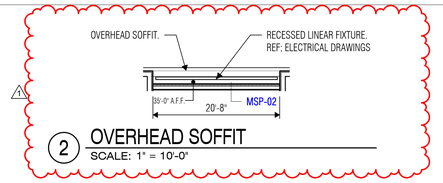
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

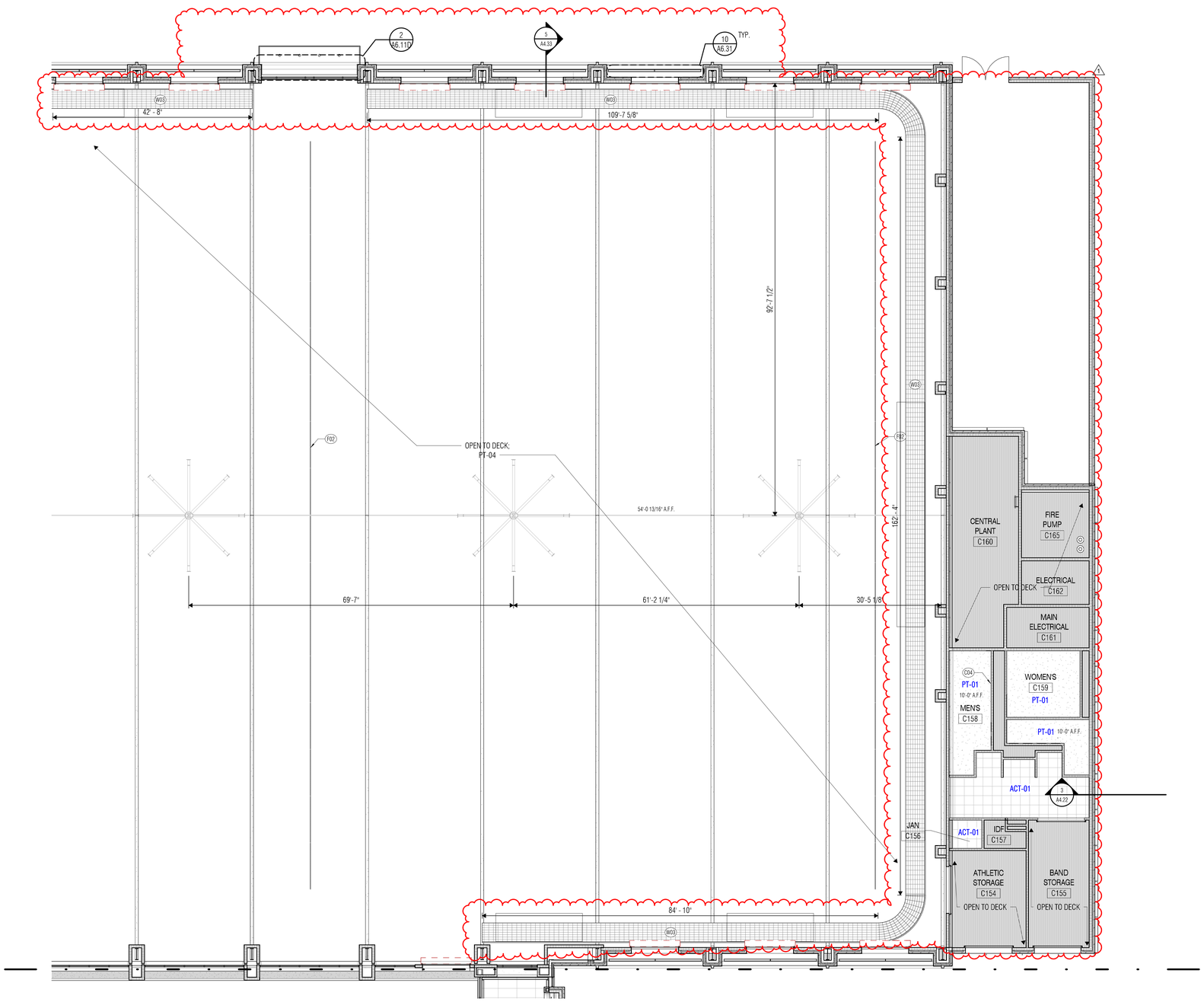
SHEET TITLE
REFLECTED CEILING PLAN - LEVEL ONE - UNIT C - ALTERNATE

SHEET NO.
A6.11C.1

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2 OVERHEAD SOFFIT
SCALE: 1" = 10'-0"



1 REFLECTED CEILING PLAN - LEVEL ONE - UNIT D
SCALE: 1" = 10'-0"

KEY NOTE SCHEDULE

NUMBER	NOTE TEXT
C04	18" X 18" ACCESS PANEL ON WALL.
F02	MOTORIZED DROP DOWN NETTING
W03	GRAPHICS BY ALLOWANCE. PROVIDE PLYWOOD OVER STUDS.

REFLECTED CEILING PLAN NOTES

1. All ceiling heights shall be [10'-00"] A.F.F. unless noted otherwise.
2. Refer to Detail 1 / A6.31 for Typical Gypsum Board Ceiling Control Joint Detail.
3. Refer to Detail - / --- for Typical Plaster Ceiling Control Joint Detail.
4. Provide vented reveals at perimeter of all non-insulated exterior plaster soffits. Provide venting strips or perforated panels at perimeter of all non-insulated metal panel soffits (refer to Detail- / ---). Venting at non-insulated soffits shall be provided whether specifically indicated on the drawings or not.
5. Provide partition to deck (PTD) at walls surrounding spaces with exposed structure. Refer to Reflected Ceiling Plan Legend for PTD requirements.
6. Provide hold-down clips for all acoustic lay-in ceiling panels at vestibules, at sloped ceilings, at fire-rated ceilings, and within 6 feet of exterior doors without vestibules.
7. At ceiling furring details, the suspended assemblies, bracing, blocking, etc. shown on the details are for schematic representation only. Provide stable, secure and permanent assemblies at these locations in accordance with recommended light-gage steel framing installation practices.
8. At partitions that do not extend to deck above, extend partition 4" minimum above highest adjacent ceiling and brace per Floor Plan Legend and Floor Plan Notes.

REFLECTED CEILING PLAN LEGEND

EXISTING TO REMAIN WITH LIMITED OR NO ARCHITECTURAL WORK REQUIRED IN THIS AREA. REFER TO CIVIL, MEPT AND STRUCTURAL DRAWINGS FOR ANY ADDITIONAL WORK IN AREA.

CEILINGS:

- ACT-01 — ACOUSTIC LAY-IN CEILING TILE 24" X 24"
- ACT-02 — EXISTING GRID TO REMAIN, NEW ACOUSTIC LAY-IN CEILING TILE 24" X 24"
- 1 — EXISTING ACOUSTIC LAY-IN CEILING TILE TO REMAIN
- MP-01 — LINEAR METAL CEILING
- MP-02 — PERFORATED METAL CEILING WITH BACK LIGHTING. BASIS OF DESIGN: ARKTURA VAPOR FREQUENCY. 48" X 24" (1)
- MP-03 — PERFORATED METAL CEILING WITH BACK LIGHTING. BASIS OF DESIGN: ARKTURA VAPOR TRAIL WITH CUSTOM DESIGN. 48" X 24" (1)
- MP-04 — LINEAR METAL CEILING
- EXISTING GYPSUM BOARD CEILING TO REMAIN
- PT-01 — 5/8" GYPSUM BOARD CEILING PAINTED PT-01, U.N.O.
- HVAC SUPPLY AND RETURN GRILLES Shown for location purposes only. Refer to Mechanical Drawings.
- 1 Hour Fire Barrier Partition
- 2 Hour Fire Barrier Partition
- Smoke Partition
- Sound Partition
- Non-rated Partition to Deck

1-HOUR FIRE BARRIER PARTITION. Extend partition to deck above and seal with firestopping as required for fire-resistance requirements. Paint stenciled label on partitions above ceiling at 15'-0" o.c. as follows: *'1-HOUR FIRE AND SMOKE BARRIER - PROTECT ALL OPENINGS'*. Brace partitions per Floor Plan General Notes.

2-HOUR FIRE BARRIER PARTITION. Extend partition to deck above and seal with firestopping as required for fire-resistance requirements. Paint stenciled label on partitions above ceiling at 15'-0" o.c. as follows: *'2-HOUR FIRE AND SMOKE BARRIER - PROTECT ALL OPENINGS'*. Brace partitions per Floor Plan General Notes.

SMOKE PARTITION. Extend partition to deck above and seal with sealant as required to resist the passage of smoke. Paint stenciled label on partitions above ceiling at 15'-0" o.c. as follows: 'SMOKE BARRIER - PROTECT ALL OPENINGS'. Seal all joints and penetrations. Brace partitions per Floor Plan General Notes.

ACOUSTICAL DRYWALL PARTITION / SOUND-CONDITIONED CMU PARTITION. Extend partition to deck above and seal with acoustical sealant. Seal all joints and penetrations with acoustical sealant. Brace partitions per Floor Plan General Notes.

NON-RATED PARTITION TO DECK. Extend partition to deck above. Brace partitions per Floor Plan General Notes.

CEILING SCHEDULE

TYPE MARK	TYPE
	Generic
ACT-01	2' x 2' ACT System
ACT-02	2' x 2' ACT (NEW TILES ONLY)
LMC-01	<varies>
PT-01	<varies>

KEY PLAN
C D
B
A

VLK

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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT MONIKA C. CASTILLO 26558 STATE OF TEXAS
10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 4	10/22/2025

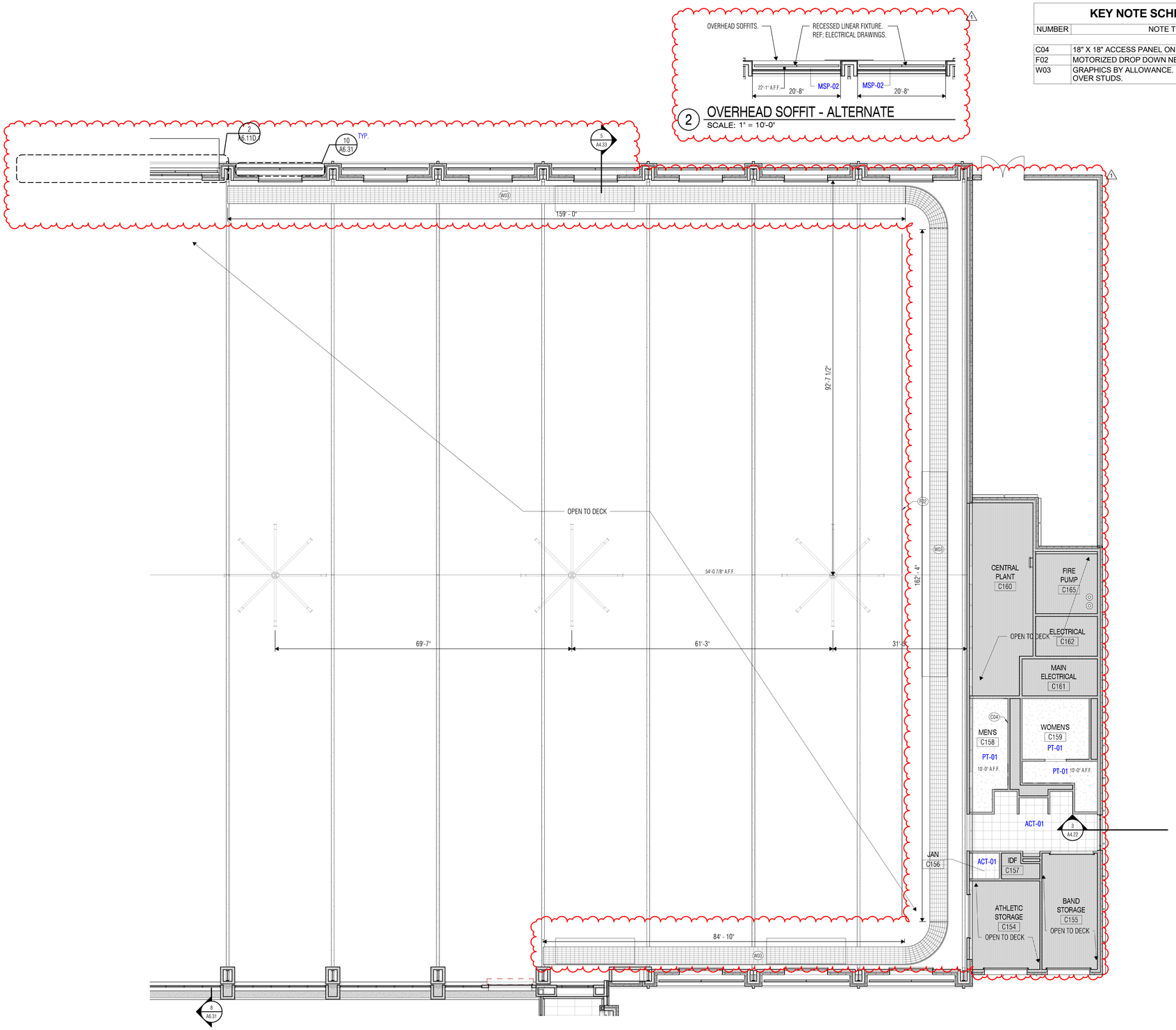
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
REFLECTED CEILING PLAN - LEVEL ONE - UNIT D

SHEET NO.
A6.11D

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KEY NOTE SCHEDULE

NUMBER	NOTE TEXT
C04	18" X 18" ACCESS PANEL ON WALL.
F02	MOTORIZED DROP DOWN NETTING
W03	GRAPHICS BY ALLOWANCE. PROVIDE PLYWOOD OVER STUDS.

REFLECTED CEILING PLAN NOTES

1. All ceiling heights shall be [10'-00"] A.F.F. unless noted otherwise.
2. Refer to Detail 1 / A6.31 for Typical Gypsum Board Ceiling Control Joint Detail.
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8. At partitions that do not extend to deck above, extend partition 4" minimum above highest adjacent ceiling and brace per Floor Plan Legend and Floor Plan Notes.

REFLECTED CEILING PLAN LEGEND

EXISTING TO REMAIN WITH LIMITED OR NO ARCHITECTURAL WORK REQUIRED IN THIS AREA. REFER TO CIVIL, MEPT AND STRUCTURAL DRAWINGS FOR ANY ADDITIONAL WORK IN AREA.

CEILINGS:

- ACT-01 ACOUSTIC LAY-IN CEILING TILE 24" X 24"
- ACT-02 EXISTING GRID TO REMAIN, NEW ACOUSTIC LAY-IN CEILING TILE 24" X 24"
- 1 EXISTING ACOUSTIC LAY-IN CEILING TILE TO REMAIN
- MP-01 LINEAR METAL CEILING
- MP-02 PERFORATED METAL CEILING WITH BACK LIGHTING. BASIS OF DESIGN: ARKTURA VAPOR FREQUENCY. 48" X 24" (1)
- MP-03 PERFORATED METAL CEILING WITH BACK LIGHTING. BASIS OF DESIGN: ARKTURA VAPOR TRAIL WITH CUSTOM DESIGN. 48" X 24" (1)
- MP-04 LINEAR METAL CEILING
- EXISTING GYPSUM BOARD CEILING TO REMAIN
- PT-01 5/8" GYPSUM BOARD CEILING PAINTED PT-01, U.N.O.
- HVAC SUPPLY AND RETURN GRILLES Shown for location purposes only. Refer to Mechanical Drawings.
- 1 Hour Fire Barrier Partition
- 2 Hour Fire Barrier Partition
- Smoke Partition
- Sound Partition
- Non-rated Partition to Deck

1-HOUR FIRE BARRIER PARTITION. Extend partition to deck above and seal with firestopping as required for fire-resistance requirements. Paint stenciled label on partitions above ceiling at 15'-0" o.c. as follows: *'1-HOUR FIRE AND SMOKE BARRIER - PROTECT ALL OPENINGS'*. Brace partitions per Floor Plan General Notes.

2-HOUR FIRE BARRIER PARTITION. Extend partition to deck above and seal with firestopping as required for fire-resistance requirements. Paint stenciled label on partitions above ceiling at 15'-0" o.c. as follows: *'2-HOUR FIRE AND SMOKE BARRIER - PROTECT ALL OPENINGS'*. Brace partitions per Floor Plan General Notes.

SMOKE PARTITION. Extend partition to deck above and seal with sealant as required to resist the passage of smoke. Paint stenciled label on partitions above ceiling at 15'-0" o.c. as follows: 'SMOKE BARRIER - PROTECT ALL OPENINGS'. Seal all joints and penetrations. Brace partitions per Floor Plan General Notes.

ACOUSTICAL DRYWALL PARTITION / SOUND-CONDITIONED CMU PARTITION. Extend partition to deck above and seal with acoustical sealant. Seal all joints and penetrations with acoustical sealant. Brace partitions per Floor Plan General Notes.

NON-RATED PARTITION TO DECK. Extend partition to deck above. Brace partitions per Floor Plan General Notes.

CEILING SCHEDULE

TYPE MARK	TYPE
	Generic
ACT-01	2' x 2' ACT System
ACT-02	2' x 2' ACT (NEW TILES ONLY)
LMC-01	<varies>
PT-01	<varies>

C | D | B | A

KEY PLAN

VLK

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GALENA PARK ISD
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North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT MONICA C. CASTILLO 28606 STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.

25-0056.00

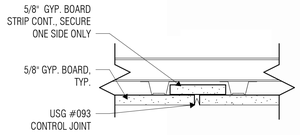
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REFLECTED CEILING PLAN - LEVEL ONE - UNIT D - ALTERNATE

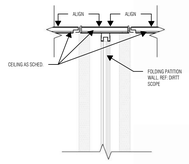
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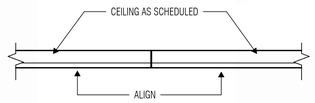
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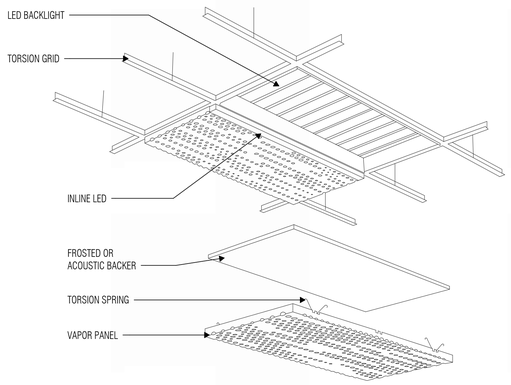
1 TYP. GYP. BD CONTROL JOINT DETAIL
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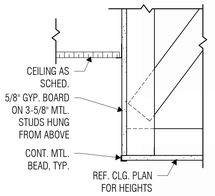
2 CEILING SECTION DETAIL
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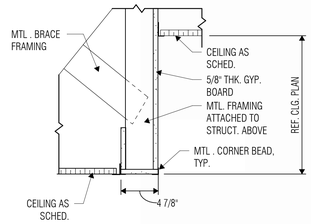
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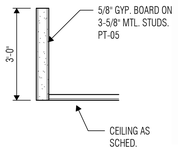
5 VAPOR METAL PANEL DETAIL
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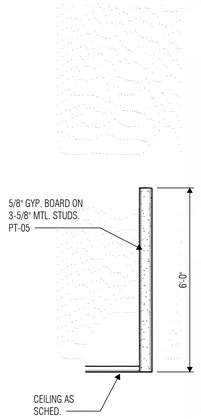
6 C508 - DETAIL AT FURR DOWN
SCALE: 1 1/2" = 1'-0"



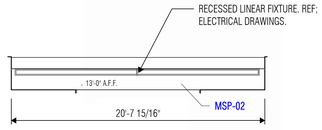
7 C512 - DETAIL AT FURR DOWN (NO REVEAL)
SCALE: 1 1/2" = 1'-0"



8 CEILING SECTION DETAIL
SCALE: 1/2" = 1'-0"



9 CEILING SECTION DETAIL
SCALE: 1/2" = 1'-0"



10 ENLARGED CEILING PLAN
SCALE: 1 : 60

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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT
MONIKA C. CASTILLO
26508
STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 1	10/08/2025
2	Addendum 3	10/17/2025
3	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
CEILING DETAILS

SHEET NO.
A6.31

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DOOR SCHEDULE

DOOR	DOOR TYPE	PANEL MATERIAL	FRAME TYPE	DOOR OPENING WIDTH	DOOR OPENING HEIGHT	FIRE RATING	HARDWARE SET	KEYED NOTES	REMARKS	PHASE
C101	F	4		6'-0"	7'-0"		102			Existing
C104	F	4		6'-0"	7'-0"		101	9		Existing
C108	K	4	1	6'-0"	7'-0"		102			Existing
C109	A	4	1	3'-0"	7'-0"		110			Existing
C112	A	1	1	3'-0"	7'-0"		108			Existing
C115	A	1	1	3'-0"	7'-0"		117			Existing
C116	A	1	1	3'-0"	7'-0"		117			Existing
C117	A	1	1	3'-0"	7'-0"		117			Existing
C118	A	1	1	3'-0"	7'-0"		113			Existing
C119	A	1	1	3'-0"	7'-0"		107			Existing
C120	A	1	1	3'-0"	7'-0"		113			Existing
C121	A	1	1	3'-0"	7'-0"		113			Existing
C122A	C	1		3'-0"	7'-0"		107			Existing
C122B	C	4		3'-0"	7'-0"		108			Existing
C123	A	1	1	3'-0"	7'-0"		117			Existing
C124	A	1	1	3'-0"	7'-0"		117			Existing
C125	A	1	1	3'-0"	7'-0"		108			Existing
C126	A	1	1	3'-0"	7'-0"		114			Existing
C127	A	1	1	3'-0"	7'-0"		114			Existing
C128	A	1	1	3'-0"	7'-0"		116			Existing
C129	A	1	1	3'-0"	7'-0"		116			Existing
C133	A	1	1	3'-0"	7'-0"		112			Existing
C136	K	4	1	6'-0"	7'-0"		104			Existing
C137	A	4	1	3'-0"	7'-0"					Existing
C138	A	1	1	3'-0"	7'-0"		113			Existing
C141A	A	4	1	3'-0"	7'-0"		108			Existing
C147	A	4	1	3'-0"	7'-0"		102			Existing

EXISTING DOORS TO REMAIN. PROVIDE NEW HARDWARE AS SCHEDULED.

DOOR SCHEDULE

DOOR	DOOR TYPE	PANEL MATERIAL	FRAME TYPE	DOOR OPENING WIDTH	DOOR OPENING HEIGHT	FIRE RATING	HARDWARE SET	KEYED NOTES	REMARKS	PHASE
C105	SFD-G	8		3'-0"	6'-10"		107			New Construction
C105A	A	1	1	3'-0"	7'-0"		115			New Construction
C106	A	1	1	3'-0"	7'-0"		117			New Construction
C107	A	1	1	3'-0"	7'-0"		114			New Construction
C111	B	1	1	6'-0"	7'-0"		105			New Construction
C125C	SFD-K	9		6'-0"	7'-0"		101			New Construction
C125D	SFD-K	9		6'-0"	7'-0"		101	9		New Construction
C130	F	4		6'-0"	7'-0"		102		COORDINATE WITH PREFAB WALL MNFR.	New Construction
C130A	C	4		3'-0"	7'-0"		111		COORDINATE WITH PREFAB WALL MNFR.	New Construction
C130B	SFD-K	9		6'-0"	7'-0"				COORDINATE WITH PREFAB WALL MNFR.	New Construction
C130C	C	4		3'-0"	7'-0"		111		COORDINATE WITH PREFAB WALL MNFR.	New Construction
C131	B	4		6'-0"	7'-0"		106			New Construction
C132	F	4	1	6'-0"	7'-0"		101	9		New Construction
C133A	A	4	1	3'-0"	7'-0"		112			New Construction
C138A	A	4	1	3'-0"	7'-0"		113			New Construction
C141	A	4	1	3'-0"	7'-0"		108			New Construction
C143	SFD-T	9		6'-0"	7'-0"		101	9		New Construction
C144	J	1	1	3'-0"	7'-0"		108			New Construction
C145	J	1	1	3'-0"	7'-0"		114			New Construction
C146	J	1	1	3'-0"	7'-0"		114			New Construction
C147	SFD-K	9		6'-0"	7'-0"		102			New Construction
C147A	SFD-K	9		6'-0"	7'-0"			9		New Construction
C148	SFD-K	9		6'-0"	7'-0"		101			New Construction
C148A	SFD-K	9		6'-0"	7'-0"		101			New Construction
C148B	SFD-K	9		6'-0"	7'-0"					New Construction
C148C	Y	19		10'-0"	10'-0"					New Construction
C148D	Y	19		10'-0"	10'-0"					New Construction
C149	SFD-K	9		6'-0"	7'-0"		101	9		New Construction
C150	B	4	1	6'-0"	7'-0"		106			New Construction
C150A	X	10	10	5'-0"	4'-0"					New Construction
C151	A	4	1	3'-0"	7'-0"		107	9		New Construction
C152A	SFD-K	9		6'-0"	7'-0"		102			New Construction
C152B	SFD-K	9		6'-0"	7'-0"		101	9		New Construction
C152E	Y	19		10'-0"	10'-0"					New Construction
C152F	Y	19		20'-0"	10'-0"					New Construction
C152G	Y	19		20'-0"	10'-0"					New Construction
C152H	Y	19		20'-0"	10'-0"					New Construction
C152I	Y	19		20'-0"	10'-0"					New Construction
C152J	Y	19		20'-0"	10'-0"					New Construction
C152K	Y	19		20'-0"	10'-0"					New Construction
C152L	Y	19		10'-0"	10'-0"					New Construction
C152M	W	15		10'-0"	10'-0"					New Construction
C152N	W	15		10'-0"	10'-0"					New Construction
C152O	W	15		10'-0"	10'-0"					New Construction
C152P	W	15		10'-0"	10'-0"					New Construction
C152Q	W	15		10'-0"	10'-0"					New Construction
C152R	W	15		10'-0"	10'-0"					New Construction
C152S	W	15		10'-0"	10'-0"					New Construction
C152T	W	15		10'-0"	10'-0"					New Construction
C152U	W	15		10'-0"	10'-0"					New Construction
C152V	W	15		10'-0"	10'-0"					New Construction
C152W	W	15		10'-0"	10'-0"					New Construction
C152X	W	15		10'-0"	10'-0"					New Construction
C152Y	W	15		10'-0"	10'-0"					New Construction
C153	A	4	1	3'-0"	7'-0"		108			New Construction
C154	A	4	1	3'-0"	7'-0"		108			New Construction
C154A	W	17		10'-0"	10'-0"					New Construction
C154B	W	17		10'-0"	10'-0"					New Construction
C155	A	4	1	3'-0"	7'-0"		102			New Construction
C155A	W	17		10'-0"	10'-0"					New Construction
C155B	W	17		10'-0"	10'-0"					New Construction
C156	A	4	1	3'-0"	7'-0"		108			New Construction
C157	A	4	1	3'-0"	7'-0"		107			New Construction
C158	A	4	1	3'-0"	7'-0"		114			New Construction
C159	A	4	1	3'-0"	7'-0"		114			New Construction
C160A	A	6		3'-0"	7'-0"		102			New Construction
C160B	B	6		6'-0"	7'-0"		102			New Construction
C161	A	6		4'-0"	7'-0"		102			New Construction
C161A	A	6		3'-0"	7'-0"		102			New Construction
C162	A	6		4'-0"	7'-0"		102			New Construction
C164	B	4	1	6'-0"	7'-0"	60	106			New Construction
C165	A	6		4'-0"	7'-0"		102			New Construction
G	S	18		10'-0"	10'-0"				PROVIDE CHAIN AND PADLOCK	New Construction
A	S	18		18'-0"	6'-0"				PROVIDE CHAIN AND PADLOCK	New Construction
B	S	18		6'-0"	8'-0"				PROVIDE CHAIN AND PADLOCK	New Construction
C	S	18		6'-0"	8'-6"				PROVIDE CHAIN AND PADLOCK	New Construction
D	S	18		24'-0"	8'-0"				PROVIDE CHAIN AND PADLOCK	New Construction
E	S	18		24'-0"	8'-0"				PROVIDE CHAIN AND PADLOCK	New Construction
F	R	18		4'-0"	8'-0"				PROVIDE CHAIN AND PADLOCK	New Construction

1 BASE BID ONLY. REFER TO ALTERNATE SCHEDULE

DOOR SCHEDULE ALTERNATE

DOOR	DOOR TYPE	PANEL MATERIAL	FRAME TYPE	DOOR OPENING WIDTH	DOOR OPENING HEIGHT	FIRE RATING	HARDWARE SET	KEYED NOTES	REMARKS	PHASE
C152B.1	SFD-K	9		6'-0"	7'-0"					New Construction
C152C.1	SFD-K	9		6'-0"	7'-0"					New Construction
C152E.1	B	4		6'-0"	7'-0"					New Construction
C152F.1	W	15		10'-0"	10'-0"					New Construction
C152G.1	W	15		10'-0"	10'-0"					New Construction
C152H.1	W	15		10'-0"	10'-0"					New Construction
C152I.1	W	15		10'-0"	10'-0"					New Construction
C152J.1	W	15		10'-0"	10'-0"					New Construction
C152K.1	W	15		10'-0"	10'-0"					New Construction
C152L.1	W	15		10'-0"	10'-0"					New Construction
C152M.1	W	15		10'-0"	10'-0"					New Construction
C152N.1	W	15		10'-0"	10'-0"					New Construction
C152O.1	W	15		10'-0"	10'-0"					New Construction
C152P.1	W	15		10'-0"	10'-0"					New Construction
C152Q.1	W	15		10'-0"	10'-0"					New Construction
C152R.1	W	15		10'-0"	10'-0"					New Construction
C152S.1	W	15		10'-0"	10'-0"					New Construction
C152T.1	W	15		10'-0"	10'-0"					New Construction
C152U.1	W	15		10'-0"	10'-0"					New Construction
C152V.1	W	15		10'-0"	10'-0"					New Construction
C152W.1	W	15		10'-0"	10'-0"					New Construction
C152X.1	W	15		10'-0"	10'-0"					New Construction
C152Y.1	W	15		10'-0"	10'-0"					New Construction
C152Z.1	W	15		10'-0"	10'-0"					New Construction
C153.1	A	4		3'-0"	7'-0"					New Construction

DOOR SCHEDULE NOTES

1. At Doors marked 'SMK', provide smoke seals at frame and door bottom to resist the passage of smoke. Provide threshold if required by code or if necessary for proper function of door bottom seal.
2. At Doors marked 'SND', frames to be stuffed with mineral fiber insulation prior to installation and the perimeter of the frame sealed to the surrounding wall with non-hardening acoustical sealant on both sides of the partition. Threshold, where used, shall be sealed to the floor with acoustical sealant.
3. At Doors without a Frame Type designation, the door frame is part of a Glazing System, Sound-Control Door Assembly, Tornado-Resistant Door Assembly, etc.
4. At Doors with a Frame Type designation "AL", the door frame is an interior aluminum frame that is not part of a glazing system
5. At Doors with a Frame Type designation "N/A", there is no door frame required (e.g. all-glass doors, gates, etc.).
6. At Doors with a Frame Type designation "REF DET", refer to the referenced Head and Jamb detail for frame information.
7. At Doors with a Door Type or Frame Type designation "EX", the door or door frame is existing to remain.
8. Refer to Hardware Schedule for additional information regarding hardware.
9. Vision panels at non-rated interior doors shall be 1/4" clear tempered glass (CT4) U.N.O. Vision panels at interior fire-rated glass (CC4) U.N.O. Vision panels at exterior doors shall be 1" tinted tempered insulating glass (TT1) U.N.O.
10. Refer to Glazing System Elevation Sheets for Glass Types.

DOOR KEYED NOTES

KEY NUMBER	KEYED NOTES
1	Cased Opening
2	Double Egress Doors
3	Fire-Rated Wired Glass
4	Fire-Rated Ceramic Glass
5	Keyed Removable Mullion
6	Electromagnetic Hold-Open
7	Manual Hold-Open, Floor Mounted
8	Manual Hold-Open Overhead
9	Access Control / Card Reader
10	Door Position Switch
11	Applied Sound Seals Threshold

PANEL MATERIAL NOTES

TYPE MARK	PANEL MATERIAL
1	Plastic Laminate
2	Stained Wood
3	Painted Wood
4	Painted Hollow Metal
5	Painted Metal Sound Control Door and Frame
6	Painted Metal Tornado Resistance Door and Frame
7	Solid Storefront Panel
8	Wide Stile Storefront Panel
9	Narrow Stile Storefront Panel
10	Manual Non Insulated Stainless Steel
11	Motorized Non Insulated Stainless Steel
12	Manual Non Insulated Painted Steel
13	Motorized Non Insulated Painted Steel
14	Manual Insulated Painted Steel
15	Motorized Insulated Painted Steel
16	Motorized Insulated Painted Steel Storm
17	Motorized Non Insulated Painted Steel Storm
18	Wire Mesh
19	Motorized Insulated Glass and Steel

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REGISTERED ARCHITECT
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STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.

25-0056.00

SHEET TITLE

DOOR SCHEDULE

SHEET NO.

A7.01

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GLAZING SYSTEM LEGEND

STOREFRONT FRAMING WITH 3/16" THICK 'HEAVY WALL' MATERIAL. TYPICAL AT ALL DOOR FRAME MEMBERS IN STOREFRONT GLAZING SYSTEMS.

CURTAIN WALL FRAMING WITH STEEL REINFORCING PROVIDED BY MANUFACTURER.

GLAZING SYSTEM NOTES

1. Overall dimensions of glazing system elevations reflect rough opening dimensions, inclusive of perimeter joints.
2. Provide 3/16" thick heavy wall framing members at all door frames in exterior and interior aluminum Storefront systems.
3. Provide 3/16" thick heavy wall door adapters at all door frame members in exterior and interior aluminum Curtain Wall systems.
4. Door opening dimensions in Curtain Wall systems reflect 1" door adapters at jamb conditions, and 1-3/4" door adapters at head conditions. Adjust dimensions between mullions at door openings in curtain wall systems as required for actual size of door adapters provided. Door sizes as identified in Door Schedule shall be maintained.
5. Refer to **5 / A7.02** for Typical Push/Pull Mounting Heights Detail for aluminum glass doors.

GLAZING TYPE LEGEND

Material: Description	Material: Name
CT4	Glazing - Clear
TH	Glazing - Insulated, Tinted, Impact Resistant
MP	Metal - Perforated
EXTERIOR FINISH	Metal - Wall Panel-02
Stainless Steel 18/8, polished finish	Shiny Red
TWP	Translucent Wall Panel

SAA 2" x 4-1/2" EXTERIOR ALUMINUM STOREFRONT

SAB 2" x 4-1/2" EXTERIOR ALUMINUM STOREFRONT

SAC 2" x 4-1/2" EXTERIOR ALUMINUM STOREFRONT

SAD 2" x 4-1/2" INTERIOR ALUMINUM STOREFRONT (REF. DIRTT DRAWINGS)

SAE 2" x 4-1/2" INTERIOR ALUMINUM STOREFRONT

1 STOREFRONTS - UNIT A

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

SBA 2" X 4-1/2" EXTERIOR ALUMINUM STOREFRONT

SBB 2" X 4-1/2" EXTERIOR ALUMINUM STOREFRONT

SBC 2" X 4-1/2" INTERIOR ALUMINUM STOREFRONT

SBD 2" X 4-1/2" INTERIOR ALUMINUM STOREFRONT

2 STOREFRONTS - UNIT B

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

SBE 2" X 4-1/2" INTERIOR ALUMINUM STOREFRONT

SBF 2" X 4-1/2" INTERIOR ALUMINUM STOREFRONT

SBG 2" X 4-1/2" INTERIOR ALUMINUM STOREFRONT WITH BUTT-GLAZE UNITS

SBH 2" X 4-1/2" INTERIOR ALUMINUM STOREFRONT

SBJ 2" X 4-1/2" INTERIOR ALUMINUM STOREFRONT

SBK 2" X 4-1/2" INTERIOR ALUMINUM STOREFRONT

3 STOREFRONTS - UNIT B

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

SCA 2" X 4-1/2" EXTERIOR ALUMINUM STOREFRONT (ALTERNATE)

SCB 2" X 4-1/2" EXTERIOR ALUMINUM STOREFRONT

SCC 2" X 4-1/2" EXTERIOR ALUMINUM STOREFRONT

SCD 2" X 4-1/2" EXTERIOR ALUMINUM STOREFRONT

SCE 2" X 4-1/2" EXTERIOR ALUMINUM STOREFRONT

SDA 2" X 4-1/2" EXTERIOR ALUMINUM STOREFRONT

SDB 2" X 4-1/2" EXTERIOR ALUMINUM STOREFRONT (ALTERNATE)

4 STOREFRONTS - UNITS C & D

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

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Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.

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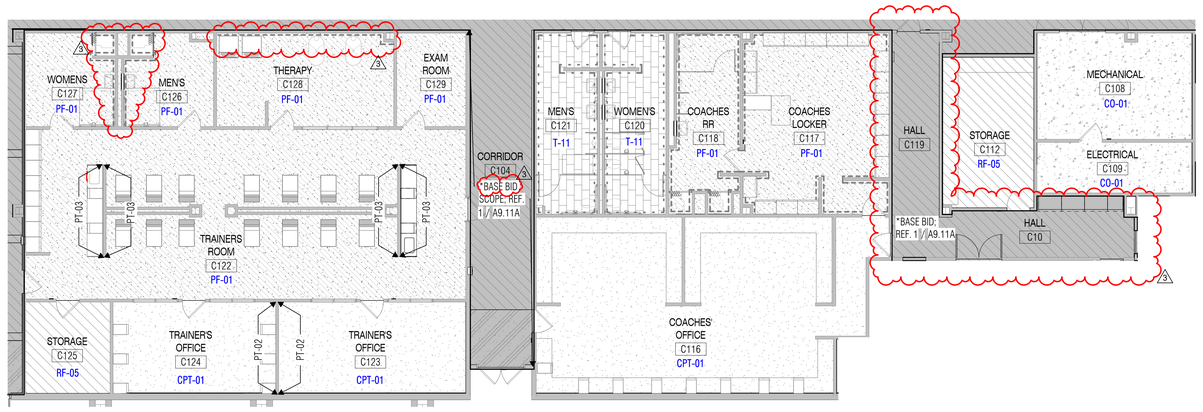
SHEET TITLE

GLAZING ASSEMBLY ELEVATIONS

SHEET NO.

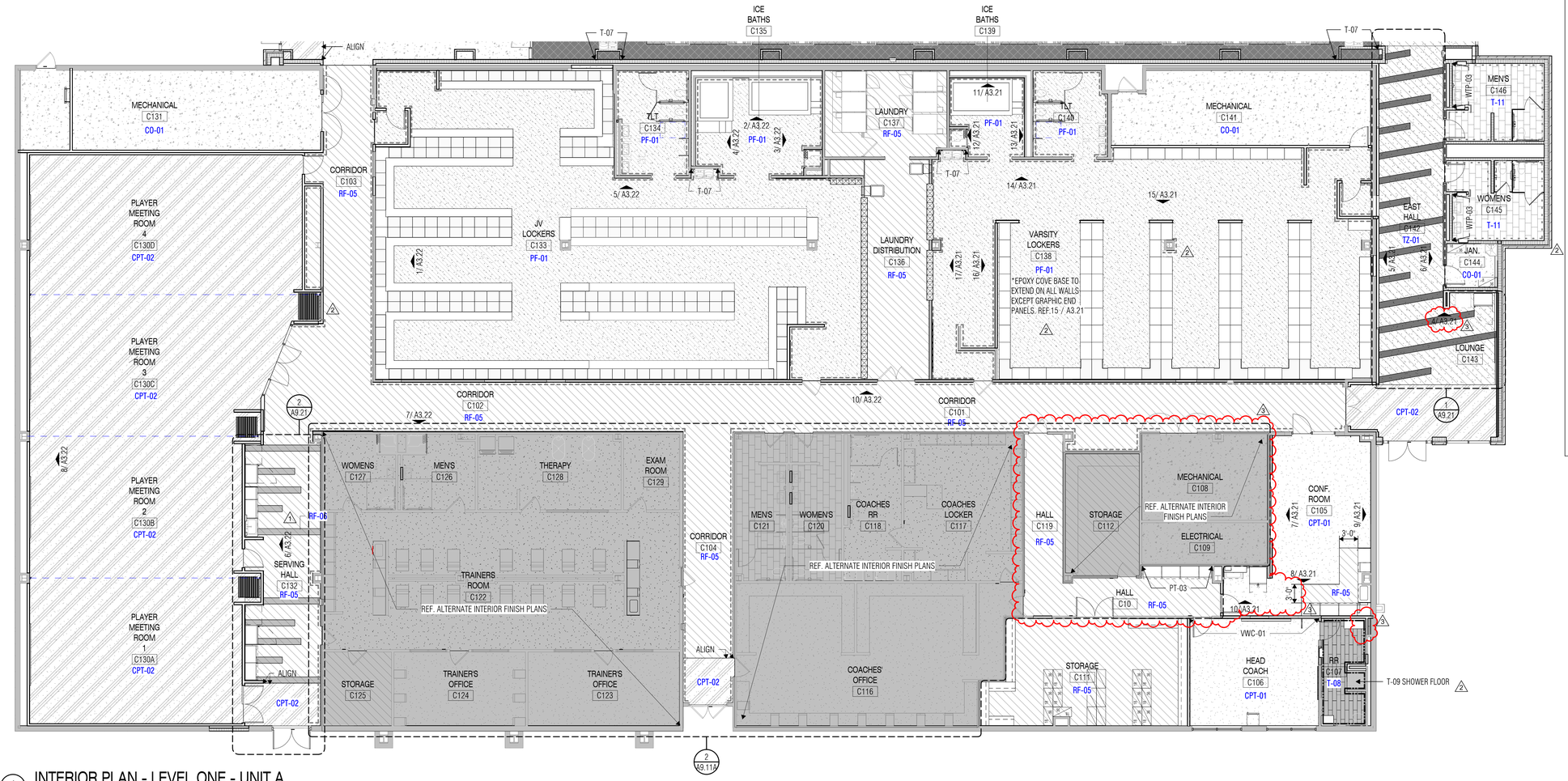
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2 INTERIOR FINISH PLAN - LEVEL 1 - UNIT A - ALTERNATE

SCALE: 1/8" = 1'-0"



1 INTERIOR PLAN - LEVEL ONE - UNIT A

SCALE: 1/8" = 1'-0"

INTERIOR FLOOR FINISH LEGEND

TYPE MARK	TYPE
	PLACEHOLDER - FLOORING
CO-01	Finish Floor - Concrete Sealed/Topping/Polished
CPT-01	Finish Floor - Carpet Field
CPT-02	Finish Floor - Carpet Walk Off
CSG-01	Finish Floor - CSG-01_Concrete Slab on Grade
CSS-01	<varies>
RF-01	Finish Floor - Rubber - Sports Floor - Field
RF-02	Finish Floor - Rubber - Sports Floor - Accent
RF-03	Finish Floor - Rubber - Sports Floor - Dropzone Accent
RF-04	Finish Floor - Rubber - Sports Floor - Dropzone Black
RF-05	Finish Floor - Resilient Floor - Field
RF-06	Finish Floor - Resilient Floor - Accent Red
SF	Finish Floor - Turf - White
SW-1	Site - Sidewalk - 5"
T-08	Finish Floor - Porcelain Tile Field
T-09	Finish Floor - Porcelain Tile - Showers
T-11	Finish Floor - Porcelain Tile - Restrooms 02
TF-01	Finish Floor - Indoor Turf - Red
TF-03	Finish Floor - Turf - Green - Practice
TZ-01	Finish - Terrazzo - Field
TZ-02	Finish Floor - Terrazzo - Accent Red

WALL FINISH LEGEND

WTP-01	WALL TILE PATTERN - WAINSCOT 12" x 24"
WTP-02	WALL TILE PATTERN - HEAD COACH RR
WTP-03	WALL TILE PATTERN - VISITOR RR'S
CG	CORNER GUARD
PT	PAINT

INTERIOR FINISH SCHEDULE NOTES

1. **General Finish Notes**
   - A. Any finish conflict between finish schedules and finish floor plans to be brought to the Architect's attention for resolution.
2. **Floor Finishes**
   - A. Refer to Interior Finish Plans for floor finish patterns.
   - B. Refer to Interior Finish Plans for tile origin in each room. If origin point is not indicated, center in middle of the room or corridor.
   - C. All changes in floor material between rooms shall occur at centerline of doorway, U.N.O.
   - D. Level and float flooring at public corridor walls.
   - E. All toilets and other areas capable of water incursion shall have a 2" x ½" wide marble threshold with ¼" beveled edges centered under each door.
   - F. Epoxy cove base to extend on all walls in locker rooms & restrooms, U.N.O. Ref. Interior Elevations & Details.
   - G. Sealant color shall match adjacent material. 1
   - H. Typical flooring application at brick walls:
     1. Resilient Tile/ Sheet Flooring: Rake brick joint at floor level and install sealant between LVT and brick.
     2. Carpet: Rake brick joint at floor level and tuck carpet tight into raked brick joint.
3. **Wall Finishes**
   - A. Finishes shall continue to inside corner, U.N.O.
   - B. Provide Corner Guard CG-01 (to ceiling) at all vinyl wall covering outside corners at public areas, whether indicated on finish plans or not.
   - C. **Vinyl Wallcovering Information**:
     1. No vinyl wallcovering should be terminated at an outside corner. All vinyl wallcovering to wrap to inside corner,U.N.O.
     2. Provide Corner Guard at any vinyl wall covering outside corner when the color changes at the corner.
     3. Provide Corner Guard CG-01 (to ceiling) at all vinyl wall covering outside corners at public areas, whether indicated on finish plans or not.
   - D. **Paint Information:**
     1. **Walls:**
        - a. All exterior walls with gypsum board interior shall be painted PT-01, U.N.O.
        - b. All interior sealants shall be painted to match adjacent wall.
     2. **Hollow Metal Doors and Windows:**
        - a. All hollow metal doors shall be painted PT-06, U.N.O. 3
        - b. All hollow metal door frames and vision panel frames shall be painted PT-06, U.N.O.
        - c. At door frames with 2 different colors, transition color at inside corner of door stop, on the door side of the stop.
        - d. Hollow metal glazed opening frames shall be painted PT-06, U.N.O.
     3. At painted CMU base, color shall match the wall above.
4. **Ceiling Finishes**
   - A. Refer to Reflected Ceiling Plans for scheduled finish.
   - B. At ceilings with exposed structure, all exposed elements shall be painted the scheduled color, including mechanical ductwork, electrical, piping, conduit, j-boxes, etc.
   - C. All interior gypsum board ceilings to be painted PT-01, U.N.O.
   - D. All interior gypsum board furr-downs to be painted PT-01, U.N.O.
5. **Tiling**
   - A. Refer to Detail 2/A3.31 for typical tile wainscot wall pattern.
   - B. Refer to Detail 3/A3.31 for typical toilet room wall pattern.
   - C. Refer to Detail 1/A3.31 for typical drinking fountain wall pattern.
   - D. At outside corners and exposed edges of ceramic or porcelain tile, provide anodized aluminum trim, unless otherwise detailed.
   - E. Provide Metal Trim WFA-01 at all outside and/or exposed tile locations (top, bottom, and corners) in corridors, whether indicated on finish plans or not.
6. **Casework/ Architectural Woodwork**
   1. Typical Casework/Millwork cabinet body, doors, and drawer fronts shall be PL-01, U.N.O.
   2. Countertops shall be PL-02, or SS-01 U.N.O
   3. Interior Plastic Laminate clad wood doors to be PL-01.
   4. Window Sills shall be PL-02, U.N.O.
   5. Consultant to match specified finishes. 1

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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT
TRENT C. CASTILLO
#32668
STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 1	10/08/2025
2	Addendum 3	10/17/2025
3	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.

25-0056.00

SHEET TITLE

INTERIOR FINISH PLAN - LEVEL ONE - UNIT A

SHEET NO.

A9.11A

KEY PLAN

C D B A

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WALL FINISH LEGEND

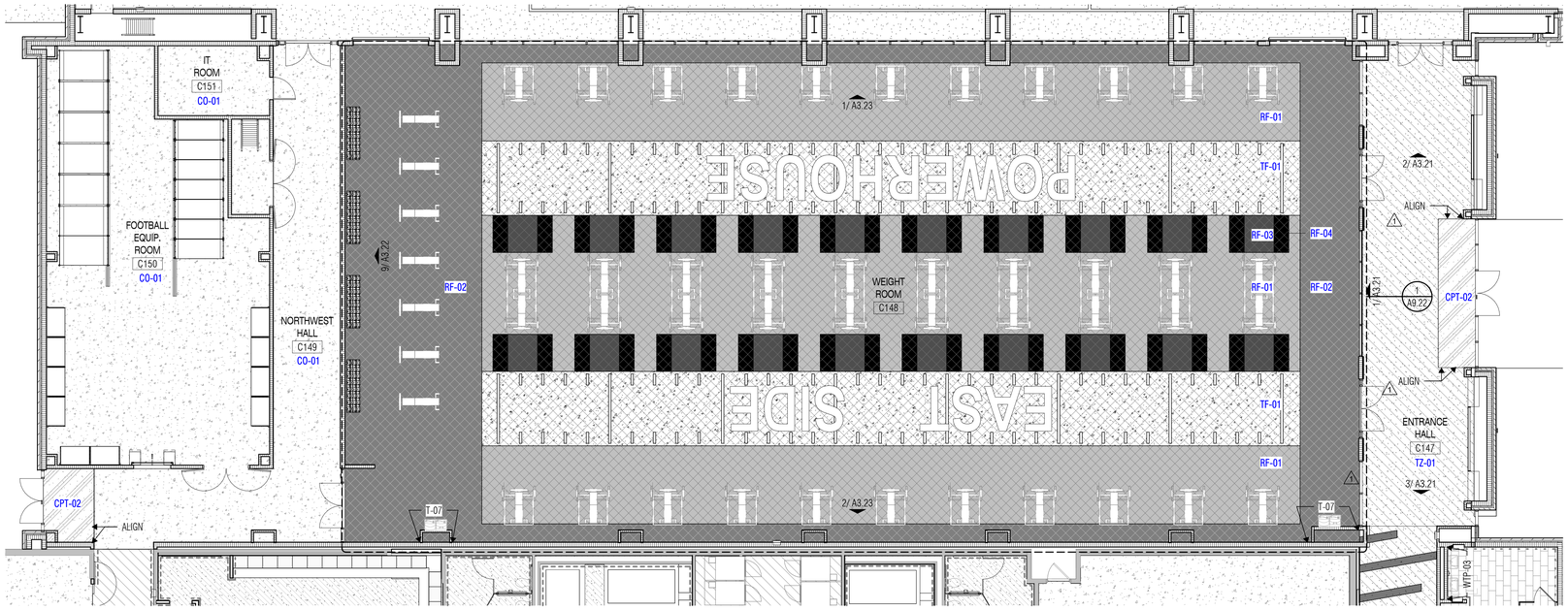
WTP-01	WALL TILE PATTERN - WAINSCOT 12" x 24"
WTP-02	WALL TILE PATTERN - HEAD COACH RR
WTP-03	WALL TILE PATTERN - VISITOR RR'S
CG	CORNER GUARD
PT	PAINT

INTERIOR FLOOR FINISH LEGEND

TYPE MARK	TYPE
	PLACEHOLDER - FLOORING
CO-01	Finish Floor - Concrete Sealed/Topping/Polished
CPT-01	Finish Floor - Carpet Field
CPT-02	Finish Floor - Carpet Walk Off
CSG-01	CSG-01_Concrete Slab on Grade
CSS-01	<varies>
RF-01	Finish Floor - Rubber - Sports Floor - Field
RF-02	Finish Floor - Rubber - Sports Floor - Accent
RF-03	Finish Floor - Rubber - Sports Floor - Dropzone Accent
RF-04	Finish Floor - Rubber - Sports Floor - Dropzone Black
RF-05	Finish Floor - Resilient Floor - Field
RF-06	Finish Floor - Resilient Floor - Accent Red
SF	Finish Floor - Turf - White
SW-1	Site - Sidewalk - 5"
T-08	Finish Floor - Porcelain Tile Field
T-09	Finish Floor - Porcelain Tile - Showers
T-11	Finish Floor - Porcelain Tile - Restrooms 02
TF-01	Finish Floor - Indoor Turf - Red
TF-03	Finish Floor - Turf - Green - Practice
TZ-01	Finish - Terrazzo - Field
TZ-02	Finish Floor - Terrazzo - Accent Red

INTERIOR FINISH SCHEDULE NOTES

1. **General Finish Notes**
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2. **Floor Finishes**
   - A. Refer to Interior Finish Plans for floor finish patterns.
   - B. Refer to Interior Finish Plans for tile origin in each room. If origin point is not indicated, center in middle of the room or corridor.
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   - D. Level and float flooring at public corridor walls.
   - E. All toilets and other areas capable of water incursion shall have a 2" x ½" wide marble threshold with ¼" beveled edges centered under each door.
   - F. Epoxy cove base to extend on all walls in locker rooms & restrooms, U.N.O. Ref. Interior Elevations & Details.
   - G. Sealant color shall match adjacent material. 2
   - H. Typical flooring application at brick walls:
     1. Resilient Tile/ Sheet Flooring: Rake brick joint at floor level and install sealant between LVT and brick.
     2. Carpet: Rake brick joint at floor level and tuck carpet tight into raked brick joint.
3. **Wall Finishes**
   - A. Finishes shall continue to inside corner, U.N.O.
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        - a. All hollow metal doors shall be painted PT-06, U.N.O.
        - b. All hollow metal door frames and vision panel frames shall be painted PT-06, U.N.O.
        - c. At door frames with 2 different colors, transition color at inside corner of door stop, on the door side of the stop.
        - d. Hollow metal glazed opening frames shall be painted PT-06, U.NO.
     3. At painted CMU base, color shall match the wall above.
4. **Ceiling Finishes**
   - A. Refer to Reflected Ceiling Plans for scheduled finish.
   - B. At ceilings with exposed structure, all exposed elements shall be painted the scheduled color, including mechanical ductwork, electrical, piping, conduit, j-boxes, etc.
   - C. All interior gypsum board ceilings to be painted PT-01, U.N.O.
   - D. All interior gypsum board furr-downs to be painted PT-01, U.N.O.
5. **Tiling**
   - A. Refer to Detail 2/A3.31 for typical tile wainscot wall pattern.
   - B. Refer to Detail 3/A3.31 for typical toilet room wall pattern.
   - C. Refer to Detail 1/A3.31 for typical drinking fountain wall pattern.
   - D. At outside corners and exposed edges of ceramic or porcelain tile, provide anodized aluminum trim, unless otherwise detailed.
   - E. Provide Metal Trim WFA-01 at all outside and/or exposed tile locations (top, bottom, and corners) in corridors, whether indicated on finish plans or not.
6. **Casework/ Architectural Woodwork**
   1. Typical Casework/Millwork cabinet body, doors, and drawer fronts shall be PL-01, U.N.O.
   2. Countertops shall be PL-02, or SS-01 U.N.O
   3. Interior Plastic Laminate clad wood doors to be PL-01.
   4. Window Sills shall be PL-02, U.N.O.
   5. Consultant to match specified finishes. 1



1 INTERIOR PLAN - LEVEL ONE - UNIT B
SCALE: 1/8" = 1'-0"

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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT — MONIKA C. CASTILLO — 26555 — STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 1	10/08/2025
2	Addendum 3	10/17/2025
3	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

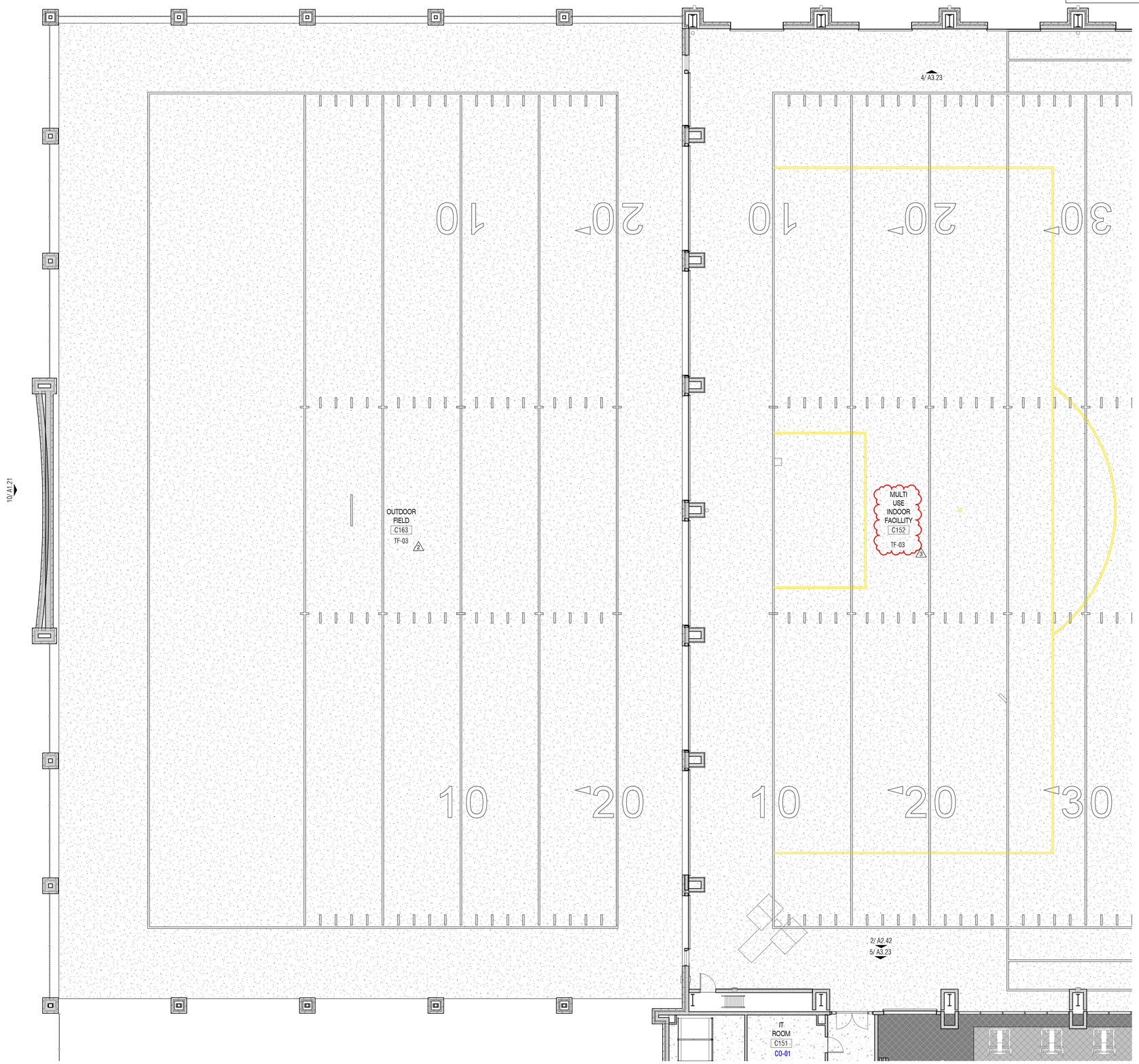
PROJECT NO.
25-0056.00

SHEET TITLE
INTERIOR FINISH PLAN - LEVEL ONE - UNIT B

SHEET NO.
A9.11B

KEY PLAN
C D
B
A

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1 INTERIOR PLAN - LEVEL ONE - UNIT C
SCALE: 1/8" = 1'-0"

WALL FINISH LEGEND

WTP-01	WALL TILE PATTERN - WAINSCOT 12" x 24"
WTP-02	WALL TILE PATTERN - HEAD COACH RR
WTP-03	WALL TILE PATTERN - VISITOR RR'S
CG	CORNER GUARD
PT	PAINT

INTERIOR FINISH SCHEDULE NOTES

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   - F. Epoxy cove base to extend on all walls in locker rooms & restrooms, U.N.O. Ref. Interior Elevations & Details.
   - G. Sealant color shall match adjacent material. 2
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     1. **Walls:**
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        - b. All interior sealants shall be painted to match adjacent wall.
     2. **Hollow Metal Doors and Windows:**
        - a. All hollow metal doors shall be painted PT-06, U.N.O.
        - b. All hollow metal door frames and vision panel frames shall be painted PT-06, U.N.O.
        - c. At door frames with 2 different colors, transition color at inside corner of door stop, on the door side of the stop.
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   3. Interior Plastic Laminate clad wood doors to be PL-01.
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INTERIOR FLOOR FINISH LEGEND

TYPE MARK	TYPE
	PLACEHOLDER - FLOORING
CO-01	Finish Floor - Concrete Sealed/Topping/Polished
CPT-01	Finish Floor - Carpet Field
CPT-02	Finish Floor - Carpet Walk Off
CSG-01	CSG-01_Concrete Slab on Grade
CSS-01	<varies>
RF-01	Finish Floor - Rubber - Sports Floor - Field
RF-02	Finish Floor - Rubber - Sports Floor - Accent
RF-03	Finish Floor - Rubber - Sports Floor - Dropzone Accent
RF-04	Finish Floor - Rubber - Sports Floor - Dropzone Black
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RF-06	Finish Floor - Resilient Floor - Accent Red
SF	Finish Floor - Turf - White
SW-1	Site - Sidewalk - 5"
T-08	Finish Floor - Porcelain Tile Field
T-09	Finish Floor - Porcelain Tile - Showers
T-11	Finish Floor - Porcelain Tile - Restrooms 02
TF-01	Finish Floor - Indoor Turf - Red
TF-03	Finish Floor - Turf - Green - Practice
TZ-01	Finish - Terrazzo - Field
TZ-02	Finish Floor - Terrazzo - Accent Red

2

KEY PLAN
C D B A

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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

REGISTERED ARCHITECT MONIKA C. CASTILLO 28555 STATE OF TEXAS
10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 1	10/08/2025
2	Addendum 3	10/17/2025
3	Addendum 4	10/22/2025

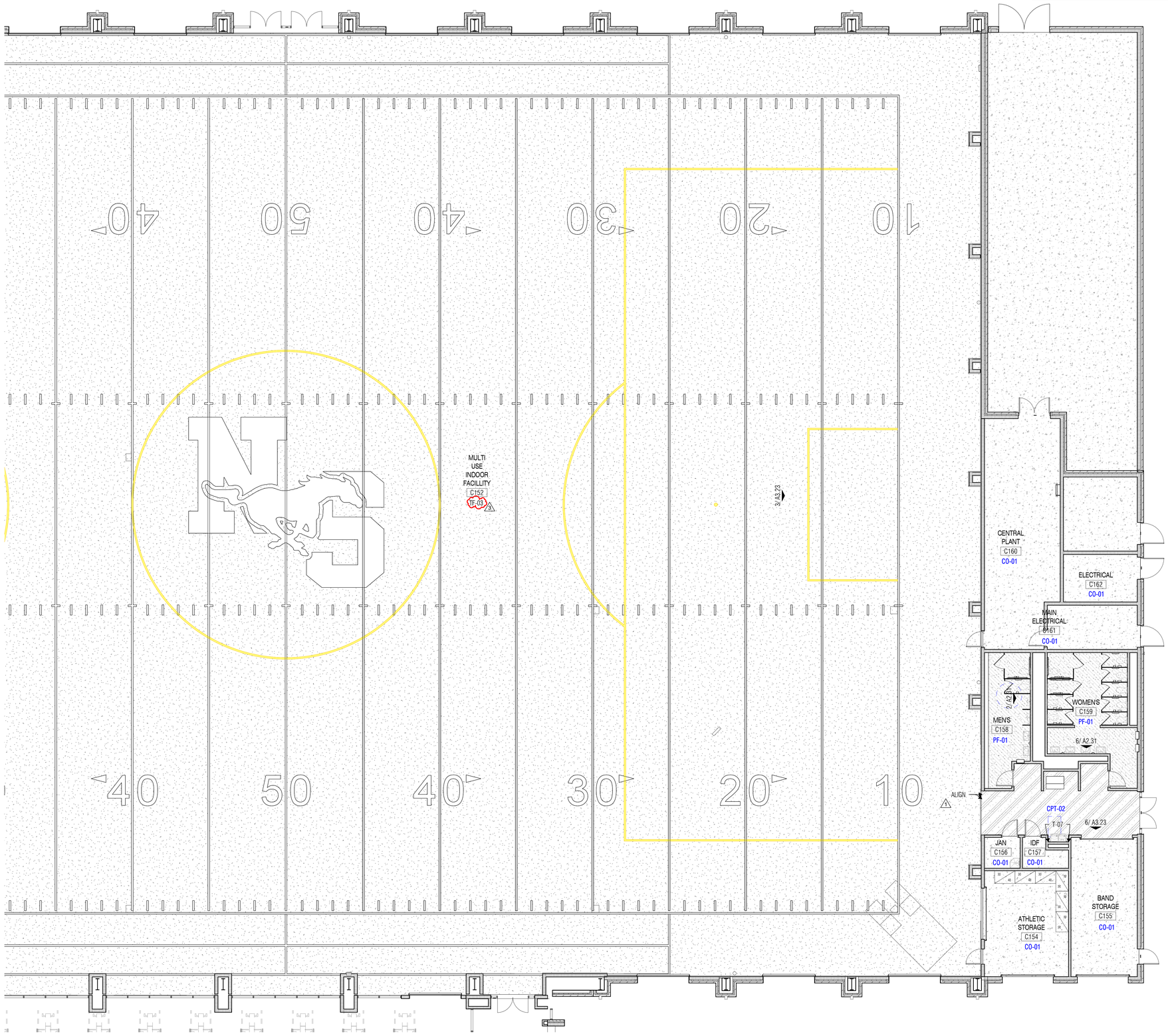
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
INTERIOR FINISH PLAN - LEVEL ONE - UNIT C

SHEET NO.
A9.11C

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1 INTERIOR PLAN - LEVEL ONE - UNIT D
SCALE: 1/8" = 1'-0"

WALL FINISH LEGEND

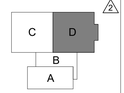
WTP-01	WALL TILE PATTERN - WAINSCOT 12" x 24"
WTP-02	WALL TILE PATTERN - HEAD COACH RR
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PT	PAINT

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INTERIOR FLOOR FINISH LEGEND

TYPE MARK	TYPE
	PLACEHOLDER - FLOORING
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TF-01	Finish Floor - Indoor Turf - Red
TF-03	Finish Floor - Turf - Green - Practice
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KEY PLAN

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GALENA PARK ISD
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REGISTERED ARCHITECT MONIKA C. CASTILLO 26508 STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 1	10/08/2025
2	Addendum 3	10/17/2025
3	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.

25-0056.00

SHEET TITLE

INTERIOR FINISH PLAN - LEVEL ONE - UNIT D

SHEET NO.

A9.11D

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SIGNAGE SCHEDULE

TYPE MARK	TYPE	ROOM: NAME	ROOM: NUMBER
A	Room Sign	MULTI USE INDOOR FACILLITY	C152
H	Max Occupancy	MULTI USE INDOOR FACILLITY	C152
E	Boys	MEN'S	C158
D	Girls	WOMEN'S	C159
A	Room Sign	JAN	C156
A	Room Sign	IDF	C157
A	Room Sign	ATHLETIC STORAGE	C154
A	Room Sign	BAND STORAGE	C155
A	Room Sign	ELECTRICAL	C162
A	Room Sign	FIRE PUMP	C165
A	Room Sign	CENTRAL PLANT	C160
Q	Riser Room Q		
Q	Riser Room Q	MULTI USE INDOOR FACILLITY	C152
A	Room Sign	BAND STORAGE	C155
R	Exterior Door Number		
R	Exterior Door Number	MULTI USE INDOOR FACILLITY	C152
R	Exterior Door Number		
R	Exterior Door Number		
R	Exterior Door Number		
A	Room Sign		
R	Exterior Door Number		
R	Exterior Door Number	MULTI USE INDOOR FACILLITY	C152
H	Max Occupancy	MULTI USE INDOOR FACILLITY	C152
A	Room Sign		

MULTI USE INDOOR FACILLITY C152

CENTRAL PLANT C160

FIRE PUMP C165

ELECTRICAL C162

MAIN ELECTRICAL C161

MEN'S C158

WOMEN'S C159

JAN C156

IDF C157

ATHLETIC STORAGE C154

BAND STORAGE C155

1 WAYFINDING PLAN - LEVEL ONE - UNIT D
SCALE: 1/8" = 1'-0"

KEY PLAN

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REGISTERED ARCHITECT MONIKA C. CASTILLO 28555 STATE OF TEXAS

10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 4	10/22/2025

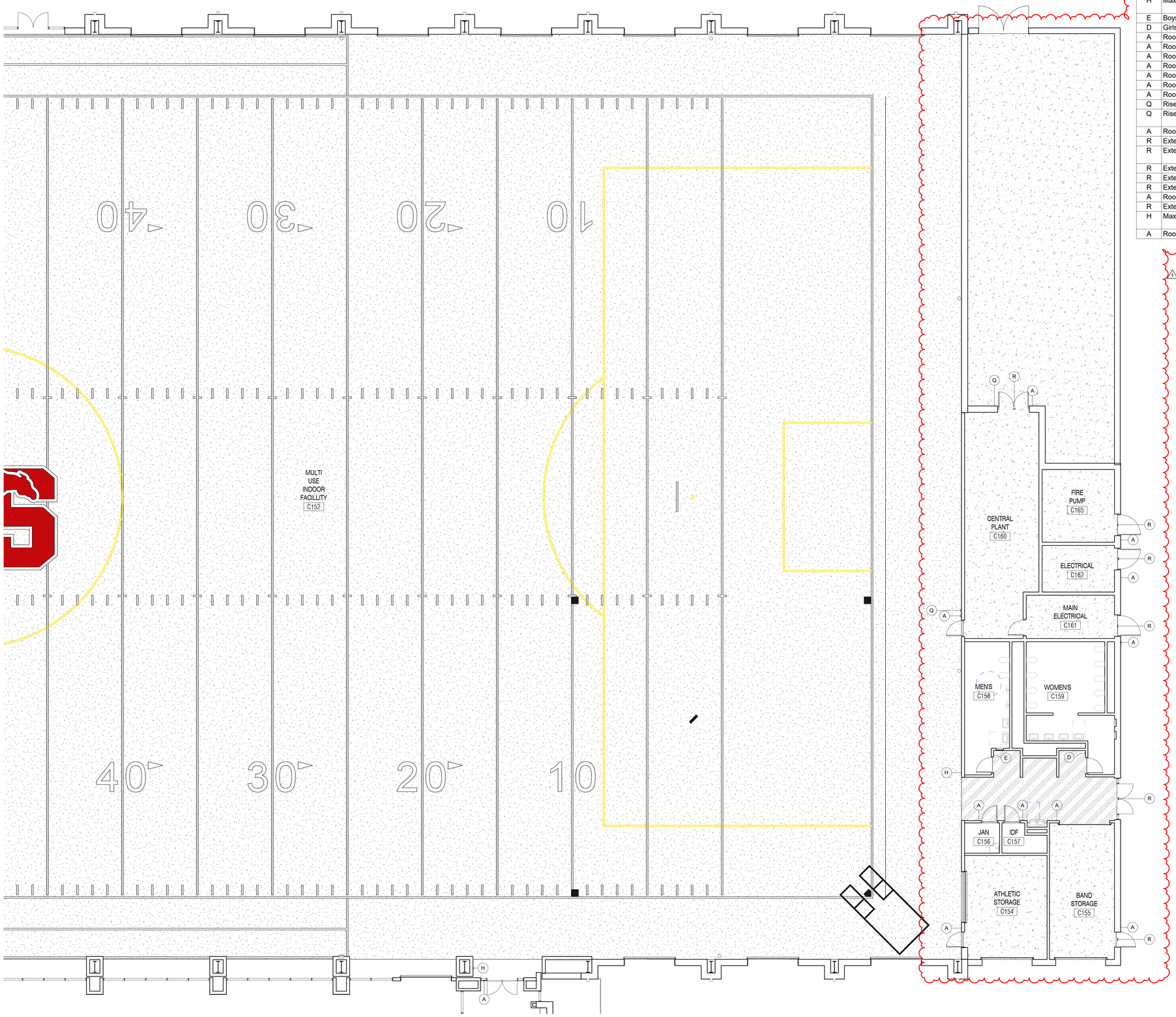
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
WAYFINDING PLAN - LEVEL ONE - UNIT D

SHEET NO.
A9.41D

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1 WAYFINDING PLAN - LEVEL ONE - UNIT D - ALTERNATE
SCALE: 1/8" = 1'-0"

SIGNAGE SCHEDULE

TYPE MARK	TYPE	ROOM: NAME	ROOM: NUMBER
A	Room Sign	MULTI USE INDOOR FACILLITY	C152
H	Max Occupancy	MULTI USE INDOOR FACILLITY	C152
E	Boys	MEN'S	C158
D	Girls	WOMEN'S	C159
A	Room Sign	JAN	C156
A	Room Sign	IDF	C157
A	Room Sign	ATHLETIC STORAGE	C154
A	Room Sign	BAND STORAGE	C155
A	Room Sign	ELECTRICAL	C162
A	Room Sign	FIRE PUMP	C165
A	Room Sign	CENTRAL PLANT	C160
Q	Riser Room Q		
Q	Riser Room Q	MULTI USE INDOOR FACILLITY	C152
A	Room Sign	BAND STORAGE	C155
R	Exterior Door Number		
R	Exterior Door Number	MULTI USE INDOOR FACILLITY	C152
R	Exterior Door Number		
R	Exterior Door Number		
R	Exterior Door Number		
A	Room Sign		
R	Exterior Door Number		
H	Max Occupancy	MULTI USE INDOOR FACILLITY	C152
A	Room Sign		

1

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GALENA PARK ISD
HOUSTON, TEXAS

REGISTERED ARCHITECT MONIKA C. CASTILLO 26558 STATE OF TEXAS
10/22/2025

ISSUED: OCTOBER 1, 2025

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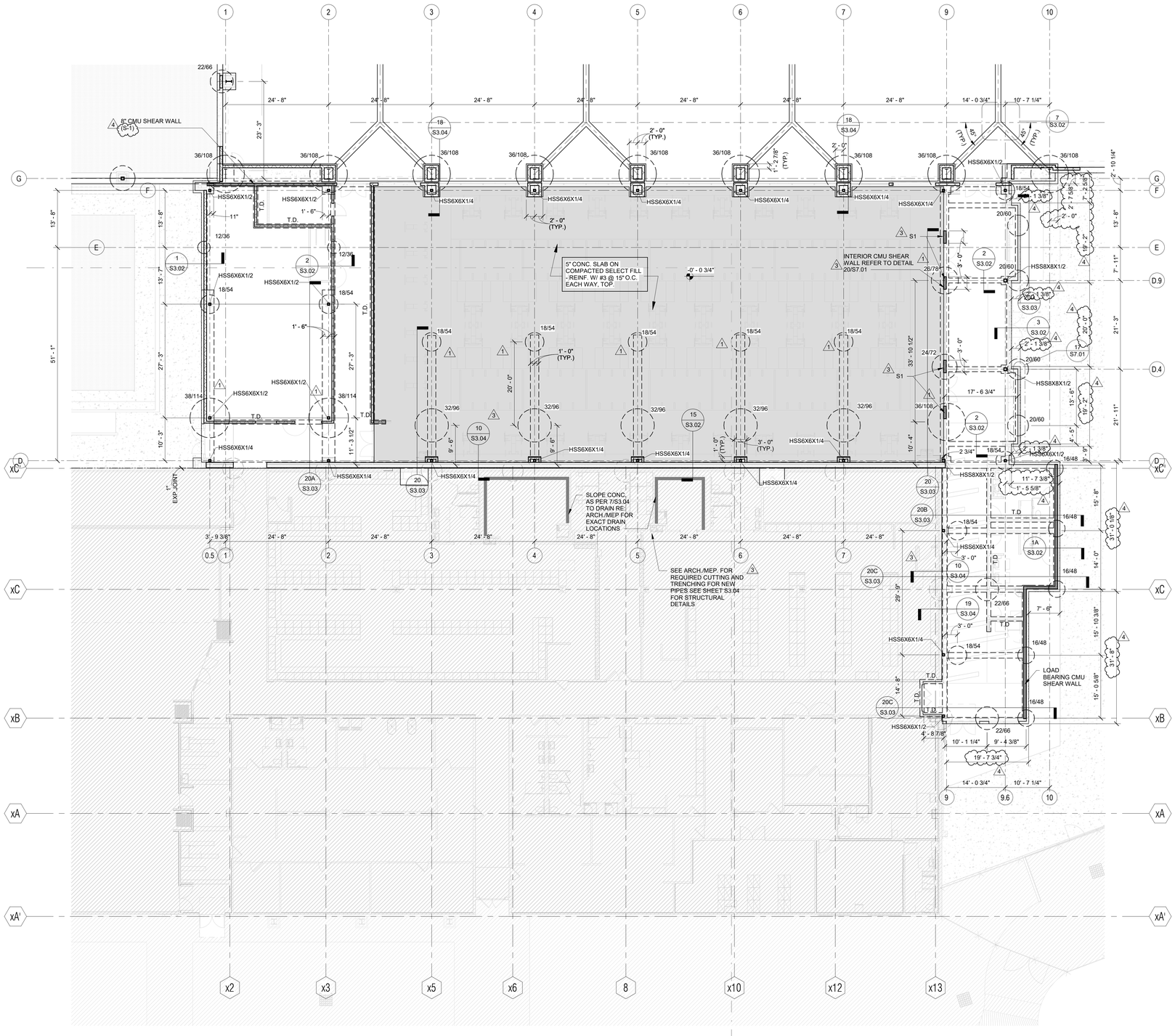
PROJECT NO.
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SHEET TITLE
WAYFINDING PLAN - LEVEL ONE - UNIT D - ALTERNATE

SHEET NO.
A9.41D.1

North Shore Multi-Use Indoor Facility

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1 FOUNDATION PLAN - UNIT B
SCALE: 3/32" = 1'-0"

PEMB FOUNDATION PLAN NOTES:

1. ALL PIERS ARE CENTERED UNDER COLUMN CENTERLINES, U.N.O.
2. PIERS UNDER GRADE BEAM (WITHOUT COLUMNS) SHALL BE CENTERED UNDER GRADE BEAMS, U.N.O.
3. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL FLOOR SLOPES, DEPRESSIONS, ETC.
4. COORDINATE ALL BRICK LEDGES AND DEPTH WITH ARCHITECTURAL DRAWINGS.
5. LOCATIONS NOTED THUS: 0' - 0" INDICATES TOP OF SLAB ELEVATION.
6. SEE PEMB FOR BASE PLATE INFORMATION.
7. REFER TO PEMB FOR SIZE, LOCATION AND ORIENTATION OF ALL COLUMNS, ANCHOR BOLTS. NOTIFY ARCH. OF ANY DISCREPANCIES BETWEEN PLANS FOR RESOLUTION PRIOR TO FABRICATION AND INSTALLATION.
8. SEE 5/S3.01, 7/S3.01 & 10/S3.01 FOR ADDITIONAL REBAR AT OPENINGS, DISCONTINUOUS JOINTS, AND RE-ENTRANT CORNERS IN SLAB-ON-GRADE.
9. PROVIDE CONTRACTION JOINTS AND DISCONTINUOUS SLAB REINFORCING AS SHOWN IN DETAIL 6/S3.01.
10. REFER TO MEP FOR SLOPE - INVERT ELEVATION (I.E.) AT DRAINS.
11. TYPICAL SLOPE AT FLOOR IS 1/8" PER FOOT, U.N.O. ON ARCH.
12. PROVIDE (2)#4X4'-0" TOP & BOT. AT ALL RE-ENTRANT CORNERS AT SLAB ON GRADE. TOP REINFORCING SHALL BE PLACED AT 1 1/4" CLEAR FROM THE TOP OF THE SLAB.
13. ——► WHERE SHOWN ON PLAN INDICATES SLOPE DIRECTION. SEE ARCH. FOR INFORMATION.
14. ALL COLUMN LOCATIONS SHOWN AND ASSOCIATED FOUNDATIONS ARE PLACEHOLDERS IN THE ABSENCE OF A COMPLETE METAL BUILDING DESIGN SUBMITTAL. SEE GENERAL NOTES FOR SUBMITTAL REQUIREMENTS.
15. 1" EXPNSION JOINT SHALL BE PROVIDED BETWEEN PEMB BUILDING AND THE ADJACENT STEEL BUILDING (UNIT B)
16. PEMB ENGINEER TO BRACE THE TOP OF CMU WALLS FOR ANY LATERAL LOAD

FOUNDATION PLAN NOTES:

1. ALL PIERS ARE CENTERED UNDER COLUMN CENTERLINES, U.N.O.
2. PIERS UNDER GRADE BEAMS (WITHOUT COLUMNS) SHALL BE CENTERED UNDER GRADE BEAMS, U.N.O.
3. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL FLOOR SLOPES, DEPRESSIONS, ETC.
4. COORDINATE ALL BRICK LEDGES AND DEPTH WITH ARCHITECTURAL DRAWINGS.
5. LOCATIONS NOTED THUS: 0' - 0" INDICATES TOP OF SLAB ELEVATION.
6. REF. ELEVATION = 0' - 0" CORRESPONDS TO CIVIL ELEVATION 33.50'. VERIFY WITH CIVIL.
7. SEE DETAIL 13/S3.03 FOR BASE PLATES.
8. SEE 5/S3.01, 7/S3.01 & 10/S3.01 FOR ADDITIONAL REBAR AT OPENINGS, DISCONTINUOUS JOINTS, AND RE-ENTRANT CORNERS IN SLAB-ON-GRADE.
9. PROVIDE CONTRACTION JOINTS AND DISCONTINUOUS SLAB REINFORCING AS SHOWN IN DETAIL 6/S3.01.
10. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO FABRICATION / CONSTRUCTION.

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STATE OF TEXAS — KHALIL TABAJA — 127125 — FINAL — 10/22/2025

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REVISIONS

Revision No.		Revision Date
1	Addendum 1	10-08-2025
3	Addendum 3	10-17-2025
4	Addendum 4	10-21-2025

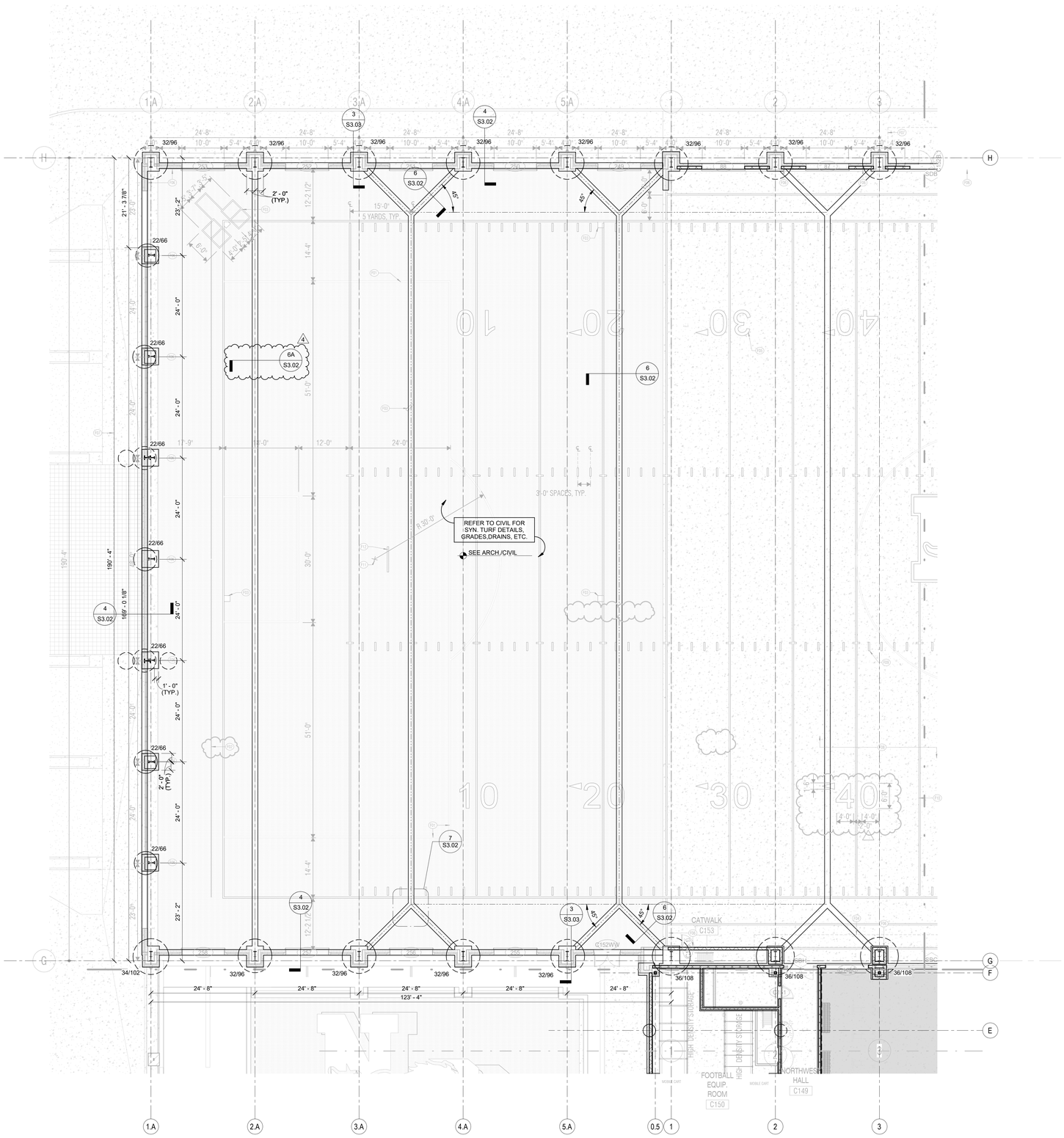
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	HR
Drawn By	RJC

PROJECT NO.
25-0056.00

SHEET TITLE
FOUNDATION PLAN - UNIT B

SHEET NO.
S2.01B

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1 FOUNDATION PLAN - UNIT C - ALTERNATE BID
SCALE: 3/32" = 1'-0"

PEMB FOUNDATION PLAN NOTES:

1. ALL PIERS ARE CENTERED UNDER COLUMN CENTERLINES, U.N.O.
2. PIERS UNDER GRADE BEAM (WITHOUT COLUMNS) SHALL BE CENTERED UNDER GRADE BEAMS, U.N.O.
3. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL FLOOR SLOPES, DEPRESSIONS, ETC.
4. COORDINATE ALL BRICK LEDGES AND DEPTH WITH ARCHITECTURAL DRAWINGS.
5. LOCATIONS NOTED THUS: 0' - 0" INDICATES TOP OF SLAB ELEVATION.
6. SEE PEMB FOR BASE PLATE INFORMATION.
7. REFER TO PEMB FOR SIZE, LOCATION AND ORIENTATION OF ALL COLUMNS, ANCHOR BOLTS. NOTIFY ARCH. OF ANY DISCREPANCIES BETWEEN PLANS FOR RESOLUTION PRIOR TO FABRICATION AND INSTALLATION.
8. SEE 5/S3.01, 7/S3.01 & 10/S3.01 FOR ADDITIONAL REBAR AT OPENINGS, DISCONTINUOUS JOINTS, AND RE-ENTRANT CORNERS IN SLAB-ON-GRADE.
9. PROVIDE CONTRACTION JOINTS AND DISCONTINUOUS SLAB REINFORCING AS SHOWN IN DETAIL 6/S3.01.
10. REFER TO MEP FOR SLOPE - INVERT ELEVATION (I.E.) AT DRAINS.
11. TYPICAL SLOPE AT FLOOR IS 1/8" PER FOOT, U.N.O. ON ARCH.
12. PROVIDE (2)#4X4'-0" TOP & BOT. AT ALL RE-ENTRANT CORNERS AT SLAB ON GRADE. TOP REINFORCING SHALL BE PLACED AT 1 1/4" CLEAR FROM THE TOP OF THE SLAB.
13. ——► WHERE SHOWN ON PLAN INDICATES SLOPE DIRECTION. SEE ARCH. FOR INFORMATION.
14. ALL COLUMN LOCATIONS SHOWN AND ASSOCIATED FOUNDATIONS ARE PLACEHOLDERS IN THE ABSENCE OF A COMPLETE METAL BUILDING DESIGN SUBMITTAL. SEE GENERAL NOTES FOR SUBMITTAL REQUIREMENTS.
15. 1" EXPNSION JOINT SHALL BE PROVIDED BETWEEN PEMB BUILDING AND THE ADJACENT STEEL BUILDING (UNIT B)
16. PEMB ENGINEER TO BRACE THE TOP OF CMU WALLS FOR ANY LATERAL LOAD

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6. REF. ELEVATION = 0' - 0" CORRESPONDS TO CIVIL ELEVATION 33.50'. VERIFY WITH CIVIL.
7. SEE DETAIL 13/S3.03 FOR BASE PLATES.
8. SEE 5/S3.01, 7/S3.01 & 10/S3.01 FOR ADDITIONAL REBAR AT OPENINGS, DISCONTINUOUS JOINTS, AND RE-ENTRANT CORNERS IN SLAB-ON-GRADE.
9. PROVIDE CONTRACTION JOINTS AND DISCONTINUOUS SLAB REINFORCING AS SHOWN IN DETAIL 6/S3.01.
10. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO FABRICATION / CONSTRUCTION.

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10/22/2025

ISSUED: OCTOBER 1, 2025

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Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	HR
Drawn By	RJC

PROJECT NO.

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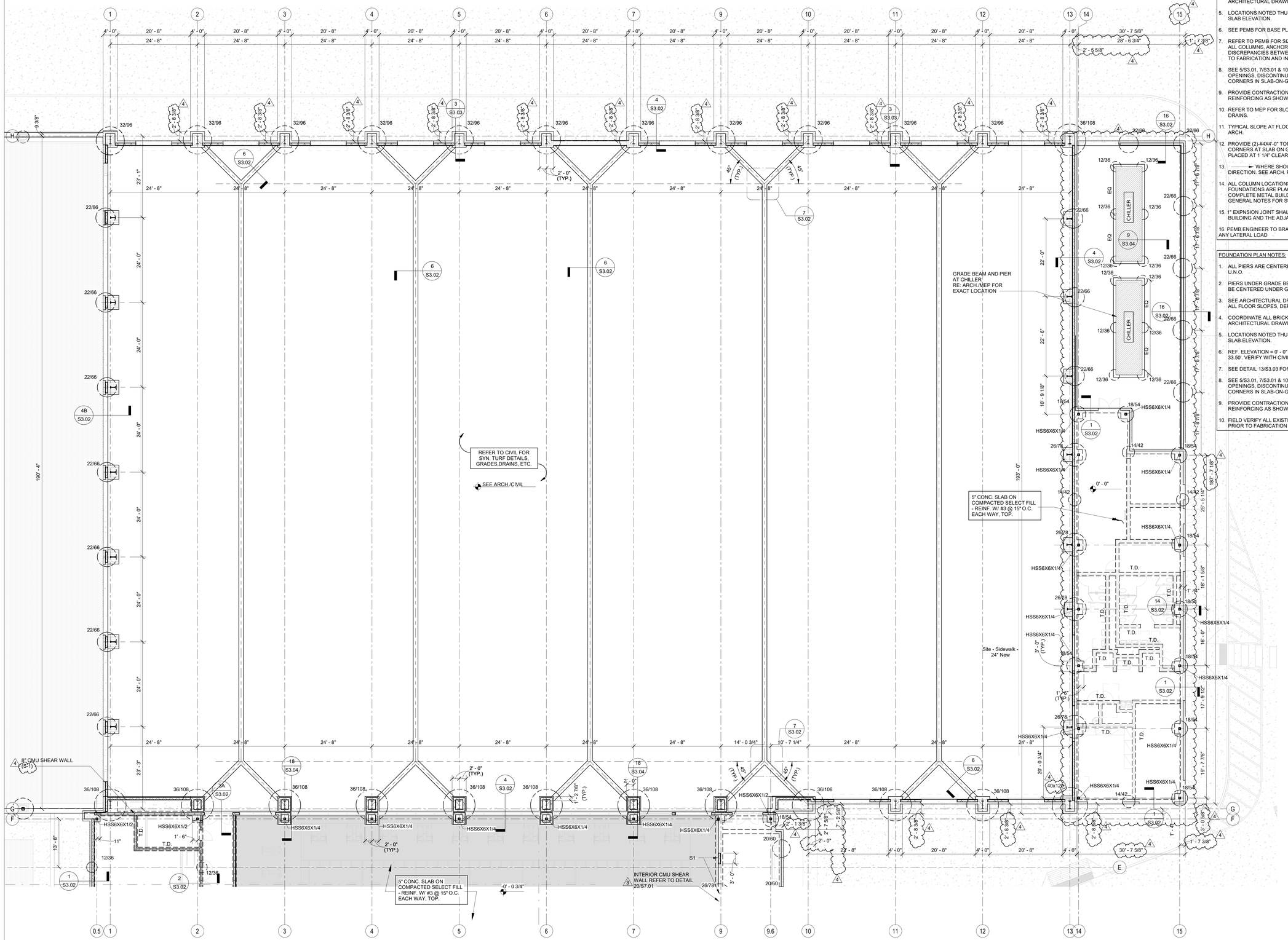
SHEET TITLE

FOUNDATION PLAN - UNIT C - ALTERNATE BID

SHEET NO.

S2.02C.1

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1 FOUNDATION PLAN - UNIT D
SCALE: 3/32" = 1'-0"

C D B A
KEY PLAN

PEMB FOUNDATION PLAN NOTES:

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7. REFER TO PEMB FOR SIZE, LOCATION AND ORIENTATION OF ALL COLUMNS, ANCHOR BOLTS. NOTIFY ARCH. OF ANY DISCREPANCIES BETWEEN PLANS FOR RESOLUTION PRIOR TO FABRICATION AND INSTALLATION.
8. SEE 5/S3.01, 7/S3.01 & 10/S3.01 FOR ADDITIONAL REBAR AT OPENINGS, DISCONTINUOUS JOINTS, AND RE-ENTRANT CORNERS IN SLAB-ON-GRADE.
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7. SEE DETAIL 13/S3.03 FOR BASE PLATES.
8. SEE 5/S3.01, 7/S3.01 & 10/S3.01 FOR ADDITIONAL REBAR AT OPENINGS, DISCONTINUOUS JOINTS, AND RE-ENTRANT CORNERS IN SLAB-ON-GRADE.
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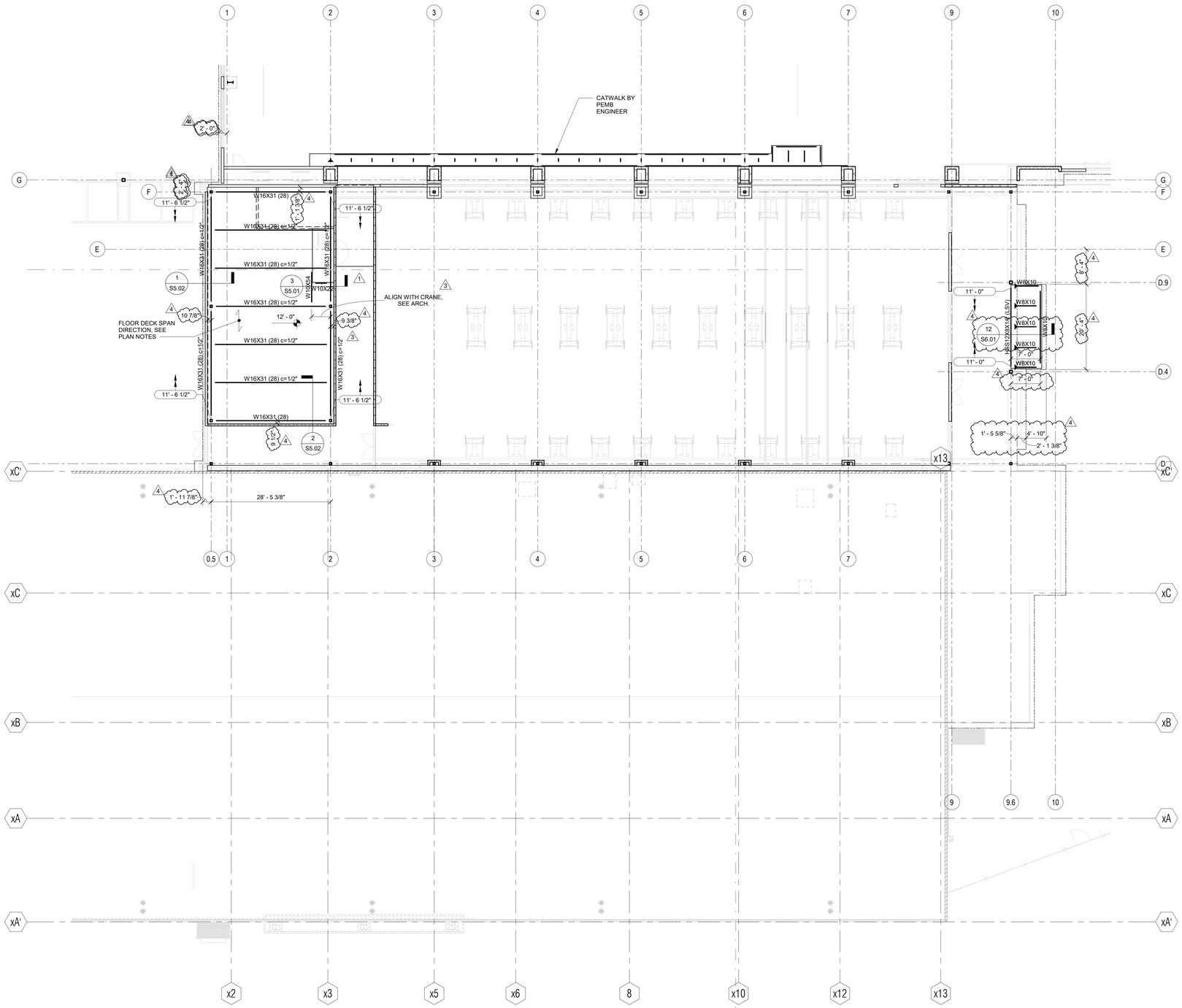
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	HR
Drawn By	RJC

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25-0056.00

SHEET TITLE
FOUNDATION PLAN - UNIT D

SHEET NO.
S2.03D

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1 MEZZANINE FRAMING PLAN - UNIT B
SCALE: 3/32" = 1'-0"

MEZZANINE FRAMING PLAN NOTES:

1. TOP OF CONCRETE ELEVATION = SEE PLAN
2. LOCATIONS SHOWN THUS: (12) C=3/4" INDICATES NUMBER OF SHEAR CONNECTORS AS 12 AND UPWARD CAMBER AT MID SPAN OF BEAM AS 3/4".
3. SPACE JOISTS EQUALLY U.N.O.
4. PROVIDE END PLATES AT ALL TUBE BEAMS.
5. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO FABRICATION / CONSTRUCTION.
6. HSS 6X6X5/8 FOR ALL COLUMN SIZES NOT SHOWN.
7. ⟵ = MOMENT CONNECTION
8. ALL LOWER TUBE BEAM ELEVATIONS TO BE VERIFIED WITH ARCHITECT DRAWINGS.
9. FLOOR SHALL BE 3 1/2" NORMAL WEIGHT CONCRETE OVER THE FLUTES OF 2" x 18 GA TYPE VLI STEEL DECK AS MANUFACTURED BY VULCRAFT OR APPROVED EQUIVALENT TO TOTAL THICKNESS = 5 1/2". REINFORCE CONCRETE WITH #3 AT 18" O.C. EACH WAY. PLACE REBAR PERPPENDICULAR TO BEAMS (PARALLEL TO DECK) IN THE OUTSIDE LAYER. WELD DECK USING 5/8"Ø NET EFFECTIVE PUDDLE WELDS:
   a. PERPENDICULAR BEARING : 36/4 PATTERN.
   b. PARALLEL BEARING AND EDGE : AT 12" O.C.
   c. SIDE SEAMS : SEAM WELDS AT 12" O.C.
10. SEE 19/S5.01 FOR ADDITIONAL SLAB REINFORCING AT ALL BEAMS & GIRDERS.
11. SEE 13/S5.01 & 20/S5.01 FOR ADDITIONAL SLAB REINFORCING AT OPENINGS AND EDGES.
12. SEE 11/S5.01 & 15/S5.01 FOR ADDITIONAL STEEL ANGLES AND REINFORCING AT STEEL COLUMNS.
13. AT SLOPED FLOOR LOCATIONS ON ELEVATED FLOORS WHERE OVERALL SLAB THICKNESS IS LESS THAN 5 1/2", SPRAY FIREPROOFING SHALL BE APPLIED TO THE UNDERSIDE OF THE DECK IN SLOPED AREA TO MEET REQUIRED FIRE RATING. REFER TO ARCHITECTURAL DRAWINGS FOR REQUIRED FIRE RATING.

KEY PLAN

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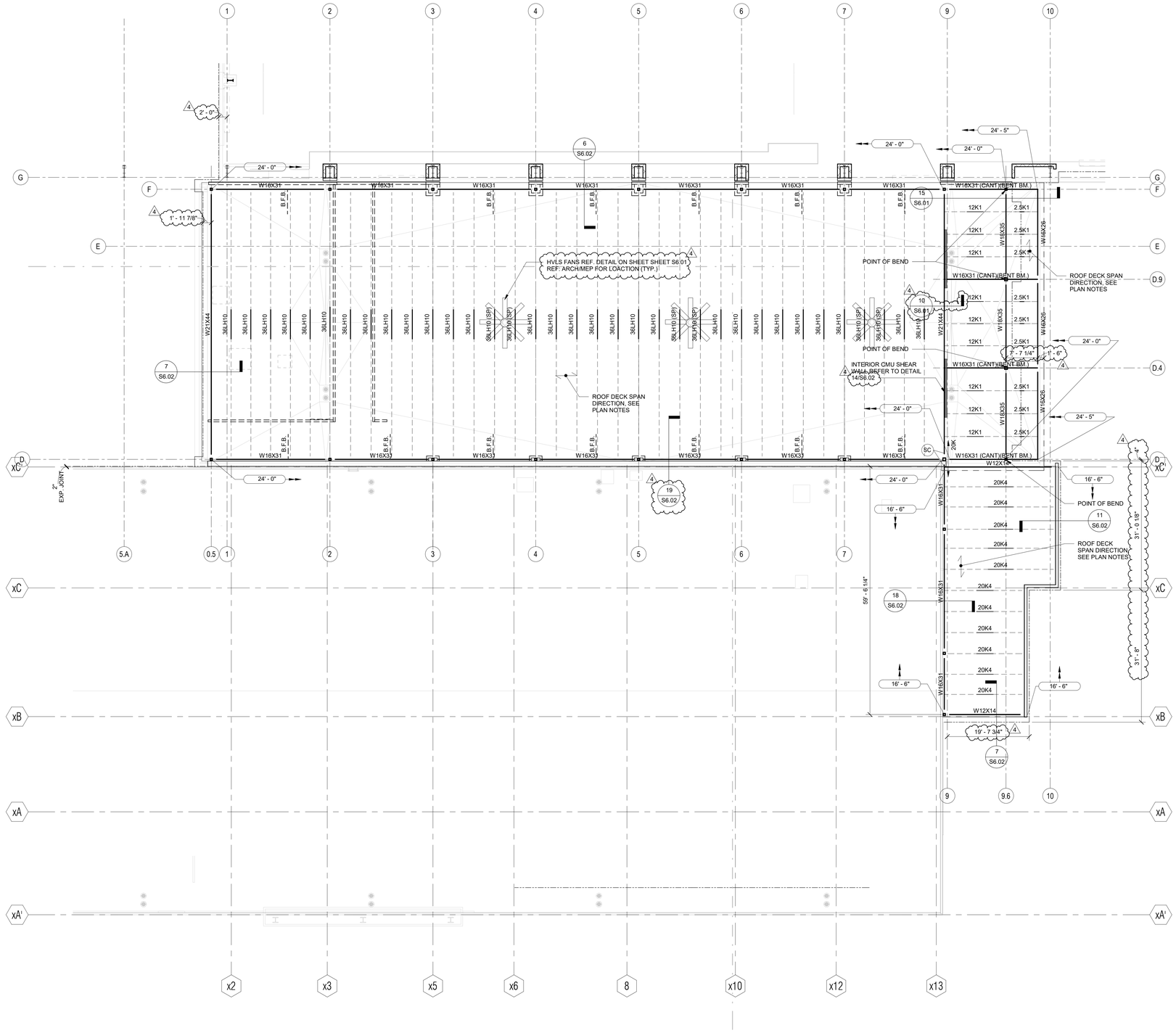
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	HR
Drawn By	RJC

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SHEET TITLE
MEZZANINE FRAMING PLAN - UNIT B

SHEET NO.
S2.11B

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1 ROOF FRAMING PLAN - UNIT B

SCALE: 3/32" = 1'-0"

ROOF FRAMING PLAN NOTES:

1. LOCATIONS SHOWN THUS: ( ) INDICATES TOP OF STEEL (T.O.S.) ELEVATION (TOP OF STEEL = TOP OF JOIST OR BOTTOM OF DECK).
2. LOCATIONS SHOWN THUS: C=3/4" INDICATES UPWARD CAMBER AT MID SPAN OF BEAM AS 3/4".
3. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO FABRICATION / CONSTRUCTION.
4. JOISTS SHALL BE DESIGNED FOR ADDITIONAL LOADS RESULTING FROM RTU'S AND OTHER MECHANICAL EQUIPMENT ON THE ROOF OR SUSPENDED FROM THE ROOF STRUCTURE. SEE ARCHITECTURAL AND MEP DRAWINGS FOR LOCATIONS.
5. SHADED AREA IS DESIGNATED TO RECEIVE MECHANICAL EQUIPMENT - ASSUME 2000# UNIT (TO BE SUPPORTED BY 2 JOISTS, 1000# DL PER JOIST W/ 400# REVERSIBLE WIND LOAD PER JOIST). EACH JOIST SHALL BE DESIGNED FOR ADDITIONAL LOAD OF ONE SUCH UNIT PLACED ANYWHERE ALONG THE SPAN (IN SHADED AREA), A MAX. OF (2) UNITS SHALL BE LOCATED PER BAY. GIRDERS SHALL BE DESIGNED FOR (2) UNITS LOCATED ANYWHERE WITHIN THE SHADED AREA.
6. SPACE JOISTS EQUALLY, U.N.O.
7. PROVIDE 3/16" CLOSURE PLATES AT ALL TUBE BEAMS.
8. REFER TO ARCHITECTURAL DRAWINGS / MEP FOR LOCATIONS OF ROOF DRAINS, OVERFLOW DRAINS AND TAPERED INSULATION.
9. ROOF SHALL BE 1.5B, 22GA DECK AS MANUFACTURED BY VULCRAFT OR EQUIVALENT. SEE ARCHITECTURAL DRAWINGS FOR INSULATION; ROOFING, ETC. WELD DECK USING 5/8"Ø NET EFFECTIVE PUDDLE WELDS:
   a. PERPENDICULAR BEARING: 36/7 PATTERN.
   b. PARALLEL BEARINGS AND EDGE: AT 6"O.C.
   c. SIDE SEAMS: #10 TEK SCREWS AT 12"O.C.
10. IN LIEU OF THE DECK ATTACHMENT SHOWN ABOVE, ALTERNATE DECK ATTACHMENT SHALL BE AS FOLLOWS:
    a. REPLACE EACH 5/8"Ø WELD WITH ONE HILTI X-HSN 24 FASTENER FOR BASE STEEL FLANGE THICKNESS (tf) ≤ 3/8" AT THICKER BASE STEEL USE ONE HILTI X-ENP-19-L15 TYPE FASTENER.
    b. REPLACE EACH SIDE SEAM #10 SCREW WITH ONE HILTI S-SLC 01 M HWH FASTENER FOR DECK THICKNESS LESS THAN OR EQUAL TO 20 GAGE.
    c. ATTACHMENTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER SPECIFICATIONS.
11. ⟶ = MOMENT CONNECTION
12. B.F.B. INDICATES BOTTOM FLANGE BRACE, SEE 1/S5.01 FOR DETAIL.
13. V = 'x' K INDICATES ULTIMATE STRENGTH BEAM SHEAR REACTIONS IN KIPS (LRFD) AT THE END OF THE BEAM SHOWN. WHERE INDICATED, THIS VALUE SHALL SUPERCEDE THE CRITERIA IN THE CHART ABOVE.
14. M = 'x' K-FT INDICATES ULTIMATE STRENGTH BEAM MOMENT REACTIONS IN KIP-FEET (LRFD) AT THE END OF THE BEAM SHOWN.
15. JOIST SUPPORTING RTU TO BE DESIGNED FOR ADDITION LOADS.
16. (SC) INDICATES SLIP CRITICAL CONNECTION. →20K← DESIGN CONNECTION FOR AXIAL TENSION/COMPRESSION ULTIMATE FORCE (LRFD) AS SHOWN IN THE PLAN. SEE 14/S4.01 FOR CONNECTION DETAILS.

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ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
4	Addendum 4	10-21-2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	HR
Drawn By	RJC

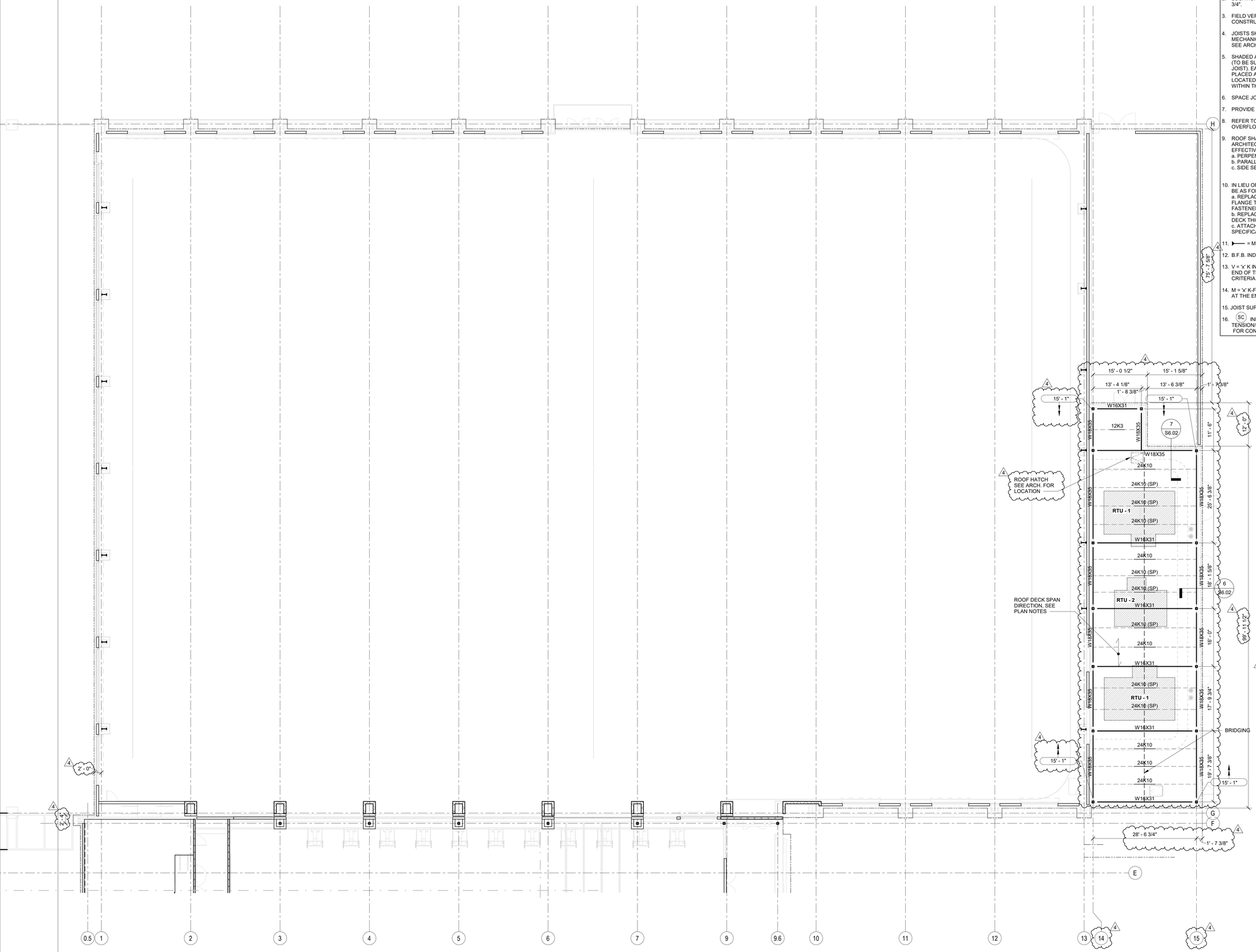
PROJECT NO.
25-0056.00

SHEET TITLE
ROOF FRAMING PLAN - UNIT B

SHEET NO.
S2.21B

KEY PLAN
C D B A

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1 ROOF FRAMING PLAN - UNIT D
SCALE: 3/32" = 1'-0"

ROOF FRAMING PLAN NOTES:

1. LOCATIONS SHOWN THUS: ( ) INDICATES TOP OF STEEL (T.O.S.) ELEVATION (TOP OF STEEL = TOP OF JOIST OR BOTTOM OF DECK).
2. LOCATIONS SHOWN THUS: C=3/4" INDICATES UPWARD CAMBER AT MID SPAN OF BEAM AS 3/4".
3. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO FABRICATION / CONSTRUCTION.
4. JOISTS SHALL BE DESIGNED FOR ADDITIONAL LOADS RESULTING FROM RTU'S AND OTHER MECHANICAL EQUIPMENT ON THE ROOF OR SUSPENDED FROM THE ROOF STRUCTURE. SEE ARCHITECTURAL AND MEP DRAWINGS FOR LOCATIONS.
5. SHADED AREA IS DESIGNATED TO RECEIVE MECHANICAL EQUIPMENT - ASSUME 2000# UNIT (TO BE SUPPORTED BY 2 JOISTS, 1000# DL PER JOIST W/ 400# REVERSIBLE WIND LOAD PER JOIST). EACH JOIST SHALL BE DESIGNED FOR ADDITIONAL LOAD OF ONE SUCH UNIT PLACED ANYWHERE ALONG THE SPAN (IN SHADED AREA), A MAX. OF (2) UNITS SHALL BE LOCATED PER BAY. GIRDERS SHALL BE DESIGNED FOR (2) UNITS LOCATED ANYWHERE WITHIN THE SHADED AREA.
6. SPACE JOISTS EQUALLY, U.N.O.
7. PROVIDE 3/16" CLOSURE PLATES AT ALL TUBE BEAMS.
8. REFER TO ARCHITECTURAL DRAWINGS / MEP FOR LOCATIONS OF ROOF DRAINS, OVERFLOW DRAINS AND TAPERED INSULATION.
9. ROOF SHALL BE 1.5B, 22GA DECK AS MANUFACTURED BY VULCRAFT OR EQUIVALENT. SEE ARCHITECTURAL DRAWINGS FOR INSULATION; ROOFING, ETC. WELD DECK USING 5/8"Ø NET EFFECTIVE PUDDLE WELDS:
   a. PERPENDICULAR BEARING: 36/7 PATTERN.
   b. PARALLEL BEARINGS AND EDGE: AT 6"O.C.
   c. SIDE SEAMS: #10 TEK SCREWS AT 12"O.C.
10. IN LIEU OF THE DECK ATTACHMENT SHOWN ABOVE, ALTERNATE DECK ATTACHMENT SHALL BE AS FOLLOWS:
    a. REPLACE EACH 5/8"Ø WELD WITH ONE HILTI X-HSN 24 FASTENER FOR BASE STEEL FLANGE THICKNESS (tf) ≤ 3/8" AT THICKER BASE STEEL USE ONE HILTI X-ENP-19-L15 TYPE FASTENER.
    b. REPLACE EACH SIDE SEAM #10 SCREW WITH ONE HILTI S-SLC 01 M HWH FASTENER FOR DECK THICKNESS LESS THAN OR EQUAL TO 20 GAGE.
    c. ATTACHMENTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER SPECIFICATIONS.
11. ▶— = MOMENT CONNECTION
12. B.F.B. INDICATES BOTTOM FLANGE BRACE, SEE 1/S5.01 FOR DETAIL.
13. V = 'x' K INDICATES ULTIMATE STRENGTH BEAM SHEAR REACTIONS IN KIPS (LRFD) AT THE END OF THE BEAM SHOWN. WHERE INDICATED, THIS VALUE SHALL SUPERCEDE THE CRITERIA IN THE CHART ABOVE.
14. M = 'x' K-FT INDICATES ULTIMATE STRENGTH BEAM MOMENT REACTIONS IN KIP-FEET (LRFD) AT THE END OF THE BEAM SHOWN.
15. JOIST SUPPORTING RTU TO BE DESIGNED FOR ADDITION LOADS.
16. (SC) INDICATES SLIP CRITICAL CONNECTION. →20K← DESIGN CONNECTION FOR AXIAL TENSION/COMPRESSION ULTIMATE FORCE (LRFD) AS SHOWN IN THE PLAN. SEE 14/S4.01 FOR CONNECTION DETAILS.

MEZZANINE FRAMING PLAN NOTES:

1. TOP OF CONCRETE ELEVATION = SEE PLAN
2. LOCATIONS SHOWN THUS: (12) C=3/4" INDICATES NUMBER OF SHEAR CONNECTORS AS 12 AND UPWARD CAMBER AT MID SPAN OF BEAM AS 3/4".
3. SPACE JOISTS EQUALLY U.N.O.
4. PROVIDE END PLATES AT ALL TUBE BEAMS.
5. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO FABRICATION / CONSTRUCTION.
6. HSS 6X6X5/8 FOR ALL COLUMN SIZES NOT SHOWN.
7. ▶— = MOMENT CONNECTION
8. ALL LOWER TUBE BEAM ELEVATIONS TO BE VERIFIED WITH ARCHITECT DRAWINGS.
9. FLOOR SHALL BE 3 1/2" NORMAL WEIGHT CONCRETE OVER THE FLUTES OF 2" x 18 GA TYPE VLI STEEL DECK AS MANUFACTURED BY VULCRAFT OR APPROVED EQUIVALENT TO TOTAL THICKNESS = 5 1/2". REINFORCE CONCRETE WITH #3 AT 18" O.C. EACH WAY. PLACE REBAR PERPENDICULAR TO BEAMS (PARALLEL TO DECK) IN THE OUTSIDE LAYER. WELD DECK USING 5/8"Ø NET EFFECTIVE PUDDLE WELDS:
   a. PERPENDICULAR BEARING : 36/4 PATTERN.
   b. PARALLEL BEARING AND EDGE : AT 12" O.C.
   c. SIDE SEAMS : SEAM WELDS AT 12" O.C.
10. SEE 19/S5.01 FOR ADDITIONAL SLAB REINFORCING AT ALL BEAMS & GIRDERS.
11. SEE 13/S5.01 & 20/S5.01 FOR ADDITIONAL SLAB REINFORCING AT OPENINGS AND EDGES.
12. SEE 11/S5.01 & 15/S5.01 FOR ADDITIONAL STEEL ANGLES AND REINFORCING AT STEEL COLUMNS.
13. AT SLOPED FLOOR LOCATIONS ON ELEVATED FLOORS WHERE OVERALL SLAB THICKNESS IS LESS THAN 5 1/2", SPRAY FIREPROOFING SHALL BE APPLIED TO THE UNDERSIDE OF THE DECK IN SLOPED AREA TO MEET REQUIRED FIRE RATING. REFER TO ARCHITECTURAL DRAWINGS FOR REQUIRED FIRE RATING.

RTU LOAD SCHEDULE

RTU NAME	RTU WEIGHT (LBS)	WIND REACTION* (-)	WIND REACTION* (+)
RTU-1	11250	700#	20#
RTU-2	11800	700#	20#

KEY PLAN
C D B A

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10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

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4 Addendum 4	10-21-2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	HR
Drawn By	RJC

PROJECT NO.
25-0056.00

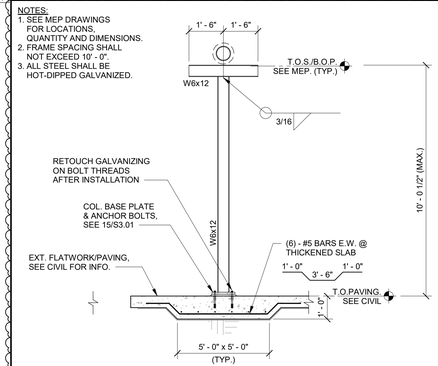
SHEET TITLE
ROOF FRAMING PLAN - UNIT D

SHEET NO.
S2.22D

North Shore Multi-use Indoor Facility

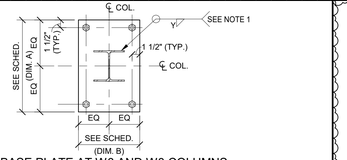
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NOTES:
1. SEE MEP DRAWINGS FOR LOCATIONS, QUANTITY AND DIMENSIONS.
2. FRAME SPACING SHALL NOT EXCEED 10' - 0".
3. ALL STEEL SHALL BE HOT-DIPPED GALVANIZED.



PIPE RACK SUPPORT (EXTERIOR) AT CENTRAL PLANT

19 SCALE: 3/8" = 1'-0"



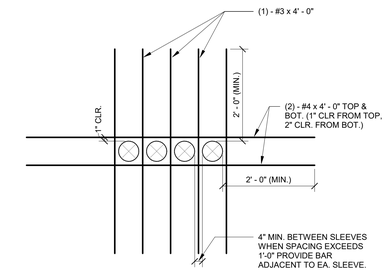
BASE PLATE AT W6 AND W8 COLUMNS

COLUMN SCHEDULE				
TYPE	BASE PLATE A x B x THICKNESS	ANCHOR BOLTS	BASE PLATE MATERIAL	WELD SIZE "F"
W6	12" x 8" x 3/4"	(4)-3/4"Ø HIT - HY 200+ HAS ANCHOR BOLTS, (7" EMBEDMENT)	ASTM A572 GR. 50	1/4"
W8	14" x 14" x 1"	(4)-3/4"Ø HIT - HY 200+ HAS ANCHOR BOLTS, (7" EMBEDMENT)	ASTM A572 GR. 50	1/4"

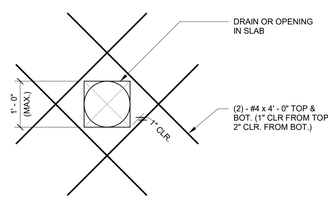
NOTES:
1. WELDING INSIDE RADIUS AND AROUND TOES OF FLANGES UP TO ONE WELD SIZE FROM EDGE NOT REQUIRED U.N.O.
2. USE STANDARD SIZE HOLES FOR POST-INSTALLED ANCHOR BOLTS.

TYPICAL DETAIL
BASE PLATE AT WIDE FLANGE COLUMNS AT PIPE RACKS

15 SCALE: 1" = 1'-0"



MULTIPLE OPENINGS (PIPE SLEEVES)

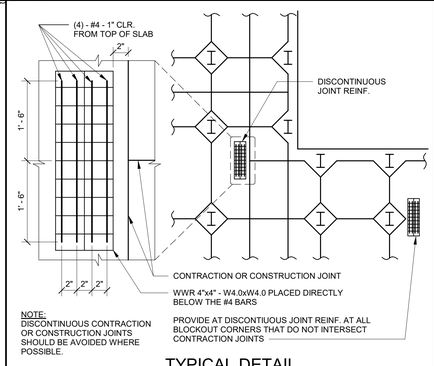


SINGLE DRAIN OR OPENING

NOTES:
1. COORDINATE OPENING SIZE AND LOCATIONS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.
2. CONDUIT & PIPES OF ALUMINUM SHALL NOT BE PLACED IN CONCRETE UNLESS EFFECTIVELY COATED W/ PROTECTIVE MATERIAL TO PREVENT CHEMICAL REACTION.

TYPICAL DETAIL
ADDITIONAL REINFORCEMENT AT OPENINGS AT SLAB-ON-GRADE

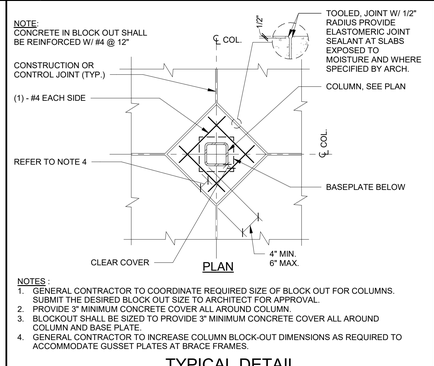
10 SCALE: N.T.S.



NOTE:
DISCONTINUOUS CONTRACTION OR CONSTRUCTION JOINTS SHOULD BE AVOIDED WHERE POSSIBLE.

TYPICAL DETAIL
ADDITIONAL REINFORCEMENT AT DISCONTINUOUS JOINT IN SLAB-ON-GRADE

7 SCALE: N.T.S.



NOTE:
CONCRETE IN BLOCK OUT SHALL BE REINFORCED W/ #4 @ 12"

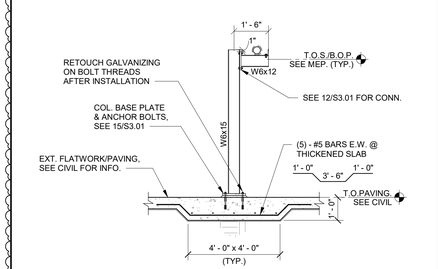
PLAN

NOTES :
1. GENERAL CONTRACTOR TO COORDINATE REQUIRED SIZE OF BLOCK OUT FOR COLUMNS. SUBMIT THE DESIRED BLOCK-OUT SIZE TO ARCHITECT FOR APPROVAL.
2. PROVIDE 3" MINIMUM CONCRETE COVER ALL AROUND COLUMN.
3. BLOCKOUT SHALL BE SIZED TO PROVIDE 3" MINIMUM CONCRETE COVER ALL AROUND COLUMN AND BASE PLATE.
4. GENERAL CONTRACTOR TO INCREASE COLUMN BLOCK-OUT DIMENSIONS AS REQUIRED TO ACCOMMODATE GUSSET PLATES AT BRACE FRAMES.

TYPICAL DETAIL
BLOCK-OUT AROUND COLUMN (SLAB-ON-GRADE)

3 SCALE: N.T.S.

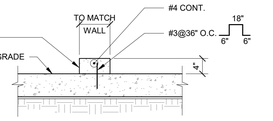
NOTES:
1. SEE MEP DRAWINGS FOR LOCATIONS, QUANTITY AND DIMENSIONS.
2. FRAME SPACING SHALL NOT EXCEED 10' - 0".
3. ALL STEEL SHALL BE HOT-DIPPED GALVANIZED.



PIPE RACK SUPPORT (EXTERIOR) AT CENTRAL PLANT

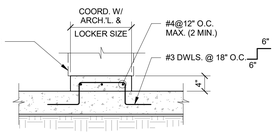
18 SCALE: 3/8" = 1'-0"

NOTE:
SEE ARCH'L. DRAWINGS FOR CURB LOCATIONS.



NOTE:
FOR CURBS WIDER THAN 8" USE DETAIL BELOW.

CURB AT MECHANICAL ROOMS



NOTE:
COORDINATE CURB SIZES AND LOCATIONS W/ ARCH'L.

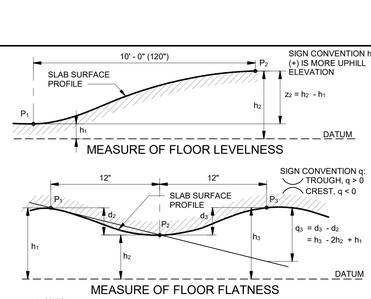
CURB AT LOCKERS

TYPICAL DETAIL
CURB AT MECH. ROOMS AND LOCKERS

14 SCALE: N.T.S.



MEASURE OF FLOOR LEVELNESS



HOUSEKEEPING PAD REINF. SCHEDULE		
PAD THICKNESS	TOP REINFORCEMENT	BOTTOM REINF.
T ≤ 4"	WWR 4x4-W2.9xW2.9 OR #3 @12" E.W.	NONE
4" < T ≤ 6"	WWR 4x4-W4xW4 OR #4 @18" E.W.	NONE
6" < T ≤ 8"	WWR 4x4-W6xW6 OR #4 @12" E.W.	NONE
8" < T ≤ 12"	#4 @ 18" E.W.	#4 @ 18" E.W.
12" < T ≤ 16"	#4 @ 12" E.W.	#4 @ 12" E.W.

NOTES:
1. GENERAL CONTRACTOR TO COORDINATE WITH MECHANICAL DRAWINGS AND SPECIFICATIONS TO DETERMINE REQUIREMENTS FOR HOUSEKEEPING PADS OVER SLAB-ON-GRADE AND PROVIDE WHERE REQUIRED WHETHER SHOWN ON STRUCTURAL DRAWINGS OR NOT. COORDINATE DIMENSIONS AND OTHER SPECIAL REQUIREMENTS WITH EQUIPMENT MANUFACTURERS AS REQUIRED.
2. PAD SHALL NOT BE POURED UNTIL AFTER SLAB HAS REACHED ITS SPECIFIED 28 DAYS STRENGTH.
3. CONCRETE FOR HOUSEKEEPING PAD SHALL BE NORMAL WEIGHT CONCRETE WITH f'c = 3,000 PSI.

TYPICAL DETAIL
CONCRETE ISLAND OR HOUSEKEEPING PAD SLAB-ON-GRADE

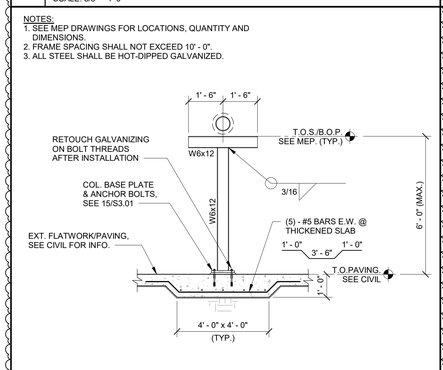
8 SCALE: N.T.S.

MEASURE OF FLOOR FLATNESS

NOTES:
1. F_L = LEVELNESS F-NUMBER
$F_L = \frac{12.5}{(3 \times S_Z) + z}$ WHERE z = MEAN VALUE OF ALL z FLOOR READINGS.
S_Z = STANDARD DEVIATION OF ALL z FLOOR READINGS.
2. F_F = LEVELNESS F-NUMBER
$F_F = \frac{4.57}{(3 \times S_Q) + q}$ WHERE q = MEAN VALUE OF ALL z FLOOR READINGS.
S_Z = STANDARD DEVIATION OF ALL q FLOOR READINGS
3. F_L AND F_F SHALL BE STATISTICALLY DETERMINED ACCORDING TO ASTM E 1155 "STANDARD TEST METHOD FOR DETERMINING FLOOR FLATNESS AND LEVELNESS USING THE F-NUMBER SYSTEM."
4. REFER TO CONCRETE SPECIFICATIONS FOR REQUIRED F_F AND F_L VALUES.

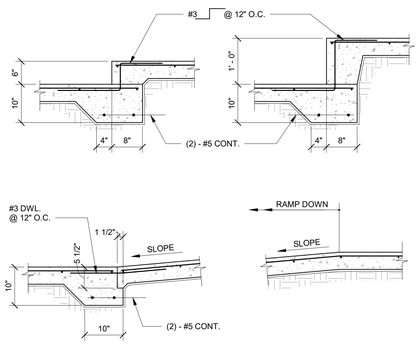
TYPICAL DETAIL
SLAB SURFACE TOLERANCE

4 SCALE: N.T.S.



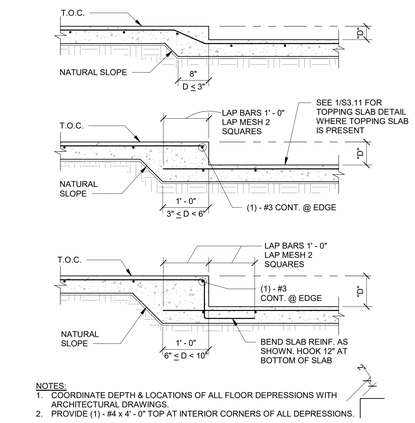
PIPE RACK SUPPORT (EXTERIOR) AT CENTRAL PLANT

17 SCALE: 3/8" = 1'-0"



TYPICAL DETAIL
AT RAMP

13 SCALE: 3/4" = 1'-0"



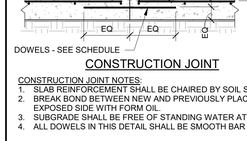
NOTES:
1. COORDINATE DEPTH & LOCATIONS OF ALL FLOOR DEPRESSIONS WITH ARCHITECTURAL DRAWINGS.
2. PROVIDE (1) - #4 x 4' - 0" TOP AT INTERIOR CORNERS OF ALL DEPRESSIONS.

TYPICAL DETAIL
AT FLOOR DEPRESSIONS

9 SCALE: N.T.S.

DOWEL SCHEDULE			
SLAB DEPTH (IN.)	DOWEL DIAMETER (IN.)	TOTAL DOWEL LENGTH (IN.)	DOWEL SPACING CENTER TO CENTER (IN.)
5-6	3/4	16	12
7-8	1	18	12
9-11	1 1/4	18	12

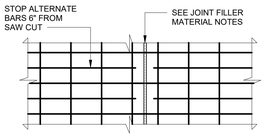
CONTRACTION JOINT SPACING	
SLAB THK. (IN.)	JOINT SPACING (FT)
4	11
5	13
6	14
7	16
8	17
≥9	18



CONSTRUCTION JOINT



CONTRACTION JOINT



CONTRACTION JOINT (PLAN VIEW)

CONSTRUCTION JOINT NOTES:
1. SLAB REINFORCEMENT SHALL BE CHAIRED BY SOIL SUPPORTED SLAB BOLSTERS.
2. BREAK BOND BETWEEN NEW AND PREVIOUSLY PLACED SLAB BY SPRAYING OR PAINTING EXPOSED SIDE WITH FORM OIL.
3. SUBGRADE SHALL BE FREE OF STANDING WATER AT THE TIME OF CONCRETE PLACEMENT.
4. ALL DOWELS IN THIS DETAIL SHALL BE SMOOTH BAR DOWELS.

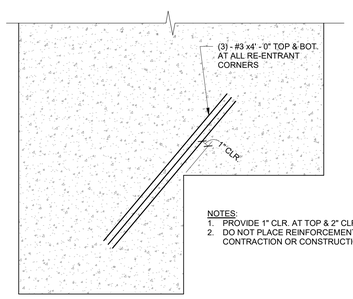
JOINT SPACING NOTE:
1. PROVIDE CONTRACTION AND/OR CONSTRUCTION JOINTS AT EVERY COLUMN CENTERLINE AND AT A MAXIMUM SPACING AS SCHEDULED. ASPECT RATIOS OF SLAB PANELS ENCLOSED BY CONTROL JOINTS SHALL NOT EXCEED 1.5 TO 1.

SAW CONTRACTION JOINT NOTES:
1. MAKE SAW CUT AS SOON AS SLAB IS ABLE TO SUPPORT WEIGHT OF WORKERS AND SAWING EQUIPMENT WITHOUT DAMAGE TO FINISH SURFACE OF SLAB.
2. ALL JOINTS SHALL BE CONTINUOUS. DO NOT OFFSET OR STAGGER JOINTS.
3. CLEAN JOINT PRIOR TO FILLING THE JOINT.

JOINT FILLER MATERIAL NOTES:
1. FILLER MATERIAL USED SHALL BE EPOXY RESINS WITH A MINIMUM SHORE "A" HARDNESS OF 80 AND SHALL CONFORM TO ASTM D2240. JOINT FILLER SHALL BE APPROVED BY ENGINEER PRIOR TO APPLICATION. INSTALL JOINT FILLER PER MANUFACTURER'S SPECIFICATIONS.
2. WHERE POSSIBLE, FILLER MATERIAL SHALL BE APPLIED WHEN BUILDING IS UNDER PERMANENT TEMPERATURE CONTROL. THIS SHALL BE EITHER AT THE END OF CONSTRUCTION OF THE COMPLETE BUILDING SHELL, OR A MINIMUM OF 90 DAYS AFTER SLAB CONSTRUCTION.
3. ALL EXPOSED SLAB JOINTS SHALL BE FILLED WITH FILLER MATERIAL.

TYPICAL DETAIL
CONSTRUCTION AND CONTRACTION JOINTS SLAB-ON-GRADE

6 SCALE: N.T.S.

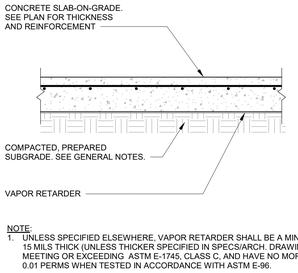


NOTES:
1. PROVIDE 1" CLR. AT TOP & 2" CLR. AT BOT.
2. DO NOT PLACE REINFORCEMENT ACROSS CONTRACTION OR CONSTRUCTION JOINTS.

SCHEMATIC SLAB-ON-GRADE

TYPICAL DETAIL
RE-ENTRANT CORNER BARS AT SLAB-ON-GRADE

5 SCALE: N.T.S.



NOTE:
1. UNLESS SPECIFIED ELSEWHERE, VAPOR RETARDER SHALL BE A MINIMUM OF 15 MILS THICK (UNLESS THICKER SPECIFIED IN SPECS/ARCH. DRAWINGS) MEETING OR EXCEEDING ASTM E-1745, CLASS C, AND HAVE NO MORE THAN 0.01 PERMS WHEN TESTED IN ACCORDANCE WITH ASTM E-96.

TYPICAL DETAIL
SLAB-ON-GRADE CONSTRUCTION SUBGRADE PREPARATION

1 SCALE: N.T.S.

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Galena Park ISD
HOUSTON, TEXAS

10/22/2025
ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
4 Addendum 4	10-21-2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	HR
Drawn By	RJC

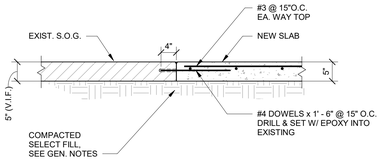
PROJECT NO.
25-0056.00

SHEET TITLE
FOUNDATION DETAILS

SHEET NO.
S3.01

North Shore Multi-use Indoor Facility

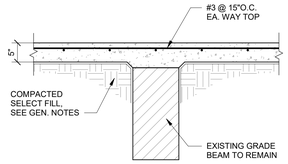
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NOTE:
1. SAWCUT TOP 1" OF EXISTING SLAB PRIOR TO REMOVING EXISTING CONCRETE.
2. EXTENT OF SLAB DEMOLITION TO BE DETERMINED BY CONTRACTOR.

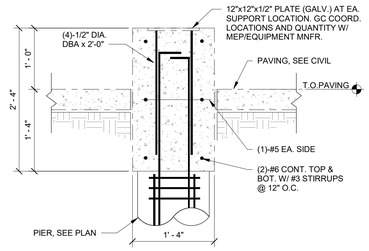
TYPICAL DETAIL
AT EXISTING SLAB-ON-GRADE

16 SCALE: 3/4" = 1'-0"



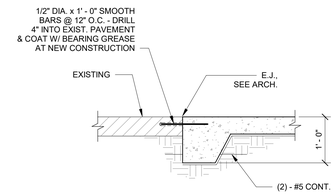
TYPICAL DETAIL
SLAB REPAIR OVER EXISTING BEAM

12 SCALE: 3/4" = 1'-0"



TYPICAL DETAIL
GRADE BEAM AT CHILLER

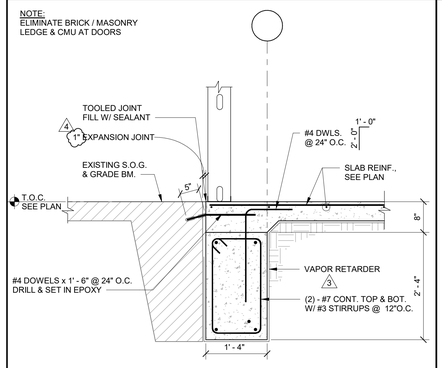
9 SCALE: 1" = 1'-0"



TYPICAL DETAIL
NEW SLAB-ON-GRADE AT EXISTING SLAB

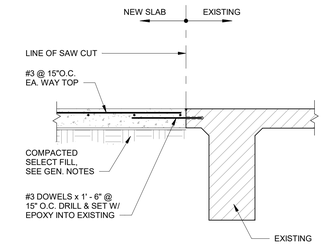
4 SCALE: 3/4" = 1'-0"

NOTE:
ELIMINATE BRICK / MASONRY
LEDGE & CMU AT DOORS



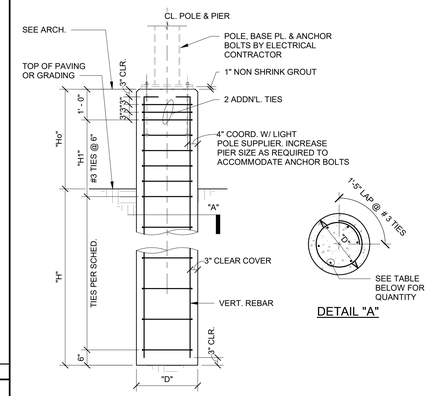
GRADE BEAM AT EXISTING

19 SCALE: 3/4" = 1'-0"



TYPICAL DETAIL
SLAB REPAIR NEAR BEAM

15 SCALE: 3/4" = 1'-0"

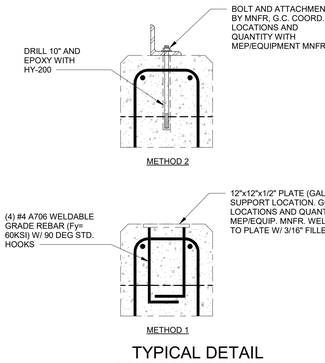


POLE MARK	NOM. POLE HEIGHT	ASSUMED EPA (sf)	"H" DEPTH OF PIER	"Ho" ABOVE GRADE	"H1"	"D" DIAMETER OF PIER	VERTICAL REINF	TIES	REMARKS
LP1	15' - 0"	5.0	5' - 0"	RE: ARCH.	1' - 6"	24"	6 - #6	#3 @ 12"	TYPICAL PARKING
LP2	25' - 0"	10.0	8' - 0"	RE: ARCH.	1' - 6"	24"	6 - #6	#3 @ 12"	TYPICAL PARKING
LP3	35' - 0"	10.0	10' - 0"	RE: ARCH.	1' - 6"	24"	6 - #7	#3 @ 12"	

NOTES:
1. WIND LOAD CRITERIA IS PER IBC 2021. Vult = 146 MPH.
2. CONCRETE COMPRESSIVE STRENGTH, F'C = 3,000 PSI (NWC), WITH A MAX WATER/CEMENT RATIO OF 0.54.
3. STEEL REINFORCEMENT SHALL BE ASTM A615, GR. 60.
4. REFER TO ARCH DRAWINGS/CIVIL DRAWINGS FOR LOCATIONS OF LIGHT POLES.
5. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION (AND SPECIFICATIONS FOR LIGHT STANDARDS).
6. VERIFY PROJECTION OF CONCRETE ABOVE GROUND WITH ARCHITECT.
7. EPA INDICATES MAXIMUM EXPOSED PROJECTED AREA AT THE TOP OF THE POLE IN ANY DIRECTION.
8. FOR A STATED POLE HEIGHT SHOWN ON THE TABLE, THE DEPTH OF PIER IS DEEMED ADEQUATE IF EPA IS LESS THAN SHOWN ON TABLE ABOVE.
9. THE PRESENCE OF SAND SEAMS AND SLICKENSIDES IN THE LAYERS MAY CAUSE SLOUGHING DURING PIER EXCAVATION, THIS MAY REQUIRE THE USE OF TEMPORARY STEEL CASING.
10. CONCRETE SHALL BE POURED IMMEDIATELY AFTER EXCAVATION.

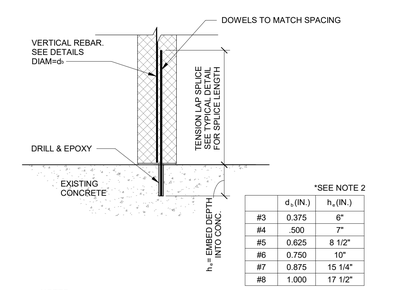
TYPICAL DETAIL
LIGHT POLE FOUNDATION

11 SCALE: N.T.S.



TYPICAL DETAIL
COOLING TOWER TO
CONCRETE ATTACHMENT

8 SCALE: 1 1/2" = 1'-0"



*SEE NOTE 2

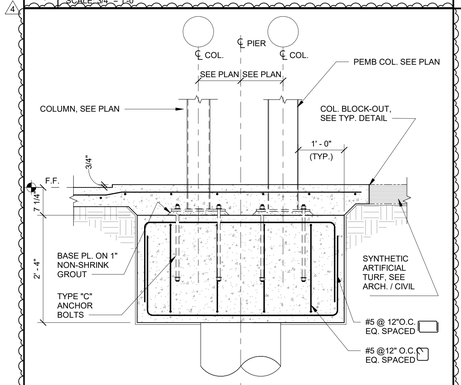
	d_s (IN.)	h_e (IN.)
#3	0.375	6"
#4	.500	7"
#5	0.625	8 1/2"
#6	0.750	10"
#7	0.875	15 1/4"
#8	1.000	17 1/2"

NOTES:
1. THIS DETAIL MAY BE USED IN LIEU OF CAST-IN-PLACE DOWELS WHERE SHOWN ON STRUCTURAL DETAILS EXCEPT WHERE PROHIBITED BY NOTE 2.
2. THIS DETAIL IS NOT APPLICABLE AT CANTILEVER WALLS OR WALLS SUBJECTED TO MOMENT AT THE BASE.
3. USE HILTI HIT-HY200 ADHESIVE SYSTEM OR APPROVED EQUIVALENT.

ALTERNATE DETAIL
EPOXY DOWELS AT CMU WALLS

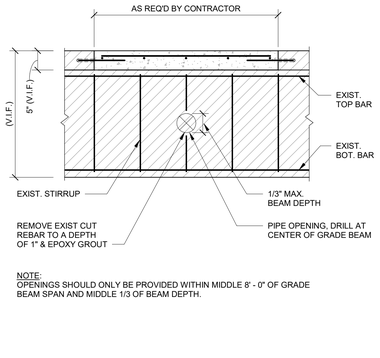
3 SCALE: 1" = 1'-0"

4



SHARED PIER CAP

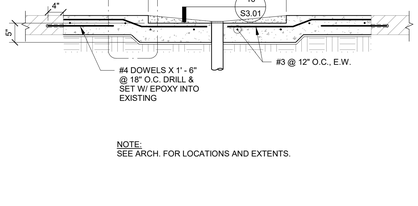
18 SCALE: 3/4" = 1'-0"



NOTE:
OPENINGS SHOULD ONLY BE PROVIDED WITHIN MIDDLE 8' - 0" OF GRADE BEAM SPAN AND MIDDLE 1/3 OF BEAM DEPTH.

TYPICAL DETAIL
PIPE OPENING THROUGH EXIST GRADE BEAM

14 SCALE: 3/4" = 1'-0"



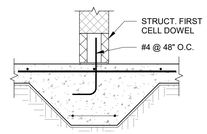
NOTE:
SEE ARCH. FOR LOCATIONS AND EXTENTS.

TYPICAL DETAIL
SHOWER SLAB DEPRESSION AT EXISTING

7 SCALE: 3/4" = 1'-0"

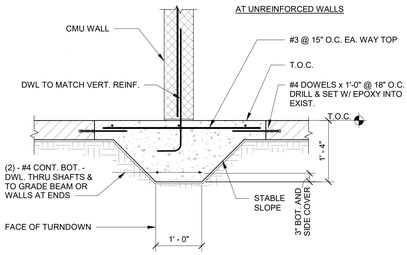
FOUNDATION TYPE

	4" CMU		6" CMU		8" CMU		
GROUT	NONE	NONE	AT 48"	AT 24"	NONE	AT 48"	AT 24"
WALL HEIGHT (FT)							
0-10	1	1	1	1	1	1	1
12	1	1	1	1	1	1	2
14	1	1	1	2	1	2	2
16	1	1	2	2	2	2	2
18	1	2	2	2	2	2	2
20	2	2	2	2	2	2	2



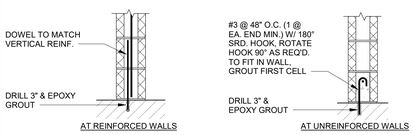
NOTE :
THIS DETAIL APPLIES AT ALL CMU WALL LOCATIONS WITHOUT GRADE BEAMS.

AT UNREINFORCED WALLS



NOTE:
SEE PLAN FOR LOCATIONS MARKED "TURNDOWN", T.D. OR OTHERWISE NOTED.

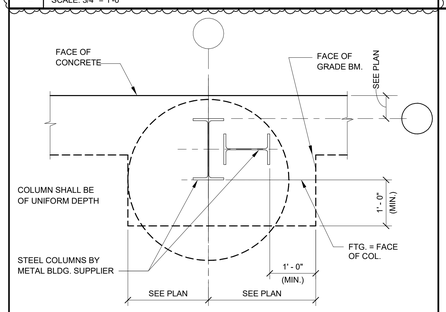
TYPE 2 DETAIL



TYPE 1 DETAIL

TYPICAL DETAIL
EXISTING FOUNDATION AT NON-LOAD
BEARING CMU WALL

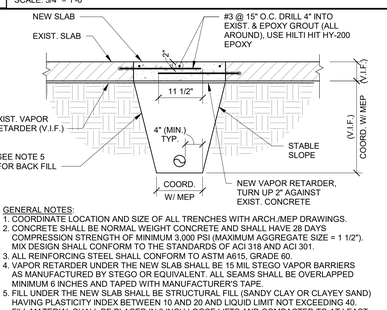
1 SCALE: 3/4" = 1'-0"



NOTE:
1. LOCATIONS OF PORTAL FRAMES ARE UNKNOWN UNTIL PEMB SHOP DRAWINGS ARE RECEIVED, G.C. TO COORDINATE LOCATIONS AND ADJUST PLINTH SIZES ACCORDINGLY

TYPICAL DETAIL
PLAN AT PORTAL FRAME

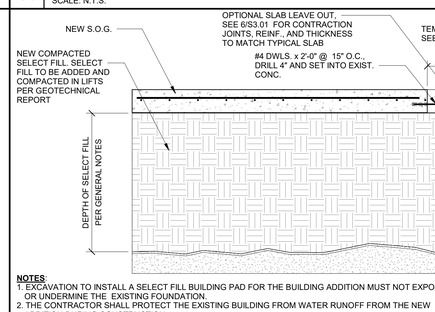
17 SCALE: 3/4" = 1'-0"



GENERAL NOTES:
1. COORDINATE LOCATION AND SIZE OF ALL TRENCHES WITH ARCH./MEP DRAWINGS.
2. CONCRETE SHALL BE NORMAL WEIGHT CONCRETE AND SHALL HAVE 28 DAYS COMPRESSION STRENGTH OF MINIMUM 3,000 PSI (MAXIMUM AGGREGATE SIZE = 1 1/2"). MIX DESIGN SHALL CONFORM TO THE STANDARDS OF ACI 318 AND ACI 301.
3. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.
4. VAPOR RETARDER UNDER THE NEW SLAB SHALL BE 15 MIL STEGO VAPOR BARRIERS AS MANUFACTURED BY STEGO OR EQUIVALENT. ALL SEAMS SHALL BE OVERLAPPED MINIMUM 6 INCHES AND TAPED WITH MANUFACTURER'S TAPE.
5. FILL UNDER THE NEW SLAB SHALL BE STRUCTURAL FILL (SANDY CLAY OR CLAYEY SAND) HAVING PLASTICITY INDEX BETWEEN 10 AND 20 AND LIQUID LIMIT NOT EXCEEDING 40. FILL MATERIAL SHALL BE PLACED IN 6 INCH LOOSE LIFTS AND COMPACTED TO AT LEAST 95% MAXIMUM DENSITY (ASTM D698). THE SELECT FILL SHALL BE MOISTURE ADJUSTED TO WITHIN 2% OF OPTIMUM MOISTURE CONTENT. AS AN ALTERNATE TO SELECT FILL, CONTRACTOR MAY UTILIZE CEMENT STABILIZED SAND FOR BACKFILLING TRENCHES. SAND SHALL BE CLEAN AND SHALL CONFORM TO ASTM C33 AND CEMENT SHALL CONFORM TO ASTM C150. SAND-CEMENT MIXTURE SHALL PROVIDE COMPRESSIVE STRENGTH OF MINIMUM 100 PSI WHEN COMPACTED TO MINIMUM 95% (ASTM D558). PLACE MATERIAL IN 8 INCH LOOSE LIFTS AND COMPACT TO MINIMUM 95% WITH MOISTURE CONTENT AT OPTIMUM OR BELOW OPTIMUM MOISTURE CONTENT.
6. V.I.F. - VERIFY IN FIELD.

TYPICAL DETAIL AT PLUMBING TRENCHES

13 SCALE: 3/4" = 1'-0"



NOTES:
1. EXCAVATION TO INSTALL A SELECT FILL BUILDING PAD FOR THE BUILDING ADDITION MUST NOT EXPOSE OR UNDERMINE THE EXISTING FOUNDATION.
2. THE CONTRACTOR SHALL PROTECT THE EXISTING BUILDING FROM WATER RUNOFF FROM THE NEW ADDITION DURING CONSTRUCTION.
3. AT CONTRACTOR OPTION, A SLAB LEAVE-OUT MAY BE PROVIDED ADJACENT TO THE EXISTING BUILDING TO PROVIDE TEMPORARY DRAINAGE.
4. IF CONTRACTOR CHOOSES TO POUR SLAB MONOLITICALLY, A CONTINUOUS WATERSTOP AND FLASHING SHALL BE PROVIDED ADJACENT TO THE EXISTING BUILDING TO PREVENT WATER DAMAGE. FLASHING DETAIL SHALL BE SUMBITTED TO ARCH. FOR APPROVAL.
5. CONTRACTOR SHALL HAVE TESTING LAB PERFORM OBSERVATIONS AND COMPACTION TESTS AT LEAVE OUTS PRIOR TO POURING LEAVE OUT CONCRETE BUT AFTER THE REMAINING SLAB HAS BEEN POURED.

TYPICAL DETAIL NEW SLAB AND SELECT FILL NEAR EXISTING BUILDING

10 SCALE: 3/4" = 1'-0"

ARCHITECT

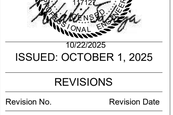
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HOUSTON, TEXAS

Matrix Structural Engineers
TBPE Firm Registration No. F-2640



10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
3 Addendum 3	10-17-2025
4 Addendum 4	10-21-2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	HR
Drawn By	RJC

PROJECT NO.

25-0056.00

SHEET TITLE

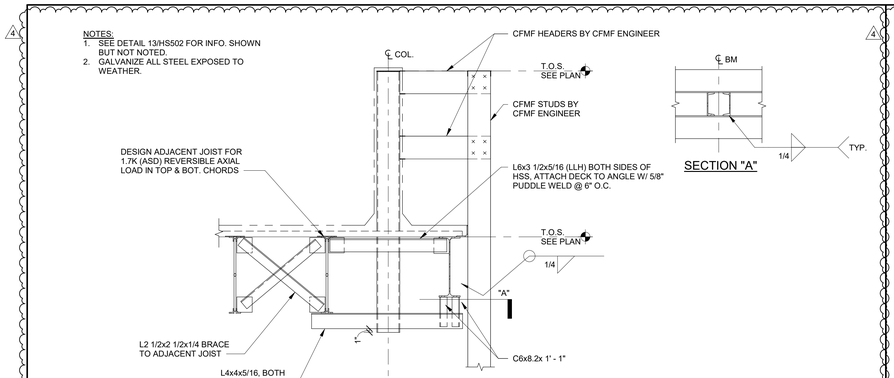
FOUNDATION DETAILS

SHEET NO.

S3.04

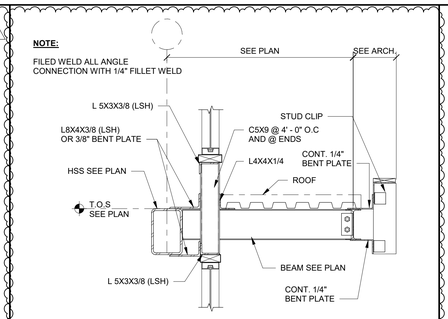
North Shore Multi-use Indoor Facility

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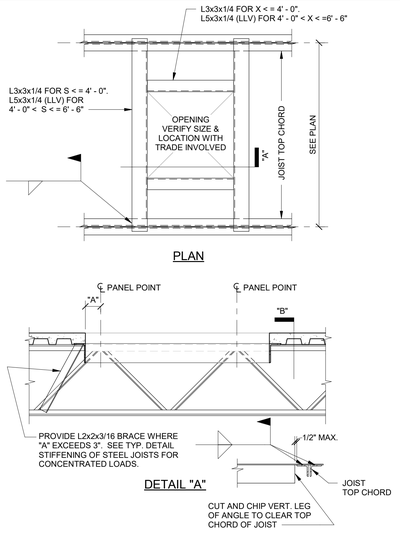
TYPICAL DETAIL HSS COLUMN SUPPORTS AT RTU ROOF MULLIONS

20 SCALE: N.T.S.



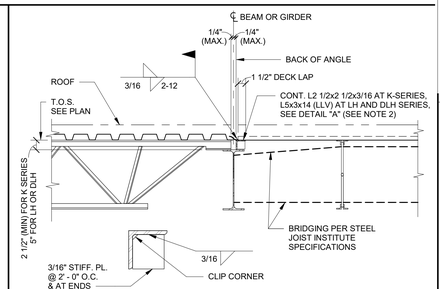
DETAIL AT CANOPY ENTRANCE

12 SCALE: N.T.S.



TYPICAL DETAIL OPEN WEB STEEL JOIST ROOF OPENING

8 SCALE: N.T.S.

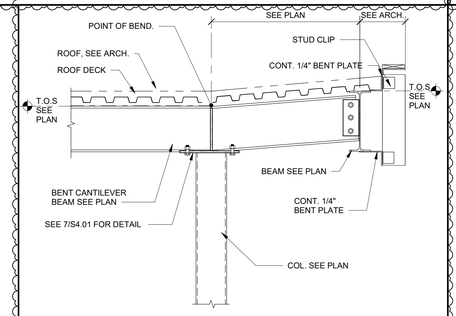


DETAIL "A"

NOTES:
1. PROVIDE JOIST BRIDGING AS REQUIRED BY STEEL JOIST INSTITUTE SPECIFICATIONS.
2. WHERE JOIST SEAT REQUIRES MORE THAN 1/2 THE FLANGE WIDTH FOR BEARINGS EXTEND JOIST SEATS TO THE EDGE OF FLANGE AND PROVIDE ANGLES BETWEEN JOISTS. WHERE JOIST SEAT DEPTH DIFFERS FROM ANGLE LENGTH SHOWN USE CONT. 1/4" BENT PLATE OF EQUAL DEPTH TO JOIST SEAT WITH 3" FLANGE.

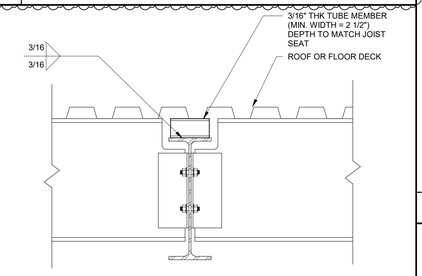
TYPICAL DETAIL OPEN WEB STEEL JOIST INTERIOR STEEL BEAM AT CHANGE IN METAL DECK DIRECTION, ROOF

4 SCALE: N.T.S.



DETAIL AT CANTILEVER BENT BEAM

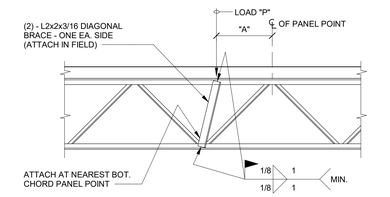
15 SCALE: N.T.S.



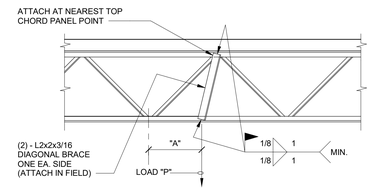
NOTE:
AT LOCATIONS WITH A JOIST ON ONE SIDE AND A BEAM ON THE OTHER SIDE, PROVIDE FILLER TS MEMBER ON HALF THE FLANGE. ALTERNATIVELY, THE TOP CHORD OF THE JOIST CAN BE EXTENDED TO THE EDGE OF THE MAIN BEAM FLANGE.

TYPICAL DETAIL FILLER MEMBER FOR DECK AND SUPPORT AT SECONDARY BEAMS PARALLEL TO JOISTS

11 SCALE: N.T.S.



LOAD ON TOP CHORD

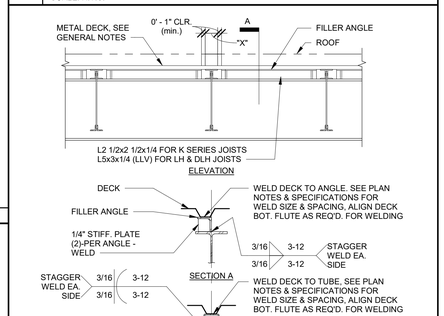


LOAD ON BOTTOM CHORD

NOTES:
1. DIAGONAL BRACE IS NOT REQUIRED FOR "A" LESS THAN 3".
2. PROVIDE DIAGONAL BRACE AT LOCATION OF CONCENTRATED LOADS SUCH AS HEAVY PIPES, MECHANICAL UNITS, HEAVY LIGHTS AND ANY OTHER CONCENTRATED LOADS AS DIRECTED BY EOR.
3. P = CONCENTRATED LOAD.

TYPICAL DETAIL STIFFENING OF STEEL JOIST FOR CONCENTRATED LOADS

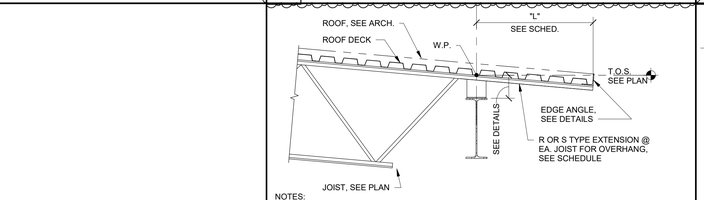
6 SCALE: N.T.S.



NOTES:
1. PROVIDE FILLER ANGLES AT BEAMS WITH DIAGONAL BRACES OR MOMENT CONNECTIONS.
2. INCREASE SIZE OR PROVIDE BENT PLATES TO FILL GAP WHERE REQUIRED TO MATCH JOIST SEATS.
3. "X" DIMENSION SHALL BE AS FOLLOWS: UNLESS OTHERWISE REQUIRED BY JOIST MNFR.
   G.C TO COORDINATE
   7" FOR K1-12 & LH02-06
   9" FOR LH07-17 & DLH10-17
   14" FOR DLH18-25

TYPICAL DETAIL OPEN WEB STEEL JOIST DECK DIAPHRAGM CONNECTION TO STEEL BEAM

3 SCALE: N.T.S.



NOTES:
1. CONTRACTOR/JOIST MNFR. MAY CHOOSE EITHER TYPE JOIST EXTENSION SHOWN (OR LARGER) FOR "L" = MAX. "L" SHOWN.
2. FOR ANY "L" JOIST, MNFR. MAY DESIGN JOIST EXTENSION FOR THE FOLLOWING CRITERIA IN LIEU OF SIZE SHOWN, U.N.O.:
   TL = 240 PLF
   TOTAL DEFLECTION ≤ 2 x "L" / 240
   LL = 120 PLF
   LIVE LOAD DEFLECTION < 2 x "L" / 360
   MNFR. SHALL ACCOUNT FOR SKIP LOADING OF LIVE LOADS.
3. LOADS ON JOIST EXTENSIONS SHOWN ON PLAN OR IN DETAILS SHALL BE IN ADDITION TO THOSE SHOWN HERE. DEFLECTION CRITERIA SHALL REMAIN THE SAME AS SHOWN ABOVE. THE SCHEDULE SHOWN HERE DOES NOT APPLY WHERE ADDITIONAL LOADS ARE SHOWN.

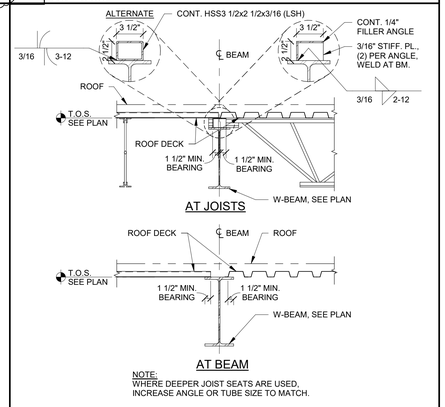
TOP CHORD JOIST EXTENSION SCHEDULE*

MAX "L"	R-TYPE	S-TYPE
≤ 1' - 6"	R1	S3
2' - 0"	R1	S7
2' - 6"	R1	S10
3' - 0"	R1	S12
3' - 6"	R1	N/A
4' - 0"	R3	N/A
4' - 6"	R8	N/A
5' - 0"	R11	N/A
≥ 5' - 6"	DESIGN SPECIAL EXTENSION	

*CONTRACTOR/FABRICATOR MAY CHOOSE EITHER TYPE JOIST EXTENSION FOR "L" ≤ MAX "L" SHOWN

TYPICAL DETAIL K-JOIST EXTENSION SCHEDULE

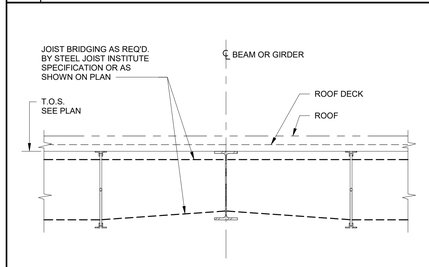
14 SCALE: N.T.S.



NOTE:
WHERE DEEPER JOIST SEATS ARE USED, INCREASE ANGLE OR TUBE SIZE TO MATCH.

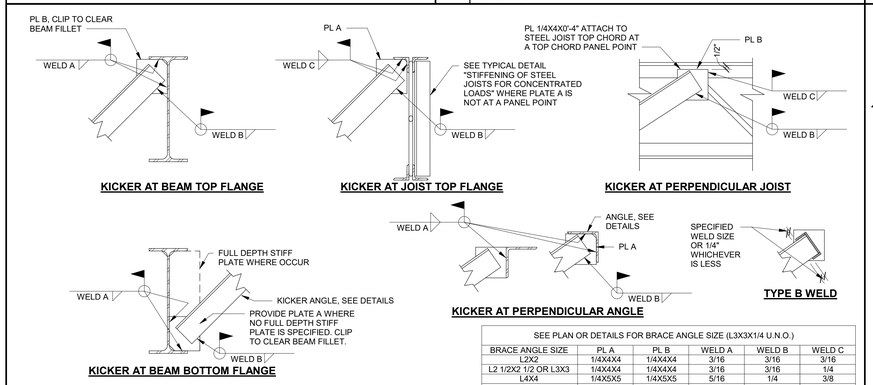
TYPICAL DETAIL CHANGE IN ROOF DECK DIRECTION

10 SCALE: N.T.S.



TYPICAL DETAIL OPEN WEB STEEL JOIST AT INTERIOR TIE BEAM, ROOF

2 SCALE: N.T.S.

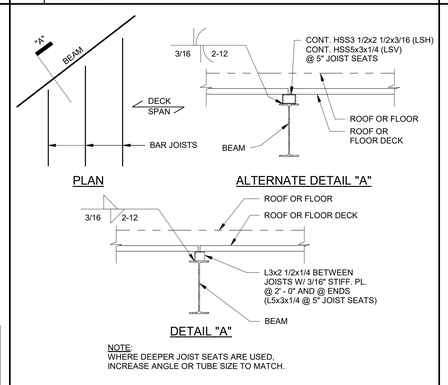


SEE PLAN OR DETAILS FOR BRACE ANGLE SIZE (L3X3X1/4 U.N.O.)

BRACE ANGLE SIZE	PL A	PL B	WELD A	WELD B	WELD C
L2X2	1/4X4X4	1/4X4X4	3/16	3/16	3/16
L2 1/2X2 1/2 OR L3X3	1/4X4X4	1/4X4X4	3/16	3/16	1/4
L4X4	1/4X5X5	1/4X5X5	5/16	1/4	3/8
L5X5	3/8X6X6	3/8X6X6	3/8	5/16	7/16

TYPICAL DETAIL KICKER ANGLE CONNECTIONS

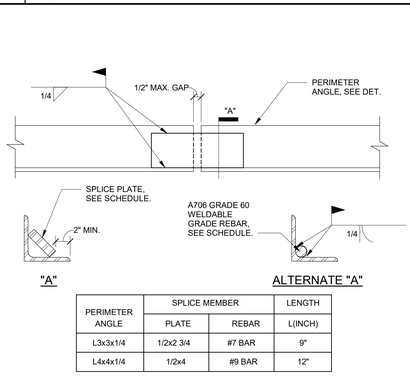
17 SCALE: 1 1/2" = 1'-0"



NOTE:
WHERE DEEPER JOIST SEATS ARE USED, INCREASE ANGLE OR TUBE SIZE TO MATCH.

TYPICAL DETAIL DECK SUPPORT AT SKEWED BEAM

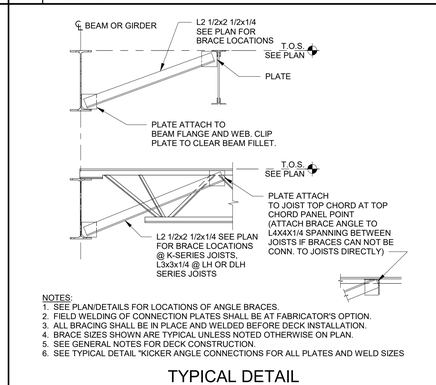
9 SCALE: N.T.S



PERIMETER ANGLE	SPLICE MEMBER		LENGTH
	PLATE	REBAR	L(INCH)
L3x3x1/4	1/2x2 3/4	#7 BAR	9"
L4x4x1/4	1/2x4	#9 BAR	12"

TYPICAL DETAIL SPLICE AT PERIMETER ROOF ANGLE

5 SCALE: N.T.S.



NOTES:
1. SEE PLAN/DETAILS FOR LOCATIONS OF ANGLE BRACES.
2. FIELD WELDING OF CONNECTION PLATES SHALL BE AT FABRICATOR'S OPTION.
3. ALL BRACING SHALL BE IN PLACE AND WELDED BEFORE DECK INSTALLATION.
4. BRACE SIZES SHOWN ARE TYPICAL UNLESS NOTED OTHERWISE ON PLAN.
5. SEE GENERAL NOTES FOR DECK CONSTRUCTION.
6. SEE TYPICAL DETAIL "KICKER ANGLE CONNECTIONS FOR ALL PLATES AND WELD SIZES

TYPICAL DETAIL BEAM BOTTOM FLANGE BRACE JOIST CONSTRUCTION

1 SCALE: N.T.S.

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PROFESSIONAL ENGINEER
10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
4 Addendum 4	10-21-2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.

25-0056.00

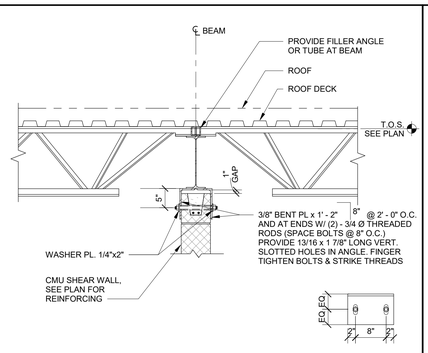
SHEET TITLE

ROOF DETAILS

SHEET NO.

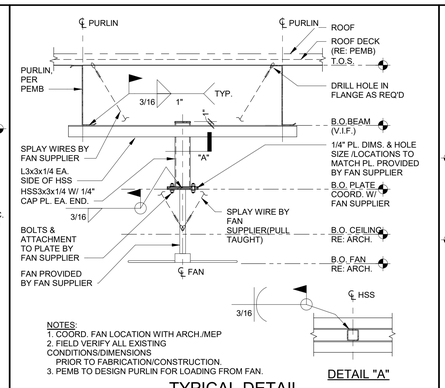
S6.01

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ROOF DETAIL AT INTERIOR SHEAR WALL (JOIST PARALLEL)

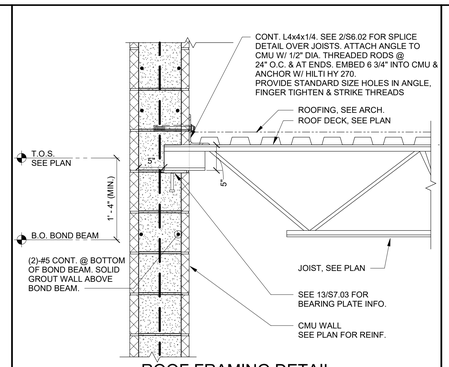
16 SCALE: 3/4" = 1'-0"



NOTES:
1. COORD. FAN LOCATION WITH ARCH./MEP
2. FIELD VERIFY ALL EXISTING CONDITIONS/DIMENSIONS PRIOR TO FABRICATION/CONSTRUCTION.
3. PEMB TO DESIGN PURLIN FOR LOADING FROM FAN.

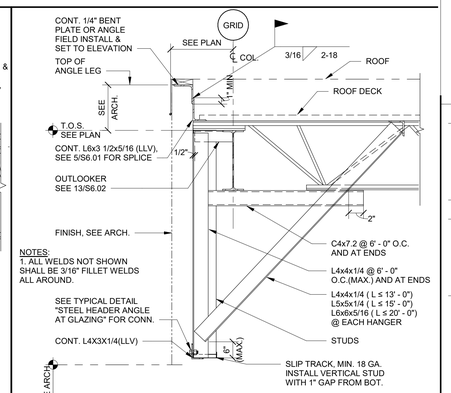
TYPICAL DETAIL BIG ASS FAN AT PURLINS

5 SCALE: N.T.S.



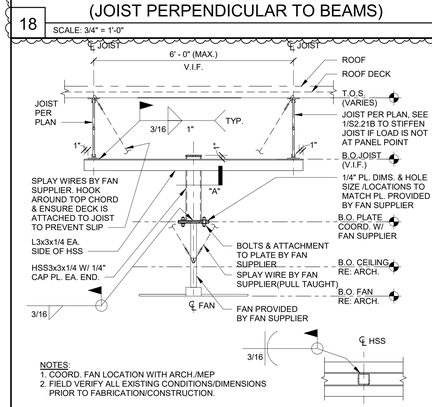
ROOF FRAMING DETAIL AT CARRIED BRICK AT LOAD BEARING CMU WALLS

8 SCALE: 1" = 1'-0"



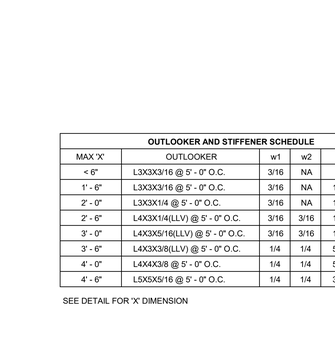
CARRIED WALL AT ROOF BEAM

4 SCALE: 3/4" = 1'-0"



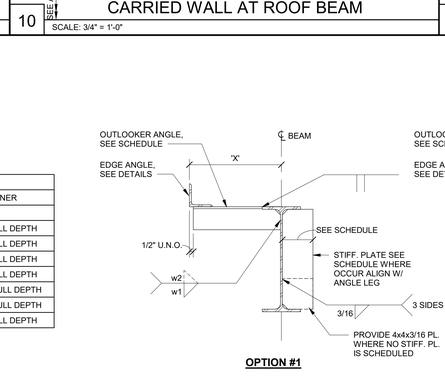
TYPICAL DETAIL EXTERIOR EDGE AT CMU

19 SCALE: 3/4" = 1'-0"



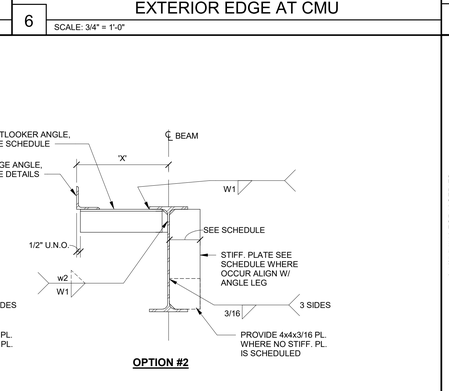
TYPICAL DETAIL STEEL BEAM AT CMU WALL

15 SCALE: N.T.S.



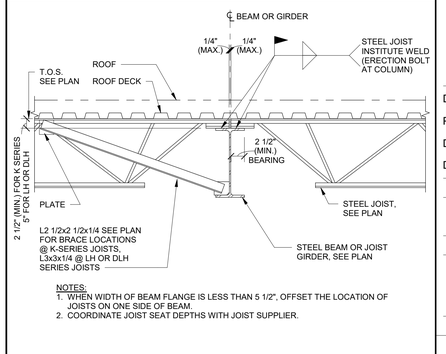
ROOF FRAMING DETAIL AT LOAD BEARING CMU WALLS

11 SCALE: 1" = 1'-0"



TYPICAL DETAIL EXTERIOR EDGE AT CMU

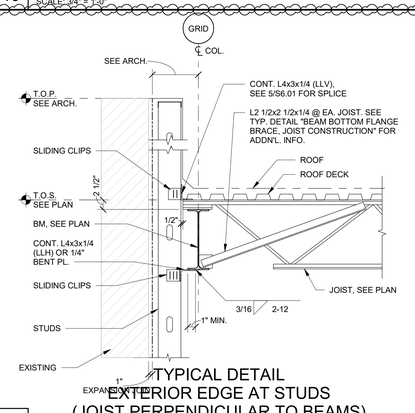
7 SCALE: 3/4" = 1'-0"



NOTE:
COORDINATE JOIST SEATS WITH JOIST SUPPLIER.

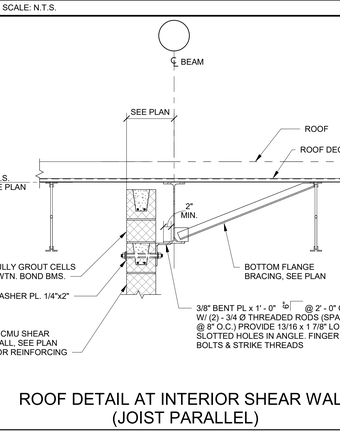
TYPICAL DETAIL STEEL JOIST/STEEL BEAM AT INTERIOR STEEL BEAM, ROOF

3 SCALE: N.T.S.



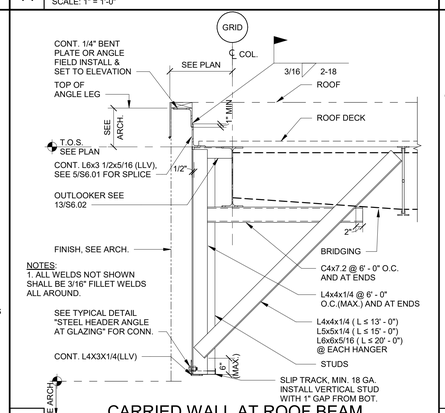
TYPICAL DETAIL EXTERIOR EDGE AT STUDS (JOIST PERPENDICULAR TO BEAMS)

18 SCALE: 3/4" = 1'-0"



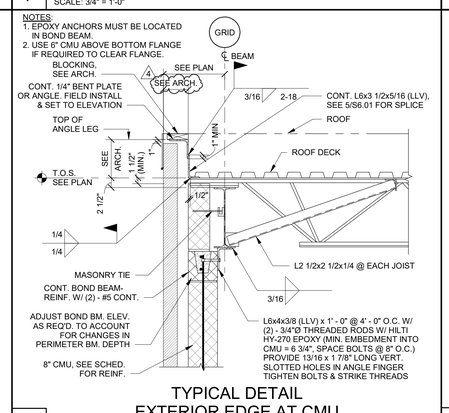
ROOF DETAIL AT INTERIOR SHEAR WALL (JOIST PARALLEL)

14 SCALE: 3/4" = 1'-0"



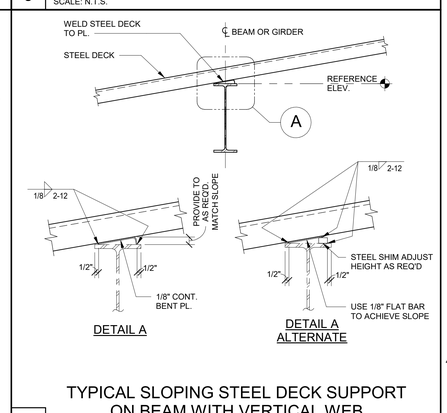
CARRIED WALL AT ROOF BEAM

10 SCALE: 3/4" = 1'-0"



TYPICAL DETAIL EXTERIOR EDGE AT CMU

6 SCALE: 3/4" = 1'-0"



DETAIL A

DETAIL A ALTERNATE

TYPICAL SLOPING STEEL DECK SUPPORT ON BEAM WITH VERTICAL WEB

2 SCALE: N.T.S.

TYPICAL DETAIL BIG ASS FAN AT JOISTS

17 SCALE: N.T.S.

OUTLOOKER AND STIFFENER SCHEDULE				
MAX 'X'	OUTLOOKER	w1	w2	STIFFENER
< 6"	L3X3X3/16 @ 5' - 0" O.C.	3/16	NA	NA
1' - 6"	L3X3X3/16 @ 5' - 0" O.C.	3/16	NA	1/4"X2" FULL DEPTH
2' - 0"	L3X3X1/4 @ 5' - 0" O.C.	3/16	NA	1/4"X3" FULL DEPTH
2' - 6"	L4X3X1/4(LLV) @ 5' - 0" O.C.	3/16	3/16	1/4"X3" FULL DEPTH
3' - 0"	L4X3X5/16(LLV) @ 5' - 0" O.C.	3/16	3/16	1/4"X4" FULL DEPTH
3' - 6"	L4X3X3/8(LLV) @ 5' - 0" O.C.	1/4	1/4	5/16"X4" FULL DEPTH
4' - 0"	L4X4X3/8 @ 5' - 0" O.C.	1/4	1/4	5/16"X4" FULL DEPTH
4' - 6"	L5X5X5/16 @ 5' - 0" O.C.	1/4	1/4	3/8"X4" FULL DEPTH

SEE DETAIL FOR 'X' DIMENSION

TYPICAL DETAIL OUTLOOKER ANGLE AT BEAM

13 SCALE: N.T.S.

NOTES:
1. WHEN WIDTH OF BEAM FLANGE IS LESS THAN 5 1/2", OFFSET THE LOCATION OF JOISTS ON ONE SIDE OF BEAM.
2. COORDINATE JOIST SEAT DEPTHS WITH JOIST SUPPLIER.

TYPICAL DETAIL OPEN WEB STEEL JOIST AT INTERIOR STEEL BEAM, ROOF

1 SCALE: N.T.S.

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ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
4 Addendum 4	10-21-2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	HR
Drawn By	RJC

PROJECT NO.
25-0056.00

SHEET TITLE
ROOF DETAILS

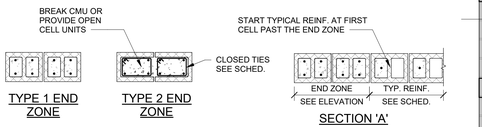
SHEET NO.
S6.02

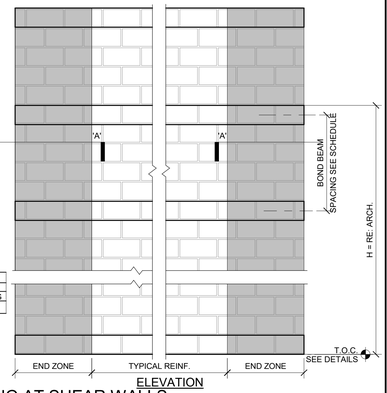
North Shore Multi-use Indoor Facility

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NOTE:
THIS DETAIL APPLIES TO ALL SHEAR WALLS SCHEDULED ON PLAN U.N.O.

NOTES:
1. SHEAR WALL SHALL BE RUNNING BOND U.N.O. LAP BLOCKS AT CORNERS AND INTERSECTIONS.
2. BOND BEAM SHALL LAP AT CORNERS AND INTERSECITONS SEE 5/S5.01.
3. DOWELS SHALL MATCH VERTICAL REINFORCMENT. DOWELS MAY NOT BE EPOXY GROUTED AND MUST BE CAST IN PLACE.
4. REINFORCING AT OPENINGS SHALL FOLLOW TYPICAL LINTEL AND JAMB REINFORCING DETAILS UNLESS NOTED OTHERWISE.





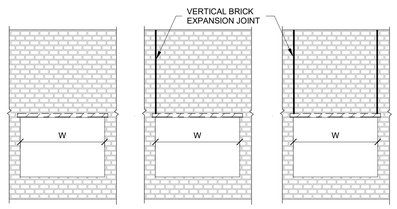
SHEAR WALL SCHEDULE

WALL TYPE	WALL THICKNESS	TYPICAL REINF.	END ZONE REINF.	END ZONE WIDTH	END ZONE TYPE	BOND BEAM DEPTH	BOND BEAM REINF.	BOND BEAM SPACING
S-1	8"	#5 @ 24" O.C.	(1) - #6 @ 8" *	3'-0"	1	8"	(2)-#4	4'-0"

*PROVIDE 1 BAR AT EA. FACE

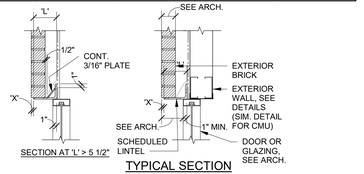
TYPICAL DETAIL REINFORCING AT SHEAR WALLS

20 SCALE: 3/4" = 1'-0"



MINIMUM ANGLE SIZE

CLEAR OPENING	EXPANSION JOINT AT RUNNING BOND			
	NONE	ONE SIDE	BOTH SIDES	STACK BOND
≤6'-0"	L3 1/2 x 'L' x 5/16	L5 x 'L' x 1/4	L5 x 'L' x 5/16	L7 x 'L' x 3/8
6'-8"	L4 x 'L' x 5/16	L5 x 'L' x 5/16	L6 x 'L' x 5/16	L7 x 'L' x 3/8
7'-4"	L5 x 'L' x 1/4	L6 x 'L' x 5/16	L6 x 'L' x 3/8	L8 x 'L' x 7/16
8'-0"	L6 x 'L' x 5/16	L6 x 'L' x 3/8	L7 x 'L' x 3/8	L8 x 'L' x 7/16
10'-0"	L7 x 'L' x 3/8	L8 x 'L' x 7/16	L8 x 'L' x 7/16	NA
12'-0"	L8 x 'L' x 7/16	NA	NA	NA



TYPICAL SECTION

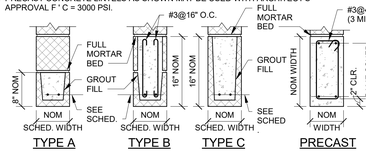
NOTES:
1. SEE ARCHITECTURAL DRAWINGS FOR SIZE & LOCATION OF OPENINGS.
2. PROVIDE 1" OF BEARING AT EACH JAMB FOR EACH FOOT OF CLEAR SPAN BUT NOT LESS THAN 8".
3. WHERE MINIMUM BEARING CANNOT BE ACHIEVED, PROVIDE ADEQUATE CONNECTION TO ADJACENT STRUCTURAL MEMBERS OR PROVIDE SEPARATE VERTICAL SUPPORTS. SUBMIT SUCH DETAILS FOR THE ENGINEER'S APPROVAL.
4. ALL LINTELS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
5. FOR MASONRY OPENINGS GREATER THAN 10'-0", SEE DETAILS ON THE DRAWINGS OR REFER TO ENGINEER.
6. BRICK HEIGHTS OVER OPENINGS GREATER THAN ONE HALF THE LINTEL SPAN SHALL BE SHORED UNTIL MORTAR HAS SET AND CURED.
7. 'L' DIMENSION SHALL NOT BE LESS THAN 4". FOR 'L' DIMENSION GREATER THAN 5 1/2". PROVIDE 3/16" PLATE STIFFENER.
8. UNLESS NOTED OTHERWISE BY ARCHITECT, 'X' DIMENSION SHALL BE 5/8" AT NOMINAL BRICK OR 4" CMU, AT KING BRICK 'X' SHALL BE 1/2".
9. WHERE MINIMUM ANGLE THICKNESS EXCEEDS GROUT BED THICKNESS, BOOT CUT BRICK AS REQ'D IN ORDER TO MAINTAIN LEVEL COURSING.
10. WHERE NO BRICK JOINTS OCCUR, LINTEL SCHEDULE IS VALID FOR ALL BRICK WALL HEIGHTS. WHERE EXPANSION JOINTS ARE PROVIDED AT ONE OR BOTH SIDES OF OPENINGS,OR WHERE STACK BONDED BRICK IS USED, LINTEL SCHEDULE IS VALID FOR A CARRIED BRICK HEIGHT UP TO 26 FT. SEE EOR IF THIS VALUE IS EXCEEDED.

TYPICAL DETAIL STEEL LOOSE LINTEL SCHEDULE EXTERIOR BRICK

11 SCALE: N.T.S.

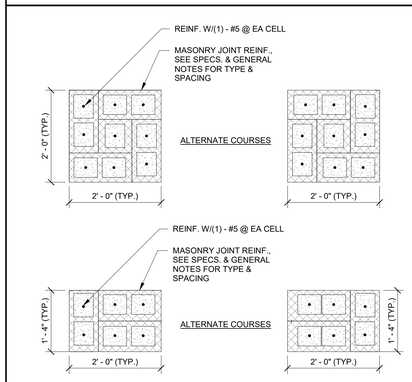
CLEAR SPAN	REINFORCING REQUIREMENTS IN NOMINAL LINTEL SECTION								
	4x8	6x8	6x16	8x8	8x16	10x8	10x16	12x8	12x16
3-4	1-#3	1-#3	——	1-#3	——	2-#3	——	2-#3	——
4-0	1-#3	1-#4	——	2-#3	——	2-#3	——	2-#4	——
4-8	1-#4	1-#4	——	2-#4	——	2-#4	——	2-#4	——
5-4	1-#4	2-#4	——	2-#4	——	2-#4	2-#3	2-#5	——
6-0	1-#5	2-#4	1-#4	2-#4	2-#3	2-#5	2-#4	2-#5	2-#4
6-8	N/A	N/A	1-#5	N/A	2-#4	N/A	2-#4	2-#6	2-#4
7-4	↑	↑	1-#5	↑	2-#4	↑	2-#4	N/A	2-#5
8-0	↑	↑	1-#6	↑	2-#4	↑	2-#5	↑	2-#5
8-8	↑	↑	1-#6	↑	2-#5	↑	2-#5	↑	2-#6
9-4	N/A	N/A	1-#7	N/A	2-#5	N/A	2-#6	N/A	2-#6

NOTES:
1. SEE ARCHITECTURAL DRAWINGS FOR SIZE & LOCATION OF OPENINGS.
2. PROVIDE 1" OF BEARING AT EACH JAMB FOR EACH FOOT OF CLEAR SPAN BUT NOT LESS THAN 8". REINFORCEMENT SHALL PROJECT A MINIMUM OF 6" ONTO THE BEARING.
3. MINIMUM MASONRY COMPRESSIVE STRENGTH OF GROUTED PRISM F' M = 2000 PSI.
4. LINTELS SCHEDULED AT 16" HIGH MAY BE EITHER TYPE "B" OR TYPE "C" AS DETAILED BELOW.
5. PRECAST CONCRETE LINTELS AS SHOWN MAY BE USED WITH ARCHITECT'S APPROVAL F ' C = 3000 PSI.



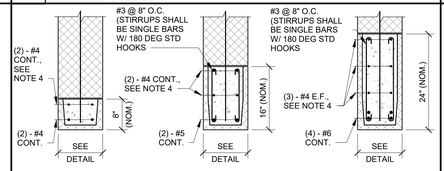
NON-LOAD BEARING BLOCK LINTEL SCHEDULE

15 SCALE: N.T.S.



TYPICAL DETAIL MASONRY COLUMNS

18 SCALE: 3/4" = 1'-0"



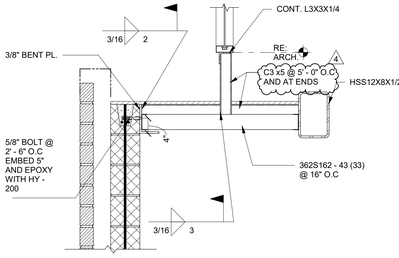
BOND BEAM MAX CLEAR SPAN SCHEDULE

CMU	WALL GROUT SPACING	TYPE 1		TYPE 2		TYPE 3	
		RUNNING BOND	STACK BOND	RUNNING BOND	STACK BOND	RUNNING BOND	STACK BOND
8"	16" O.C.	6'-4"	5'-0"	9'-4"	7'-8"	13'-4"	11'-8"
	>32" O.C.	7'-0"	5'-8"	10'-4"	8'-8"	14'-0"	12'-4"
10"	16" O.C.	6'-4"	5'-0"	9'-4"	7'-8"	15'-8"	13'-4"
	>32" O.C.	7'-0"	5'-8"	10'-4"	8'-8"	17'-0"	14'-8"
12"	16" O.C.	6'-4"	5'-4"	9'-8"	8'-0"	16'-4"	13'-4"
	>32" O.C.	7'-0"	6'-0"	11'-0"	9'-0"	18'-0"	15'-4"

NOTES:
1. SEE ARCH. DRAWINGS FOR SIZE AND LOCATION OF OPENINGS.
2. PROVIDE 1" OF BEARING @ EACH JAMB FOR EACH FOOT OF CLEARSPAN BUT NOT LESS THAN 8" REINF. SHALL PROJECT A MIN. OF 6" ONTO THE BEARING CMU.
3. BOND BEAMS SHALL BE FULLY GROUTED (2500 PSI @ 28 DAYS).
4. THE #4 FACE BARS ARE ONLY REQUIRED AT EXTERIOR CMU WALLS.

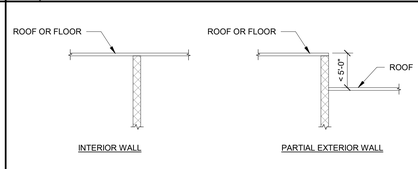
TYPICAL DETAIL BLOCK LINTEL AT EXTERIOR OR LOAD BEARING WALLS

13 SCALE: N.T.S.



CMU DETAIL AT ENTRANCE

17 SCALE: N.T.S.

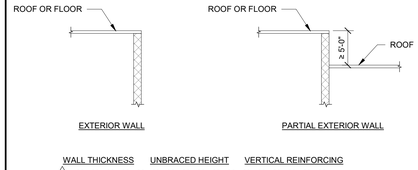


WALL THICKNESS	VERTICAL REINFORCING
6"	#5 @ 24" O.C.
8"	#6 @ 24" O.C.

NOTES:
1. LOAD BEARING WALL IS DEFINED AS A WALL SUPPORTING MEZZANINE FLOOR OR ROOF.
2. ALL REINFORCING SHALL BE CONTINUOUS BETWEEN FOUNDATION AND TOP OF WALL. ALL REINFORCED CELLS SHALL BE GROUTED SOLID.
3. AT FOUNDATION, PROVIDE DOWELS TO MATCH VERTICAL REINFORCING BARS.
4. PROVIDE CONTINUOUS BOND BEAMS AT TOP OF WALLS. REINFORCE BOND BEAMS WITH (2) - #5 UNLESS NOTED OTHERWISE.
5. IF A WALL IS AN EXTERIOR WALL, THEN USE LARGER REINF. FOR EXTERIOR WALL AND SHOWN ABOVE.

TYPICAL DETAIL INTERIOR LOAD-BEARING WALLS

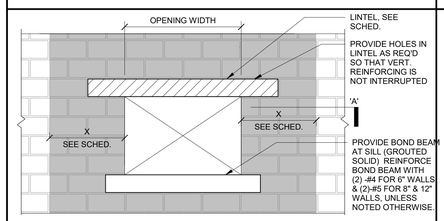
10 SCALE: N.T.S.



NOTES:
1. SEE GENERAL NOTES FOR ADDITIONAL INFORMATION.
2. ALL REINFORCING STEEL SHALL BE CONTINUOUS BETWEEN FOUNDATION AND TOP OF CMU. SPLICE REINFORCING PER GENERAL NOTES. ALL REINFORCED CELLS SHALL BE GROUTED SOLID.
3. AT FOUNDATION, PROVIDE DOWELS TO MATCH SIZE AND SPACING OF VERTICAL BARS.
4. CONSULT WITH ARCH./EOR WHEN HEIGHT OF WALL EXCEEDS THE HEIGHT SHOWN HERE.
5. PROVIDE CONTINUOUS BOND BEAMS AT THE TOP OF WALLS. REINFORCE BOND BEAMS WITH (2) - #5, UNLESS NOTED OTHERWISE.

TYPICAL DETAIL - EXTERIOR CMU WALL

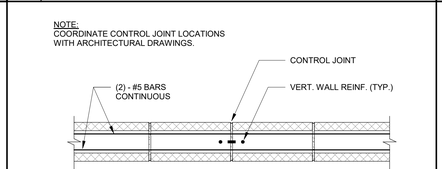
9 SCALE: N.T.S.



OPENING SIZE	JAMB WIDTH 'X'	JAMB REINF.
≤ 5' - 4"	2' - 0"	(2) - #5 @ 8" O.C.
>5'-4"& ≤ 8' - 0"	3' - 0"	(2) - #5 @ 8" O.C.
>8' - 0" & ≤ 12' - 0"	4' - 0"	(2) - #7 @ 8" O.C.

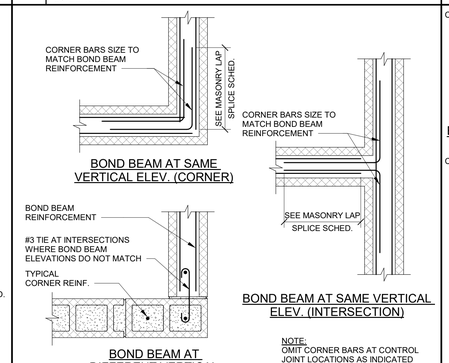
CMU JAMB REINFORCING SCHEDULE

7 SCALE: N.T.S.



TYPICAL BOND BEAM AT CONTROL JOINTS

6 SCALE: N.T.S.



NOTE:
OMIT CORNER BARS AT CONTROL JOINT LOCATIONS AS INDICATED ON TYPICAL CMU ELEVATION.

TYPICAL CMU BOND BEAM REINFORCEMENT

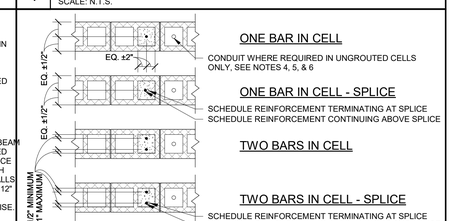
5 SCALE: N.T.S.

	MINIMUM LAP SPLICE LENGTH				REINFORCEMENT OFF CENTER	HOOKED BAR DEVELOPMENT LENGTH
	REINFORCEMENT AT CENTER OF WALL					
BAR SIZE	6" CMU	8" CMU	10" CMU	12" CMU	ANY	ANY
3	12	12	12	12	17	5
4	18	13	12	12	29	7
5	28[4]	20	16	13	45	9
6	51[4]	37	29	24	54	10
7	NA[5]	50	39	32	63	12
8	NA[5]	72	58	48	72	13

NOTES:
1. TABLE FOR USE WITH GRADE 60 UNCOATED REINF. BARS IN CMU (f'm = 2000 psi)
2. BARS SPLICED BY NON-CONTACT LAP SPLICE SHALL NOT BE SPACED FARTHER APART THAN, ONE-FIFTH THE REQUIRED LAP LENGTH, OR 8".
3. LAP LENGTHS PER IBC 2021.
4. PERMITTED ONLY IF ALL MORTAR FINS ARE REMOVED ROM THE CELL TO BE GROUTED.
5. BAR EXCEEDS MAX. ALLOWABLE SIZE.
6. DEVELOPMENT LENGTH OF EPOXY COATED BARS SHALL BE TAKEN AS 1.5 TIMES THE VALUES IN THE CHART.

TYPICAL DETAIL MASONRY TENSION LAP SPLICE (INCHES)

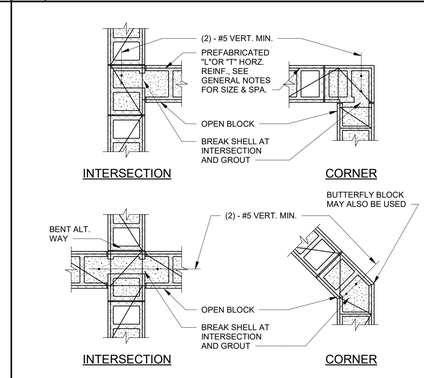
4 SCALE: N.T.S.



NOTES:
1. REINFORCEMENT MUST BE PLACED USING REINFORCING BAR POSITIONERS THAT LOCATE THE BAR AS SPECIFIED AND PREVENT MOVEMENT OF THE BAR DURING CONSTRUCTION.
2. SPLICED REINFORCEMENT MUST BE A CONTACT LAP SPLICE WITH SPLICED BARS ALIGNED PARALLEL TO THE WALL AS SHOWN.
3. THE ENGINEER MUST BE NOTIFIED PRIOR TO PLACEMENT OF REINFORCEMENT THAT IS REQUIRED TO BE PLACED OUTSIDE OF THE TOLERANCES OF THIS DETAIL SUCH AS TO AVOID INTERFERENCE WITH OTHER REINFORCEMENT, CONDUITS, OR EMBEDDED ITEMS.
4. CONDUIT, PIPES AND SLEEVES SHALL BE NO CLOSER THAN 3 DIAMETERS ON CENTER (USE LARGER DIAMETER WHERE MULTIPLE SIZES ARE USED).
5. ALUMINUM PIPES MAY NOT BE USED UNLESS EFFECTIVELY COATED TO PREVENT CHEMICAL REACTION.
6. PIPES SHALL NOT BE EMBEDDED IN MASONRY WHEN:
   (a) CONTAINING LIQUIDS, GAS, OR VAPORS AT A TEMPERATURE HIGHER THAN 150°F (66°C).
   (b) UNDER PRESSURE IN EXCESS OF 55 PSI (379 KPA).
   (c) CONTAINING WATER OR OTHER LIQUIDS SUBJECT TO FREEZING.

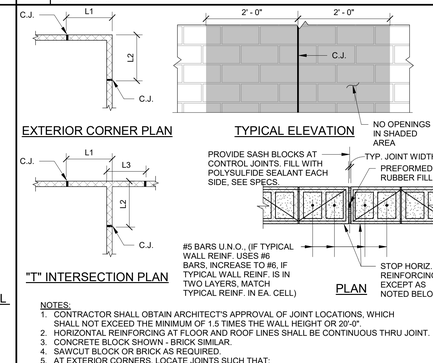
TYPICAL DETAIL CMU VERTICAL BAR PLACEMENT

3 SCALE: N.T.S.



CMU WALL INTERSECTIONS

2 SCALE: N.T.S.



NOTES:
1. CONTRACTOR SHALL OBTAIN ARCHITECT'S APPROVAL OF JOINT LOCATIONS, WHICH SHALL NOT EXCEED THE MINIMUM OF 1.5 TIMES THE WALL HEIGHT OR 20'-0".
2. HORIZONTAL REINFORCING AT FLOOR AND ROOF LINES SHALL BE CONTINUOUS THRU JOINT.
3. CONCRETE BLOCK SHOWN - BRICK SIMILAR.
4. SAWCUT BLOCK OR BRICK AS REQUIRED.
5. AT EXTERIOR CORNERS, LOCATE JOINTS SUCH THAT: L1 + L2 ≤ 20' - 0".
6. AT EXTERIOR "T" INTERSECTIONS, LOCATE JOINTS SUCH THAT: L1 + L2 ≤ 20' - 0", L2 + L3 ≤ 20' - 0" AND L1 + L3 - WALL THICKNESS ≤ 20' - 0"

MASONRY WALL CONTROL JOINT

1 SCALE: N.T.S.

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PROFESSIONAL ENGINEER
10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
4 Addendum 4	10-21-2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	HR
Drawn By	RJC

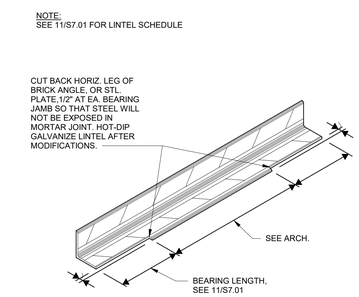
PROJECT NO.
25-0056.00

SHEET TITLE
CMU DETAILS

SHEET NO.
S7.01

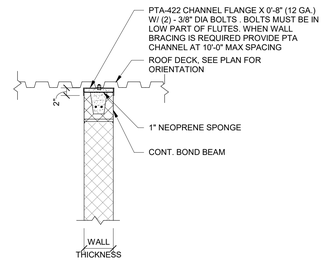
North Shore Multi-use Indoor Facility

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TYPICAL DETAIL
LOOSE LINTEL CUT BACK AND BEARING

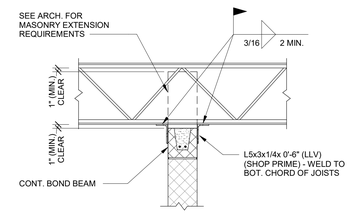
12 SCALE: N.T.S.



NOTES:
1. THIS DETAIL IS TO BE USED ONLY IF INTERSECTING SUPPORT WALLS EXCEED A SPACING OF 26 TIMES THE NOMINAL THICKNESS.
2. SEE 13/S7.02 FOR BRACE LOCATION REQUIREMENTS.

TYPICAL DETAIL
INTERIOR NON-LOAD BEARING CMU WALL
TOP CONNECTION TO STEEL BEAM

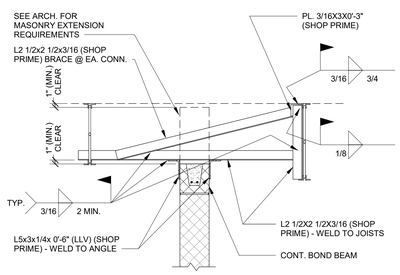
8 SCALE: 3/4" = 1'-0"



NOTES:
1. THIS DETAIL IS TO BE USED ONLY IF INTERSECTING SUPPORT WALLS EXCEED A SPACING OF 26 TIMES THE NOMINAL THICKNESS.
2. SEE 13/S7.02 FOR BRACE LOCATION REQUIREMENTS.

TYPICAL DETAIL
INTERIOR NON-LOAD BEARING CMU WALL
TOP CONNECTION PERPENDICULAR
TO BAR JOISTS

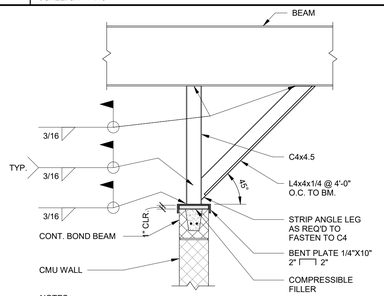
4 SCALE: 3/4" = 1'-0"



NOTES:
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TYPICAL DETAIL
INTERIOR NON-LOAD BEARING CMU WALL
TOP CONNECTION PARALLEL TO UNEQUAL
DEPTH BAR JOISTS

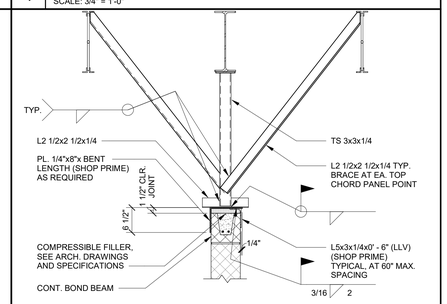
11 SCALE: 3/4" = 1'-0"



NOTES:
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2. SEE 13/S7.02 FOR BRACE LOCATION REQUIREMENTS.

TYPICAL DETAIL
INTERIOR NON-LOAD BEARING CMU WALL
TOP CONNECTION TO STEEL BEAM

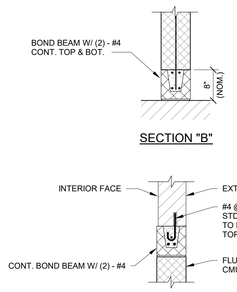
7 SCALE: 3/4" = 1'-0"



NOTES:
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2. SEE 13/S7.02 FOR BRACE LOCATION REQUIREMENTS.

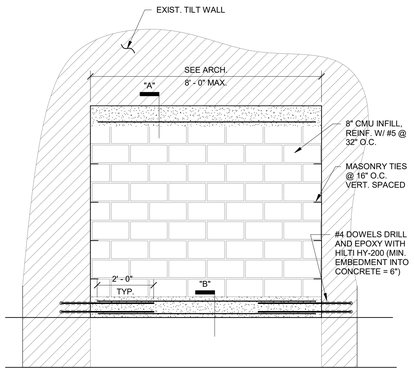
TYPICAL DETAIL
INTERIOR NON-LOAD BEARING CMU WALL
TOP CONNECTION TO STEEL BEAM

3 SCALE: 3/4" = 1'-0"



SECTION "B"

SECTION "A"



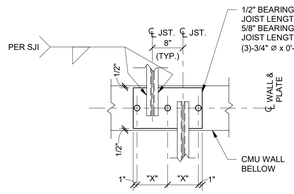
EXTERIOR MASONRY INFILL
AT EXISTING TILT WALL

17 SCALE: N.T.S.

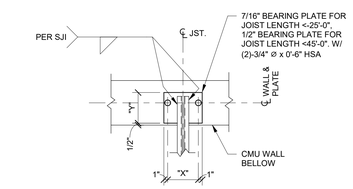
NOTES:

"X" DIMENSION SHALL BE AS FOLLOWS:
8" FOR K1-12 AND LH02-08
9" FOR LH07-17 & DLH10-17
14" FOR DLH15-25

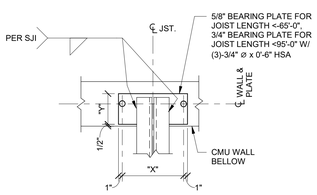
"Y" DIMENSION SHALL BE AS FOLLOWS:
6" FOR 8" CMU
7" FOR 10" CMU
8" FOR 12" CMU



JOIST BOTH SIDES



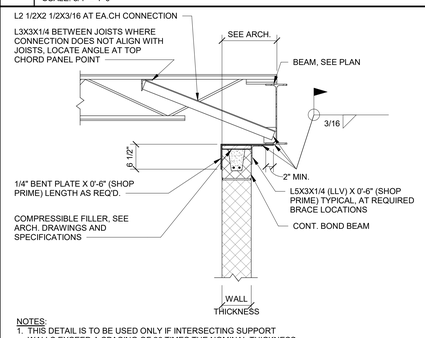
JOIST ONE SIDES



LH JOIST ONE SIDE

TYPICAL DETAIL JOIST BEARING PLATE

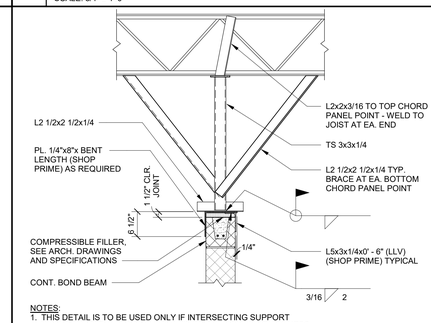
13 SCALE: 3/4" = 1'-0"



NOTES:
1. THIS DETAIL IS TO BE USED ONLY IF INTERSECTING SUPPORT WALLS EXCEED A SPACING OF 26 TIMES THE NOMINAL THICKNESS.
2. SEE 13/S7.02 FOR BRACE LOCATION REQUIREMENTS.

TYPICAL DETAIL
INTERIOR NON-LOAD BEARING CMU WALL
TOP CONNECTION TO STEEL BEAM

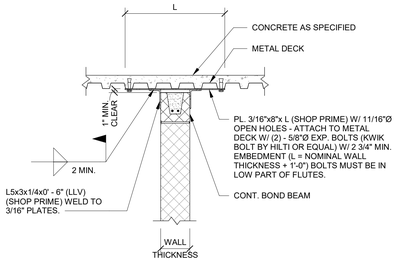
10 SCALE: 3/4" = 1'-0"



NOTES:
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2. SEE 13/S7.02 FOR BRACE LOCATION REQUIREMENTS.

TYPICAL DETAIL
INTERIOR NON-LOAD BEARING
CMU WALL TOP CONNECTION
PERPENDICULAR TO JOISTS

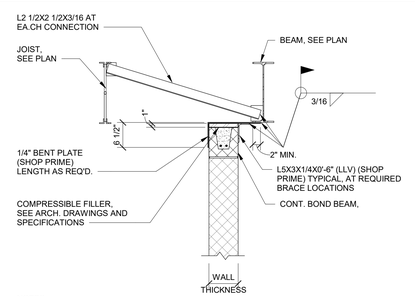
6 SCALE: 3/4" = 1'-0"



NOTES:
1. THIS DETAIL IS TO BE USED ONLY IF INTERSECTING SUPPORT WALLS EXCEED A SPACING OF 26 TIMES THE NOMINAL THICKNESS.
2. SEE 13/S7.02 FOR BRACE LOCATION REQUIREMENTS.

TYPICAL DETAIL
INTERIOR NON-LOAD BEARING CMU WALL
TOP CONNECTION TO METAL DECK

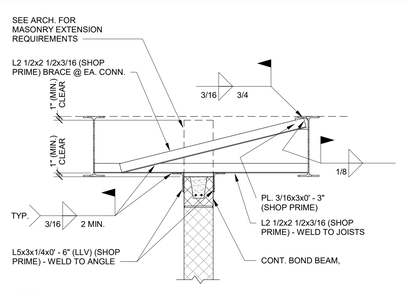
2 SCALE: 3/4" = 1'-0"



NOTES:
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TYPICAL DETAIL
INTERIOR NON-LOAD BEARING CMU WALL
TOP CONNECTION TO STEEL BEAM

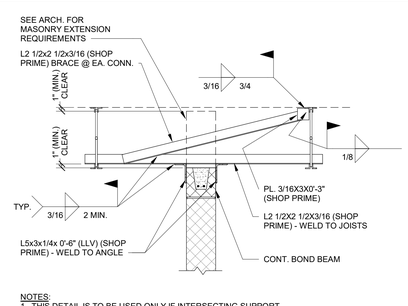
9 SCALE: 3/4" = 1'-0"



NOTES:
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2. SEE 13/S7.02 FOR BRACE LOCATION REQUIREMENTS.

TYPICAL DETAIL
INTERIOR NON-LOAD BEARING
CMU WALL TOP CONNECTION
PARALLEL TO STEEL BEAMS

5 SCALE: 3/4" = 1'-0"



NOTES:
1. THIS DETAIL IS TO BE USED ONLY IF INTERSECTING SUPPORT WALLS EXCEED A SPACING OF 26 TIMES THE NOMINAL THICKNESS.
2. SEE 13/S7.02 FOR BRACE LOCATION REQUIREMENTS.

TYPICAL DETAIL
INTERIOR NON-LOAD BEARING CMU WALL
TOP CONNECTION PARALLEL TO BAR JOISTS

1 SCALE: 3/4" = 1'-0"

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North Shore Multi-use Indoor Facility

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10/22/2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
4 Addendum 4	10-21-2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	HR
Drawn By	RJC

PROJECT NO.
25-0056.00

SHEET TITLE
CMU DETAILS

SHEET NO.
S7.03

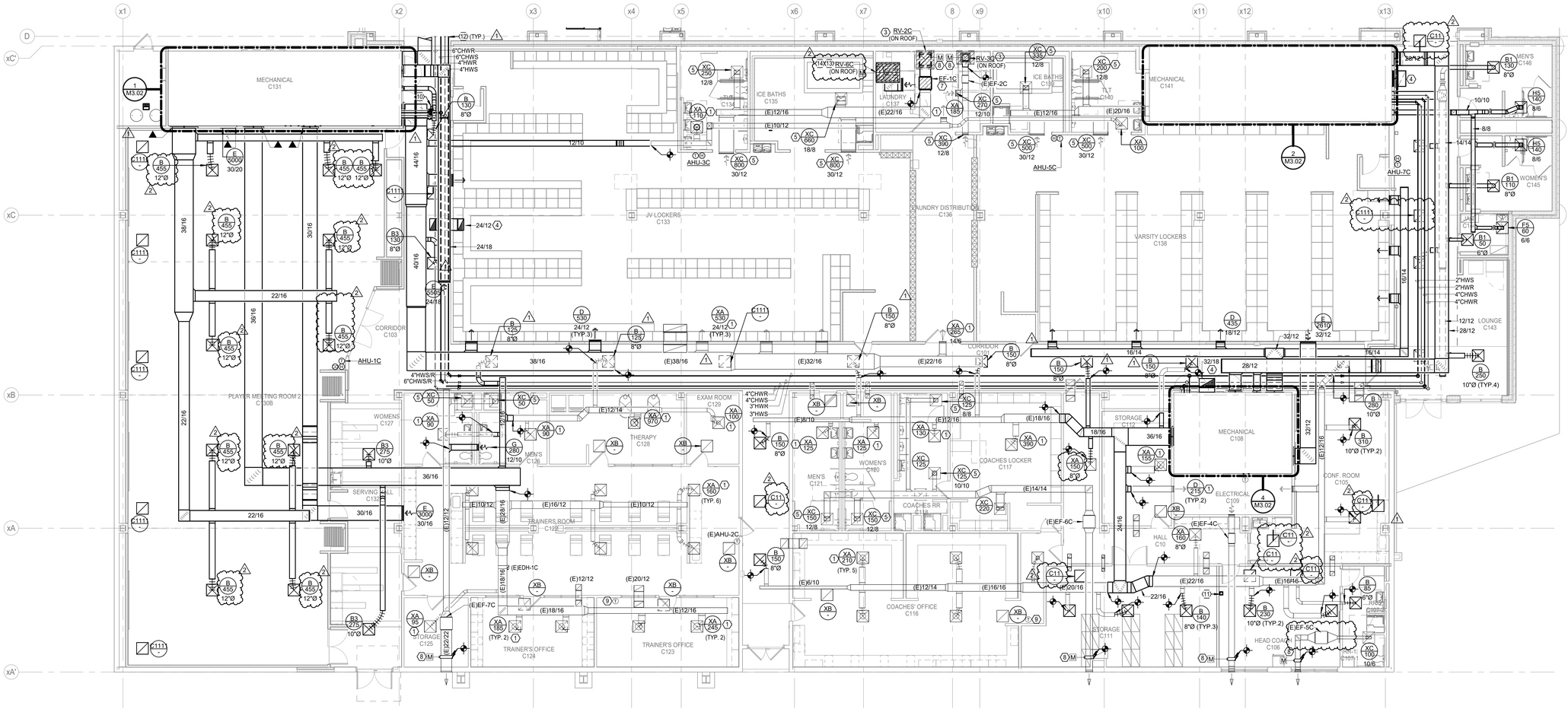
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MECHANICAL GENERAL NOTES

1	THESE CONSTRUCTION DRAWINGS ARE DIAGRAMMATIC, AND DO NOT NECESSARILY REFLECT ACTUAL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND COORDINATE PLACEMENT OF ALL EQUIPMENT AND ROUTING OF ALL PIPING AND/OR DUCT SYSTEMS.
2	ALL DUCT SIZES ARE INSIDE CLEAR. INCREASE ACCORDINGLY WHERE INTERIOR LINER IS SHOWN OR SPECIFIED.
3	MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL POWER REQUIREMENTS.
4	COORDINATE IN THE FIELD THE EXACT LOCATION OF ALL CEILING MOUNTED GRILLES AND DIFFUSERS WITH LIGHT FIXTURES AND (ARCHITECT'S) REFLECTED CEILING PLAN.
5	THERMOSTATS SHALL BE MOUNTED AT +48" AFF (ABOVE FINISHED FLOOR), UNLESS OTHERWISE NOTED.

MECHANICAL KEYED NOTES

1	EXISTING SUPPLY DIFFUSER TO REMAIN. RE-BALANCE TO AIRFLOW INDICATED.
2	ROUTE COMBUSTION AIR DUCTWORK DOWN FROM INTAKE ON ROOF AVBOVE. RE: 1/M2.10 FOR CONTINUATION.
3	ROUTE EXHAUST AIR DUCT UP TO RELIEF VENT ON ROOF ABOVE. RE: 1/M2.10 FOR CONTINUATION.
4	PROVIDE ACOUSTICALLY LINED RETURN AIR TRANSFER DUCT ABOVE CEILING.
5	EXISTING EXHAUST DIFFUSER TO REMAIN. RE-BALANCE TO AIRFFLOW INDICATED.
6	RE: M2.04B FOR CONTINUATION.
7	UNIT SHALL BE SUSPENDED WITH UNISTRUT RUNNERS AND PLATFORM SECURED TO STRUCTURE WITH THREADED HANGER RODS. INSTALL PER MANUFACTURER. COORDINATE WITH ALL OTHER TRADES NOT TO OBSTRUCT.
8	PROVIDE NEW MOTORIZED DAMPER AT POINT INDICATED.
9	EXISTING THERMOSTAT TO REMAIN.
10	PROVIDE ISOLATION VALVE AT LOCATION SHOWN.
11	PROVIDE HVAC SHUTDOWN STATION, EXTERIOR LIGHTING OVERRIDE STATION, AND INTERIOR LIGHTING OVERRIDE STATION. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. COORDINATE FINAL LOCATION WITH OWNER/ARCHITEC
12	RE: 1/M2.04B FOR CONTINUATION.
13	ROUTE COMBUSTION AIR DUCT UP TO RELIEF VENT ON ROOF ABOVE. RE: 1/M2.10 FOR CONTINUATION.
14	PROVIDE TWO COMBUSTION AIR DUCTS AT SIZE INDICATED. ROUTE ONE DUCT DOWN WALL TO WITHIN 12" ABOVE FLOOR. ROUTE SECOND DUCT HIGH THRU WALL AND TERMINATE WITHIN UPPER 12" OF THE ENCLOSURE. COVER DUCT OPENINGS WITH 1/4" GALVANIZED STEEL MESH.



N

1 **MECHANICAL FLOOR PLAN - LEVEL ONE - UNIT A**
Scale: 1/8" = 1'-0"

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Salas O'Brien Project Number: 2550-01455-00

GALENA PARK ISD
HOUSTON, TEXAS

BRADLEY KALMANS
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LICENSED
CENSE
10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
1 Addendum 1	10/08/2025
2 Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

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25-0056.00

SHEET TITLE
MECHANICAL FLOOR PLAN - LEVEL ONE - UNIT A

SHEET NO.
M2.03A

North Shore Multi-Use Indoor Facility

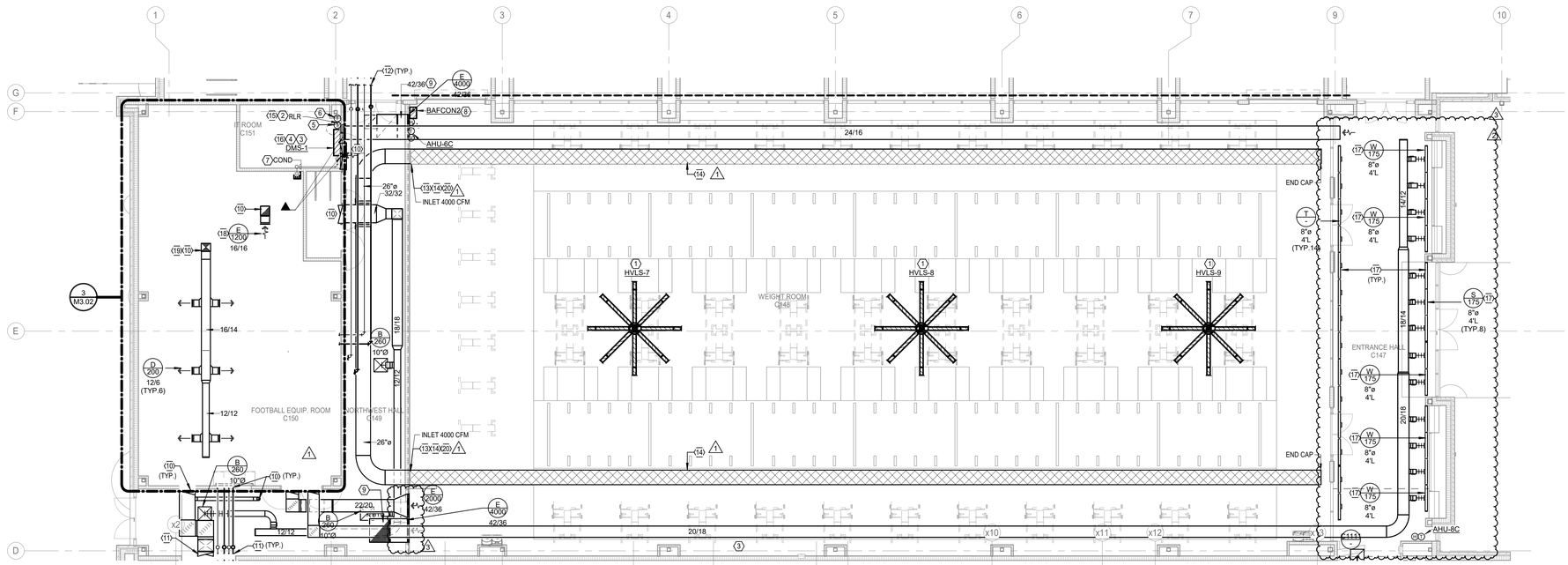
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MECHANICAL GENERAL NOTES

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2	ALL DUCT SIZES ARE INSIDE CLEAR, INCREASE ACCORDINGLY WHERE INTERIOR LINER IS SHOWN OR SPECIFIED.
3	MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL POWER REQUIREMENTS.
4	COORDINATE IN THE FIELD THE EXACT LOCATION OF ALL CEILING MOUNTED GRILLES AND DIFFUSERS WITH LIGHT FIXTURES AND (ARCHITECT'S) REFLECTED CEILING PLAN.
5	THERMOSTATS SHALL BE MOUNTED AT +48" AFF (ABOVE FINISHED FLOOR), UNLESS OTHERWISE NOTED.

MECHANICAL KEYED NOTES

1	VERIFY SERVICE CLEARANCE AND COORDINATE WITH ALL TRADES NOT TO OBSTRUCT. INSTALL PER MANUFACTURER GUIDLINES.
2	RE: 1/M2.10 FOR CONTINUATION.
3	VERIFY SERVICE CLEARANCE FOR AIR FILTER, FAN SHAFT AND COIL REMOVAL WITH EQUIPMENT MANUFACTURER.
4	COORDINATE UNIT LOCATION WITH ALL TRADES NOT TO OBSTRUCT. BOTTOM OF HIGH WALL UNIT SHALL BE MOUNTED ABOVE 7'-3" A.F.F.
5	PROVIDE HARD WIRED THERMOSTAT.
6	PROVIDE THERMOSTAT FOR BMSC MONITOR.
7	ROUTE FULL SIZE CONDENSATE DRAIN LINE AS HIGH AS POSSIBLE AND GRAVITY DRAIN TO FLOOR DRAIN AS INDICATED. INSTALL TRAP AND PIPE SIZING PER MANUFACTURER. REFER TO PLUMBING DRAWINGS FOR EXACT LOCATION.
8	PROVIDE LABELS ON SWITCHES AND CONTROLLERS TO ASSOCIATED EQUIPMENT.
9	PROVIDE ACOUSTICALLY LINED RETURN AIR DUCT.
10	RE: 3/M3.02 FOR CONTINUATION.
11	RE: 1/M2.03A FOR CONTINUATION.
12	RE: 1/M2.08D FOR CONTINUATION.
13	TRANSITION FROM METAL DUCTWORK TO FABRIC DUCT AS INDICATED. REFER TO FABRIC DUCT SPECIFICATIONS AND MANUFACTURER FOR MORE INFORMATION.
14	PROVIDE FABRIC DUCT AND SUSPENSION SYSTEM AS SPECIFIED. REFER TO MANUFACTURER FOR FINAL SIZE, DISTRIBUTION AND INSTALLATION REQUIREMENTS.
15	ROUTE REFRIGERANT PIPING UP TO ASSOCIATED OUTDOOR UNIT ON ROOF. SIZE LINE AND INSTALL PER MANUFACTURER RECOMMENDATIONS. PIPING SHOWN SINGLE LINE FOR CLARITY. RE: M5.02 FOR DETAILS.
16	INSULATE ALL PIPING PER SPECIFICATIONS.
17	COORDINATE FINAL AIR DEVICE LOCATION AND FINISH COLOR WITH ARCHITECT.
18	ROUTE DUCTWORK FROM THE RETURN AIR GRILLE UP TO THE MEZZANINE TO CONNECT TO THE RETRUN AIR PLENUM BOX AT THE UNIT.
19	ROUTE DUCTWORK UP TO THE MEZZANINE TO CONNECT TO THE SUPPLY AIR MAIN DUCT.
20	COORDINATE FINAL DUCT ELEVATION AND FINISH COLOR WITH ARCHITECT.



N

1 **MECHANICAL FLOOR PLAN - LEVEL ONE - UNIT B**
Scale: 1/8" = 1'-0"

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HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

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STATE OF TEXAS
10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

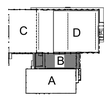
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2	Addendum 3	10/17/2025
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Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
MECHANICAL FLOOR PLAN - LEVEL ONE - UNIT B

SHEET NO.
M2.04B



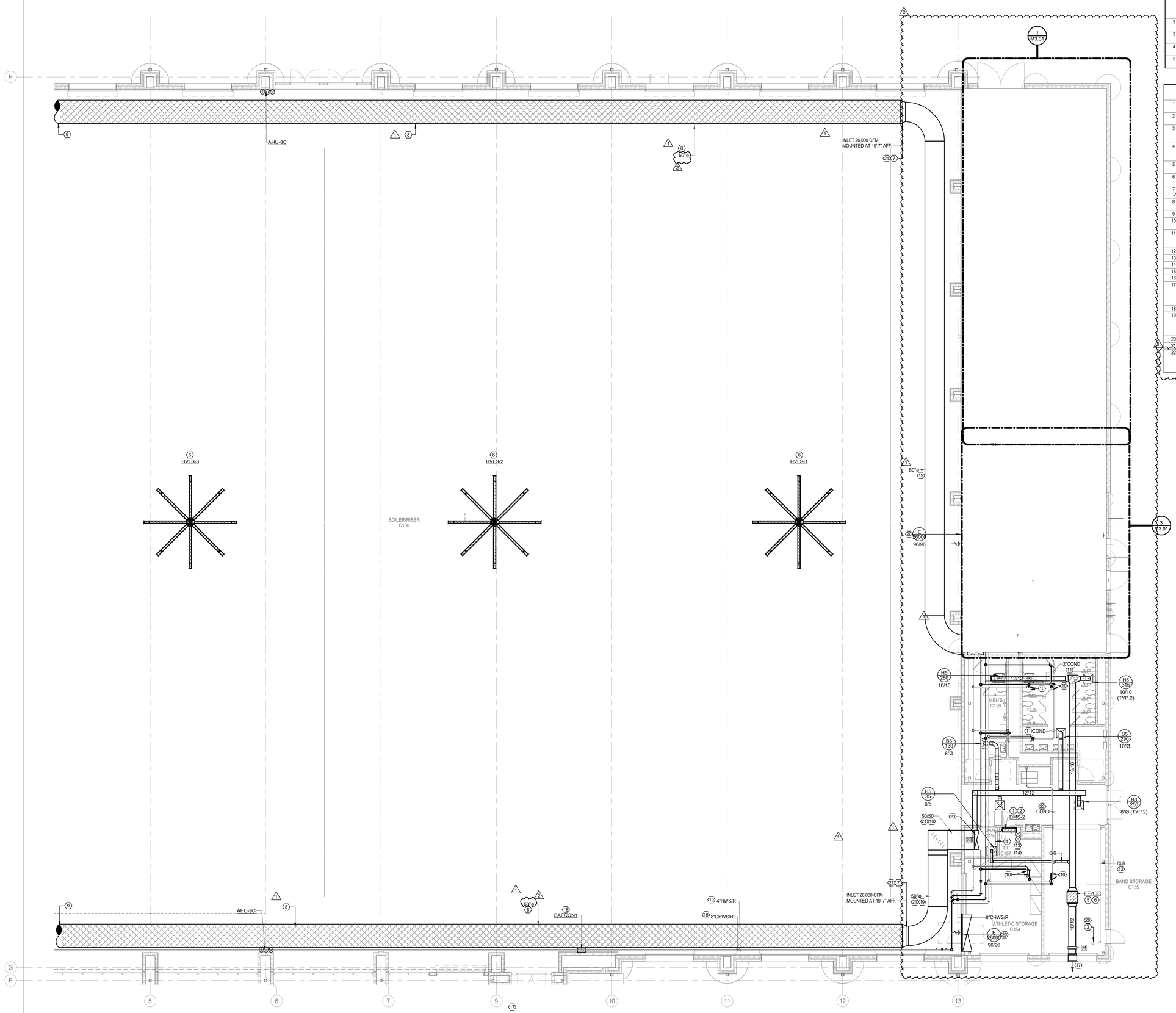
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4	COORDINATE IN THE FIELD THE EXACT LOCATION OF ALL CEILING MOUNTED GRILLES AND DIFFUSERS WITH LIGHT FIXTURES AND (ARCHITECT'S) REFLECTED CEILING PLAN.
5	THERMOSTATS SHALL BE MOUNTED AT +48" AFF (ABOVE FINISHED FLOOR), UNLESS OTHERWISE NOTED.

MECHANICAL KEYED NOTES

1	VERIFY SERVICE CLEARANCE FOR AIR FILTER, FAN SHAFT AND COIL REMOVAL WITH EQUIPMENT MANUFACTURER.
2	COORDINATE UNIT LOCATION WITH ALL TRADES NOT TO OBSTRUCT. BOTTOM OF HIGH WALL UNIT SHALL BE MOUNTED ABOVE 7'-3" A.F.F.
3	ROUTE REFRIGERANT PIPING UP TO ASSOCIATED OUTDOOR UNIT ON ROOF ABOVE. INSTALL PER MANUFACTURER RECOMMENDATIONS. PIPING SHOWN SINGLE LINE FOR CLARITY. RE: M5.02 FOR DETAILS.
4	ROUTE FULL SIZE CONDENSATE DRAIN LINE AS HIGH AS POSSIBLE AND GRAVITY DRAIN TO MOP SINK. INSTALL TRAP AND PIPE SIZING PER MANUFACTURER. REFER TO PLUMBING DRAWINGS FOR EXACT LOCATION.
5	SUSPEND UNIT WITH THREADED HANGER RODS ATTACHED TO UNISTRUT RUNNERS SECURED TO STRUCTURE. PROVIDE SPRING ISOLATION. REFER TO MANUFACTURER FOR MORE DETAILS.
6	VERIFY SERVICE CLEARANCE AND COORDINATE WITH ALL TRADES NOT TO OBSTRUCT. INSTALL PER MANUFACTURER GUIDLINES.
7	TRANSITION FROM METAL DUCTWORK TO FABRIC DUCT AS INDICATED. REFER TO FABRIC DUCT SPECIFICATIONS AND MANUFACTURER FOR MORE INFORMATION.
8	PROVIDE FABRIC DUCT AND SUSPENSION SYSTEM AS SPECIFIED. REFER TO MANUFACTURER FOR FINAL SIZE, DISTRIBUTION AND INSTALLATION REQUIREMENTS.
9	RE: 1/M2.06C.1 FOR CONTINUATION.
10	ROUTE CHWS&R AND HWS&R UP TO UNITS THROUGH ROOF. RE:2/M3.01 FOR CONTINUATION AND M5.02 FOR DETAILS.
11	ROUTE FULL SIZE CONDENSATE DRAIN LINE AS HIGH AS POSSIBLE AND GRAVITY DRAIN TO FLOOR DRAIN IN THE BOILER/RISER ROOM. INSTALL TRAP AND PIPE SIZING PER MANUFACTURER. REFER TO PLUMBING DRAWINGS FOR EXACT LOCATION.
12	INSULATE PIPING PER SPECIFICATION.
13	PROVIDE HARD WIRED THERMOSTAT.
14	PROVIDE THERMOSTAT FOR BMSC MONITOR.
15	ROUTE CHWS&R AND HWS&R AS INDICATED. PROVIDE PIPE SUPPORTS. RE: M5.02 FOR DETAILS.
16	RE: M2.03A FOR CONTINUATION.
17	PROVIDE 24" W X 24"H EXHAUST LOUVER, RUSKIN MODEL HZ700 OR APPROVED EQUAL WITH MINIMUM FREE AREA OF 1.77 SQ. FEET. PROVIDE WITH BIRD SCREEN AND PAINT TO MATCH WALL OR AS SPECIFIED BY ARCHITECT. COORDINATE FINAL LOCATION WITH ARCHITECT. RE: 5/M5.03 FOR DETAIL.
18	PROVIDE LABELS ON SWITCHES AND CONTROLLERS TO ASSOCIATED EQUIPMENT.
19	PROVIDE DOUBLE WALL ACOUSTICALLY TREATED WITH ANNULAR SPACE PACKED WITH 1.0 PCF, 1-INCH-THICK FIBERGLASS INSULATION. PAINTABLE GALVANIZED STEEL EXTERIOR CONSTRUCTION WITH A PERFORATED METAL LINER TO PROVIDE SPECIFIC ACOUSTIC IMPEDANCE. UNITED MCGILL ACOUSTI-K27 SPIRAL LOCKSEAM OR APPROVED EQUAL.
20	RE: 2/M3.01 FOR CONTINUATION.
21	COORDINATE FINAL DUCT ELEVATION AND FINISH COLOR WITH ARCHITECT.
22	ROUTE CONDENSATE DRAIN PIPE DOWN TO FLOOR SINK AT THE ICE MACHINE. SIZE PER MANUFACTURER, SLOPE PIPING TO ALLOW FOR GRAVITY DRAINAGE. INSTALL TRAP AS RECOMMENDED BY MANUFACTURER. REFER TO PLUMBING PLANS FOR EXACT LOCATION OF FLOOR SINK.



1 **MECHANICAL FLOOR PLAN - LEVEL ONE - UNIT D**
Scale: 1/8" = 1'-0"

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10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

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1 Addendum 1	10/08/2025
2 Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

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25-0056.00

SHEET TITLE
MECHANICAL FLOOR PLAN - LEVEL ONE - UNIT D

SHEET NO.
M2.08D

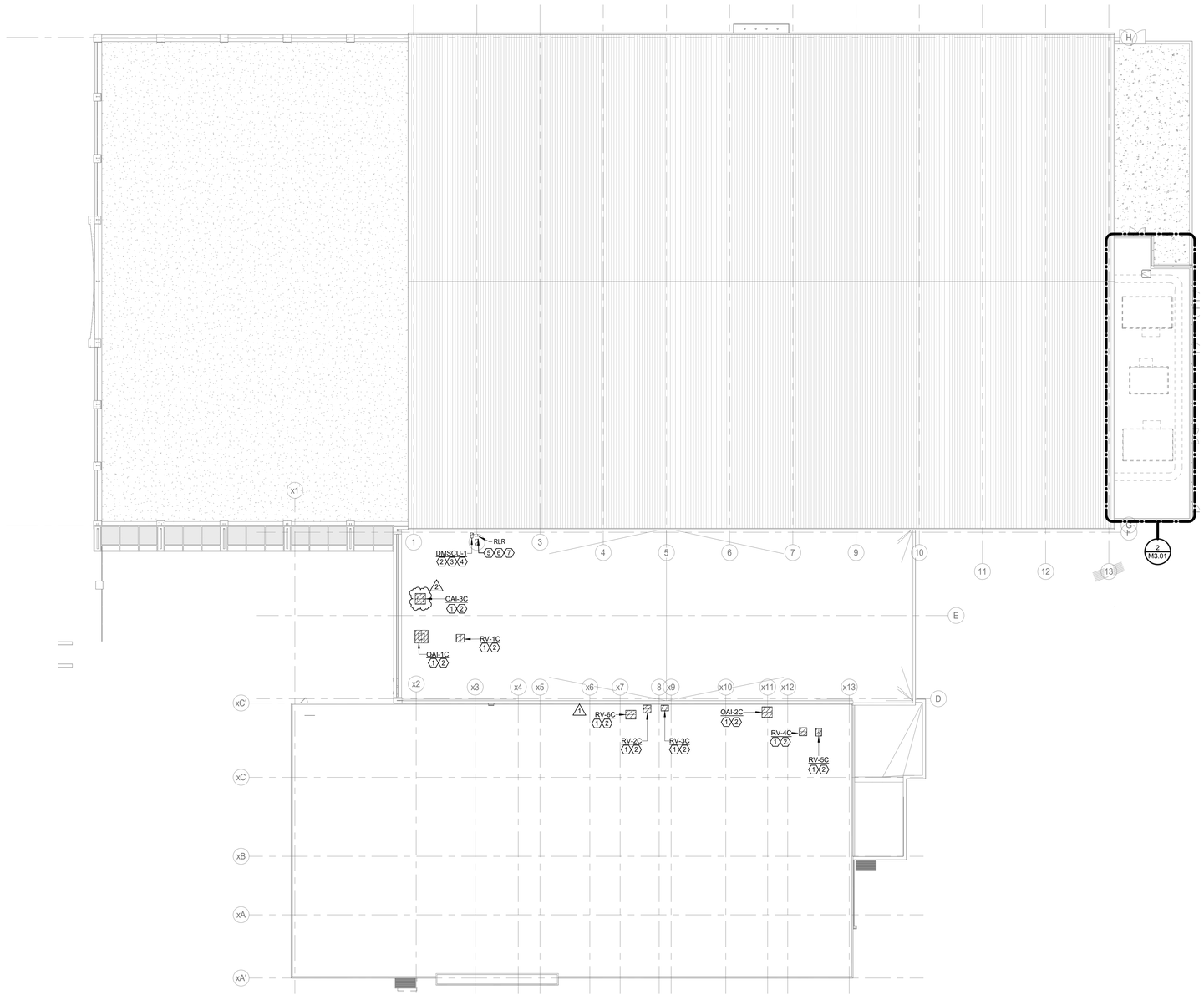
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5	THERMOSTATS SHALL BE MOUNTED AT +48" AFF (ABOVE FINISHED FLOOR), UNLESS OTHERWISE NOTED.

MECHANICAL KEYED NOTES

1	ROOF MOUNTED EQUIPMENT SHALL BE MOUNTED ON ROOF CURB. RE: DETAIL 7/M5.03,TRANSITION DUCTWORK AS REQUIRED TO CONNECT TO EQUIPMENT ON ROOF.
2	VERIFY SERVICE CLEARANCE WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
3	CONDENSING UNIT SHALL BE MOUNTED ON ROOF SUPPORT. RE:8/M5.03 FOR DETAIL.
4	ROUTE REFRIGERANT PIPING FROM CONDENSING UNIT TO ASSOCIATED INDOOR UNIT THROUGH ROOF. PIPING SHOWN SINGLE LINE FOR CLARITY. PROVIDE PIPE SUPPORT AND INSTALL PER MANUFACTURER.RE: M5.03 FOR DETAILS.
5	INSULATE ALL PIPING PER SPECIFICATIONS.
6	RE:3/M3.02 FOR CONTINUATION.
7	PROVIDE PHP MODEL PP-10 ON ROOF WITH ROLLER AND FULLY ADJUSTABLE HEIGHT THROUGHOUT PIPE RUN EVERY 6'-0" ON CENTER AND EVERY CHANGE IN DIRECTION. RE:M5.02 FOR DETAILS.



N

1 **MECHANICAL ROOF PLAN**
Scale: 1" = 20'-0"

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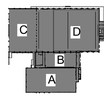
Revision No.		Revision Date
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Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

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SHEET TITLE
MECHANICAL ROOF PLAN

SHEET NO.
M2.10



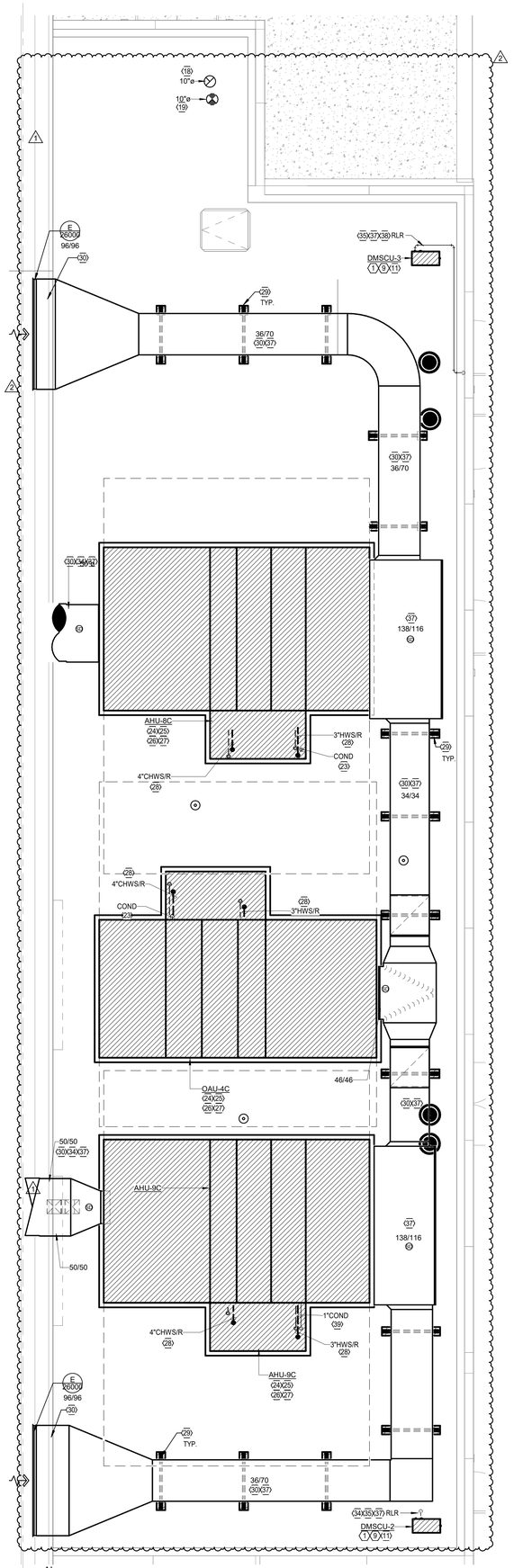
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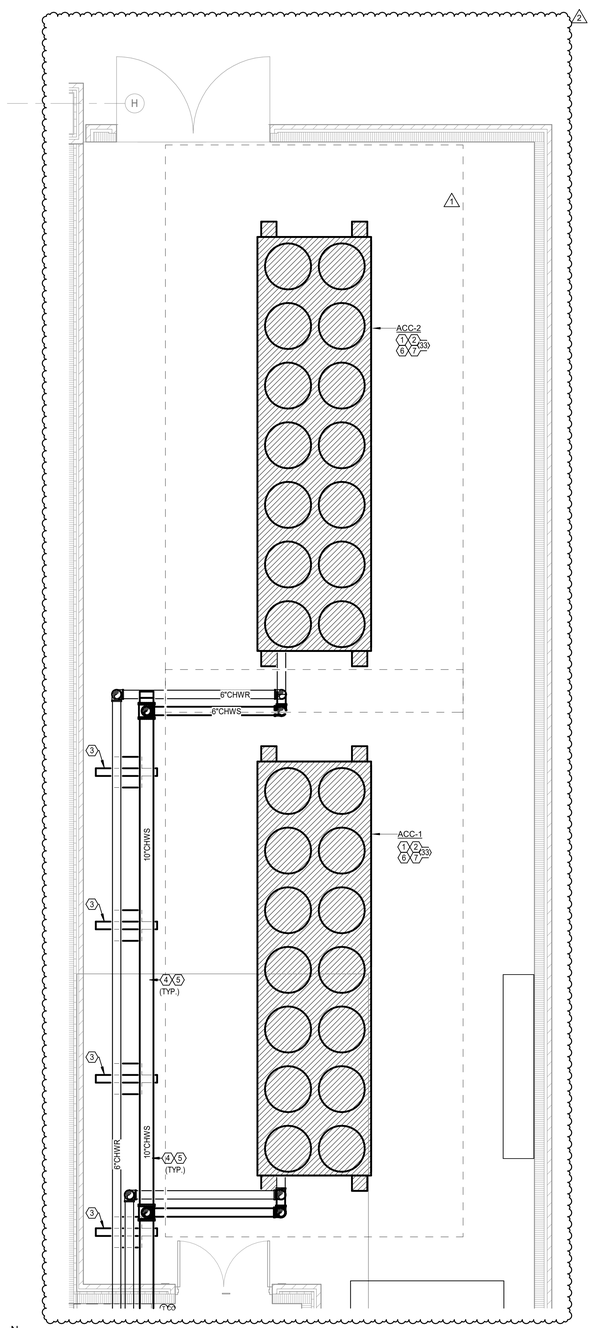
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4	COORDINATE IN THE FIELD THE EXACT LOCATION OF ALL CEILING MOUNTED GRILLES AND DIFFUSERS WITH LIGHT FIXTURES AND (ARCHITECT'S) REFLECTED CEILING PLAN.
5	THERMOSTATS SHALL BE MOUNTED AT +48" AFF (ABOVE FINISHED FLOOR), UNLESS OTHERWISE NOTED.

MECHANICAL KEYED NOTES

1	VERIFY SERVICE CLEARANCE WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
2	PROVIDE TRASH SCREEN FOR CHILLER.
3	PROVIDE PIPE STAND AT LOCATION SHOWN. RE: 9/M-5.02 FOR DETAIL.
4	PAINT AND INSULATE OUTDOOR PIPING PER SPECIFICATIONS.
5	BOTTOM OF ALL PIPING IN THE CHILLER YARD TO BE MINIMUM 11'-6" ABOVE GRADE.
6	PROVIDE 12W"X24H" CONCRETE RUNNER TO SPAN LENGTH OF AIR-COOLED CHILLERS. TYPICAL (2) PER CHILLER. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
7	REFER TO M4.01 FOR MORE INFORMATION.
8	PROVIDE REDUNDANT VFD IN CASE #1 VFD FAILS.
9	CONDENSING UNIT SHALL BE MOUNTED ON ROOF SUPPORT. RE:8/M5.03 FOR DETAIL.
10	PROVIDE PIPE SUPPORT. RE:M5.02 FOR DETAILS.
11	ROUTE REFRIGERANT PIPING FROM CONDENSING UNIT TO ASSOCIATED INDOOR UNIT THROUGH ROOF. PIPING SHOWN SINGLE LINE FOR CLARITY. PROVIDE PIPE SUPPORT AND INSTALL PER MANUFACTURER.RE: M5.03 FOR DETAILS.
12	PROVIDE NEW CARBON MONOXIDE MONITOR SYSTEM, REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION. COORDINATE FINAL LOCATION WITH OWNER PRIOR TO INSTALLATION.
13	PROVIDE 4" CONCRETE HOUSEKEEPING PAD.
14	RE:1/M5.02 FOR CHEMICAL FEEDER SUPPORT DETAIL.
15	RE:2/M5.02 FOR AIR DIRT SEPARATOR SUPPORT DETAIL.
16	PROVIDE END SUCTION PUMP. RE:3/M5.02 FOR DETAIL.
17	INSTALL BOILER CIRCULATOR PUMP PROVIDED BY BOILER MANUFACTURER.
18	PROVIDE DOUBLE WALL BOILER FLUE UP THROUGH ROOF TO STAINLESS STEEL STACK CAP. PROVIDE CAT IV (SCHEBLER E-VENT) STACK SYSTEM CONSISTING OF AL-294C INNER LINER RATED FOR POSITIVE PRESSURE AND FLUE CONDENSATION. VERIFY FLUE DUCT SIZE WITH MANUFACTURER. RE: 7/M5.02
19	PROVIDE COMBUSTION AIR INTAKE. ROUTE THROUGH ROOF. VERIFY AIR INTAKE DUCT SIZE WITH MANUFACTURER. RE: 8/M5.02 FOR DETAIL.
20	UNIT SHALL ENERGIZE WHEN TEMPERATURE DROPS BELOW 40°F.
21	PROVIDE ISOLATION VALVE AT LOCATION SHOWN.
22	UNIT SHALL BE SUSPENDED WITH UNISTRUT RUNNERS AND PLATFORM SECURED TO STRUCTURE WITH THREADED HANGER RODS. INSTALL PER MANUFACTURER. COORDINATE WITH ALL OTHER TRADES NOT TO OBSTRUCT.
23	ROUTE CONDENSATE DRAIN PIPE DOWN THROUGH ROOF ABOVE 1ST FLOOR CEILING, SIZE PER MANUFACTURER. TO FLOOR SINK IN THE BOILER ROOM. SLOPE PIPING TO ALLOW FOR GRAVITY DRAINAGE. INSTALL TRAP AS RECOMMENDED BY MANUFACTURER. REFER TO PLUMBING PLANS FOR EXACT LOCATION OF FLOOR SINK.
24	VERIFY SERVICE CLEARANCE FOR AIR FILTER, FAN SHAFT AND COIL REMOVAL WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
25	PROVIDE SHEET METAL PLENUM. FULL SIZE OF RETURN AIR OPENING; LENGTH AS REQUIRED FOR ALL DUCT CONNECTIONS SHOWN.
26	PROVIDE DUCT MOUNTED SMOKE DETECTOR. REFER TO LOCAL CODES FOR MORE INFORMATION.
27	ROOF MOUNTED EQUIPMENT SHALL BE MOUNTED ON ROOF CURB. RE: DETAIL 7/M5.03.TRANSITION DUCTWORK AS REQUIRED TO CONNECT TO EQUIPMENT ON ROOF.
28	ROUTE FULL SIZE CHILLED AND HOT WATER PIPING DOWN TO FIRST FLOOR ABOVE CEILING TO CONNECT TO MAIN CHILLED AND HOT WATER PIPING. RE: M5.02 FOR DETAILS AND 1/M2.08D FOR CONTINUATION.
29	PROVIDE MODEL PHP-D DUCT SUPPORT FOR HIGH WIND APPLICATION. PROVIDE THREADED RODS AND ADHESIVE ANCHORS, WITH ROD EMBEDDED AT LEAST 1-3/4 INCHES (44 MM) INTO CONCRETE. REFER TO MANUFACTURER INSTALLATION INSTRUCTION FOR ADDITIONAL INFORMATION.
30	TRANSITION DUCTWORK AS REQUIRED TO CONNECT TO EQUIPMENT ON ROOF.
31	PROVIDE PRESSURE REDUCING VALVE ON CHILLED WATER RETURN PIPE SIDE.
32	ROUTE CONDENSATE DRAIN PIPE, SIZE AS INDICATED, TO FLOOR SINK. SLOPE PIPING TO ALLOW FOR GRAVITY DRAINAGE.INSTALL TRAP AS RECOMMENDED BY MANUFACTURER. REFER TO PLUMBING PLANS FOR EXACT LOCATION OF FLOOR SINK.
33	REFER TO PIPING DIAGRAM SHEET (M4.01) FOR PIPE SIZES.
34	RE: 1/M2.08D FOR CONTINUATION.
35	PROVIDE PHP MODEL PP-10 ON ROOF WITH ROLLER AND FULLY ADJUSTABLE HEIGHT THROUGHOUT PIPE RUN EVERY 6'-0" ON CENTER AND EVERY CHANGE IN DIRECTION. RE:M5.02 FOR DETAILS.
36	INSTALL PER MANUFACTURER'S GUIDELINES.
37	INSULATE PER SPECIFICATION.
38	RE: 3/M3.01 FOR CONTINUATION.
39	ROUTE CONDENSATE DRAIN PIPE DOWN THROUGH ROOF ABOVE 1ST FLOOR CEILING, SIZE PER MANUFACTURER. TO FLOOR SINK AT THE ICE MACHINE. SLOPE PIPING TO ALLOW FOR GRAVITY DRAINAGE. INSTALL TRAP AS RECOMMENDED BY MANUFACTURER. REFER TO PLUMBING PLANS FOR EXACT LOCATION OF FLOOR SINK.



2 ENLARGED MECHANICAL ROOF PLAN - AREA D
Scale: 1/4" = 1'-0"



1 MECHANICAL PLAN - MECHANICAL YARD - LEVEL ONE
Scale: 1/4" = 1'-0"

3 MECHANICAL PLAN - BOILER / PUMP ROOM - LEVEL ONE
Scale: 1/4" = 1'-0"

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Salas O'Brien Project Number: 2550-01455-00

GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

STATE OF TEXAS
BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
1 Addendum 1	10/08/2025
2 Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
MECHANICAL ENLARGED PLAN

SHEET NO.
M3.01

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SYMBOL LEGEND	
	POINT OF CONNECTION TO EXISTING
	ITEM TO REMAIN
	ITEM TO BE REMOVED

MECHANICAL GENERAL NOTES

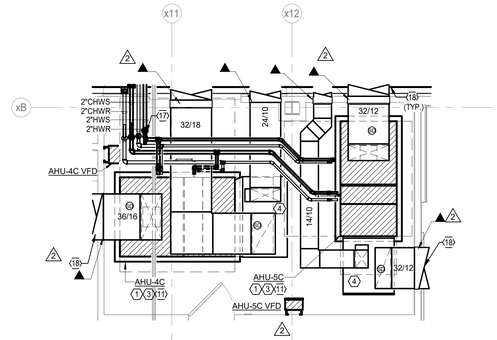
1	THESE CONSTRUCTION DRAWINGS ARE DIAGRAMMATIC, AND DO NOT NECESSARILY REFLECT ACTUAL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND COORDINATE PLACEMENT OF ALL EQUIPMENT AND ROUTING OF ALL PIPING AND/OR DUCT SYSTEMS.
2	ALL DUCT SIZES ARE INSIDE CLEAR, INCREASE ACCORDINGLY WHERE INTERIOR LINER IS SHOWN OR SPECIFIED.
3	MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL POWER REQUIREMENTS.
4	COORDINATE IN THE FIELD THE EXACT LOCATION OF ALL CEILING MOUNTED GRILLES AND DIFFUSERS WITH LIGHT FIXTURES AND (ARCHITECT'S) REFLECTED CEILING PLAN.
5	THERMOSTATS SHALL BE MOUNTED AT +48" AFF (ABOVE FINISHED FLOOR), UNLESS OTHERWISE NOTED.

MECHANICAL DEMOLITION GENERAL NOTES

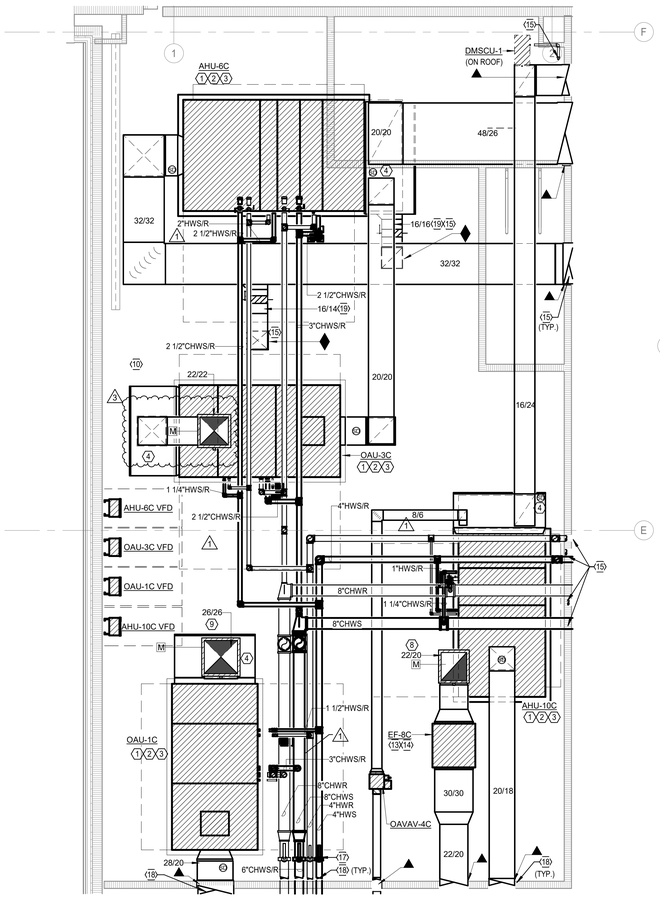
1	THESE CONSTRUCTION DRAWINGS ARE DIAGRAMMATIC, AND DO NOT NECESSARILY REFLECT ACTUAL DIMENSIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD-VERIFY ALL DIMENSIONS AND COORDINATE PLACEMENT OF ALL EQUIPMENT AND ROUTING OF ALL PIPING AND/OR DUCT SYSTEMS.
2	ALL MECHANICAL SYSTEMS SHOWN ON THIS PLAN ARE FROM EXISTING DRAWINGS AND PRELIMINARY FIELD WORK. CONTRACTOR IS REPONSIBLE FOR FIELD VERIFYING ALL LOCATIONS AND SIZES OF MECHANICAL SYSTEMS PRIOR TO THE START OF WORK.
3	OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL HVAC EQUIPMENT BEING REMOVED FROM THIS PROJECT. THIS INCLUDES BUT NOT LIMITED TO EVAPORATIVE FLUID COOLER, PIPE STANDS, VALVES, AND BOILERS.

MECHANICAL KEYED NOTES

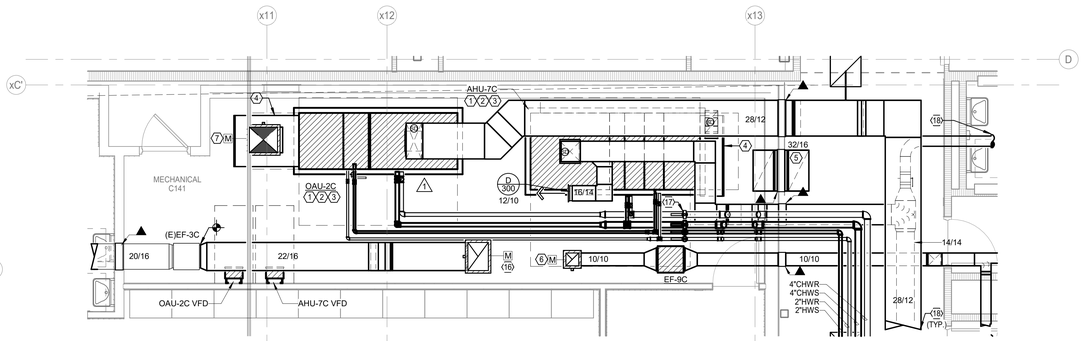
1	VERIFY SERVICE CLEARANCE FOR AIR FILTER, FAN SHAFT AND COIL REMOVAL WITH EQUIPMENT MANUFACTURER. PROVIDE REQUIRED CLEARANCES FOR PROPER MAINTENANCE AND OPERATION. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
2	PROVIDE 4" THICK CONCRETE HOUSEKEEPING PAD.
3	ROUTE FULL SIZE CONDENSATE DRAIN PIPE TO FLOOR DRAIN. REFER TO PLUMBING DRAWINGS FOR EXACT LOCATION OF FLOOR DRAIN. INSTALL TRAP AS RECOMMENDED BY MANUFACTURER.
4	PROVIDE SHEET METAL PLENUM, FULL SIZE OF UNIT AIR OPENINGS; LENGTH AS REQUIRED FOR ALL DUCT CONNECTIONS AS SHOWN.
5	INTERNALLY LINED RETURN AIR BELOW.
6	ROUTE 10/10 EXHAUST AIR DUCTWORK UP TO RELIEF HOOD ABOVE ON ROOF. TRANSITION EXHAUST DUCT TO CONNECT RELIEF HOOD OPENING.
7	ROUTE 22/16 OUTSIDE AIR DUCTWORK DOWN FROM OUTSIDE AIR INTAKE ABOVE ON ROOF.
8	ROUTE 22/20 EXHAUST AIR DUCTWORK UP TO RELIEF HOOD ON ROOF ABOVE. TRANSITION EXHAUST DUCT TO CONNECT RELIEF HOOD OPENING.
9	ROUTE 26/26 OUTSIDE AIR DUCTWORK DOWN FROM OUTSIDE AIR INTAKE ABOVE ON ROOF.
10	ROUTE 22/22 OUTSIDE AIR DUCTWORK DOWN FROM OUTSIDE AIR INTAKE ABOVE ON ROOF.
11	AHU TO USE EXISTING HOUSEKEEPING PAD.
12	NOT USED.
13	VERIFY SERVICE CLEARANCE WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
14	UNIT SHALL BE SUSPENDED WITH UNISTRUT RUNNERS AND PLATFORM SECURED TO STRUCTURE WITH THREADED HANGER RODS. INSTALL PER MANUFACTURER. COORDINATE WITH ALL OTHER TRADES NOT TO OBSTRUCT.
15	RE: 1/M2.04B FOR CONTINUATION.
16	ROUTE 22/16 EXHAUST AIR DUCTWORK UP TO RELIEF HOOD ABOVE ON ROOF. TRANSITION EXHAUST DUCT TO CONNECT RELIEF HOOD OPENING.
17	PROVIDE ISOLATION VALVE AT LOCATION SHOWN.
18	RE: 1/M2.03A FOR CONTINUATION.
19	ROUTE DUCTWORK DOWN TO FLOOR BELOW. PROVIDE WITH FIRE DAMPER.



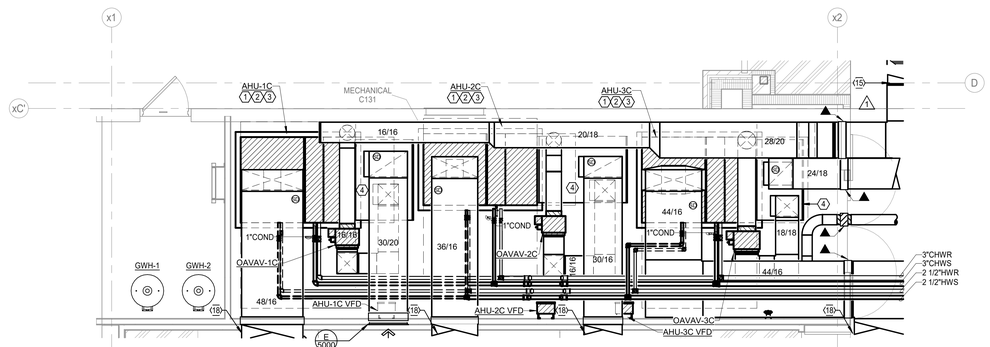
N 4 **MECHANICAL PLAN - MECHANICAL ROOM - C108 - LEVEL ONE**
Scale: 1/4" = 1'-0"



N 3 **MECHANICAL PLAN - MEZZANINE - M2.04B**
Scale: 1/4" = 1'-0"



N 2 **MECHANICAL PLAN - MECHANICAL ROOM - C141 - LEVEL ONE**
Scale: 1/4" = 1'-0"



N 1 **MECHANICAL PLAN - MECHANICAL ROOM - C131 - LEVEL ONE**
Scale: 1/4" = 1'-0"

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1	Addendum 1	10/08/2025
2	Addendum 3	10/17/2025
3	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
MECHANICAL ENLARGED PLAN

SHEET NO.
M3.02

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DUCTLESS MINI-SPLIT - INDOOR UNIT

MARK	SUPPLY AIR CFM	OUTSIDE AIR CFM	FAN: EXT.STATIC PRESSURE (IN. W.C.)	FAN: POWER CHARAC. V	P	F	AIR TEMPERATURE (°F): ENTERING DRY BULB	ENTERING WET BULB	COOLING: TOTAL CAPACITY (BTUH)	COOLING: MIN. SENS. CAPACITY (BTUH)	COOLING: MINIMUM EER/ SEER	HEATING: ENTERING AIR TEMP.(°F)	HEATING: MINIMUM CAPACITY (BTUH)	LOCATION	REMARKS
DMS-1	850	-	0.25	208	1	60	78.0	65.0	36,000	13,200	12.0/20.3	-	-	AV/IT C151	1-7
DMS-2	375	-	0.25	208	1	60	78.0	65.0	18,000	4,200	11.0/12.5	-	-	RF C156	1-7
DMS-3	700	-	0.25	208	1	60	78.0	65.0	24,000	17,700	11.0/19.5	-	-	FIRE PUMP C160	1-7

GENERAL NOTES:
1. EXTERNAL STATIC PRESSURE INCLUDES LOSSES DUE TO DUCTWORK, AIR DEVICES, DAMPERS, AND DUCT MOUNTED HOT WATER COILS WHERE APPLICABLE. DIRTY FILTER AND UNIT CASING MUST BE ADDED TO EXTERNAL STATIC PRESSURE TO OBTAIN TOTAL PRESSURE LOSS. INCREASE HORSEPOWER AS REQUIRED TO MEET YOUR TOTAL PRESSURE LOSS. COORDINATE WITH ELECTRICIAN.
2. MAINTAIN MINIMUM CLEARANCE FOR COIL PULL AS RECOMMENDED BY UNIT MANUFACTURER. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.

REMARKS:
1. UNIT TO BE INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. CONTROLLED BY PROGRAMMABLE WIRED THERMOSTAT.
3. REFRIGERANT LINES TO BE SIZED PER MANUFACTURER'S REQUIREMENTS.
4. INDOOR UNIT IS POWERED FROM OUTDOOR UNIT.
5. PROVIDE HIGH WALL UNIT.
6. PROVIDE WITH LITTLE GIANT CONDENSATE PUMP MODEL 554652 VCMA-20ULS-C-PRO, 1/30 HP, 115V/1PH/60HZ. INTALL PUMP OUTSIDE THE UNIT.
7. PROVIDE A WATER LEVEL SENSING DEVICE IN THE PRIMARY DRAIN PAN. THIS DEVICE SHALL SHUT OFF THE APPLIANCE IN THE EVENT THE PRIMARY DRAIN LINE BECOMES RESTRICTED.

DUCTLESS MINI-SPLIT - COOLING ONLY - OUTDOOR UNIT

MARK	MIN. TOTAL CAPACITY (BTUH)	OUTDOOR AIR TEMP (°F)	MINIMUM EER/ SEER	POWER CHARAC. V	PH	F	RELATED UNIT MARK	MCA	MOCP	REMARKS
DMSCU-1	36,000	98	12.0/20.3	208	1	60	DMS-1	34	56	1-7
DMSCU-2	18,000	98	11.0/12.5	208	1	60	DMS-2	16	27	1-7
DMSCU-3	24,000	98	12.0/20.3	208	1	60	DMS-3	34	56	1-7

GENERAL NOTES:
1. MINIMUM RECOMMENDED CLEARANCE AROUND ROOFTOP UNIT IS 12 INCHES ON NON-SERVICE SIDES AND 30 INCHES ON SERVICE SIDES. MAINTAIN MINIMUM CLEARANCE FOR CONDENSER AIR FLOW AS RECOMMENDED BY UNIT MANUFACTURER. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.

REMARKS:
1. PROVIDE LOW AMBIENT CONTROL DOWN TO 20°F.
2. UNIT TO BE INSTALLED PER MANUFACTURER.
3. REFRIGERANT LINES TO BE SIZED PER MANUFACTURER'S REQUIREMENTS.
4. PROVIDE WITH DISCONNECT.
5. PROVIDE COOLING ONLY UNIT
6. PROVIDE EPOXY COATED COILS.
7. PROVIDE UNIT WITH ICM SURGE PROTECTION DEVICE. COORDINATE WITH ELECTRICAL FOR INSTALLATION.

PACKAGED AIR COOLED CHILLER - STANDARD EFFICIENCY- SCREW

MARK	ACTUAL CAPACITY (TONS)	LEAVING WATER TEMP.(°F)	GPM	PRESSURE DROP (FT.)	AMBIENT AIR TEMP. (°F)	ELECTRICAL CHARAC. V	P	F	MCA	MOCP	REMARKS
ACC-1	200	42	402	20.0	98 °F	480	3	60	455	600	1-7
ACC-2	200	42	402	20.0	98 °F	480	3	60	455	600	1-7

GENERAL NOTES:
1. MAXIMUM FOULING FACTOR FOR THE EVAPORATOR IS 0.0001
2. MAINTAIN MINIMUM CLEARANCES REQUIRED BY CHILLER MANUFACTURER FOR PROPER AIRFLOW TO FANS AND UNIT. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON EQUIPMENT FOR SERVICE, MAINTENANCE AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCES AS REQUIRED BY NEC.
3. CHILLER SHALL MEET OR EXCEED BOTH ABOVE SCHEDULED FULL-LOAD AND PART-LOAD EFFICIENCIES INDICATED IN ICCC 2021. COMPLY BY PATH A OR BY PATH B AS REQUIRED BY IECC 2021.

REMARKS:
1. PROVIDE WITH LOW AMBIENT HEAD PRESSURE CONTROL.
2. PROVIDE WITH INTEGRAL MAIN ELECTRICAL DISCONNECT SWITCH.
3. PROVIDE WITH INSULATION ON ALL SUCTION LINES.
4. PROVIDE CHILLER WITH A MINIMUM FULL LOAD EFFICIENCY OF 9.7 EER AND A MINIMUM IPLV OF 16.1.
5. PROVIDE WITH POLYMER CONDENSER FANS AND COMPRESSOR BLANKETS.
6. PROVIE CHILLER RATED FOR 65kA SCCR.
7. PROVIDE EPOXY COATED COILS.

PACKAGED AIR COOLED CHILLER - HIGH EFFICIENCY- SCREW

MARK	ACTUAL CAPACITY (TONS)	LEAVING WATER TEMP.(°F)	GPM	PRESSURE DROP (FT.)	AMBIENT AIR TEMP. (°F)	ELECTRICAL CHARAC. V	P	F	MCA	MOCP	REMARKS
ACC-1	200	42	402	20.0	98 °F	460	3	3	455	600	1-7
ACC-2	200	42	402	20.0	98 °F	460	3	3	455	600	1-7

GENERAL NOTES:
1. MAXIMUM FOULING FACTOR FOR THE EVAPORATOR IS 0.0001
2. MAINTAIN MINIMUM CLEARANCES REQUIRED BY CHILLER MANUFACTURER FOR PROPER AIRFLOW TO FANS AND UNIT. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON EQUIPMENT FOR SERVICE, MAINTENANCE AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCES AS REQUIRED BY NEC.
3. CHILLER SHALL MEET OR EXCEED BOTH ABOVE SCHEDULED FULL-LOAD AND PART-LOAD EFFICIENCIES INDICATED IN IECC 2021. COMPLY BY PATH A OR BY PATH B AS REQUIRED BY IECC 2021.

REMARKS:
1. PROVIDE WITH LOW AMBIENT HEAD PRESSURE CONTROL.
2. PROVIDE WITH INTEGRAL MAIN ELECTRICAL DISCONNECT SWITCH.
3. PROVIDE WITH INSULATION ON ALL SUCTION LINES.
4. PROVIDE CHILLER WITH A MINIMUM FULL LOAD EFFICIENCY OF 10.600 EER AND A MINIMUM IPLV OF 19.2.
5. PROVIDE WITH POLYMER CONDENSER FANS AND COMPRESSOR BLANKETS.
6. PROVIE CHILLER RATED FOR 65kA SCCR.
7. PROVIDE EPOXY COATED COILS.

RELIEF VENT & O.A. INTAKE

MARK	CFM	MAX. S.P. (IN.W.C.)	MIN. THROAT AREA	MODEL	SERVES	REMARKS
OAI-1C	4500	0.05 in-wg	7.5 SF	GI	OAU-1C	1,2,3,4,5
OAI-2C	2700	0.04 in-wg	5.0 SF	GI	OAU-2C	1,2,3,4,5
OAI-3C	3000	0.05 in-wg	5.0 SF	GI	OAU-3C	1,2,3,4,5
RV-1C	2000	0.05 in-wg	4.0 SF	GR	EF-8C	1,2,3,4,5
RV-2C	2510	0.08 in-wg	2.7 SF	GR	EF-1C	1,2,3,4,5
RV-3C	390	0.01 in-wg	1.0 SF	GR	(E)EF-2C	1,2,3,4,5
RV-4C	1535	0.03 in-wg	2.7 SF	GR	(E)EF-3C	1,2,3,4,5
RV-5C	340	0.01 in-wg	1.0 SF	GR	-	1,2,3,4,5
RV-6C	2400	0.01 in-wg	4.5 SF	GR	-	1,2,3,4,5

REMARKS:
1. PROVIDE WITH ROOF CURB.
2. PROVIDE WITH BIRD SCREEN.
3. PROVIDE WITH MOTORIZED DAMPER.
4. HOOD SHALL BE RATED FOR 150MPH WIND LOADS.
5. PROVIDE EPOXY COATING.
6. PROVIDE WITH BAROMETRIC RELIEF DAMPER.

BOILER - FORCED AIR - INDOOR

MARK	TYPE	MINIMUM GAS INPUT (MBH)	MINIMUM HEAT OUTPUT (MBH)	PRESSURE DROP (FT.H20)	GPM	FLUE SIZE	ELECTRICAL CHARAC. V	P	F	REMARKS
B-1	CONDENSING	2500.0	2400.0	10.0	160.0	10	208	3	60	1,2

GENERAL NOTES:
1. PROVIDE 8 OUNCE GAS PRESSURE TO BOILER.
2. MAINTAIN MINIMUM CLEARANCE AROUND A BOILER OF 24 INCHES PER TEXAS BOILER LAW. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS FOR SERVICE, MAINTENANCE AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCES AS REQUIRED BY NEC.

REMARKS:
1. PROVIDE WITH CIRCULATING PUMP, SIZED BY BOILER MANUFACTURER TO ENSURE CONSTANT FLOW THROUGH BOILER. PUMP TO BE SHIPPED LOOSE. POWER BY ELECTRICAL CONTRACTOR BUT CONTROLLED BY BOILER. CONTRACTOR TO WIRE FROM BOILER PUMP CONTROL CIRCUIT TO PUMP STARTER RELAY.
2. PROVIDE SEALED COMBUSTION BOILER.

PUMP

TAG	SERVICE	TYPE	GPM	HEAD (FT.)	MOTOR HORSE POWER	MAX. RPM	ELECTRICAL CHARAC. V	P	F	MANUFACTURER	MODEL NUMBER	REMARKS
HWP-1	HOT WATER	HORIZONTAL END SUCTION	250	80.00	15	1800	480	3	60	ARMSTRONG	4030	1,2,3,4
HWP-2	HOT WATER	INLINE CIRCULATOR	160	25.00	2	1800	480	3	60	ARMSTRONG	4030	4,5
PCHWP-1	CHILLED WATER	HORIZONTAL END SUCTION	480	60.00	15	1800	480	3	60	ARMSTRONG	4030	1,2,3,4
PCHWP-2	CHILLED WATER	HORIZONTAL END SUCTION	480	60.00	15	1800	480	3	60	ARMSTRONG	4030	1,2,3,4
SCHWP-1	CHILLED WATER	HORIZONTAL END SUCTION	402	65.00	15	1800	480	3	60	ARMSTRONG	4030	1,2,3,4
SCHWP-2	CHILLED WATER	HORIZONTAL END SUCTION	402	65.00	15	1800	480	3	60	ARMSTRONG	4030	1,2,3,4

GENERAL NOTES:
1. PUMP IS TO HAVE A NON-OVERLOADING MOTOR.
2. MINIMUM RECOMMENDED CLEARANCE AROUND A PUMP IS 24 INCHES. MAINTAIN MINIMUM CLEARANCES AS REQUIRED FOR SERVICE, MAINTENANCE, AND INSPECTION.

REMARKS:
1. PROVIDE WITH VARIABLE FREQUENCY DRIVE.
2. PROVIDE SUCTION DIFFUSER AT PUMP INLET.
3. PROVIDE WITH BACK PULL OUT.
4. PROVIDE WITH GAUGE TAPPINGS.
5. PUMP SHALL BE SELECTED BY BOILER MANUFACTURER, WITH DISCONNECT AND STARTER BY ELECTRICAL CONTRACTOR AND CONTROLLED BY BOILER.

GRILLE

MARK	SERVICE	TYPE	DAMPER	CONSTRUCTION MATERIAL	FINISH COLOR	MANUFACTURER	MODEL NUMBER	DESCRIPTION
B	SUPPLY AIR	DIFFUSER	-	ALUMINUM	WHITE	TITUS	OMNI	EXPOSED T-BAR CEILING FRAME STYLE WITH A 24"X24" FACE. PERFORATED.
C11	RETURN AIR	DIFFUSER	-	ALUMINUM	WHITE	TITUS	PAR	EXPOSED T-BAR CEILING FRAME STYLE WITH A 24"X24" FACE. PERFORATED.
D	SUPPLY AIR	GRILLE	-	ALUMINUM	WHITE	TITUS	300RL	DOUBLE DEFLECTION SIDEWALL GRILLE WITH HORIZONTAL FRONT BARS. SURFACE MOUNTED (1)
E	RETURN AIR	GRILLE	-	ALUMINUM	WHITE	TITUS	350 RL	DOUBLE DEFLECTION SIDEWALL GRILLE WITH HORIZONTAL FRONT BARS. SURFACE MOUNTED (1)
F	EXHAUST AIR	DIFFUSER	-	ALUMINUM	WHITE	TITUS	50F	EXPOSED T-BAR CEILING FRAME STYLE WITH A 24"X24" OR 12"X12" FACE. PERFORATED FACE.
G	EXHAUST AIR	DIFFUSER	-	ALUMINUM	WHITE	TITUS	350RL	DOUBLE DEFLECTION SIDEWALL GRILLE WITH HORIZONTAL FRONT BARS. SURFACE MOUNTED (1)
H	EXHAUST AIR	GRILLE	-	ALUMINUM	WHITE	TITUS	50F	SURFACE MOUNT CEILING FRAME STYLE WITH 18"X18" OR 12"X12" FACE. PERFERATED FACE.
S	SUPPLY AIR	SLOT	-	ALUMINUM	BLACK	TITUS	FL-20-JT	4' LONG FLOWBAR, JETTHROW WITH TITUS PLENUM, 1 SLOT 2" WIDTH AND 12" INLET. PROVIDE WITH BORDER 66 OR 11 FINISH WITH EXPOSED FLANGE.
T	RETURN AIR	SLOT	-	ALUMINUM	BLACK	TITUS	FL-20	SURFACE MOUNT PLENUM SLOT DIFFUSER WITH 1 SLOT 2" WIDTH. PROVIDE WITH BORDER 66 OR 11 FINISH WITH EXPOSED FLANGE.
W	SUPPLY AIR	SLOT	-	ALUMINUM	BLACK	TITUS	FL-20-HT	4' LONG FLOWBAR, HIGH THROW WITH TITUSPLENUM, 1 SLOT 2" WIDTH AND 12" INLET. PROVIDE WITH BORDER 66 OR 11 FINISH WITH EXPOSED FLANGE
XA	SUPPLY AIR	DIFFUSER / GRILLE	-	-	-	-	-	EXISTING AIR DEVICE SHALL REMAIN. BALANCE TO INDICATED CFM.
XB	RETURN AIR	DIFFUSER	-	-	-	-	-	EXISTING AIR DEVICE SHALL REMAIN. BALANCE TO INDICATED CFM.
XC	EXHAUST AIR	DIFFUSER / GRILLE	-	-	-	-	-	EXISTING AIR DEVICE SHALL REMAIN. BALANCE TO INDICATED CFM.

GENERAL NOTES:
1. DAMPERS NOTED AS U.L. SHALLBE A 'U.L.' CLASSIFIED CEILING RADIATION DAMPER WITH THERMAL BLANKET.
2. COORDINATE FINAL AIR DEVICE LOCATION AND FINISH COLOR WITH ARCHITECT.

REMARKS:
1. N/A

CHILLED & HOT WATER FAN/COIL UNIT

MARK	FAN: SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT.STATIC PRESSURE (IN. W.C.)	HORSE POWER	CURRENT V	P	F	COOLING: AIR TEMPERATURE (°F): ENTERING DRY BULB	ENTERING WET BULB	MIN. TOTAL CAPACITY (BTUH)	MIN. SENSIBLE CAPACITY (BTUH)	WATER: ENTERING TEMP(°F)	GPM	PRESSURE DROP (FT.)	PIPE SIZE TO COIL (IN.): CHILLED WATER	REMARKS
CHWFCU-1	1,200	0	1.30	1.5	208	3	60	75.0	62.6	34,560	28,515	45	6	15.0	1"	1-7

GENERAL NOTES:
1. EXTERNAL STATIC PRESSURE INCLUDES LOSSES DUE TO DUCTWORK, AIR DEVICES, DAMPERS, AND DUCT MOUNTED HOT WATER COILS WHERE APPLICABLE. DIRTY FILTER AND UNIT CASING MUST BE ADDED TO EXTERNAL STATIC PRESSURE TO OBTAIN TOTAL PRESSURE LOSS. INCREASE HORSEPOWER AS REQUIRED TO MEET YOUR TOTAL PRESSURE LOSS. COORDINATE WITH ELECTRICIAN.
2. MAINTAIN MINIMUM CLEARANCE FOR COIL PULL AS RECOMMENDED BY UNIT MANUFACTURER. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.

REMARKS:
1. VELOCITY NOT TO EXCEED 500 FPM ON COOLING COIL.
2. PROVIDE HORIZONTAL UNIT.
3. PROVIDE WITH LOW VELOCITY ANGLED FILTER SECTION.
4. PROVIDE WITH FLOAT SWITCH AUTOMATIC SHUT OFF.
5. SUSPEND UNIT WITH FOUR THREADED HANGER RODS ATTACHED TO TWO UNISTRUT RUNNERS SECURED TO STRUCTURE. PROVIDE SPRING ISOLATION REFER TO MANUFACTURER FOR MORE DETAILS.
6. PROVIDE 2-WAY COOLING CONTROL VALVES.

VARIABLE VOLUME TERMINAL BOX

MARK	MAXIMUM CFM	MINIMUM CFM	INLET DIAMETER SIZE (IN.)	HOT WATER COIL: GPM	CONNECTING PIPE SIZE	REMARKS
OAVAV-1C	1,500	360	12	-	-	-
OAVAV-2C	900	0	10	-	-	-
OAVAV-3C	1,925	0	14	-	-	-
OAVAV-4C	175	0	6	-	-	-

GENERAL NOTES:
1. MAXIMUM STATIC PRESSURE DROP OF AIR THROUGH THE TERMINAL BOX SHALL BE 0.2" ESP.
2. MAXIMUM VELOCITY THROUGH DUCT INLET SHALL BE 2,000 FPM.
3. MAXIMUM STATIC PRESSURE DROP THROUGH HEATER COIL SHALL BE 0.25" ESP.
4. MAXIMUM STATIC PRESSURE DROP OF WATER THROUGH HEATER COIL SHALL BE 10' W.G.
5. BTUH REQUIRED FOR HOT WATER HEATING IS HEATING GPM MULTIPLIED BY 10,000.
6. SUSPEND UNIT WITH FOUR THREADED HANGER RODS ATTACHED TO TWO UNISTRUT RUNNERS SECURED TO STRUCTURE. REFER TO MANUFACTURER FOR MORE DETAILS.
7. UNITS TO BE MOUNTED BETWEEN BEAMS AND 18" MAXIMUM ABOVE CEILING. AVOID MOUNTING OVER LIGHTS WHEREVER POSSIBLE
8. REFER TO PIPING AT HOT WATER COIL DETAILS. PROVIDE WITH 2-WAY CONTROL VALVE UNLESS OTHERWISE SCHEDULED.

REMARKS:
1. N/A

EXISTING FAN SCHEDULE

TAG	LOCATION	CFM	EXT. STATIC PRESSURE (IN.W.C.)	MAX RPM	HORSE POWER	ELECTRICAL CHARAC. V	P	F	LOCALLY SWITCHED	INTERLOCK WITH	FAN TYPE	DRIVE TYPE	MANUFACTURER	REMARKS
(E)EF-2C	LOCKERS/LAUNDRY	660	0.250	1300	0.25	120	1	60	-	OAU-1C	INLINE	BELT	GREENHECK	1,2
(E)EF-3C	TOILET/SHOWERS LAUNDRY	1535	0.375	889	0.5	120	1	60	-	OAU-1C	INLINE	BELT	GREENHECK	1,2
(E)EF-4C	ELECT.	350	0.250	1870	0.25	120	1	60	-	OAU-2C	INLINE	BELT	GREENHECK	1,2
(E)EF-5C	SHOWER	100	0.250	1363	0.25	120	1	60	-	OAU-2C	INLINE	BELT	GREENHECK	1,2
(E)EF-6C	TOILET	770	0.375	1142	0.33	120	1	60	-	OAU-2C	INLINE	BELT	GREENHECK	1,2
(E)EF-7C	LOCKERS/ JAN	580	0.375	1149	0.25	120	1	60	-	OAU-1C	INLINE	BELT	GREENHECK	1,2

GENERAL NOTES:
1. INTERLOCKS ARE SHOWN FOR ASSOCIATION PURPOSES ONLY SOFTWARE INTERLOCKS ARE ACCEPPTABLE..

REMARKS:
1. EXISTING UNITS SHALL BE MODIFIED TO SCHEDULED PERFORMANCE AS NOTED ABOVE.
2. EXISTING EXHAUST FANS EQUIPPED WITH MOTORIZED DAMPER SHALL HAVE THE MOTORIZED DAMPER REPLACED.

UNIT HEATER - ELECTRIC

MARK	MINIMUM CAPACITY (BTUH)	KW	NUMBER OF STAGES	ELECTRICAL CHARAC. V	P	F	CFM	MANUFACTURER	SERIES	REMARKS
EUH-1	11,200	3	1	208	3	60	400	MERKEL	UHE	1,2
EUH-2	11,200	3	1	208	3	60	400	MERKEL	UHE	1,2
EUH-3	11,200	3	1	208	3	60	400	MERKEL	UHE	1,2

REMARKS:
1. PROVIDE WITH HARD WIRED WALL MOUNTED THERMOSTAT.
2. REFER TO MANUFACTURER MANUAL FOR ADDITIONAL INSTALLATION REQUIREMENTS.

AIR HANDLING UNIT - FIELD HOUSE

MARK	FAN: SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT. STATIC PRESSURE (IN. W.C)	HORSE POWER	POWER V	PH	F	COOLING: AIR TEMPERATURE (°F): ENTERING DRY BULB	ENTERING WET BULB	LEAVING DRY BULB	LEAVING WET BULB	COOLING CAPACITY (BTUH)	WATER: ENTERING TEMP (°F)	GPM	PRESSURE DROP (FT.)	HEATING: ENTERING AIR TEMPERATURE (°F)	MIN. HEATING CAPACITY	WATER: ENTERING TEMP. (°F)	GPM	PRESSURE DROP (FT.)	PIPE SIZE TO COIL (IN.): CHILLED WATER	HOT WATER	REMARKS
AHU-1C	5,000	1,500	2.00	8.0	480	3	60	75.0	62.6	53.0	52.5	145,400	45	24.2	15.0	65.0	135,000	130.0	13.6	10.0	2"	1 1/2"	1,3,4,5,7,8,10,11,12
AHU-2C	3,000	900	2.00	8.0	480	3	60	75.0	62.6	53.0	52.5	87,300	45	14.5	15.0	65.0	81,000	130.0	8.2	10.0	1 1/2"	1 1/4"	1,3,4,5,7,8,10,11,12
AHU-3C	5,505	1,925	2.00	8.0	480	3	60	75.0	62.6	53.0	52.5	160,100	45	26.7	15.0	65.0	148,635	130.0	15.0	10.0	2"	1 1/2"	1,3,4,5,7,8,10,11,12
AHU-4C	4,500	1,350	2.00	8.0	480	3	60	75.0	62.6	53.0	52.5	130,900	45	21.8	15.0	65.0	121,500	130.0	12.3	10.0	2"	1 1/4"	1,3,4,5,7,8,10,11,12
AHU-5C	2,610	750	2.00	4.0	480	3	60	75.0	62.6	53.0	52.5	75,900	45	12.6	15.0	65.0	70,470	130.0	7.1	10.0	1 1/4"	1 1/4"	1,3,4,5,7,8,10,11,12
OAU-1C	4,500	4,500	2.00	8.0	480	3	60	98.0	80.0	53.0	52.5	441,200	45	73.4	15.0	27.0	136,080	130.0	13.7	10.0	3"	1 1/2"	2,3,5,6,7,8,9
OAU-2C	2,700	2,700	2.00	4.0	480	3	60	98.0	80.0	53.0	52.5	264,000	45	43.9	15.0	27.0	81,648	130.0	8.2	10.0	2 1/2"	1 1/4"	3,5,6,7,8,9,10

GENERAL NOTES:
1. EXTERNAL STATIC PRESSURE INCLUDES LOSSES DUE TO DUCTWORK, AIR DEVICES, DAMPERS, AND DUCT MOUNTED HOT WATER COILS WHERE APPLICABLE. DIRTY FILTER AND UNIT CASING MUST BE ADDED TO EXTERNAL STATIC PRESSURE TO OBTAIN TOTAL PRESSURE LOSS. INCREASE HORSEPOWER AS REQUIRED TO MEET YOUR TOTAL PRESSURE LOSS. COORDINATE WITH ELECTRICIAN.
2. MAINTAIN MINIMUM CLEARANCE FOR COIL PULL AS RECOMMENDED BY UNIT MANUFACTURER. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.

REMARKS:
1. VELOCITY NOT TO EXCEED 500 FPM ON COOLING COIL.
2. PROVIDE HORIZONTAL UNIT.
3. PROVIDE CONSTANT VOLUME UNIT WITH VARIABLE FREQUENCY DRIVE..
4. PROVIDE TOP DISCHARGE.
5. PROVIDE TWO-WAY COOLING CONTROL VALVES.
6. PROVIDE THREE-WAY HEATING CONTROL VALVES.
7. PROVIDE HOT WATER COIL IN REHEAT POSITION.
8. PROVIDE UNIT WITH FLAT FILTER SECTION.
9. VELOCITY NOT TO EXCEED 450 FPM ON COOLING COIL.
10. PROVIDE VERTICAL UNIT.
11. PROVIDE TWO-WAY HEATING CONTROL VALVES.
12. PROVIDE SINGLE-ZONE VAV CONTROLS, COMPLETE WITH SUPPLY FAN VFD, DISCHARGE AIR TEMPERATURE SENSOR AND PROGRAMMABLE ZONE TEMPERATURE AND RELATIVE HUMDITY SENSOR.

ROOF MOUNTED WEATHERPROOF AIR HANDLING UNIT

MARK	FAN: SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT. STATIC PRESSURE (IN. W.C)	HORSE POWER	ELECTRICAL CHARAC. V	P	F	COOLING: AIR TEMPERATURE (°F): ENTERING DRY BULB	ENTERING WET BULB	LEAVING DRY BULB	LEAVING WET BULB	COOLING CAPACITY (BTUH)	WATER: ENTERING TEMP (°F)	GPM	PRESSURE DROP (FT.)	HEATING: ENTERING AIR TEMPERATURE (°F)	MIN. HEATING CAPACITY	WATER: ENTERING TEMP. (°F)	GPM	PRESSURE DROP (FT.)	PIPE SIZE TO COIL (IN.): CHILLED WATER	HOT WATER	REMARKS
AHU-8C	26,000	12,000	3.00	40	480	3	60	75.0	62.6	53.0	52.5	752,100	45	125.2	15.0	65.0	702,000	130.0	70.9	10.0	4"	3"	1,2,3,4,5,6,7,9,10,12,13
AHU-9C	26,920	12,000	3.00	40	480	3	60	75.0	62.6	53.0	52.5	783,100	45	130.4	15.0	65.0	726,840	130.0	73.4	10.0	4"	3"	1,2,3,4,5,7,9,10,11,12,13
OAU-4C	24,000	24,000	2.00	33	480	3	60	98.0	80.0	53.0	52.5	2,353,100	45	391.7	15.0	27.0	725,760	130.0	73.3	10.0	6"	3"	2,3,4,5,6,8,9,10,13,14

GENERAL NOTES:
1. EXTERNAL STATIC PRESSURE INCLUDES LOSSES DUE TO DUCTWORK, AIR DEVICES, DAMPERS, AND DUCT MOUNTED HOT WATER COILS WHERE APPLICABLE. DIRTY FILTER AND UNIT CASING MUST BE ADDED TO EXTERNAL STATIC PRESSURE TO OBTAIN TOTAL PRESSURE LOSS. INCREASE HORSEPOWER AS REQUIRED TO MEET YOUR TOTAL PRESSURE LOSS. COORDINATE WITH ELECTRICIAN.
2. MAINTAIN MINIMUM CLEARANCE FOR COIL PULL AS RECOMMENDED BY UNIT MANUFACTURER. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.

REMARKS:
1. VELOCITY NOT TO EXCEED 500 FPM ON COOLING COIL.
2. PROVIDE HORIZONTAL UNIT.
3. PROVIDE CONSTANT VOLUME UNIT WITH A VARIABLE FREQUENCY DRIVE AND ONE A REDUNDANT VFD . THIS UNIT HAS TWO VARIABLE FREQUENCY DRIVES.
4. PROVIDE FRONT DISCHARGE.
5. PROVIDE TWO-WAY COOLING CONTROL VALVES.
6. PROVIDE THREE-WAY HEATING CONTROL VALVES.
7. PROVIDE HOT WATER COIL IN REHEAT POSITION.
8. PROVIDE HOT WATER COIL IN PRE-HEAT POSITION.
9. PROVIDE UNIT WITH FLAT FILTER SECTION.
10. PROVIDE UV LIGHT PER SPECIFICATIONS. UV LIGHT SHALL HAVE SEPARATE ELECTRICAL CONNECTION FROM AIR HANDLING UNIT. REFER TO ELECTRICAL DRAWINGS.
11. PROVIDE TWO-WAY HEATING CONTROL VALVES.
12. PROVIDE SINGLE-ZONE VAV CONTROLS, COMPLETE WITH SUPPLY FAN VFD, DISCHARGE AIR TEMPERATURE SENSOR AND PROGRAMMABLE ZONE TEMPERATURE AND RELATIVE HUMDITY SENSOR.
13. PROVIDE ROOF CURB WITH SOLID BOTTOM TO MEET WITH 150 MPH WINDS, ACOUSTICAL TYPE, WITH A MINIMUM OF 2" FIBERGLASS INSULATION.
14. VELOCITY NOT TO EXCEED 450 FPM ON COOLING COIL.

100% OUTSIDE AIR HANDLING UNIT - WEIGHT ROOM

MARK	FAN: SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT. STATIC PRESSURE (IN. W.C)	HORSE POWER	ELECTRICAL CHARAC. V	P	F	COOLING: AIR TEMPERATURE (°F): ENTERING DRY BULB	ENTERING WET BULB	LEAVING DRY BULB	LEAVING WET BULB	COOLING CAPACITY	WATER: ENTERING TEMP (°F)	GPM	PRESSURE DROP (FT.)	HEATING: ENTERING AIR TEMPERATURE (°F)	HEATING CAPACITY	WATER: ENTERING TEMP. (°F)	GPM	PRESSURE DROP (FT.)	PIPE SIZE TO COIL (IN.): CHILLED WATER	HOT WATER	REMARKS
OAU-3C	3,000	3,000	2.00	5.0	480	3	60	98.

SYMBOL SCHEDULE

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
LIGHTING (LETTER DENOTES TYPE - SEE LIGHT FIXTURE SCHEDULE)	
	LIGHT FIXTURE
	FIXTURE ON EMERGENCY CIRCUIT
	DOWNLIGHT FIXTURE
H	LIGHT FIXTURE - WALL MOUNTED
	DOWNLIGHT FIXTURE ON EMERGENCY CIRCUIT
H	LIGHT FIXTURE - WALL MOUNTED ON EMERGENCY CIRCUIT
	EXIT LIGHT-CEILING MTD WITH DIRECTIONAL ARROWS AS REQUIRED
H	EXIT LIGHT-WALL MTD WITH DIRECTIONAL ARROWS AS REQUIRED
SWITCHES	
$	LINE VOLTAGE SINGLE POLE SWITCH
$2	LINE VOLTAGE 2-POLE SWITCH
LIGHTING CONTROLS	
$R	LIGHTING CONTROLLER WALL SWITCH REFER TO ASSOCIATED ROOM TAG AND CONTROL SCHEDULE
P	CEILING MOUNTED PHOTO SENSOR
V	CEILING MOUNTED VACANCY SENSOR, MANUAL ON / AUTO OFF
S	CEILING MOUNTED OCCUPANCY SENSOR, AUTO ON / AUTO OFF
RX	ROOM CONTROL TAG - REFER TO 'X' ROW ON ELECTRICAL CONTROL SCHEDULE FOR ROOM CONTROL SCHEME
ER	PROVIDE UL924 DEVICE(S) AS NEEDED FOR FOR EMERGENCY CIRCUITS IN ROOM.
ES	PROVIDE UL1008/UL924 DEVICE(S) AS NEEDED FOR FOR EMERGENCY CIRCUITS IN ROOM.
RECEPTACLES AND OUTLETS	
	SIMPLEX RECEPTACLE
	DUPLEX RECEPTACLE
	POWER POLE
	125/250 VOLT, 1 PHASE, 3-WIRE, 20 AMPS UNLESS NOTED OTHERWISE
	CEILING MOUNTED RECEPTACLE
	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
	FLUSH FLOOR CONCEALED SERVICE DUPLEX RECEPTACLE OUTLET
	FLUSH FLOOR CONCEALED SERVICE DOUBLE DUPLEX RECEPTACLE OUTLET
MPA	CONCEALED SERVICE MULTI-ACCESS FLOOR BOX WITH WIRING DEVICES AS INDICATED ON DRAWINGS. SIZE TO MATCH DEVICE QUANTITIES.
[R]	REMOTE BLANK FACE GFCI DEVICE.
SR	PROVIDE BLACK CONTROLLED DUPLEX RECEPTACLE (LEVITON 5362-2BP). INTERLOCK DUPLEX WITH LOCAL ROOM OCCUPANCY SENSOR MEETING 2021 IECC 405.11 REQUIREMENTS.
SR	PROVIDE 2 BLACK CONTROLLED DUPLEX RECEPTACLES (LEVITON 5362-2BP) IN 2-GANG BOX WITH SINGLE COVER PLATE. INTERLOCK POWER TO BOTH DUPLEXES WITH LOCAL ROOM OCCUPANCY SENSOR MEETING 2021 IECC 405.11 REQUIREMENTS.
[H]	DIVISION 26 TO MAKE FINAL CONNECTION TO A HAND DRYER.
[R]	REMOTE GFCI DEVICE

SYMBOL	DESCRIPTION (DISREGARD ITEMS NOT SHOWN ON PLANS)
MISCELLANEOUS EQUIPMENT	
[FACP]	FIRE ALARM CONTROL PANEL
[ANNC]	FIRE ALARM REMOTE ANNUCIATOR
[T]	TRANSFORMER FOR DOOR BELL/BUZZER
	CHIME/BUZZER
MOTOR CONTROLLERS AND EQUIPMENT	
	MOTOR, MAKE FINAL MOTOR CONNECTION
	3-PHASE MOTOR, MAKE FINAL MOTOR CONNECTION
	DISCONNECT SWITCH AS REQUIRED
	FUSED DISCONNECT SWITCH AS REQUIRED
	COMBINATION MOTOR STARTER/DISCONNECT SWITCH AS REQUIRED
	MOTOR STARTER
M	MANUAL MOTOR SWITCH AS REQUIRED
	PREWIRED DEVICE, MAKE ELECTRICAL FINAL CONNECTIONS
	VARIABLE FREQUENCY DRIVE MOTOR CONTROLLER FURNISHED BY DIVISION 23 AND INSTALLED BY DIVISION 26
ELECTRICAL EQUIPMENT	
	ELECTRICAL DISTRIBUTION OR PANELBOARD
	DRY TYPE TRANSFORMER
CIRCUITING	
	CONDUIT
	CONDUIT BELOW FLOOR, SLAB, OR GRADE
SUBSCRIPTS AND ABBREVIATIONS	
WP	INDICATES WEATHERPROOF
WG	INDICATES WIREGUARD
H	INDICATES HORIZONTAL
TL	INDICATES TWIST LOCK
NL	LIGHT FIXTURE ON NIGHT LIGHT CIRCUIT
ERMS	ENERGY REDUCTION MAINTENANCE SWITCH
1-L	REFER TO ONE-LINE DIAGRAM
	INDICATES WALL MOUNTED DEVICE
	NEXT TO ANY SYMBOL INDICATES FINAL ROUGH-IN FIELD COORDINATION BY CONTRACTOR WITH ARCHITECTURAL MILLWORK DRAWINGS AND OTHER TRADES
PP	POWER POLE
OHE	OVERHEAD ELECTRICAL LINE

GENERAL NOTES:

-ALL EXTERIOR BUILDING ELECTRICAL EQUIPMENT TO BE WEATHERPROOF NEMA-3R MINIMUM.

LIGHTING FIXTURE SCHEDULE

Type Mark	MANUFACTURER	CATALOG NUMBER MODEL	MOUNTING	LAMP TYPE	CCT	CRI	VOLTAGE	LOAD	REMARKS
A1	DAYBRITE	2EPZ-48L-840-4-DS-UNV-DIM	RECESSED	4300L LED	4000 K	80	277 V	37 W	2'X4' LED FLAT PANEL TROFFER
A2	DAYBRITE	2FPZ-45L-840-2-DS-UNV-DIM	RECESSED	4500L LED	4000 K	80	277 V	36 W	2'X2' LED FLAT PANEL TROFFER
A3	DAYBRITE	1FPZ-45L-840-4-DS-UNV-DIM	RECESSED	4500L LED	4000 K	80	277 V	38 W	1'X4' LED FLAT PANEL WITH DRYWALL KIT.
C1-8	COLOR KINETICS	523-00114-23 (INCLUDE POWER SUPPLIES AND CABLING)	RECESSED	1000L LED	4000 K	80	277 V	168 W	EXTERIOR LINEAR WALL WASH FOR CHAMPIONS WALL; CONTRACTOR TO PURCHASE IN SHORT LENGTHS TO FIT CURVED WALL
C1-12	COLOR KINETICS	523-00114-23 (INCLUDE POWER SUPPLIES AND CABLING)	RECESSED	1000L LED	4000 K	80	277 V	252 W	EXTERIOR LINEARWALL WASH FOR CHAMPIONS WALL; CONTRACTOR TO PURCHASE IN SHORT LENGTHS TO FIT CURVED WALL
D1	LIGHTOLIER	6RN/PAR-DL-30-940-W-CC-Z10-U	RECESSED	3000L LED	4000 K	80	277 V	28 W	6-INCH MEDIUM BEAM OPEN DOWNLIGHT.
D2	LIGHTOLIER	6RN/PAR-DL-50-940-W-CC-Z10-U	RECESSED	5000L LED	4000 K	80	277 V	40 W	6-INCH EXTERIOR MEDIUM BEAM OPEN DOWNLIGHT FOR WET LOCATIONS
D3	LIGHTOLIER	6RN/PAR-DL-30-940-W-CC-Z10-U	RECESSED	3000L LED	4000 K	80	277 V	28 W	6-INCH MEDIUM BEAM AS SHOWN HIGH.
D4	LIGHTOLIER	4RN/PAR-DL-30-940-W-CC-Z10-U	RECESSED	3000L LED	4000 K	80	277 V	25 W	4-INCH MEDIUM BEAM OPEN DOWNLIGHT
E1	DAYBRITE	FSS4-40L-840-UNV-DIM	PENDANT	4000L LED	4000 K	80	277 V	30 W	4' LINEAR UTILITY PENDANT
G1	DAYBRITE	SF4-C-42A-40-U-US	SURFACE	4200L LED	4000 K	80	277 V	36 W	1'X4' WALL MOUNTED STAIR ROOM FIXTURE
H1-8	PINNACLE	EV4DA-840HO-8'-G1-U-FSD-1-FINISH	RECESSED	6000L LED	4000 K	80	277 V	48 W	LINEAR RECESSED ACCENT LIGHTING TO BE MOUNTED IN METAL CEILING PANELS; CONTRACTOR TO VERIFY LENGTHS WITH ARCHITECT PRIOR TO PURCHASE
H2-8	PINNACLE	EV4DA-840HO-8'-G1-U-FSD-1-FINISH	RECESSED	6000L LED	4000 K	80	277 V	48 W	LINEAR RECESSED ACCENT LIGHTING TO BE MOUNTED IN METAL CEILING PANELS; CONTRACTOR TO VERIFY LENGTHS WITH ARCHITECT PRIOR TO PURCHASE
H2-10	PINNACLE	EV4DA-840HO-10'-G1-U-FSD-1-FINISH	RECESSED	7500L LED	4000 K	80	277 V	60 W	LINEAR RECESSED ACCENT LIGHTING TO BE MOUNTED IN METAL CEILING PANELS; CONTRACTOR TO VERIFY LENGTHS WITH ARCHITECT PRIOR TO PURCHASE
H2-15	PINNACLE	EV4DA-840HO-15'-G1-U-FSD-1-FINISH	RECESSED	11250L LED	4000 K	80	277 V	90 W	LINEAR RECESSED ACCENT LIGHTING TO BE MOUNTED IN METAL CEILING PANELS; CONTRACTOR TO VERIFY LENGTHS WITH ARCHITECT PRIOR TO PURCHASE
H2-18	PINNACLE	EV4DA-840HO-15'-G1-U-FSD-1-FINISH	RECESSED	13500L LED	4000 K	80	277 V	108 W	LINEAR RECESSED ACCENT LIGHTING TO BE MOUNTED IN METAL CEILING PANELS; CONTRACTOR TO VERIFY LENGTHS WITH ARCHITECT PRIOR TO PURCHASE
P1	KENALL	MLHA3-96-R-MB-PP-800LF-40KB-DIM1-DV-PM	PENDANT	6400L LED	4000 K	80	277 V	48 W	HIGH ABUSE LINEAR PENDANTS IN LOCKER ROOM AREAS
P2	ALL	3S-8-VHO-40-MTG-FINISH/C90-CB06	PENDANT	9600L LED	4000 K	80	277 V	84 W	HIGH ABUSE LINEAR PENDANTS IN WEIGHT ROOM
P3	LIGHTOLIER	C6-P-DL-48-940-Z10-DC-B-CA-CK-xx-BK	PENDANT	4800L LED	4000 K	80	277 V	35 W	3" CYLINDER PENDANTS FOR LOCKER ROOM ENTRIES; CONTRACTOR TO VERIFY CABLE LENGTH FOR MOUNTING HEIGHT WITH WITH ARCHITECT PRIOR TO PURCHASE
R1-12	COLOR KINETICS	423-000035-29 (INCLUDE POWER SUPPLIES AND CABLING)	RECESSED	4600L LED	4000 K	80	277 V	197 W	EXTERIOR LINEAR RECESSED FIXTURE WITH RGBW CAPABILITIES
R1-20	COLOR KINETICS	423-000035-29 (INCLUDE POWER SUPPLIES AND CABLING)	SURFACE	4600L LED	4000 K	80	277 V	560 W	EXTERIOR LINEAR RECESSED FIXTURE WITH RGBW CAPABILITIES WITH SEMI-ROUND MOUNTING BRACKET
R2-20	COLOR KINETICS	123-000027-01 (INCLUDE POWER SUPPLIES AND CABLING)	SURFACE	4600L LED	4000 K	80	277 V	560 W	EXTERIOR LINEAR RECESSED FIXTURE WITH RGBW CAPABILITIES WITH OFFSET ARM MOUNTING BRACKET
SB1	WE-EF	114-6506	SURFACE	3450L LED	4000 K	80	277 V	30 W	IMPACT RATED BOLLARD
SF1	DLC	DISC-LED-2.0-X-DIRECT-CPL	PENDANT	9680L/9180L LED	4000 K	80	277 V	650 W	PENDANT MOUNT DIRECT/INDIRECT LED 48" ROUND DOME. FINISH AND PENDANT CABLE LENGTH BY ARCHITECT.
SF2	DLC	DISC-LED-2.0-X-IC-CPL	PENDANT	9680L/9180L LED	4000 K	80	277 V	650 W	PENDANT MOUNT DIRECT/INDIRECT LED 48" ROUND DOME. FINISH AND PENDANT CABLE LENGTH BY ARCHITECT.
T1-8	AXIS	EXR-1200-80-40-CL-SO-B-C-277	RECESSED	9600L LED	4000 K	80	277 V	80 W	EXTERIOR LINEAR FOR UP/DOWN WALL WASH AT CHAMPIONS WALL
W1	COOPER	2-25c-3x2-2-P1	SURFACE	3500L LED	3000 K	80	277 V	20 W	CANOPY MOUNT FOR RESTROOMS
W1	GARDCO	GWM-408-840-T3M-277-FINISH	WALL	5000L LED	4000 K	80	277 V	30 W	MOUNT FIXTURE AT +14'-0" AFF
X1	EMERGI-LITE	ELX400-RN	SURFACE	LED	4000 K	80	277 V	5 W	UNIVERSAL, LED EXIT SIGN WITH WHITE HOUSING, RED LETTERING, SINGLE SIDED
X2	EMERGI-LITE	ELX400-RN	SURFACE	LED	4000 K	80	277 V	11 W	UNIVERSAL, LED EXIT SIGN WITH WHITE HOUSING, RED LETTERING; DUAL SIDED
X3	EMERGI-LITE	ELX400-RN	WALL	LED	4000 K	80	277 V	5 W	UNIVERSAL, LED EXIT SIGN WITH WHITE HOUSING, RED LETTERING; SINGLE SIDED

1. FIXTURES SHOWN ON THE FLOORPLAN HAVING A DESIGNATION OF "E" FOLLOWING THE BASE DESIGNATION (I.E. - A FIXTURE TYPE "AE, C2E, FE") AND/OR A HALF SHADED REGION SHALL BE THE BASE FIXTURE TYPE EQUIPPED WITH THE APPROPRIATE BATTERY BACK-UP. 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.
2. ALL REQUIRED TEST SWITCHES FOR THE BATTERY BACK-UPS SHALL BE INTEGRAL TO THE FIXTURE.
3. 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 INCLUDED IN THE PROPOSAL.
4. UNLESS OTHERWISE INDICATED ON THE SCHEDULE ABOVE, THE ARCHITECT/OWNER SHALL SELECT ALL FINISHES, COLORS, AND TRIMS.
5. ALL LED FIXTURE BOARDS AND DRIVERS SHALL BE OF THE LATEST GENERATION, BASED UPON THE INDIVIDUAL MANUFACTURER'S STATED LITERATURE. IF A "GEN 5" IS AVAILABLE, "GEN 4" FIXTURES ARE NOT ACCEPTABLE.
6. 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.
7. 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.
8. FOR PRIOR APPROVALS AND SUBMITTALS THAT DEVIATE FROM NOMINAL WATTAGE AND/OR DELIVERED LUMENS, IT SHALL BE UP 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 POWER SYSTEM.
9. ALL LIGHTING SPECIFIED SHALL BE 4000K INTERIOR UNLESS NOTED OTHERWISE.
10. THE CONTRACTOR SHALL PROVIDE ALL HARDWARE AND ACCESSORIES AS REQUIRED TO INSTALL FIXTURES IN LOCATIONS AS ILLUSTRATED WITH MOUNTING METHODS DESIRED.
11. WHEN A UNIVERSAL (120-277V) VOLTAGE OPTION IS AVAILABLE, IT SHALL BE PROVIDED. OTHERWISE PROVIDE AS INDICATED IN SCHEDULE.
12. FOR ALL SUSPENDED FIXTURES, COORDINATE THE EXACT MOUNTING ELEVATION ABOVE FINISHED FLOOR WITH ARCHITECT PRIOR TO INSTALLATION. PROVIDE SUSPENSION HARDWARE IN LENGTHS AS REQUIRED.
13. FIXTURES SHOWN ON THE FLOORPLAN HAVING A DESIGNATION OF "X" FOLLOWING THE BASE DESIGNATION (I.E. - A FIXTURE TYPE "AX, C2X, FX") SHALL BE THE BASE FIXTURE TYPE CONNECTED TO EMERGENCY LIGHTING INVERTER SYSTEM. REFER TO DETAIL 3 SHEET 10.42 FOR ADDITIONAL INFORMATION.
14. FIXTURES SHOWN ON THE FLOORPLAN HAVING A DESIGNATION OF "A" FOLLOWING THE BASE DESIGNATION (I.E. - A FIXTURE TYPE "A1A, C2A, FA") SHALL BE THE BASE FIXTURE TYPE EXCEPT SUITABLE FOR GYPSUM CEILING INSTALLATION AND EQUIPPED WITH THE APPROPRIATE BATTERY BACK-UP. 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.
15. ALL EXTERIOR LIGHT FIXTURES RECESSED IN A CANOPY OR SURFACED MOUNTED DIRECTLY TO THE BOTTOM OF A CANOPY SHALL BE UL OR ETL LISTED AS WET LOCATION. WHERE SPECIFICALLY STATED IN THE LIGHTING FIXTURE SCHEDULE AS "DAMP LOCATION" FIXTURES AND PROTECTED BY THE BUILDING STRUCTURE FROM FALLING OR WIND DRIVEN RAIN OR SNOW, THEY MAY BE EITHER DAMP OR WET LOCATION LISTED.
16. ALL EXTERIOR LIGHT FIXTURES NOT RECESSED IN A CANOPY OR SURFACED MOUNTED DIRECTLY TO THE BOTTOM OF A CANOPY SHALL BE UL OR ETL LISTED AS WET FROM ABOVE LOCATION.

UTILITY CONTACT INFORMATION

NAME: FIRST LAST

PHONE: XXX-XXX-XXXX

EMAIL: EMAIL@EMAIL.COM

CONTRACTOR NOTES:

IT IS THE RESPONSIBILITY OF THE CONTRACTORS TO NOTIFY THE ARCHITECT OF ANY DISCREPANCIES ENCOUNTERED ON THE PLANS OR IN EXISTING SITE CONDITIONS PRIOR TO COMMENCEMENT OF WORK.

CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND SATISFY THEMSELVES AS TO THE NATURE AND SCOPE OF THE WORK. THE BASE PROPOSAL SHALL INCLUDE MODIFICATIONS TO SYSTEMS AND DEVICES AS REQUIRED BY STATE AND LOCAL CODES WHETHER INDICATED OR NOT ON CONTRACT DOCUMENTS. THE SUBMISSIONS OF A PROPOSAL WILL BE EVIDENCE THAT SUCH AN EXAMINATION AND COMPLIANCE WITH GOVERNING CODES/REQUIREMENTS HAS BEEN MADE. LATER CLAIMS FOR LABOR, EQUIPMENT, OR MATERIALS REQUIRED, OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORSEEN HAD AN EXAMINATION AND CODE/REQUIREMENTS REVIEW BEEN MADE, WILL NOT BE ACCEPTED.

FIRE DETECTION AND FIRE ALARM NOTE:

A LICENSED FIRE ALARM PLANNING SUPERINTENDENT CERTIFIED TO A MINIMUM LEVEL III, IN THE SUB FIELD OF FIRE ALARM SYSTEMS THROUGH THE NATIONAL INSTITUTE FOR CERTIFICATION IN ENGINEERING TECHNOLIGIES (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, NFPA 72, LOCAL AND STATE CODE REQUIREMENTS. FURNISH AND INSTALL ALL REQUIRED FIRE ALARM DEVICES, AS REQUIRED BY CODE. VERIFY EXACT REQUIREMENTS IN THE FIELD. COORDINATE ALL LOCATIONS WITH DRAWINGS APPROVED BY AUTHORITY HAVING JURISDICTION PRIOR TO INSTALLATION. ALL WORK SHALL BE INCLUDED WITHIN BASE BID.

INITIAL UTILITY ELECTRICAL SERVICE COORDINATION HAS BEEN COMPLETED BY SALAS OBRIEN. DURING BID, CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL THE REQUIRED LABOR & MATERIALS THAT ARE NOT INCLUDED IN THE ELECTRICAL UTILITY COMPANY'S SCOPE OF WORK. FINAL UTILITY ELECTRICAL COORDINATION WILL BE FULLY THE CONTRACTOR'S RESPONSIBILITY AND ANY UNCOORDINATED WORK WILL BE AT NO EXPENSE TO OWNER.

DAYLIGHT ZONE CONTROLS

ENTIRE BUILDING IS EXEMPT FROM DAYLIGHT ZONE CONTROLS IN ACCORDANCE WITH 2018 IECC 405.2.3 EXCEPTION #4.

TOTAL BUILDING SQ FOOTAGE (TBFA): 256000

BUILDING LIGHTING ALLOWANCE PER IECC 2018 405.3.2(1) (LPA_{comb}): 256000

TOTAL CONNECTED LIGHTING POWER: 22350

DAYLIGHT ZONES REQUIRED TOTAL SQ FOOTAGE (UDZFA): 1

ADJUSTED LIGHTING POWER ALLOWANCE (LPA_{adj}): 256000

22350 < 256000

DAYLIGHT ZONES WITHIN BUILDING ARE EXEMPT.

CONDUCTOR CONVERSION CHART - 75°C

FUSE	COPPER (THHN)	ALUMINUM (XHHW-2 AL) BRANCH FEEDERS	SERVICE ENT.
100A	4#3, 1#6GND, 1-1/4"C	4#1, 1#6GND, 1-1/2"C	#8 GND (CU)
125A	4#1, 1#6GND, 1-1/2"C	4#2/0, 1#4GND, 2"C	#6 GND (CU)
150A	4#1/0, 1#6GND, 2"C	4#3/0, 1#4GND, 2"C	#6 GND (CU)
175A	4#2/0, 1#6GND, 2"C	4#4/0, 1#4GND, 2-1/2"C	#6 GND (CU)
200A	4#3/0, 1#6GND, 2"C	4#250KCMIL, 1#4GND, 3"C	#6 GND (CU)
225A	4#4/0, 1#4GND, 2-1/2"C	4#300 KCMIL, 1#2GND, 3"C	#4 GND (CU)
400A	(2 SETS:) 4#3/0, 1#2GND, 2"C	(2 SETS:) 4#250KCMIL, 1#1GND, 3"C	#2 GND (CU)
500A	(2 SETS:) 4#250KCMIL, 1#2GND, 3"C	(2 SETS:) 4#350KCMIL, 1#1/0GND, 3"C	#1/0 GND (CU)
600A	(2 SETS:) 4#350KCMIL, 1#1GND, 3"C	(2 SETS:) 4#500KCMIL, 1#2/0GND, 4"C	#1/0 GND (CU)
800A	(3 SETS:) 4#300KCMIL, 1#1/0GND, 3"C	(3 SETS:) 4#400KCMIL, 1#3/0GND, 4"C	#2/0 GND (CU)
1200A	(4 SETS:) 4#350KCMIL 1#3/0GND, 4"C	(4 SETS:) 4#500KCMIL, 1#250KCMIL GND, 4"C	#2/0 GND (CU)
2000A	(6 SETS:) 4#400KCMIL, 1#250KCMIL GND, 4"C	(7 SETS:) 4#500KCMIL, 1#400KCMIL GND, 4"C	#3/0 GND (CU)
2500A	(7 SETS:) 4#500KCMIL, 1#350KCMIL GND, 4"C	(8 SETS:) 4#600KCMIL, 1#600KCMIL GND, 4"C	#3/0 GND (CU)
3000A	(8 SETS:) 4#500KCMIL, 1#500KCMIL GND, 4"C	(9 SETS:) 4#600KCMIL, 1#600KCMIL GND, 4"C	#3/0 GND (CU)

1. ALUMINUM CONDUCTOR TO HAVE COMPRESSSION LUGS.
2. THIS CHART IS A REPRESENTATION AND NOT INDICATIVE OF ALL APPROVED CONVERSION POSSIBILITIES.
3. CONTRACTOR SHALL FURNISH AND INSTALL ALL FEEDERS IN ACCORDANCE WITH NEC AND ALUMINUM WIRING MANUFACTURERS REQUIREMENTS.
4. ALL GROUND CONDUCTORS FOR SERVICE ENTRANCE TO BE COPPER.

1. CONDUIT SIZE AND QUANTITIES ARE BASED ON 3-PHASE 4-WIRE SYSTEMS. CONDUIT SIZE IS PERMITTED TO BE REDUCED BY THE CONTRACTOR AS PREMITTED BY THE NEC FOR THE REDUCED NUMBER OF CONDUCTORS THAT ARE TYPICAL FOR EQUIPMENT THAT IS SINGLE PHASE OR EQUIPMENT THAT DOES NOT REQUIRE A NEUTRAL CONDUCTOR.
2. CONDUCTOR SIZES BASED ON NEC TABLE 310.16 - COPPER 75°.
3. GROUND SIZES BASED ON NEC TABLE 250.122 – COPPER, UNLESS NOTED OTHERWISE. FEEDER TAGS WITH 'SE' REFERS TO SERVICE ENTRANCE CONDUCTORS AND GROUND SIZES BASED ON NEC TABLE 250.66 – COPPER
4. CONDUIT FILL BASED ON NEC ANNEX C.

MAXIMUM ALLOWABLE VOLTAGE DROP FOR FEEDERS AND BRANCH CIRCUITS (2018 IECC 405.9)

1. Total voltage drop from the point of service to the last outlet or utilization equipment of the same voltage shall not exceed five-percent of rated voltage.
2. Total voltage drop from the point of service to transformers with adjustable taps, buck-boost transformers, uninterruptable power supplies (UPS), or voltage regulators shall not exceed five-percent of rated voltage.
3. Total voltage drop from a separately derived system, transformer with adjustable taps, buck-boost transformer, uninterruptable power supply (UPS), or voltage regulator to the last outlet or utilization equipment of the same voltage shall not exceed five-percent of rated voltage.
4. Total voltage drop from the point of service to distribution equipment of the same voltage shall not exceed two-percent of rated voltage.
5. Branch circuit voltage drop from distribution equipment to the last outlet or utilization equipment shall not exceed three-percent of rated voltage.
6. Provide the same size branch circuit conductors to last outlet on circuit unless specifically noted or indicated otherwise on the drawings. For 20 amp branch circuits operating at 150-Volts or less, provide #10 AWG wire when the first outlet is over 75-feet from the panelboard. For branch circuits operating above 150-Volts to 600-Volts, provide #10 AWG wire when the first outlet is over 150-feet from the panelboard.

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Salas O'Brien Project Number: 2550-01455-00

GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

BRADLEY KALMANS — 80219 — LICENSED PROFESSIONAL ENGINEER — STATE OF TEXAS
10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
1 Addendum 1	10/08/2025
2 Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.

25-0056.00

SHEET TITLE

ELECTRICAL ESSENTIALS

SHEET NO.

E0.00

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SYMBOL LEGEND	
	POINT OF CONNECTION TO EXISTING
	ITEM TO REMAIN
	ITEM TO BE REMOVED

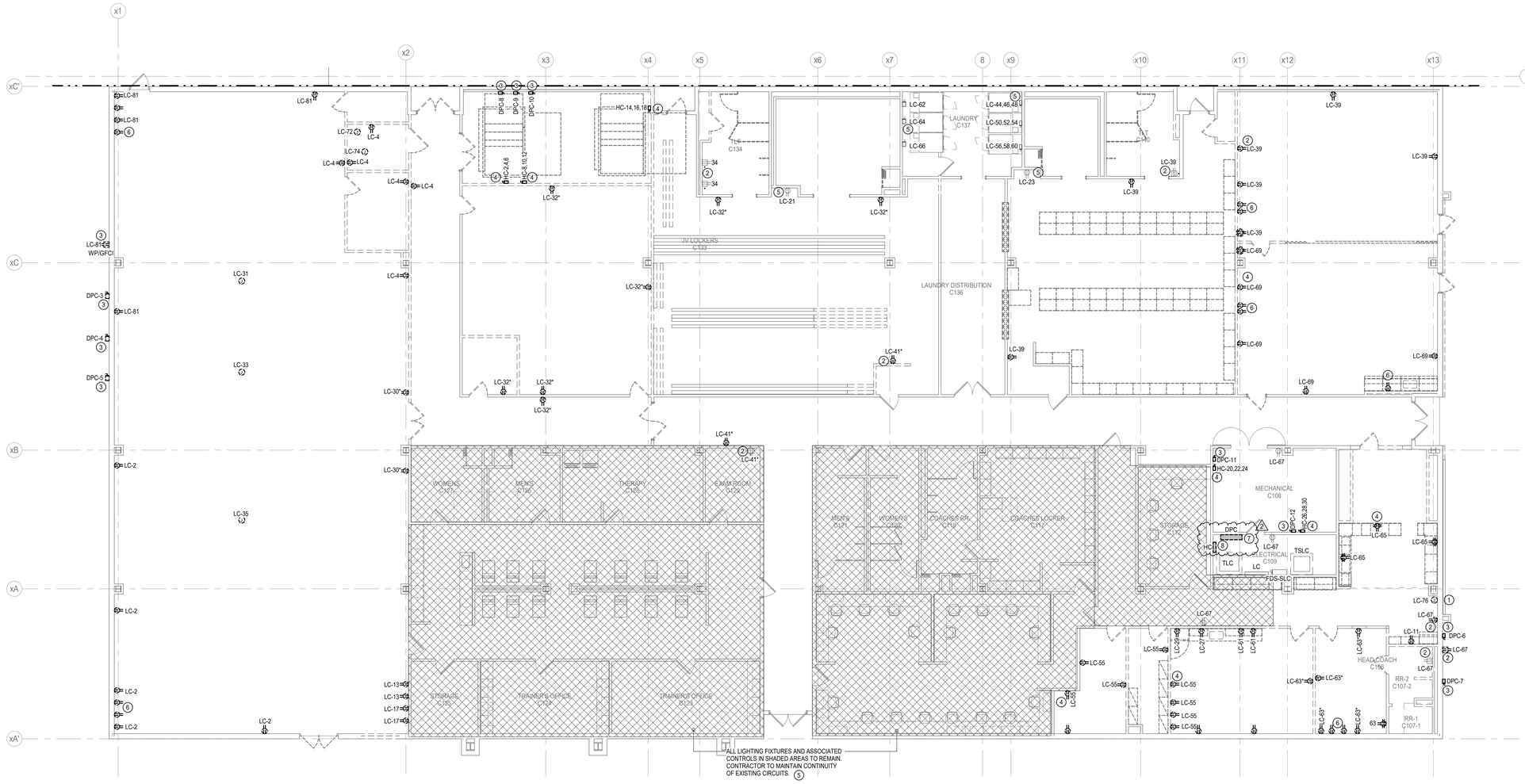
LINETYPE LEGEND	
EXISTING TO REMAIN	———
DEMOLITION WORK	- - - - - -
NEW WORK	———

ELECTRICAL DEMOLITION GENERAL NOTES

1	VERIFY EXISTING CONDITIONS AND CONDUIT ROUTING. CONTRACTOR TO VERIFY THAT EXISTING CONDUITS ARE IN GOOD CONDITIONS TO PULL NEW CONDUCTORS IN PRIOR TO COMMENCMENT OF WORK AND TO NOTIFY ENGINEER IF CONDUITS NEED TO BE REPLACED. REFER TO SURVEY FOR MORE INFORMATION.
2	DEMOLITION / EXISTING DRAWINGS ARE BASED ON CASUAL FIELD OBSERVATION AND, WHEN AVAILABLE, EXISTING RECORD DOCUMENTS. REPORT DISCREPANCIES TO ARCHITECT BEFORE DISTURBING ANY INSTALLATION AND IMMEDIATELY AFTER SUCHDISCREPANCIES ARE DISCOVERED. CONTRACTOR TO VERIFY EXISTING CONDITIONS ON FIELD AND NOTIFY ENGINEER IF THERE ARE ANY CONFLICTS BETWEEN EXISTING CONDITIONS AND DRAWINGS PRIOR TO COMMENCEMENT OF WORK AS CALLED FORON THE DRAWINGS OR AS REQUIRED TO CLEAR THE AREAS OF NEW CONSTRUCTION. OWNER OR ITS REPRESENTATIVE SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED FROM THIS PROJECT. CONTRACTOR SHALL NOTIFY CAREY RAMSEY WITH THE DISTRICT PRIOR TO DEMOLITION WORK TO DISCUSS ALL RETURNED ITEMS TO DISTRICT.
3	CONTRACTOR TO VERIFY EXISTING CONDITIONS IN FIELD FOR UNDERGROUND PIPING, CONDUIT/WIRING AND UTILITIES PRIOR TO BID. ANY DAMAGES WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR
4	OWNER OR ITS REPRESENTATIVE SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED FROM THIS PROJECT. CONTRACTOR TO NOTIFY REPRESENTIVE WITH DISTRICT PRIOR TO DEMOLITION WORK TO DISCUSS ALL RETURNED ITEMS TO DISTRICT.
5	CONTINUITY OF ALL EXISTING CIRCUITS SERVING ELECTRICAL EQUIPMENT NOT UNDER THIS SCOPE TO REMAIN IN TACT AFTER CONSTRUCTION. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL EQUIPMENT PRIOR TO CONSTRUCTION.
6	VERIFY ALL DEMOLITION WORK WITH ARCHITECT/OWNER PRIOR TO COMMENCEMENT OF WORK.
7	UNLESS NOTED OTHERWISE, ALL EXISTING ELECTRICAL SWITCHBOARDS, PANELBOARDS & TRANSFORMERS SHALL REMAIN.
8	ELECTRICAL WORK OR MATERIAL RENDERED OBSOLETE SHALL BE ABANDONED WHERE CONCEALED AND REMOVED WHERE EXPOSED. OLD UNUSED WIRING AND DEVICES SHALL BE REMOVED FROM THE ABANDONED (CONCEALED) CONDUITS. OUTLETS SHALL BE PROVIDED WITH BLANK COVERS. ANY CONDUITS OUT OF MASONRY SURFACE SHALL BE CUT INTO SURFACE AND PATCHED.
9	DISCONNECT & REMOVE ALL ELECTRICAL POWER DEVICES FROM WALLS SCHEDULED TO BE DEMOLISHED. UNLESS INDICATED OTHERWISE, PULL EXISTING CONDUCTORS BACK TO CEILING AND LEAVE IN PLACE FOR RE-USE. REFER TO ARCHITECURAL DRAWINGS FOR EXISTING WALL DEMOLITION.
10	REMOVE AND STORE ALL EXISTING LIGHT SPEED CLASSROOM SOUND ENHANCEMENT SYSTEMS TO FACILITATE DEMOLITION OF EXISTING CEILING GRID AND RELOCATION OF CLASSROOMS.
11	RETURN ANY REMOVED LIGHTING CONTROL PANELS & RELAY PANELS TO THE OWNER.
12	PROVIDE COVER PLATE FOR ANY REMOVED ELECTRICAL EQUIPMENT SUCH AS BUT NOT LIMITED TO RECEPTACLES OR SWITCHES ON EXISTING TO REMAIN WALLS. PROVIDE COVER PLATE FOR ANY REMOVED ELECTRICAL EQUIPMENT SUCH AS BUT NOT LIMITED TO RECEPTACLES OR SWITCHES ON EXISTING TO REMAIN WALLS.
13	UNLESS NOTED OTHERWISE, DISCONNECT AND REMOVE ALL EXISTING INTERIOR AND EXTERIOR LIGHT FIXTURES AND EXIT SIGNS. EXISTING CIRCUITS TO REMAIN IN PLACE FOR RE-USE. UNLESS NOTED OTHERWISE, DISCONNECT AND REMOVE ALL EXISTING INTERIOR AND EXTERIOR LIGHT FIXTURES AND EXIT SIGNS. EXISTING CIRCUITS TO REMAIN IN PLACE FOR RE-USE.
14	UNLESS NOTED OTHERWISE, PULL CONDUCTORS FOR DEMOLISHED RECEPTACLES, FLOORBOXES, DROP CORDS AND CORD REELS BACK TO SOURCE.

ELECTRICAL KEYED NOTES

1	FIRE ALARM CONTROL PANEL TO BE DEMOLISHED. CONTRACTOR TO DEMOLISH JUNCTION BOX AND ASSOCIATED CIRCUIT BACK TO SOURCE PANEL COMPLETE. FIRE ALARM CONTROL PANEL TO BE RELOCATED TO NEW IDF ROOM. CONTRACTOR TO VERIFY CIRCUIT NUMBER SHOWN, TURN BREAKER IN THE OFF POSITION AND LABELED AS SPARE UNLESS ITS RE-USED IN RENOVATION CONSTRUCTION.
2	EXISTING PARTIAL POWER CIRCUIT CONDUIT AND WIRING TO BE DEMOLISHED BACK TO NEAREST UPSTREAM JUNCTION BOX COMPLETE. CONTRACTOR TO VERIFY CIRCUIT NUMBER SHOWN. REMAINING ELECTRICAL DEVICES AND PARTIAL CIRCUIT TO REMAIN OPERABLE.
3	EXISTING POWER CIRCUIT CONDUIT AND WIRING TO BE DEMOLISHED BACK TO SOURCE PANEL COMPLETE. CONTRACTOR TO VERIFY CIRCUIT NUMBER SHOWN, TURN BREAKER IN THE OFF POSITION AND LABELED AS SPARE.
4	EXISTING POWER CIRCUIT CONDUIT AND WIRING TO BE DEMOLISHED BACK TO SOURCE PANEL COMPLETE. CONTRACTOR TO VERIFY EXISTING CIRCUIT NUMBER SHOWN. CIRCUIT TO BE USED IN NEW CONSTRUCTION, REFER TO ELECTRICAL POWER SHEETS.
5	EXISTING ELECTRICAL DEVICES AND ASSOCIATED CIRCUITS TO REMAIN. TYPICAL IN SHADED AREA.
6	CIRCUIT NUMBER WAS NOT IDENTIFIED IN EXISTING DRAWINGS. CONTRACTOR TO VERIFY THAT NO OTHER DEVICES ARE ON CIRCUIT. EXISTING RECEPTACLES AND ASSOCIATED CIRCUIT TO BE DEMOLISHED BACK TO SOURCE PANEL OR NEAREST UPSTREAM JUNCTION BOX COMPLETE. REMAINING DEVICES NOT UNDER DEMOLITION SCOPE TO REMAIN OPERATIONAL AFTER CONSTRUCTION. CONTRACTOR TO PROVIDE CIRCUIT NUMBER IN AS-BUILT DRAWINGS.
7	EXISTING MAIN DISTRIBUTION PANEL DPC, TO BE DEMOLISHED. EXSITING UNDERGROUND FEEDERS AND ASSOCIATED CONDUITS TO BE CAPPED AT 6" AFF. CONDUCTORS TO BE ABANDONED IN PLACE. ANY BRANCH CIRCUITS TO REMAIN, SHAL BE RE-FED FROM NEW PANEL HC REFER TO ONE-LINE, SHEET E5.01.
8	EXISTING BRANCH PANEL HC TO BE DEMOLISHED. EXISITNG CIRCUITS TO BE INTERCEPTED AND EXTENDED TO NEW PANEL HC LOCATION AND RECONNECTED AS REQUIRED. REFER TO SHEETS E3.02A AND ELECTRICAL PANEL SCHEDULES SHEET E5.02.



N

1 **ELECTRICAL DEMOLITION PLAN - LEVEL ONE - UNIT A**
Scale: 1/8" = 1'-0"

VLK

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Salas O'Brien Project Number: 2550-01455-00

GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

BRADLEY KAU MANS
80219
LICENSED
PROFESSIONAL ENGINEER
10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

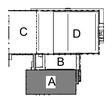
Revision No.	Revision Date
1 Addendum 1	10/08/2025
2 Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
ELECTRICAL DEMOLTION POWER PLAN - LEVEL ONE - UNIT A

SHEET NO.
E0.03A



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SITE LIGHTING FIXTURE SCHEDULE

Type Mark	CATALOG NUMBER MANUFACTURER	CATALOG NUMBER MODEL	MOUNTING	LAMP TYPE	CCT	CRI	VOLTAGE	LOAD	REMARKS
S1	GARDCO	OPF-M-A12-840-T3M-AR1	POLE MOUNT 1 @ 90	22,645L LED	4000 K	80	277 V	74 W	TYPE III AREA LUMINAIRE. 30' SQUARE STEEL POLE FACTORY CUT TO 27'-6".
S2	GARDCO	OPF-M-A12-840-T3M-AR1	POLE MOUNT 1 @ 90	22,645L LED	4000 K	80	277 V	300 W	TYPE III AREA LUMINAIRE. 30' SQUARE STEEL POLE FACTORY CUT TO 27'-6".
S4	GARDCO	OPF-M-A12-840-T3M-AR1	POLE MOUNT 1 @ 90	22,645L LED	4000 K	80	277 V	600 W	TYPE III AREA LUMINAIRE. 30' SQUARE STEEL POLE FACTORY CUT TO 27'-6".

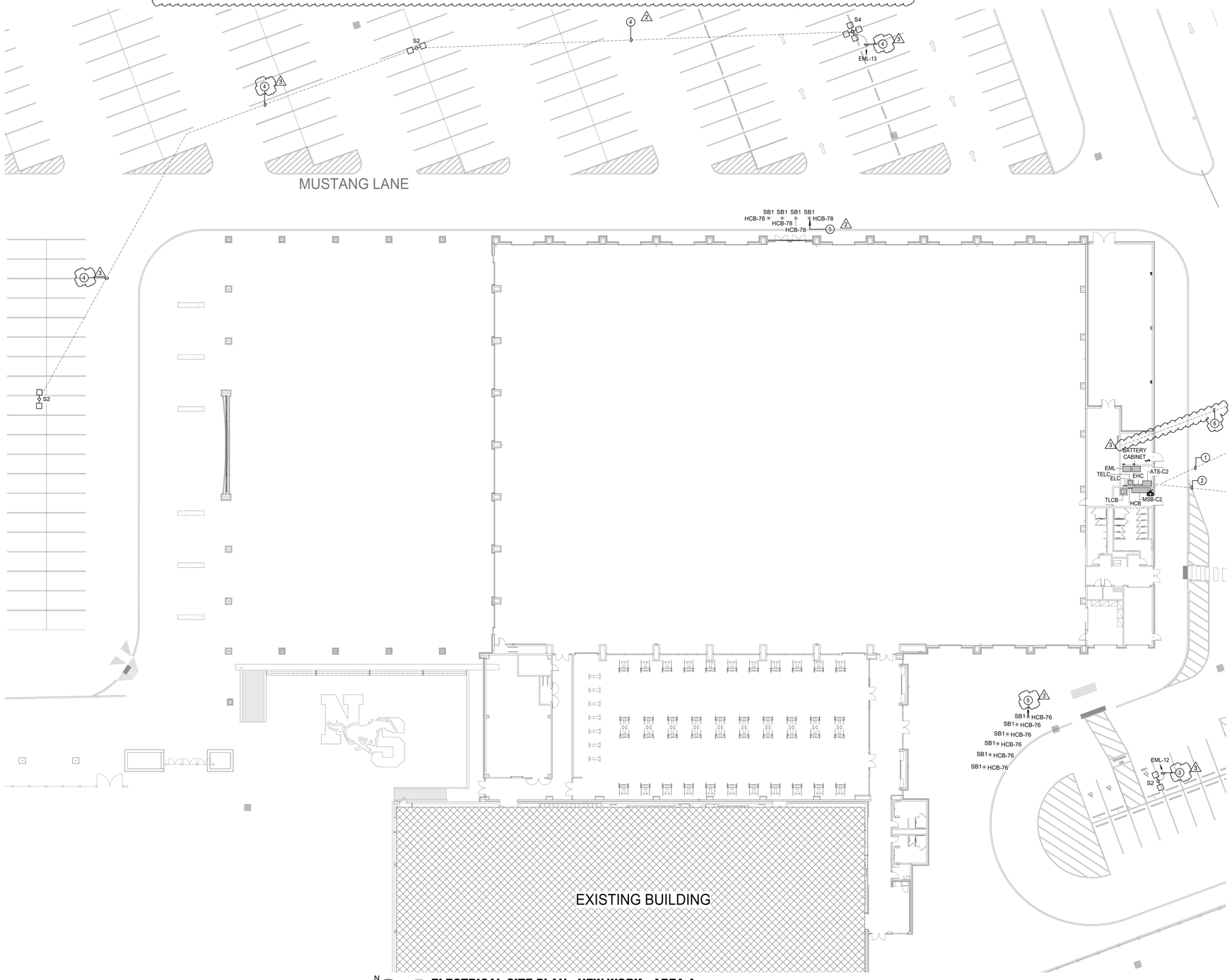
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2. ALL REQUIRED TEST SWITCHES FOR THE BATTERY BACK-UPS SHALL BE INTEGRAL TO THE FIXTURE.
3. REFER TO THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS NOT INDICATED IN THE LIGHTING FIXTURE SCHEDULE. WHERE THERE IS AN INCONSISTENCY BETWEEN THE LIGHTING FIXTURE SCHEDULE AND THE SPECIFICATIONS, THE GREATER QUANTITY OR HIGHER QUALITY OF WORK SHALL BE INCLUDED IN THE PROPOSAL.
4. UNLESS OTHERWISE INDICATED ON THE SCHEDULE ABOVE, THE ARCHITECT/OWNER SHALL SELECT ALL FINISHES, COLORS, AND TRIMS.
5. ALL LED FIXTURE BOARDS AND DRIVERS SHALL BE OF THE LATEST GENERATION, BASED UPON THE INDIVIDUAL MANUFACTURER'S STATED LITERATURE. IF A "GEN 5" IS AVAILABLE, "GEN 4" FIXTURES ARE NOT ACCEPTABLE.
6. 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.
7. 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.
8. FOR PRIOR APPROVALS AND SUBMITTALS THAT DEVIATE FROM NOMINAL WATTAGE AND/OR DELIVERED LUMENS, IT SHALL BE UP 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 POWER SYSTEM.
9. ALL LIGHTING SPECIFIED SHALL BE 4000K INTERIOR UNLESS NOTED OTHERWISE.
10. THE CONTRACTOR SHALL PROVIDE ALL HARDWARE AND ACCESSORIES AS REQUIRED TO INSTALL FIXTURES IN LOCATIONS AS ILLUSTRATED WITH MOUNTING METHODS DESIRED.
11. WHEN A UNIVERSAL (120-277V) VOLTAGE OPTION IS AVAILABLE, IT SHALL BE PROVIDED. OTHERWISE PROVIDE AS INDICATED IN SCHEDULE.
12. FOR ALL SUSPENDED FIXTURES, COORDINATE THE EXACT MOUNTING ELEVATION ABOVE FINISHED FLOOR WITH ARCHITECT PRIOR TO INSTALLATION. PROVIDE SUSPENSION HARDWARE IN LENGTHS AS REQUIRED.
13. FIXTURES SHOWN ON THE FLOORPLAN HAVING A DESIGNATION OF "X" FOLLOWING THE BASE DESIGNATION (I.E. - A FIXTURE TYPE "AX, C2X, FX") SHALL BE THE BASE FIXTURE TYPE CONNECTED TO EMERGENCY LIGHTING INVERTER SYSTEM. REFER TO DETAIL 3 SHEET 10.42 FOR ADDITIONAL INFORMATION.
14. FIXTURES SHOWN ON THE FLOORPLAN HAVING A DESIGNATION OF "A" FOLLOWING THE BASE DESIGNATION (I.E. - A FIXTURE T YPE "A1A, C2A, FA") SHALL BE THE BASE FIXTURE TYPE EXCEPT SUITABLE FOR GYPSUM CEILING INSTALLATION AND EQUIPPED WITH THE APPROPRIATE BATTERY BACK-UP. 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.
15. ALL EXTERIOR LIGHT FIXTURES RECESSED IN A CANOPY OR SURFACED MOUNTED DIRECTLY TO THE BOTTOM OF A CANOPY SHALL BE UL OR ETL LISTED AS WET LOCATION. WHERE SPECIFICALLY STATED IN THE LIGHTING FIXTURE SCHEDULE AS "DAMP LOCATION" FIXTURES AND PROTECTED BY THE BUILDING STRUCTURE FROM FALLING OR WIND DRIVEN RAIN OR SNOW, THEY MAY BE EITHER DAMP OR WET LOCATION LISTED.
16. ALL EXTERIOR LIGHT FIXTURES NOT RECESSED IN A CANOPY OR SURFACED MOUNTED DIRECTLY TO THE BOTTOM OF A CANOPY SHALL BE UL OR ETL LISTED AS WET FROM ABOVE LOCATION.

SITE GENERAL NOTES

1. CONTRACTOR TO COORDINATE FINAL LOCATION OF ALL CONDUITS WITH ALL OTHER TRADES.
2. REFER TO CIVIL DRAWINGS FOR FINAL ROUTING AND DEPTH OF ALL UNDERGROUND UTILITIES.
3. PROVIDE PULL WIRES IN ALL EMPTY CONDUITS.
4. ALL FACILITIES INSTALLED TO SERVE THE UTILITY COMPANY SHALL BE MADE PER THE UTILITY COMPANY STANDARDS. A MINIMUM 1-FOOT VERTICAL CLEARANCE SHALL BE MAINTAINED BETWEEN THE UTILITY COMPANY PRIMARY DUCTBANK AND ALL OTHER UTILITIES CROSSING THE DUCTBANK. A MINIMUM 5-FEET HORIZONTAL CLEARANCE SHALL BE MAINTAINED BETWEEN THE UTILITY COMPANY PRIMARY DUCTBANK AND ALL OTHER UTILITIES RUNNING PARALLEL. A MINIMUM 4-FEET SHALL BE MAINTAINED BETWEEN PRIMARY DUCTBANK TOP OF CONCRETE AND FINAL GRADE.
5. DO NOT ROUTE CONDUITS THROUGH DETENTION PONDS.
6. MAINTAIN THE CONTINUITY OF CIRCUITS TO ALL EXISTING LOADS TO REMAIN.

ELECTRICAL KEYED NOTES

1. UNDERGROUND SERVICE ENTRANCE FEEDERS IN SCHEDULE 40 PVC CONDUITS FROM SECONDARY TAPS OF UTILITY TRANSFORMER TO MAIN SWITCHBOARD MSB-CB IN MAIN ELECTRICAL ROOM VIA CONCRETE ENCASED DUCT-BANK. REFER TO FEEDER SCHEDULE, SHEET ES.01.
2. UNDERGROUND FEEDERS IN SCHEDULE 40 PVC CONDUITS FROM AUTOMATIC TRANSFER SWITCH ATS-CB, 'EMERGENCY' LUGS TO MANUAL TRANSFER SWITCH, MTS-CB, 'LOAD' LUGS VIA CONCRETE ENCASED DUCT-BANK. CONTRACTOR TO COORDINATE WITH STRUCTURAL DRAWINGS TO ENSURE DUCT-BANK DEPTH PASSES UNDER STRUCTURAL BEAMS UNDERGROUND. REFER TO FEEDER SCHEDULE, SHEET ES.01.
3. PROVIDE 2 #10, 1#10 GND IN 1" CONDUIT FOR SITE LIGHTING CIRCUITS. CONTRACTOR TO SAW-CUT EXISTING CONCRETE AND REPAIR AFTER UNDERGROUND CONDUIT AND WIRING INSTALLATION. LIGHTING CIRCUIT CONTROLLED BY LIGHTING CONTROL PANEL "LCP" LOCATED IN MAIN ELECTRICAL ROOM. REFER TO DETAIL 6/ES.04 AND DETAIL 1/ES.05.
4. PROVIDE 2 #8, 1#8 GND IN 1" CONDUIT FOR SITE LIGHTING CIRCUITS TO ALSO BE USED FOR EMERGENCY EGRESS LIGHTING. CONTRACTOR TO SAW-CUT EXISTING CONCRETE AND REPAIR AFTER UNDERGROUND CONDUIT AND WIRING INSTALLATION. LIGHTING CIRCUIT CONTROLLED BY LIGHTING CONTROL PANEL "LCP" LOCATED IN MAIN ELECTRICAL ROOM. REFER TO DETAIL 6/E5.04 AND DETAIL 1/E5.05.
5. PROVIDE 2 #10, 1#10 GND IN 1" CONDUIT FOR BOLLARD LIGHTING CIRCUITS. LIGHTING CIRCUIT CONTROLLED BY LIGHTING CONTROL PANEL "LCP" LOCATED IN MAIN ELECTRICAL ROOM. REFER TO DETAIL 6/E5.04 AND DETAIL 1/E5.05. (TYPICAL)
6. UNDERGROUND FIRE PUMP FEEDERS IN SCHEDULE 40 PVC CONDUITS FROM SECONDARY TAPS OF UTILITY TRANSFORMER TO MAIN SWITCHBOARD MSB-CB IN MAIN ELECTRICAL ROOM VIA CONCRETE ENCASED DUCT-BANK. REFER TO ONE-LINE, SHEET ES.01 FOR FEEDER AND CONDUIT SIZES.



1 **ELECTRICAL SITE PLAN - NEW WORK - AREA A**
Scale: 1" = 20'-0"

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Salas O'Brien Project Number: 2550-01455-00

GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
STATE OF TEXAS
10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 1	10/08/2025
2	Addendum 3	10/17/2025
3	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
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SHEET TITLE
ELECTRICAL SITE PLAN - AREA A

SHEET NO.
E1.01A

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SITE LIGHTING FIXTURE SCHEDULE

Type Mark	CATALOG NUMBER MANUFACTURER	CATALOG NUMBER MODEL	MOUNTING	LAMP TYPE	CCT	CRI	VOLTAGE	LOAD	REMARKS
S1	GARDCO	OPF-M-A12-840-T3M-AR1	POLE MOUNT 1 @ 90	22,645L LED	4000 K	80	277 V	74 W	TYPE III AREA LUMINAIRE. 30' SQUARE STEEL POLE FACTORY CUT TO 27'-6".
S2	GARDCO	OPF-M-A12-840-T3M-AR1	POLE MOUNT 1 @ 90	22,645L LED	4000 K	80	277 V	300 W	TYPE III AREA LUMINAIRE. 30' SQUARE STEEL POLE FACTORY CUT TO 27'-6".
S4	GARDCO	OPF-M-A12-840-T3M-AR1	POLE MOUNT 1 @ 90	22,645L LED	4000 K	80	277 V	600 W	TYPE III AREA LUMINAIRE. 30' SQUARE STEEL POLE FACTORY CUT TO 27'-6".

1	FIXTURES SHOWN ON THE FLOORPLAN HAVING A DESIGNATION OF "E" FOLLOWING THE BASE DESIGNATION (I.E. - A FIXTURE TYPE "AE, C2E, FE") AND/OR A HALF SHADED REGION SHALL BE THE BASE FIXTURE TYPE EQUIPPED WITH THE APPROPRIATE BATTERY BACK-UP. 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.
2	ALL REQUIRED TEST SWITCHES FOR THE BATTERY BACK-UPS SHALL BE INTEGRAL TO THE FIXTURE.
3	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 INCLUDED IN THE PROPOSAL.
4	UNLESS OTHERWISE INDICATED ON THE SCHEDULE ABOVE, THE ARCHITECT/OWNER SHALL SELECT ALL FINISHES, COLORS, AND TRIMS.
5	ALL LED FIXTURE BOARDS AND DRIVERS SHALL BE OF THE LATEST GENERATION, BASED UPON THE INDIVIDUAL MANUFACTURER'S STATED LITERATURE. IF A "GEN 5" IS AVAILABLE, "GEN 4" FIXTURES ARE NOT ACCEPTABLE.
6	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.
7	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.
8	FOR PRIOR APPROVALS AND SUBMITTALS THAT DEVIATE FROM NOMINAL WATTAGE AND/OR DELIVERED LUMENS, IT SHALL BE UP 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 POWER SYSTEM.
9	ALL LIGHTING SPECIFIED SHALL BE 4000K INTERIOR UNLESS NOTED OTHERWISE.
10	THE CONTRACTOR SHALL PROVIDE ALL HARDWARE AND ACCESSORIES AS REQUIRED TO INSTALL FIXTURES IN LOCATIONS AS ILLUSTRATED WITH MOUNTING METHODS DESIRED.
11	WHEN A UNIVERSAL (120-277V) VOLTAGE OPTION IS AVAILABLE, IT SHALL BE PROVIDED. OTHERWISE PROVIDE AS INDICATED IN SCHEDULE.
12	FOR ALL SUSPENDED FIXTURES, COORDINATE THE EXACT MOUNTING ELEVATION ABOVE FINISHED FLOOR WITH ARCHITECT PRIOR TO INSTALLATION. PROVIDE SUSPENSION HARDWARE IN LENGTHS AS REQUIRED.
13	FIXTURES SHOWN ON THE FLOORPLAN HAVING A DESIGNATION OF "X" FOLLOWING THE BASE DESIGNATION (I.E. - A FIXTURE TYPE "AX, C2X, FX") SHALL BE THE BASE FIXTURE TYPE CONNECTED TO EMERGENCY LIGHTING INVERTER SYSTEM. REFER TO DETAIL 3 SHEET 10.42 FOR ADDITIONAL INFORMATION.
14	FIXTURES SHOWN ON THE FLOORPLAN HAVING A DESIGNATION OF "A" FOLLOWING THE BASE DESIGNATION (I.E. - A FIXTURE T YPE "A1A, C2A, FA") SHALL BE THE BASE FIXTURE TYPE EXCEPT SUITABLE FOR GYPSUM CEILING INSTALLATION AND EQUIPPED WITH THE APPROPRIATE BATTERY BACK-UP. 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.
15	ALL EXTERIOR LIGHT FIXTURES RECESSED IN A CANOPY OR SURFACED MOUNTED DIRECTLY TO THE BOTTOM OF A CANOPY SHALL BE UL OR ETL LISTED AS WET LOCATION. WHERE SPECIFICALLY STATED IN THE LIGHTING FIXTURE SCHEDULE AS "DAMP LOCATION" FIXTURES AND PROTECTED BY THE BUILDING STRUCTURE FROM FALLING OR WIND DRIVEN RAIN OR SNOW, THEY MAY BE EITHER DAMP OR WET LOCATION LISTED.
16	ALL EXTERIOR LIGHT FIXTURES NOT RECESSED IN A CANOPY OR SURFACED MOUNTED DIRECTLY TO THE BOTTOM OF A CANOPY SHALL BE UL OR ETL LISTED AS WET FROM ABOVE LOCATION.

SITE GENERAL NOTES

1	CONTRACTOR TO COORDINATE FINAL LOCATION OF ALL CONDUITS WITH ALL OTHER TRADES.
2	REFER TO CIVIL DRAWINGS FOR FINAL ROUTING AND DEPTH OF ALL UNDERGROUND UTILITIES.
3	PROVIDE PULL WIRES IN ALL EMPTY CONDUITS.
4	ALL FACILITIES INSTALLED TO SERVE THE UTILITY COMPANY SHALL BE MADE PER THE UTILITY COMPANY STANDARDS. A MINIMUM 1-FOOT VERTICAL CLEARANCE SHALL BE MAINTAINED BETWEEN THE UTILITY COMPANY PRIMARY DUCTBANK AND ALL OTHER UTILITIES CROSSING THE DUCTBANK. A MINIMUM 5-FEET HORIZONTAL CLEARANCE SHALL BE MAINTAINED BETWEEN THE UTILITY COMPANY PRIMARY DUCTBANK AND ALL OTHER UTILITIES RUNNING PARALLEL. A MINIMUM 4-FEET SHALL BE MAINTAINED BETWEEN PRIMARY DUCTBANK TOP OF CONCRETE AND FINAL GRADE.
5	DO NOT ROUTE CONDUITS THROUGH DETENTION PONDS.
6	MAINTAIN THE CONTINUITY OF CIRCUITS TO ALL EXISTING LOADS TO REMAIN.

ELECTRICAL KEYED NOTES

2	1	FUTURE 750 KW NATURAL GAS GENERATOR IN WEATHER ENCLOSURE. REFER TO ONE-LINE DIAGRAM, SHEET E5.01.
1	2	CONCRETE PAD FOR UTILITY TRANSFORMER PER CENTERPOINT REQUIREMENTS. TRANSFORMER TO BE SIZED PER CENTERPOINT, 12470Y/4803Y/277V, STEP-DOWN TRANSFORMER.
	3	800A MANUAL TRANSFER SWITCH WITH CONNECTION BOX FOR TEMPORARY GENERATOR. REFER TO DETAIL 2, SHEET E5.05.
	4	MEDIUM VOLTAGE UNDERGROUND CONCRETE ENCASE DUCT-BANK PER CENTERPOINT STANDARDS. CONDUIT TO TRANSITION FROM POLE TO UNDERGROUND DUCT-BANK PER CENTERPOINT STANDARDS AND TURN UP UNDER NEW PAD MOUNTED TRANSFORMER. REFER TO SHEET E1.02B FOR CONTINUATION.
	5	PROPOSED LOCATION OF CENTERPOINT MEDIUM VOLTAGE DISCONNECT & METER PER CENTERPOINT STANDARDS.
3	6	PROVIDE 4-#3/0 AWG, 1-#2/0 AWG GROUND IN EACH OF FOUR (4) 2" SCHEDULE 40 PVC CONDUITS FROM 500 KW GENERATOR 800A OUTPUT BREAKER TO MTS-CB 'NORMAL' LUGS VIA EXISTING UNDERGROUND CONCRETE ENCASED DUCT-BANK AND CONNECT AS REQUIRED. REFER TO REFER TO ONE-LINE DIAGRAM, SHEET E5.01 AND ELEVATIONS 5 & 6, SHEET E4.01.
	7	UNDERGROUND SERVICE ENTRANCE FEEDERS IN SCHEDULE 40 PVC CONDUITS FROM SECONDARY TAPS OF UTILITY TRANSFORMER TO MAIN SWITCHBOARD MSB-CB IN MAIN ELECTRICAL ROOM VIA CONCRETE ENCASED DUCT-BANK. REFER TO FEEDER SCHEDULE, SHEET E5.01.
2	8	UNDERGROUND FEEDERS IN SCHEDULE 40 PVC CONDUITS FROM AUTOMATIC TRANSFER SWITCH, ATS-CB, 'EMERGENCY' LUGS TO MANUAL TRANSFER SWITCH, MTS-CB, 'LOAD' LUGS VIA CONCRETE ENCASED DUCT-BANK. CONTRACTOR TO COORDINATE WITH STRUCTURAL DRAWINGS TO ENSURE DUCT-BANK DEPTH PASSES UNDER STRUCTURAL BEAMS UNDERGROUND. REFER TO FEEDER SCHEDULE, SHEET E5.01.
	9	PROVIDE 2 #8, 1#8 GND IN 1" CONDUIT FOR SITE LIGHTING CIRCUITS TO ALSO BE USED FOR EMERGENCY EGRESS LIGHTING. CONTRACTOR TO SAW-CUT EXISTING CONCRETE AND REPAIR AFTER UNDERGROUND CONDUIT AND WIRING INSTALLATION. LIGHTING CIRCUIT CONTROLLED BY LIGHTING CONTROL PANEL "LCP" LOCATED IN MAIN ELECTRICAL ROOM. REFER TO DETAIL 6/E5.04 AND DETAIL 1/E5.05.
	10	UNDERGROUND FIRE PUMP FEEDERS IN SCHEDULE 40 PVC CONDUITS FROM SECONDARY TAPS OF UTILITY TRANSFORMER TO MAIN SWITCHBOARD MSB-CB IN MAIN ELECTRICAL ROOM VIA CONCRETE ENCASED DUCT-BANK. REFER TO ONE-LINE, SHEET E5.01 FOR FEEDER AND CONDUIT SIZES.



N

1 **ELECTRICAL SITE PLAN - NEW WORK - AREA B**
Scale: 1" = 20'-0"

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Salas O'Brien Project Number: 2550-01455-00

GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 1	10/08/2025
2	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

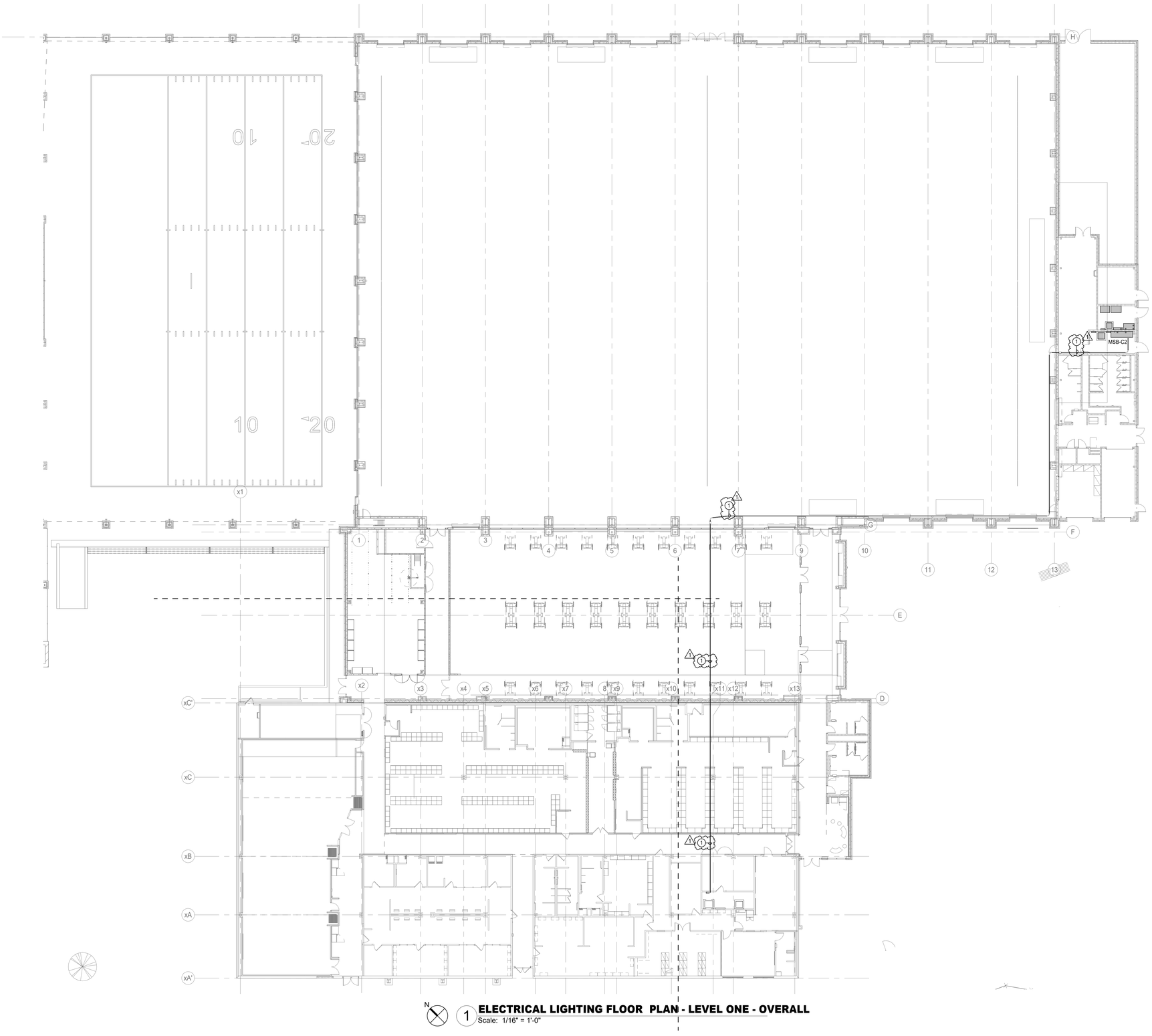
SHEET TITLE
ELECTRICAL SITE PLAN - AREA B

SHEET NO.
E1.02B

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ELECTRICAL KEYED NOTES

1	CONDUIT ROUTING FOR NEW 400A FEED TO NEW PANEL HC IN EXISTING FIELD HOUSE ELECTRICAL ROOM. CONTRACTOR TO KEEP CONDUITS AS CONCEALED FROM VIEW AS POSSIBLE. COORDINATE WITH ARCHITECTURAL TO DETERMINE IF PAINTING IS REQUIRED TO HELP CONCEAL CONDUITS, FITTINGS AND ASSOCIATED PULL-BOXES. REFER TO ONE-LINE FEEDER SCHEDULE FOR CONDUCTOR AND CONDUIT SIZES.



N

1 **ELECTRICAL LIGHTING FLOOR PLAN - LEVEL ONE - OVERALL**
Scale: 1/16" = 1'-0"

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10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

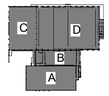
Revision No.		Revision Date
1	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
ELECTRICAL COMPOSITE PLAN - LEVEL ONE - OVERALL

SHEET NO.
E2.01



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ELECTRICAL GENERAL NOTES

1. PROVIDE NEW LIGHTING CONTROLS, SENSORS AND ASSOCIATED DEVICES, AND 20A EMERGENCY LOAD CONTROL RELAYS. REFER TO SPECIFICATIONS AND CONTROLS SCHEDULE.
2. LOCATE DIGITAL LIGHTING CONTROLLER AND / OR EMERGENCY LOAD CONTROL RELAY ABOVE ACCESSIBLE CEILING 12-FEET AFF OR BELOW ADJACENT TO SWITCH CONTROLLING THE SPACE. IN NON-ACCESSIBLEAND / OR HIGH CEILING AREAS, LOCATE DIGITAL LIGHTING CONTROLLER IN ADJACENT ANCILLARY AREA WITH ACCESSIBLE CEILING; IN AREAS WITH NO CEILING AND / OR IN EXTERIOR APPLICATIONS LOCATE ADJACENT TO PANEL SERVING THE LOAD. PROVIDE LABEL, GRID MARKERS WITH WORDING PER SPECIFICATIONS.
3. LOCATE DIGITAL LIGHTING CONTROLLER FOR CORRIDORS, GYM AND HIGH CEILING AREAS WITH NO ADJACENT ANCILLARY AREA ADJACENT TO PANEL SERVING THE LOAD. PROVIDE LABEL, GRID MARKERS WITH WORDING PER SPECIFICATIONS.
4. OCCUPANCY / VACANCY SENSOR AND DAYLIGHTING SENSOR LOCATIONS INDICATE SPACE OR AREA CONTROLLED, CONTRACTOR TO PROVIDE ACTUAL QUANTITIES, TYPES, AND MOUNTING LOCATIONS AS RECOMMENDED BY MANUFACTURER AND IECC-2018 C405.
5. SPACES WITH MULTIPLE OCCUPANCY / VACANCY SENSORS OR WHERE LINE OF SIGHT MAY BE OBSCURED, SHALL BE LINKED TOGETHER FOR SIMULTANEOUS OPERATION WITHIN THE SPACE.
6. CONTRACTOR SHALL MAINTAIN CONSTANT UNSWITCHED CIRCUITS FROM EXISTING SOURCE AND / OR NEW AS SHOWN FOR EMERGENCY FIXTURES, EMERGENCY LOAD RELAYS AND EXIT SIGNS.
7. COORDINATE LOCATION OF LIGHT FIXTURES IN ALL MECHANICAL AND ELECTRICAL ROOMS WITH MECHANICAL EQUIPMENT, PIPING, AND ALL OTHER TRADES.
8. FIELD COORDINATE LOCATION OF AV ZONE AND AV ZONE SWITCH WITH EXISTING TEACHING WALLS.

LIGHTING GENERAL NOTES

1	PROVIDE PULL STRINGS IN ALL EMPTY CONDUITS.
2	ALL JUNCTION BOXES, CONDUITS, AND WIRES SHALL BE SIZED PER NEC.
3	CONNECT ALL EXIT LIGHTS AHEAD OF ANY LOCAL OR AUTOMATIC SWITCHING DEVICE. PROVIDE POWER VIA NEAREST LIGHTING CIRCUIT NOT TO EXCEED 16A.
4	REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION & MOUNTING HEIGHTS OF ALL LIGHTING FIXTURES SHOWN ON THIS DRAWING.
5	REFER TO SHEETS 10.41 FOR LIGHTING FIXTURE SCHEDULE AND LIGHTING CONTACTOR SCHEDULE.
6	ELECTRICAL CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY PROBLEMS PERTAINING TO CIRCUIT AVAILABILITY OR LOAD CAPACITY PRIOR TO INSTALLATION.
7	ELECTRICAL CONTRACTOR SHALL CONFIRM COMPATIBILITY OF ALL LIGHTING CONTROL SYSTEMS.
8	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.
9	ALL CLASSROOMS AND SPACES DO NOT REQUIRE DAYLIGHT HARVESTING CONTROLS, UNLESS NOTED ON PLAN. PER 2015 IECC C405.2.3 WATTAGE REQUIREMENT.
10	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.
11	PROVIDE CONNECTION FROM INVERTER PANEL FOR EMERGENCY POWER FOR ALL EGRESS FIXTURES, PROVIDE ECM MODULE FOR CONNECTION OF EMERGENCY LOADS. CIRCUIT NORMAL AND EMERGENCY POWER AS INDICATED. REFER TO DETAIL #12 ON SHEET 10.42 AND ONE-LINE DIAGRAM ON SHEET 10.51.
12	LOWER CASE LETTER INDICATES SWITCHING SCHEME.
13	ALL ABOVE CEILING POWER PACKS TO BE MOUNTED ABOVE ROOM DOORS REGARDLESS OF SCHEMATIC DESIGN SHOWN ON FLOOR PLANS. E.C. SHALL ENSURE INSTALLATION OF ALL POWER PACKS OCCUR ABOVE ROOM DOORS.

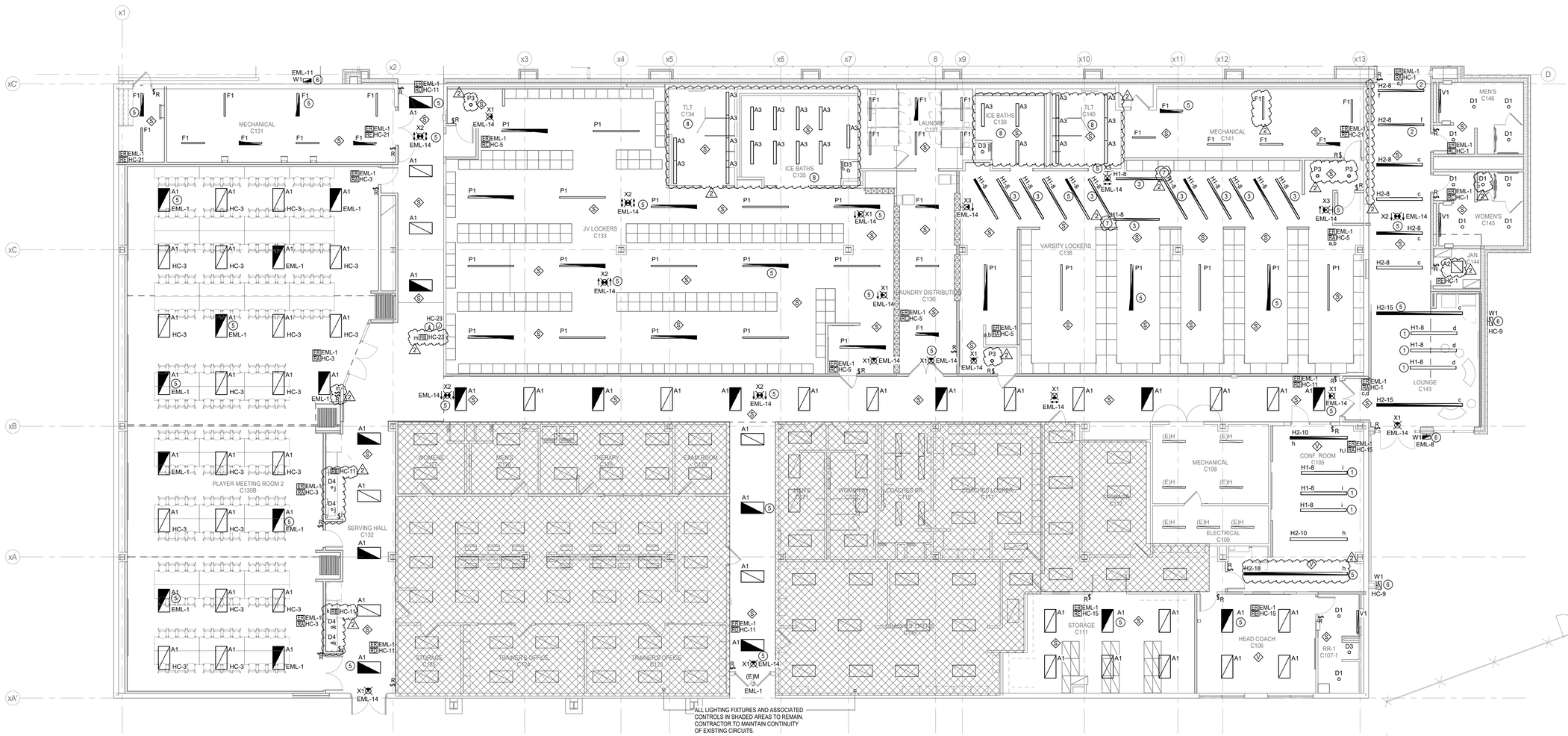
LIGHTING CONTROLS SHALL BE CAPABLE OF AUTOMATICALLY MAINTAIN LIGHTING LEVELS IN EGRESS PATHES PER NFPA 101 INCASE OF POWER LOSS AND WHENEVER FIRE ALARM SYSTEM IS ACTIVATED. CONTRACTOR TO MAKE ALL TIE-IN CONNECTIONS TO FIRE ALARM SYSTEM AND TO COORDINATE WITH FIRE ALARM CONTRACTOR PRIOR TO COMMENCMENT OF WORK.

ELECTRICAL KEYED NOTES

1	1	ARCHITECTURAL METAL SLOTTED CEILING PANEL. H1 FIXTURES TO BE INSTALLED IN SLOTS OF METAL CEILING PANELS. COORDINATE WITH ARCHITECTURAL DRAWINGS AND MANUFACTURER FOR MOUNTING REQUIREMENTS. H2 FIXTURES TO BE CONTROLLED INDEPENDANTLY OF OTHER LIGHTING FIXTURES ON SAME CIRCUIT.
	2	ARCHITECTURAL METAL SLOTTED CEILING PANEL. H2 FIXTURES TO BE INSTALLED IN SLOTS OF METAL CEILING PANELS. COORDINATE WITH ARCHITECTURAL DRAWINGS AND MANUFACTURER FOR MOUNTING REQUIREMENTS. H2 FIXTURES TO BE CONTROLLED INDEPENDANTLY OF OTHER LIGHTING FIXTURES ON SAME CIRCUIT.
	3	ARCHITECTURAL METAL SLOTTED CEILING PANEL WITH SCHOOL LOGO. H3 FIXTURES TO BE INSTALLED IN SLOTS OF METAL CEILING PANELS. COORDINATE WITH ARCHITECTURAL DRAWINGS AND MANUFACTURER FOR MOUNTING REQUIREMENTS. H3 FIXTURES TO BE CONTROLLED INDEPENDANTLY OF OTHER LIGHTING FIXTURES ON SAME CIRCUIT.
	4	ARKTURA CEILING PANELS WITH SINGLE POINT 277V CONNECTION AND CIRCUIT AS INDICATED. DECORATIVE CEILING PANEL TO BE CONTROLLED VIA LOW VOLTAGE DIMMING SWITCH. COORDINATE WITH ARCHITECT FOR SWITCH LOCATION.
	5	EXIT SIGNS AND EMERGENCY EGRESS LIGHTING SHALL BE CIRCUITED TO LIGHTING INVERTER AND SHALL BE WIRED AHEAD OF ANY LOCAL SWITCHING PER NEC. CONTRACTOR SHALL VERIFY AND COORDINATE ALL CHEVRONS AND THEIR ASSOCIATED DIRECTIONS PRIOR TO PURCHASE OF EXIT SIGNS. (TYPICAL)
	6	WALL PACK LIGHTING TO BE ROUTED VIA LIGHTING CONTROL PANEL 1 OR 2.
2	7	PROVIDE SEAMLESS LIGHT TRANSITION FROM STRAIGHT TO ANGLED RUNS AROUND SCHOOL LOGO.
	8	PROVIDE NEW FIXTURES, TYPE A3, IN EXISTING RESTROOM AND ICE BATH CEILINGS IN SAME PLACE AS DEMOLISHED EXISTING FIXTURES. CONTRACTOR TO MAINTAIN EXISTING CEILINGS IN THESE SPACES.

LIGHTING CONTROLS SCHEDULE

Type	Sensor Operation	# of Lighting Zones	# of Plug Load Zones	# of Total Zones	Description	AREA
RA	OCCUPANCY - AUTO ON / AUTO OFF	1	1	2	MULTI-BUTTON ZONING SWITCH WITH 100%, 50%, RAISE, LOWER, OFF; 0-10V DIMMING.	CONFERENCE ROOMS/VARSITY LOCKER ROOM
RB	VACANCY - MANUAL ON / AUTO OFF	2	1	3	ON-OFF SWITCHING, 0-10V DIMMING.	HEAD COACHES OFFICE
RC	VACANCY - MANUAL ON / AUTO OFF	2	1	2	ON-OFF KEYED SWITCH	JV LOCKER RM/WEIGHT RM/RESTROOMS
RD	OCCUPANCY - AUTO ON / AUTO OFF	1	-	1	ON/OFF KEYED SWITCH	CORRIDORS
RE	-	3	-	3	MECHANICALLY WOUND TIMER SWITCH	JANITORS/STORAGE ROOMS/ELEC/MECH
ER	-	-	-	-	UL924 LOAD CONTROL RELAY, PLENUM RATED, 0-10V COMPATIBLE, 16A MINIMUM	-



N

1 **ELECTRICAL LIGHTING FLOOR PLAN - LEVEL ONE - UNIT A**
Scale: 1/8" = 1'-0"

VLK

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Salas O'Brien Project Number: 2550-01455-00

GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

BRADLEY KALMANS — 80219 — LICENSED — 10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 1	10/08/2025
2	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
ELECTRICAL LIGHTING PLAN - LEVEL ONE - UNIT A

SHEET NO.
E2.02A

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ELECTRICAL GENERAL NOTES

1. PROVIDE NEW LIGHTING CONTROLS, SENSORS AND ASSOCIATED DEVICES, AND 20A EMERGENCY LOAD CONTROL RELAYS. REFER TO SPECIFICATIONS AND CONTROLS SCHEDULE.
2. LOCATE DIGITAL LIGHTING CONTROLLER AND / OR EMERGENCY LOAD CONTROL RELAY ABOVE ACCESSIBLE CEILING 12-FEET AFF OR BELOW ADJACENT TO SWITCH CONTROLLING THE SPACE. IN NON-ACCESSIBLEAND / OR HIGH CEILING AREAS, LOCATE DIGITAL LIGHTING CONTROLLER IN ADJACENT ANCILLARY AREA WITH ACCESSIBLE CEILING; IN AREAS WITH NO CEILING AND / OR IN EXTERIOR APPLICATIONS LOCATE ADJACENT TO PANEL SERVING THE LOAD. PROVIDE LABEL, GRID MARKERS WITH WORDING PER SPECIFICATIONS.
3. LOCATE DIGITAL LIGHTING CONTROLLER FOR CORRIDORS, GYM AND HIGH CEILING AREAS WITH NO ADJACENT ANCILLARY AREA ADJACENT TO PANEL SERVING THE LOAD. PROVIDE LABEL, GRID MARKERS WITH WORDING PER SPECIFICATIONS.
4. OCCUPANCY / VACANCY SENSOR AND DAYLIGHTING SENSOR LOCATIONS INDICATE SPACE OR AREA CONTROLLED, CONTRACTOR TO PROVIDE ACTUAL QUANTITIES, TYPES, AND MOUNTING LOCATIONS AS RECOMMENDED BY MANUFACTURER AND IECC-2018 C405.
5. SPACES WITH MULTIPLE OCCUPANCY / VACANCY SENSORS OR WHERE LINE OF SIGHT MAY BE OBSCURED, SHALL BE LINKED TOGETHER FOR SIMULTANEOUS OPERATION WITHIN THE SPACE.
6. CONTRACTOR SHALL MAINTAIN CONSTANT UNSWITCHED CIRCUITS FROM EXISTING SOURCE AND / OR NEW AS SHOWN FOR EMERGENCY FIXTURES, EMERGENCY LOAD RELAYS AND EXIT SIGNS.
7. COORDINATE LOCATION OF LIGHT FIXTURES IN ALL MECHANICAL AND ELECTRICAL ROOMS WITH MECHANICAL EQUIPMENT, PIPING, AND ALL OTHER TRADES.
8. FIELD COORDINATE LOCATION OF AV ZONE AND AV ZONE SWITCH WITH EXISTING TEACHING WALLS.

LIGHTING GENERAL NOTES

1	PROVIDE PULL STRINGS IN ALL EMPTY CONDUITS.
2	ALL JUNCTION BOXES, CONDUITS, AND WIRES SHALL BE SIZED PER NEC.
3	CONNECT ALL EXIT LIGHTS AHEAD OF ANY LOCAL OR AUTOMATIC SWITCHING DEVICE. PROVIDE POWER VIA NEAREST LIGHTING CIRCUIT NOT TO EXCEED 16A.
4	REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION & MOUNTING HEIGHTS OF ALL LIGHTING FIXTURES SHOWN ON THIS DRAWING.
5	REFER TO SHEETS 10.41 FOR LIGHTING FIXTURE SCHEDULE AND LIGHTING CONTACTOR SCHEDULE.
6	ELECTRICAL CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY PROBLEMS PERTAINING TO CIRCUIT AVAILABILITY OR LOAD CAPACITY PRIOR TO INSTALLATION.
7	ELECTRICAL CONTRACTOR SHALL CONFIRM COMPATIBILITY OF ALL LIGHTING CONTROL SYSTEMS.
8	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.
9	ALL CLASSROOMS AND SPACES DO NOT REQUIRE DAYLIGHT HARVESTING CONTROLS, UNLESS NOTED ON PLAN. PER 2015 IECC C405.2.3 WATTAGE REQUIREMENT.
10	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.
11	PROVIDE CONNECTION FROM INVERTER PANEL FOR EMERGENCY POWER FOR ALL EGRESS FIXTURES, PROVIDE ECM MODULE FOR CONNECTION OF EMERGENCY LOADS. CIRCUIT NORMAL AND EMERGENCY POWER AS INDICATED. REFER TO DETAIL #12 ON SHEET 10.42 AND ONE-LINE DIAGRAM ON SHEET 10.51.
12	LOWER CASE LETTER INDICATES SWITCHING SCHEME.
13	ALL ABOVE CEILING POWER PACKS TO BE MOUNTED ABOVE ROOM DOORS REGARDLESS OF SCHEMATIC DESIGN SHOWN ON FLOOR PLANS. E.C. SHALL ENSURE INSTALLATION OF ALL POWER PACKS OCCUR ABOVE ROOM DOORS.

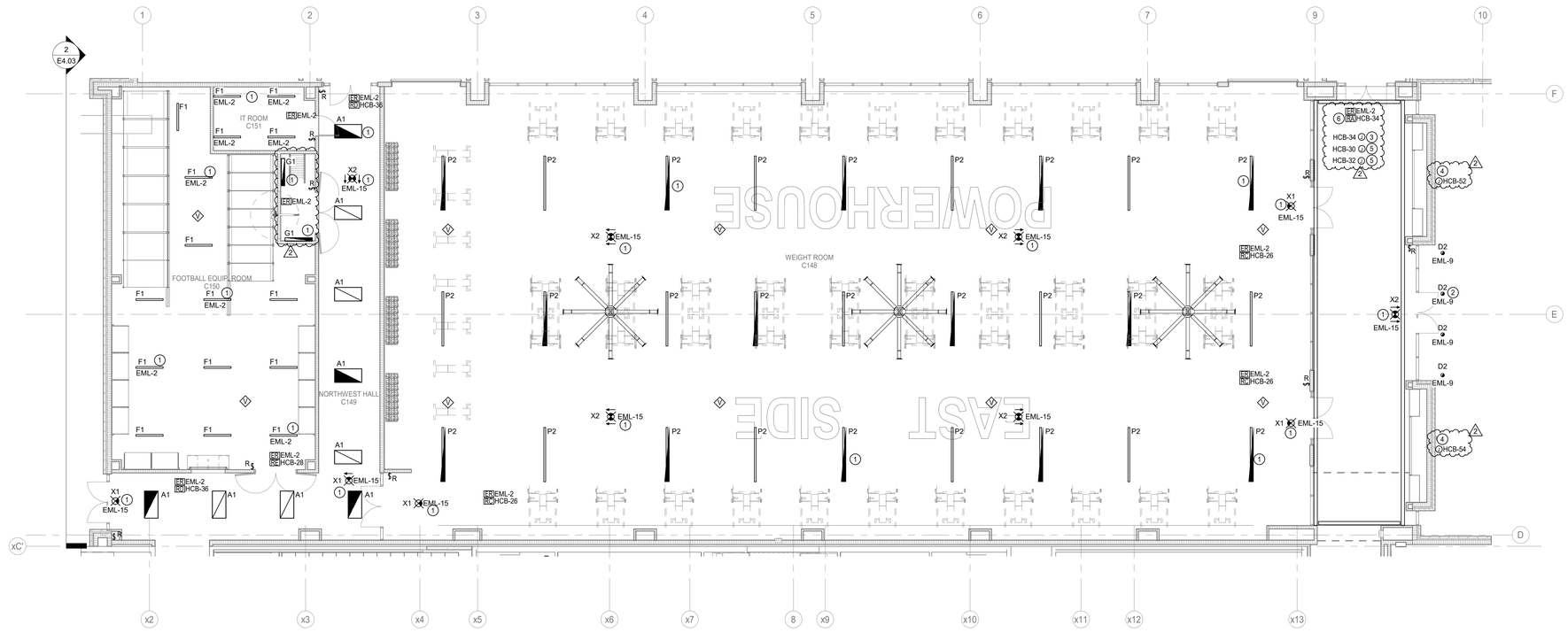
LIGHTING CONTROLS SHALL BE CAPABLE OF AUTOMATICALLY MAINTAIN LIGHTING LEVELS IN EGRESS PATHES PER NFPA 101 INCASE OF POWER LOSS AND WHENEVER FIRE ALARM SYSTEM IS ACTIVATED. CONTRACTOR TO MAKE ALL TIE-IN CONNECTIONS TO FIRE ALARM SYSTEM AND TO COORDINATE WITH FIRE ALARM CONTRACTOR PRIOR TO COMMENCMENT OF WORK.

ELECTRICAL KEYED NOTES

1	1	EXIT SIGNS AND EMERGENCY EGRESS LIGHTING SHALL BE CIRCUITED TO LIGHTING INVERTER AND SHALL BE WIRED AHEAD OF ANY LOCAL SWITCHING PER NEC. CONTRACTOR SHALL VERIFY AND COORDINATE ALL CHEVRONS AND THEIR ASSOCIATED DIRECTIONS PRIOR TO PURCHASE OF EXIT SIGNS.
	2	EXTERIOR EMERGENCY EGRESS CANOPY DOWN LIGHTING TO BE ROUTED VIA LIGHTING CONTROL PANEL 'LCP' AND CIRCUITED THROUGH LIGHTING INVERTER.
	3	SINGLE POINT CONNECTION FOR ARKTURA HANGING CEILING SYSTEM LINEAR PERIMETER LIGHTING. ROUTE CEILING LIGHTING SYSTEM THROUGH ROOM CONTROLLER 'RC' AND CIRCUIT AS INDICATED. MOUNTING HEIGHT TO BE DETERMINED BY ARCHITECT/MANUFACTURER.
2	4	SINGLE POINT CONNECTION FOR EXTERIOR MUSTANG SIGN AND CIRCUIT AS INDICATED. CIRCUIT TO BE ROUTED VIA LIGHTING CONTROL PANEL, LCP, REFER TO DETAIL 1, SHEET E5.05.
	5	SINGLE POINT CONNECTION FOR ARKTURA HANGING CEILING SYSTEM 2x4 BACK-LIGHTING. ROUTE CEILING LIGHTING SYSTEM THROUGH ROOM CONTROLLER 'RC' AND CIRCUIT AS INDICATED. MOUNTING HEIGHT TO BE DETERMINED BY ARCHITECT/MANUFACTURER.
	6	CEILING PANEL SYSTEM WILL BE PROVIDED WITH TWO (2) ZONES: ONE FOR PERIMETER LIGHTING AND THE SECOND FOR CEILING TILE BACK-LIGHTING.

LIGHTING CONTROLS SCHEDULE

Type	Sensor Operation	# of Lighting Zones	# of Plug Load Zones	# of Total Zones	Description	AREA
RA	OCCUPANCY - AUTO ON / AUTO OFF	1	1	2	MULTI-BUTTON ZONING SWITCH WITH 100%, 50%, RAISE, LOWER, OFF; 0-10V DIMMING.	CONFERENCE ROOMS/VARSITY LOCKER ROOM
RC	VACANCY - MANUAL ON / AUTO OFF	2	1	2	ON-OFF KEYED SWITCH	JV LOCKER RM/WEIGHT RM/RESTROOMS
RD	OCCUPANCY - AUTO ON / AUTO OFF	1	-	1	ON/OFF KEYED SWITCH	CORRIDORS
RE	-	3	-	3	MECHANICALLY WOUND TIMER SWITCH	JANITORS/STORAGE ROOMS/ELEC/MECH
ER	-	-	-	-	UL924 LOAD CONTROL RELAY, PLENUM RATED, 0-10V COMPATIBLE, 16A MINIMUM	-



N

1 **ELECTRICAL LIGHTING FLOOR PLAN - LEVEL ONE - UNIT B**
Scale: 1/8" = 1'-0"

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North Shore Multi-Use Indoor Facility

BRADLEY KALMANS 80219 LICENSED PROFESSIONAL ENGINEER
10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
1 Addendum 1	10/08/2025
2 Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

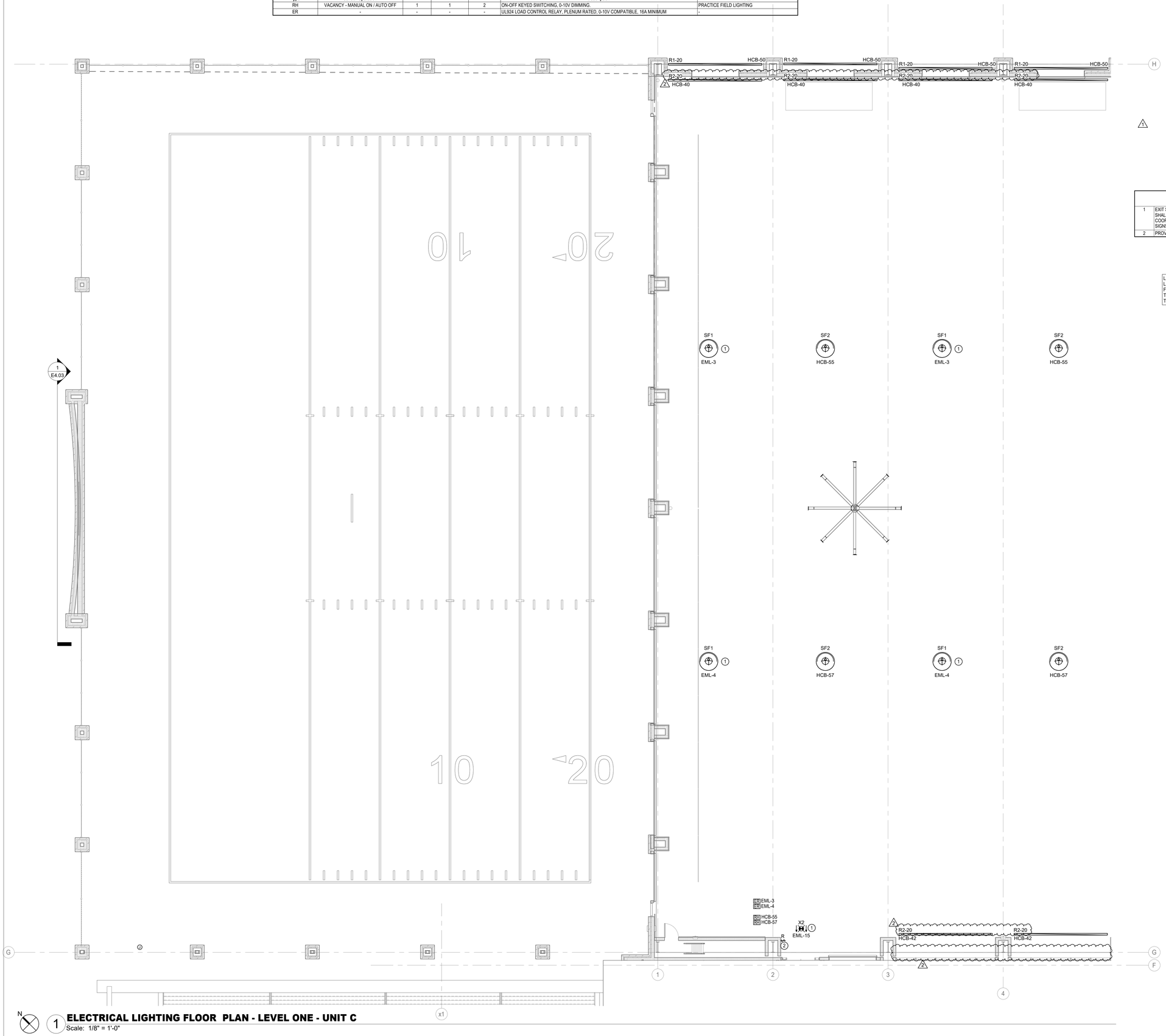
SHEET TITLE
ELECTRICAL LIGHTING PLAN - LEVEL ONE - UNIT B

SHEET NO.
E2.03B

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LIGHTING CONTROLS SCHEDULE

Type	Sensor Operation	# of Lighting Zones	# of Plug Load Zones	# of Total Zones	Description	AREA
RH	VACANCY - MANUAL ON / AUTO OFF	1	1	2	ON-OFF KEYED SWITCHING, 0-10V DIMMING.	PRACTICE FIELD LIGHTING
ER	-	-	-	-	UL924 LOAD CONTROL RELAY, PLENUM RATED, 0-10V COMPATIBLE, 16A MINIMUM	-



1 **ELECTRICAL LIGHTING FLOOR PLAN - LEVEL ONE - UNIT C**
Scale: 1/8" = 1'-0"

ELECTRICAL GENERAL NOTES

1. PROVIDE NEW LIGHTING CONTROLS, SENSORS AND ASSOCIATED DEVICES, AND 20A EMERGENCY LOAD CONTROL RELAYS. REFER TO SPECIFICATIONS AND CONTROLS SCHEDULE.
2. LOCATE DIGITAL LIGHTING CONTROLLER AND / OR EMERGENCY LOAD CONTROL RELAY ABOVE ACCESSIBLE CEILING 12-FEET AFF OR BELOW ADJACENT TO SWITCH CONTROLLING THE SPACE; IN NON-ACCESSIBLEAND / OR HIGH CEILING AREAS, LOCATE DIGITAL LIGHTING CONTROLLER IN ADJACENT ANCILLARY AREA WITH ACCESSIBLE CEILING; IN AREAS WITH NO CEILING AND / OR IN EXTERIOR APPLICATIONS LOCATE ADJACENT TO PANEL SERVING THE LOAD. PROVIDE LABEL, GRID MARKERS WITH WORDING PER SPECIFICATIONS.
3. LOCATE DIGITAL LIGHTING CONTROLLER FOR CORRIDORS, GYM AND HIGH CEILING AREAS WITH NO ADJACENT ANCILLARY AREA ADJACENT TO PANEL SERVING THE LOAD. PROVIDE LABEL, GRID MARKERS WITH WORDING PER SPECIFICATIONS.
4. OCCUPANCY / VACANCY SENSOR AND DAYLIGHTING SENSOR LOCATIONS INDICATE SPACE OR AREA CONTROLLED, CONTRACTOR TO PROVIDE ACTUAL QUANTITIES, TYPES, AND MOUNTING LOCATIONS AS RECOMMENDED BY MANUFACTURER AND IECC-2018 C405.
5. SPACES WITH MULTIPLE OCCUPANCY / VACANCY SENSORS OR WHERE LINE OF SIGHT MAY BE OBSCURED, SHALL BE LINKED TOGETHER FOR SIMULTANEOUS OPERATION WITHIN THE SPACE.
6. CONTRACTOR SHALL MAINTAIN CONSTANT UNSWITCHED CIRCUITS FROM EXISTING SOURCE AND / OR NEW AS SHOWN FOR EMERGENCY FIXTURES, EMERGENCY LOAD RELAYS AND EXIT SIGNS.
7. COORDINATE LOCATION OF LIGHT FIXTURES IN ALL MECHANICAL AND ELECTRICAL ROOMS WITH MECHANICAL EQUIPMENT, PIPING, AND ALL OTHER TRADES.
8. FIELD COORDINATE LOCATION OF AV ZONE AND AV ZONE SWITCH WITH EXISTING TEACHING WALLS.

ELECTRICAL KEYED NOTES

1	EXIT SIGNS AND EMERGENCY EGRESS LIGHTING SHALL BE CIRCUITED TO LIGHTING INVERTER AND SHALL BE WIRED AHEAD OF ANY LOCAL SWITCHING PER NEC. CONTRACTOR SHALL VERIFY AND COORDINATE ALL CHEVRONS AND THEIR ASSOCIATED DIRECTIONS PRIOR TO PURCHASE OF EXIT SIGNS.
2	PROVIDE ONE SWITCH TO CONTROLLER 'RH' FOR FIELD LIGHTING CONTROL.

LIGHTING CONTROLS SHALL BE CAPABLE OF AUTOMATICALLY MAINTAIN LIGHTING LEVELS IN EGRESS PATHES PER NFPA 101 INCASE OF POWER LOSS AND WHENEVER FIRE ALARM SYSTEM IS ACTIVATED. CONTRACTOR TO MAKE ALL TIE-IN CONNECTIONS TO FIRE ALARM SYSTEM AND TO COORDINATE WITH FIRE ALARM CONTRACTOR PRIOR TO COMMENCMENT OF WORK.

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North Shore Multi-Use Indoor Facility

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10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

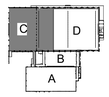
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1	Addendum 1	10/08/2025
2	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
ELECTRICAL LIGHTING PLAN - LEVEL ONE - UNIT C

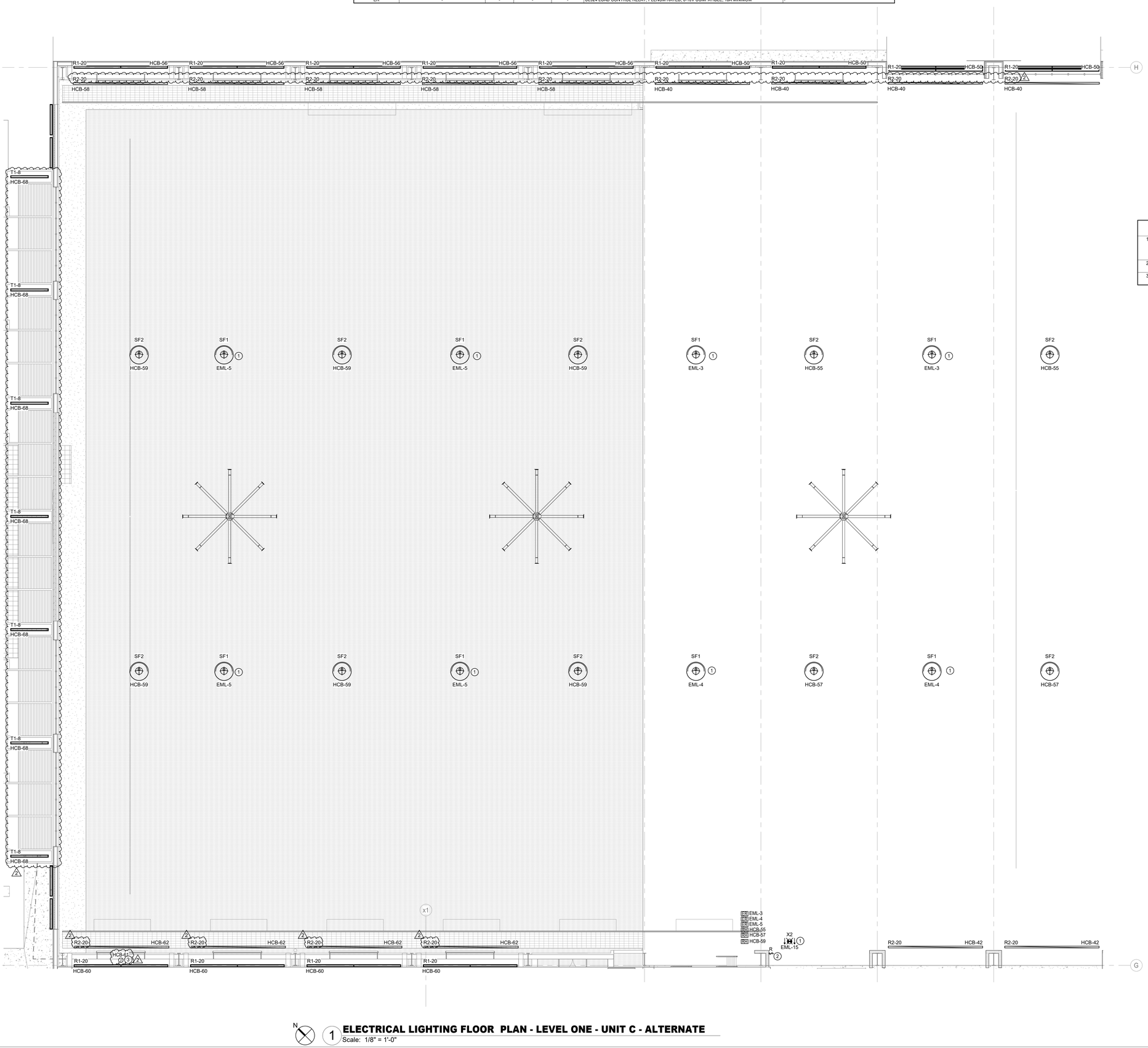
SHEET NO.
E2.04C



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LIGHTING CONTROLS SCHEDULE

Type	Sensor Operation	# of Lighting Zones	# of Plug Load Zones	# of Total Zones	Description	AREA
RH	VACANCY - MANUAL ON / AUTO OFF	1	1	2	ON-OFF KEYED SWITCHING, 0-10V DIMMING.	PRACTICE FIELD LIGHTING
ER	-	-	-	-	UL924 LOAD CONTROL RELAY, PLENUM RATED, 0-10V COMPATIBLE, 16A MINIMUM	-



1 **ELECTRICAL LIGHTING FLOOR PLAN - LEVEL ONE - UNIT C - ALTERNATE**
Scale: 1/8" = 1'-0"

ELECTRICAL GENERAL NOTES

1. PROVIDE NEW LIGHTING CONTROLS, SENSORS AND ASSOCIATED DEVICES, AND 20A EMERGENCY LOAD CONTROL RELAYS. REFER TO SPECIFICATIONS AND CONTROLS SCHEDULE.
2. LOCATE DIGITAL LIGHTING CONTROLLER AND / OR EMERGENCY LOAD CONTROL RELAY ABOVE ACCESSIBLE CEILING 12-FEET AFF OR BELOW ADJACENT TO SWITCH CONTROLLING THE SPACE; IN NON-ACCESSIBLEAND / OR HIGH CEILING AREAS, LOCATE DIGITAL LIGHTING CONTROLLER IN ADJACENT ANCILLARY AREA WITH ACCESSIBLE CEILING; IN AREAS WITH NO CEILING AND / OR IN EXTERIOR APPLICATIONS LOCATE ADJACENT TO PANEL SERVING THE LOAD. PROVIDE LABEL, GRID MARKERS WITH WORDING PER SPECIFICATIONS.
3. LOCATE DIGITAL LIGHTING CONTROLLER FOR CORRIDORS, GYM AND HIGH CEILING AREAS WITH NO ADJACENT ANCILLARY AREA ADJACENT TO PANEL SERVING THE LOAD. PROVIDE LABEL, GRID MARKERS WITH WORDING PER SPECIFICATIONS.
4. OCCUPANCY / VACANCY SENSOR AND DAYLIGHTING SENSOR LOCATIONS INDICATE SPACE OR AREA CONTROLLED, CONTRACTOR TO PROVIDE ACTUAL QUANTITIES, TYPES, AND MOUNTING LOCATIONS AS RECOMMENDED BY MANUFACTURER AND IECC-2018 C405.
5. SPACES WITH MULTIPLE OCCUPANCY / VACANCY SENSORS OR WHERE LINE OF SIGHT MAY BE OBSCURED, SHALL BE LINKED TOGETHER FOR SIMULTANEOUS OPERATION WITHIN THE SPACE.
6. CONTRACTOR SHALL MAINTAIN CONSTANT UNSWITCHED CIRCUITS FROM EXISTING SOURCE AND / OR NEW AS SHOWN FOR EMERGENCY FIXTURES, EMERGENCY LOAD RELAYS AND EXIT SIGNS.
7. COORDINATE LOCATION OF LIGHT FIXTURES IN ALL MECHANICAL AND ELECTRICAL ROOMS WITH MECHANICAL EQUIPMENT, PIPING, AND ALL OTHER TRADES.
8. FIELD COORDINATE LOCATION OF AV ZONE AND AV ZONE SWITCH WITH EXISTING TEACHING WALLS.

ELECTRICAL KEYED NOTES

1	EXIT SIGNS AND EMERGENCY EGRESS LIGHTING SHALL BE CIRCUITED TO LIGHTING INVERTER AND SHALL BE WIRED AHEAD OF ANY LOCAL SWITCHING PER NEC. CONTRACTOR SHALL VERIFY AND COORDINATE ALL CHEVRONS AND THEIR ASSOCIATED DIRECTIONS PRIOR TO PURCHASE OF EXIT SIGNS.
2	PROVIDE ONE SWITCH TO CONTROLLER 'RH' FOR FIELD LIGHTING CONTROL. ADDITIONAL POWER PACKS WILL BE TIED INTO WALL SWITCH WHEN PRACTICE FIELD IS FULLY ENCLOSED.
3	EXTERIOR NORTH SHORE HIGH SCHOOL SIGN AND CIRCUIT AS INDICATED. CIRCUIT TO BE ROUTED VIA LIGHTING CONTROL PANEL, LCP. REFER TO DETAIL 1, SHEET E5.05.

LIGHTING CONTROLS SHALL BE CAPABLE OF AUTOMATICALLY MAINTAIN LIGHTING LEVELS IN EGRESS PATHES PER NFPA 101 INCASE OF POWER LOSS AND WHENEVER FIRE ALARM SYSTEM IS ACTIVATED. CONTRACTOR TO MAKE ALL TIE-IN CONNECTIONS TO FIRE ALARM SYSTEM AND TO COORDINATE WITH FIRE ALARM CONTRACTOR PRIOR TO COMMENCMENT OF WORK.

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10.22.2025

ISSUED: OCTOBER 1, 2025

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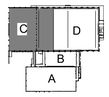
Revision No.		Revision Date
1	Addendum 1	10/08/2025
2	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
ELECTRICAL LIGHTING PLAN - LEVEL ONE - UNIT C - ALTERNATE

SHEET NO.
E2.04C.1



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LIGHTING CONTROLS SCHEDULE

Type	Sensor Operation	# of Lighting Zones	# of Plug Load Zones	# of Total Zones	Description	AREA
RE	-	3	-	3	MECHANICALLY WOUND TIMER SWITCH	JANITORS/STORAGE ROOMS/ELEC/MECH
RF	-	2	-	2	ON-OFF SWITCHING, 0-10V DIMMING, RGBW COLOR SELECTION	EXTERIOR DOOR ACCENT LIGHTING
RH	VACANCY - MANUAL ON / AUTO OFF	1	1	2	ON-OFF KEYED SWITCHING, 0-10V DIMMING.	PRACTICE FIELD LIGHTING
ER	-	-	-	-	UL924 LOAD CONTROL RELAY, PLENUM RATED, 0-10V COMPATIBLE, 16A MINIMUM	-

ELECTRICAL GENERAL NOTES

1. PROVIDE NEW LIGHTING CONTROLS, SENSORS AND ASSOCIATED DEVICES, AND 20A EMERGENCY LOAD CONTROL RELAYS. REFER TO SPECIFICATIONS AND CONTROLS SCHEDULE.
2. LOCATE DIGITAL LIGHTING CONTROLLER AND / OR EMERGENCY LOAD CONTROL RELAY ABOVE ACCESSIBLE CEILING 12-FEET AFF OR BELOW ADJACENT TO SWITCH CONTROLLING THE SPACE; IN NON-ACCESSIBLEAND / OR HIGH CEILING AREAS, LOCATE DIGITAL LIGHTING CONTROLLER IN ADJACENT ANCILLARY AREA WITH ACCESSIBLE CEILING; IN AREAS WITH NO CEILING AND / OR IN EXTERIOR APPLICATIONS LOCATE ADJACENT TO PANEL SERVING THE LOAD. PROVIDE LABEL, GRID MARKERS WITH WORDING PER SPECIFICATIONS.
3. LOCATE DIGITAL LIGHTING CONTROLLER FOR CORRIDORS, GYM AND HIGH CEILING AREAS WITH NO ADJACENT ANCILLARY AREA ADJACENT TO PANEL SERVING THE LOAD. PROVIDE LABEL, GRID MARKERS WITH WORDING PER SPECIFICATIONS.
4. OCCUPANCY / VACANCY SENSOR AND DAYLIGHTING SENSOR LOCATIONS INDICATE SPACE OR AREA CONTROLLED, CONTRACTOR TO PROVIDE ACTUAL QUANTITIES, TYPES, AND MOUNTING LOCATIONS AS RECOMMENDED BY MANUFACTURER AND IECC-2018 C405.
5. SPACES WITH MULTIPLE OCCUPANCY / VACANCY SENSORS OR WHERE LINE OF SIGHT MAY BE OBSCURED, SHALL BE LINKED TOGETHER FOR SIMULTANEOUS OPERATION WITHIN THE SPACE.
6. CONTRACTOR SHALL MAINTAIN CONSTANT UNSWITCHED CIRCUITS FROM EXISTING SOURCE AND / OR NEW AS SHOWN FOR EMERGENCY FIXTURES, EMERGENCY LOAD RELAYS AND EXIT SIGNS.
7. COORDINATE LOCATION OF LIGHT FIXTURES IN ALL MECHANICAL AND ELECTRICAL ROOMS WITH MECHANICAL EQUIPMENT, PIPING, AND ALL OTHER TRADES.
8. FIELD COORDINATE LOCATION OF AV ZONE AND AV ZONE SWITCH WITH EXISTING TEACHING WALLS.

ELECTRICAL KEYED NOTES

1	EXIT SIGNS AND EMERGENCY EGRESS LIGHTING SHALL BE CIRCUITED TO LIGHTING INVERTER AND SHALL BE WIRED AHEAD OF ANY LOCAL SWITCHING PER NEC. CONTRACTOR SHALL VERIFY AND COORDINATE ALL CHEVRONS AND THEIR ASSOCIATED DIRECTIONS PRIOR TO PURCHASE OF EXIT SIGNS.
2	PROVIDE TWO SWITCHES. ONE TIED TO CONTROLLER 'RH' FOR FIELD LIGHTING CONTROLS AND ONE SWITCH TIED TO CONTROLLER 'RF' FOR EXTERIOR ACCENT LIGHTING AND INTERIOR CLERESTORY WINDOW BACK-LIGHTING.
3	EXTERIOR EMERGENCY EGRESS CANOPY DOWN LIGHTING TO BE ROUTED VIA LIGHTING CONTROL PANEL 'LCP' AND CIRCUITED THROUGH LIGHTING INVERTER.
4	EXTERIOR LIGHTING CIRCUIT TO BE ROUTED VIA LIGHTING CONTROL PANEL, LCP, REFER TO DETAIL 1, SHEET E5.05
5	EXTERIOR NORTH SHORE HIGH SCHOOL SIGN AND CIRCUIT AS INDICATED. CIRCUIT TO BE ROUTED VIA LIGHTING CONTROL PANEL, LCP. REFER TO DETAIL 1, SHEET E5.05.

LIGHTING CONTROLS SHALL BE CAPABLE OF AUTOMATICALLY MAINTAIN LIGHTING LEVELS IN EGRESS PATHES PER NFPA 101 INCASE OF POWER LOSS AND WHENEVER FIRE ALARM SYSTEM IS ACTIVATED. CONTRACTOR TO MAKE ALL TIE-IN CONNECTIONS TO FIRE ALARM SYSTEM AND TO COORDINATE WITH FIRE ALARM CONTRACTOR PRIOR TO COMMENCMENT OF WORK.

CENTRAL PLANT
C158

N

1 **ELECTRICAL LIGHTING FLOOR PLAN - LEVEL ONE - UNIT D**
Scale: 1/8" = 1'-0"

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ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 1	10/08/2025
2	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
ELECTRICAL LIGHTING PLAN - LEVEL ONE - UNIT D

SHEET NO.
E2.05D

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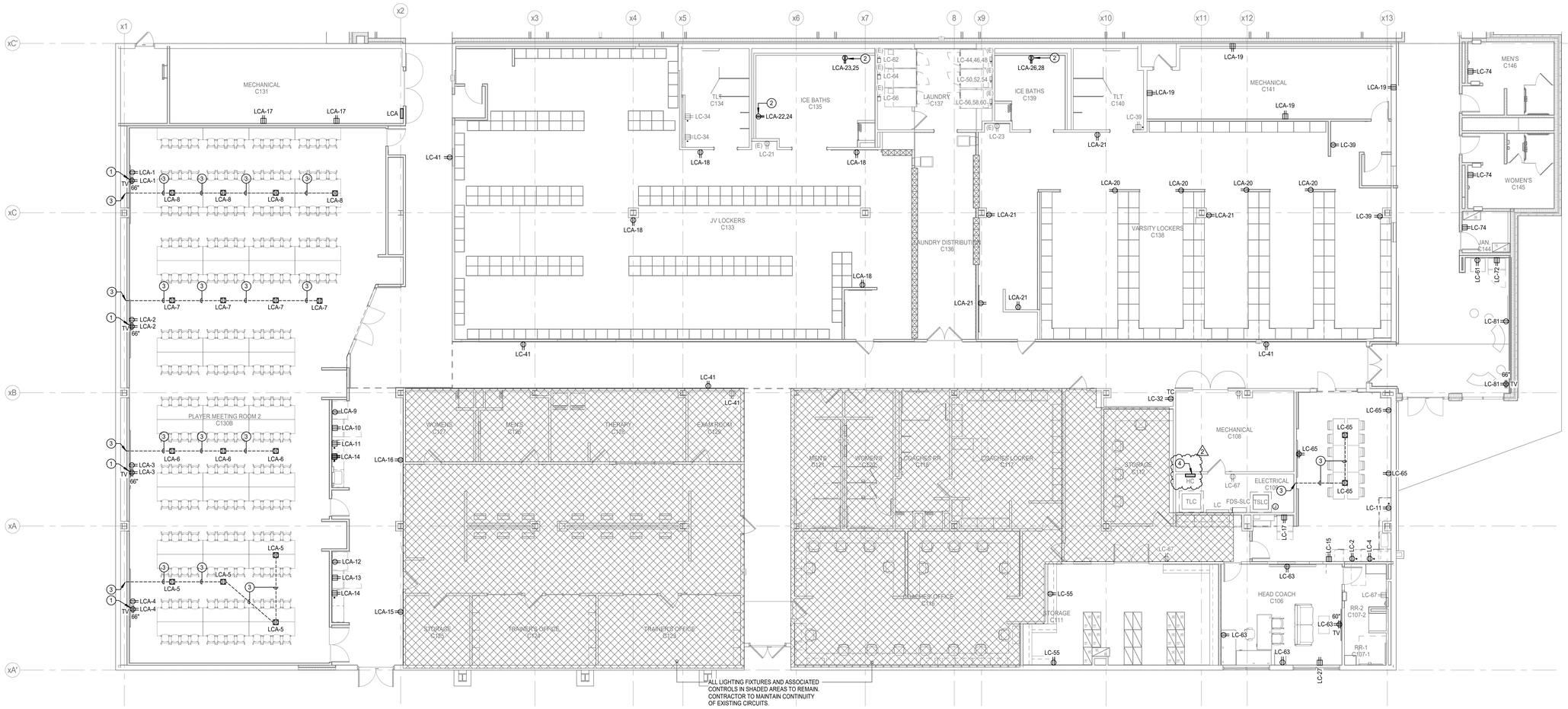
LINETYPE LEGEND	
EXISTING TO REMAIN	———
DEMOLITION WORK	- - - - - -
NEW WORK	———

POWER GENERAL NOTES

1	ELECTRICAL CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY PROBLEMS PERTAINING TO CIRCUIT AVAILABILITY OR LOAD CAPACITY PRIOR TO INSTALLATION.
2	CONTRACTOR SHALL REFER TO MECHANICAL AND PLUMBING DRAWINGS FOR EXACT LOCATION OF MECHANICAL AND PLUMBING EQUIPMENT AND SCHEDULES. CONTRACTOR SHALL PROVIDE ALL ELECTRICAL DISCONNECTS, BRANCH CIRCUITRY, STARTERS/CONTROLS, CIRCUIT BREAKERS AND CONNECTIONS REQUIRED TO POWER EQUIPMENT.
3	CONTRACTOR TO COORDINATE EXACT LOCATION OF DISCONNECT SWITCHES, JUNCTION BOXES AND SINGLE POLE TOGGLE SWITCHES FOR MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.
4	ALL RECEPTACLES LOCATED WITHIN 6'-0" OF SINK SHALL BE GFCI TYPE.
5	CONTRACTOR SHALL COORDINATE EXACT LOCATIONS OF RECEPTACLES AND SWITCHES WITH ARCHITECTURAL ELEVATIONS PRIOR TO ELECTRICAL ROUGH-IN. ADJUST DEVICES AS REQUIRED SO THAT NO DEVICES ARE INSTALLED BEHIND CABINETS OR SHELVES.
6	ALL BLANK FACE GFCI DEVICES SHALL BE INSTALLED IN A READILY ACCESSIBLE LOCATION AND NOT BEHIND EQUIPMENT.
7	CONTRACTOR SHALL REFER TO TECHNOLOGY SERIES CONSTRUCTION DOCUMENTS FOR EXACT LOCATION AND REQUIREMENTS OF ALL LOW VOLTAGE BACK BOXES, FITTINGS, AND CONDUITS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
8	ALL EXTERIOR OUTLETS SHALL BE WP GFI IN METAL WHILE-IN -USE LOCKABLE ENCLOSURE WITH EXCEPTION TO INTEGRAL RTU RECEPTACLES.
9	MAINTAIN THE CONTINUITY OF CIRCUITS TO ALL EXISTING LOADS TO REMAIN.
10	ALL 15A AND 20A, 120V AND 208V NON-LOCKING TYPE RECEPTACLES IN AREAS SPECIFIED IN NEC ARTICLE 406.12 SHALL BE LISTED AS TAMPER-RESISTANT.

ELECTRICAL KEYED NOTES

1	DUPLEX RECEPTACLE FOR MONITOR AND GENERAL PURPOSE RECEPTACLE TO BE PROVIDED WITH PRE-MANUFACTURED WALL PANELS. CONTRACTOR TO TIE INTO ELECTRICAL WHIPS PROVIDED WITH WALL SECTIONS AND CONNECT TO CIRCUIT AS INDICATED. REFER TO T-SERIES DRAWINGS FOR DATA DROPS ASSOCIATED WITH MONITORS.
2	NEMA-14-30L 250V RECEPTACLE FOR THERAPY TUB. PROVIDE 3-#10, #10G IN 3/4"C AND CIRCUIT AS INDICATED. VERIFY RECEPTACLE NEMA RATING WITH MANUFACTURER'S REQUIREMENTS PRIOR TO PURCHASE. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN AND INSTALLATION.
3	FLOOR MOUNTED RECESSED COMBINATION DUPLEX RECEPTACLE/PHONE/DATA OUTLET AND CIRCUIT AS INDICATED. PROVIDE ONE (1) 1" CONDUIT FOR POWER AND ONE (1) 1-1/2" CONDUIT FOR DATA & AV. BOTH CONDUITS TO BE PROVIDED WITH PULL-WIRES. CONTRACTOR TO ROUTE CONDUITS UNDER SLAB TO WALL WITH VIDEO MONITORS AND TURN AS REQUIRED. VERIFY WITH AUDIO VISUAL CONSULTANT FOR EXACT TYPE/SIZE/MANUFACTURER OF OUTLET PRIOR TO BID AND INSTALLATION. VERIFY EXACT MOUNTING LOCATION IN FLOOR WITH ARCHITECTURAL DRAWINGS PRIOR TO ROUGH-IN AND INSTALLATION. REFER TO T-SERIES DRAWINGS FOR AUDIO/VISUAL/DATA DROPS ASSOCIATED WITH FLOOR BOX.
4	NEW 400A 480Y/277V PANEL 'HC'. REFER TO ONE-LINE DIAGRAM, SHEET E5.01



N

1 **ELECTRICAL POWER FLOOR PLAN - LEVEL ONE - UNIT A**
Scale: 1/8" = 1'-0"

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Salas O'Brien Project Number: 2550-01455-00

GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

BRADLEY KALMANS
80219
LICENSED
CIVIL
10.22.2025

ISSUED: OCTOBER 1, 2025

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1 Addendum 1	10/08/2025
2 Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

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ELECTRICAL POWER PLAN - LEVEL ONE - UNIT A

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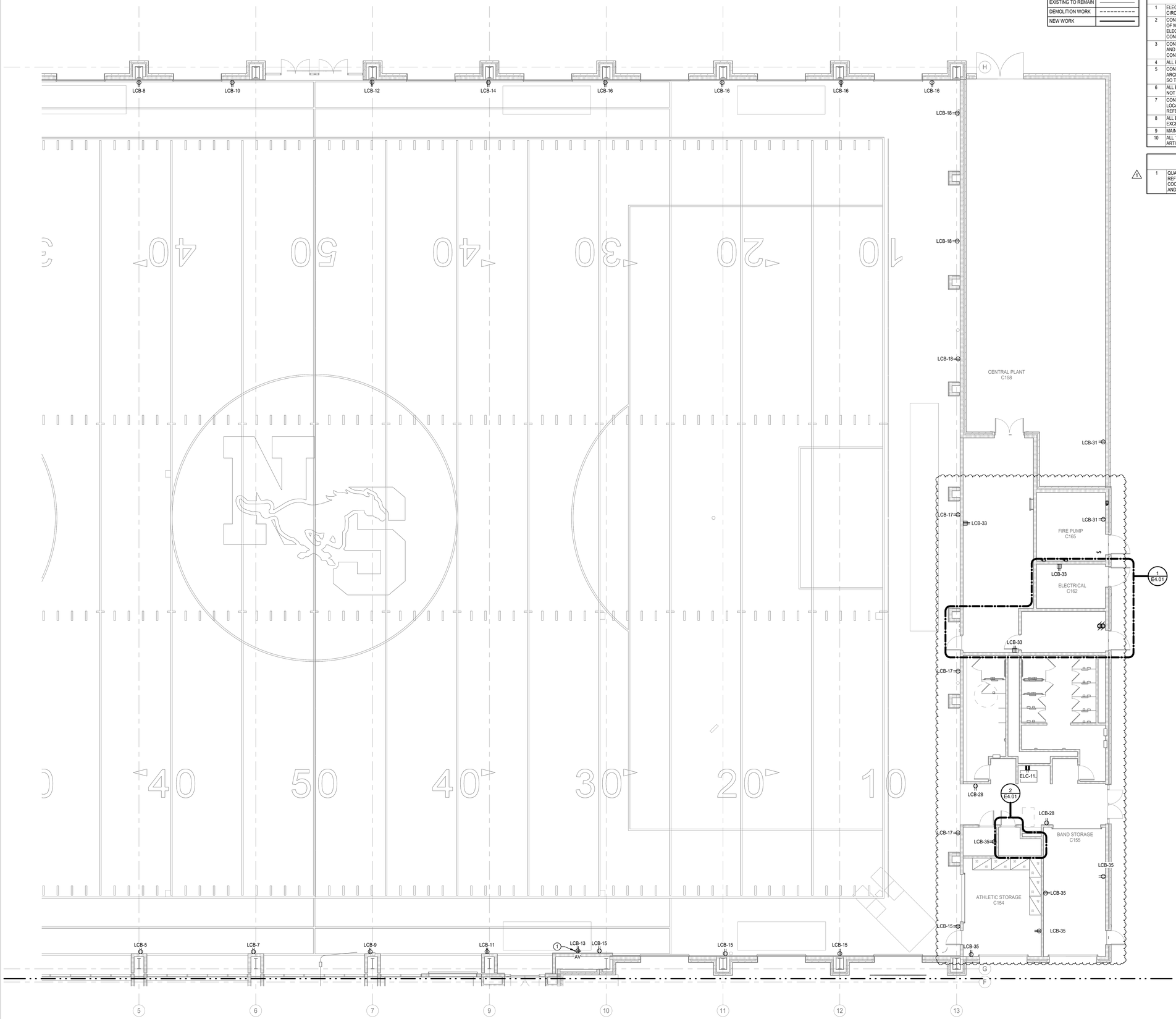
LINETYPE LEGEND	
EXISTING TO REMAIN	———
DEMOLITION WORK	- - - - - -
NEW WORK	———

POWER GENERAL NOTES

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3	CONTRACTOR TO COORDINATE EXACT LOCATION OF DISCONNECT SWITCHES, JUNCTION BOXES AND SINGLE POLE TOGGLE SWITCHES FOR MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.
4	ALL RECEPTACLES LOCATED WITHIN 6'-0" OF SINK SHALL BE GFCI TYPE.
5	CONTRACTOR SHALL COORDINATE EXACT LOCATIONS OF RECEPTACLES AND SWITCHES WITH ARCHITECTURAL ELEVATIONS PRIOR TO ELECTRICAL ROUGH-IN. ADJUST DEVICES AS REQUIRED SO THAT NO DEVICES ARE INSTALLED BEHIND CABINETS OR SHELVES.
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8	ALL EXTERIOR OUTLETS SHALL BE WP GFI IN METAL WHILE-IN -USE LOCKABLE ENCLOSURE WITH EXCEPTION TO INTEGRAL RTU RECEPTACLES.
9	MAINTAIN THE CONTINUITY OF CIRCUITS TO ALL EXISTING LOADS TO REMAIN.
10	ALL 15A AND 20A, 120V AND 208V NON-LOCKING TYPE RECEPTACLES IN AREAS SPECIFIED IN NEC ARTICLE 406.12 SHALL BE LISTED AS TAMPER-RESISTANT.

ELECTRICAL KEYED NOTES

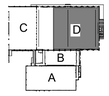
1	QUADRAPLEX RECEPTACLE TO AUDIO/VISUAL EQUIPMENT RACK AND CIRCUIT AS INDICATED. REFERENCE T-SERIES DRAWINGS FOR ALL AUDIO/VISUAL SYSTEM POWER REQUIREMENTS. COORDINATE ALL POWER REQUIREMENTS WITH AUDIO/VISUAL CONSULTANT PRIOR TO ROUGH-IN AND INSTALLATION.



N

1 **ELECTRICAL POWER FLOOR PLAN - LEVEL ONE - UNIT D**

Scale: 1/8" = 1'-0"



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Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

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SHEET TITLE

ELECTRICAL POWER PLAN - LEVEL ONE - UNIT D

SHEET NO.

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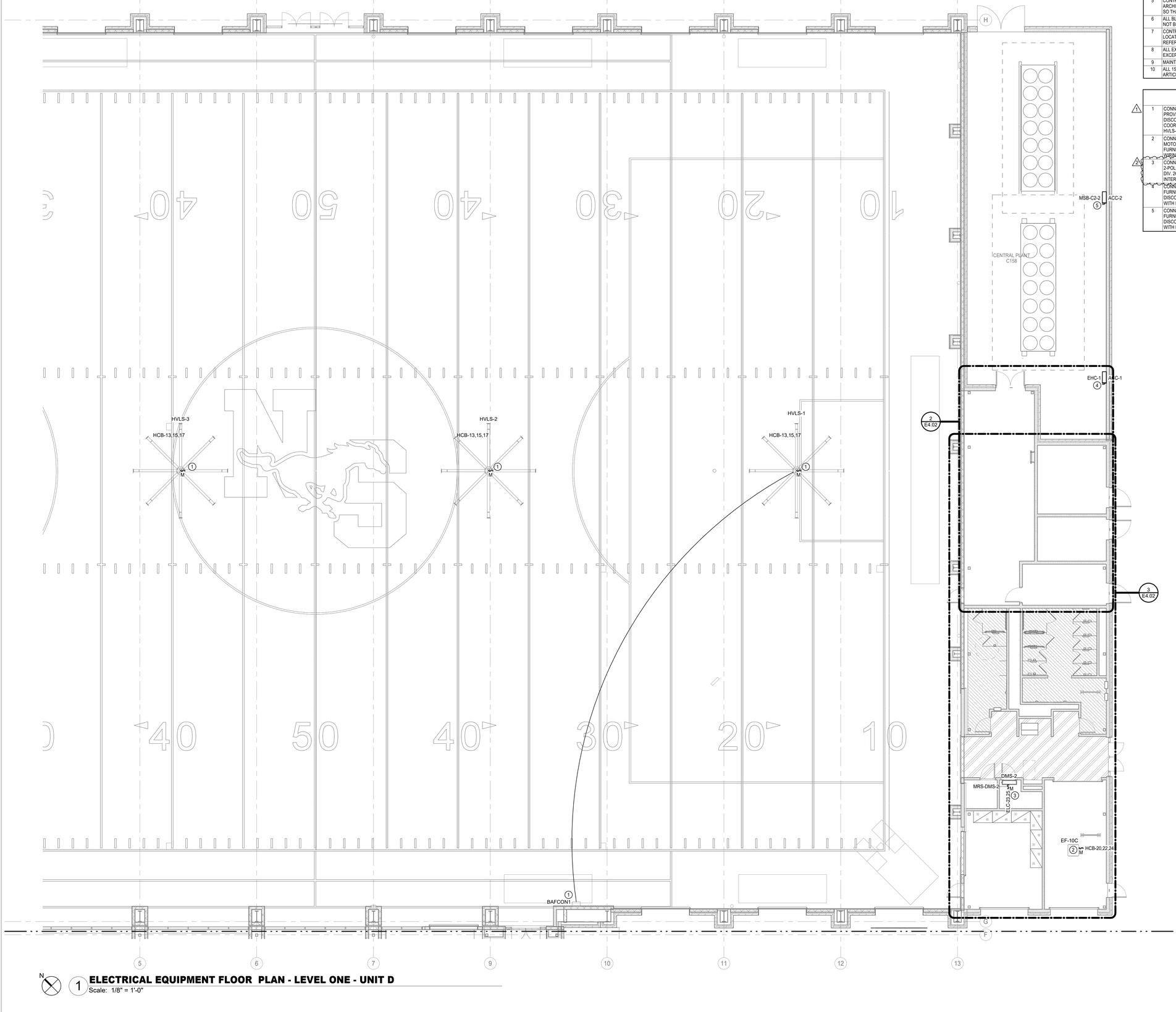
LINETYPE LEGEND	
EXISTING TO REMAIN	———
DEMOLITION WORK	- - - - - - - -
NEW WORK	———

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10	ALL 15A AND 20A, 120V AND 208V NON-LOCKING TYPE RECEPTACLES IN AREAS SPECIFIED IN NEC ARTICLE 406.12 SHALL BE LISTED AS TAMPER-RESISTANT.

ELECTRICAL KEYED NOTES

1	1	CONNECTION TO HIGH VELOCITY LOW SPEED FANS, HVLS-5 AND HVLS-6, AND CIRCUIT AS SHOWN. PROVIDE 600V, 3-POLE 20A MOTOR-RATED SWITCHES IN NEMA-1 ENCLOSURE TO SERVE AS DISCONNECT SWITCHES AT EACH FAN. FURNISH AND INSTALL DISCONNECT SWITCH BY DIV. 26. COORDINATE WITH DIV.23 FOR INTERLOCKING WIRING REQUIREMENTS TO BAFCON1 CONTROLLER. HVLS-5 & 6 ARE TO BE INSTALLED ONLY IF BUILDING IS EXTENDED TO INCLUDE ENTIRE FIELD.
	2	CONNECTION TO EXHAUST FAN, EF-10C, AND CIRCUIT AS SHOWN. PROVIDE 600V, 3-POLE 20A MOTOR-RATED SWITCH IN NEMA-1 ENCLOSURE TO SERVE AS DISCONNECT SWITCH. DIV.26 TO FURNISH AND INSTALL DISCONNECT SWITCH. COORDINATE WITH DIV.23 FOR INTERLOCKING WIRING REQUIREMENTS.
2	3	CONNECTION TO MIN-SPLIT FAN COIL UNIT, DMS-2, AND CIRCUIT AS SHOWN. PROVIDE 208V, 2-POLE, 25A MOTOR-RATED SWITCH IN NEMA-1 ENCLOSURE TO SERVE AS DISCONNECT SWITCH. DIV. 26 TO FURNISH AND INSTALL DISCONNECT SWITCH. COORDINATE WITH DIV.23 FOR INTERLOCKING WITH ASSOCIATED CONDENSING UNIT DSMCU-2.
	4	CONNECTION TO AIR-COOLED CHILLER, ACC-1, AND CIRCUIT AS SHOWN. DISCONNECT TO BE FURNISHED AND INSTALLED BY DIV. 26. PROVIDE 600V, 800A, 3P, 3F, NEMA-3R FUSIBLE DISCONNECT SWITCH WITH THREE (3) 1600A RF<=1 OR S>> FUSES. COORDINATE EXACT LOCATION WITH DIV. 23 PRIOR TO ROUGH-IN AND INSTALLATION.
	5	CONNECTION TO AIR-COOLED CHILLER, ACC-2, AND CIRCUIT AS SHOWN. DISCONNECT TO BE FURNISHED AND INSTALLED BY DIV. 26. PROVIDE 600V, 800A, 3P, 3F, NEMA-3R FUSIBLE DISCONNECT SWITCH WITH THREE (3) 1600A RF<=1 OR S>> FUSES. COORDINATE EXACT LOCATION WITH DIV. 23 PRIOR TO ROUGH-IN AND INSTALLATION.



N

1 **ELECTRICAL EQUIPMENT FLOOR PLAN - LEVEL ONE - UNIT D**
Scale: 1/8" = 1'-0"

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REVISIONS

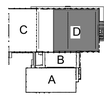
Revision No.		Revision Date
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Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

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SHEET TITLE
ELECTRICAL EQUIPMENT PLAN - LEVEL ONE - UNIT D

SHEET NO.
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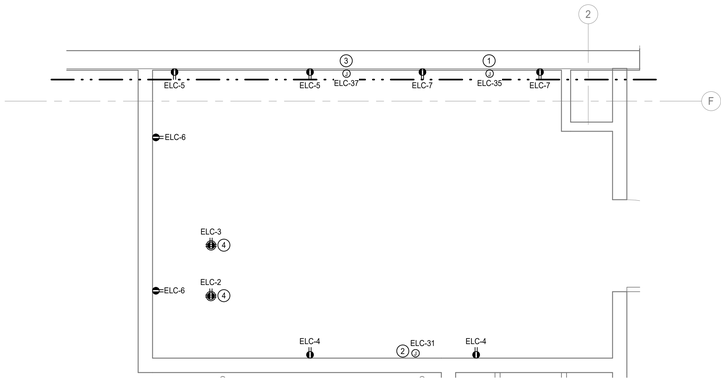
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EXISTING TO REMAIN	———
DEMOLITION WORK	– – – – – – – – – –
NEW WORK	———

POWER GENERAL NOTES

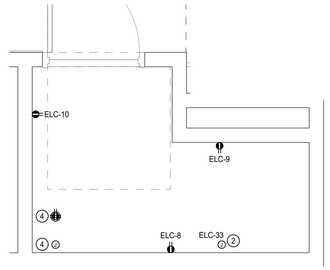
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5	CONTRACTOR SHALL COORDINATE EXACT LOCATIONS OF RECEPTACLES AND SWITCHES WITH ARCHITECTURAL ELEVATIONS PRIOR TO ELECTRICAL ROUGH-IN. ADJUST DEVICES AS REQUIRED SO THAT NO DEVICES ARE INSTALLED BEHIND CABINETS OR SHELVES.
6	ALL BLANK FACE GFCI DEVICES SHALL BE INSTALLED IN A READILY ACCESSIBLE LOCATION AND NOT BEHIND EQUIPMENT.
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8	ALL EXTERIOR OUTLETS SHALL BE WP GFI IN METAL WHILE-IN -USE LOCKABLE ENCLOSURE WITH EXCEPTION TO INTEGRAL RTU RECEPTACLES.
9	MAINTAIN THE CONTINUITY OF CIRCUITS TO ALL EXISTING LOADS TO REMAIN.
10	ALL 15A AND 20A, 120V AND 208V NON-LOCKING TYPE RECEPTACLES IN AREAS SPECIFIED IN NEC ARTICLE 406.12 SHALL BE LISTED AS TAMPER-RESISTANT.

ELECTRICAL KEYED NOTES

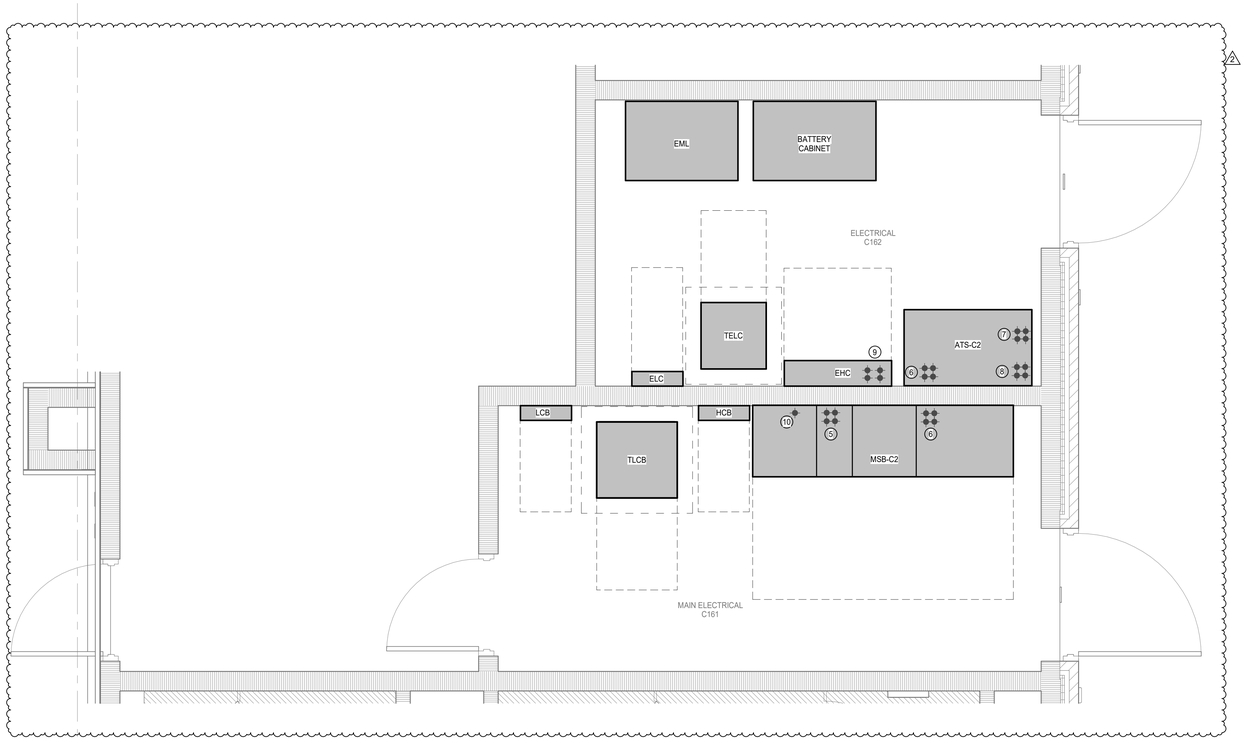
1	120V CONNECTION FOR FIRE ALARM CONTROL PANEL, FACP, AND CIRCUIT AS INDICATED. REFERENCE T-SERIES DRAWINGS FOR COORDINATION OF MOUNTING LOCATION PRIOR TO ROUGH-IN AND INSTALLATION.
2	120V CONNECTION FOR IDP/ACP PANEL AND CIRCUIT AS INDICATED. REFERENCE T-SERIES DRAWINGS FOR COORDINATION OF MOUNTING LOCATION PRIOR TO ROUGH-IN AND INSTALLATION.
3	120V CONNECTION FOR FUTURE ERRCS PANEL AND CIRCUIT AS INDICATED. REFERENCE T-SERIES DRAWINGS FOR COORDINATION OF MOUNTING LOCATION PRIOR TO ROUGH-IN AND INSTALLATION.
4	QUAD RECEPTACLES FOR IT RACKS AND CIRCUIT AS SHOWN. ONE CONDUIT PER OUTLET BOX. COORDINATE WITH IT CONSULTANT AND T-SERIES DRAWINGS FOR EXACT MOUNTING LOCATION ON RACK PRIOR TO ROUGH-IN AND INSTALLATION.
5	UNDERGROUND SERVICE ENTRANCE FEEDERS IN SCHEDULE 40 PVC CONDUITS FROM SECONDARY TAPS OF UTILITY TRANSFORMER TO MAIN SWITCHBOARD MSB-CB IN MAIN ELECTRICAL ROOM VIA CONCRETE ENCASED DUCT-BANK. REFER TO FEEDER SCHEDULE, SHEET E5.01.
6	OVERHEARD RGS CONDUITS AND ASSOCIATED FEEDERS FROM MAIN SWITCHBOARD MSB-CB TO AUTOMATIC TRANSFER SWITCH, ATS-CB, 'NORMAL' LUGS. REFER TO FEEDER SCHEDULE, SHEET E5.01.
7	UNDERGROUND FEEDERS IN SCHEDULE 40 PVC CONDUITS FROM AUTOMATIC TRANSFER SWITCH, ATS-CB, 'LOAD' LUGS TO MANUAL TRANSFER SWITCH, MTS-CB, 'NORMAL' LUGS VIA CONCRETE ENCASED DUCT-BANK. CONTRACTOR TO COORDINATE WITH STRUCTURAL DRAWINGS TO ENSURE DUCT-BANK DEPTH PASSES UNDER STRUCTURAL BEAMS UNDERGROUND. REFER TO FEEDER SCHEDULE, SHEET E5.01.
8	UNDERGROUND FEEDERS IN SCHEDULE 40 PVC CONDUITS FROM GENERATOR TO AUTOMATIC TRANSFER SWITCH, ATS-CB, 'EMERGENCY' LUGS VIA CONCRETE ENCASED DUCT-BANK. CONTRACTOR TO ROUTE CONDUITS AND FEEDERS VIA EMERGENCY ELECTRICAL ROOM IN PULL BOX TO MAKE TRANSITION TO ABOVE GROUND. CONTRACTOR TO COORDINATE WITH STRUCTURAL DRAWINGS TO ENSURE DUCT-BANK DEPTH PASSES UNDER STRUCTURAL BEAMS UNDERGROUND. REFER TO FEEDER SCHEDULE, SHEET E5.01.
9	UNDERGROUND FEEDERS IN SCHEDULE 40 PVC CONDUITS FROM MANUAL TRANSFER SWITCH, MTS-CB, 'LOAD' LUGS TO EMERGENCY PANEL 'EHC' VIA CONCRETE ENCASED DUCT-BANK. CONTRACTOR TO ROUTE CONDUITS AND FEEDERS VIA EMERGENCY ELECTRICAL ROOM IN PULL BOX TO MAKE TRANSITION TO ABOVE GROUND. CONTRACTOR TO COORDINATE WITH STRUCTURAL DRAWINGS TO ENSURE DUCT-BANK DEPTH PASSES UNDER STRUCTURAL BEAMS UNDERGROUND. REFER TO FEEDER SCHEDULE, SHEET E5.01.
10	FIRE PUMP 'NORMAL' POWER UNDERGORUND CONDUIT AND ASSOCIATED FEEDERS. REFER TO DETAIL 3, ELECTRICAL SHEET E5.01.



N 3 **ENLARGED POWER PLAN - AV/IT ROOM - AREA B**
Scale: 1/2" = 1'-0"



N 2 **ENLARGED POWER FLOOR PLAN - IDF ROOM C158**
Scale: 1/2" = 1'-0"



N 1 **ENLARGED POWER PLAN - ELECTRICAL ROOM - LEVEL ONE - UNIT D**
Scale: 1/2" = 1'-0"

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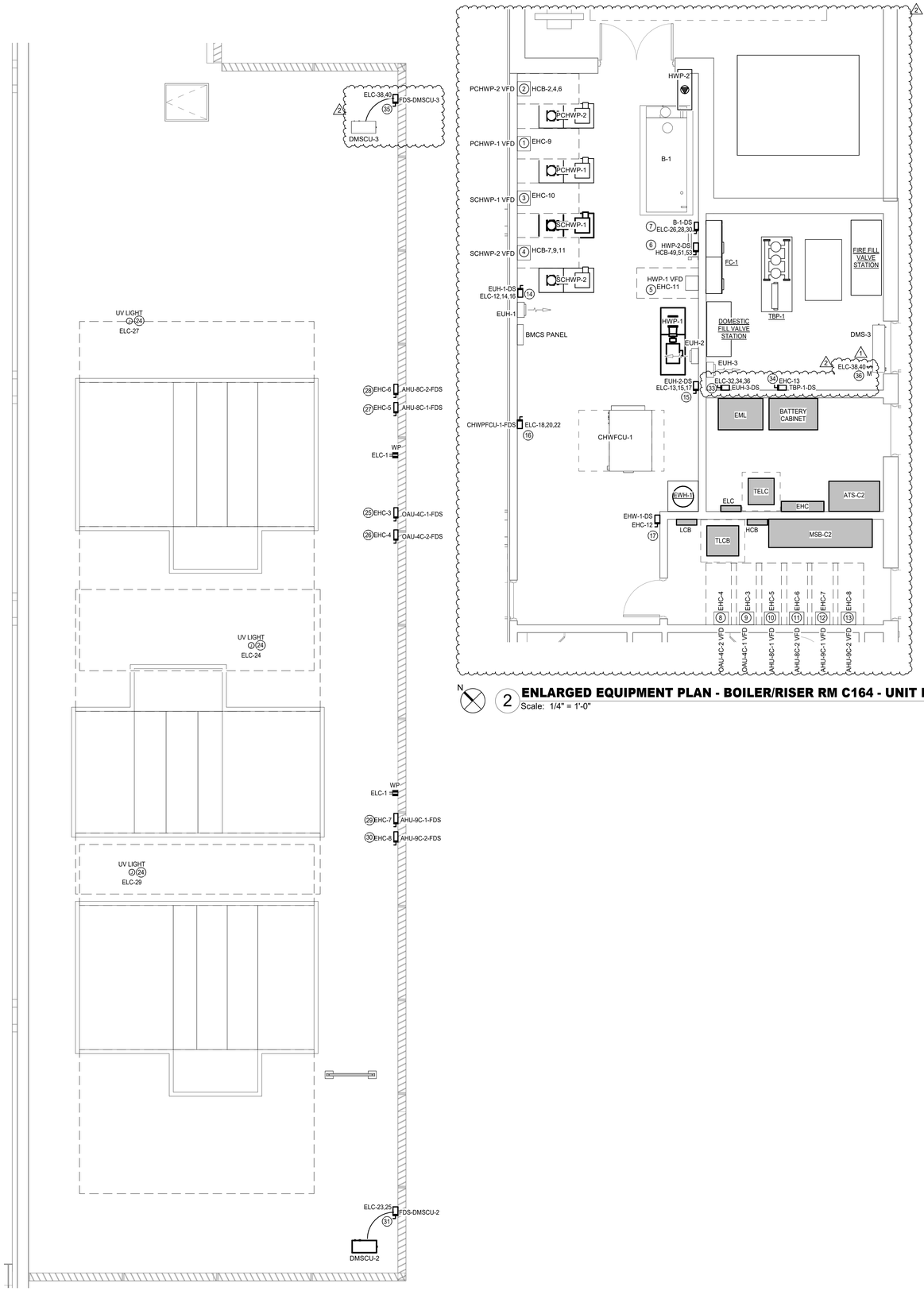
Director	Monika Castillo
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Designer	Designer
Drawn By	Author

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25-0056.00

SHEET TITLE
ELECTRICAL ENLARGED PLANS

SHEET NO.
E4.01

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N

2 ENLARGED EQUIPMENT PLAN - BOILER/RISER RM C164 - UNIT D

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

N

1 ENLARGED EQUIPMENT PLAN - MECHANICAL MEZZANINE - UNIT B

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

N

3 ENLARGED EQUIPMENT PLAN - MECHANICAL MEZZANINE - UNIT D

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

LINETYPE LEGEND	
EXISTING TO REMAIN	———
DEMOLITION WORK	– – – – – –
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5	CONTRACTOR SHALL COORDINATE EXACT LOCATIONS OF RECEPTACLES AND SWITCHES WITH ARCHITECTURAL ELEVATIONS PRIOR TO ELECTRICAL ROUGH-IN. ADJUST DEVICES AS REQUIRED SO THAT NO DEVICES ARE INSTALLED BEHIND CABINETS OR SHELVES.
6	ALL BLANK FACE GFCI DEVICES SHALL BE INSTALLED IN A READILY ACCESSIBLE LOCATION AND NOT BEHIND EQUIPMENT.
7	CONTRACTOR SHALL REFER TO TECHNOLOGY SERIES CONSTRUCTION DOCUMENTS FOR EXACT LOCATION AND REQUIREMENTS OF ALL LOW VOLTAGE BACK BOXES, FITTINGS, AND CONDUITS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
8	ALL EXTERIOR OUTLETS SHALL BE WP GFI IN METAL WHILE-IN -USE LOCKABLE ENCLOSURE WITH EXCEPTION TO INTEGRAL RTU RECEPTACLES.
9	MAINTAIN THE CONTINUITY OF CIRCUITS TO ALL EXISTING LOADS TO REMAIN.
10	ALL 15A AND 20A, 120V AND 208V NON-LOCKING TYPE RECEPTACLES IN AREAS SPECIFIED IN NEC ARTICLE 406.12 SHALL BE LISTED AS TAMPER-RESISTANT.

ELECTRICAL KEYED NOTES

1	CONNECTION TO CHILLED WATER PRIMARY PUMP. PCHWP-1, VIA VARIABLE FREQUENCY DRIVE , PCHWP-1-VFD, AND CIRCUIT AS SHOWN. PROVIDE VFD WITH INTEGRAL DISCONNECT TO BE FURNISHED BY DIV. 23 AND INSTALLED BY DIV. 26. COORDINATE EXACT LOCATION WITH DIV. 23 PRIOR TO ROUGH-IN AND INSTALLATION.
2	CONNECTION TO CHILLED WATER PRIMARY PUMP. PCHWP-2, VIA VARIABLE FREQUENCY DRIVE , PCHWP-2-VFD, AND CIRCUIT AS SHOWN. PROVIDE VFD WITH INTEGRAL DISCONNECT TO BE FURNISHED BY DIV. 23 AND INSTALLED BY DIV. 26. COORDINATE EXACT LOCATION WITH DIV. 23 PRIOR TO ROUGH-IN AND INSTALLATION.
3	CONNECTION TO CHILLED WATER SECONDARY PUMP, SCHWP-1, VIA VARIABLE FREQUENCY DRIVE , SCHWP-1-VFD, AND CIRCUIT AS SHOWN. PROVIDE VFD WITH INTEGRAL DISCONNECT TO BE FURNISHED BY DIV. 23 AND INSTALLED BY DIV. 26. COORDINATE EXACT LOCATION WITH DIV. 23 PRIOR TO ROUGH-IN AND INSTALLATION.
4	CONNECTION TO CHILLED WATER SECONDARY PUMP, SCHWP-2, VIA VARIABLE FREQUENCY DRIVE , SCHWP-2-VFD, AND CIRCUIT AS SHOWN. PROVIDE VFD WITH INTEGRAL DISCONNECT TO BE FURNISHED BY DIV. 23 AND INSTALLED BY DIV. 26. COORDINATE EXACT LOCATION WITH DIV. 23 PRIOR TO ROUGH-IN AND INSTALLATION.
5	CONNECTION TO HOT WATER PUMP, HWP-1, VIA VARIABLE FREQUENCY DRIVE , HWP-1-VFD, AND CIRCUIT AS SHOWN. PROVIDE VFD WITH INTEGRAL DISCONNECT TO BE FURNISHED BY DIV. 23 AND INSTALLED BY DIV. 26. COORDINATE EXACT LOCATION WITH DIV. 23 PRIOR TO ROUGH-IN AND INSTALLATION.
6	CONNECTION TO HOT WATER PUMP, HWP-2 AND CIRCUIT AS SHOWN. PROVIDE 250V, 30A, 3P, NEMA-1 NON-FUSIBLE DISCONNECT SWITCH. DISCONNECT TO BE FURNISHED AND INSTALLED BY DIV. 26. COORDINATE WITH DIV.23 FOR INTERLOCKING WIRING REQUIREMENTS.
7	CONNECTION TO BOILER, B-1 AND CIRCUIT AS SHOWN. PROVIDE 600V, 30A, 3P. NEMA-1 NON-FUSIBLE DISCONNECT SWITCH. DISCONNECT TO BE FURNISHED AND INSTALLED BY DIV. 26. COORDINATE WITH DIV.23 FOR INTERLOCKING WIRING REQUIREMENTS.
8	CONNECTION TO OUTSIDE AIR HANDLER UNIT, OAU-4C-1, VIA VARIABLE FREQUENCY DRIVE , OAU-4C-1-VFD, WITH INTEGRAL DISCONNECT AND CIRCUIT AS SHOWN. VFD FURNISHED BY DIV. 23 AND INSTALLED BY DIV. 26. COORDINATE EXACT LOCATION WITH DIV. 23 PRIOR TO ROUGH-IN AND INSTALLATION. CONTRACTOR TO PROVIDE LOCAL DISCONNECT AT UNIT AND INTERLOCK DISCONNECT TO VFD TO ENSURE POWER IS ALWAYS TURNED OFF AT THE VFD.
9	CONNECTION TO OUTSIDE AIR HANDLER UNIT, OAU-4C-2, VIA VARIABLE FREQUENCY DRIVE , OAU-4C-2-VFD, WITH INTEGRAL DISCONNECT AND CIRCUIT AS SHOWN. VFD FURNISHED BY DIV. 23 AND INSTALLED BY DIV. 26. COORDINATE EXACT LOCATION WITH DIV. 23 PRIOR TO ROUGH-IN AND INSTALLATION. CONTRACTOR TO PROVIDE LOCAL DISCONNECT AT UNIT AND INTERLOCK DISCONNECT TO VFD TO ENSURE POWER IS ALWAYS TURNED OFF AT THE VFD.
10	CONNECTION TO AIR HANDLER UNIT, AHU-8C-1, VIA VARIABLE FREQUENCY DRIVE , AHU-8C-1-VFD, WITH INTEGRAL DISCONNECT AND CIRCUIT AS SHOWN. VFD FURNISHED BY DIV. 23 AND INSTALLED BY DIV. 26. COORDINATE EXACT LOCATION WITH DIV. 23 PRIOR TO ROUGH-IN AND INSTALLATION. CONTRACTOR TO PROVIDE LOCAL DISCONNECT AT UNIT AND INTERLOCK DISCONNECT TO VFD TO ENSURE POWER IS ALWAYS TURNED OFF AT THE VFD.
11	CONNECTION TO AIR HANDLER UNIT, AHU-8C-2, VIA VARIABLE FREQUENCY DRIVE , AHU-8C-2-VFD, WITH INTEGRAL DISCONNECT AND CIRCUIT AS SHOWN. VFD FURNISHED BY DIV. 23 AND INSTALLED BY DIV. 26. COORDINATE EXACT LOCATION WITH DIV. 23 PRIOR TO ROUGH-IN AND INSTALLATION. CONTRACTOR TO PROVIDE LOCAL DISCONNECT AT UNIT AND INTERLOCK DISCONNECT TO VFD TO ENSURE POWER IS ALWAYS TURNED OFF AT THE VFD.
12	CONNECTION TO AIR HANDLER UNIT, AHU-9C-1, VIA VARIABLE FREQUENCY DRIVE , AHU-9C-1-VFD, WITH INTEGRAL DISCONNECT AND CIRCUIT AS SHOWN. VFD FURNISHED BY DIV. 23 AND INSTALLED BY DIV. 26. COORDINATE EXACT LOCATION WITH DIV. 23 PRIOR TO ROUGH-IN AND INSTALLATION. CONTRACTOR TO PROVIDE LOCAL DISCONNECT AT UNIT AND INTERLOCK DISCONNECT TO VFD TO ENSURE POWER IS ALWAYS TURNED OFF AT THE VFD.
13	CONNECTION TO AIR HANDLER UNIT, AHU-9C-2, AND CIRCUIT AS SHOWN. PROVIDE 600V, 100A, 3P, 3F, NEMA-3R FUSIBLE DISCONNECT SWITCH WITH THREE (3) 70A FUSES. DISCONNECT TO BE FURNISHED AND INSTALLED BY DIV. 26. COORDINATE EXACT LOCATION WITH DIV. 23 PRIOR TO ROUGH-IN AND INSTALLATION. CONTRACTOR TO PROVIDE LOCAL DISCONNECT AT UNIT AND INTERLOCK DISCONNECT TO VFD TO ENSURE POWER IS ALWAYS TURNED OFF AT THE VFD.
14	CONNECTION TO ELECTRIC UNIT HEATER, EUH-1, AND CIRCUIT AS SHOWN. PROVIDE 600V, 100A, 3P, 3F, NEMA 3R FUSIBLE DISCONNECT SWITCH WITH THREE (3) 20A FUSES. DISCONNECT TO BE FURNISHED AND INSTALLED BY DIV. 26.
15	CONNECTION TO ELECTRIC UNIT HEATER, EUH-2, AND CIRCUIT AS SHOWN. PROVIDE 600V, 100A, 3P, 3F, NEMA 3R FUSIBLE DISCONNECT SWITCH WITH THREE (3) 20A FUSES. DISCONNECT TO BE FURNISHED AND INSTALLED BY DIV. 26.
16	CONNECTION TO CHILLED WATER FAN COIL UNIT, CWHFCU-1, AND CIRCUIT AS SHOWN. PROVIDE 250V, 30A, 3P, 3F, NEMA 1 FUSIBLE DISCONNECT SWITCH WITH THREE (3) 20A FUSES. DISCONNECT TO BE FURNISHED AND INSTALLED BY DIV. 26.
17	CONNECTION TO ELECTRIC WATER HEATER, EWH-1, AND CIRCUIT AS SHOWN. PROVIDE 600V, 30A, 3P. NEMA 1, NON-FUSIBLE DISCONNECT SWITCH. DISCONNECT TO BE FURNISHED AND INSTALLED BY DIV. 26.
18	CONNECTION TO AIR HANDLER UNIT, AHU-6C, VIA VARIABLE FREQUENCY DRIVE , AHU-6C-VFD, WITH INTEGRAL DISCONNECT AND CIRCUIT AS SHOWN. VFD FURNISHED BY DIV. 23 AND INSTALLED BY DIV. 26. COORDINATE EXACT LOCATION WITH DIV. 23 PRIOR TO ROUGH-IN AND INSTALLATION.
19	CONNECTION TO AIR HANDLER UNIT, AHU-10C, VIA VARIABLE FREQUENCY DRIVE , AHU-10C-VFD, WITH INTEGRAL DISCONNECT AND CIRCUIT AS SHOWN. VFD FURNISHED BY DIV. 23 AND INSTALLED BY DIV. 26. COORDINATE EXACT LOCATION WITH DIV. 23 PRIOR TO ROUGH-IN AND INSTALLATION. CONTRACTOR TO PROVIDE LOCAL DISCONNECT AT UNIT AND INTERLOCK DISCONNECT TO VFD TO ENSURE POWER IS ALWAYS TURNED OFF AT THE VFD.
20	CONNECTION TO OUTSIDE AIR HANDLER UNIT, OAU-1C, VIA VARIABLE FREQUENCY DRIVE , OAU-1C-VFD, WITH INTEGRAL DISCONNECT AND CIRCUIT AS SHOWN. VFD FURNISHED BY DIV. 23 AND INSTALLED BY DIV. 26. COORDINATE EXACT LOCATION WITH DIV. 23 PRIOR TO ROUGH-IN AND INSTALLATION.
21	CONNECTION TO OUTSIDE AIR HANDLER UNIT, OAU-3C, VIA VARIABLE FREQUENCY DRIVE , OAU-3C-VFD, WITH INTEGRAL DISCONNECT AND CIRCUIT AS SHOWN. VFD FURNISHED BY DIV. 23 AND INSTALLED BY DIV. 26. COORDINATE EXACT LOCATION WITH DIV. 23 PRIOR TO ROUGH-IN AND INSTALLATION.
22	CONNECTION TO AIR HANDLER UNIT, AHU-10C, AND CIRCUIT AS SHOWN. PROVIDE 600V, 100A, 3P, 3F, NEMA-3R FUSIBLE DISCONNECT SWITCH WITH THREE (3) 70A FUSES. DISCONNECT TO BE FURNISHED AND INSTALLED BY DIV. 26. COORDINATE EXACT LOCATION WITH DIV. 23 PRIOR TO ROUGH-IN AND INSTALLATION. CONTRACTOR TO PROVIDE LOCAL DISCONNECT AT UNIT AND INTERLOCK DISCONNECT TO VFD TO ENSURE POWER IS ALWAYS TURNED OFF AT THE VFD.
23	CONNECTION TO MINI-SPLIT CONDENSING UNITS, DMSCU-1, AND CIRCUIT AS SHOWN. PROVIDE 250V, 30A, 2P, 3F, NEMA-3R FUSIBLE DISCONNECT SWITCH WITH TWO (2) 25A FUSES. DISCONNECT TO BE FURNISHED AND INSTALLED BY DIV. 26. CONTRACTOR TO PROVIDE CONENCTION TO ASSOCIATED FAN COIL UNIT DMS-1 LOCATED IN FIRE PUMP ROOM.
24	CONTROL POWER CONNECTION TO UV LIGHTING IN HVAC UNIT AND CIRCUIT AS INDICATED COORDINATE WITH DIV. 23 FOR EXACT LOCATION AND CONNECTION REQUIREMENTS.
25	CONNECTION TO OUTSIDE AIR HANDLER UNIT, OAHU-4C-1, AND CIRCUIT AS SHOWN. PROVIDE 600V, 60A, 3P, 3F, NEMA-3R FUSIBLE DISCONNECT SWITCH WITH THREE (3) 60A RK1 FUSES. DISCONNECT TO BE FURNISHED AND INSTALLED BY DIV. 26. COORDINATE EXACT LOCATION WITH DIV. 23 PRIOR TO ROUGH-IN AND INSTALLATION. CONTRACTOR TO PROVIDE LOCAL DISCONNECT AT UNIT AND INTERLOCK DISCONNECT TO VFD TO ENSURE POWER IS ALWAYS TURNED OFF AT THE VFD.
26	CONNECTION TO OUTSIDE AIR HANDLER UNIT, OAHU-4C-2, AND CIRCUIT AS SHOWN. PROVIDE 600V, 60A, 3P, 3F, NEMA-3R FUSIBLE DISCONNECT SWITCH WITH THREE (3) 60A FUSES. DISCONNECT TO BE FURNISHED AND INSTALLED BY DIV. 26. COORDINATE EXACT LOCATION WITH DIV. 23 PRIOR TO ROUGH-IN AND INSTALLATION. CONTRACTOR TO PROVIDE LOCAL DISCONNECT AT UNIT AND INTERLOCK DISCONNECT TO VFD TO ENSURE POWER IS ALWAYS TURNED OFF AT THE VFD.
27	CONNECTION TO AIR HANDLER UNIT, AHU-8C-1, AND CIRCUIT AS SHOWN. PROVIDE 600V, 100A, 3P, 3F, NEMA-3R FUSIBLE DISCONNECT SWITCH WITH THREE (3) 70A FUSES. DISCONNECT TO BE FURNISHED AND INSTALLED BY DIV. 26. COORDINATE EXACT LOCATION WITH DIV. 23 PRIOR TO ROUGH-IN AND INSTALLATION. CONTRACTOR TO PROVIDE LOCAL DISCONNECT AT UNIT AND INTERLOCK DISCONNECT TO VFD TO ENSURE POWER IS ALWAYS TURNED OFF AT THE VFD.
28	CONNECTION TO AIR HANDLER UNIT, AHU-8C-2, AND CIRCUIT AS SHOWN. PROVIDE 600V, 100A, 3P, 3F, NEMA-3R FUSIBLE DISCONNECT SWITCH WITH THREE (3) 70A FUSES. DISCONNECT TO BE FURNISHED AND INSTALLED BY DIV. 26. COORDINATE EXACT LOCATION WITH DIV. 23 PRIOR TO ROUGH-IN AND INSTALLATION. CONTRACTOR TO PROVIDE LOCAL DISCONNECT AT UNIT AND INTERLOCK DISCONNECT TO VFD TO ENSURE POWER IS ALWAYS TURNED OFF AT THE VFD.
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30	CONNECTION TO AIR HANDLER UNIT, AHU-9C-2, AND CIRCUIT AS SHOWN. PROVIDE 600V, 100A, 3P, 3F, NEMA-3R FUSIBLE DISCONNECT SWITCH WITH THREE (3) 70A FUSES. DISCONNECT TO BE FURNISHED AND INSTALLED BY DIV. 26. COORDINATE EXACT LOCATION WITH DIV. 23 PRIOR TO ROUGH-IN AND INSTALLATION. CONTRACTOR TO PROVIDE LOCAL DISCONNECT AT UNIT AND INTERLOCK DISCONNECT TO VFD TO ENSURE POWER IS ALWAYS TURNED OFF AT THE VFD.
31	CONNECTION TO MINI-SPLIT CONDENSING UNITS, DMSCU-2, AND CIRCUIT AS SHOWN. PROVIDE 250V, 30A, 2P, 3F, NEMA-3R FUSIBLE DISCONNECT SWITCH WITH TWO (2) 25A FUSES. DISCONNECT TO BE FURNISHED AND INSTALLED BY DIV. 26. CONTRACTOR TO PROVIDE CONENCTION TO ASSOCIATED FAN COIL UNIT DMS-2 LOCATED IN IT ROOM.
33	CONNECTION TO ELECTRIC UNIT HEATER, EUH-3, AND CIRCUIT AS SHOWN. PROVIDE 600V, 100A, 3P, 3F, NEMA 3R FUSIBLE DISCONNECT SWITCH WITH THREE (3) 20A FUSES. DISCONNECT TO BE FURNISHED AND INSTALLED BY DIV. 26.
34	CONNECTION TO TRIPLEX BOOSTER PUMP, TBP-1, CONTROLLER AND CIRCUIT AS SHOWN. PROVIDE 600V, 30A, 3P, 3F, NEMA-3R FUSIBLE DISCONNECT SWITCH WITH THREE (3) 25A FUSES. DISCONNECT TO BE FURNISHED AND INSTALLED BY DIV. 26. COORDINATE EXACT LOCATION WITH DIV. 22 PRIOR T
35	CONNECTION TO MINI-SPLIT CONDENSING UNITS, DMSCU-3, AND CIRCUIT AS SHOWN. PROVIDE 250V, 30A, 2P, 3F, NEMA-3R FUSIBLE DISCONNECT SWITCH WITH TWO (2) 25A FUSES. DISCONNECT TO BE FURNISHED AND INSTALLED BY DIV. 26. CONTRACTOR TO PROVIDE CONENCTION TO ASSOCIATED FAN COIL UNIT DMS-3 LOCATED IN FIRE PUMP ROOM.
36	CONNECTION TO MIN-SPLIT FAN COIL UNIT, DMS-3, AND CIRCUIT AS SHOWN. PROVIDE 208V, 2-POLE, 25A MOTOR-RATED SWITCH IN NEMA-1 ENCLOSURE TO SERVE AS DISCONNECT SWITCH. DIV. 26 TO FURNISH AND INSTALL DISCONNECT SWITCH. COORDINATE WITH DIV.23 FOR INTERLOCKING WITH ASSOCIATED CONDENSING UNIT DSMCU-3.

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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

BRADLEY KALMANS — STATE OF TEXAS — 80219 — LICENSED — GENERAL ENGINEER
10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
1 Addendum 1	10/08/2025
2 Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
ELECTRICAL ENLARGED PLANS

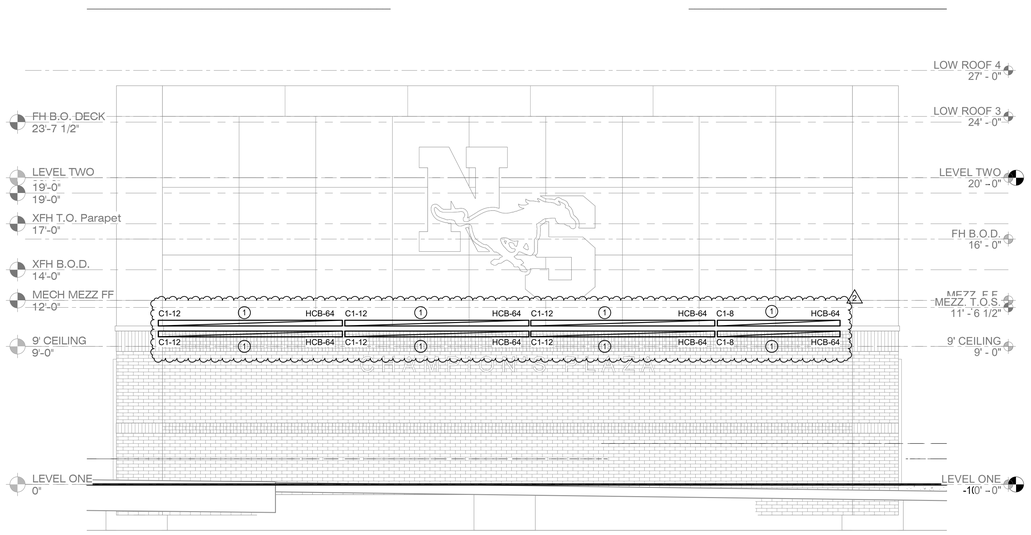
SHEET NO.
E4.02

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LINETYPE LEGEND	
EXISTING TO REMAIN	———
DEMOLITION WORK	– – – – – – – – – –
NEW WORK	———

ELECTRICAL KEYED NOTES

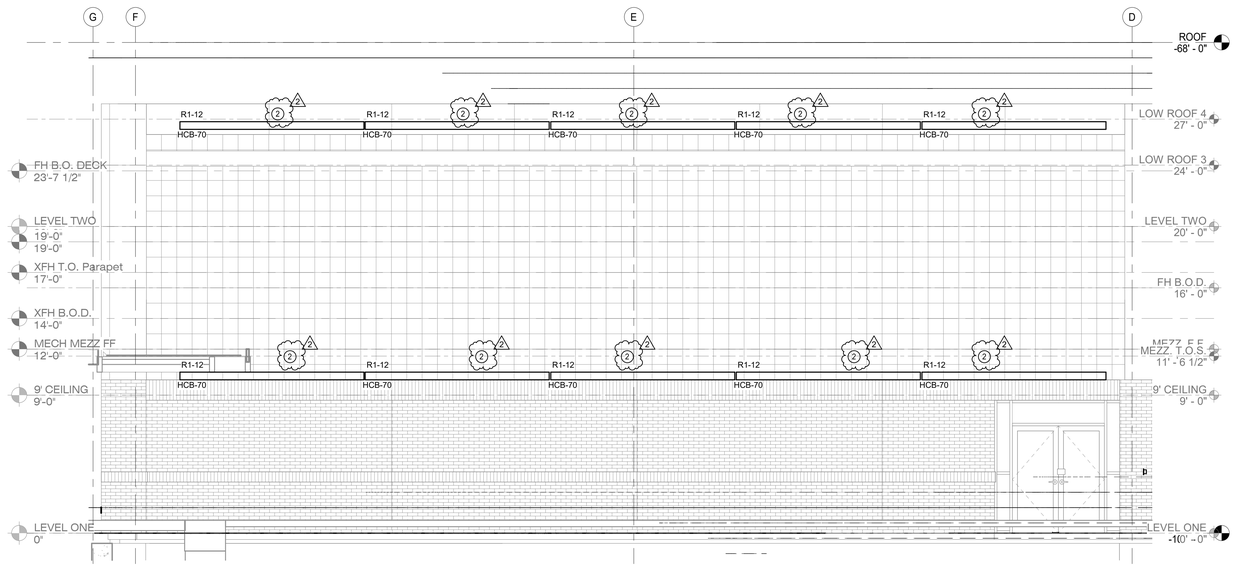
1	PROVIDE UP/DOWN LIGHTING FOR CHAMPION'S PLAZA WALL SIGN AND PLACARD ILLUMINATION. COORDINATE WITH ARCHITECTURAL ELEVATIONS FOR MOUNTING. FIXTURES ARE TO BE ROUTED VIA LIGHTING CONTACTOR LCP. SEE DETAIL 1, SHEET E5.05.
2	PROVIDE UP/DOWN RGBW ACCENT LIGHTING FOR WALL IMAGE ILLUMINATION. COORDINATE WITH ARCHITECTURAL ELEVATIONS FOR MOUNTING. FIXTURESS ARE TO BE ROUTED VIA LIGHTING CONTACTOR LCP. SEE DETAIL 1, SHEET E5.05.



N

1 CHAMPIONS WALL

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



N

2 UNIT B WEST WALL

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

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Salas O'Brien Project Number: 2550-01455-00

GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

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80219
LICENSED
PROFESSIONAL ENGINEER
10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 1	10/08/2025
2	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.

25-0056.00

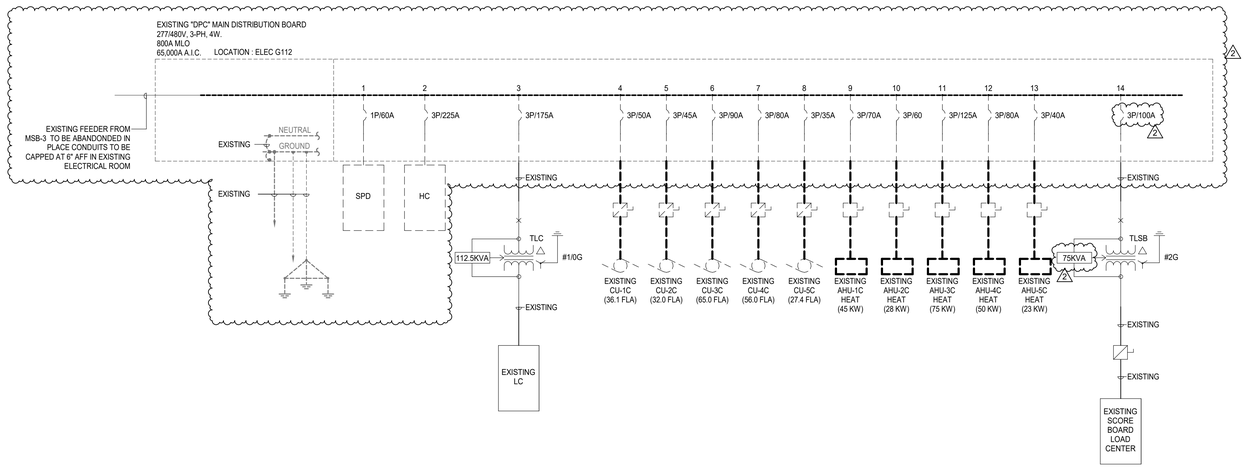
SHEET TITLE

ELECTRICAL ENLARGED PLANS

SHEET NO.

E4.03

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1 **ONE LINE DIAGRAM - DEMOLITION - EXISTING SERVICE ENTRANCE**
Scale: **N.T.S.**

PANELBOARDS REUSED AND MODIFIED FOR RENOVATION:

CONTRACTOR SHALL CLEAN EXPOSED SURFACES, REMOVE MARKINGS, IDENTIFYING NAMEPLATES AND CHECK TIGHTNESS OF ELECTRICAL CONNECTIONS. REPLACE DAMAGED CIRCUIT BREAKERS AND PROVIDE CLOSURE PLATES FOR VACANT POSITIONS. REFER TO SPECIFICATION 26 05 05.

PANELBOARD CIRCUIT DIRECTORY:

CONTRACTOR SHALL RECORD AND/OR PRESERVE THE EXISTING CIRCUIT DIRECTORY, IF ANY, FOR THE SOLE PURPOSE UPON COMPLETION OF NEW WORK OF PRODUCING A NEW CIRCUIT DIRECTORY.

CONTRACTOR SHALL PROVIDE AS PART OF THE CONSTRUCTION DOCUMENTS A NEW, NEATLY TYPED DIRECTORY. CONTRACTOR SHALL LEGIBLY IDENTIFY AS TO ITS CLEAR, EVIDENT, AND SPECIFIC PURPOSE OR USE. LOADS SERVED AND LOCATION AND/OR THE PANELBOARD SCHEDULE ON THE DRAWINGS. THE WORD "EXISTING" SHALL NOT BE USED ON PANELBOARD DIRECTORIES. SPARE BREAKERS ARE TO BE LISTED AS "SPARE". SPACES WITH NO BREAKERS ARE TO BE LEFT BLANK. REFER TO NEC-2023: 408.4(A) FOR DETAILS

CONTRACTOR SHALL PERMANENTLY LABEL AS PART OF THE CONSTRUCTION DOCUMENTS ALL SWITCHBOARDS, SWITCHGEAR AND PANELBOARDS TO INDICATE EACH POWER SOURCE. REFER TO NEC-2023: 408.4(B) FOR DETAILS.

CONTRACTOR TO VERIFY INTERRUPTING FAULT CURRENT CAPACITY OF EXISTING PANELS AND / OR SWITCHBOARDS AND TO PROVIDE NEW BREAKERS TO MATCH EXISTING.

GENERATOR LOAD ANALYSIS

NOTES: REFER TO ONE-LINE DIAGRAM, SHEET E5.01 FOR SHUNT-TRIP WIRING NOTES.

#	MAIN ELECTRICAL SERVICE ENTRANCE EQUIPMENT	Load
1	ATS-C2	652.2 kVA
2	FIRE PUMP	28.0 kVA
	TOTAL CONNECTED LOAD (VA)	680.2 kVA
	TOTAL CONNECTED LOAD (AMPS)	818

Load Classification	Connected Load	Demand Factor	Estimated Demand
HVAC	579.6 kVA	100.00%	579.6 kVA
Motor	39.0 kVA	100.00%	39.0 kVA
Receptacles	21.1 kVA	73.74%	15.5 kVA
Heating	9.0 kVA	100.00%	9.0 kVA
Miscellaneous	31.5 kVA	100.00%	31.5 kVA
TOTALS (VA)	680.2 kVA	99.19%	674.7 kVA
TOTALS (AMPS)	818	99.19%	811

UTILITY LOAD ANALYSIS

#	MAIN ELECTRICAL SERVICE ENTRANCE EQUIPMENT	LOAD
1	MSB-C2	1484.3 kVA
	TOTAL CONNECTED LOAD (VA)	1512.3 kVA
	TOTAL CONNECTED LOAD (AMPS)	1819

Load Classification	Connected Load	Demand Factor	Estimated Demand
HVAC	1111.9 kVA	100.00%	1111.9 kVA
Lighting	89.8 kVA	125.00%	112.2 kVA
Motor	40.5 kVA	100.00%	40.5 kVA
Other	10.0 kVA	100.00%	10.0 kVA
Receptacles	105.3 kVA	54.75%	57.6 kVA
Heating	9.0 kVA	100.00%	9.0 kVA
Miscellaneous	138.4 kVA	100.00%	138.4 kVA
Existing	2.5 kVA	125.00%	3.1 kVA
Kitchen Equipment	5.0 kVA	70.00%	3.5 kVA
TOTALS (VA)	1512.3 kVA	98.28%	1486.2 kVA
TOTALS (AMPS)	1819	98.28%	1788

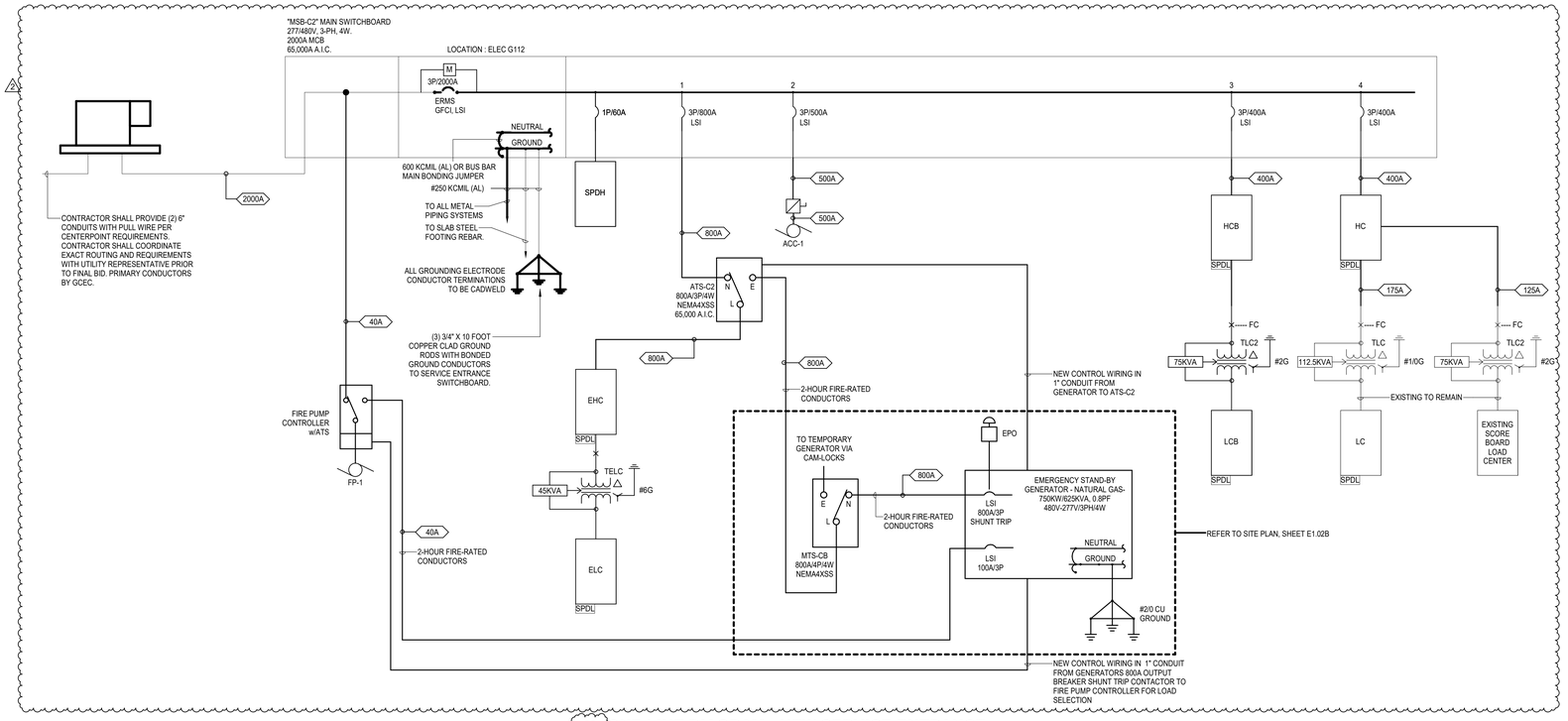
TRANSFORMER SCHEDULE

PRIMARY (480V 3PH 3W +GND)			SECONDARY (120/208V 3PH 4W +GND)		
KVA	WIRE & CONDUIT	CIRCUIT BREAKER	WIRE & CONDUIT	CIRCUIT BREAKER	GROUNDING ELECTRODE CONDUCTOR
45KVA	3#4, 1#8G,1-1/4"C	3P-70A	4#1/0, 1#6G,2"C	3P-150A	#6
75KVA	3#2, 1#6G,1-1/4"C	3P-125A	4#250KCMIL, 1#2G,3"C	3P-250A	#2

FEEDER SCHEDULE

AMPERAGE	# SETS	CONDUCTOR (QTY.)/SIZE	GROUND (QTY.)/SIZE	CONDUIT
40A	1	(4) #8	#10	1"C
125A	1	(4) #1/0	#6	2"C
175A	1	(4) #2/0	#6	2"C
400A	2	(4) #3/0	#2	2"C
500A	2	(4) #250KCMIL	#2	3"C
800A	4	(4) #3/0	#1/0	2"C
2000A	6	(4) #400KCMIL	#250KCMIL	3"C

LINETYPE LEGEND	
EXISTING TO REMAIN	———
DEMOLITION WORK	- - - - -
NEW WORK	———



3 **ONE LINE DIAGRAM - NEW SERVICE ENTRANCE**
Scale: **N.T.S.**

ALL ELECTRICAL EQUIPMENT/WIREWAYS AND UTILITY TRANSFORMERS SHALL BE INSTALLED ABOVE FLOODPLAIN AS REQUIRED BY AUTHORITY HAVING JURISDICTION.

CONTRACTOR TO VERIFY EXISTING CONDITIONS IN FIELD AND NOTIFY ENGINEER IF THERE ARE ANY CONFLICTS BETWEEN EXISTING CONDITIONS AND THE ONE-LINE DIAGRAM SHOWN PRIOR TO COMMENCEMENT OF WORK.

VERIFY EXISTING CONDITIONS AND CONDUIT ROUTING. CONTRACTOR TO VERIFY THAT EXISTING CONDUITS ARE IN GOOD CONDITIONS TO PULL NEW CONDUCTORS IN PRIOR TO COMMENCEMENT OF WORK AND TO NOTIFY ENGINEER IF CONDUITS NEED TO BE REPLACED. REFER TO SURVEY FOR MORE INFORMATION.

DEMOLITION / EXISTING DRAWINGS ARE BASED ON CASUAL FIELD OBSERVATION AND, WHEN AVAILABLE, EXISTING RECORD DOCUMENTS. REPORT DISCREPANCIES TO ARCHITECT BEFORE DISTURBING ANY INSTALLATION AND IMMEDIATELY AFTER SUCH DISCREPANCIES ARE DISCOVERED. CONTRACTOR TO VERIFY EXISTING CONDITIONS ON FIELD AND NOTIFY ENGINEER IF THERE ARE ANY CONFLICTS BETWEEN EXISTING CONDITIONS AND DRAWINGS PRIOR TO COMMENCEMENT OF WORK AS CALLED FOR ON THE DRAWINGS OR AS REQUIRED TO CLEAR THE AREAS OF NEW CONSTRUCTION. OWNER OR ITS REPRESENTATIVE SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED FROM THIS PROJECT. CONTRACTOR SHALL NOTIFY CAREY RAMSEY WITH THE DISTRICT PRIOR TO DEMOLITION WORK TO DISCUSS ALL RETURNED ITEMS TO DISTRICT.

OWNER OR ITS REPRESENTATIVE SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL EQUIPMENT BEING REMOVED FROM THIS PROJECT. CONTRACTOR TO NOTIFY REPRESENTATIVE WITH DISTRICT PRIOR TO DEMOLITION WORK TO DISCUSS ALL RETURNED ITEMS TO DISTRICT.

COORDINATE EMERGENCY SYSTEM ELECTRICAL PANELBOARDS, CIRCUIT BREAKERS, AND DISCONNECT FUSES WITH MANUFACTURER TO COMPLY WITH COORDINATION STUDY REQUIREMENTS FOR NEC PRIOR TO SUBMITTAL.

CONTRACTOR SHALL PROVIDE A COORDINATION STUDY, FAULT CURRENT ANALYSIS, AND ARC-FLASH STUDY REPORT FOR NEW ELECTRICAL DISTRIBUTION EQUIPMENT DOWNSTREAM TO THE LAST NEW OVERCURRENT DEVICE IN EACH FEEDER OR BRANCH CIRCUIT, CONDUCTED AND PREPARED BY THE SWITCHGEAR MANUFACTURER. THE COORDINATION STUDY AND FAULT CURRENT ANALYSIS SHALL INCLUDE THE MANUFACTURER'S RECOMMENDATIONS FOR ALL ADJUSTABLE OVERCURRENT DEVICES SPECIFIED OR PROVIDED. STUDY DOES NOT REQUIRE INCLUSION OF EXISTING SWITCHGEAR, EXCEPT IT SHALL INCLUDE EXISTING OR NEW OVERCURRENT DEVICES IN EXISTING SWITCHGEAR SERVING NEW DISTRIBUTION EQUIPMENT. CONTRACTOR SHALL SUBMIT THE REPORT RESULTS PRIOR TO SUBMITTING SWITCHGEAR SUBMITTALS TO ALLOW CHANGES OR MODIFICATIONS TO EQUIPMENT SELECTION.

PROVIDE TESTING BY NETA CERTIFIED COMPANY, CLEANING AND MAINTENANCE FOR EXISTING SWITCHBOARDS, WHICH SHALL INCLUDE: CHECKING FOR SHORT CIRUITS AND CONTINUITY OF CIRCUITS, INSULATION RESISTANCE TESTING, CHECKING CIRCUIT BREAKERS OPERATION, GROUND FAULT INTERRUPTER TESTING, THERMAL INFRARED SCAN OF SWITCHBOARD UNDER FULL LOAD, CHECKING ALL BOLTED CONNECTIONS FOR HIGH RESISTANCE, PERFORMING GROUND RESISTANCE TESTING, AND CHECKING LOW VOLTAGE CONTROLS WIRINGDEVICES AND INSTRUMENT TRANSFORMERS FOR PROPER OPERATION. CONTRACTOR SHALL PROVIDE A COMPLETE WRITTEN REPORT INDICATING ANY DEFICIENCIES IN RELATION TO EACH COMPONENT'S INTENDED FUNCTION AND RECOMMENDATIONS FOR RESOLVING ANY DEFICIENCY.

INSULATION FOR 2-HOUR FIRE RATED POWER CABLES: INSULATION SHALL MEET OR EXCEED THE REQUIREMENTS OF UL 2196 FIRE TEST FOR ELECTRICAL CIRCUIT PROTECTION SYSTEMS, ANSI UL 44, STANDARDS FOR FIRE RESISTIVE CABLE. CONDUCTOR AMPACITY SHALL BE BASED ON 75C. COMBINATION UL TYPE INSULATION TYPES ARE PERMISSIBLE WHERE THE REQUIRED UL TYPE IS PART OF THE COMBINATION UL LISTING.
1. CONDUCTORS INSTALLED UNDERGROUND: INSULATION FOR UNDERGROUND FIRE RATED CONDUCTORS SHALL BE WET LOCATION; UL TYPE RHW 75 DEGREES C, OR UL RHW-2 90 DEGREES C.
2. CONDUCTORS INSTALLED ABOVE GROUND: INSULATION FOR ABOVE GROUND FIRE RATED CONDUCTORS SHALL BE UL TYPE RHH 90C OR RHW 75C OR UL RHW-2 90C.
3. ELECTRICAL CIRCUIT PROTECTIVE SYSTEMS (FHIT) – SYSTEM 27 OF THE UL FIRE RESISTANCE DIRECTORY

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10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
1 Addendum 1	10/08/2025
2 Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
ELECTRICAL ONE-LINE DIAGRAM

SHEET NO.
E5.01

North Shore Multi-Use Indoor Facility

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Branch Panel: HC

EXISTING

Location: MECHANICAL C108 | **Volts:** 277/480 Wye | **A.I.C. Rating:** 18,000
Supply From: MSB-C2 | **Phases:** 3 | **Enclosure:** Type 1
Mounting: Surface | **Wires:** 4 | **Mains:** 400A MCB

Phase in kVA

Note	CKT	Circuit Description	Wire	Breaker		A	B	C	Breaker	Wire	Circuit Description	CKT	Note
	1	LTG LOUNGE C143	12	20	1	0.7 / 3.8						2	
2	3	LTG MEETING RM	12	20	1		0.7 / 3.8		3	25	12 AHU-1C (10.0 HP) MECHANICAL C131	4	
	5	LTG VARISTY/JV LOCKERS C133/C138	12	20	1			2.3 / 3.8				6	
	7	Lighting (NOTE 1)	E	20	1	1.2 / 3.8						8	
	9	WALL PACK EXTERIOR LTG	10	20	1		0.1 / 3.8		3	25	12 AHU-2C (10.0 HP) MECHANICAL C131	10	
	11	CORRIDOR LTG	12	20	1			0.6 / 3.8				12	
	13	Lighting (NOTE 1)	E	20	1	2.8 / 3.8						14	
	15	Existing LTG, NEW OFFICE LTG	12	20	1		2.0 / 3.8		3	25	12 AHU-3C (10.0 HP) MECHANICAL C131	16	
	17	Lighting (NOTE 1)	E	20	1			1.8 / 3.8				18	
	19	Lighting (NOTE 1)	12	20	1	1.4 / 3.0						20	
	21	LTG MECHANICAL C141	12	20	1		0.3 / 3.0		3	25	12 AHU-4C (10.0 HP) MECHANICAL C108	22	
	23	CEILING PANEL LTG	12	20	1			0.5 / 3.0				24	
	25	Lighting (NOTE 1)	E	20	1	1.0 / 2.1						26	
	27						2.1 / 2.1		3	20	12 AHU-5C (5.0 HP) MECHANICAL C108	28	
	29	AHU-7C (5.0 HP) MECHANICAL C141	12	20	3			2.1 / 2.1				30	
	31					2.1 / 3.0						32	
	33	TRANSFORMER TLG (NOTE 1)	E	40	2		5.0 / 3.0		3	20	E WASHER (NOTE 1)	34	
	35							5.0 / 3.0				36	
	37					3.0 / 3.0						38	
	39	WASHER (NOTE 1)	E	20	3		3.0 / 3.0		3	20	E WASHER (NOTE 1)	40	
	41							3.0 / 3.0				42	
	43					19.4 / 0.0			1	--	-- SPACE	44	--
	45	(E)TLC (112.5 kVA XFR)	1/0	175	3		18.8 / 0.0		1	--	-- SPACE	46	--
	47							19.0 / 0.0	1	--	-- SPACE	48	--
	49					25.0 / 0.0			1	--	-- SPACE	50	--
	51	(E)TSLC	2	125	3		25.0 / 0.0		1	--	-- SPACE	52	--
	53							25.0 / 0.0	1	--	-- SPACE	54	--
			Total Load:			79.1 kVA	79.5 kVA	81.9 kVA					
			Total Amps:			286 A	287 A	296 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	59.8 kVA	100.00%	59.8 kVA		
Kitchen Equipment	5.0 kVA	70.00%	3.5 kVA	**Total Conn. Load:**	240.6 kVA
Lighting	15.2 kVA	125.00%	19.0 kVA	**Total Est. Demand:**	226.4 kVA
Miscellaneous	102.5 kVA	100.00%	102.5 kVA	**Total Conn. Current:**	289 A
Motor	1.5 kVA	100.00%	1.5 kVA	**Total Est. Demand Current:**	272 A
Other	10.0 kVA	100.00%	10.0 kVA		
Receptacles	44.2 kVA	61.32%	27.1 kVA		
Existing	2.5 kVA	125.00%	3.1 kVA		

Notes:
WIRE SIZES LABELED AS 'E' ARE EXISTING CIRCUITS TO BE INTERCEPTED AND EXTENDED TO NEW PANEL 'HC' LOCATION AND THE ASSOCIATED NEW BREAKER.

Abbrevations:
G - PROVIDE GFCI CIRCUIT BREAKER
LF - PROVIDE PERMANENT LOCK-OFF DEVICE
LO - PROVIDE PERMANENT LOCK-ON DEVICE
M - PROVIDE METERING DEVICE

Branch Panel: LC

EXISTING

Location: ELECTRICAL C109 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 10,000
Supply From: TLC | **Phases:** 3 | **Enclosure:** Type 1
Mounting: Surface | **Wires:** 4 | **Mains:** 400A MLO

Phase in kVA

Note	CKT	Circuit Description	Wire	Breaker		A	B	C	Breaker	Wire	Circuit Description	CKT	Note
	1	EF-1C JV LOCKER RM C136	E	20	1	0.5 / 0.2			1	20	**12 GFCI RECEPT**	2	
	3	EF-2C LAUNDRY C140	E	20	1		0.5 / 0.2		1	20	**12 GFCI RECEPT**	4	
	5	EF-3C VARSITY LOCKER RM C140	E	20	1			0.5 / 0.5	1	20	E Receptacles OFFICE C124	6	
	7	EF-4C,EF-5C HALL C110, HC C106	E	20	1	0.5 / 0.5			1	20	E Receptacles EXAM RM C129	8	
	9	EF-6C HALL C119	E	20	1		0.5 / 0.5		1	20	E Receptacles TRAINING C122	10	
	11	**GFCI RECEPT**	**12**	20	1			0.2 / 0.5	1	20	E Receptacles TRAINING C122	12	
	13	Receptacle STORAGE C125	E	20	1	0.5 / 0.5			1	20	E Receptacles OFFICE C124	14	
	15	**ICE MAKER CONF RM C106**	**#12**	20	1		1.8 / 0.5		1	20	E Receptacles CLASSROOM C123	16	
	17	**REFRIGERATOR CONF RM C106**	**#12**	20	1			0.2 / 0.5	1	20	E Receptacles CLASSROOM C123, WP/GFCI	18	
	19	ICE MACHINE THERAPY C128	E	20	1	0.5 / 0.5			1	20	E Receptacles THERAPY C128	20	
G	21	Water Fountain Rec JV LOCKERS 4	E	20	1		0.2 / 0.5		1	20	E Receptacles THERAPY C128	22	
G	23	Water Fountain Rec VARSITY LOCKERS 5	E	20	1			0.2 / 0.5	1	20	E WHIRLPOOL THERAPY C128	24	
	25	Receptacles		20	1	0.5 / 0.5			1	20	E WHIRLPOOL THERAPY C128	26	
	27	**MINI-FRIDGE HEAD COACH C106**	**12**	20	1		0.2 / 0.5		1	20	E WHIRLPOOL THERAPY C128	28	
	29							8.5 / 0.5	1	20	E Receptacles C122, C126, C127	30	
	31	**NEW PANEL 'LC-1'**	**#3**	**125**	**3**	8.9 / 0.2			1	20	**#12 TIMECLOCK CORRIDOR C101**	32	
	33						7.0 / 0.4		1	20	E Receptacles TOILETS C137	34	
--	35	**SPARE**	--	20	1			0.0 / 0.3				36	
	37	EF-7C STORAGE C125	E	20	1	0.5 / 0.3			2	20	Receptacles	38	
	39	***GP REC's VARSITY LOCKERS C138***	***12***	20	1		0.5 / 0.5		1	20	Receptacles	40	
	41	**CORRIDOR RECEPTACLES**	**#12**	20	1			0.9 / 0.5	1	20	Receptacles	42	
	43	Receptacle EXAM RM C129	E	20	1	0.5 / 0.0						44	
	45	Receptacles C118,C120, C121	E	20	1		0.5 / 0.0		3	30	E WASHER LAUNDRY C140	46	
	47	Receptacles COACHING STAFF C116	E	20	1			0.5 / 0.0				48	
	49	Receptacles COACHING STAFF C116	E	20	1	0.5 / 0.0						50	
	51	Rec's COACHING STAFF C116/LOCKER C117	E	20	1		0.5 / 0.0		3	30	E WASHER LAUNDRY C140	52	
	53	Receptacles COACHING STAFF C116	E	20	1			0.5 / 0.0				54	
	55	**GP REC's STORAGE C111**	**12**	20	1	0.4 / 0.0						56	
	57	Receptacles	E	20	1		0.5 / 0.0		3	30	E WASHER LAUNDRY C140	58	
	59	Receptacles	E	20	1			0.5 / 0.0				60	
	61	**WARMING CABINET LOUNGE C143**	**#12**	20	1	0.2 / 0.0			1	25	E DRYER LAUNDRY C140	62	
	63	**GP REC's HEAD COACH 38**	**12**	20	1		0.9 / 0.0		1	25	E DRYER LAUNDRY C140	64	
	65	**GP REC's CONF. ROOM C105**	**12**	20	1			1.1 / 0.0	1	25	E DRYER LAUNDRY C140	66	
	67	Receptacles MECH C108, ELEC/TELE C109	E	20	1	0.7 / 0.5			1	20	E TTB ELEC/TELE C109	68	
	69	Receptacles		20	1		0.5 / 0.5		1	20	E TTB ELEC/TELE C109	70	
	71	VENDING MACHINES CORRIDOR C101	E	20	1			0.5 / 0.2	1	20	**#12 GLASS DOOR REF LOUNGE C143**	72	
	73	VENDING MACHINES CORRIDOR C101	E	20	1	0.5 / 0.5			1	20	**#12 GP GFCI JAN. C144**	74	
	75	VENDING MACHINES CORRIDOR C101	E	20	1		0.5 / 0.0		1	20	-- **SPARE**	76	--
	77	DAMPERS	E	20	1			0.5 / 0.5	1	20	EXSIITING	78	
	79	FIRE SMOKE DAMPERS	E	20	1	0.5 / 0.5			1	20	EXISTING	80	
	81	**GP REC's LOUNGE C143**	**#12**	20	1		0.6 / 0.5		1	20	EXISTING	82	
	83	EXISTING		20	1			0.5 / 0.5	1	20	EXISTING	84	
			Total Load:			19.4 kVA	18.8 kVA	19.0 kVA					
			Total Amps:			161 A	157 A	158 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	3.5 kVA	100.00%	3.5 kVA		
Kitchen Equipment	5.0 kVA	70.00%	3.5 kVA	**Total Conn. Load:**	57.1 kVA
Miscellaneous	0.5 kVA	100.00%	0.5 kVA	**Total Est. Demand:**	39.2 kVA
Motor	1.5 kVA	100.00%	1.5 kVA	**Total Conn. Current:**	159 A
Receptacles	44.2 kVA	61.32%	27.1 kVA	**Total Est. Demand Current:**	109 A
Existing	2.5 kVA	125.00%	3.1 kVA		

Notes:

Abbrevations:
G - PROVIDE GFCI CIRCUIT BREAKER
LF - PROVIDE PERMANENT LOCK-OFF DEVICE
LO - PROVIDE PERMANENT LOCK-ON DEVICE
M - PROVIDE METERING DEVICE

Branch Panel: LCA

Location: MECHANICAL C131 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 10,000
Supply From: LC | **Phases:** 3 | **Enclosure:** Type 1
Mounting: Surface | **Wires:** 4 | **Mains:** 100A MCB

Phase in kVA

Note	CKT	Circuit Description	Wire	Breaker		A	B	C	Breaker	Wire	Circuit Description	CKT	Note
	1	TV, GP REC'S PLAYER MTG RM C130B	#12	20	1	0.6 / 0.4			1	20	#12 TV, GP REC'S PLAYER MTG RM C130B	2	
	3	TV, GP REC'S PLAYER MTG RM C130B	#12	20	1		0.4 / 0.4		1	20	#12 TV, GP REC'S PLAYER MTG RM C130B	4	
	5	FLR REC's PLAYER MTG RM C130B	#12	20	1			0.7 / 0.5	1	20	#12 FLR REC's PLAYER MTG RM C130B	6	
	7	FLR REC's PLAYER MTG RM C130B	#12	20	1	0.7 / 0.7			1	20	#12 FLR REC's PLAYER MTG RM C130B	8	
	9	Receptacles SERVING HALL C132	#12	20	1		1.8 / 1.0		1	20	#12 Receptacles SERVING HALL C132	10	
	11	Receptacles SERVING HALL C132	#12	20	1			0.4 / 0.2	1	20	#12 Receptacles SERVING HALL C132	12	
1	13	Receptacles SERVING HALL C132	#12	20	1	0.2 / 0.4			1	20	#12 Receptacles SERVING HALL C132	14	
	15	Receptacles SERVING HALL C132	#12	20	1		0.2 / 0.2		1	20	#12 Receptacles SERVING HALL C132	16	
	17	GFCI SVC REC's MECHANICAL C131	#12	20	1			0.4 / 0.7	1	20	#12 GP REC's JV LOCKERS C133	18	
	19	HVAC SVC REC's MECHANICAL C141	#12	20	1	0.7 / 0.7			1	20	#12 GP REC's VARSITY LOCKERS C138	20	
	21	GP REC's VARSITY LOCKERS C138	#12	20	1		0.9 / 2.1					22	
	23							2.1 / 2.1	2	20	#10 THERAPY TUB ICE BATHS C135 (NOTE 1)	24	
	25	THERAPY TUB ICE BATHS C135 (NOTE 1) 1	#10	30	2	2.1 / 2.1						26	
	27						0.0 / 2.1		2	20	#10 THERAPY TUB ICE BATHS C139 (NOTE 1)	28	
	29											30	
	31											32	
	33											34	
	35											36	
	37											38	
	39											40	
	41											42	
			Total Load:			8.5 kVA	8.9 kVA	7.0 kVA					
			Total Amps:			73 A	76 A	59 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Kitchen Equipment	3.2 kVA	80.00%	2.5 kVA		
Receptacles	21.3 kVA	73.43%	15.7 kVA	**Total Conn. Load:**	24.5 kVA
				Total Est. Demand:	18.2 kVA
				Total Conn. Current:	68 A
				Total Est. Demand Current:	51 A

Notes:
1. PROVIDE GFCI BREAKER 1

Abbrevations:
G - PROVIDE GFCI CIRCUIT BREAKER
LF - PROVIDE PERMANENT LOCK-OFF DEVICE
LO - PROVIDE PERMANENT LOCK-ON DEVICE
M - PROVIDE METERING DEVICE

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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

BRADLEY KALMANS — 80219 — LICENSED — PROFESSIONAL ENGINEER
10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
1 Addendum 1	10/08/2025
2 Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
ELECTRICAL PANEL SCHEDULES

SHEET NO.
E5.02

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Lighting Inverter Schedule: EML

Location: ELECTRICAL C162 **Input Voltage:** 277/480 Wye **Output Voltage:** 277/480 Wye
Supply From: HCB **Phases:** 3 **Battery Run Time (Minutes):** 90
Mounting: SURFACE **Wires:** 4 **kVA Rating:**
Enclosure: NEMA-1

Notes:

CKT	Circuit Description	# of Poles	Trip Rating	Load	Remarks
1	UNIT A EGRESS LTG	1	20	2.6 kVA	
2	UNIT B EGRESS LTG C150, C148, C151	1	20	1.6 kVA	
3	UNIT D EGRESS LIGHTING PRACTICE FIELD	1	20	3.9 kVA	
4	UNIT D EGRESS LIGHTING PRACTICE FIELD	1	20	3.9 kVA	
5	UNIT D EGRESS LIGHTING PRACTICE FIELD	1	20	2.6 kVA	
6	UNIT D EGRESS LIGHTING RMS C157, C154, C155	1	20	0.6 kVA	
7	EXTERIOR WALL PACK LTG CENTRAL PLANT C158	1	20	0.1 kVA	
8	EXTERIOR WALL PACK EGRESS LIGHTING	1	20	0.0 kVA	
9	EXTERIOR EGRESS CANOPY DOWN LIGHTING	1	20	0.2 kVA	
10	EXTERIOR EGRESS CANOPY DOWN LIGHTING	1	20	0.2 kVA	
11	EXTERIOR WALL PACK EGRESS LIGHTING	1	20	0.0 kVA	
12	SITE PARKING LIGHTING	1	20	0.3 kVA	
13	SITE PARKING LIGHTING	1	20	1.2 kVA	
14	EXIT SIGNS C132, C143, C101, C138	1	20	0.1 kVA	
15	EXIT SIGNS C149, C148, C147	1	20	0.1 kVA	
				17.5 kVA	
				21	

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	17.5 kVA	125.00%	21.8 kVA		
				Total Conn. Load:	17.5 kVA
				Total Est. Demand:	21.8 kVA
				Total Conn. Current:	21
				Total Est. Demand Current:	26

Branch Panel: HCB

Location: MAIN ELECTRICAL C161 **Volts:** 277/480 Wye **A.I.C. Rating:** 35,000
Supply From: MSB-C2 **Phases:** 3 **Enclosure:** Type 1
Mounting: Surface **Wires:** 4 **Mains:** 400A
Phase in kVA

Note	CKT	Circuit Description	Wire	Breaker	A	B	C	Breaker	Wire	Circuit Description	CKT	Note
	1				18.4 / 3.6						2	
	3	TLC2 (75 KVA TRANSFORMER)	1/0	150	3		11.4 / 3.6	3	40	8 PCHWP-2 (15.0 HP)	4	
	5						13.4 / 3.6				6	
	7				3.6 / 0.7						8	
	9	SCHWP-2 (15.0 HP) BOILER/RISER C160	8	40	3		3.6 / 0.7	3	20	10 EF-1C (1.0 HP) LAUNDRY C137	10	
	11						3.6 / 0.7				12	
	13				3.0 / 1.4						14	
	15	HVLS-1 THRU HVLS-6 (2.0 HP EA)	10	20	3		3.0 / 1.4	3	20	12 EF-8C (3.0 HP) MEZZANINE	16	
	17						3.0 / 1.4				18	
	19				3.0 / 0.8						20	
	21	OAU-1C (7.5 HP)	12	20	3		3.0 / 0.8	3	20	12 EF-10C (1.5 HP) BAND STORAGE C155	22	
	23						3.0 / 0.8				24	
	25				3.8 / 1.1			1	20	10 WEIGHT ROOM LTG C148	26	
	27	OAU-2C (5.0 HP) MECHANICAL C141	10	20	3		3.8 / 0.2	1	20	10 FOOTBALL EQUIP. ROOM LTG C150	28	
	29						3.8 / 3.0	1	20	**12 CLG LTG SYSTEM ENTRANCE HALL C147**	30	
	31				2.1 / 3.1			1	20	**12 CLG LTG SYSTEM ENTRANCE HALL C147**	32	
	33	OAU-3C (5.0 HP)	12	20	3		2.1 / 1.5	1	20	12 CLG LTG SYSTEM ENTRANCE HALL C147	34	
	35						2.1 / 0.2	1	20	10 CORRIDOR LTG	36	
	37				3.6 / 0.5			1	20	12 LIGHTING RMS C156, C154, C155	38	
	39	AHU-6C (15.0 HP)	8	40	3		3.6 / 3.4	1	20	10 INTERIOR SCREEN WALL LTG	40	
	41						3.6 / 4.5	1	20	10 UNTERIOR SCREEN WALL LTG	42	
	43				1.3 / 2.8			1	20	**10 INTERIOR SCREEN WALL LTG**	44	
	45	AHU-10C (3.0 HP)	12	20	3		1.3 / 2.8	1	20	**10 INTERIOR SCREEN WALL LTG**	46	
	47						1.3 / 1.7	1	20	10 EXTERIOR ACCENT LTG	48	
	49				1.1 / 3.4			1	20	10 EXTERIOR ACCENT LTG	50	
	51	HWP-2 (2.0 HP) BOILER/RISER C160	12	20	3		1.1 / 1.2	1	20	**12 MUSTANG SIGN**	52	
	53						1.1 / 1.2	1	20	**12 MUSTANG SIGN**	54	
	55	PRACTICE FIELD LIGHTING	10	20	1 3.3 / 2.8			1	20	10 EXTERIOR ACCENT LTG (FUTURE)	56	
	57	PRACTICE FIELD LIGHTING	10	20	1		3.3 / 2.8	1	20	10 INTERIOR SCREEN WALL LTG (FUTURE)	58	
	59	PRACTICE FIELD LIGHTING (ALTERNATE)	10	20	1		3.9 / 2.2	1	20	10 EXTERIOR ACCENT LTG (FUTURE)	60	
2	61	**NORTH SHORE HS SIGN**	**10**	**20**	**1** 1.2 / 2.2			1	20	10 INTERIOR SCREEN WALL LTG (FUTURE)	62	
	63	**NORTH SHORE HS SIGN**	**10**	**20**	**1**		1.2 / 1.8	1	20	10 CHAMPIONS WALL ACCENT LTG	64	
--	65	SPACE	--	--	1		0.0 / 0.1	1	20	12 WALL PACK LTG CENTRAL PLANT C158	66	
--	67	SPACE	--	--	1 0.0 / 1.0			1	20	10 EXTERIOR CANOPY LTG	68	
--	69	SPACE	--	--	1		0.0 / 2.0	1	20	10 EXTERIOR WALL PACK LIGHTING	70	
--	71	SPACE	--	--	1		0.0 / 0.4	1	20	8 SITE PARKING LIGHTING	72	
--	73	SPACE	--	--	1 0.0 / 0.6			1	20	10 SITE PARKING LIGHTING	74	
--	75	SPACE	--	--	1		0.0 / 0.2	1	20	10 BOLLARD LIGHTING	76	
--	77	SPACE	--	--	1		0.0 / 0.1	1	20	10 BOLLARD LIGHTING	78	
--	79	SPACE	--	--	1 0.0 / 12.0						80	
--	81	SPACE	--	--	1		0.0 / 0.3	3	30	10 EML LIGHTING INVERTER	82	
--	83	SPACE	--	--	1		0.0 / 5.2				84	
			Total Load:		80.3 kVA	60.1 kVA	63.8 kVA					
			Total Amps:		292 A	217 A	233 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	85.2 kVA	100.00%	85.2 kVA		
Lighting	74.6 kVA	125.00%	93.3 kVA	**Total Conn. Load:**	204.3 kVA
Miscellaneous	4.4 kVA	100.00%	4.4 kVA	**Total Est. Demand:**	207.9 kVA
Receptacles	40.1 kVA	62.48%	25.0 kVA	**Total Conn. Current:**	246 A
				Total Est. Demand Current:	250 A

Notes:

Abbrevations:
G - PROVIDE GFCI CIRCUIT BREAKER
LF - PROVIDE PERMANENT LOCK-OFF DEVICE
LO - PROVIDE PERMANENT LOCK-ON DEVICE
M - PROVIDE METERING DEVICE

Branch Panel: LCB

Location: MAIN ELECTRICAL C161 **Volts:** 120/208 Wye **A.I.C. Rating:** 10,000
Supply From: TLCB **Phases:** 3 **Enclosure:** Type 1
Mounting: Surface **Wires:** 4 **Mains:** 400A
Phase in kVA

Note	CKT	Circuit Description	Wire	Breaker	A	B	C	Breaker	Wire	Circuit Description	CKT	Note
	1	GP DED REC INDOOR FIELD C156-1	#10	20	1 0.7 / 0.7			1	20	#10 GP DED REC INDOOR FIELD C156-1	2	
	3	GP DED REC INDOOR FIELD C156-1	#10	20	1	3.0 / 1.5		1	20	#12 IT RACK PRACTICE FEILD C156	4	
	5	GP DED REC INDOOR FIELD C156-1	#10	20	1		1.0 / 0.7	1	20	#10 GP DED REC INDOOR FIELD C156-1	6	
	7	GP DED REC INDOOR FIELD C156-1	#10	20	1 1.0 / 1.0			1	20	#10 GP DED REC INDOOR FIELD C156-1	8	
	9	GP DED REC INDOOR FIELD C156-1	#10	20	1	1.0 / 1.0		1	20	#10 GP DED REC INDOOR FIELD C156-1	10	
	11	GP DED REC INDOOR FIELD C156-1	#10	20	1		1.0 / 1.0	1	20	#10 GP DED REC INDOOR FIELD C156-1	12	
	13	AV QUAD INDOOR FIELD C156	#12	20	1 1.5 / 1.0			1	20	#10 GP DED REC INDOOR FIELD C156-1	14	
	15	GP DED REC INDOOR FIELD C156-1	#10	20	1	0.7 / 0.7		1	20	#10 GP DED REC INDOOR FIELD C156-1	16	
	17	GP DED REC INDOOR FIELD C156-1	#10	20	1		0.5 / 3.0	1	20	#10 GP DED REC INDOOR FIELD C156-1	18	
	19	GP DED REC OUTDOOR FIELD C163	#10	20	1 4.0 / 4.0			1	20	#10 GP DED REC OUTDOOR FIELD C163	20	
	21	HVLS-7 (0.5 HP),HVLS-8 (0.5 HP),HVLS-9 (0.5 HP)	#12	20	2	0.6 / 0.0		1	20	#12 EF-9C (1/3 HP) MECHANICAL C141	22	
	23						0.6 / 0.5	1	20	#12 AHU-10C UV LIGHT MEZZANINE C201	24	
	25	OAU-1C UV LIGHT MEZZANINE C201	#12	20	1 0.5 / 0.5			1	20	#10 GFCI HVAC SVC REC's MEZZANINE	26	
	27	OAU-3C UV LIGHT MEZZANINE C201	#12	20	1	0.5 / 0.4		1	20	#12 GP REC'S CORRIDOR C156-1	28	
	29	AHU-6C UV LIGHT MEZZANINE C201	#12	20	1		0.5 / 0.7	1	20	#12 GP REC's ENTRANCE HALL C147	30	
	31	SVC REC's ELECTRICAL RM's C162, C161	#12	20	1 0.4 / 0.7			1	20	#12 GP REC's FOOTBALL EQUIP. ROOM C150	32	
	33	GP GFCI REC's BOILER/RISER C164	#12	20	1	0.5 / 0.4		1	20	#12 GP REC's WEIGHT ROOM C148	34	
	35	GP REC's ATHLETIC STORAGE C159	#12	20	1		0.9 / 0.5	1	20	#12 GP REC's NORTHWEST HALL C149	36	
	37	GP REC's WEIGHT ROOM C148	#12	20	1 0.7 / 1.6			1	20	#12 TV REC's Room C147, C148	38	
	39	GP REC's WEIGHT ROOM C148	#12	20	1	0.4 / 0.8		1	20	#12 TV REC's WEIGHT ROOM C148	40	
	41						0.0 / 2.4	1	20	#12 TV RECsWEIGHT ROOM C148	42	
	43										44	
	45										46	
	47										48	
	49										50	
	51										52	
	53										54	
	55										56	
	57										58	
	59										60	
	61										62	
	63										64	
	65										66	
	67										68	
	69										70	
	71										72	
	73										74	
	75										76	
	77										78	
	79										80	
	81										82	
	83										84	
			Total Load:		18.4 kVA	11.4 kVA	13.4 kVA					
			Total Amps:		156 A	95 A	114 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	1.1 kVA	100.00%	1.1 kVA		
Miscellaneous	2.0 kVA	100.00%	2.0 kVA	**Total Conn. Load:**	43.2 kVA
Receptacles	40.1 kVA	62.48%	25.0 kVA	**Total Est. Demand:**	28.1 kVA
				Total Conn. Current:	120 A
				Total Est. Demand Current:	78 A

Notes:

Abbrevations:
G - PROVIDE GFCI CIRCUIT BREAKER
LF - PROVIDE PERMANENT LOCK-OFF DEVICE
LO - PROVIDE PERMANENT LOCK-ON DEVICE
M - PROVIDE METERING DEVICE

Switchboard: MSB-C2

Location: MAIN ELECTRICAL C161 **Volts:** 277/480 Wye **A.I.C. Rating:** 45,000
Supply From: CNP XFR **Phases:** 3
Mounting: SURFACE **Wires:** 4 **Mains Rating:** 2000
Enclosure: NEMA-1

CKT	Circuit Description	Trip Rating	# of Poles	Load	Wire	Remarks
1	ATS-C2	800	3	652.2 kVA		100% RATED LSI BREAKER
2	ACC-2	500	3	387.3 kVA		100% RATED LSI BREAKER
3	HC2	400	3	204.3 kVA		100% RATED LSI BREAKER
4	**HC**	**400**	**3**	**240.6 kVA**		**100% RATED LSI BREAKER**
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
				Total Conn...	1484.3 kVA	
				Total Amps:	1785	

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	1111.9 kVA	100.00%	1111.9 kVA		
Lighting	89.8 kVA	125.00%	112.2 kVA	**Total Conn. Load:**	1484.3 kVA
Motor	12.5 kVA	100.00%	12.5 kVA	**Total Est. Demand:**	1458.2 kVA
Other	10.0 kVA	100.00%	10.0 kVA	**Total Conn. Current:**	1785
Miscellaneous	138.4 kVA	100.00%	138.4 kVA	**Total Est. Demand...**	1754
Kitchen Equipment	5.0 kVA	70.00%	3.5 kVA		
Receptacles	105.3 kVA	54.75%	57.6 kVA		
Heating	9.0 kVA	100.00%	9.0 kVA		
Existing	2.5 kVA	125.00%	3.1 kVA		

Notes:

Switchboard: EHC

Location: ELECTRICAL C162 **Volts:** 277/480 Wye **A.I.C. Rating:** 18,000
Supply From: MSB-C2 **Phases:** 3
Mounting: Surface **Wires:** 4 **Mains Rating:** 800
Enclosure: Type 1

CKT	Circuit Description	Trip Rating	# of Poles	Load	Wire	Remarks
1	ACC-1 EXTERIOR CHILLER YARD	500	3	387.3 kVA	1L	
2	TELC	70	3	51.4 kVA	4	
3	OAU-4C-1 (20.0 HP) ROOF UNIT D	60	3	22.4 kVA	6	
4	OAU-4C-2 (20.0 HP) ROOF UNIT D	60	3	22.4 kVA	6	
5	AHU-8C-1 (25.0 HP) ROOF UNIT D	70	3	28.3 kVA	4	
6	AHU-8C-2 (25.0 HP) ROOF UNIT D	70	3	28.3 kVA	4	
7	AHU-9C-1 (25.0 HP) ROOF UNIT D	70	3	28.3 kVA	4	
8	AHU-9C-2 (25.0 HP) ROOF UNIT D	70	3	28.3 kVA	4	
9	PCHWP-1 (15.0 HP) MECH RM C164	40	3	10.8 kVA	8	
10	SCHWP-1 (15.0 HP) BOILER/RISER C160	40	3	10.8 kVA	8	
11	HWP-1 (15.0 HP) MECH RM C164	40	3	10.8 kVA	8	
12	EWH-1 (12.3 KW) BOILER/RISER C164	20	3	12.3 kVA	10	
13	**TBP-1 (9.0 HP) FIRE PUMP C165**	**25**	**3**	**11.0 kVA**	**10**	
14						
15						
16						
17						
18						
19						
20						
				Total Conn...	652.2 kVA	
				Total Amps:	784	

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	579.6 kVA	100.00%	579.6 kVA		
Motor	11.0 kVA	100.00%	11.0 kVA	**Total Conn. Load:**	652.2 kVA
Miscellaneous	31.5 kVA	100.00%	31.5 kVA	**Total Est. Demand:**	646.7 kVA
Receptacles	21.1 kVA	73.74%	15.5 kVA	**Total Conn. Current:**	784
Heating	9.0 kVA	100.00%	9.0 kVA	**Total Est. Demand...**	778

Notes:
1. PROVIDE 100% RATED MAIN CIRCUIT BREAKER

Branch Panel: ELC

Location: MAIN ELECTRICAL C161 **Volts:** 120/208 Wye **A.I.C. Rating:** 10,000
Supply From: TELC **Phases:** 3 **Enclosure:** Type 1
Mounting: Surface **Wires:** 4 **Mains:** 200A MCB
Phase in kVA

Note	CKT	Circuit Description	Wire	Breaker	A	B	C	Breaker	Wire	Circuit Description	CKT	Note
	1	GFCI SERVICE REC's MECH YARD	#12	20	1 0.4 / 0.4			1	20	#12 GP REC AV/IT ROOM C151	2	
	3	GP REC AV/IT ROOM C151	#12	20	1	0.4 / 3.6		1	20	#12 GP REC AV/IT ROOM C151	4	
	5	GP REC AV/IT ROOM C151	#12	20	1		3.6 / 3.6	1	20	#12 GP REC AV/IT ROOM C151	6	
	7	GP REC AV/IT ROOM C151	#12	20	1 3.6 / 1.8			1	20	#12 GP RECEPT IDF C158	8	
	9	GP RECEPT IDF C158	#12	20	1	1.8 / 1.8		1	20	#12 GP RECEPT IDF C158	10	
	11	ICE MACHINE RECEPT JAN-1 C156-1	#12	20	1		0.2 / 1.0				12	
	13					1.0 / 1.0		3	20	#12 EUH-2 (5.0 KW) BOILER/RISER C164	14	
	15	EUH-1 (5.0 KW) BOILER/RISER C164	#12	20	3		1.0 / 1.0				16	
	17						1.0 / 0.0				18	
	19	DMSCU-1 MECH MEZZANINE C201	#8	50	2 3.5 / 0.0			3	20	#12 CHWPFCU-1 (1.5 HP) BOILER/RISER C164	20	
	21					3.5 / 0.0					22	
	23	DMSCU-2 UNIT D ROOF	#10	25	2		2.0 / 0.5	1	20	#12 OAU-4C UV LIGHT	24	
	25				2.0 / 0.7						26	
	27	AHU-8C UV LIGHT	#12	20	1	0.5 / 0.7		3	20	#12 B-1 (BOILER) BOILER/RISER C160	28	
	29	AHU-9C UV LIGHT	#12	20	1		0.5 / 0.7				30	
	31	IDP/ACP POWER AV/IT ROOM C151	#12	20	1 0.5 / 1.0						32	
	33	IDP/ACP POWER JAN C157	#12	20	1	1.2 / 1.0		**3**	**20**	**#12 EUH-2 (5.0 KW) FIRE PUMP C165**	34	
	35	FACP PWR AV/IT ROOM C151	#12	20	1		0.5 / 1.0				36	
	37	FUTURE ERRCS PWR AV/IT ROOM C151	#12	20	1 0.5 / 2.0			**2**	**25**	**#10 DMSCU-3 UNIT D ROOF**	38	
--	39	SPARE	--	20	1		0.0 / 2.0				40	
--	41	SPARE	--	20	1		0.0 / 0.0	1	--	-- SPACE	42	--
			Total Load:		18.3 kVA	18.5 kVA	14.6 kVA					
			Total Amps:		157 A	159 A	122 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	2.1 kVA	100.00%	2.1 kVA		
Heating	9.0 kVA	100.00%	9.0 kVA	**Total Conn. Load:**	51.4 kVA
Miscellaneous	19.2 kVA	100.00%	19.2 kVA	**Total Est. Demand:**	45.8 kVA
Receptacles	21.1 kVA	73.74%	15.5 kVA	**Total Conn. Current:**	143 A
				Total Est. Demand Current:	127 A

Notes:

Abbrevations:
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Salas O'Brien Project Number: 2550-01455-00

GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
1 Addendum 1	10/08/2025
2 Addendum 4	10/22/2025

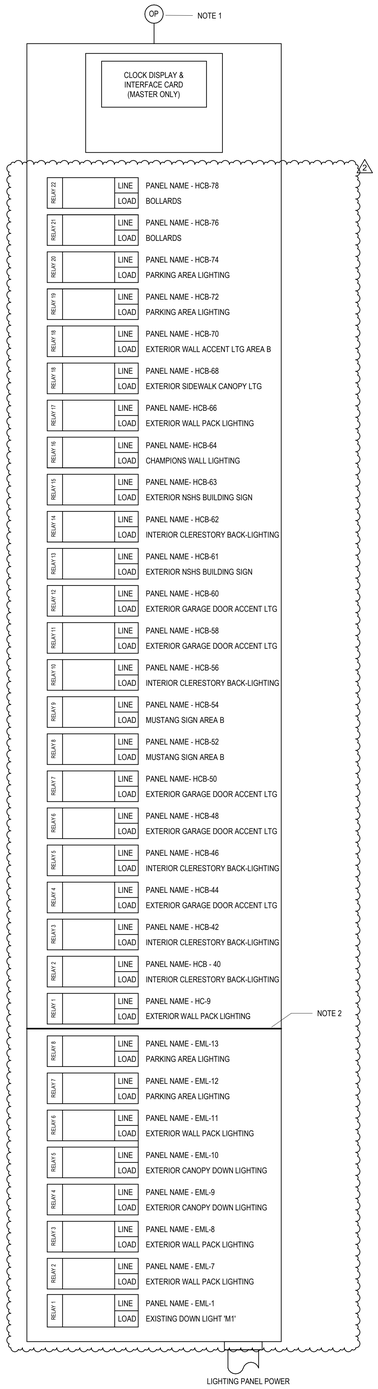
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
ELECTRICAL PANEL SCHEDULES

SHEET NO.
E5.03

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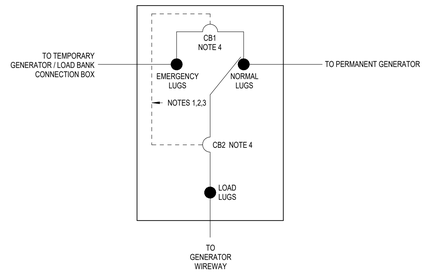


NOTE:

1. PANEL LCP SHALL OPERATE "PHOTOCELL ON" FOR ALL EXTERIOR CIRCUITS AND "TIMECLOCK OFF" FOR EACH INDIVIDUAL CIRCUIT. TIMECLOCK SETTINGS AS DIRECTED BY THE OWNER.
2. PROVIDE METAL BARRIER IN PANEL LCP TO ISOLATE NORMAL POWER CIRCUITS FROM THE EMERGENCY CIRCUITS.
3. BASIS OF DESIGN IS THE ACUITY LCD BLUEBOX MODEL #GR1408 LT ENC

1 PANEL LCP WIRING DIAGRAM

Scale: NONE



NOTES:

1. **IN MANUAL TRANSFER SWITCH MODE FOR CONNECTION OF TEMPORARY GENERATOR, CIRCUIT BREAKER CB1 IS OPEN AND CIRCUIT BREAKER CB2 IS CLOSED AND TRANSER SWITCH IS MOVED FROM NORMAL LUGS TO EMERGENCY LUGS.**
2. **IN LOAD BANK CONNECTION MODE FOR LOAD BANK TESTING OF PERMANENT GENERATOR, CIRCUIT BREAKER CB1 IS CLOSED AND CIRCUIT BREAKER CB2 IS OPEN.**
3. **CB1 AND CB2 ARE INTERLOCKED SO THAT BOTH BREAKERS CANNOT BE CLOSED AS THE SAME TIME.**
4. **CB1 IS NORMALLY OPEN AND CB2 IS NORMALLY CLOSED.**

2 MTS-CB TEMPORARY GENERATOR & LOAD BANK CONNECTION WIRING DIAGRAM

Scale: NONE

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STATE OF TEXAS
10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 1	10/08/2025
2	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.

25-0056.00

SHEET TITLE

ELECTRICAL DETAILS, AND SCHEDULES

SHEET NO.

E5.05

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PLUMBING GENERAL NOTES:

1. CONTRACT DRAWINGS ARE BASED ON CASUAL FIELD OBSERVATION, AND WHEN AVAILABLE, EXISTING RECORD DOCUMENTS. CONTRACTOR TO VERIFY AT SITE EXACT LOCATIONS, AND SIZES OF EXISTING PIPING. REPORT DISCREPANCIES TO ARCHITECT BEFORE DISTURBING EXISTING INSTALLATION, AND IMMEDIATELY AFTER SUCH DISCREPANCIES ARE DISCOVERED. CONTRACTOR TO VERIFY EXISTING CONDITIONS IN FIELD AND NOTIFY ARCHITECT AND ENGINEER IF THERE ARE ANY CONFLICTS BETWEEN EXISTING CONDITIONS AND DRAWINGS PRIOR TO COMMENCEMENT OF WORK.

2. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTAL OF BID TO DETERMINE CONDITIONS AFFECTING THE WORK. ANY ITEMS WHICH ARE NOT COVERED IN THE BID DOCUMENTS OR ANY PROPOSED SUBSTITUTIONS SHALL BE LISTED SEPARATELY AND QUALIFIED IN THE CONTRACTORS BID. SUBMITTAL OF BID SHALL SERVE AS EVIDENCE OF KNOWLEDGE OF EXISTING CONDITIONS AND ANY MODIFICATIONS WHICH ARE REQUIRED TO MEET THE INTENT OF THE DRAWINGS AND SPECIFICATIONS. FAILURE TO VISIT THE SITE DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY IN PERFORMANCE OF WORK.

3. ANY OTHER ITEMS NOT REFERENCED WHICH ARE LOCATED IN THE DEMOLISHED SPACE (VENT, WASTE, WATER, PLUMBING FIXTURE, ETC.) THAT ARE IDENTIFIED OR DISCOVERED DURING DEMOLITION WHICH WILL NOT BE USED FOR THIS PROJECT, SHALL BE DEMOLISHED BACK TO THE MAIN SOURCE OR RISER, AND DEVICES SHALL BE RETAINED TO THE OWNER STORAGE AS DIRECTED BY THE ARCHITECT/OWNER.

4. PLUMBING FIXTURES/EQUIPMENT SHOWN ON PLAN THAT ARE NOT IDENTIFIED AND DO NOT HAVE A FIXTURE DESIGNATION ARE EXISTING AND ARE TO REMAIN.

PLUMBING KEYED NOTES "⊠"

1 REMOVE EXISTING PLUMBING FIXTURES, EQUIPMENT AND ALL ASSOCIATED APPURTENANCES. REFER TO ARCHITECTURAL DRAWINGS FOR DEMOED FIXTURES. CAP EXISTING ROUGH-INS AT WALL. COORDINATE ALL WORK WITH EXISTING CONDITIONS AND FIELD VERIFY EXACT LOCATIONS.. COORDINATE ALL WORK WITH EXISTING CONDITIONS AND FIELD VERIFY EXACT LOCATIONS.

2 REMOVE EXISTING PLUMBING FIXTURES AND ALL ASSOCIATED APPURTENANCES. REFER TO ARCHITECTURAL DRAWINGS FOR DEMOED FIXTURES. REMOVE EXISTING WASTE TO BELOW FLOOR AND CAP. REMOVE WATER AND VENT PIPING AS SHOWN. COORDINATE ALL WORK WITH EXISTING CONDITIONS AND FIELD VERIFY EXACT LOCATIONS.

3 EXISTING VENT THRU ROOF TO REMAIN. CAP PIPING BELOW ROOF FOR RECONNECTION DURING NEW CONSTRUCTION.

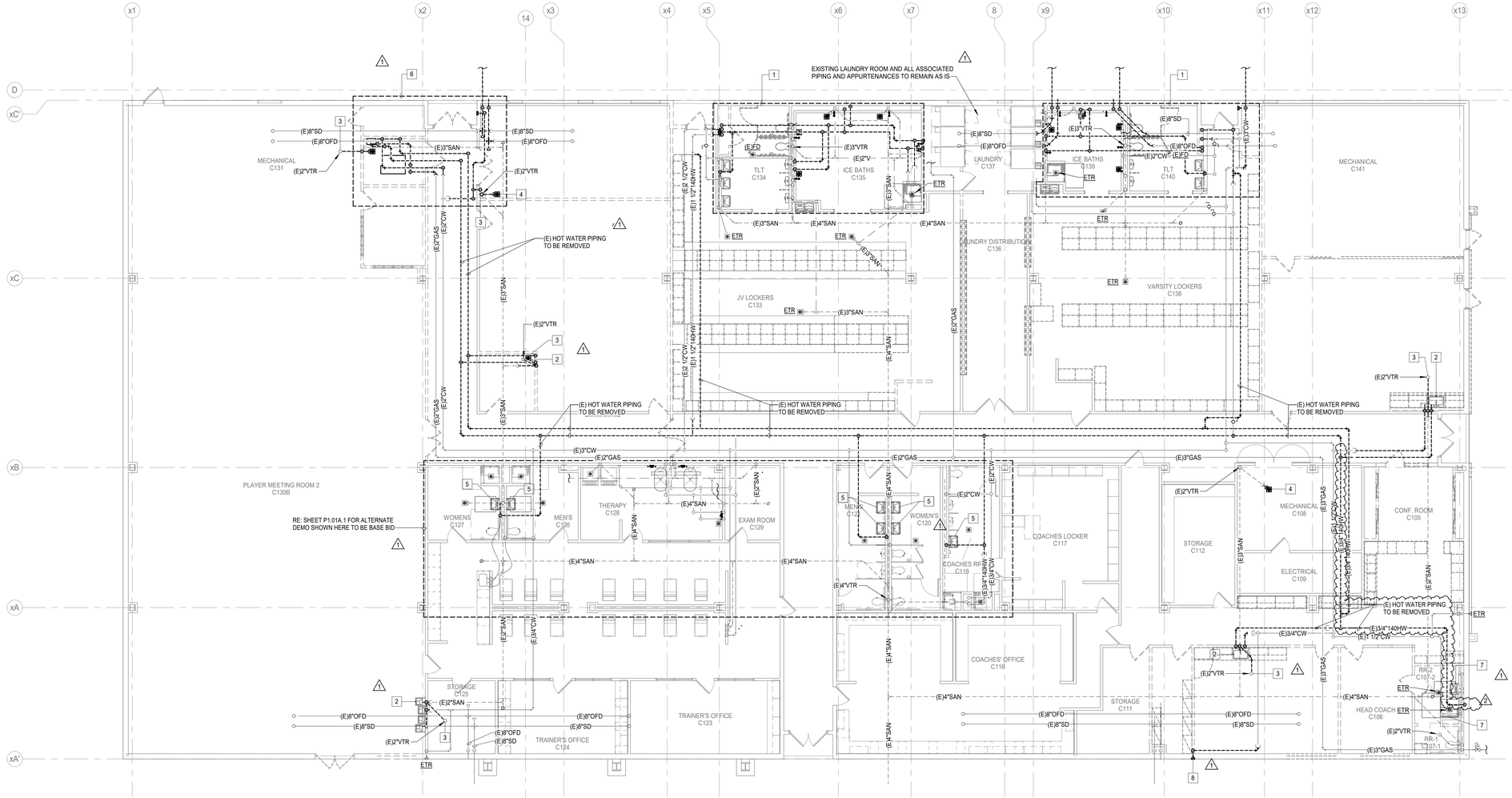
4 REMOVE EXISTING FLOOR DRAIN/HUB DRAIN/TRENCH DRAIN. CAP PIPING BELOW FLOOR.

5 REMOVE EXISTING PLUMBING FIXTURES AND ALL ASSOCIATED APPURTENANCES. REFER TO ARCHITECTURAL DRAWINGS FOR DEMOED FIXTURES. CAP EXISTING WASTE AND WATER ROUGH-INS FOR RECONNECTION DURING NEW CONSTRUCTION. COORDINATE ALL WORK WITH EXISTING CONDITIONS AND FIELD VERIFY EXACT LOCATIONS.

6 REMOVE EXISTING PLUMBING FIXTURES, EQUIPMENT AND ALL ASSOCIATED APPURTENANCES. REMOVE SERVICES SUCH AS WATER, WASTE, STORM, GAS AND VENT PIPING IN THIS AREA SERVING CONNECTIONS TO EQUIPMENT/FIXTURES, WHICH ARE EXISTING AND ARE TO BE REMOVED. REMOVE WATER PIPING BACK TO MAIN AND CAP OR AS INDICATED. REMOVE WASTE PIPING SERVING FIXTURES TO BE REMOVED TO BELOW FLOOR AND CAP. REMOVE VENT PIPING TO ABOVE CEILING AND CAP. REMOVE GAS AND STORM PIPING AS INDICATED AND CAP FOR RECONNECTION DURING NEW CONSTRUCTION. REFER TO ARCHITECTURAL DRAWINGS FOR DEMOED FIXTURES. COORDINATE ALL WORK WITH EXISTING CONDITIONS AND FIELD VERIFY EXACT LOCATIONS.

7 REMOVE EXISTING PLUMBING FIXTURES AND ALL ASSOCIATED APPURTENANCES. REFER TO ARCHITECTURAL DRAWINGS FOR DEMOED FIXTURES. REMOVE EXISTING ROUGH-INS TO RISER AND CAP FOR RECONNECTION DURING NEW CONSTRUCTION. COORDINATE ALL WORK WITH EXISTING CONDITIONS AND FIELD VERIFY EXACT LOCATIONS..

⚠1 8 REMOVE EXISTING WALL HYDRANT AND ASSOCIATED PIPING AS SHOWN AND CAP..



N

1 **PLUMBING DEMOLITION FLOOR PLAN - LEVEL ONE - UNIT A**
Scale: 1/8" = 1'-0"

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Salas O'Brien Project Number: 2550-01455-00

GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

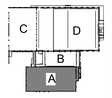
Revision No.		Revision Date
1	Addendum 1	10/08/2025
2	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
PLUMBING DEMOLITION FLOOR PLAN - LEVEL ONE - UNIT A

SHEET NO.
P1.01A



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PLUMBING GENERAL NOTES:

1. CONTRACT DRAWINGS ARE BASED ON CASUAL FIELD OBSERVATION, AND WHEN AVAILABLE, EXISTING RECORD DOCUMENTS. CONTRACTOR TO VERIFY AT SITE EXACT LOCATIONS, AND SIZES OF EXISTING PIPING. REPORT DISCREPANCIES TO ARCHITECT BEFORE DISTURBING EXISTING INSTALLATION, AND IMMEDIATELY AFTER SUCH DISCREPANCIES ARE DISCOVERED. CONTRACTOR TO VERIFY EXISTING CONDITIONS IN FIELD AND NOTIFY ARCHITECT AND ENGINEER IF THERE ARE ANY CONFLICTS BETWEEN EXISTING CONDITIONS AND DRAWINGS PRIOR TO COMMENCEMENT OF WORK.

2. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTAL OF BID TO DETERMINE CONDITIONS AFFECTING THE WORK. ANY ITEMS WHICH ARE NOT COVERED IN THE BID DOCUMENTS OR ANY PROPOSED SUBSTITUTIONS SHALL BE LISTED SEPARATELY AND QUALIFIED IN THE CONTRACTORS BID. SUBMITTAL OF BID SHALL SERVE AS EVIDENCE OF KNOWLEDGE OF EXISTING CONDITIONS AND ANY MODIFICATIONS WHICH ARE REQUIRED TO MEET THE INTENT OF THE DRAWINGS AND SPECIFICATIONS. FAILURE TO VISIT THE SITE DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY IN PERFORMANCE OF WORK.

3. ANY OTHER ITEMS NOT REFERENCED WHICH ARE LOCATED IN THE DEMOLISHED SPACE (VENT, WASTE, WATER, PLUMBING FIXTURE, ETC.) THAT ARE IDENTIFIED OR DISCOVERED DURING DEMOLITION WHICH WILL NOT BE USED FOR THIS PROJECT, SHALL BE DEMOLISHED BACK TO THE MAIN SOURCE OR RISER, AND DEVICES SHALL BE RETAINED TO THE OWNER STORAGE AS DIRECTED BY THE ARCHITECT/OWNER.

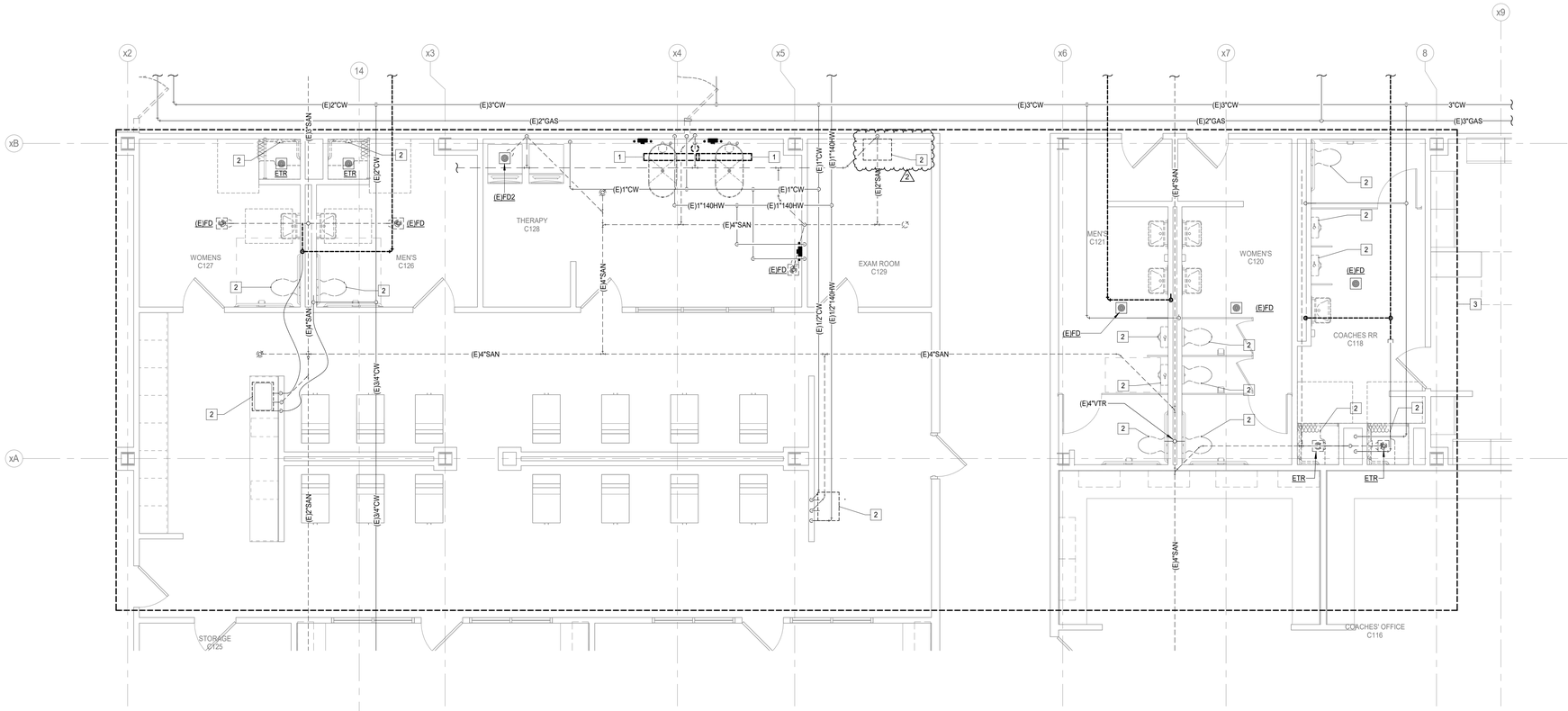
4. PLUMBING FIXTURES/EQUIPMENT SHOWN ON PLAN THAT ARE NOT IDENTIFIED AND DO NOT HAVE A FIXTURE DESIGNATION ARE EXISTING AND ARE TO REMAIN.

PLUMBING KEYED NOTES "⊠"

1 REMOVE EXISTING FLOOR DRAIN/HUB DRAIN/TRENCH DRAIN. CAP PIPING BELOW FLOOR.

2 REMOVE EXISTING PLUMBING FIXTURES AND ALL ASSOCIATED APPURTENANCES. REFER TO ARCHITECTURAL DRAWINGS FOR DEMOED FIXTURES. CAP EXISTING ROUGH-INS AT WALL FOR RE-WORK/RECONNECTION DURING NEW CONSTRUCTION. COORDINATE ALL WORK WITH EXISTING CONDITIONS AND FIELD VERIFY EXACT LOCATIONS. COORDINATE ALL WORK WITH EXISTING CONDITIONS AND FIELD VERIFY EXACT LOCATIONS.

3 REMOVE EXISTING PLUMBING FIXTURES, EQUIPMENT AND ALL ASSOCIATED APPURTENANCES. REFER TO ARCHITECTURAL DRAWINGS FOR DEMOED FIXTURES. CAP EXISTING ROUGH-INS AT WALL. COORDINATE ALL WORK WITH EXISTING CONDITIONS AND FIELD VERIFY EXACT LOCATIONS. COORDINATE ALL WORK WITH EXISTING CONDITIONS AND FIELD VERIFY EXACT LOCATIONS. ⚠1



N ⊗ 1 **PLUMBING DEMOLITION FLOOR PLAN - LEVEL ONE - UNIT A - ALTERNATE**
Scale: 1/4" = 1'-0"

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GALENA PARK ISD
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North Shore Multi-Use Indoor Facility

STATE OF TEXAS
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10.22.2025

ISSUED: OCTOBER 1, 2025

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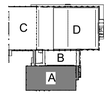
Revision No.		Revision Date
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2	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
PLUMBING DEMOLITION FLOOR PLAN - LEVEL ONE - UNIT A - ALTERNATE

SHEET NO.
P1.01A.1



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PLUMBING GENERAL NOTES:

1. IT IS IMPRACTICAL DUE TO THE STREET SEWER, STRUCTURAL FEATURES AND ARRANGEMENT OF BUILDING TO OBTAIN A SLOPE OF 1/4" PER FOOT PIPING 3" THRU 6" SHALL HAVE A SLOPE OF 1/8" PER FOOT BELOW BUILDING TO 5'-0" OUTSIDE OF BUILDING.

2. REFER TO ARCHITECTS DRAWING FOR EXACT LOCATION OF FLOOR DRAINS.

3. ALL FLOOR DRAINS AND FLOOR SINKS MUST BE EASILY ACCESSIBLE FOR SERVICING. RE: SHEET P5.01 FOR DETAILS AND SHEET P6.01 FOR SCHEDULES

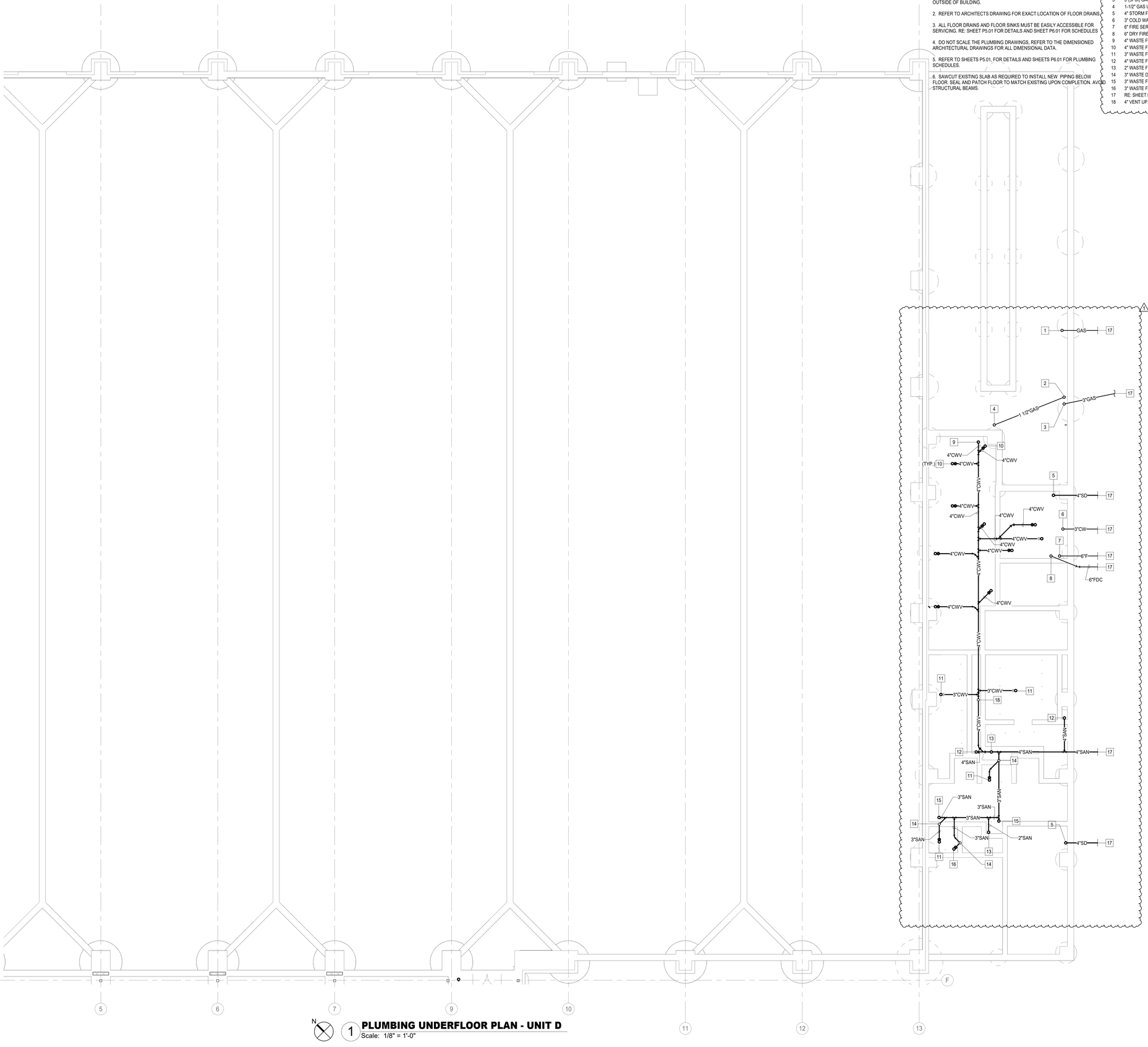
4. DO NOT SCALE THE PLUMBING DRAWINGS, REFER TO THE DIMENSIONED ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONAL DATA.

5. REFER TO SHEETS P5.01, FOR DETAILS AND SHEETS P6.01 FOR PLUMBING SCHEDULES.

6. SAWCUT EXISTING SLAB AS REQUIRED TO INSTALL NEW PIPING BELOW FLOOR. SEAL AND PATCH FLOOR TO MATCH EXISTING UPON COMPLETION. AVOID STRUCTURAL BEAMS.

PLUMBING KEYED NOTES "⊠"

1	GAS PIPE SERVICE STUB-UP BY CENTERPOINT ENERGY.
2	1-1/2"(SPSI) GAS FROM ABOVE.
3	3"(SPSI) GAS FROM ABOVE.
4	1-1/2" GAS UP
5	4" STORM FROM ABOVE.
6	3" COLD WATER UP.
7	6" FIRE SERVICE UP.
8	6" DRY FIRE SERVICE UP.
9	4" WASTE FROM CLEANOUT ABOVE.
10	4" WASTE FROM DRAIN ABOVE. PROVIDE P-TRAP.
11	3" WASTE FROM DRAIN ABOVE PROVIDE P-TRAP.
12	4" WASTE FROM ABOVE.
13	2" WASTE FROM ABOVE.
14	3" WASTE DOWN, 2" VENT UP.
15	3" WASTE FROM CLEANOUT ABOVE.
16	3" WASTE FROM MOP SINK ABOVE
17	RE: SHEET P1.00 FOR CONTINUATION.
18	4" VENT UP.



N

1 **PLUMBING UNDERFLOOR PLAN - UNIT D**
Scale: 1/8" = 1'-0"

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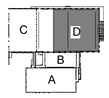
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Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

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25-0056.00

SHEET TITLE
PLUMBING UNDERFLOOR PLAN - UNIT D

SHEET NO.
P2.05D



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FIRE SPRINKLER NOTE:

LICENSED SPRINKLER ENGINEER OR LICENSED SPRINKLER CONTRACTOR, TO PROVIDE DRAWINGS AND HYDRAULIC CALCULATIONS FOR AN AUTOMATIC FIRE SPRINKLER SYSTEM FOR THIS BUILDING, TO COMPLY WITH SPACE LAYOUT, NFPA 13, ALL STATE AND LOCAL CODE REQUIREMENTS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

PLUMBING GENERAL NOTES:

1. REFER TO ARCHITECTS DRAWING FOR EXACT LOCATION OF FLOOR DRAINS.

2. ALL FLOOR DRAINS AND FLOOR SINKS MUST BE EASILY ACCESSIBLE FOR SERVICING. RE: SHEET P5.01 FOR DETAIL AND SHEET P6.01 FOR SCHEDULES

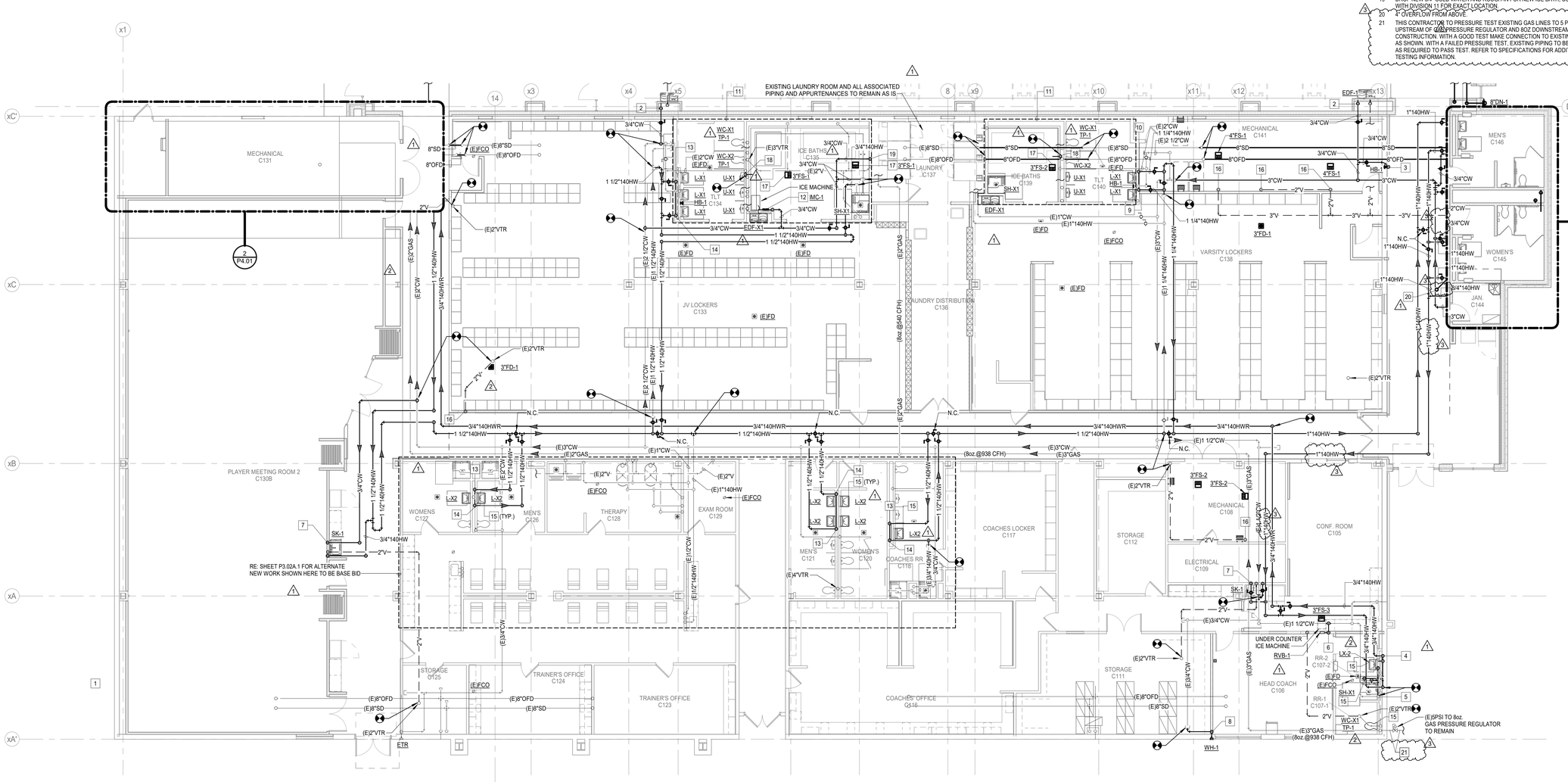
3. DO NOT SCALE THE PLUMBING DRAWINGS, REFER TO THE DIMENSIONED ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONAL DATA.

4. REFER TO SHEETS P5.01 FOR PLUMBING DETAILS AND SHEET P6.01 FOR PLUMBING SCHEDULES.

5. CONRACTOR SHALL REMOVE AND REPLACE CEILING WHERE REQUIRED TO COMPLETE INDICATED SCOPE OF WORK. EXISTING CEILING SHALL BE RE-INSTALLED IN THE EXACT CONDITION IT WAS REMOVED IN. DAMAGED CEILING AND/OR CEILING TILES SHALL BE REPLACED TO MATCH EXISTING CONDITIONS PRIOR TO CONSTRUCTION. IF A MATCH IS NOT POSSIBLE, CONTRACTOR SHALL REPLACE ALL CEILING FROM WALL TO WALL OR BOUNDARY SEPARATING IN ADJOINING ROOMS. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR ADDITIONAL INFORMATION.

PLUMBING KEYED NOTES "⊠"

1
2 3/4" COLD WATER DOWN, 2" WASTE DOWN, 2" VENT UP. EXTEND AND ROUGH-IN TO EQUIPMENT/FIXTURE(S).
3 DROP 3/4" COLD WATER AND CONNECT TO HOSE BIBB MOUNT AT MINIMUM 18" AFF. VERIFY EXACT HEIGHT WITH ARCHITECT/OWNER PRIOR TO INSTALLATION.
4 DROP 3/4" HOT WATER LOOP DOWN IN CHASE, ROUTE THRU CHASE, ROUGH-IN AND CONNECT TO FIXTURES.
5 PROVIDE NEW 3/4 COLD WATER TAP OFF EXISTING COLD WATER RISER, EXTEND 3/4" COLD WATER LINE IN CHASE, OFFSET AND ROUGH-IN TO FIXTURES.
6 DROP 3/4" COLD WATER DOWN, EXTEND 1/2" CW TO RVB-1 AND CONNECT. RE: DETAIL SHEET P5.01 FOR VALVE BOX HOOK-UP. PROVIDE WILKINS 700XL BACKFLOW PREVENTER WHEN MAKING FINAL CONNECTION TO UNDERCOUNTER ICE MAKER RE: SHEET P5.02 FOR DETAIL
7 DROP 3/4" HOT AND COLD WATER, RISE 2" VENT UP, 2" WASTE DOWN, ROUTE HOT AND COLD WATER LINES THRU POINT OF USE MIXING VALVE EXTEND AND ROUGH-IN TO FIXTURE(S). RE: SHEET P5.02 FOR DETAIL
8 DROP 3/4" COLD WATER TO SERVE WALL HYDRANT, MOUNT AT MINIMUM 18" ABOVE FINISHED GRADE COORDINATE EXACT LOCATION AND HEIGHT WITH ARCHITECT/OWNER.
9 DROP 1-1/4" HOT WATER LOOP DOWN IN CHASE, ROUTE THRU CHASE AND ROUGH-IN TO FIXTURES
10 RISE 1-1/4" HOT(120°) UP FROM W, RE: SHEET P5.02 FOR HW CIRCULATION AT PUBLIC LAVATORIES DETAIL.
11 PROVIDE NEW PLUMBING FIXTURE(S) TO REPLACE EXISTING REMOVED DURING DEMOLITION PHASE. MODIFY AS REQUIRED AND RE-USE EXISTING WASTE, VENT AND WATER ROUGH-INS FOR NEW FIXTURE(S). CLEAN AND RESTORE FLOOR DRAIN STRAINER TO LIKE NEW CONDITION. REPLACE IF CRACKED OR BROKEN..
12 3/4" COLD WATER DOWN EXTEND AND CONNECT TO ICE MACHINE THROUGH BACKFLOW PREVENTER.(IMC-1) RE: SHEET P5.01 FOR ICE MACHINE CONNECTION DETAIL. PROVIDE FILTER AS SPECIFIED ON SHEET P6.01(IMC-1) WHEN MAKING FINAL CONNECTION, PROVIDE FILTER IN AN ACCESSIBLE LOCATION OFF TO THE SIDE. DO NOT LOCATE FILTER BEHIND ICE MACHINE.
13 DROP 1-1/2" HOT WATER LOOP DOWN IN CHASE, ROUTE THRU CHASE AND ROUGH-IN TO FIXTURES
14 RISE 1-1/2" HOT(140°) UP. RE: SHEET P5.02 FOR HW CIRCULATION AT PUBLIC LAVATORIES DETAIL.
15 PROVIDE NEW PLUMBING FIXTURE TO REPLACE EXISTING REMOVED DURING DEMOLITION PHASE. MODIFY AS REQUIRED AND RE-USE EXISTING WASTE, VENT AND WATER ROUGH-INS FOR NEW FIXTURE(S).
16 2" VENT UP FROM BELOW SLAB.
17 COORDINATE WITH DIVISION 11 FOR EXACT PLACEMENT OF FLOOR SINK WITH THERAPY TUB DRAIN OUTLET.
18 PROVIDE NEW 3/4" COLD WATER ROUGH-IN FROM EXISTING COLD WATER MAIN IN CHASE, FOR NEW ICE BATH, COORDINATE WITH DIVISION 11 FOR EXACT LOCATION.
19 DROP NEW 3/4" COLD WATER AND ROUGH-IN FOR NEW ICE BATH, COORDINATE WITH DIVISION 11 FOR EXACT LOCATION
20 4" OVERFLOW FROM ABOVE.
21 THIS CONTRACTOR TO PRESSURE TEST EXISTING GAS LINES TO 5 PSI UPSTREAM OF GAS PRESSURE REGULATOR AND 8OZ DOWNSTREAM, PRIOR TO CONSTRUCTION. WITH A GOOD TEST MAKE CONNECTION TO EXISTING PIPING AS SHOWN. WITH A FAILED PRESSURE TEST, EXISTING PIPING TO BE REPLACED AS REQUIRED TO PASS TEST. REFER TO SPECIFICATIONS FOR ADDITIONAL TESTING INFORMATION.



N

1 **PLUMBING FLOOR PLAN - LEVEL ONE - UNIT A**
Scale: 1/8" = 1'-0"

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North Shore Multi-Use Indoor Facility

BRADLEY KALMANS — STATE OF TEXAS — 80219 — LICENSED — PROFESSIONAL ENGINEER
10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
1 Addendum 1	10/08/2025
2 Addendum 3	10/17/2025
3 Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
PLUMBING FLOOR PLAN - LEVEL ONE - UNIT A

SHEET NO.
P3.02A

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FIRE SPRINKLER NOTE:

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PLUMBING GENERAL NOTES:

1. REFER TO ARCHITECTS DRAWING FOR EXACT LOCATION OF FLOOR DRAINS.

2. ALL FLOOR DRAINS AND FLOOR SINKS MUST BE EASILY ACCESSIBLE FOR SERVICING. RE: SHEET P5.01 FOR DETAIL AND SHEET P6.01 FOR SCHEDULES

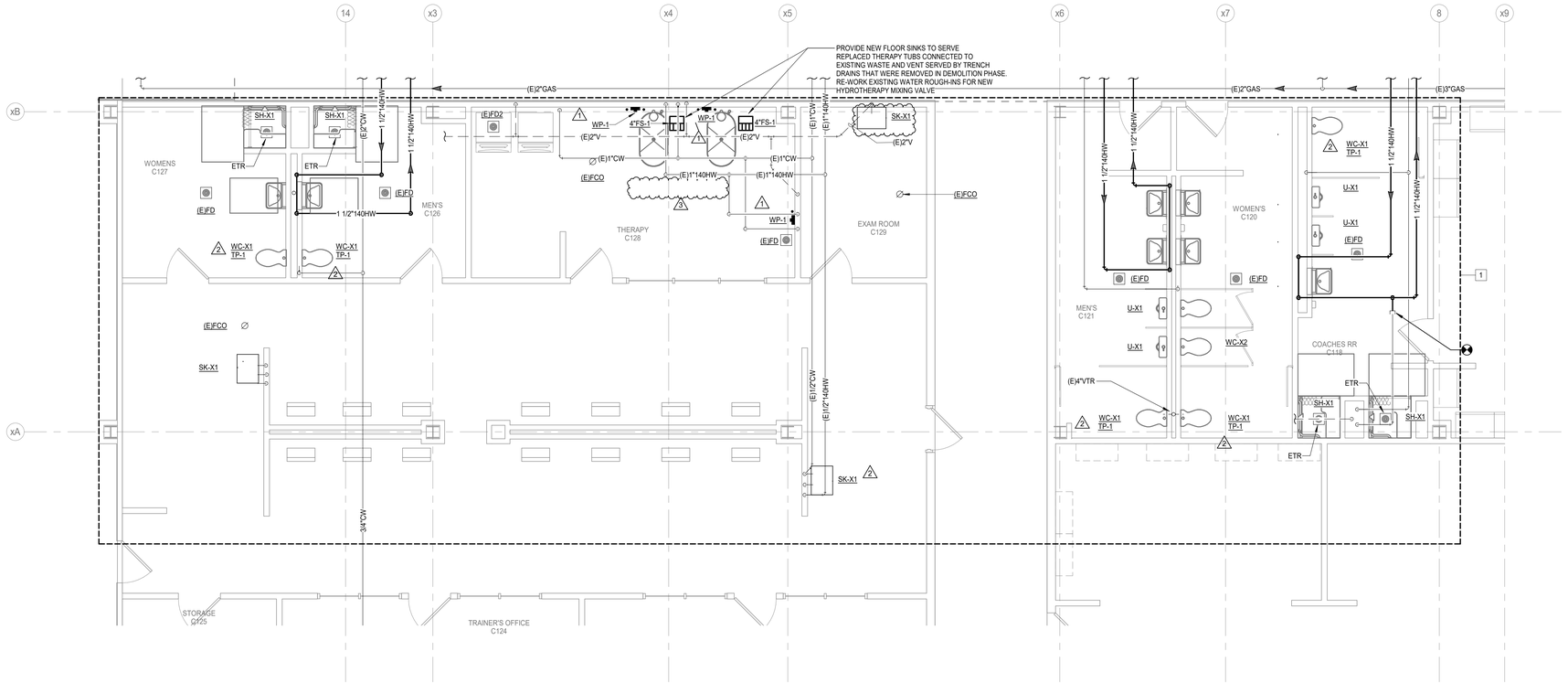
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4. REFER TO SHEETS P5.01 FOR PLUMBING DETAILS AND SHEET P6.01 FOR PLUMBING SCHEDULES.

5. CONRACTOR SHALL REMOVE AND REPLACE CEILING WHERE REQUIRED TO COMPLETE INDICATED SCOPE OF WORK. EXISTING CEILING SHALL BE RE-INSTALLED IN THE EXACT CONDITION IT WAS REMOVED IN. DAMAGED CEILING AND/OR CEILING TILES SHALL BE REPLACED TO MATCH EXISTING CONDITIONS PRIOR TO CONSTRUCTION. IF A MATCH IS NOT POSSIBLE, CONTRACTOR SHALL REPLACE ALL CEILING FROM WALL TO WALL OR BOUNDARY SEPARATING IN ADJOINING ROOMS. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR ADDITIONAL INFORMATION.

PLUMBING KEYED NOTES "⊠"

1 PROVIDE NEW PLUMBING FIXTURE(S) TO REPLACE EXISTING REMOVED DURING DEMOLITION PHASE. MODIFY AS REQUIRED AND RE-USE EXISTING WASTE, VENT AND WATER ROUGH-INS FOR NEW FIXTURE(S). CLEAN AND RESTORE FLOOR DRAIN STRAINER TO LIKE NEW CONDITION, REPLACE IF CRACKED OR BROKEN..



N

1 **PLUMBING FLOOR PLAN - LEVEL ONE - UNIT A - ALTERNATE**
Scale: 1/4" = 1'-0"

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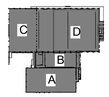
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Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

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SHEET TITLE
PLUMBING FLOOR PLAN - LEVEL ONE - UNIT A - ALTERNATE

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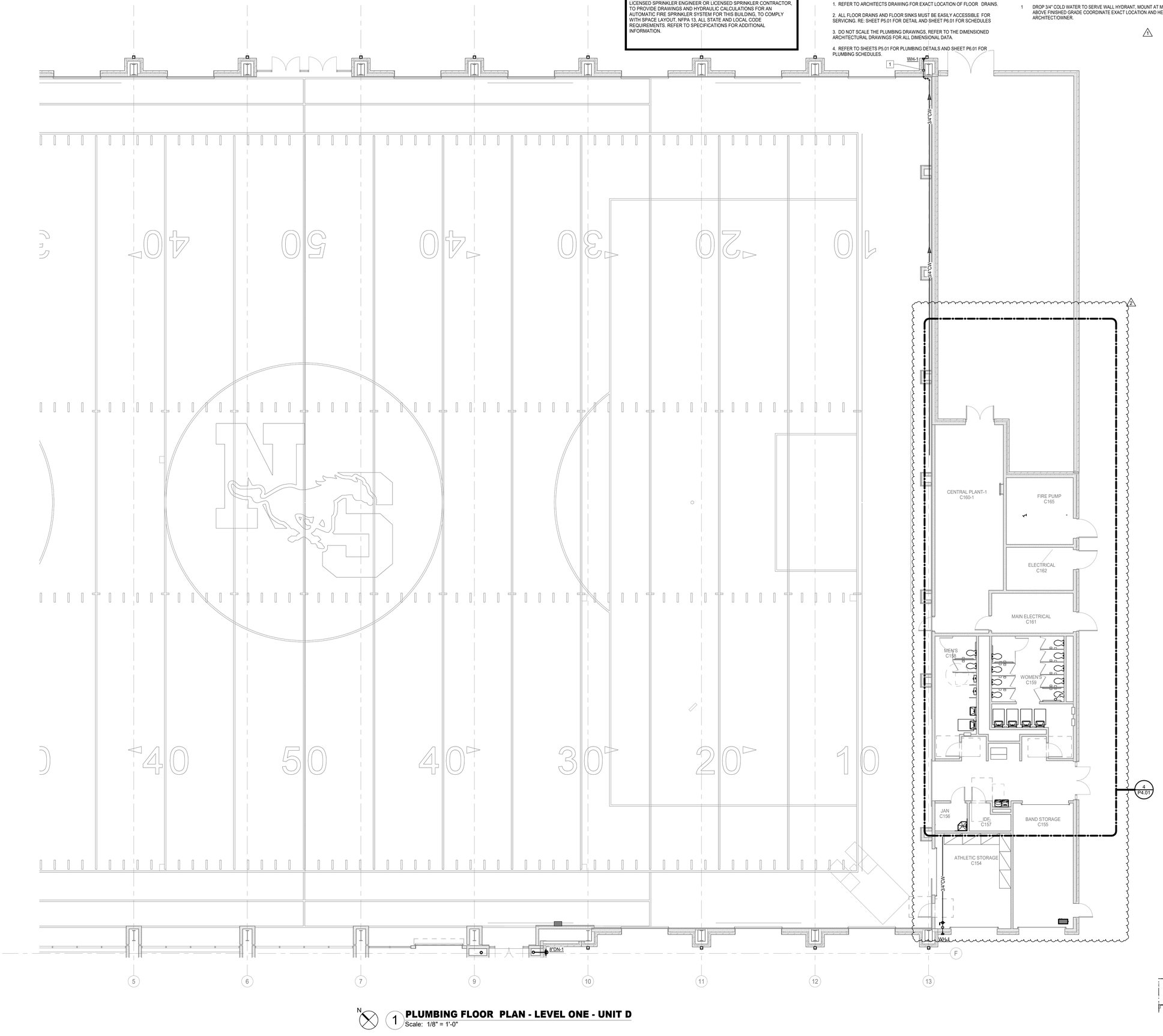
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PLUMBING GENERAL NOTES:

1. REFER TO ARCHITECTS DRAWING FOR EXACT LOCATION OF FLOOR DRAINS.
2. ALL FLOOR DRAINS AND FLOOR SINKS MUST BE EASILY ACCESSIBLE FOR SERVICING. RE: SHEET P5.01 FOR DETAIL AND SHEET P6.01 FOR SCHEDULES
3. DO NOT SCALE THE PLUMBING DRAWINGS, REFER TO THE DIMENSIONED ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONAL DATA.
4. REFER TO SHEETS P5.01 FOR PLUMBING DETAILS AND SHEET P6.01 FOR PLUMBING SCHEDULES.

PLUMBING KEYED NOTES "⊠"

1 DROP 3/4" COLD WATER TO SERVE WALL HYDRANT, MOUNT AT MINIMUM 18" ABOVE FINISHED GRADE COORDINATE EXACT LOCATION AND HEIGHT WITH ARCHITECT/OWNER.



N

1 **PLUMBING FLOOR PLAN - LEVEL ONE - UNIT D**
Scale: 1/8" = 1'-0"

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10.22.2025

ISSUED: OCTOBER 1, 2025

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Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

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25-0056.00

SHEET TITLE
PLUMBING FLOOR PLAN - LEVEL ONE - UNIT D

SHEET NO.
P3.05D

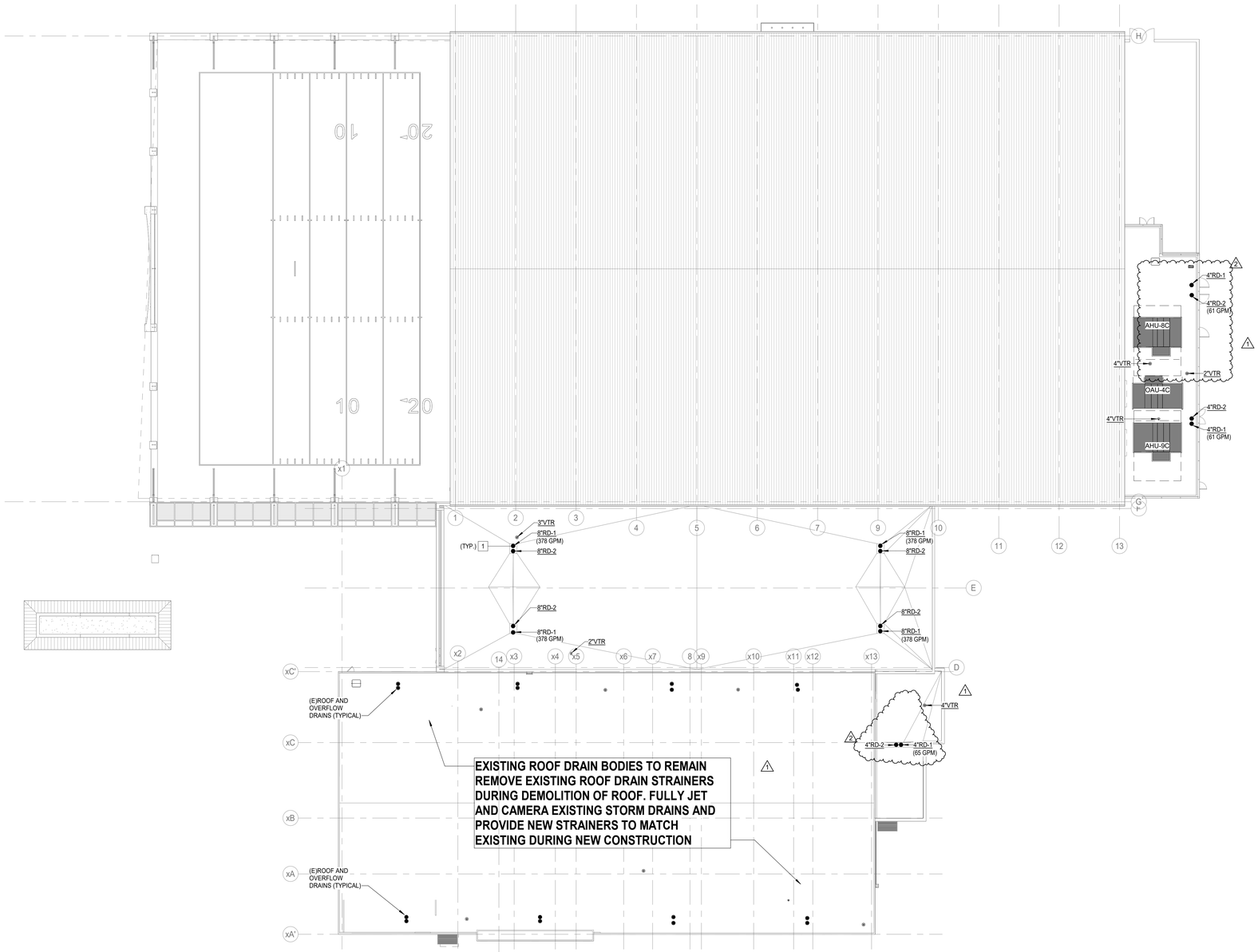
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PLUMBING GENERAL NOTES:

1. REFER TO ARCHITECTS DRAWING FOR EXACT LOCATION OF DRAINS.
2. STORM SIZING IS BASED ON 4.6" PER HOUR RAINFALL.
3. DO NOT SCALE THE PLUMBING DRAWINGS, REFER TO THE DIMENSIONED ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONAL DATA.
4. REFER TO SHEETS P5.01 AND P5.02 FOR PLUMBING DETAILS AND SHEET P6.01 FOR PLUMBING SCHEDULES.

PLUMBING KEYED NOTES "⊠"

1 RE: SHEET P5.01 FOR ROOF DRAIN DETAIL.



N

1 **PLUMBING ROOF PLAN**
Scale: 1" = 20'-0"

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ISSUED: OCTOBER 1, 2025

REVISIONS

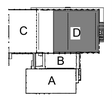
Revision No.		Revision Date
1	Addendum 3	10/17/2025
2	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

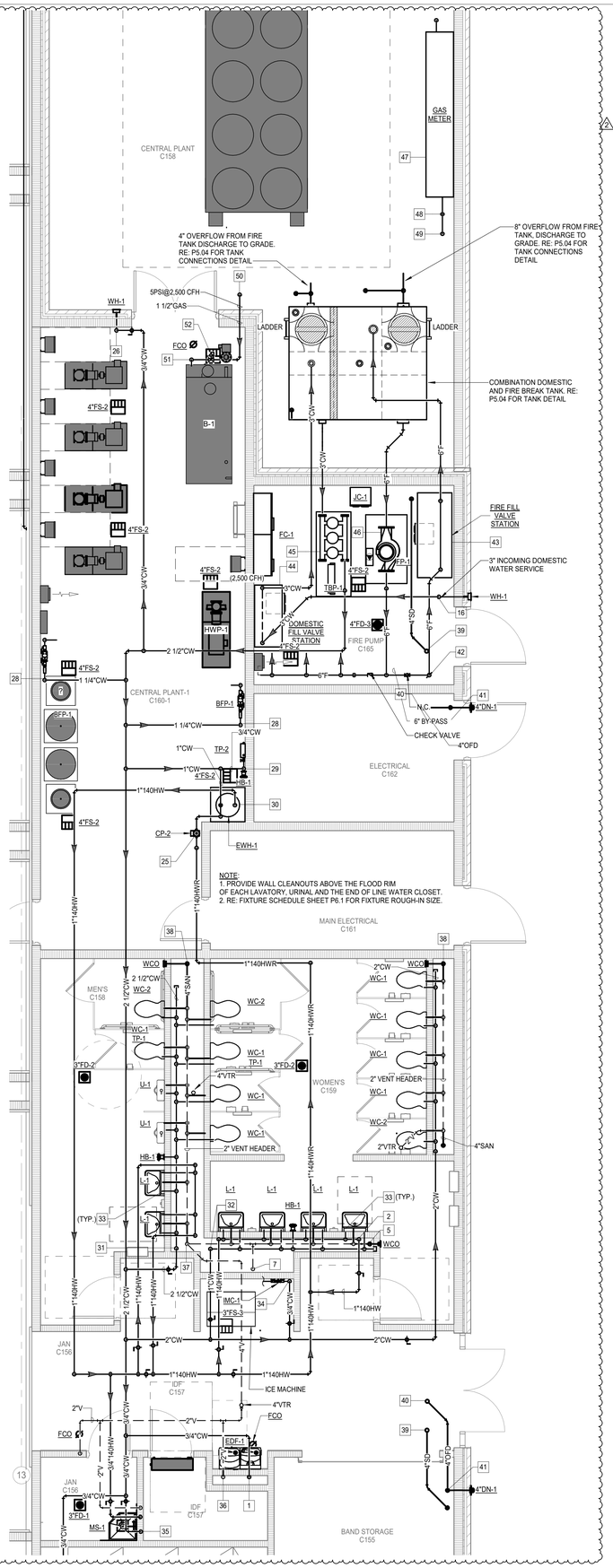
PROJECT NO.
25-0056.00

SHEET TITLE
PLUMBING ROOF PLAN

SHEET NO.
P3.07



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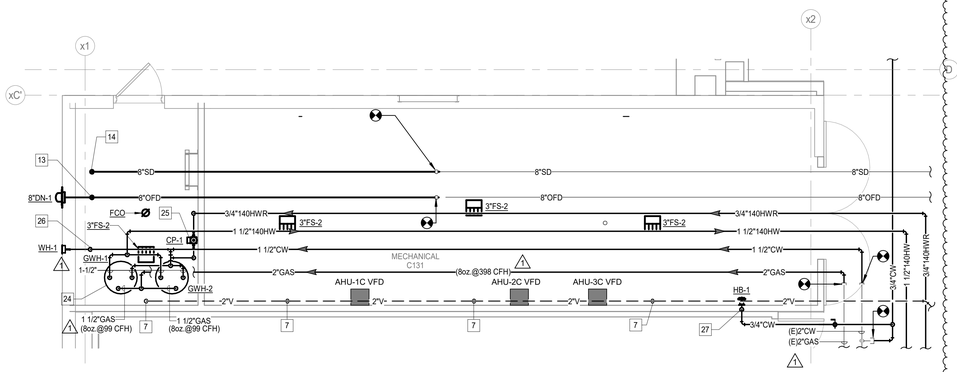
N 4 **PLUMBING ENLARGED PLAN - UNIT D - MENS C153/WOMENS C154**
Scale: 1/4" = 1'-0"

FIRE SPRINKLER NOTE:

LICENSED SPRINKLER ENGINEER OR LICENSED SPRINKLER CONTRACTOR, TO PROVIDE DRAWINGS AND HYDRAULIC CALCULATIONS FOR AN AUTOMATIC FIRE SPRINKLER SYSTEM FOR THIS BUILDING, TO COMPLY WITH SPACE LAYOUT, NFPA 13, ALL STATE AND LOCAL CODE REQUIREMENTS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

PLUMBING GENERAL NOTES:

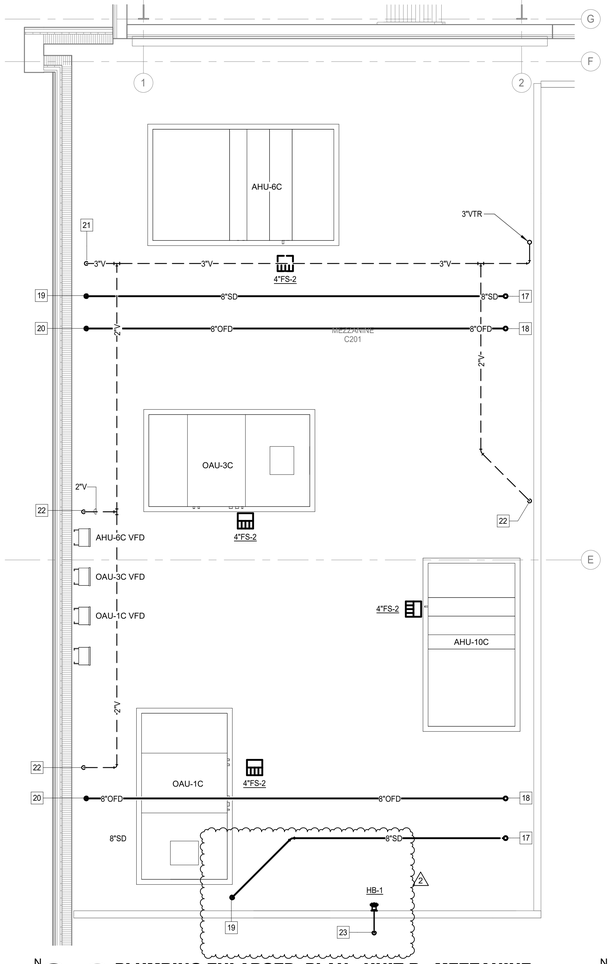
1. REFER TO ARCHITECTS DRAWING FOR EXACT LOCATION OF FLOOR DRAINS.
2. ALL FLOOR DRAINS AND FLOOR SINKS MUST BE EASILY ACCESSIBLE FOR SERVICING. RE: SHEET P5.01 FOR DETAIL AND SHEET P6.01 FOR SCHEDULES
3. DO NOT SCALE THE PLUMBING DRAWINGS, REFER TO THE DIMENSIONED ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONAL DATA.
4. REFER TO SHEETS P5.01 FOR PLUMBING DETAILS AND SHEET P6.01 FOR PLUMBING SCHEDULES.



2 **PLUMBING ENLARGED PLAN - UNIT A MECHANICAL C131**
Scale: 1/4" = 1'-0"

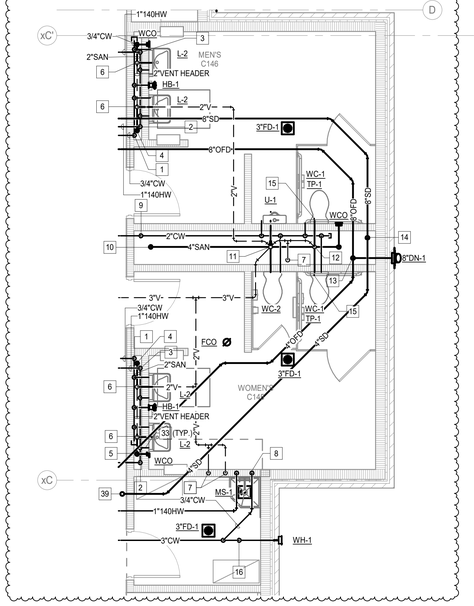
PLUMBING KEYED NOTES "⊠"

1. 3/4" COLD WATER DOWN, EXTEND FULL SIZE IN CHASE, ROUGH-IN AND CONNECT TO FIXTURE(S).
2. RISE 1" HOT(140°) UP, RE: SHEET P5.02 FOR HW CIRCULATION AT PUBLIC LAVATORIES DETAIL.
3. DROP 1" HOT WATER LOOP DOWN IN CHASE, ROUTE THRU CHASE AND ROUGH-IN TO FIXTURES
4. 2" WASTE DOWN TO BELOW SLAB.
5. 2" WASTE DOWN.
6. ROUGH-IN 1/2" HOT AND COLD WATER , RISE 2" VENT UP, 2" WASTE DOWN EXTEND AND CONNECT TO FIXTURE(S).
7. 2" VENT UP FROM BELOW SLAB.
8. 3/4" HOT AND COLD WATER DOWN. EXTEND AND ROUGH-IN TO EQUIPMENT/FIXTURE(S).
9. 2" COLD WATER DOWN, EXTEND FULL SIZE AND ROUGH-IN TO FIXTURES. PROVIDE SHOCK ARRESTOR PRIOR TO LAST FIXTURE.
10. 4" WASTE DOWN TO BELOW SLAB.
11. 4" WASTE DOWN, 4" VENT UP.
12. 4" WASTE DOWN, 2" VENT UP.
13. 8" OVERFLOW DOWN. EXTEND AND CONNECT TO DOWNSPOUT NOZZLE(DN-1). RE: SHEET P5.01 FOR DOWNSPOUT NOZZLE DETAIL
14. 8" STORM DOWN TO BELOW SLAB.
15. PROVIDE FLUSH VALVE TRAP PRIMER CONNECTION(TP-1) RE: SHEET P5.01 FOR CONNECTION DETAIL.
16. 3" INCOMING COLD WATER ENTRY. RE: SHEET P5.01 FOR DETAIL.
17. 8" STORM FROM ABOVE.
18. 8" OVERFLOW FROM ABOVE.
19. 8" STORM DOWN.
20. 8" OVERFLOW DOWN.
21. 3" VENT UP FROM BELOW FLOOR.
22. 2" VENT UP FROM BELOW FLOOR.
23. 3/4" COLD WATER FROM BELOW. ROUGH-IN AND CONNECT TO FIXTURE.
24. RE: SHEET P5.02 FOR GAS WATER HEATER PIPING DIAGRAM AND VALVING.
25. RE: SHEET P5.02 FOR CIRCULATOR PUMP PIPING DETAIL. MOUNT PUMP ON WALL NO MORE THAN 60" AFF
26. DROP 3/4" COLD WATER TO SERVE WALL HYDRANT, COORDINATE MOUNTING HEIGHT LOCATION WITH ARCHITECT/OWNER. RE: SHEET P5.01 FOR DETAIL.
27. DROP 3/4" COLD WATER AND CONNECT TO HOSE BIBB MOUNT AT MINIMUM 18" AFF. VERIFY EXACT HEIGHT WITH ARCHITECT/OWNER PRIOR TO INSTALLATION.
28. DROP 1-1/4" COLD WATER FOR COLD WATER MAKE-UP. ROUTE THRU BACKFLOW PREVENTER(BFP-1) AND PROVIDE SUB-METER. RE: SHEET P5.01 AND P5.02 FOR DETAILS.
29. DROP 3/4" COLD ON WALL, PROVIDE BALL TYPE SHUT-OFF VALVE IN VERTICAL TO SERVE SURFACE MOUNTED TRAP PRIMER(TP-2) RE: SHEET P5.01 FOR ELECTRONIC TRAP PRIMER DETAIL AND SHEET P6.01 FOR SCHEDULE
30. RE: SHEET P5.02 FOR ELECTRIC WATER HEATER PIPING DIAGRAM AND VALVING.
31. DROP 2-1/2" COLD WATER DOWN, EXTEND FULL SIZE AND CAP, ROUGH-IN TO FIXTURES. PROVIDE SHOCK ARRESTOR PRIOR TO LAST FIXTURE.
32. 1" HOT AND COLD WATER DOWN, EXTEND FULL SIZE AND ROUGH-IN TO FIXTURES. PROVIDE SHOCK ARRESTOR PRIOR TO LAST FIXTURE.
33. ROUTE 3/4" HOT AND COLD LINES THRU POINT OF USE MIXING VALVE, RISE 2" VENT UP, 2" WASTE DOWN, EXTEND AND ROUGH-IN TO FIXTURE(S). RE: SHEET P5.02 FOR DETAIL. PROVIDE SHUT-OFF VALVE IN VERTICAL.
34. 3/4" COLD WATER DOWN EXTEND AND CONNECT TO ICE MACHINE THROUGH BACKFLOW PREVENTER.(IMC-1) RE: SHEET P5.01 FOR ICE MACHINE CONNECTION DETAIL. PROVIDE FILTER AS SPECIFIED ON SHEET P6.01(IMC-1) WHEN MAKING FINAL CONNECTION, PROVIDE FILTER IN AN ACCESSIBLE LOCATION OFF TO THE SIDE. DO NOT LOCATE FILTER BEHIND ICE MACHINE.
35. DROP 3/4" HOT AND COLD WATER, RISE 2" VENT UP, 3" WASTE DOWN AND ROUGH-IN TO FIXTURE(S)
36. 2" WASTE DOWN, 2" VENT UP.
37. 4" WASTE DOWN TO BELOW SLAB, 4" VENT UP
38. 4" WASTE DOWN.
39. 4" STORM FROM ABOVE.
40. 4" OVERFLOW FROM ABOVE.
41. 4" OVERFLOW DOWN. EXTEND AND CONNECT TO DOWNSPOUT NOZZLE(DN-1). RE: SHEET P5.01 FOR DOWNSPOUT NOZZLE DETAIL
42. 6" FIRE ENTRY, RE: DETAIL SHEET P5.03
43. 6" DRY FIRE SERVICE UP.
44. 3" DOMESTIC FILL VALVE STATION, RE: DETAIL SHEET P5.04
45. TRIPLEX DOMESTIC BOOSTER PUMP, RE: DETAIL SHEET P5.03 AND SHEET P6.01 FOR SCHEDULE
46. FIRE PUMP, RE: DETAIL SHEET P5.03 AND SHEET P6.01 FOR SCHEDULE
47. PROPOSED NEW NATURAL GAS METER AND REGULATOR SET LOCATION . COORDINATE LOCATION AND INSTALLATION WITH CENTERPOINT ENERGY IN ADVANCE. MAKE ADJUSTMENTS AS REQUIRED. TOTAL CONNECTED LOAD: 13,901 CFH AT 5 PSI OUTLET PRESSURE. RE; SHEET P5.02 FOR DETAIL
48. 1-1/2"(5PSI) GAS DOWN TO BELOW SLAB
49. 2"(5PSI) GAS DOWN TO BELOW SLAB
50. 1-1/2"(5PSI) GAS FROM BELOW SLAB. OFFSET AND PUNCH THRU EXTERIOR WALL. RE: SHEET P5.02 FOR EXTERIOR WALL PENETRATION DETAIL.
51. CONNECT GAS PIPING TO EQUIPMENT WITH UNION AND PLUG VALVE. REFER TO SHEET P5.02 FOR DETAIL. MAKE FINAL CONNECTION AS REQUIRED.
52. SET REGULATOR FROM 5 PSIG TO 8 OUNCE. REFER TO SHEET P5.02 FOR DETAIL.



N 3 **PLUMBING ENLARGED PLAN - UNIT B - MEZZANINE**
Scale: 1/4" = 1'-0"

NOTE:
1. PROVIDE WALL CLEANOUTS ABOVE THE FLOOD RIM OF EACH LAVATORY, URINAL AND THE END OF LINE WATER CLOSET.
2. RE: FIXTURE SCHEDULE SHEET P6.1 FOR FIXTURE ROUGH-IN SIZE.



N 1 **PLUMBING ENLARGED PLAN UNIT A - MENS C146/WOMENS C145**
Scale: 1/4" = 1'-0"

M.E.P. ENGINEER

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Salas O'Brien Registration: F-4111
Salas O'Brien Project Number: 2550-01455-00

GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL
ENGINEER
10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
1 Addendum 3	10/17/2025
2 Addendum 4	10/22/2025

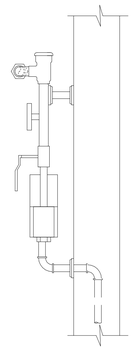
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

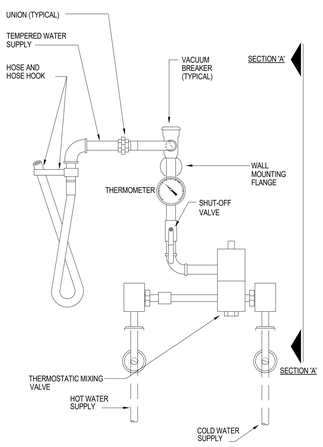
SHEET TITLE
PLUMBING ENLARGED FLOOR PLAN

SHEET NO.
P4.01

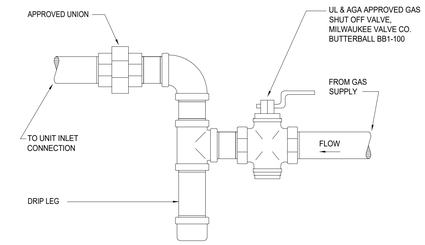
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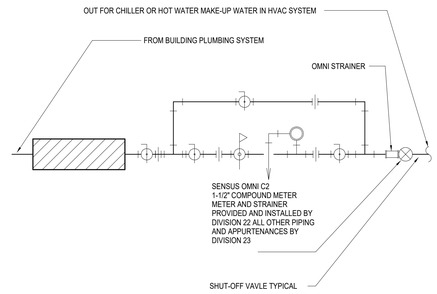
SECTION 'A-A'



13 WHIRLPOOL MIXING VALVE (WP-1) - ALTERNATE
SCALE: NONE

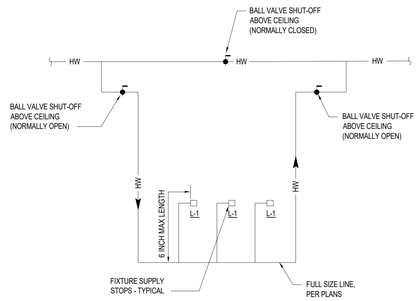


11 GAS CONNECTION
SCALE: NONE



NOTE: PROVIDE WATER SUB METER ON CHILLED AND HOT WATER MAKE-UP LINES.

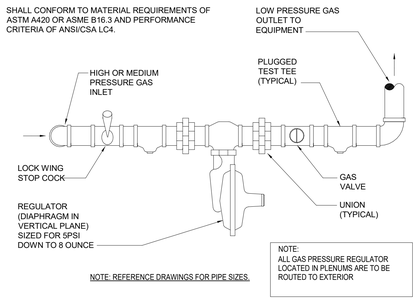
7 MAKE-UP WATER SUB-METER
SCALE: NONE



3 HW CIRCULATION FOR PUBLIC LAVATORIES
SCALE: NONE

PROVIDE AMERICAN METER COMPANY REGULATORS OR APPROVED EQUAL, SUITABLE FOR OUTDOOR INSTALLATION. REGULATORS OUTSIDE EXPOSED TO WEATHER SHALL BE INSTALLED WITH VENT IN VERTICAL DOWN POSITION.

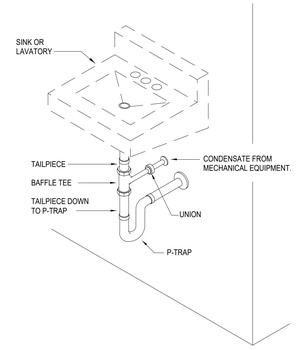
SHALL CONFORM TO MATERIAL REQUIREMENTS OF ASTM A420 OR ASME B16.3 AND PERFORMANCE CRITERIA OF ANSI/CSA LC4.



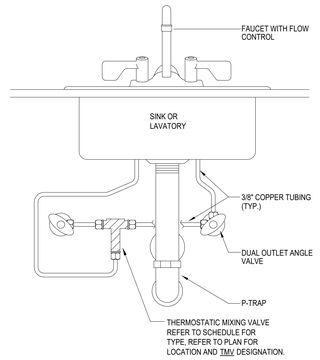
NOTE: REFERENCE DRAWINGS FOR PIPE SIZES.

NOTE:
ALL GAS PRESSURE REGULATOR LOCATED IN PLENUMS ARE TO BE ROUTED TO EXTERIOR

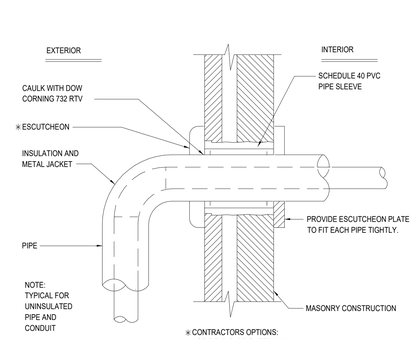
10 GAS PRESSURE REGULATOR INSTALLATION
SCALE: NONE



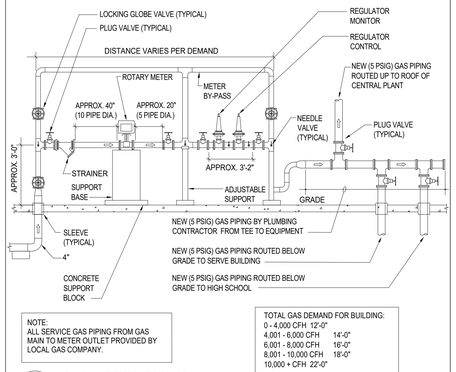
6 BAFFLE TEE CONNECTION
SCALE: NONE



2 POINT OF USE MIXING VALVE
SCALE: NONE



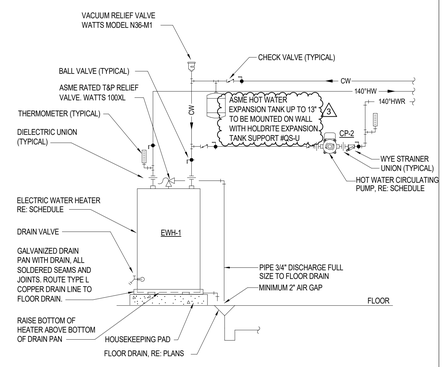
13 EXTERIOR WALL PENETRATION
SCALE: NONE



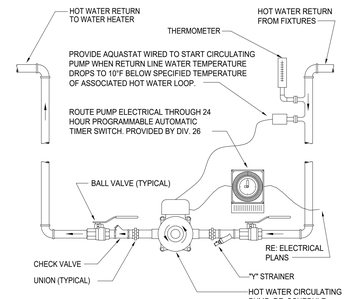
NOTE:
ALL SERVICE GAS PIPING FROM GAS MAIN TO METER OUTLET PROVIDED BY LOCAL GAS COMPANY.

TOTAL GAS DEMAND FOR BUILDING:
0 - 4,000 CFH 12'-0"
4,001 - 6,000 CFH 14'-0"
6,001 - 8,000 CFH 16'-0"
8,001 - 10,000 CFH 18'-0"
10,000 + CFH 22'-0"

9 GAS METER PIPING
SCALE: NONE

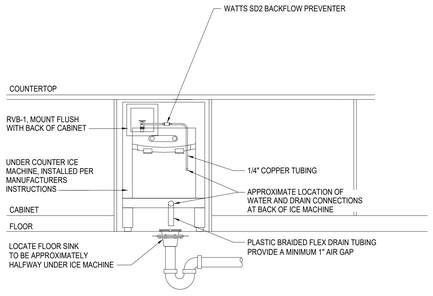


5 ELECTRIC WATER HEATER PIPING
SCALE: NONE

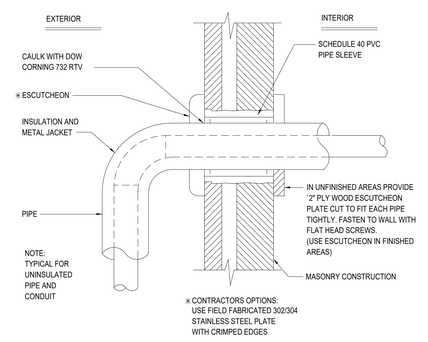


NOTE: MOUNT AT 54"-60" A.F.F. UNLESS NOTED OTHERWISE ON PLANS.

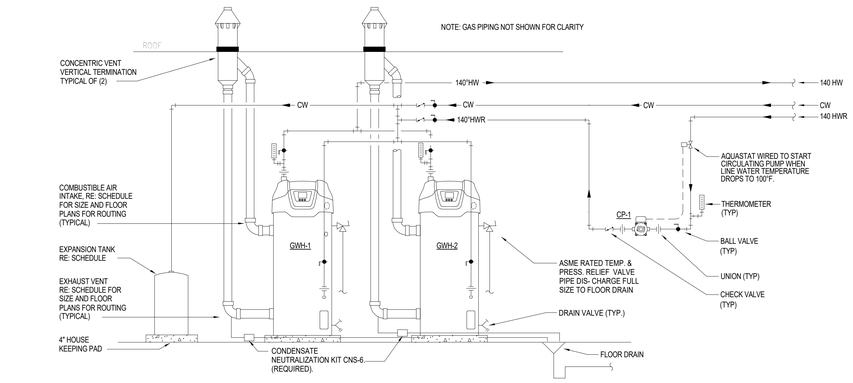
1 HOT WATER CIRCULATING PUMP
SCALE: NONE



12 UNDER COUNTER ICE MACHINE CONNECTION
SCALE: NONE



8 EXTERIOR WALL PENETRATION
SCALE: NONE



4 DOMESTIC GAS WATER HEATER PIPING (GWH-1 AND GWH-2)
SCALE: NONE

VLK

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Salas O'Brien Registration: F-4111
Salas O'Brien Project Number: 2550-01455-00

GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

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1 Addendum 1	10/08/2025
2 Addendum 3	10/17/2025
3 Addendum 4	10/22/2025

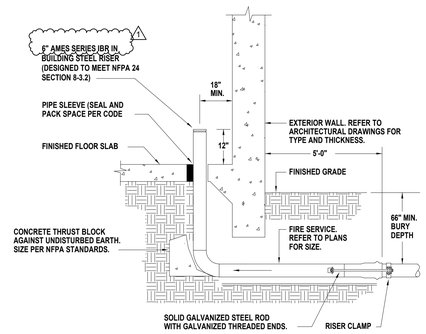
Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

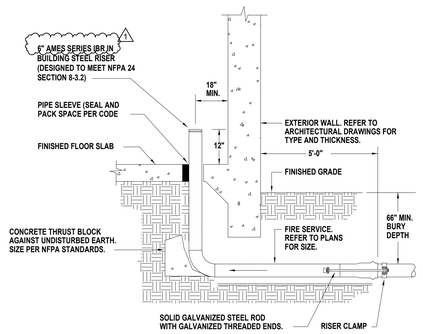
SHEET TITLE
PLUMBING DETAILS

SHEET NO.
P5.02

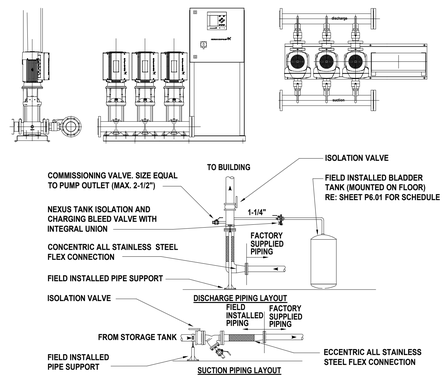
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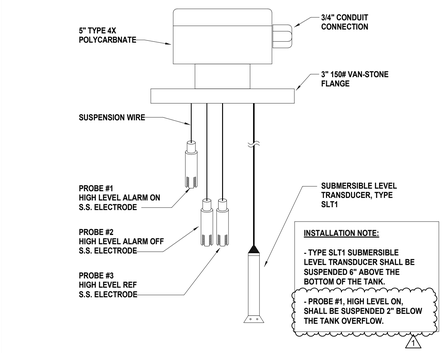
10 FDC SERVICE ENTRY
SCALE: NONE



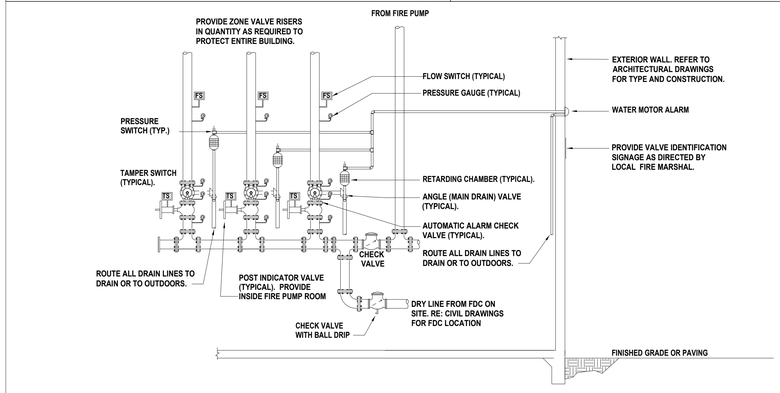
9 FIRE/WATER SERVICE ENTRY
SCALE: NONE



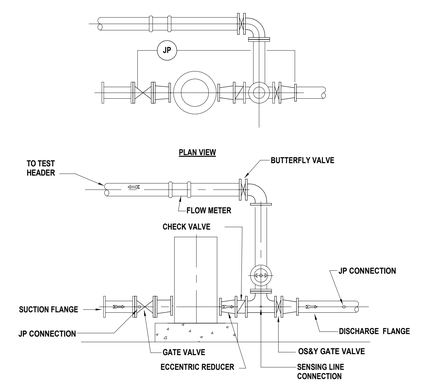
5 DOMESTIC TRIPLEX BOOSTER PUMP DETAIL
SCALE: NONE



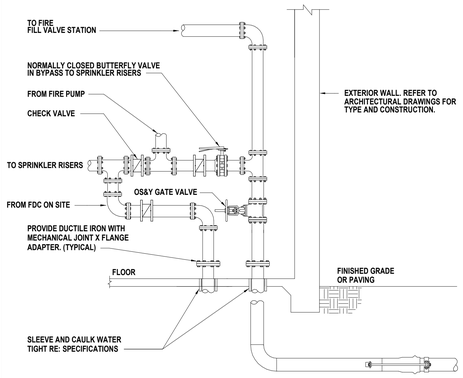
3 LEVEL SENSOR ASSEMBLY
SCALE: NONE



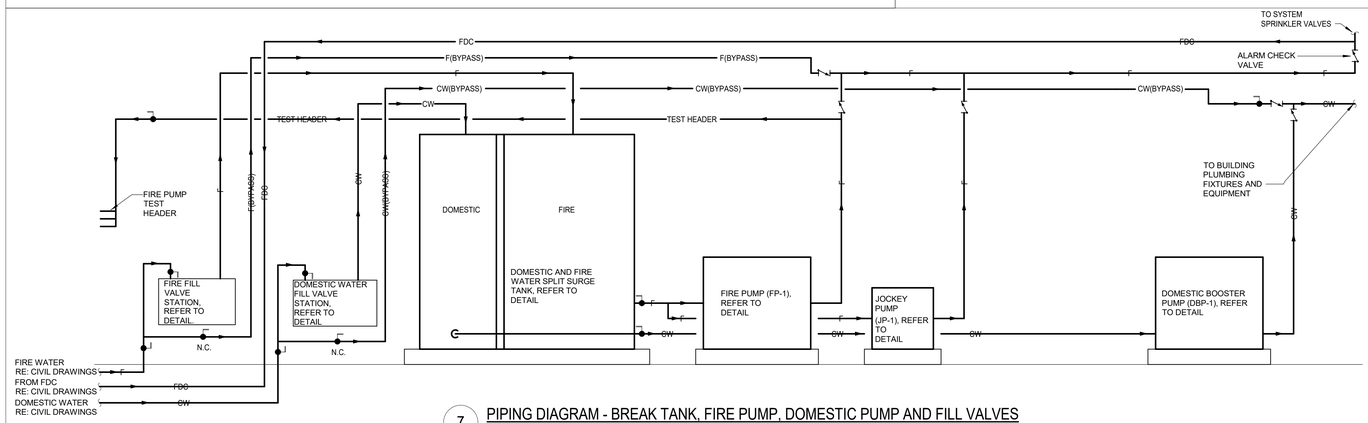
8 FIRE PIPING DETAIL
SCALE: NONE



4 INLINE FIRE PROTECTION PUMP (FP-1)
SCALE: NONE

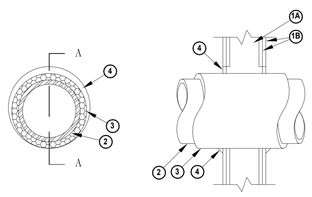


2 FIRE ENTRY PIPING DETAIL
SCALE: NONE



7 PIPING DIAGRAM - BREAK TANK, FIRE PUMP, DOMESTIC PUMP AND FILL VALVES
SCALE: NONE

System No.W-L-5039 For Insulated Pipe
System No.W-L-1010 For Uninsulated Pipe
May 04, 2017
ANSI/UL1479 (ASTM E814)
F Ratings - 1 & 2 Hr (See Item 1)
T Ratings - 0,1 and 1-1/2 Hr (See Item 3)



SECTION A-A

1. Wall Assembly — The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400, V400 or W400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 3-5/8 in. (92 mm) wide and spaced max 24 in. (610 mm) OC.
   B. Gypsum Board* — Nom 5/8 in. (16 mm) thick, 4 ft (122 cm) wide with square or tapered edges. The gypsum wallboard type, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design. Max diam of opening in wallboard layers is 13-3/4 in. (349 mm). The hourly F and FH Ratings of the firestop system are equal to the hourly fire rating of the wall assembly.
2. Through Penetrant — One metallic pipe or tube to be installed either concentrically or eccentrically within the firestop system. Pipe to be rigidly supported on both sides of wall assembly. The following types and sizes of pipe and tubing may be used:
   A. Steel Pipe — Nom 8 in. (203 mm) diam (or smaller) Sch 10 (or heavier) steel pipe.
   B. Copper Tube — Nom 4 in. (102 mm) diam (or smaller) Type L (or heavier) copper tubing.
3. Pipe Covering* — Nom 1/2 to 2 in. (13 to 51 mm) thick hollow cylindrical heavy density (min 3.5 pcf or 24 kg/m3) glass fiber units for 1 hr rated assemblies, nom 1/2 to 1-1/2 in. (13 to 38 mm) thick cylindrical heavy density (min 3.5 pcf or 24 kg/m3) glass fiber units for 2 hr rated assemblies, jacketed on the outside with an all service jacket. Longitudinal joints sealed with metal fasteners or factory-applied SSL tape. Transverse joints secured with metal fasteners or with butt tape supplied with the product. The annular space between the insulated pipe and the edge of the through opening shall be min 0 in. (continuous point contact) to max 1-1/4 in. (32 mm).
   The hourly T, FT and FTH Ratings are 0 hr when pipe covering less than nom 1-1/2 in. (38 mm) thick is used and/or when nom penetrant diam exceeds 4 in. (102 mm). When 1-1/2 in. (38 mm) thick pipe covering is used and penetrant diam does not exceed 4 in. (102 mm), the hourly T, FT and FTH Ratings are 1 hr when installed in 1 hr rated walls. When 1-1/2 in. (38 mm) thick pipe covering is used in 2 hr rated wall, the T, FT and FTH Ratings are 1 hr when copper tube is used and 1-1/2 hr when steel pipe not exceeding 4 in. (102 mm) diam is used.
   See Pipe and Equipment Covering — Materials (BRGU) category in the Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.
4. Fill, Void or Cavity Materials* — Caulk or Sealant — Min 5/8 in. (16 mm) thickness of caulk aplied within annular space flush with each surface of wall. A min 1/2 in. (13 mm) diam bead of caulk shall be applied to the pipe insulation/ wallboard interface at the point contact location on both sides of wall.
   3M COMPANY — Type CP 25WB+ or FB-3000 WT
* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.

6 INTERIOR WALL PENETRATION

- Min 5-1/2 in. thick reinforced lightweight or normal weight (100-150 pcf) concrete. Wall may also be constructed of any UL Classified Concrete Blocks* . Diam of opening to be 1 1/4 in. to 1-3/4 in. larger than outside diam of insulated pipe. Max diam of opening is 12 in.

SeeConcrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.

2. Pipe - Nom 4 in. diam (or smaller) Type L (or heavier) copper pipe or nom 6 in. diam (or smaller) Schedule 10 (or heavier) steel pipe centered in the opening and rigidly supported on both sides of the floor or wall assembly.

3. Pipe Covering* - Nom 1 or 2 in. thick hollow cylindrical heavy density glass fiber units jacketed on the outside with an all service jacket. Longitudinal joints sealed with metal fasteners or factory-applied self sealing lap tape. Transverse joints secured with metal fasteners or with butt strip tape supplied with the product.
SeePipe and Equipment Covering - Materials* (BRGU) category in Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.

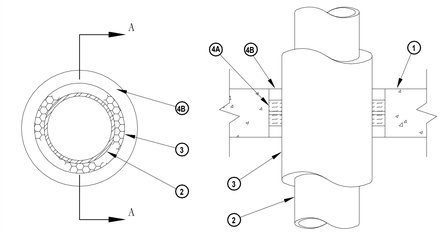
4. Firestop System - The details of the firestop system shall be as follows:

A.Packing Material - Min 1 in. thickness of tightly-packed mineral wool batt insulation firmly packed into opening as a permanent form on both sides of floor or wall assembly. Packing material to be recessed min 1 in. from both surfaces of floor or wall assembly.
B.Fill,Void or Cavity Materials* - Caulk or Sealant - Applied to fill the annular space to a min depth of 1 in., flush with both surfaces of floor or wall assembly.

3M COMPANY - CP 25WB+ caulk or FB-3000 WT sealant.

*Bearing the UL Classification Marking

System No. C-BJ-5002 FOR INSULATED PIPES
System No. C-AJ-1557 FOR UNINSULATED PIPE
September 07, 2004
(Formerly System No. 91)
F Rating - 4 Hr
T Rating - 1/2 Hr
L Rating At Ambient - 2 CFM/sq ft
L Rating At 400 F - Less Than 1 CFM/sq ft



SECTION A-A

1 INTERIOR FLOOR/WALL PENETRATION - INSULATED PIPE
SCALE: NONE

VLK

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Salas O'Brien Project Number: 2550-01455-00

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PROFESSIONAL ENGINEER
10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
1 Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

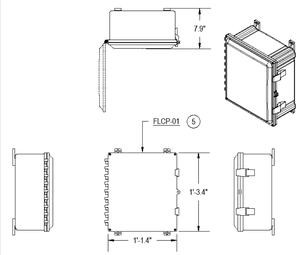
PROJECT NO.
25-0056.00

SHEET TITLE
PLUMBING DETAILS

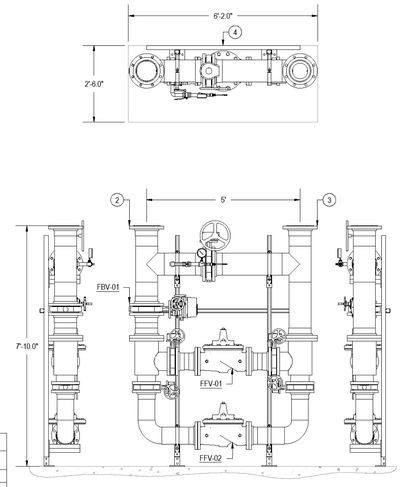
SHEET NO.
P5.03

North Shore Multi-Use Indoor Facility

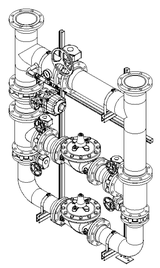
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CONTROL PANEL
SCALE: 1" = 1'-0"



PROVIDE AS SIMILAR TO COUGAR USA
FIRE FILL VALVE STATION
MICHAEL BALBONI
832-912-7500



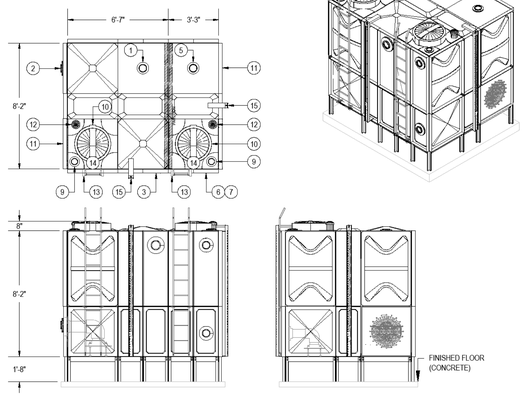
FILL STATION PLAN, ELEVATION, AND ISOMETRIC VIEWS
SCALE: 1/2" = 1'-0"

GENERAL NOTES
1. ALL FILL STATION COMPONENTS TO BE PURCHASED FROM A SINGLE SUPPLIER.
2. FILL STATION INLET, 8"Ø ANSI FLANGED CONNECTION.
3. FILL STATION DISCHARGE, 8"Ø ANSI FLANGED CONNECTION.
4. SUPPORT STRUCTURE, 5' SEGMENT PROVIDED LOOSE AND FIELD INSTALLED ON WALL, SUPPORT STRUCTURE THEN CONNECTS TO 5' SEGMENT FOR A FULLY SUPPORTED INSTALLATION.
5. COUGAR CONTROL PANEL TO BE SHIPPED LOOSE AND FIELD INSTALLED AT A REMOTE LOCATION.

1 GENERAL EQUIPMENT SCHEDULE

TAG	DESCRIPTION	PIPE CONNECTION SIZE(S)	MODEL	NOTES
FFV-01, 02	SOLENOID ACTUATED FILL VALVE	8" ANSI FLANGE	CLA-VAL 136-03-BYC-AC-SS	3, 4
FBV-01	MOTORIZED BLOCK VALVE	8" ANSI FLANGE	A-T CONTROLS NS SERIES	3, 4
FLCP-01	COUGAR PLC CONTROL PANEL	-	MODEL ET10F2B1T1	1, 2, 3, 4

NOTES
1. LEVEL CONTROL DONE BY PRESSURE TRANSDUCER WITH BACK UP HIGH LEVEL PROBE. TANK LEVEL & SET POINTS DISPLAYED IN INCHES.
2. MONITOR CITY PRESSURE WITH PRESSURE TRANSMITTER.
3. START-UP DONE BY SYSTEM SUPPLIER.
4. FIELD WIRING FROM CONTROL PANEL TO VALVES AND LEVEL SENSOR ASSEMBLY BY SYSTEM SUPPLIER.



WATER STORAGE TANK COORDINATION SCHEDULE

NO.	DESCRIPTION	QTY.	SIZE	TYPE
1	FIRE TANK INLET CONNECTION	1		GROOVED
2	FIRE TANK VORTEX OUTLET CONNECTION	1		GROOVED
3	FIRE OVERFLOW CONNECTION	1		GROOVED
4	FIRE DRAIN CONNECTION	1		NPT
5	DOMESTIC TANK INLET CONNECTION	1		GROOVED
6	DOMESTIC TANK VORTEX OUTLET CONNECTION	1		GROOVED
7	DOMESTIC OVERFLOW CONNECTION	1		GROOVED
8	DOMESTIC DRAIN CONNECTION	1		NPT
9	LEVEL CONTROL CONNECTIONS	2	3"	FLANGE
10	TOP MANHOLE COVER	2	24"	FRP
11	SIDE MANHOLE COVER	2	24"	FRP
12	COWL TYPE AIR VENT	2	4"	VENT
13	EXTERNAL LADDER	2	-	LADDER
14	INTERNAL LADDER	2	-	SS LADDER
15	WATER LEVEL GUIDE	2	-	FLOAT AND BOARD TYPE

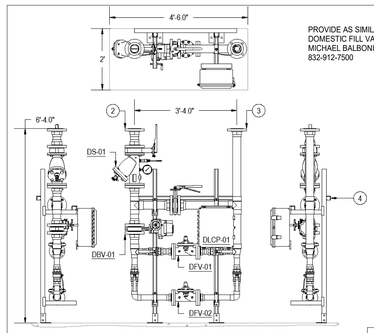
NOTES
1. ALLOW FOR A MINIMUM OF 2" CLEARANCE AROUND TANK FOUNDATION.
2. OVERFLOWS SHALL FLOW FREELY TO THE GROUND AND BE DIRECTLY ROUTED TO A DRAIN.

WATER STORAGE TANK SCHEDULE

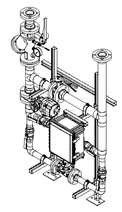
TAG	USEABLE CAPACITY (GALLONS)	DIMENSIONS (L x W x H)	TYPE	MODEL	EMPTY WEIGHT (LBS)	NOTES
ST-04	FIRE 2,500 DOMESTIC 1,000	FIRE: 6'-7" x 8'-2" x 8'-2" DOM: 3'-3" x 8'-2" x 8'-2"	FIELD BUILT BOLTED FIBERGLASS	FTC-(1.95+0.1+0.95)x2.5x2.5	4,100	1, 2, 3, 4, 5, 6, 7

NOTES
1. FOR TANK CONNECTIONS AND INSTALLATION DIMENSIONS, REFER TO STORAGE TANK DETAIL AND COORDINATION SCHEDULE.
2. TANK TO BE INSTALLED BY SUPPLIER.
3. TANK TO BE INSTALLED ON ENGINEERED STEEL BASE WITH MODULAR STEEL PEDESTAL FOOTING OR CONCRETE DUNNAGE. SEE DETAIL FOR PLATFORM INSTALLATION HEIGHT.
4. TANK MUST BE COMPLIANT WITH AWWA D12-121 AND NSF 61 WITHOUT A LINER.
5. SHEET MOLDING COMPOUND TO BE HOT PRESSED AT 300° F AND 3000 PSI.
6. TANK SEALANT TO BE A SOLID SYNTHETIC RUBBER SEALANT RIBBED IN NO LESS THAN 4 LOCATIONS.
7. ALL HARDWARE TO BE 316 STAINLESS STEEL.

3 FIRE FILL VALVE STATION AND CONTROLS WITH BYPASS
Scale: 12" = 1'-0"



PROVIDE AS SIMILAR TO COUGAR USA
DOMESTIC FILL VALVE STATION
MICHAEL BALBONI
832-912-7500



PLAN AND ELEVATION SYSTEM VIEWS
SCALE: 1/2" = 1'-0"

ISO SYSTEM VIEW
SCALE: 1/2" = 1'-0"

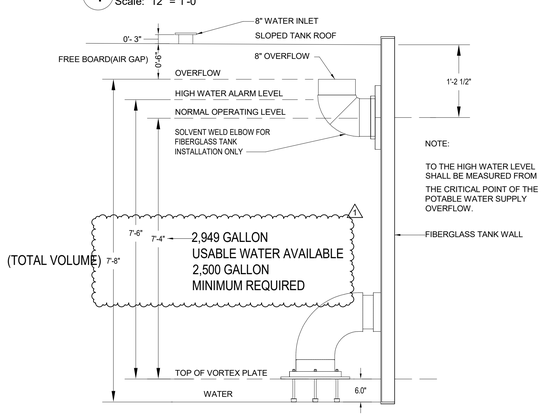
GENERAL NOTES
1. ALL FILL STATION COMPONENTS TO BE PURCHASED FROM A SINGLE SUPPLIER.
2. FILL STATION INLET, 3.0"Ø ANSI FLANGED CONNECTION.
3. FILL STATION DISCHARGE, 3.0"Ø ANSI FLANGED CONNECTION.
4. SUPPORT STRUCTURE PROVIDED BY SYSTEM SUPPLIER FOR PREFABRICATED SYSTEMS.

1 GENERAL EQUIPMENT SCHEDULE

TAG	DESCRIPTION	PIPE CONNECTION SIZE(S)	MODEL	NOTES
DFV-01, 02	DOMESTIC FILL VALVE	2" ANSI FLANGE	CLA-VAL 136-01-AC-KC-SS	2, 3
DBV-01	MOTORIZED BLOCK VALVE	2" ANSI FLANGE	A-T CONTROLS NS SERIES	2, 3
DS-01	STRAINER, BLOW-DOWN, ISOLATION VALVE	2" ANSI FLANGE	NEXUS DXFV	1, 2
DLCP-01	COUGAR PLC CONTROL PANEL	-	MODEL ET10F2B1T1	1, 2, 3

NOTES
1. MONITOR CITY PRESSURE WITH PRESSURE TRANSMITTER.
2. START-UP DONE BY SYSTEM SUPPLIER.
3. FIELD WIRING FROM CONTROL PANEL TO FILL VALVES AND BLOCK VALVE COMPLETED BY SYSTEM SUPPLIER.

4 DOMESTIC FILL VALVE STATION AND CONTROLS WITH BYPASS
Scale: 12" = 1'-0"



5 BREAK TANK VOLUME
Scale: 12" = 1'-0"

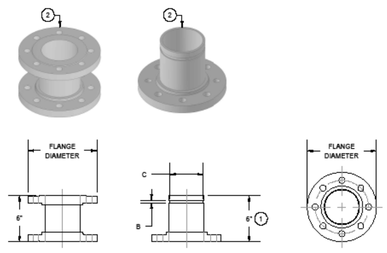
2 FIBERGLASS COMBINATION DOMESTIC/FIRE SURGE TANK
Scale: 12" = 1'-0"

TANK CONNECTION DIMENSIONS SCHEDULE

NOMINAL SIZE	FLANGE DIAMETER (IN)	GROOVE DIMENSIONS (IN)			NOTES
		A	B	C	
2"	6.0	0.625	0.344	2.250	1, 2, 3
2-1/2"	7.0	0.625	0.344	2.720	1, 2, 3
3"	7.5	0.625	0.344	3.344	1, 2, 3
4"	9.0	0.625	0.344	4.334	1, 2, 3
6"	11.0	0.625	0.344	6.455	1, 2, 3
8"	13.5	0.750	0.469	8.441	1, 2, 3
10"	16.0	0.750	0.469	10.562	1, 2, 3

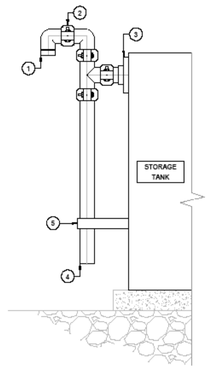
NOTES
1. FLANGE DIMENSIONS PER ANSI CLASS 150 B16.5 SLIP ON FLANGE.
2. GROOVED DIMENSIONS PER ORIGINAL GROOVE SYSTEM (OGS) GROOVE SPECIFICATIONS FROM VICTAULIC.
3. FLANGES TO BE PREINSTALLED ON FTC TANKS WITH GROOVED END BEING CONTRACTOR CONNECTION POINT.

TANK CONNECTION CONSTRUCTION NOTES
1. DRAWING SHOWS 4" NOMINAL SIZE DIMENSIONS, ALL VARIATION MAINTAIN THE SAME 6" DISTANCE SHOWN.
2. ISOMETRIC DRAWING IS NTS. 3D DRAWINGS AVAILABLE UPON REQUEST.



STANDARD TANK CONNECTION DETAIL
SCALE: 1 1/2" = 1'-0"

OVERFLOW CONSTRUCTION NOTES
1. OVERFLOW VENT INSTALLED WITH SS BIRD AND INSECT SCREEN.
2. RECOMMENDED OVERFLOW PIPE FITTINGS TO BE INSTALLED USING VICTAULIC PGS-300 AND STYLE 357 RIGID COUPLINGS. SEE SPEC FOR APPROVED PIPE MATERIALS.
3. OVERFLOW TO BE INSTALLED ON SITE BY CONTRACTOR. TANK WILL INCLUDE AN INSTALLED VICTAULIC GROOVED FITTING OVERFLOW CONNECTION POINT.
4. OVERFLOW TO BE FIELD ROUTED TO NEAREST FLOOR DRAIN, RECOMMENDED TO BE AS SHORT AS POSSIBLE.
5. TANKS SUPPORTS TO BE PROVIDED IF REQUIRED.



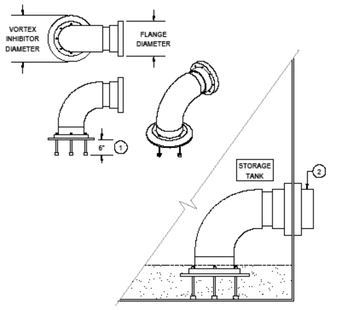
OVERFLOW DETAIL
SCALE: NTS

ANTI-VORTEX DIMENSIONS SCHEDULE

NOMINAL SIZE	FLANGE DIAMETER (IN)	VORTEX INHIBITOR DIA (IN)	NOTES
2"	6.0	8.0	1
2-1/2"	7.0	9.0	1
3"	7.5	12.0	1
4"	9.0	16.0	1
6"	11.0	18.0	1
8"	13.5	20.0	1
10"	16.0	24.0	1

NOTES
1. FLANGE DIMENSIONS PER ANSI CLASS 150 B16.5 SLIP ON, PVC OR STEEL AVAILABLE.

ANTI-VORTEXT CONSTRUCTION NOTES
1. ALL SIZES INSTALLED WITH 6" VORTEX INLET STANDS.
2. EXTERIOR CONNECTION TO BE ANSI FLANGED AS EITHER PVC OR STEEL FLANGE.



VORTEX CONNECTION DETAIL
SCALE: NTS

1 DOMESTIC/FIRE SURGE TANK CONNECTIONS
Scale: 12" = 1'-0"

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PROFESSIONAL ENGINEER
10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
1 Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	Designer
Drawn By	Author

PROJECT NO.
25-0056.00

SHEET TITLE
PLUMBING DETAILS

SHEET NO.
P5.04

North Shore Multi-Use Indoor Facility

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GAS WATER HEATER SCHEDULE

MARK	BASIS OF DESIGN MANUFACTURER	MODEL	STORAGE CAPACITY (GAL)	BTU/HR INPUT	WH GALS. PER HR. RECOVERY RATE 100°F RISE	STORED WATER TEMP	ELECTRICAL CHAR. V	P	MCA	MOCP	REMARKS
GWH-1	AO SMITH	BTH-199A	100 GAL	199	256	140 °F	120	1	0	20	
GWH-2	AO SMITH	BTH-199A	100 GAL	199	256	140 °F	120	1	0	20	

1 INDIVIDUAL VERTICAL 4" CONCENTRIC FLUE VENT FOR EACH WATER HEATER. PROVIDE CONCENTRIC VENT KIT "90061440S". REFER TO DRAWINGS FOR FLUE ROUTING AND LOCATIONS THROUGH ROOF. CONTRACTOR SHALL COORDINATE FLUE LOCATION THROUGH ROOF AND PIPE ROUTING IN CEILING SPACES WITH ALL OTHER DISCIPLES PRIOR TO CONSTRUCTION.

2 PROVIDE ACID NEUTRALIZING TANK KIT "900796000S"

NOTE: PROVIDE HOT WATER EXPANSION TANK DOWNSTREAM OF CHECK VALVE ON COLD WATER SUPPLY. WATTS DETA-20

ELECTRIC WATER HEATER SCHEDULE

MARK	BASIS OF DESIGN MANUFACTURER	MODEL	STORAGE CAPACITY	KW	WH GALS. PER HR. RECOVERY RATE 100°F RISE	STORED WATER TEMP	ELECTRICAL CHAR. V	P	MCA	MOCP	REMARKS
792	AO SMITH	DSE-30A	30 GAL	12.3	50	140	480	3	0	20	

NOTE: PROVIDE HOT WATER EXPANSION TANK DOWNSTREAM OF CHECK VALVE ON COLD WATER SUPPLY. WATTS DETA-5

CIRCULATION PUMP SCHEDULE

MARK	BASIS OF DESIGN MANUFACTURER	MODEL	DESCRIPTION	TYPE	GPM	HEAD FEET	HP MIN	ELECTRICAL CHAR. V	P	F	MAX RPM
CP-1	GRUNDFOS	MAGNA3 32-120 GF	CIRCULATION PUMP	INLINE BRONZE	4	30'	1/25	120	1	60	1750
CP-2	GRUNDFOS	ALPHA HWR 15-55SF	CIRCULATION PUMP	INLINE BRONZE	5	6'	1/25	120	1	60	1750

NOTE: FACTORY SET PUMP TO AUTO-ADAPT SETTING

SHOCK ARRESTORS

P.D.I SYMBOL	FIXTURE UNITS	CHAMBER LENGTH	THREADED CONNECTION
A	1-11	9 5/8"	1/2"
B	12-32	11 3/4"	3/4"
C	33-60	14 11/16"	1"
D	61-113	12 3/8"	1"
E	114-154	15 3/8"	1"
F	155-330	17 3/8"	1"

PUMPS

ITEM	DESCRIPTION	TYPE	GPM	HEAD FEET	H.P. MIN.	VOLT/ PHASE	MAX RPM	MANUFACTURER AND MODEL
FP-1	FIRE PUMP	VERTICAL IN-LINE	500	148'	25	460/3/60	3525	PATTERSON 5X3 VIP
JP-1	JOCKEY PUMP	VERTICAL IN-LINE MULTISTAGE	5	185'	3/4	460/3/60	3500	EBARA MODEL-EVI-1-F0075T3S

NOTES:
1. PROVIDE (FC-1) FIRE PUMP CONTROLLER - FIRETROL MODEL-FTT1000-AM25B, SOFT START WITH TRANSFER SWITCH
2. PROVIDE (JC-1) JOCKEY PUMP CONTROLLER - FIRETROL MODEL-FTA570F-AG034B

DOMESTIC BOOSTER PUMP

ITEM NO.	DESCRIPTION	TYPE	GPM (EA.)	HEAD FEET (TOTAL)	H.P MIN. (EA.)	ELECTRICAL REQUIRED V/P/2/HZ	MAX RPM	MANUFACTURER AND MODEL
TBP-1	TRIPLEX BOOSTER PUMP	VERTICAL MULTI-STAGE	45	130	3	460/3/60	3500	GRUNDFOS HYDRO MPC-E 3CRE 10-4

PUMP NOTES:
1. PROVIDE AN 44 GALLON ELBI WTL-170 BLADDER/DIAPHRAGM TANK.
2. PROVIDE INTEGRAL VFD ON EACH PUMP OR IF EXTERNAL DRIVES THEY SHALL BE CONTAINED WITHIN A SINGLE ELECTRICAL ENCLOSURE (MIN. NEMA 3R UNLESS NOTED OTHERWISE), PANEL SHALL HAVE MAIN DISCONNECT AND SINGLE POINT CONNECTION.
3. PROVIDE REDUNDANT DISCHARGE PRESSURE TRANSDUCER AND CONTROL CAPABILITY TO MONITOR BOTH SENSOR AND AUTOMATICALLY SWITCH TO SECONDARY SENSOR IN THE EVENT OF A PRIMARY SENSOR FAILURE
4. PROVIDE SURGE PROTECTION, BATTERY BACKUP, SERVICE DISCONNECTS, INDIVIDUAL PUMP RUN INDICATION, AUDIBLE & VISUAL ALARM, BACNET COMMUNICATION INTERFACE.
5. HEADERS SHALL BE CONSTRUCTED OF 316 SS WITH FLANGED CONNECTIONS ON ALL ENDS, PROVIDE SUCTION & DISCHARGE ISOLATION VALVES AND DISCHARGE CHECK VALVES ON EACH PUMP.
6. CONTRACTOR TO ROUTE A PIPE OFF THE SYSTEM DISCHARGE LINE TO THE BLADDER TANK PROVIDING A BLOCK & BLEED PIPING ARRANGEMENT THAT ALLOWS THE TANK TO BE ISOLATED FROM THE SYSTEM AND DRAINED.
7. WHEN REQUIRED, SYSTEM SUPPLIER TO PROVIDE 150# FLANGED X 150# FLANGED REDUCING FLEX CONNECTORS. OF ALL STAINLESS STEEL CONSTRUCTION (RE: PLANS FOR PIPE CONNECTION SIZES).
8. FOR PACKAGES BEING FED FROM A BREAK TANK, PACKAGE TO BE WIRED INTO THE LEVEL CONTROL PANEL'S LOW LEVEL ALARM FOR DRY RUN PROTECTION (NOTE: DRY RUN PROTECTION BY SUCTION PRESSURE SENSOR IS NOT ACCEPTABLE).

GAS PIPING CALCULATIONS		
5 PSI GAS		
MEASURED LENGTH	=	110'
ADD FOR VALVES AND FITTINGS (10%)	=	11'
TOTAL EQUIVALENT LENGTH	=	121'
DESIGN: 1999 NATIONAL FUEL GAS CODE TABLE 9.9 - 150' COLUMN		
8 OUNCE GAS		
MEASURED LENGTH	=	333'
ADD FOR VALVES AND FITTINGS (10%)	=	33'
TOTAL EQUIVALENT LENGTH	=	366'
DESIGN: 2021 INTERNATIONAL FUEL GAS CODE TABLE 402.4(1)- 400' COLUMN		

PLUMBING PIPING LEGEND

SYMBOLS	DESCRIPTION
	EXISTING TO BE REMOVED
SAN	SANITARY OR WASTE PIPING BELOW SLAB(SAN)
SAN	SANITARY OR WASTE PIPING ABOVE SLAB(SAN.)
SD	STORM DRAIN PIPING (SD)
OFD	STORM OVERFLOW DRAIN (OFD)
SD	STORM PIPING BELOW SLAB(SD)
AW	ACID WASTE PIPING BELOW SLAB (AW)
PD	PUMPED DISCHARGE (PD)
CD	CONDENSTATE DRAIN PIPING (CD)
D	CONDENSTATE - INDIRECT DRAIN PIPING (D)
V	VENT PIPING (V)
CW	COLD WATER PIPING (CW)
HW	HOT WATER PIPING (HW)
HWR	HOT WATER RETURN PIPING (HWR)
SCW	SOFT COLD WATER PIPING (SCW)
AIR	COMPRESSED AIR PIPING (A)
TP	TRAP PRIMER LINE (TP)
F	FIRE PROTECTION PIPING (F)
AS	AUTOMATIC SPRINKLER PIPING (AS)
GAS	NATURAL GAS PIPING (G)
DI	DEMINERALIZATION WATER(DI)
OWS	OIL WATER SEPARATOR
	FLOW DIRECTIONAL ARROW
	SHUT-OFF VALVE
BV	BALANCING VALVE (BV)
SV	SOLENOID VALVE (SV)
	BALL VALVE (BV)
	BUTTERFLY VALVE
PC	LUBRICATED PACKED PLUG STOP STOP COCK (PC)
	HORIZONTAL SWING CHECK
	UNION
	HORIZONTAL SWING CHECK
	REDUCER OR INCREASER
RPBFP	REDUCED PRESSURE BACKFLOW PREVENTER (RPBFP)
	PIPING DOWN
	RISE OR DROP PIPING
	PIPING UP -OR- PIPING UP & DOWN
	CAP ON END OF PIPE
CO	CLEANOUT (WALL OR CEILING) (CO)
FCO	FLOOR CLEANOUT (FCO)
ECO	EXTERIOR CLEANOUT WITH 18"x18"x4" CONCRETE PAD (ECO)
	TWO-WAY CLEANOUT (PROVIDE 18"x24"x4" CONCRETE PAD OUTSIDE)
	FIRE DEPARTMENT VALVE AT RISER
	FIRE HYDRANT
	FIRE DEPARTMENT CONNECTION
PRV	PRESSURE REDUCING VALVE (PRV)
	BRANCH CONNECTION OUT OF TOP
	BRANCH CONNECTION OUT OF BOTTOM
	BRANCH CONNECTION OUT OF SIDE
	WYE & 1/8TH BEND BRANCH CONNECTION
	WYE BRANCH CONNECTION
	HOSE BIBB
	PRESSURE GAUGE WITH COCK
	THERMOMETER
	GAS PRESSURE REGULATOR
	TEST COCK
	GAS METER
	WALL HYDRANT
	VALVE IN RISE
	ASME TEMPERATURE & PRESSURE RELIEF VALVE
	VACUUM RELIEF VALVE
	ANGLE VALVE
OS&Y	OS&Y VALVE
	ROOF DRAIN
1	REFER TO KEYED NOTE
	FLOW SWITCH
FS	FLOOR SINK (FS)
FD	FLOOR DRAIN (FD)
FD	FLOOR DRAIN WITH P-TRAP (FD)
	FLOOR DRAIN WITH P-TRAP AT 45° ANGLE (FD)
HD	HUB DRAIN (HD)
	ACCESS PANEL FOR TRAP PRIMER OR SHOCK ABSORBER
AP	ACCESS PANEL LOCATION SYMBOL
A	SHOCK ABSORBER
DIA	DIAMETER
EXR	EXISTING TO REMAIN
ETR	EXISTING TO REMAIN
(N)	NEW
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
	NEW CONNECTION
S.F.	SQUARE FEET
TYP.	TYPICAL
VTR	VENT THROUGH ROOF
VTA	VENT TO ATMOSPHERE
EL=100.00	INVERT ELEVATION
1/4" SLOPE	QUARTER OF AN INCH SLOPE
1/8" SLOPE	1/8TH OF AN INCH SLOPE
1/16" SLOPE	1/16TH OF AN INCH SLOPE
	DELTA CHANGE SYMBOL

DISREGARD SYMBOLS AND ABBREVIATIONS NOT USED ON CONTRACT DRAWINGS

PLUMBING FIXTURE SCHEDULE

TYPE: WC-1 (T.A.S. COMPLIANT)
DESCRIPTION: WATER CLOSET, WALL HUNG, WHITE VITREOUS CHINA, 1.28 GALLON PER FLUSH SIPHON JET ACTION, ELONGATED CLOSET BOWL WITH 1-1/2" TOP SPUD AND BOLT COVERS. WITH EVERCLEAN. AMERICAN STANDARD "AFWALL" 3351.101.
SEAT: ELONGATED OPEN FRONT WHITE PLASTIC SEAT WITH SELF SUSTAINING CONCEALED CHECK HINGES. CHURCH 9500SSCT
FLUSH VALVE: 1.28 GALLON FLUSH CYCLE. EXPOSED, DIAPHRAGM TYPE, POLISHED CHROME CLOSET FLUSHOMETER. VACUUM BREAKER, SPUD COUPLING FOR 1-1/2" TOP SPUD. SLOAN ROYAL 111-1.28
CARRIER: WADE 311 AND 330 SERIES -AM1.
ROUGH-IN: 4" WASTE, 2" VENT, 1" COLD WATER. REFER TO ARCHITECTURAL DRAWINGS FOR HEIGHT REQUIREMENTS.

TYPE: WC-X1 (T.A.S. COMPLIANT)
DESCRIPTION: WATER CLOSET, WALL HUNG, WHITE VITREOUS CHINA, 1.28 GALLON PER FLUSH SIPHON JET ACTION, ELONGATED CLOSET BOWL WITH 1-1/2" TOP SPUD AND BOLT COVERS. WITH EVERCLEAN. AMERICAN STANDARD "AFWALL" 3351.101.
SEAT: ELONGATED OPEN FRONT WHITE PLASTIC SEAT WITH SELF SUSTAINING CONCEALED CHECK HINGES. CHURCH 9500SSCT
FLUSH VALVE: 1.28 GALLON FLUSH CYCLE. EXPOSED, DIAPHRAGM TYPE, POLISHED CHROME CLOSET FLUSHOMETER. VACUUM BREAKER, SPUD COUPLING FOR 1-1/2" TOP SPUD. SLOAN ROYAL 111-1.28
CARRIER: EXISTING TO REMAIN
ROUGH-IN: RE-USE EXISTING WASTE, WATER AND VENT ROUGH-INS

TYPE: WC-2 (STANDARD HEIGHT)
DESCRIPTION: WATER CLOSET, WALL HUNG, WHITE VITREOUS CHINA, 1.28 GALLON PER FLUSH SIPHON JET ACTION, ELONGATED CLOSET BOWL WITH 1-1/2" TOP SPUD AND BOLT COVERS. WITH EVERCLEAN. AMERICAN STANDARD "AFWALL" 3351.101.
SEAT: ELONGATED OPEN FRONT WHITE PLASTIC SEAT WITH SELF SUSTAINING CONCEALED CHECK HINGES. CHURCH 9500SSCT
FLUSH VALVE: 1.28 GALLON FLUSH CYCLE. EXPOSED, DIAPHRAGM TYPE, POLISHED CHROME CLOSET FLUSHOMETER. VACUUM BREAKER, SPUD COUPLING FOR 1-1/2" TOP SPUD. SLOAN ROYAL 111-1.28
CARRIER: WADE 311 AND 330 SERIES -AM1.
ROUGH-IN: 4" WASTE, 2" VENT, 1" COLD WATER. REFER TO ARCHITECTURAL DRAWINGS FOR HEIGHT REQUIREMENTS.

TYPE: U-1 (T.A.S. COMPLIANT)
DESCRIPTION: URINAL, WALL HUNG, WHITE VITREOUS CHINA, 0.5 GALLON PER FLUSH, SIPHON JET ACTION, INTEGRAL TRAP. REMOVEABLE DOME STRAINER AMERICAN STANDARD WASHBROOK 6590.001
0.5 GALLON FLUSH CYCLE. EXPOSED, DIAPHRAGM TYPE, CHROME PLATED URINAL FLUSHOMETER. VACUUM BREAKER, SPUD COUPLING FOR 3/4" TOP SPUD.
FLUSH VALVE: SLOAN ROYAL186-0.5-H-573-CP CAP.
CARRIER: RECTANGULAR STEEL TUBING UPRIGHTS WITH WELDED 4" SQUARE BASE ANCHORED TO CONCRETE WITH (4) 1/2" BOLTS. ADJUSTABLE SLEEVE, UPPER AND LOWER BEARING PLATES WITH THREADED STUDS. WADE 401-AM11.
ROUGH-IN: 2" WASTE, 2" VENT, 3/4" COLD WATER. REFER TO ARCHITECTURAL DRAWINGS FOR HEIGHT REQUIREMENTS.

TYPE: U-X1 (T.A.S. COMPLIANT)
DESCRIPTION: URINAL, WALL HUNG, WHITE VITREOUS CHINA, 0.5 GALLON PER FLUSH, SIPHON JET ACTION, INTEGRAL TRAP. REMOVEABLE DOME STRAINER AMERICAN STANDARD WASHBROOK 6590.001
0.5 GALLON FLUSH CYCLE. EXPOSED, DIAPHRAGM TYPE, CHROME PLATED URINAL FLUSHOMETER. VACUUM BREAKER, SPUD COUPLING FOR 3/4" TOP SPUD.
FLUSH VALVE: SLOAN ROYAL186-0.5-H-573-CP CAP.
CARRIER: EXISTING TO REMAIN
ROUGH-IN: RE-USE EXISTING WASTE, WATER AND VENT ROUGH-INS

TYPE: L-1 (T.A.S. COMPLIANT) - HOT AND COLD WATER
DESCRIPTION: LAVATORY, WALL HUNG, VITREOUS CHINA, 20-1/2" X 18-1/4" WITH FRONT OVERFLOW AND CONCEALED ARM SUPPORTS, FAUCET HOLES ON 4" CENTERS. AMERICAN STANDARD "LUCERNE" 0355.012. CHROME PLATED BRASS DECK MOUNTED LAVATORY FAUCET WITH COVER PLATE. 4-1/8" SPOUT, AND PUSH BUTTON HANDLE INDEXED "PUSH". SELF-CLOSING METERING CARTRIDGE, VANDAL RESISTANT 0.5 GPM OUTLET, CHICAGO MODEL 857-E2805-769PSHAB.
FAUCET:
MIXING VALVE: PROVIDE ASSE 1070 RATED LAWLER MODEL 570-38 POINT OF USE THERMOSTATIC MIXING VALVE AT LAVATORY TO TEMPER OUTLET WATER SUPPLY TO 105° WITH 0.5 GPM FLOW RATE
STRAINER: 1-1/4" 17 GAUGE CHROME PLATED BRASS GRID STRAINER WITH TAILPIECE. MCGUIRE #155A.
P-TRAP: 1-1/4" 17 GAUGE CHROME PLATED HEAVY CAST BRASS TRAP WITH CLEANOUT AND EXTENSION TO WALL WITH ESCUTCHEON PLATE. MCGUIRE 8872.
SUPPLIES: 1/2" I.P.S. X 3/8" O.D.CHROME PLATED LOOSE KEY STOP VALVE WITH ESCUTCHEON AND 3/8" COMPRESSION CHROME PLATED FLEXIBLE RISERS. MCGUIRE 2165LK.
CARRIER: RECTANGULAR STEEL TUBING UPRIGHTS WITH WELDED 3" X 4-1/2" BASE ANCHORED TO CONCRETE WITH (4) 1/2" BOLTS, ADJUSTABLE SLEEVE, THREADED CONCEALED ARMS, ALIGNMENT BAR, LOCKING DEVICE, AND LEVELING SCREWS. WADE 520-08.
ROUGH-IN: 2" WASTE, 2" VENT, 1/2" HOT AND COLD WATER. REFER TO ARCHITECTURAL DRAWINGS FOR HEIGHT REQUIREMENTS.

TYPE: L-X1 (T.A.S. COMPLIANT) - HOT AND COLD WATER
DESCRIPTION: LAVATORY, WALL HUNG, VITREOUS CHINA, 20-1/2" X 18-1/4" WITH FRONT OVERFLOW AND CONCEALED ARM SUPPORTS, FAUCET HOLES ON 4" CENTERS. AMERICAN STANDARD "LUCERNE" 0355.012. CHROME PLATED BRASS DECK MOUNTED LAVATORY FAUCET WITH COVER PLATE, 4-1/8" SPOUT, AND PUSH BUTTON HANDLE INDEXED "PUSH". SELF-CLOSING METERING CARTRIDGE, VANDAL RESISTANT 0.5 GPM OUTLET, CHICAGO MODEL 857-E2805-769PSHAB. ELECTRONIC
FAUCET: BOTTLE FILLER SENSOR WITH ELECTRONIC FRONT AND SIDE BUBBLER PUSHBAR ACTIVATION.WITH A CLEAR KNEE SPACE GREATER THAN 27" HIGH. NOTE: UNIT SHOULD BE ABLE TO DISPENSE UNCHILLED WATER DURING A POWER OUTAGE.
MIXING VALVE: PROVIDE ASSE 1070 RATED LAWLER MODEL 570-38 POINT OF USE THERMOSTATIC MIXING VALVE AT LAVATORY TO TEMPER OUTLET WATER SUPPLY TO 105° WITH 0.5 GPM FLOW RATE
STRAINER: 1-1/4" 17 GAUGE CHROME PLATED BRASS GRID STRAINER WITH TAILPIECE. MCGUIRE #155A.
P-TRAP: 1-1/4" 17 GAUGE CHROME PLATED HEAVY CAST BRASS TRAP WITH CLEANOUT AND EXTENSION TO WALL WITH ESCUTCHEON PLATE. MCGUIRE 8872.
SUPPLIES: 1/2" I.P.S. X 3/8" O.D.CHROME PLATED LOOSE KEY STOP VALVE WITH ESCUTCHEON AND 3/8" COMPRESSION CHROME PLATED FLEXIBLE RISERS. MCGUIRE 2165LK.
CARRIER: RECTANGULAR STEEL TUBING UPRIGHTS WITH WELDED 3" X 4-1/2" BASE ANCHORED TO CONCRETE WITH (4) 1/2" BOLTS, ADJUSTABLE SLEEVE, THREADED CONCEALED ARMS, ALIGNMENT BAR, LOCKING DEVICE, AND LEVELING SCREWS. WADE 520-08.
ROUGH-IN: 2" WASTE, 2" VENT, 1/2" HOT AND COLD WATER. REFER TO ARCHITECTURAL DRAWINGS FOR HEIGHT REQUIREMENTS.

TYPE: L-2 (T.A.S. COMPLIANT) - HOT AND COLD WATER
DESCRIPTION: LAVATORY, WALL HUNG, VITREOUS CHINA, 20-1/2" X 18-1/4" WITH FRONT OVERFLOW AND CONCEALED ARM SUPPORTS. FAUCET HOLES ON 4" CENTERS. AMERICAN STANDARD "LUCERNE" 0355.012.
FAUCET: 4" FIXED CENTERS, SINGLE LEVER HOT AND COLD WATER, THERMOSTATIC MIXING FAUCET. CERAMIC MIXING CARTRIDGE (ASSE 1070 CERTIFIED) INCLUDES SCALD PROTECTION AND INTEGRAL INLET CHECK VALVES, 0.5 GPM AERATOR. HOT WATER INLET TEMPERATURE 100° - 180°, MAXIMUM HOT WATER OUTLET TEMPERATURE OF 105° MINIMUM FLOW RATE. FOR TEMPERATURE LIMITING OF 0.35 GPM. MAXIMUM EMERGENCY TEMPERATURE OUT AT COLD WATER FAILURE: 120°. CHICAGO MODEL 420-T41E2805ABCP
STRAINER: 1-1/4" 17 GAUGE CHROME PLATED BRASS GRID STRAINER WITH TAILPIECE. MCGUIRE #155A.
P-TRAP: 1-1/4" 17 GAUGE CHROME PLATED HEAVY CAST BRASS TRAP WITH CLEANOUT AND EXTENSION TO WALL WITH ESCUTCHEON PLATE. MCGUIRE 8872.
SUPPLIES: 1/2" I.P.S. X 3/8" O.D.CHROME PLATED LOOSE KEY STOP VALVE WITH ESCUTCHEON AND 3/8" COMPRESSION CHROME PLATED FLEXIBLE RISERS. MCGUIRE 2165LK.
CARRIER: RECTANGULAR STEEL TUBING UPRIGHTS WITH WELDED 3" X 4-1/2" BASE ANCHORED TO CONCRETE WITH (4) 1/2" BOLTS, ADJUSTABLE SLEEVE, THREADED CONCEALED ARMS, ALIGNMENT BAR, LOCKING DEVICE, AND LEVELING SCREWS. WADE 520-08. 2" WASTE, 2" VENT, 1/2" HOT AND COLD WATER. REFER TO ARCHITECTURAL DRAWINGS FOR HEIGHT REQUIREMENTS.
ROUGH-IN:

TYPE: L-X2 (T.A.S. COMPLIANT) - HOT AND COLD WATER
DESCRIPTION: LAVATORY, WALL HUNG, VITREOUS CHINA, 20-1/2" X 18-1/4" WITH FRONT OVERFLOW AND CONCEALED ARM SUPPORTS. FAUCET HOLES ON 4" CENTERS. AMERICAN STANDARD "LUCERNE" 0355.012.
FAUCET: 4" FIXED CENTERS, SINGLE LEVER HOT AND COLD WATER, THERMOSTATIC MIXING FAUCET. CERAMIC MIXING CARTRIDGE (ASSE 1070 CERTIFIED) INCLUDES SCALD PROTECTION AND INTEGRAL INLET CHECK VALVES, 0.5 GPM AERATOR. HOT WATER INLET TEMPERATURE 100° - 180°, MAXIMUM HOT WATER OUTLET TEMPERATURE OF 105° MINIMUM FLOW RATE. FOR TEMPERATURE LIMITING OF 0.35 GPM. MAXIMUM EMERGENCY TEMPERATURE OUT AT COLD WATER FAILURE: 120°. CHICAGO MODEL 420-T41E2805ABCP
STRAINER: 1-1/4" 17 GAUGE CHROME PLATED BRASS GRID STRAINER WITH TAILPIECE. MCGUIRE #155A.
P-TRAP: 1-1/4" 17 GAUGE CHROME PLATED HEAVY CAST BRASS TRAP WITH CLEANOUT AND EXTENSION TO WALL WITH ESCUTCHEON PLATE. MCGUIRE 8872.
SUPPLIES: 1/2" I.P.S. X 3/8" O.D.CHROME PLATED LOOSE KEY STOP VALVE WITH ESCUTCHEON AND 3/8" COMPRESSION CHROME PLATED FLEXIBLE RISERS. MCGUIRE 2165LK.
CARRIER: RECTANGULAR STEEL TUBING UPRIGHTS WITH WELDED 3" X 4-1/2" BASE ANCHORED TO CONCRETE WITH (4) 1/2" BOLTS, ADJUSTABLE SLEEVE, THREADED CONCEALED ARMS, ALIGNMENT BAR, LOCKING DEVICE, AND LEVELING SCREWS. WADE 520-08.
ROUGH-IN: 2" WASTE, 2" VENT, 1/2" HOT AND COLD WATER. REFER TO ARCHITECTURAL DRAWINGS FOR HEIGHT REQUIREMENTS.

TYPE: SK-1 (T.A.S. COMPLIANT) - HOT AND COLD WATER
DESCRIPTION: SINGLE COMPARTMENT SINK, COUNTER MOUNTED, SELF-RIMMING, 18 GAUGE TYPE 304 STAINLESS STEEL, 22" X 19" X 5-1/2" DEEP, SINGLE COMPARTMENT WITH FAUCET DECK. THREE FAUCET HOLES ON 4" CENTERS.
FAUCET: ELKAY LRAD-221955.
CHROME PLATED BRASS DECK MOUNTED FITTING WITH 8" RIGID/SWING GOOSENECK SPOUT AND 4" WRIST BLADE HANDLES ON 8" CENTERS. QUARTER TURN CERAMIC DISC OPERATING CARTRIDGES, VANDAL RESISTANT 1.5 GPM NON-AERATING LAMINAR FLOW OUTLET. CHICAGO MODEL 786-GN8AE369XABCP
MIXING VALVE: PROVIDE ASSE 1070 RATED LAWLER MODEL 570-38 POINT OF USE THERMOSTATIC MIXING VALVE AT LAVATORY TO TEMPER OUTLET WATER SUPPLY TO 105° WITH 0.5 GPM FLOW RATE
STRAINER: CHROME PLATED BRASS WIDE TOP SINK STRAINER WITH PERFORATED STRAINER, 1-1/2" 17 GAUGE CHROME PLATED BRASS TAILPIECE.
P-TRAP: 1-1/2" 17 GAUGE CHROME PLATED CAST BRASS TRAP WITH CLEANOUT AND EXTENSION TO WALL WITH ESCUTCHEON PLATE. MCGUIRE 8912C.
SUPPLIES: 1/2" I.P.S. X 3/8" O.D. CHROME PLATED LOOSE KEY STOP VALVES WITH ESCUTCHEONS AND 3/8" COMPRESSION CHROME PLATED FLEXIBLE RISERS. MCGUIRE 2165LK.
CARRIER: RECTANGULAR STEEL TUBING UPRIGHTS WITH WELDED 3" X 4-1/2" BASE ANCHORED TO CONCRETE SLAB WITH (4) 1/2" BOLTS. ADJUSTABLE SLEEVE FOR CONNECTION TO HANGER PLATE PROVIDED BY FIXTURE MANUFACTURER. WADE 403-BL-BFS
ROUGH-IN: 2" WASTE, 2" VENT, 1/2" COLD WATER. REFER TO ARCHITECTURAL DRAWINGS FOR HEIGHT REQUIREMENTS.

TYPE: EDF-1 (T.A.S. COMPLIANT)
DESCRIPTION: WALL HUNG, BARRIER FREE, SELF-CONTAINED, SPLIT-LEVEL ELECTRIC DRINKING FOUNTAIN WITH BOTTLE FILLING STATION & BI-LEVEL ADA COOLER REFRIGERATED ULTRA-CAPACITY LEAD REDUCTION. CHILLING CAPACITY OF 8.0 GPH (GALLONS PER HOUR) OF 50 :: F DRINKING WATER, BASED ON 80 :: F INLET WATER AND 90 :: F AMBIENT, PER ASHRAE 18 TESTING. FEATURES SHALL INCLUDE ANTIMICROBIAL*, AUTOMATIC FILTER STATUS RESET, ENERGY SAVINGS, FILTERED, GREEN TICKER™, HANDS FREE, LAMINAR FLOW, REAL DRAIN, VISUAL FILTER MONITOR, ALCOVE LIGHT, PRO FILTRATION SYSTEM, TOP MOUNT QUICK FILTER CHANGE, STAINLESS STEEL, ALCOVE, AUTOMATIC FILTER FLUSH. FURNISHED WITH FLEXI-GUARD® SAFETY BUBBLER. ELECTRONIC BOTTLE FILLER SENSOR WITH ELECTRONIC FRONT AND SIDE BUBBLER PUSHBAR ACTIVATION.WITH A CLEAR KNEE SPACE GREATER THAN 27" HIGH. NOTE: UNIT SHOULD BE ABLE TO DISPENSE UNCHILLED WATER DURING A POWER OUTAGE.
P-TRAP: ELKAY LZSTL8WSBPRO WITH APRON 98324C.
SUPPLIES: 1-1/4" CHROME PLATED CAST BRASS TRAP WITH CLEANOUT AND EXTENSION TO WALL WITH ESCUTCHEON. MCGUIRE 8872.
CARRIER: 1/2" I.P.S. X 3/8" O.D. CHROME PLATED LOOSE KEY STOP VALVE WITH ESCUTCHEON AND 3/8" CHROME PLATED FLEXIBLE RISER. MCGUIRE 2165LK. RECTANGULAR STEEL TUBING UPRIGHTS WITH WELDED 3" X 4-1/2" BASE ANCHORED TO CONCRETE SLAB WITH (4) 1/2" BOLTS. ADJUSTABLE SLEEVE FOR CONNECTION TO HANGER PLATE PROVIDED BY FIXTURE MANUFACTURER. WADE 403-BL-BFS
ROUGH-IN: RE-USE EXISTING WASTE, WATER AND VENT ROUGH-INS

TYPE: MS-1
DESCRIPTION: MOP SINK BASIN, 32" X 32" X 12" HIGH CORNER TYPE, PRECAST TERRAZZO WITH 6" DROPPED FRONT, STAINLESS STEEL THRESHOLD CAP, AND DOUBLE STAINLESS STEEL WALL GUARDS. STERN-WILLIAMS "CORLOW" SBC-1725 WITH BP SPLASH PANELS, #T-40 MOP HANGER, AND #T-35 HOSE.
FAUCET: CHROME PLATED BRASS WALL MOUNTED FITTING WITH CHECK IN STOPS, ADJUSTABLE SUPPLY ARMS, VACUUM BREAKER SPOUT WITH PAIL HOOK AND WALL BRACE, 2-1/2" INDEXED LEVER HANDLES ON 8" CENTERS. CERAMIC DISC CARTRIDGES, 3/4" MALE HOSE THREAD OUTLET. CHICAGO #445-897RCXKCP.
ROUGH-IN: 3" WASTE, 2" VENT, 1/2" HOT AND COLD WATER.

TYPE: MP-1 (T.A.S. COMPLIANT) WHIRLPOOL THERAPEUTIC TUB, ALTERNATE
DESCRIPTION: THERAPEUTIC TUB BY DIVISION 11. CONTRACTOR TO COORDINATE WITH ARCHITECT FOR ROUGH-IN AND FINAL CONNECTIONS.
FAUCET: SOLID BRASS THERMOSTAT, ASSE 1017 CERTIFIED MIXING VALVE, ADJUSTABLE HIGH TEMPERATURE LIMIT STOP SET FOR 120°, BOTTOM INLETS, SIDE OUTLET. OUTLET VOLUME CONTROL/SHUTOFF WITH VACUUM BREAKER. INTEGRAL COMBINATION CHECK STOPS WITH WALL SUPPORT PROVIDE WITH 6" RUBBER HOSE ATTACHMENT AND WALL HOOK. LEONARD TM-504-26-LF
ROUGH-IN: 3/4" HOT AND COLD WATER

TYPE: SH-X1 (T.A.S. COMPLIANT) - INDIVIDUAL SHOWER STATION
DESCRIPTION: SHOWER, JOB BUILT BASE INSTALLED PER ARCHITECTURAL DRAWINGS. PRESSURE BALANCING HOT AND COLD WATER SHOWER CONTROL VALVE
CONTROLS: WITH VANDAL RESISTANT LEVER HANDLE, INTEGRAL CHECKSTOPS, AND ADJUSTABLE TEMPERATURE LIMIT SCREW NOT TO EXCEED 120°. CAST BRASS VALVE BODY. ALL EXPOSED MATERIALS STAINLESS STEEL OR CHROME PLATED BRASS. 1.5 GPM HAND HELD SHOWER WITH 60" METAL CLAD FLEXIBLE HOSE, CHROME PLATED BRASS SUPPLY ARM, VACUUM BREAKER, MOUNTING BRACKET AND 24" METAL SLIDE BAR, BRADLEY 1CHD-AKV-424.
DRAIN: EXISTING DRAIN TO REMAIN, CLEAN AND RESTORE STRAINER TO LIKE NEW CONDITION. REPLACE IF CRACKED OR BROKEN.
TRAP SEAL: PROVIDE PRO-SET SYSTEMS, INC. TRAP GUARD FACTORY FITTED TO MATCH EACH FLOOR DRAIN BY SIZE, MODEL, AND MANUFACTURER.
ROUGH-IN: 2" WASTE, 2" VENT, 1/2" HOT AND COLD WATER. REFER TO ARCHITECTURAL DRAWINGS FOR HEIGHT REQUIREMENTS.

TYPE:
DESCRIPTION: EDF-1 (T.A.S. COMPLIANT)
WALL HUNG, BARRIER FREE, SELF-CONTAINED, SPLIT-LEVEL ELECTRIC DRINKING FOUNTAIN WITH BOTTLE FILLING STATION & BI-LEVEL ADA COOLER REFRIGERATED ULTRA-CAPACITY LEAD REDUCTION. CHILLING CAPACITY OF 8.0 GPH (GALLONS PER HOUR) OF 50 :: F DRINKING WATER, BASED ON 80 :: F INLET WATER AND 90 :: F AMBIENT, PER ASHRAE 18 TESTING. FEATURES SHALL INCLUDE ANTIMICROBIAL*, AUTOMATIC FILTER STATUS RESET, ENERGY SAVINGS, FILTERED, GREEN TICKER™, HANDS FREE, LAMINAR FLOW, REAL DRAIN, VISUAL FILTER MONITOR, ALCOVE LIGHT, PRO FILTRATION SYSTEM, TOP MOUNT QUICK FILTER CHANGE, STAINLESS STEEL, ALCOVE, AUTOMATIC FILTER FLUSH. FURNISHED WITH FLEXI-GUARD® SAFETY BUBBLER. ELECTRONIC BOTTLE FILLER SENSOR WITH ELECTRONIC FRONT AND SIDE BUBBLER PUSHBAR ACTIVATION.WITH A CLEAR KNEE SPACE GREATER THAN 27" HIGH. NOTE: UNIT SHOULD BE ABLE TO DISPENSE UNCHILLED WATER DURING A POWER OUTAGE.
P-TRAP: ELKAY LZSTL8WSBPRO WITH APRON 98324C.
SUPPLIES: 1-1/4" CHROME PLATED CAST BRASS TRAP WITH CLEANOUT AND EXTENSION TO WALL WITH ESCUTC

TECHNOLOGY LEGEND

SYMBOL	DESCRIPTION	ELEVATION	BACK BOX/RACEWAY	NOTES
*# ▼	WALL MOUNTED NETWORK OUTLET D#: 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	
D# ▼	FLOOR MOUNTED NETWORK OUTLET	N/A	COORDINATE WITH ELECTRICAL CONTRACTOR	FINISHED HARDWARE PROVIDED BY DIV 27
*#	CEILING MOUNTED NETWORK OUTLET AP: WIRELESS ACCESS POINT D#: NETWORK OUTLET	ABOVE CEILING	CEILING BRACKET WITH BISCUIT 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 UNCUT PLASTIC PROTECTIVE BUSHING.
5. NO CONDUITS SHALL EXCEED FOR 40% MAXIMUM FILL RATIO. CONTRACTOR TO PROVIDE ADDITIONAL CONDUITS REQUIRED.

ACCESS CONTROL LEGEND

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 CARD READER.	+42" A.F.F.	1-G, 3/4" C	
DS	2-WAY AUDIO/VIDEO INTERCOM DOOR STATION.	+42" AFF	"W: 1-G, 3/4" C "M: 3/4"C	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	
DC	DPDT MAGNETIC DOOR CONTACT/DOOR POSITION SENSOR.	FLUSH MOUNTED IN DOOR FRAME	N/A	PROVIDED BY ACS CONTRACTOR.

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

INTERCOM LEGEND

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 MOUNTED INTERCOM SPEAKER, LAY-IN CEILING	CEILING	CONTRACTOR PROVIDED	
S2	CEILING MOUNTED INTERCOM SPEAKER, HARD CEILING.	CEILING	CONTRACTOR PROVIDED	
S3	WALL MOUNTED INTERIOR INTERCOM SPEAKER/HORN	+10' AFF UNO	CONTRACTOR PROVIDED	
S4	WALL MOUNTED EXTERIOR INTERCOM SPEAKER/HORN	+8' AFF UNO	CONTRACTOR PROVIDED	
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	
C2	DOUBLE FACE CLOCK	REFERENCE FLOOR PLANS	4"X4"X2 1/8" BACK BOX WITH 1-G MUD RING, 1"C	
ACS	ADMINISTRATIVE CALL STATION.	DESK TOP	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

VIDEO SURVEILLANCE LEGEND

SYMBOL	DESCRIPTION	ELEVATION	BACK BOX/RACEWAY	NOTES
	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
	CEILING MOUNTED 4-SENSOR CAMERA	CEILING		NOTE #5
W W	2-SENSOR CAMERA W: INDICATES WALLMOUNTED CAMERA	REFERENCE FLOOR PLANS	4"X4"X2 1/8" BACK BOX WITH 1-G MUD RING, 1"C	NOTE #5
W	1-SENSOR CAMERA W: INDICATES WALLMOUNTED CAMERA	REFERENCE FLOOR PLANS	4"X4"X2 1/8" BACK BOX WITH 1-G MUD RING, 1"C	NOTE #5
VRS	VIDEO RECORDING SERVER			NOTE #5
#MU	VIDEO SURVEILLANCE MAIN UNIT	ABOVE CEILING		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

AUDIO/VIDEO LEGEND

SYMBOL	DESCRIPTION	ELEVATION	BACK BOX/RACEWAY	NOTES
AV-1 ▽	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/VIDEO OUTPUT OUTLET	REFERENCE FLOOR PLAN	4"X4"X2 1/8" BACK BOX WITH 1-G MUD RING, 1"C	NOTE #6
FSD-2 ▽	WALL MOUNTED FLAT SCREEN DISPLAY AUDIO/VIDEO 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 #6
IVD ▽	INTERACTIVE VIDEO DISPLAY AUDIO/VIDEO 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 #6
CP ▽	AV CONTROL PANEL	+48" AFF TO TOP	4"X4"X2 1/8" BACK BOX WITH 1-G MUD RING, 1"C	NOTE #5
PS	PARTITION SENSOR	CEILING	4"X4"X2 1/8" BACK BOX WITH 1-G MUD RING, 1"C	COORDINATE POWER WITH EC

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
6. PROVIDE AND INSTALL TWO (2) CATEGORY CABLE TO CONNECT DEVICE TO NETWORK

LOCAL SOUND SYSTEM LEGEND

SYMBOL	DESCRIPTION	ELEVATION	BACK BOX/RACEWAY	NOTES
LS	LOCAL SOUND SYSTEM 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	
MI	MICROPHONE INPUT	+18" AFF UNO	4"X4"X2 1/8" BACK BOX WITH 1-G MUD RING, 1"C	
ABM	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	

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

SYMBOL	DESCRIPTION	ELEVATION	BACK BOX/RACEWAY	NOTES
IDP	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	
M	CEILING MOUNTED MOTION DETECTOR	CEILING		
M	WALL MOUNTED MOTION DETECTOR LR: LONG RANGE	REFERENCE FLOOR PLAN	N/A	
GB	CEILING MOUNTED GLASS BREAK DETECTOR	CEILING	N/A	
DC	DPDT 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	
ODC	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

*EXISTING FIELD DEVICE LOCATIONS SHALL BE REUSED WHENEVER POSSIBLE.

LEGEND

SYMBOL	DESCRIPTION
FACP	FIRE ALARM CONTROL
FACP	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.
3. FIRE ALARM DEVICES ARE SHOWN FOR REFERENCE ONLY, FIRE ALARM CONTRACTOR IS RESPOSIBLE FOR VERIFYING EXISTING LOCATIONS AND PROVIDING A COMPLETE AND FUNCTIONING, CODE COMPLIANT SYSTEM.

SUBSCRIPTS AND ABBREVIATIONS

TEXT	DESCRIPTION
'WP'	DEVICE SHALL BE WEATHER PROOF AND RATED FOR EXTERIOR CONDITIONS
•	FIELD COORDINATE ELEVATION
AFF	ABOVE FINISHED FLOOR
'UC'	DEVICE IS TO BE MOUNTED ON THE UNDERSIDE OF THE ELEVATED CANOPY

SUBSCRIPTS LEGEND - EXISTING DEVICES

TEXT	DESCRIPTION
'E'	EXISTING TO REMAIN.
'D'	DEVICE IS EXISTING AND IS TO BE REMOVED. CONTRACTOR TO REMOVE THE DEVICE AND RETURN TO OWNER.
'RR'	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 PROJECT'S ELECTRICAL CONTRACTOR.
3. CONTRACTOR TO PROVIDE PROPERLY GROUNDED LIGHTING PROTECTION ON ALL CABLING ENTERING AND EXITING THE BUILDING.

RESPONSIBILITY MATRIX

SCOPE ITEM	RESPONSIBILITY			NOTES
COMMUNICATIONS - DIVISION 27	OFOI	CFCI	OFCI	
CATEGORY 6/6A STRUCTURED CABLING SYSTEM		✓		
VIDEO DISTRIBUTION SYSTEM - SPECIAL SPACE		✓		
AUDIO DISTRIBUTION SYSTEM - SPECIAL SPACE		✓		
VIDEO DISTRIBUTION SYSTEM - INSTRUCTIONAL SPACE		✓		
AUDIO DISTRIBUTION SYSTEM - INSTRUCTIONAL SPACE		✓		
FLAT PANEL DISPLAYS			✓	
FLAT PANEL DISPLAY MOUNTS		✓		
INTERACTIVE DISPLAYS		✓		
INTERACTIVE DISPLAY MOUNTS		✓		
DIGITAL SIGNAGE	✓			
BUILDING INTERCOM/PA, BELL, AND CLOCK SYSTEM		✓		
NETWORK EQUIPMENT				
→ MDF/IDF NETWORK EQUIPMENT		✓		
→ VOIP TELEPHONES	✓			
→ WIRELESS ACCESS POINTS			✓	
→ UNINTERRUPTIBLE POWER SUPPLIES (UPS)			✓	
RACEWAY: CONDUIT, BACK BOXES, SLEEVES, ETC.		✓		SEE NOTE 4.
ELECTRICAL POWER		✓		SEE NOTE 4.
LIFE SAFETY AND SECURITY - DIVISION 28	OFOI	CFCI	OFCI	
ACCESS CONTROL SYSTEM(ACS)		✓		
INTRUSION DETECTION SYSTEM		✓		
DOOR ACCESS VIDEO INTERCOM SYSTEM		✓		
VIDEO SURVEILLANCE SYSTEM (VSS)				
→ VSS SERVERS				SEE NOTE 8.
→ VSS CAMERAS		✓		
→ VSS PROGRAMMING		✓		
→ VSS CABLING		✓		SEE NOTE 7.
FIRE ALARM SMOKE DETECTION WITH VOICE EVACUATION		✓		
RACEWAY: CONDUIT, BACK BOXES, SLEEVES, ETC.		✓		SEE NOTE 4.
ELECTRICAL POWER		✓		SEE NOTE 4.

OFOI - OWNER FURNISHED AND OWNER INSTALLED
CFCI - CONTRACTOR FURNISHED AND CONTRACTOR INSTALLED
OFCI - OWNER FURNISHED AND CONTRACTOR INSTALLED

RESPONSIBILITY MATRIX NOTES:
1. NONE IN PROJECT.
2. OWNER CONFIGURED, CONTRACTOR INSTALLED AND PATCHED.
3. OWNER CONFIGURED, CONTRACTOR INSTALLED AND PATCHED. CONTRACTOR TO PROVIDE AND INSTALL WALL MOUNT BRACKETS AND HIGH IMPACT ENCLOSURES.
4. BY DIVISION 26.
5. REFERENCE DIVISION 8 FOR DOOR HARDWARE.
6. BY DIVISION 11.
7. BY DIVISION 27.
8. EXISTING TO REMAIN

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10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
1 Addendum 3	10/17/2025
2 Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	MA
Drawn By	AY

PROJECT NO.
25-0056.00

SHEET TITLE
TECHNOLOGY NOTES AND LEGENDS

SHEET NO.
T0.00

North Shore Multi-Use Indoor Facility

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NOTES TO GENERAL CONTRACTOR

A. PROTECT ALL COMMUNICATIONS CONDUITS, RACEWAYS, PULL BOXES THROUGHOUT CONSTRUCTION. CONTRACTOR SHALL REMOVE AND REPLACE AT NO ADDITIONAL COST TO THE OWNER ANY ITEMS FOUND TO BE DAMAGED, BENT, DEFORMED. ALL EXISTING CONDUIT ROUTES AND PULL BOXES ARE BASED ON CASUAL SITE VISITS. VERIFY EXISTING CONDITIONS AND FIELD COORDINATE EXACT LOCATIONS AND CONDUIT ROUTING WITH ARCHITECT AND OWNER PRIOR TO COMMENCEMENT OF CONSTRUCTION.

B. GENERAL CONTRACTOR SHALL CONTACT ISP PRIOR TO THE DISTURBANCE OF EXISTING UNDERGROUND INCOMING FIBER OPTIC PATHWAYS FOR EXACT LOCATIONS. COORDINATE WITH OWNER AND ARCHITECT.

FIRE ALARM GENERAL NOTES

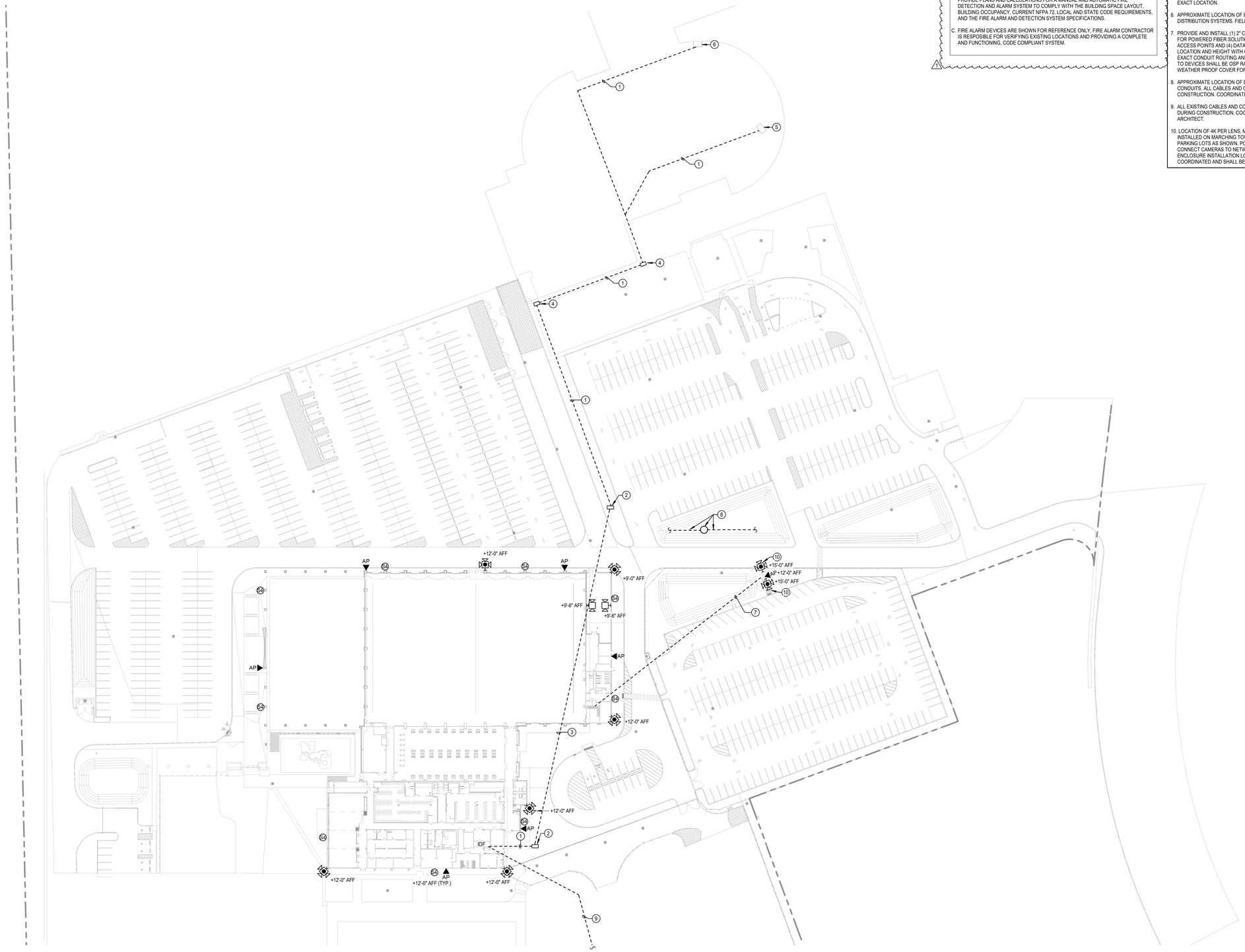
A. FIRE ALARM SYSTEM IS PERFORMANCE BASED PER SPECIFICATIONS. CONTRACTOR TO REFERENCE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

B. 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.

C. FIRE ALARM DEVICES ARE SHOWN FOR REFERENCE ONLY, FIRE ALARM CONTRACTOR IS RESPOSIBLE FOR VERIFYING EXISTING LOCATIONS AND PROVIDING A COMPLETE AND FUNCTIONING, CODE COMPLIANT SYSTEM.

TECHNOLOGY SITE KEYED NOTES

1. LOCATION OF EXISTING COMMUNICATIONS CONDUITS THAT SHALL BE REUSED FOR RE-CABLING OF COMMUNICATION SYSTEMS FROM EXISTING IDF TO HIGH SCHOOLS TELECOM INDICATED BY KEYED NOTES #5, #6. EXISTING CABLING SHALL BE REUSED WHEREVER POSSIBLE. PROVIDE NEW CABLES AS NEEDED. FIELD VERIFY EXISTING CONDITIONS.
2. LOCATION OF NEW 24" X 36" PULL BOX THAT SHALL BE USED FOR COMMUNICATIONS CABLING. PULL BOX SHALL BE PROVIDED BY DIVISION 26, SHALL INTERCEPT EXISTING CONDUITS. COORDINATE EXACT LOCATION WITH ARCHITECT AND DIVISION 26.
3. PROVIDE AND INSTALL THE FOLLOWING CONDUITS FOR CABLING FROM EXISTING IDF TO HIGH SCHOOL BUILDING AS FOLLOWS:
   A. (1) 5" FOR FIBER OPTIC CABLE.
   B. (2) 3" CONDUITS FOR TV DISTRIBUTION/VIDEO NETWORK
   C. (1) 3" CONDUIT FOR INTERCOM SYSTEM AND COPPER CABLING
   D. (1) 2" CONDUITS FOR MASTER CLOCK SYSTEM CABLING.
4. APPROXIMATE LOCATION OF EXISTING COMMUNICATIONS PULL BOX. FIELD VERIFY EXISTING LOCATION.
5. APPROXIMATE LOCATION OF PA AND MASTER CLOCK SYSTEMS. FIELD VERIFY EXACT LOCATION.
6. APPROXIMATE LOCATION OF EXISTING SCHOOL MDF AND VIDEO DISTRIBUTION SYSTEMS. FIELD VERIFY EXACT LOCATION.
7. PROVIDE AND INSTALL (1) 2" CONDUIT TO MARCHING TOWER AS SHOWN FOR FOR POWERED FIBER SOLUTION THAT SHALL SUPPORT CAMERAS, WIRELESS ACCESS POINTS AND (4) DATA OUTLETS. COORDINATE EACH DEVICE LOCATION AND HEIGHT WITH OWNER PRIOR TO INSTALLATION. COORDINATE EXACT CONDUIT ROUTING AND GROUNDING WITH DIVISION 26. ALL CABLING TO DEVICES SHALL BE OSP RATED AND RUN IN COUNDUITS. PROVIDE WEATHER PROOF COVER FOR DATA OUTLETS
8. APPROXIMATE LOCATION OF EXISTING COMMUNICATIONS PEDESTAL AND CONDUITS. ALL CABLES AND CONDUITS SHALL BE PROTECTED DURING CONSTRUCTION. COORDINATE WITH DIVISION 26, ISP AND ARCHITECT.
9. ALL EXISTING CABLES AND CONDUITS TO PRESS BOX SHALL BE PROTECTED DURING CONSTRUCTION. COORDINATE WITH DIVISION 26, ISP AND ARCHITECT.
10. LOCATION OF 4K PER LENS, MULTISENSOR CAMERA THAT SHALL BE INSTALLED ON MARCHING TOWER. CAMERA SHALL BE USED TO MONITOR PARKING LOTS AS SHOWN. POWERED FIBER SOLUTION SHALL BE USED TO CONNECT CAMERAS TO NETWORK. COORDINATE EXACT POWERED FIBER ENCLOSURE INSTALLATION LOCATION. FINAL CAMERA HEIGHT SHALL BE FIELD COORDINATED AND SHALL BE BETWEEN 15' TO 20' AFF.



N

1 **TECHNOLOGY SITE PLAN**
Scale: 1" = 50'-0"

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ISSUED: OCTOBER 1, 2025

REVISIONS

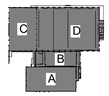
Revision No.		Revision Date
1	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	MA
Drawn By	AY

PROJECT NO.
25-0056.00

SHEET TITLE
TECHNOLOGY SITE PLAN

SHEET NO.
T1.00



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TECHNOLOGY DEMO GENERAL NOTES

A. CONTRACTOR SHALL PROVIDE NEW CEILING TILES 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 UNLESS NOTED OTHERWISE. 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. CONTRACTOR TO COORDINATE WITH GPISD TECHNOLOGY DEPARTMENT PRIOR TO CONSTRUCTION ON WHICH DEVICES ARE TO BE REMOVED BY THE OWNER'S VENDOR IN ORDER TO PREVENT VOID OF WARRANTY.

K. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DEVICES LOCATIONS AND CONDITION.

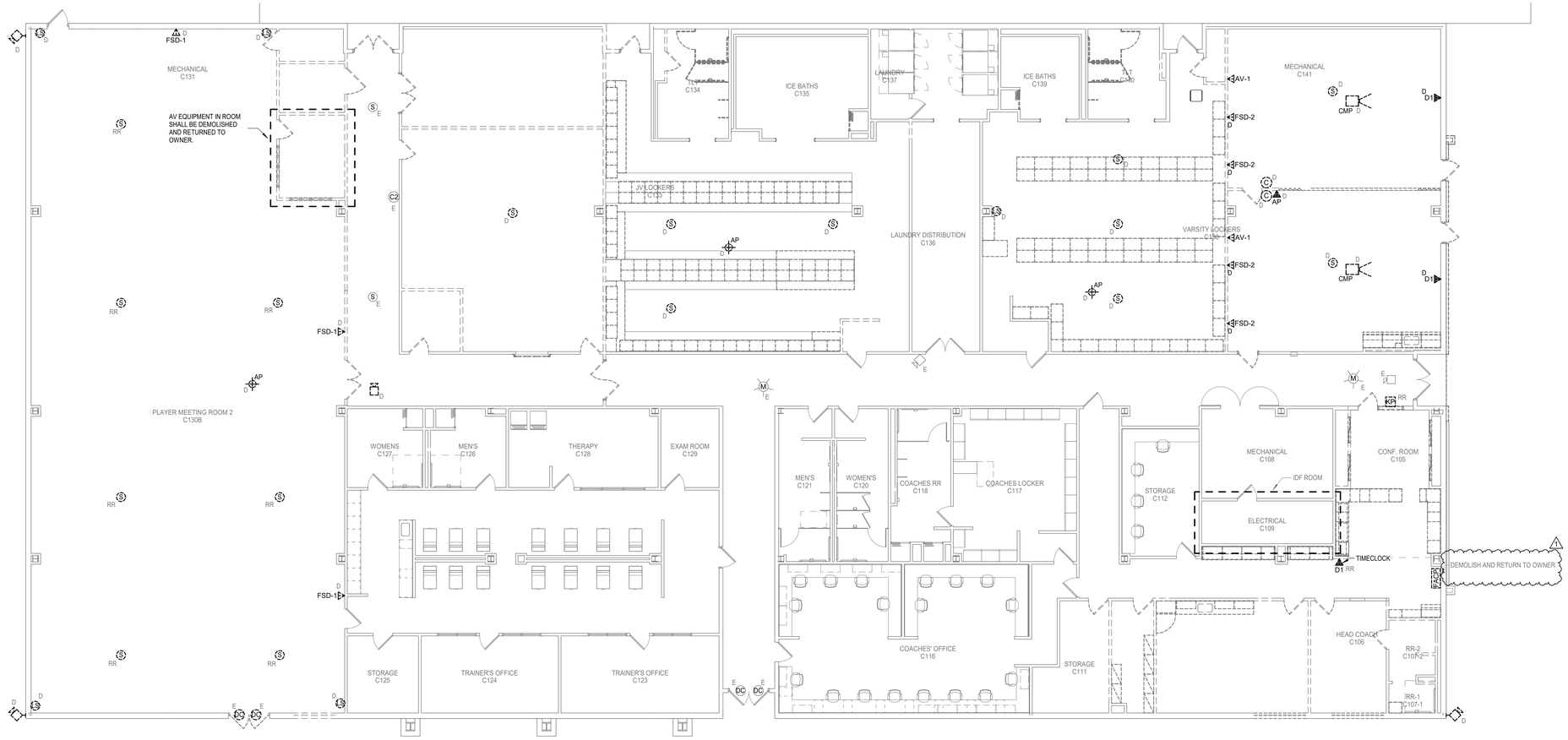
L. ALL DEMO DEVICES WITH 'D' SUBSCRIPT SHALL DISCONNECT AND REMOVE EXISTING WIRING DEVICE BACK TO SWITCH OR PANEL. PATCH WALL TO MATCH EXISTING.

FIRE ALARM GENERAL NOTES

A. FIRE ALARM SYSTEM IS PERFORMANCE BASED PER SPECIFICATIONS. CONTRACTOR TO REFERENCE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

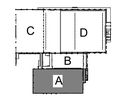
B. A LICENSED FIRE ALARM PLANNING SUPERINTENDENT CERTIFIED TO A MINIMUM LEVEL 3, IN THE SUBFIELD OF FIRE ALARM SYSTEMS THROUGH THE NATIONAL INSTITUTE FOR CERTIFICATION IN ENGINEERING TECHNOLOGIES (NICET), SHALL PROVIDE PLANS AND CALCULATIONS FOR A MANUAL AND AUTOMATIC FIRE DETECTION AND ALARM SYSTEM 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.

C. FIRE ALARM DEVICES ARE SHOWN FOR REFERENCE ONLY. FIRE ALARM CONTRACTOR IS RESPOSIBLE FOR VERIFYING EXISTING LOCATIONS AND PROVIDING A COMPLETE AND FUNCTIONING, CODE COMPLIANT SYSTEM.



N

1 **TECHNOLOGY DEMOLITION FLOOR PLAN - LEVEL ONE - UNIT A**
Scale: 1/8" = 1'-0"



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Salas O'Brien Project Number: 2550-01455-00

GALENA PARK ISD
HOUSTON, TEXAS

BRADLEY KALMANS
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LICENSED
PROFESSIONAL ENGINEER
10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
1 Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	MA
Drawn By	AY

PROJECT NO.
25-0056.00

SHEET TITLE
TECHNOLOGY DEMOLITION FLOOR PLAN - LEVEL ONE - UNIT A

SHEET NO.
T1.01A

North Shore Multi-Use Indoor Facility

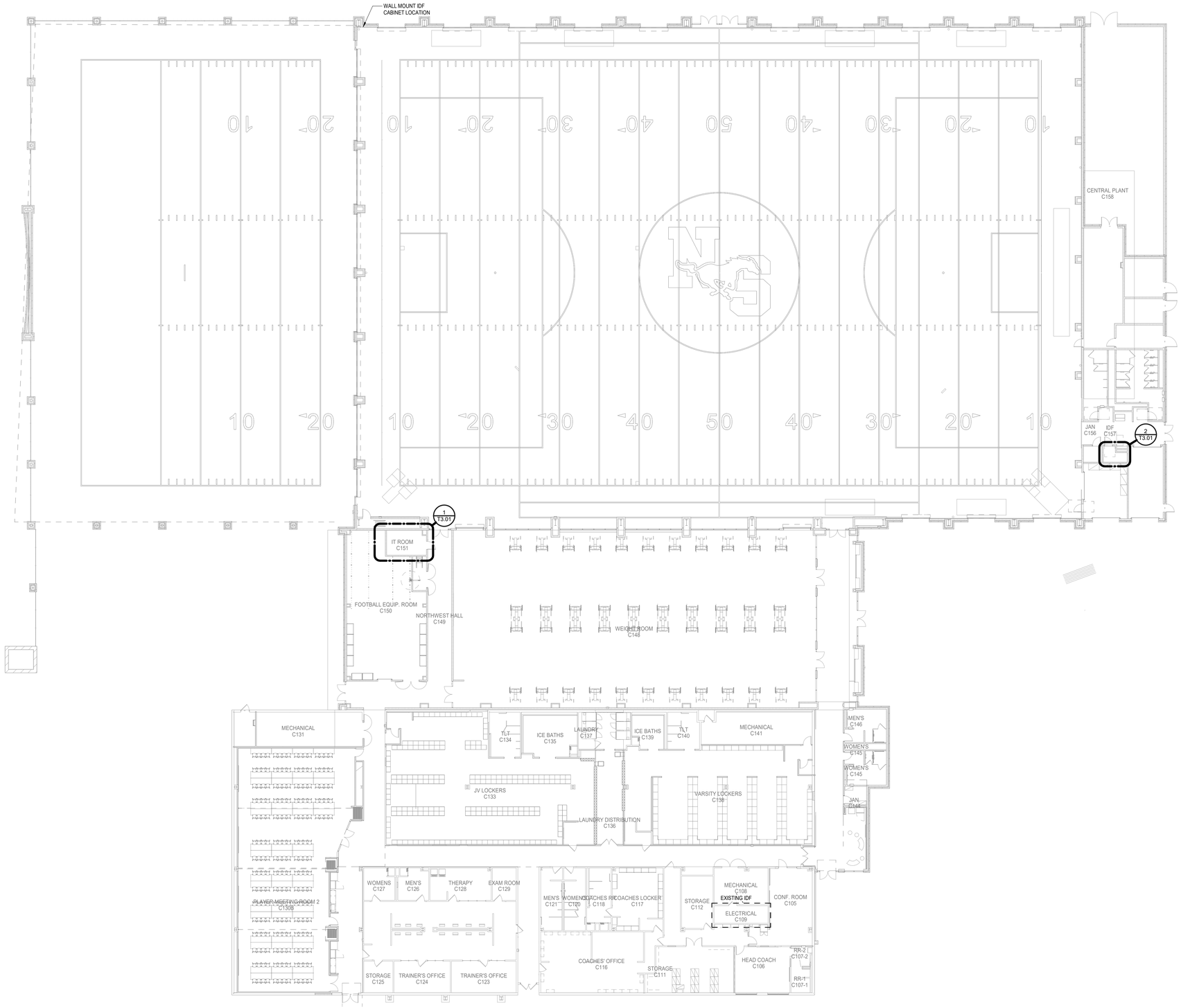
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FIRE ALARM GENERAL NOTES

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N

1 TECHNOLOGY FLOOR PLAN - LEVEL ONE - OVERALL

Scale: 1/16" = 1'-0"

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STATE OF TEXAS

10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
1 Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	MA
Drawn By	AY

PROJECT NO.

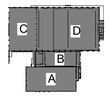
25-0056.00

SHEET TITLE

TECHNOLOGY FLOOR PLAN - LEVEL ONE - OVERALL

SHEET NO.

T2.01



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TECHNOLOGY KEYED NOTES

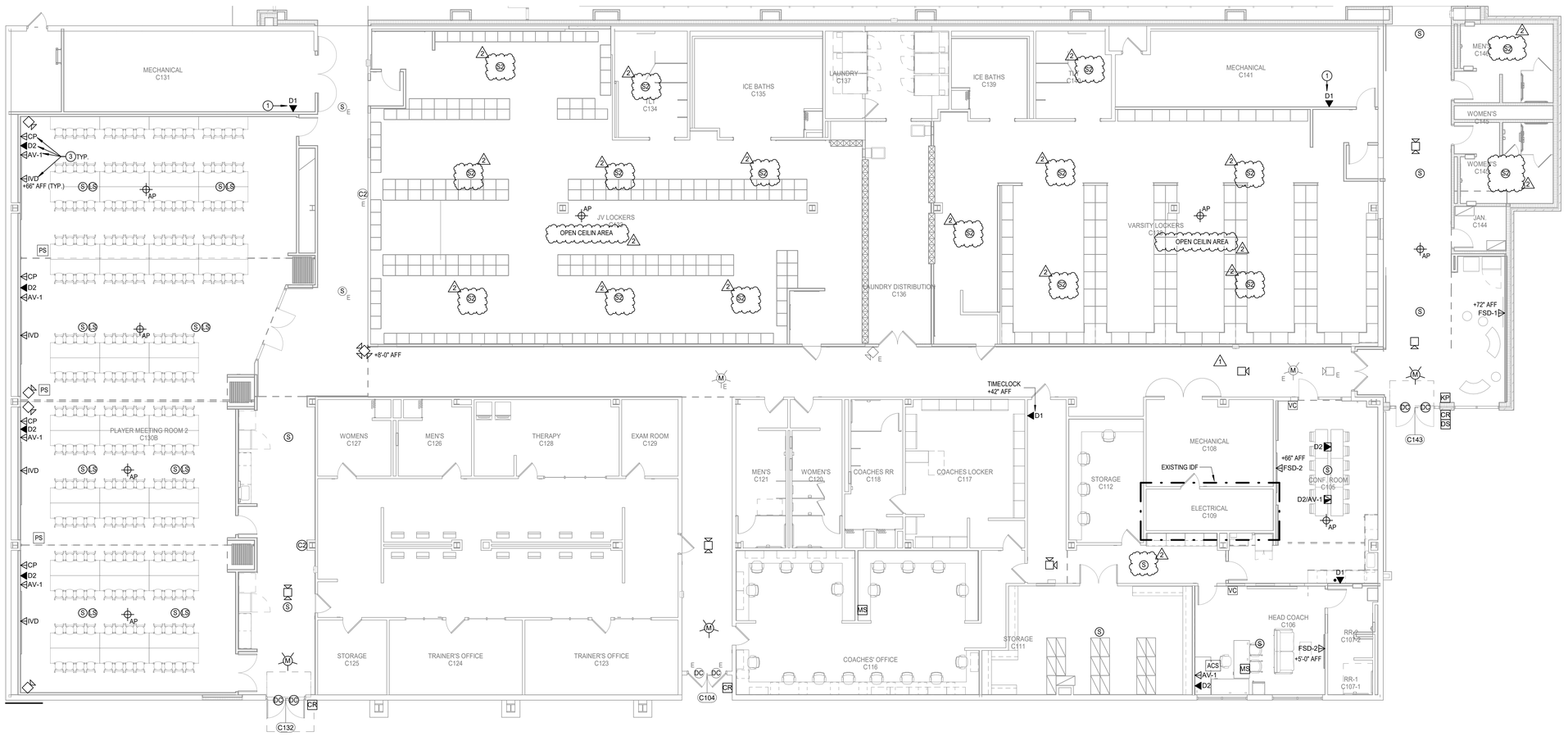
1. PROVIDE ONE (1) CATEGORY 6 DATA CIRCUIT FOR THE BUILDING MANAGEMENT CONTROL SYSTEM. COORDINATE WITH THE CONTRACTOR FOR EXACT LOCATION AND TERMINATION TYPE.
2. DOOR SHALL BE INTEGRATED WITH 2-WAY VIDEO INTERCOM SYSTEM TO BE RELEASED VIA INTERCOM MASTER STATION AT COACHES OFFICE OR HEAD COACH. PROVIDE ALL ACCESSORIES REQUIRED FOR A FULLY FUNCTIONAL SYSTEM. COORDINATE WITH DIVISION 08.
3. COORDINATE BACK BOX REQUIREMENTS FOR ALL DEVICES INSTALLED ON PRE-FABRICATED WALL WITH WALL VENDOR PRIOR TO CONSTRUCTION.

FIRE ALARM GENERAL NOTES

A. FIRE ALARM SYSTEM IS PERFORMANCE BASED PER SPECIFICATIONS. CONTRACTOR TO REFERENCE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

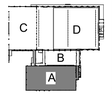
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N

1 **TECHNOLOGY FLOOR PLAN - LEVEL ONE - UNIT A**
Scale: 1/8" = 1'-0"



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GALENA PARK ISD
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PROFESSIONAL ENGINEER
10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
1 Addendum 3	10/17/2025
2 Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	MA
Drawn By	AY

PROJECT NO.
25-0056.00

SHEET TITLE
TECHNOLOGY FLOOR PLAN - LEVEL ONE - UNIT A

SHEET NO.
T2.02A

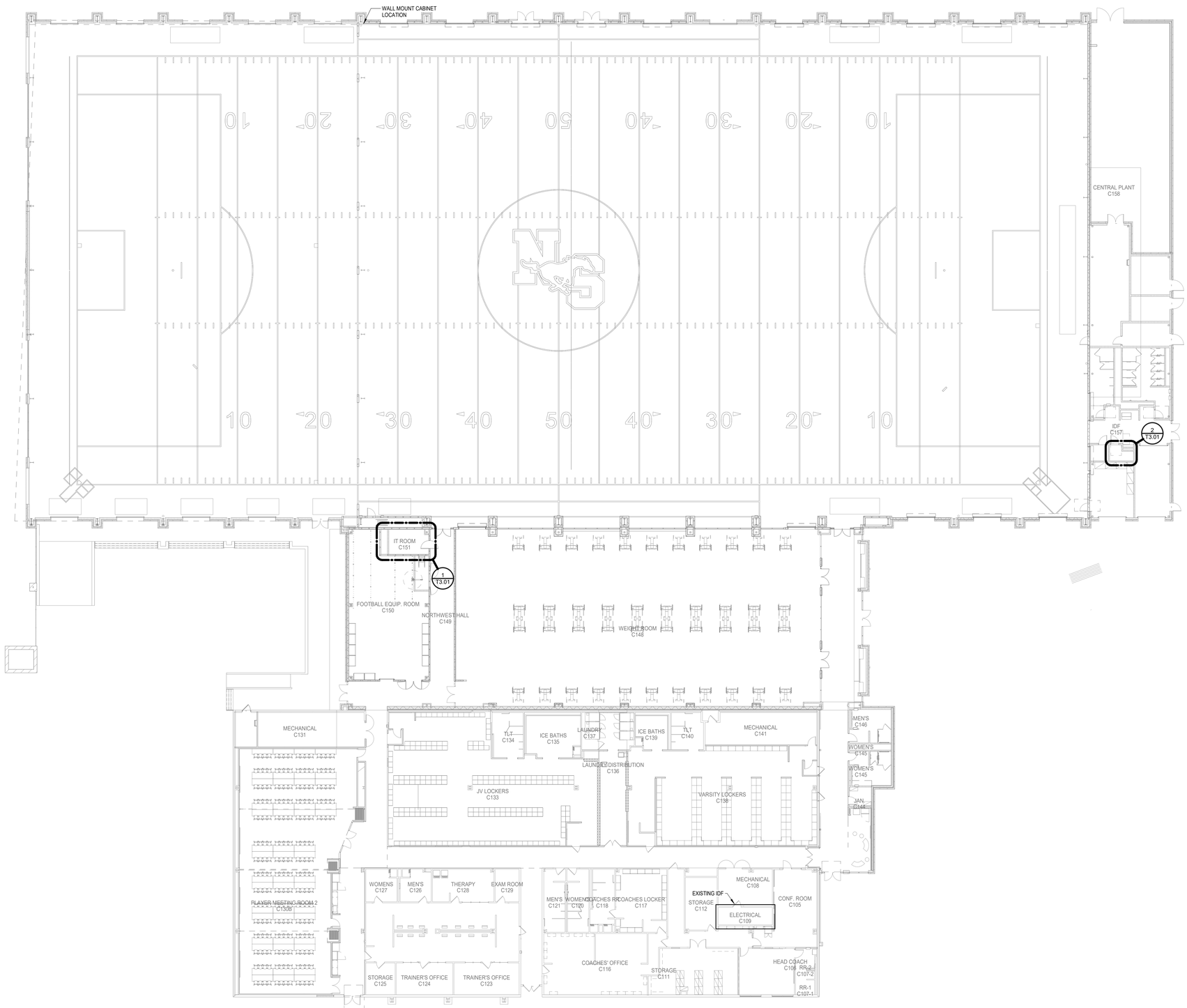
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FIRE ALARM GENERAL NOTES

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N

1 TECHNOLOGY FLOOR PLAN - LEVEL ONE - OVERALL - ALTERNATE

Scale: 1/16" = 1'-0"

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Salas O'Brien Project Number: 2550-01455-00

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10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	MA
Drawn By	AY

PROJECT NO.

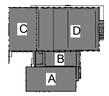
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SHEET TITLE

TECHNOLOGY FLOOR PLAN - LEVEL ONE - OVERALL - ALTERNATE

SHEET NO.

T2.02



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TECHNOLOGY KEYED NOTES

1. PROVIDE ONE (1) CATEGORY 6 DATA CIRCUIT FOR THE BUILDING MANAGEMENT CONTROL SYSTEM. COORDINATE WITH THE CONTRACTOR FOR EXACT LOCATION AND TERMINATION TYPE.

2. CAMERA HOUSING AND MOUNT SHALL BE PAINTED BLACK. FOLLOW MANUFACTURER REPAINTING GUIDE TO ENSURE WARRANTY IS NOT VOIDED.

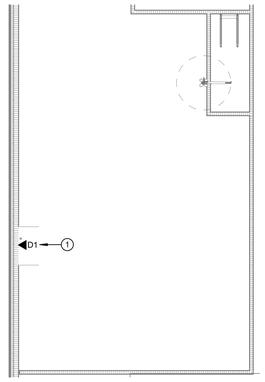
3. COORDINATE EXACT HEIGHT WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN TO CONCEAL OUTLET BEHIND DISPLAY.

FIRE ALARM GENERAL NOTES

A. FIRE ALARM SYSTEM IS PERFORMANCE BASED PER SPECIFICATIONS. CONTRACTOR TO REFERENCE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

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N

2 TECHNOLOGY ENLARGED PLAN - MECHANICAL MEZZANINE - UNIT B

Scale: 1/8" = 1'-0"

N

1 TECHNOLOGY FLOOR PLAN - LEVEL ONE - UNIT B

Scale: 1/8" = 1'-0"

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Salas O'Brien Project Number: 2550-01455-00

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10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 3	10/17/2025
2	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	MA
Drawn By	AY

PROJECT NO.

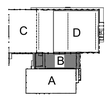
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SHEET TITLE

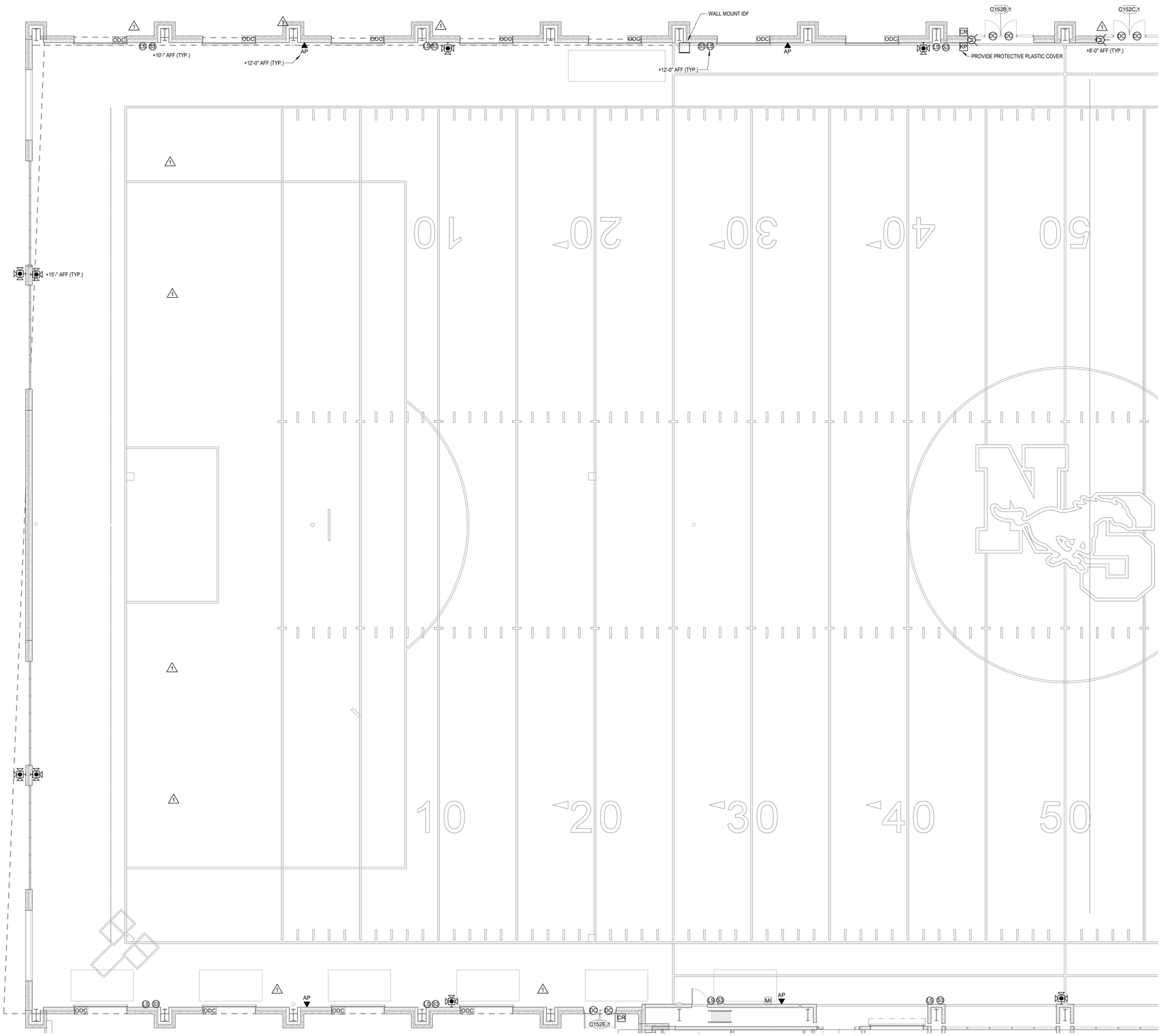
TECHNOLOGY FLOOR PLAN - LEVEL ONE - UNIT B

SHEET NO.

T2.03B



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FIRE ALARM GENERAL NOTES

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N

1 TECHNOLOGY FLOOR PLAN - LEVEL ONE - UNIT C - ALTERNATE

Scale: 1/8" = 1'-0"

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STATE OF TEXAS
ARCHITECT
10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 3	10/17/2025
2	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	MA
Drawn By	AY

PROJECT NO.

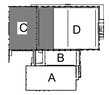
25-0056.00

SHEET TITLE

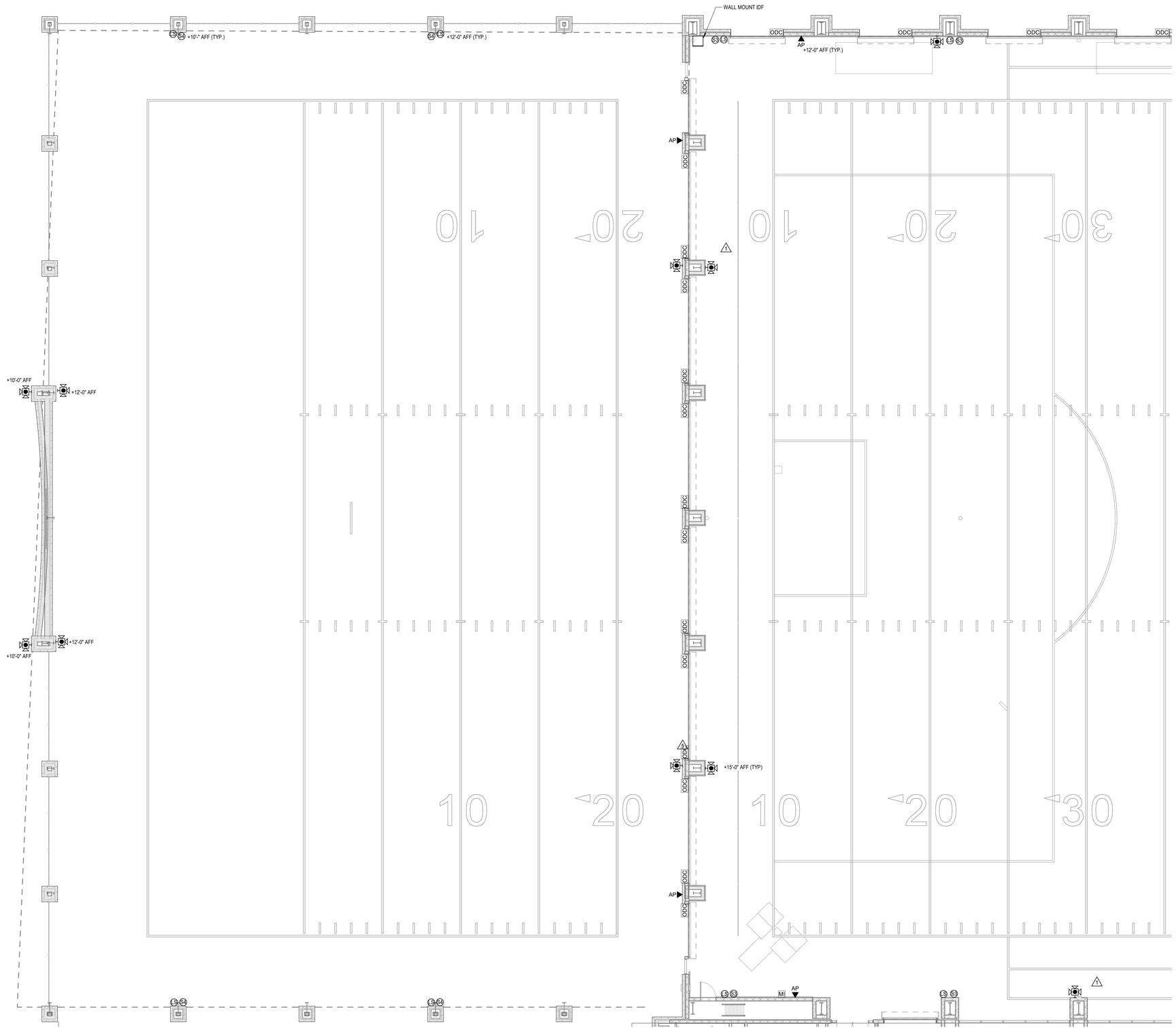
TECHNOLOGY FLOOR PLAN - LEVEL ONE - UNIT C - ALTERNATE

SHEET NO.

T2.04C.1



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N

1 **TECHNOLOGY FLOOR PLAN - LEVEL ONE - UNIT C**
Scale: 1/8" = 1'-0"

FIRE ALARM GENERAL NOTES

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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

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LICENSED
ENGINEER
10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

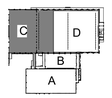
Revision No.		Revision Date
1	Addendum 3	10/17/2025
2	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	MA
Drawn By	AY

PROJECT NO.
25-0056.00

SHEET TITLE
TECHNOLOGY FLOOR PLAN - LEVEL ONE - UNIT C

SHEET NO.
T2.04C



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TECHNOLOGY KEYED NOTES

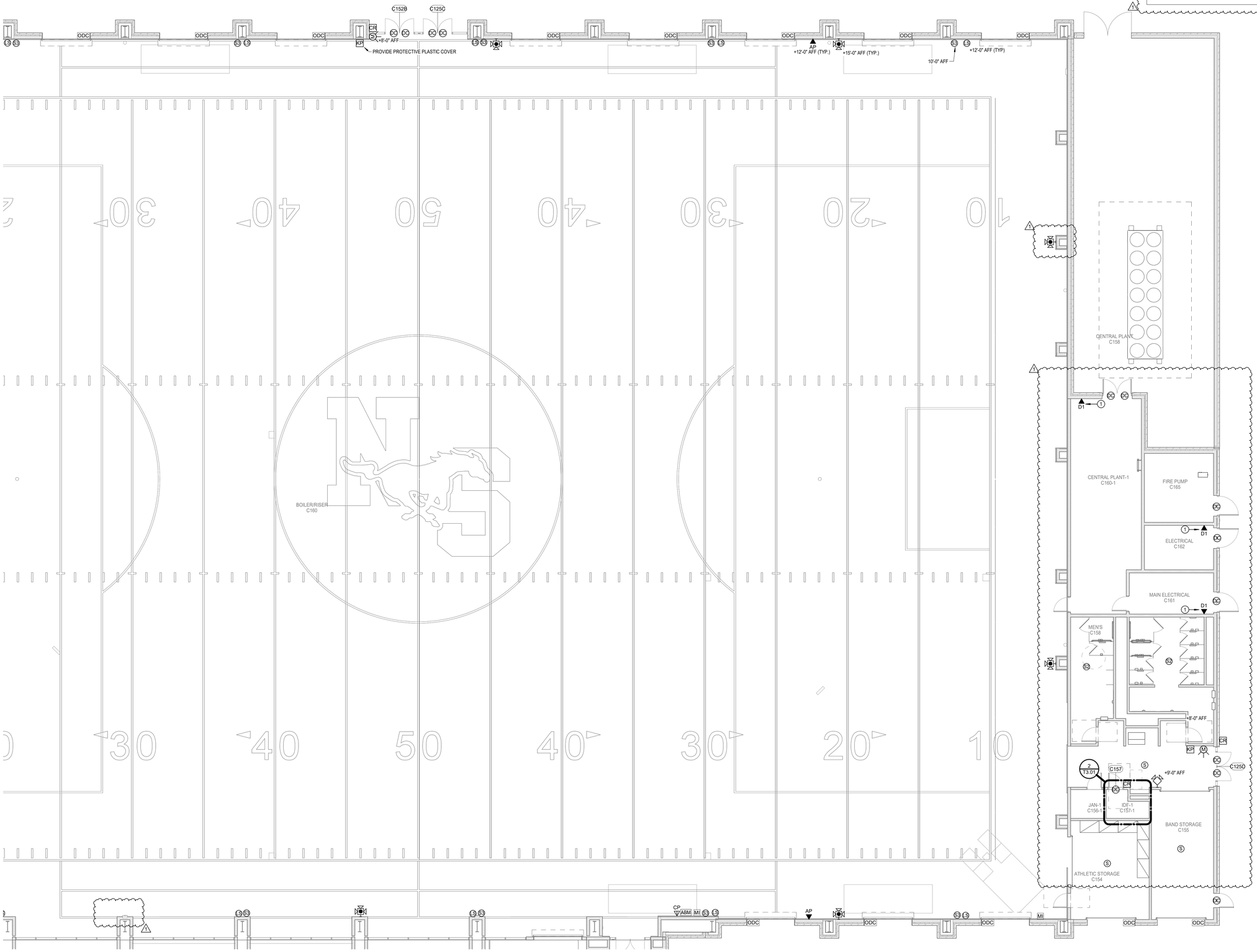
1. PROVIDE ONE (1) CATEGORY 6 DATA CIRCUIT FOR THE BUILDING MANAGEMENT CONTROL SYSTEM. COORDINATE WITH THE CONTRACTOR FOR EXACT LOCATION AND TERMINATION TYPE.

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1 **TECHNOLOGY FLOOR PLAN - LEVEL ONE - UNIT D**
Scale: 1/8" = 1'-0"

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Salas O'Brien Registration: F-4111
Salas O'Brien Project Number: 2550-01455-00

GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

BRADLEY KALMANS
STATE OF TEXAS
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LICENSED
PROFESSIONAL ENGINEER
10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.	Revision Date
1 Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	MA
Drawn By	AY

PROJECT NO.
25-0056.00

SHEET TITLE
TECHNOLOGY FLOOR PLAN - LEVEL ONE - UNIT D

SHEET NO.
T2.05D

C D B A

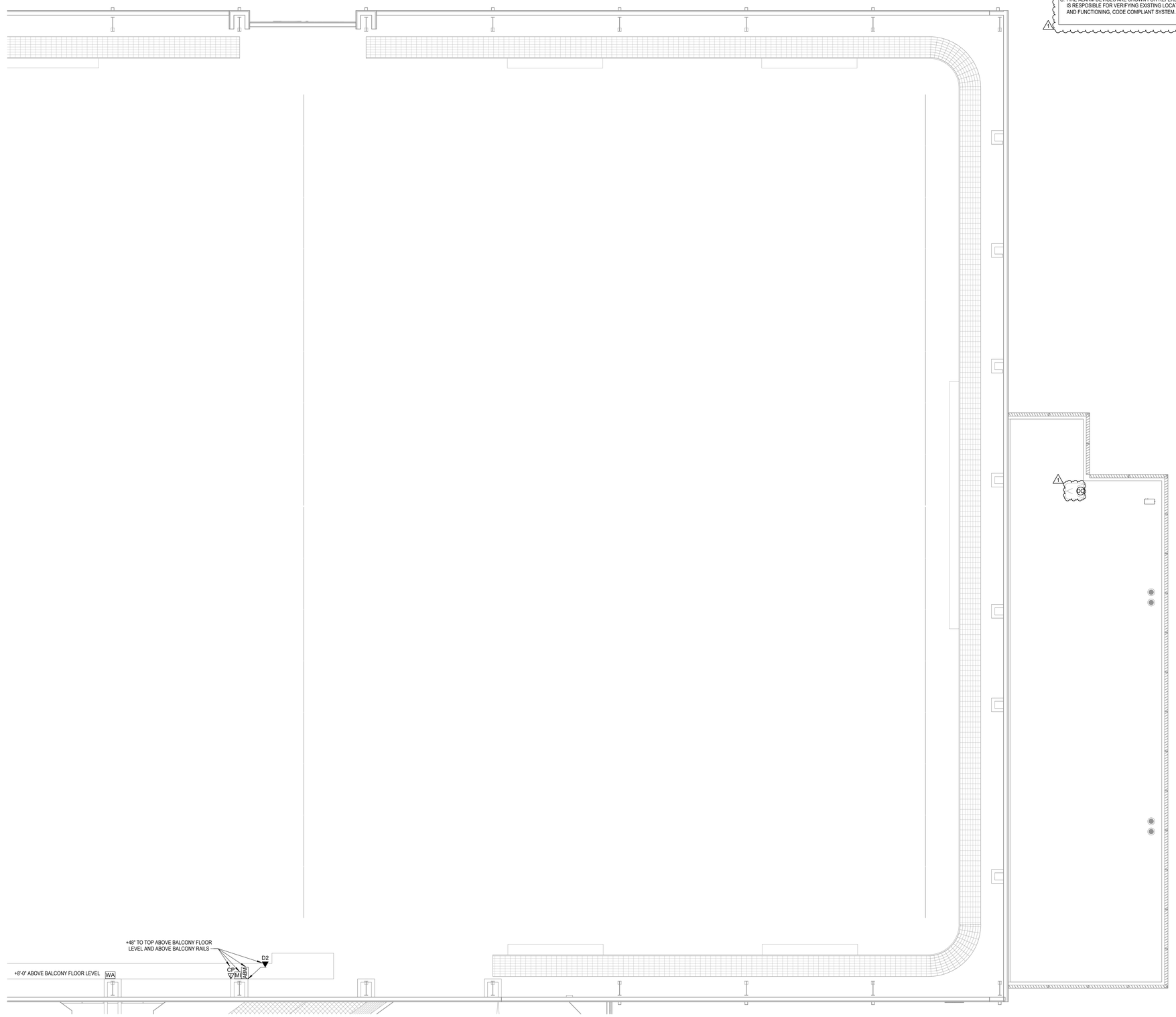
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FIRE ALARM GENERAL NOTES

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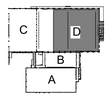
B. A LICENSED FIRE ALARM PLANNING SUPERINTENDENT CERTIFIED TO A MINIMUM LEVEL 3, IN THE SUBFIELD OF FIRE ALARM SYSTEMS THROUGH THE NATIONAL INSTITUTE FOR CERTIFICATION IN ENGINEERING TECHNOLOGIES (NICET), SHALL PROVIDE PLANS AND CALCULATIONS FOR A MANUAL AND AUTOMATIC FIRE DETECTION AND ALARM SYSTEM 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.

C. FIRE ALARM DEVICES ARE SHOWN FOR REFERENCE ONLY. FIRE ALARM CONTRACTOR IS RESPOSIBLE FOR VERIFYING EXISTING LOCATIONS AND PROVIDING A COMPLETE AND FUNCTIONING, CODE COMPLIANT SYSTEM.



N

1 **TECHNOLOGY FLOOR PLAN - LEVEL TWO - UNIT D**
Scale: 1/8" = 1'-0"



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GALENA PARK ISD
HOUSTON, TEXAS

North Shore Multi-Use Indoor Facility

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
10.22.2025

ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	MA
Drawn By	AY

PROJECT NO.
25-0056.00

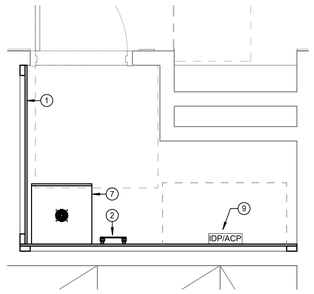
SHEET TITLE
TECHNOLOGY FLOOR PLAN - LEVEL TWO - UNIT D

SHEET NO.
T2.06D

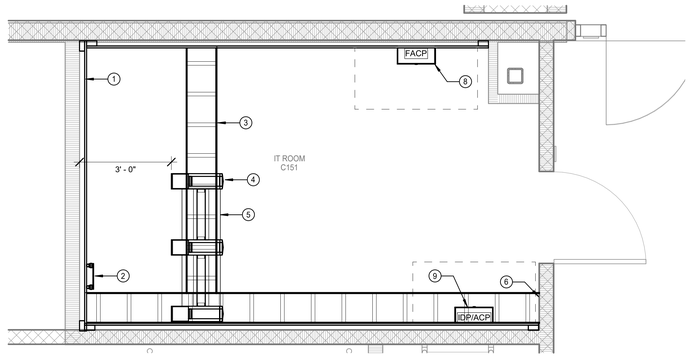
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TECHNOLOGY ENLARGED KEYED NOTES

1. INDICATES THE LOCATION OF A 8' TALL, 3/4" FIRE RATED PLYWOOD. CONTRACTOR TO PROVIDE AND INSTALL PLYWOOD AND ALL REQUIRED MOUNTING HARDWARE. PLYWOOD SHALL BE PAINTED WHITE WITH FIRE RATED PAINT. TYPICAL FOR ALL SHOWN ON DRAWING.
2. INDICATES THE LOCATION OF A NEW WALL MOUNTED TELECOMMUNICATION GROUND BUSBAR (TGBB). CABLING CONTRACTOR TO PROVIDE BUSBAR AND ALL REQUIRED MATERIAL TO MOUNT AT THE LOCATION SHOWN. TGBB TO BE MOUNTED AT +93" A.F.F.
3. PROVIDE AND INSTALL A 12" WIDE, UNIVERSAL LADDER TRAY AND ALL REQUIRED MOUNTING HARDWARE. LADDER TRAY SHALL BE BLACK IN COLOR. TYPICAL FOR ALL SHOWN ON ENTIRE PROJECT.
4. PROVIDE AND INSTALL ONE (1) 2-POST, FLOOR MOUNTED, 7' RELAY RACK (BLACK IN CONNECTED LOCATIONS OF THE RACK TO ENSURE THAT ALL PIECES OF THE RACK ARE COMPLETELY BONDED. SCRAPING PAINT FROM RACKS TO MAKE A BOND WILLNOT BE ACCEPTED.
5. PROVIDE AND INSTALL ONE (1) 7'X6", FRONT AND REAR MANAGED, VERTICAL CABLE MANAGER (BLACK IN COLOR).
6. PROVIDE AND INSTALL A MINIMUM OF THREE (3) EZ-PATH THRU-WALL PENETRATION SLEEVES WITH MULTI-GANG WALLPLATE BRACKET SYSTEM AT INDICATED LOCATION. PROVIDE ADDITIONAL AS REQUIRED TO MAINTAIN A MAXIMUM OF 40% FILL RATIO, PLUS ONE (1) ADDITIONAL FOR SPARE.
7. LOCATION OF WALL MOUNT CABINET. REFER TO SPECIFICATION FOR MORE INFORMATION.
8. LOCATION OF NEW FIRE ALARM CONTROL PANEL AND ALL RELATED ACCESSORIES. PROVIDE (1) FIRE PULL STATION AT THIS LOCATION.
9. ALL EXISTING AND NEW INTRUSION DETECTION AND ACCESS CONTROL DEVICES AT THIS BUILDING SHALL BE CONNECTED TO NEW COMBINATION ACCESS CONTROL AND INTRUSION DETECTION PANELS.



N 2 **TECHNOLOGY ENLARGED PLAN - IDF C157**
Scale: 1/2" = 1'-0"



N 1 **TECHNOLOGY ENLARGED PLAN - AV/IT ROOM C151**
Scale: 1/2" = 1'-0"

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ISSUED: OCTOBER 1, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 3	10/17/2025
2	Addendum 4	10/22/2025

Director	Monika Castillo
Proj. Arch.	Tam Quang
Designer	MA
Drawn By	AY

PROJECT NO.
25-0056.00

SHEET TITLE
TECHNOLOGY ENLARGED PLAN

SHEET NO.
T3.01

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