Project No. 24-010.00 March 14, 2025

03/14/2025

ADDENDUM NO. 2
TO THE
DRAWINGS AND PROJECT MANUAL
FOR
COOK-LABAY-TRUITT MS RENOVATIONS
CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

VLK
20445 State Highway 249, Suite 350
Houston, TX 77070
281.671.2300 voice
vlkarchitects.com

2.1 GENERAL

A. This addendum modifies the drawings and project manual, dated February 24, 2025, as noted within and shall become part of the Contract Documents.

B. Each holder of proposal documents registered with the Architect 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.

VOLUME 1

2.2 DOCUMENT 00 01 10 - TABLE OF CONTENTS

A. Page 00 01 10 – 4, Add the following: “08 33 23 - Overhead Coiling Doors”

B. Page 00 01 10 – 6, Add the following: “28 46 00 - Fire Detection and Alarm System”

C. Page 00 01 10 – 7, Delete the following “DIVISIONS 42 through 49 - Not used.” And insert the following:

“**DIVISION 41 - MATERIAL PROCESSING AND HANDLING EQUIPMENT**

Section 41 34 23.33 - Spray Painting Booth

DIVISIONS 42 - PROCESS HEATING, COOLING, AND DRYING EQUIPMENT through DIVISION 49 - Not used.”

2.3 DOCUMENT AC - BASE PROPOSAL AND ALTERNATE PROPOSAL

A. Delete this document previously re-issued in Addendum No. 1 in its entirety and insert attached revised document.

VOLUME 2

2.4 DOCUMENT 00 01 10 - TABLE OF CONTENTS

A. Page 00 01 10 – 4, Add the following: “08 33 23 - Overhead Coiling Doors”

B. Page 00 01 10 – 6, Add the following: “28 46 00 - Fire Detection and Alarm System”

C. Page 00 01 10 – 7, Delete the following “DIVISIONS 42 through 49 - Not used.” And insert the following:

“**DIVISION 41 - MATERIAL PROCESSING AND HANDLING EQUIPMENT**

Section 41 34 23.33 - Spray Painting Booth

DIVISIONS 42 - PROCESS HEATING, COOLING, AND DRYING EQUIPMENT through DIVISION 49 - Not used.”

2.5 SECTION 08 33 23 - OVERHEAD COILING DOORS

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

2.6 SECTION 08 71 00 - DOOR HARDWARE – COOK MIDDLE SCHOOL

A. Delete this section previously re-issued in Addendum No. 1 in its entirety and insert attached revised section.

2.7 SECTION 08 71 02 - DOOR HARDWARE – TRUITT MIDDLE SCHOOL

A. Delete this section previously re-issued in Addendum No. 1 in its entirety and insert attached revised section.

2.8 SECTION 11 66 00 - ATHLETIC EQUIPMENT

A. Page 11 66 00 – 1, Paragraph 2.2, A, 1; Delete Sub-Paragraph a in its entirety and insert the following:
“a. Backstop: Model 90617-000-W, “Dual Post Forward Fold Rear Braced” ceiling suspended.”

B. A. Page 11 66 00 – 1, Paragraph 2.2, A; Add the following Sub-Paragraph:
“2. Type B:
a. Backstop: Model 90617-000-W, “Dual Post Forward Fold Front Braced” ceiling suspended.
b. Backboard: No. 00216 rectangular fiberglass backboard (3'-6" x 6'-0"), steel frame.
c. Goal: No. 223 break-away power-flex goal with mounting hardware and net.
d. Motorized: No. 712 3/4-HP motor with 10797 “Saf-Strap”.
e. Mounting: Furnish framing accessories and associated hardware for a complete and rigid installation.”

2.9 SECTION 28 46 00 - FIRE DETECTION AND ALARM SYSTEM

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

2.10 SECTION 41 34 23.33 - SPRAY PAINTING BOOTH

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

2.11 THEATRICAL ADDENDUM ITEMS

A. Attached document by WJHW shall hereby become a part of this addendum.

2.12 REVISED DRAWINGS

A. Sheet Nos. A11.11, A13.11, A14.10, A15.01, A15.10, A15.21, A15.22, A18.02, A19.20, A21.11, A22.01B, A22.01D.2, A22.11, A22.11B, A22.11D1, A23.11, A25.01, A25.10, A25.21, A25.22, A25.23, A26.11, A28.01, A28.02, A29.20, A29.01, A31.11, A32.11D.2, A34.10, A35.10, A35.20, A39.20, S20.30, M10.03, M12.03, M13.01, M15.01, M21.01, M21.02, M23.01, M25.01, E23.02, E24.01, P30.02, T12.03, T32.03 through T32.06, AV22-11D.1, AV27.01 and TL22-11D.1, dated March 14, 2025 and attached hereto, are revised drawings and are hereby made a part of this addendum.

END OF ADDENDUM NO. 2

FORM AC
COMPETITIVE SEALED PROPOSAL FORM - BASE PROPOSAL

2024 Cook, Labay & Truitt MS Renovations
Cypress-Fairbanks Independent School District
Cypress-Fairbanks I.S.D. Proposal Number: 24-02-5744-R-RFP
Attn: Mr. Jesse Clayburn, Asst. Superintendent of Facilities & Construction

Submitted by:_____

Date:_____ Phone No.:_____

To: Board of Trustees
Cypress-Fairbanks Independent School District
Facilities and Construction
11430-B Perry Road
Houston, Texas 77064

Having examined Proposal and Contract Documents prepared by **VLK Architect** dated **February 24, 2025,** and having examined site conditions, the undersigned proposes to furnish all labor, equipment and materials and perform all work for the completion of the above-named project for the sum indicated below.

In submitting his Proposal, the undersigned agrees to the following:

1. Hold Base Proposal open for acceptance sixty (60) days.
2. Accept right of Owner to reject any or all proposals, to waive formalities and to accept proposal which Owner considers most advantageous.
3. Enter into and execute the contract, if awarded, for the Base Proposal and accepted Alternate Proposals.
4. Complete work in accordance with the Contract Documents within the stipulated contract time.
5. By signing, the undersigned affirms that, to the best of his knowledge, the Proposals have been arrived at independently and is submitted without collusion with anyone to obtain information or gain any favoritism that would in any way limit competition or give an unfair advantage over respondents in the award of this proposal.

I. BASE PROPOSAL

A. Undersigned agrees to complete the Work for the lump sum amount of:

_____Dollars $_____
(Amount written in words governs) (Amount in figures)

II. ALLOWANCES

Undersigned certifies that the allowances specified in Section 01 21 00 are included in the Base Proposal and agrees that unexpended balance of allowance sums will revert to Owner in the final settlement of the contract.

III. CONTRACT TIME

By submittal of this proposal, the undersigned stipulates that the Base Proposal includes all costs necessary to attain Substantial Completion of the Work on or before the date stipulated in AIA Document A101™–2017.

IV. ADDENDA

Undersigned acknowledges receipt of Addenda Nos._____ dated

_____, _____.

V. CHANGES IN THE WORK

Undersigned understands that changes in the work shall be performed in accordance with the Supplementary Conditions.

VI. LIQUIDATED DAMAGES

By submittal of this proposal, the undersigned stipulates an agreement that if Substantial Completion of the Work is not attained on or before the date stipulated in AIA Document A101™–2017, the undersigned and his Surety shall be liable for and shall pay the Owner the sums stipulated as Liquidated Damages as defined in AIA Document A201™–2017.

It is understood that the right is reserved by the Owner to reject any or all proposals, or waive any informalities in the proposal process.

_____
Authorized Signature

_____
Printed Name

_____
Title

(Seal, if a Corporation)
State whether Corporation,
Partnership or Individual

_____
Name of Contracting Firm

_____
Address

_____
Telephone

_____
Date

FORM AC
COMPETITIVE SEALED PROPOSAL FORM - ALTERNATE PROPOSALS

2024 Cook, Labay & Truitt MS Renovations
Cypress-Fairbanks Independent School District
Cypress-Fairbanks I.S.D. Proposal Number: 24-02-5744-R-RFP
Attn: Mr. Jesse Clayburn, Asst. Superintendent of Facilities & Construction

Submitted by:_____

Date:_____ Phone No.:_____

To: Board of Trustees
Cypress-Fairbanks Independent School District
Facilities and Construction
11430-B Perry Road
Houston, Texas 77064

Having examined Proposal and Contract Documents prepared by VLK **Architect**, dated **February 24, 2025 ,** and having examined site conditions, the undersigned proposes to furnish all labor, equipment and materials and perform all work for the completion of the above-named project for the sum indicated below.

In submitting his Proposal, the undersigned agrees to the following:

1. Hold Alternate Proposal open for acceptance one hundred twenty (120) days.
2. Accept right of Owner to reject any or all proposals, to waive formalities and to accept proposal which Owner considers most advantageous.
3. Enter into and execute the contract, if awarded, for the Base Proposal and accepted Alternate Proposals.
4. Complete work in accordance with the Contract Documents within the stipulated contract time.
5. By signing, the undersigned affirms that, to the best of his knowledge, the Proposals have been arrived at independently and is submitted without collusion with anyone to obtain information or gain any favoritism that would in any way limit competition or give an unfair advantage over respondents in the award of this proposal.

I. ALTERNATES

If the Owner accepts any or all of the Alternates, the undersigned agrees to modify the Base Proposal as stipulated below:

A. Alternate Number 1 – ***Base Bid Adjustment***

ADD/DEDUCT_____ Dollars $_____
(Amount written in words governs) (Amount in figures)

II. UNIT PRICES

If the Owner accepts any or all of the Alternates, the undersigned agrees to add or subtract the following units of work:

UNIT PRICE 1: ELECTRICAL DUPLEX RECEPTACLE $_____each

UNIT PRICE 2: DATA DROP $_____each

UNIT PRICE 3: VOICE DROP $_____each

THIS PAGE OF PROPOSAL FORM MUST BE SUBMITTED BY 3:00 PM, March 20,2025

UNIT PRICE 4: DATA CABLING TO TEACHER STATION $_____each

UNIT PRICE 5: 4 ½" THICK CONCRETE WALK PER SQUARE FOOT $_____SF

UNIT PRICE 6: 6" THICK CONCRETE DRIVE PER SQUARE FOOT $_____SF

UNIT PRICE 7: 7" THICK CONCRETE DRIVE PER SQUARE FOOT $_____SF

UNIT PRICE 8: LIFE SAFETY DEVICES (including all associated cabling and programming)

1. Exterior Horn to Speaker $_____ each
2. Interior Horn to Speaker $_____ each
3. Interior Visual Strobe $_____ each
4. Interior Speaker/Visual Strobe $_____ each
5. Smoke Detector $_____ each
6. Heat Detector $_____ each
7. Manual Pull Station $_____ each
8. Stopper 2 Pull Station Cover $_____ each
9. Annunciator Panel $_____ each
10. Duct Detector $_____ each
11. Relay $_____ each
12. Supervisory $_____ each
13. Waterflow $_____ each
14. Amplifier $_____ each
15. Remote Power Supply $_____ each

UNIT PRICE 9: GRAPHIC SIGNS

1. Sign Type A $_____/ each
2. Sign Type B $_____/ each
3. Sign Type C $_____/ each

UNIT PRICE 10 : EXIT SIGN $_____each

UNIT PRICE 11: ROOF SHEATHING $_____ 4x8 sheet

UNIT PRICE 12: IR FILM $_____/SF

UNIT PRICE 13: CEILING TILE REPLACEMENT $_____ 4SF

THIS PAGE OF PROPOSAL FORM MUST BE SUBMITTED BY 3:00 PM, March 20,2025

UNIT PRICE 14: INFRARED ROOF MOISTRE SCAN COOK MS & LABAY MS
$_____ price for scan

UNIT PRICE 15: REMOVE EXISTING WET INSULATION AND REPLACE WITH NEW – COOK MS & LABAY MS $_____SF

UNIT PRICE 16: ASBESTOS ABATEMENT COMPONENTS

Identified ACBM at Cook, Labay, and Truitt Middle School Package

No.	Unit Price Description	Add ($/Figures)	Deduct ($/Figures)	Unit of Measure
ASB-1	Price per square foot for the proper removal, transportation, and disposal of interior **ACBM black damp proofing mastic behind brick veneer.** All work to be completed in compliance with AHERA and TAHPR regulations. – Full Containment	_____	_____	Square Foot
ASB-2	Price per square foot for the proper removal, transportation, and disposal of exterior **ACBM through-wall flashing with black damp proofing mastic behind brick veneer.** All work to be completed in compliance with NESHAP regulations.	_____	_____	Square Foot
ASB-3	Price per square foot for the proper removal, transportation, and disposal of exterior **ACBM black damp proofing mastic behind brick veneer.** All work to be completed in compliance with NESHAP regulations.	_____	_____	Square Foot
ASB-4	Price per linear foot for the proper removal, transportation, and disposal of **ACBM pipe insulation with mastic coating** via glovebag removal method including all necessary regulated work area preparation and PPE	_____	_____	Linear Foot
ASB-5	Price per linear foot for the proper removal, transportation, and disposal of **ACBM pipe insulation with mastic coating**. All work to be completed in compliance with AHERA and TAHPR regulations. – Full Containment	_____	_____	Linear Foot
ASB-6	Price per square foot for the proper removal, transportation, and disposal of **ACBM black mirror mastic.** All work to be completed in compliance with AHERA and TAHPR regulations.	_____	_____	Square Foot
ASB-7	Price per square foot for the proper removal, transportation, and disposal of exterior **ACBM black glazing putty around windows.** All work to be completed in compliance with NESHAP regulations.	_____	_____	Square Foot
ASB-8	Price per square foot for the proper removal, transportation, and disposal of **ACBM vinyl floor tile and/or black mastic.** All work to be completed in compliance with AHERA and TAHPR regulations. – Full Containment	_____	_____	Square Foot
ASB-9	Price per unit for the proper removal, transportation, and disposal of assumed **ACBM fire doors**. All work to be completed in compliance with AHERA and TAHPR regulations. (Component Removal)	_____	_____	Unit

III. CONTRACTOR'S PROJECT TEAM MEMBERS

The undersigned proposes the following project team members (include resumes):

Project Manager _____

Superintendent _____

Asst. Superintendent(s) _____

Project Engineer _____

It is understood that the right is reserved by the Owner to reject any or all proposals, or waive any informalities in proposal process.

_____
Authorized Signature

_____
Printed Name

_____
Title

(Seal, if a Corporation)
State whether Corporation,
Partnership or Individual

_____
Name of Contracting Firm

_____
Address

_____
Telephone

_____
Date

END OF FORM

SECTION 08 33 23

OVERHEAD COILING DOORS

03/14/2025

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Coiling doors.

B. Related Sections:
1. Section 05 50 00 - Metal Fabrications: steel frames for coiling door openings.
2. Section 08 71 00 - Door Hardware: cylinders.

1.2 REFERENCES

A. ANSI/ICC/NSSA Standard for the Design and Construction of Storm Shelters:
1. ICC 500 or ANSI/ICC 500: Appropriate year of ICC 500 shall be year referenced in the applicable IBC "Referenced Standards" Chapter.

1.3 SUBMITTALS

A. General: Submit in accordance with SECTION 01 33 23 - SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

B. Shop Drawings: Include installation details and operating procedures.

1.4 QUALITY ASSURANCE

A. Wind Load: Exterior coiling doors shall be constructed to safely resist uniform pressure (velocity pressure) of 22 psf.

B. Labeled Construction: Doors required by schedule to be labeled shall be manufactured in accordance with specifications and procedures for doors tested and rated by Underwriter's Laboratories, Inc. Metal UL classification markers shall be attached to these doors.

PART 2 - PRODUCTS

2.1 COILING DOORS - MOTORIZED

A. Provide face-of-wall mounted coiling door. Product/manufacturer; one of the following:
ESD10; Cornell/Cookson, LLC.
610 Series; Overhead Door Corp.
1. Operation: Motor operator.
a. Motor:
1) Provide high starting torque motor, including motor/gearing cover and spring adjustor cover, of the size and design as recommended by door manufacturer, reduction gearing, solenoid brake, limit switches, emergency hand chain with electrical interlock, magnetic relay contactor, overload protection, prewiring to terminal block, stoplock safety bearing to prevent doors from falling in event of motor damage.
2) 208 V, 3 phase, 60 Hz.
3) Provide key operated control switch.
4) Motor operator shall be equipped with monitored, wireless safety edge in conjunction with the door operator control.
2. Curtains:
a. Interlocking slats cold roll formed of galvanized steel.
b. End of alternate slats to be fitted with malleable iron endlocks.
c. Slat design shall satisfy a windload of 20 psf.
d. Curtain to be reinforced with bottom bar consisting of two angles of galvanized steel. Install weatherseal on bottom of bars.

3. Spring Counterbalance:
   a. House in steel pipe of diameter and wall thickness to restrict maximum deflection to 0.03" per foot of door width.
   b. Springs to be helical torsion type.
   c. Spring tension to be adjustable by means of external adjustment wheel.
4. Bracket Plates: ¼" thick min. steel formed to fit contour of end bracket.
5. Guides:
   a. Structural [galvanized steel] [aluminum] [stainless steel] angles of 3/16" min. thickness.
   b. Fit guides head with two flexible weathering strips (both sides). Door shall not rattle in wind.
6. Hoods:
   a. Form sheet metal hood to entirely enclose coiled curtain and operating mechanism at opening head when not concealed in ceiling. Contour to fit end brackets to which hood is attached. Roll and reinforce top and bottom edges for stiffness. Form closed ends for surface-mounted hoods and fascia for any portion of between-jamb mounting that projects beyond wall face.
   b. Fabricated of galvanized steel sheet metal no lighter than 24 gage, laterally reinforced.
   c. Provide intermediate hood supports for hoods exceeding 16'-0".
   d. Fit with internal neoprene header weather baffle.
   e. Fit entire length of hood with internal 4” brush seal with aluminum retainer to act as wind baffle. Door shall not rattle in wind.
7. Locks:
   a. Provide cylinder locks on bottom bars less standard cylinder for key operation. Cylinder locking for motor operated doors to include electrical interlock to prevent operation before door is unlocked.
8. Finish:
   a. Galvanized Surfaces:
      1) Base Coat: ASTM A 653 galvanized base coating treated with dual process rinsing agents in preparation for chemical bonding, gray baked-on base coat and gray baked-on polyester finish coat.
      2) Finish Coat: Zirconium treatment followed by baked-on polyester powder coat, with color as selected by Architect; minimum 2.5 mils cured film thickness; ASTM D-3363 pencil hardness: H or better.
   b. Ungalvanized Surfaces: Shop coat of rust inhibiting metallic primer.
9. Weatherstripping: Door to be fully weatherstripped at sill, hood, and at guides.

2.2 COILING DOORS – MANUAL OPERATION

A. Provide face-of-wall mounted coiling door. Product/manufacturer; one of the following:
   ESD10; Cornell/Cookson, LLC.
   610 Series; Overhead Door Corp.

1. Operation: Manual push-up
2. Curtains:
   a. Interlocking slats cold roll formed of galvanized steel.
   b. End of alternate slats to be fitted with malleable iron endlocks.
   c. Slat design shall satisfy a windload of 20 psf.
   d. Curtain to be reinforced with bottom bar consisting of two angles of galvanized steel. Install weatherseal on bottom of bars.
3. Spring Counterbalance:
   a. House in steel pipe of diameter and wall thickness to restrict maximum deflection to 0.03" per foot of door width.
   b. Springs to be helical torsion type.
   c. Spring tension to be adjustable by means of external adjustment wheel.
4. Bracket Plates: ¼" thick min. steel formed to fit contour of end bracket.
5. Guides:
   a. Structural [galvanized steel] [aluminum] [stainless steel] angles of 3/16" min. thickness.
   b. Fit guides head with two flexible weathering strips (both sides). Door shall not rattle in wind.
6. Hoods:
   a. Form sheet metal hood to entirely enclose coiled curtain and operating mechanism at opening head when not concealed in ceiling. Contour to fit end brackets to which hood is attached. Roll and reinforce top and bottom edges for stiffness. Form closed ends for surface-mounted hoods and fascia for any portion of between-jamb mounting that projects beyond wall face.
   b. Fabricated of galvanized steel sheet metal no lighter than 24 gage, laterally reinforced.
   c. Provide intermediate hood supports for hoods exceeding 16'-0".
   d. Fit with internal neoprene header weather baffle.
   e. Fit entire length of hood with internal 4” brush seal with aluminum retainer to act as wind baffle. Door shall not rattle in wind.

7. Locks:
   a. Provide slide bolts suitable for padlocks for manually operated doors.
8. Finish:
   a. Galvanized Surfaces:
      1) Base Coat: ASTM A 653 galvanized base coating treated with dual process rinsing agents in preparation for chemical bonding, gray baked-on base coat and gray baked-on polyester finish coat.
      2) Finish Coat: Zirconium treatment followed by baked-on polyester powder coat, with color as selected by Architect; minimum 2.5 mils cured film thickness; ASTM D-3363 pencil hardness: H or better.
   b. Ungalvanized Surfaces: Shop coat of rust inhibiting metallic primer.
9. Weatherstripping: Door to be fully weatherstripped at sill, hood, and at guides.

PART 3 - XECUTION

3.1 INSTALLATION

A. Coiling doors shall be installed by skilled mechanics supervised by the manufacturer's authorized representative.

B. Erect the doors, guides, and accessories in a rigid substantial manner, straight and plumb, and with horizontal lines level.

3.2 TESTING AND ADJUSTING

A. Upon completion of installation, put all items through at least ten operating cycles. Make required adjustments and assure that components are in optimum operating condition.

END OF SECTION

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SECTION 08 71 00

DOOR HARDWARE – COOK MIDDLE SCHOOL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes commercial door hardware for the following:

1. Swinging doors.
2. Other doors to the extent indicated.

B. Door hardware includes, but is not necessarily limited to, the following:

1. Mechanical door hardware.
2. Electromechanical door hardware.
3. Cylinders specified for doors in other sections.

C. Related Sections:

1. Division 08 Section “Door Hardware Schedule”.
2. Division 08 Section “Hollow Metal Doors and Frames”.
3. Division 08 Section “Interior Aluminum Doors and Frames”.
4. Division 08 Section “Plastic Laminate Faced Wood Doors”.

D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
2. ICC/IBC - International Building Code.
3. NFPA 70 - National Electrical Code.
4. NFPA 80 - Fire Doors and Windows.
5. NFPA 101 - Life Safety Code.
6. NFPA 105 - Installation of Smoke Door Assemblies.
7. State Building Codes, Local Amendments.

E. Standards: All hardware specified herein shall comply with the following industry standards:

1. ANSI/BHMA Certified Product Standards - A156 Series
2. UL10C – Positive Pressure Fire Tests of Door Assemblies

1.3 SUBMITTALS

A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.

B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware

Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."

2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.

3. Content: Include the following information:

    a. Type, style, function, size, label, hand, and finish of each door hardware item.
    b. Manufacturer of each item.
    c. Fastenings and other pertinent information.
    d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
    e. Explanation of abbreviations, symbols, and codes contained in schedule.
    f. Mounting locations for door hardware.
    g. Door and frame sizes and materials.
    h. Warranty information for each product.

4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

C. Shop Drawings: Details of electrified access control hardware indicating the following:

1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:

    a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
    b. Complete (risers, point-to-point) access control system block wiring diagrams.
    c. Wiring instructions for each electronic component scheduled herein.

2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.

D. Proof of Certification: Provide copy of manufacturer(s) official certification or accreditation document indicating proof of status as a qualified installer of Windstorm assemblies.

E. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.

F. Informational Submittals:

1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

G. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Submittals.

1.4 QUALITY ASSURANCE

A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.

B. Installer Qualifications: A minimum 3 years documented experience hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

C. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

D. Integrated Wiegand, Wireless, and IP-Enabled Access Control Products Supplier Qualifications: Integrated access control products and accessories are required to be supplied and installed through current members of the ASSA ABLOY "Authorized Channel Partner" (ACP) and "Certified Integrator" (CI) programs. Suppliers are to be factory trained, certified prior to project bid, and a direct purchaser of the specified product. Installers are to be factory trained, certified prior to project bid, and are responsible for commissioning, servicing, and warranting the installed equipment specified for the project.

E. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.

1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated

F. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.

G. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:

1. Function of building, purpose of each area and degree of security required.
2. Plans for existing and future key system expansion.
3. Requirements for key control storage and software.
4. Installation of permanent keys, cylinder cores and software.
5. Address and requirements for delivery of keys.

H. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.

1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
3. Review sequence of operation narratives for each unique access controlled opening.
4. Review and finalize construction schedule and verify availability of materials.
5. Review the required inspecting, testing, commissioning, and demonstration procedures

I. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedule.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site.

B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

C. Deliver, as applicable, permanent keys, cylinders, cores and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.6 COORDINATION

A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

B. Door Hardware and Electrical Connections: Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.

C. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.7 WARRANTY

A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:

1. Structural failures including excessive deflection, cracking, or breakage.
2. Faulty operation of the hardware.
3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
4. Electrical component defects and failures within the systems operation.

C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.

D. Special Warranty Periods:

1. Lifetime for mortise locks and latches.
2. Five years for exit hardware.
3. Ten years for electric latch retraction exit motors
4. Twenty-five years for manual surface door closer bodies.
5. Two years for electromechanical door hardware.
6. Lifetime for SN200 readers.

1.8 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

1.9 OWNER STOCK – See Attic Stock at the end of Hardware Schedule.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.

B. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:

C. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.

D. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.2 HANGING DEVICES

A. Hinges: ANSI/BHMA A156.1 certified butt hinges with number of hinge knuckles as specified in the Door Hardware Sets.

1. Quantity: Provide the following hinge quantity, unless otherwise indicated:

a. Two Hinges: For doors with heights up to 60 inches.
b. Three Hinges: For doors with heights 61 to 90 inches.
c. Four Hinges: For doors with heights 91 to 120 inches.
d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.

2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:

a. Widths up to 3’0”: 4-1/2” standard or heavy weight as specified.
b. Sizes from 3’1” to 4’0”: 5” standard or heavy weight as specified.

3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:

a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.

4. Hinge Options: Comply with the following where indicated in the Hardware Sets or on Drawings:

a. Non-removable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the all out-swinging lockable doors.

5. Acceptable Manufacturers:

a. Hager Companies (HA).
b. McKinney Products (MK).
c. Stanley Hardware (ST).

B. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 certified continuous geared hinge. with minimum 0.120-inch thick extruded 6060 T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.

1. Acceptable Manufacturers:

a. McKinney Products (MK).
b. Pemko Manufacturing (PE).
c. Stanley Hardware (ST).

2.3 POWER TRANSFER DEVICES

A. Concealed Quick Connect Electric Power Transfers: Provide concealed wiring pathway housing mortised into the door and frame for low voltage electrified door hardware. Furnish with Molex™ standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.

1. Acceptable Manufacturers:

    a. Pemko Manufacturing (PE) – EL-CEPT Series.
    b. Securitron (SU) - EL-CEPT Series.
    c. Stanley Hardware (ST) EPT-12C Series.

B. Electric Door Wire Harnesses: Provide electric/data transfer wiring harnesses with standardized plug connectors to accommodate up to twelve (12) wires. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Provide sufficient number and type of concealed wires to accommodate electric function of specified hardware. Provide a connector for through-door electronic locking devices and from hinge to junction box above the opening. Wire nut connections are not acceptable. Determine the length required for each electrified hardware component for the door type, size and construction, minimum of two per electrified opening.

1. Provide one each of the following tools as part of the base bid contract:
    a. McKinney Products (MK) - Electrical Connecting Kit: QC-R001.
    b. McKinney Products (MK) - Connector Hand Tool: QC-R003.

2.4 DOOR OPERATING TRIM

A. Flush Bolts and Surface Bolts: ANSI/BHMA A156.3 and A156.16, Grade 1, certified.

1. Manual flush bolts to be furnished with top rod of sufficient length to allow bolt location approximately six feet from the floor.
2. Furnish dust proof strikes for bottom bolts.
3. Surface bolts to be minimum 8” in length and U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable.
4. Provide related accessories (mounting brackets, strikes, coordinators, etc.) as required for appropriate installation and operation.

5. Acceptable Manufacturers:

    a. Ives (IV).
    b. Rockwood Manufacturing (RO).
    c. Trimco (TC).

B. Door Push Plates and Pulls: ANS/BHMA A156.6 certified door pushes and pulls of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.

1. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.
2. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.
3. Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
4. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets.

5. Acceptable Manufacturers:

    a. Ives (IV).
    b. Rockwood Manufacturing (RO).
    c. Trimco (TC).

2.5 CYLINDERS AND KEYING

A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.

B. Source Limitations: Obtain each type of keyed cylinder and keys from the same source manufacturer as locksets and exit devices, unless otherwise indicated.

1. Acceptable Manufacturers:

    a. Stanley Best (BE).
    b. Sargent Cylinder Housings
    c. No Substitution.

C. Cylinders: Original manufacturer cylinders complying with the following:

1. Mortise Type: Threaded cylinders with rings and cams to suit hardware application.
2. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
3. Bored-Lock Type: Cylinders with tailpieces to suit locks.
4. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
5. Keyway: Match Facility Standard.

D. Keying System: Each type of lock and cylinders to be factory keyed.

1. Conduct specified "Keying Conference" to define and document keying system instructions and requirements.
2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
3. Existing System: Key locks to Owner's existing system.

E. Key Quantity: Provide the following minimum number of keys:

1. Change Keys per Cylinder: Two (2)
2. Twenty construction cores
3. 50 Key Blanks – Best “A” Keyway
4. Temporary (green) core keys: **1 key per lockset**

F. Construction Keying: Provide temporary keyed construction cores. Green Best Cores No Substitution. All Best temporary cores to be returned to the district at the end of the project.

G. Key Registration List (Bitting List):

1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
2. Provide transcript list in writing or electronic file as directed by the Owner.

H. Key Control Cabinet: Provide a key control system including envelopes, labels, and tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet. Key control cabinet shall have expansion capacity of 150% of the number of locks required

for the project. Provide a new cabinet to all new construction projects. Use Lund 1205-B as a basis of design.

1. Acceptable Manufacturers:

    a. Lund Equipment (LU).
    b. MMF Industries (MM).
    c. Telkee (TK).

2.6 MECHANICAL LOCKS AND LATCHING DEVICES

A. Mortise Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.13. Locksets are to be manufactured with a corrosion resistant steel case and be field-reversible for handing without disassembly of the lock body.

1. Acceptable Manufacturers

    a. Sargent Manufacturing (SA) 8200 Series – No substitutions
    b. Sargent Manufacturing (SA) 10X Series - No substitutions
        1) Use at student restrooms or as directed by Cy Fair ISD

2.7 AUXILIARY LOCKS

A. Tubular Deadlocks: Deadlocks to be products of the same source manufacturer and keyway as other specified locksets.

1. Acceptable Manufacturers:

    a. Marks (MX) - 130 Series.
    b. Sargent Manufacturing (SA) – 480 Series.

2.8 LOCK AND LATCH STRIKES

A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:

1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.

B. Standards: Comply with the following:

1. Strikes for Mortise Locks and Latches: BHMA A156.13.
2. Strikes for Auxiliary Deadlocks: BHMA A156.5.
3. Dustproof Strikes: BHMA A156.16.

2.9 CONVENTIONAL EXIT DEVICES

A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:

1. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.

2. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer’s catalog and template book for specific requirements.

3. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.

4. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.

5. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.

    a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
    b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.

6. Rail Sizing: Provide exit device rails factory sized for proper door width application.

7. Through Bolt Installation: For exit devices and trim as indicated (TB) in Door Hardware Sets.

8. Provide Less Dogging (LD) at all exit devices.

9. Add 31- Prefix to all exit devices being provided at two inch aluminum doors.

10. No self-tapping screws allowed.

B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 certified panic and fire exit hardware devices furnished in the functions specified in the Hardware Sets. Exit device latch to be stainless steel, pullman type, with deadlock feature.

1. Acceptable Manufacturers:

    a. Sargent Manufacturing (SA) - 80 Series.
    b. No Substitution.

C. Tube Steel Removable Mullions: ANSI/BHMA A156.3 removable steel mullions with malleable-iron top and bottom retainers and a primed paint finish.

1. Provide keyed removable feature where specified in the Hardware Sets.

2. Provide stabilizers and mounting brackets as required.

3. Provide electrical quick connection wiring options as specified in the hardware sets.

4. Acceptable Manufacturers:

    a. Stanley Precision (PR) - 822 Series.
    b. No Substitution.

2.10 INTEGRATED WIEGAND OUTPUT ACCESS CONTROL EXIT DEVICES

A. Wiegand Output Integrated Card Reader Exit Hardware: Wiegand output ANSI 156.3 Grade 1 rim, mortise, and vertical rod exit device hardware with integrated proximity card reader, latchbolt and touchbar monitoring, and request-to-exit signaling, in one complete unit. Hard wired, solenoid driven locking/unlocking control of the lever handle exit trim with 3/4" throw latch bolt. U.L listed and labeled for either panic or "fire exit hardware" for use on up to 3 hour fire rated openings. Available with or without keyed high security cylinder override.

1. Open architecture, hard wired platform supports centralized control of locking units with new or existing Wiegand compatible access control systems. Inside push bar (request-to-exit) signaling and door position (open/closed status) monitoring (via separately connected DPS).
2. Reader supports either HID 125 kHz proximity (up to 39 bits, including Corporate 1000) or 13.56 MHz (2K-32K) iClass® credentials.
3. 12VDC external power supply required for reader, with optional 24VDC operation available with iClass® reader (125 kHz reader is always 12VDC). 24VDC required for solenoid operated exit trim (12VDC if applicable). Fail safe or fail secure options.
4. Installation requires only one cable run from the exit hardware to the access control panel without requirements for additional proprietary lock panel interface boards or modules.

5. Acceptable Manufacturers:

    a. Sargent Manufacturing (SA) - SN – 56-SN20080 Series Exits. x SPAR04867
    b. Sargent Manufacturing (SA) - SN – SN2008200 Series Locks.
    c. No Substitution.

2.11 DOOR CLOSERS

A. All door closers specified herein shall meet or exceed the following criteria:

1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers including installation and adjusting information on inside of cover.

2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.

3. Cycle Testing: Provide closers which have surpassed 15 million cycles in a test witnessed and verified by UL.

4. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the physically handicapped, provide units complying with ANSI ICC/A117.1.

5. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.

6. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.

7. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates, and through-bolt and security type fasteners as required for proper installation.

8. Through Bolt Installation: All door closers are to be installed with (TB) through bolting as indicated in Door Hardware Sets.

9. No self-tapping screws allowed.

B. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units standard.

1. Acceptable Manufacturers:

a. Sargent Manufacturing (SA) – TB 351 Series.

2.12 SURFACE MOUNTED CLOSER HOLDERS

A. Electromagnetic Door Holders: Certified ANSI A156.15 electromagnetic door holder/releases with a minimum 20 to 40 pounds holding power and single coil construction able to accommodate.12VDC, 24VAC, 24VDC and 120VAC. Coils to be independently wound, employing an integral fuse and armatures to include a positive release button.

1. Acceptable Manufacturers:

a. LCN Door Closers (LC) - SEM7800 Series.
b. Rixson (RF) - 980/990 Series.
c. Sargent Manufacturing (SA) - 1560 Series.

2.13 ARCHITECTURAL TRIM

A. Door Protective Trim

1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.

2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1” LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.

3. Protection Plates: ANSI/BHMA A156.6 certified protection plates (kick, armor, or mop), fabricated from the following:

a. Stainless Steel: 300 grade, 050-inch thick.

4. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.

5. Acceptable Manufacturers:

    a. Ives (IV).
    b. Rockwood Manufacturing (RO).
    c. Trimco (TC).

2.14 DOOR STOPS AND HOLDERS

A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.

B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 certified door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.

1. Acceptable Manufacturers:

    a. Ives (IV).
    b. Rockwood Manufacturing (RO).
    c. Trimco (TC).

C. Overhead Door Stops and Holders: ANSI/BHMA A156.6, Grade 1 certified overhead stops and holders to be surface or concealed types as indicated in Hardware Sets. Track, slide, arm and jamb bracket to be constructed of extruded bronze and shock absorber spring of heavy tempered steel. Provide non-handed design with mounting brackets as required for proper operation and function.

1. Acceptable Manufacturers:

    a. Do not use overhead stops/holders

2.15 ARCHITECTURAL SEALS

A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.

B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.

1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.

C. Fire Labeled Gasketing: 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 UL-10C.

1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and UBC 7-2, Fire Tests of Door Assemblies.

D. No Replaceable Seal Strips allowed: Provide only those units where they can be screw applied..

E. Acceptable Manufacturers:

1. National Guard Products (NG).

2. Pemko Manufacturing (PE).
3. Reese Enterprises, Inc. (RE).

2.16 ELECTRONIC ACCESSORIES

A. Door Position Switches: Door position magnetic reed contact switches specifically designed for use in commercial door applications. On recessed models the contact and magnetic housing snap-lock into a 1" diameter hole. Surface mounted models include wide gap distance design complete with armored flex cabling. Provide SPDT, N/O switches with optional Rare Earth Magnet installation on steel doors with flush top channels.

1. Acceptable Manufacturers:

a. Provided by Security

B. Switching Power Supplies: Provide UL listed or recognized filtered and regulated power supplies. Provide single, dual, or multi-voltage units as shown in the hardware sets. Units must be expandable up to eight Class 2 power limited outputs. Units must include the capability to incorporate a battery backup option with integral battery charging capability in addition to operating the DC load in event of line voltage failure. Provide the least number of units, at the appropriate amperage level, sufficient to exceed the required total draw for the specified electrified hardware and access control equipment.

1. Acceptable Manufacturers:

a. Provided by Security

2.17 FABRICATION

A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.18 FINISHES

A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.

B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware.

C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.

B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.

1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.

B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:

1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.

C. Integrated Wiegand access control products are required to be installed through current members of the ASSA ABLOY "Certified Integrator" (CI) program.

D. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.

E. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."

F. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

G. No self-tapping screws allowed.

3.4 FIELD QUALITY CONTROL

A. Field Inspection: Supplier will perform a final inspection of installed door hardware and state in report whether work complies with or deviates from requirements, including whether door hardware is properly installed, operating and adjusted.

3.5 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

B. Final Adjustment: Installer shall return and make final adjustment of all hardware once all air conditioning test and balance is complete. Final adjustment shall be made while air conditioner system is operating. Coordinate with General Contractor and Owner.

3.6 CLEANING AND PROTECTION

A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.

B. Clean adjacent surfaces soiled by door hardware installation.

C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SETS

The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

A. Manufacturer’s Abbreviations:

1. MK - McKinney
2. OT - OTHER
3. PE - Pemko
4. RO - Rockwood
5. PR - Precision
6. MX - Marks
7. SA - Sargent
8. AD - Adams Rite
9. BE - Best Access Systems
10. HS – HES
11. SU – Securitron
12. KD – Keedex
13. LO – Locinox

Hardware Sets

Set: 1.0

Door: 19
Description: Add SN200 reader and 2 door viewers

1	SN200 Reader	52 6027 (Exit / Lock)	26D	SA
2	Viewer	622	CRM	RO
1	Balance of hardware	Existing to remain		OT

Set: 2.0

Doors: 10, 15
Description: Replace 462 stop pair

2	Door Stop	462	US2C	RO
1	Balance of hardware	Existing to remain		OT

Set: 2.1

Doors: 13, 14, 25, 28
Description: Replace 462 stop

1	Door Stop	462	US2C	RO
1	Balance of hardware	Existing to remain		OT

Set: 3.0

Doors: 22
Description: Replace new 351 closers

2	Surface Closer	TB 351 PS	EN	SA
1	Balance of hardware	Existing to remain		OT

Set: 4.0

Doors: 20
Description: New 56-8804 exit, 2N station, loop, gasketing, 462 stop

1	Continuous Hinge	CFM HD1 x Dr. Ht.		PE
1	Rim Exit Device, Storeroom	LD 19 TB 43 56 70 8804 Less Pull	US32D	SA
1	Vandal Resistant Trim	826	US32D	SA
1	Door Stop	462	US2C	RO
1	Gasketing	2891APK (head & jambs)		PE
1	Rain Guard	346C x Frame Width		PE
1	Sweep	345ANB x Dr. Width		PE
1	Threshold	2005AT MSES25SS X Opening Width		PE
1	Card Reader	by security		OT
1	ElectroLynx Harness	QC-C1500P		MK
1	ElectroLynx Harness	QC-C***P (length as req'd)		MK
1	Door Loop	DL-2		AK

1	Door Position Switch	By Security.		OT
1	Power Supply	Provided by security		SU

Notes: New 2N station

Set: 5.0

Doors: 1

Description: Existing add 8804 exit and 8810 exit, 462 stop

1	Rim Exit Device, Storeroom	LD 19 TB 43 70 8804 Less Pull	US32D	SA
1	Rim Exit Device, Exit Only	LD 19 TB 43 8810 EO	US32D	SA
2	Door Stop	462	US2C	RO
1	Balance of hardware	Existing to remain		OT

Set: 6.0

Doors: 26, 27

Description: Existing add SN200 exit, gasketing, loop, 462 stop

1	Rim Exit x SPAR04867/NC-E11	19 LD TB 43 70 56-SN200-8804	US32D	SA
1	Interchangeable Core	I/CK-7	626	BE
1	Const. Core	7190224	Green	BE
1	Door Stop	462	US2C	RO
1	Gasketing	2891APK (head & jambs)		PE
1	ElectroLynx Harness	QC-C1500P		MK
1	ElectroLynx Harness	QC-C***P (length as req'd)		MK
1	Door Loop	DL-2		AK
1	Balance of hardware	Existing to remain		OT

Set: 6.1

Doors: 11, 12, 17, 21, 7

Description: Existing add SN200 exit, gasketing, loop, 462 stop

1	Rim Exit x SPAR04867/NC-E11	19 LD TB 43 70 56-SN200-8804	US32D	SA
1	Interchangeable Core	I/CK-7	626	BE
1	Const. Core	7190224	Green	BE
1	Door Stop	462	US2C	RO
1	Gasketing	2891APK (head & jambs)		PE
1	ElectroLynx Harness	QC-C1500P		MK
1	ElectroLynx Harness	QC-C***P (length as req'd)		MK
1	Door Loop	DL-2		AK
2	Viewer	622	CRM	RO
1	Balance of hardware	Existing to remain		OT

Set: 7.0

Doors: 3
Description: New SN200 exit, gasketing, 462 stop

1	Continuous Hinge	CFM HD1 PT x Dr. Ht.		PE
1	Electric Power Transfer	EPT		SU
1	Rim Exit x SPAR04867/NC-E11	19 LD TB 43 70 56-SN200-8804	US32D	SA
1	Vandal Resistant Trim	826	US32D	SA
1	Interchangeable Core	I/CK-7	626	BE
1	Const. Core	7190224	Green	BE
1	Surface Closer	TB 351 PS	EN	SA
1	Door Stop	462	US2C	RO
1	Gasketing	2891APK (head & jambs)		PE
1	Rain Guard	346C x Frame Width		PE
1	Sweep	345ANB x Dr. Width		PE
1	Threshold	2005AT MSES25SS X Opening Width		PE
1	ElectroLynx Harness	QC-C1500P		MK
1	ElectroLynx Harness	QC-C***P (length as req'd)		MK
1	Door Position Switch	By Security.		OT
1	Power Supply	Provided by security		SU

Set: 7.1

Doors: 5,6,8,9
Description: New SN200 exit, gasketing, 462 stop w/viewer

1	Continuous Hinge	CFM HD1 PT x Dr. Ht.		PE
1	Electric Power Transfer	EPT		SU
1	Rim Exit x SPAR04867/NC-E11	19 LD TB 43 70 56-SN200-8804	US32D	SA
1	Vandal Resistant Trim	826	US32D	SA
1	Interchangeable Core	I/CK-7	626	BE
1	Const. Core	7190224	Green	BE
1	Surface Closer	TB 351 PS	EN	SA
1	Door Stop	462	US2C	RO
1	Gasketing	2891APK (head & jambs)		PE
1	Rain Guard	346C x Frame Width		PE
1	Sweep	345ANB x Dr. Width		PE
1	Threshold	2005AT MSES25SS X Opening Width		PE
2	Viewer	622	CRM	RO
1	ElectroLynx Harness	QC-C1500P		MK
1	ElectroLynx Harness	QC-C***P (length as req'd)		MK
1	Door Position Switch	By Security.		OT
1	Power Supply	Provided by security		SU

Set: 8.0

Doors: 29, 30

Description: Existing add SN200 exit, loop. gasketing, sweep, 462 stop

1	Rim Exit x SPAR04867/NC-E11	19 LD TB 43 70 56-SN200-8804	US32D	SA
1	Door Stop	462	US2C	RO
1	Gasketing	2891APK (head & jambs)		PE
1	Sweep IDF/MDF/Alum	18061CNB x Dr. Width		PE
1	ElectroLynx Harness	QC-C1500P		MK
1	ElectroLynx Harness	QC-C***P (length as req'd)		MK
1	Door Loop	DL-2		AK
1	Balance of hardware	Existing to remain		OT

Set: 9.0

Doors: 510

Description: Existing add 8816 exit, 491S stop

1	Rim Exit Device	LD 19 TB 43 49 70 8816 ETL	US32D	SA
2	Interchangeable Core	I/CK-7	626	BE
2	Const. Core	7190224	Green	BE
1	Door Stop & Holder	491S	US26D	RO
1	Balance of hardware	Existing to remain		OT

Set: 10.0

Doors: 100, 101, 102, 104, 106, 114, 116, 117, 120, 121, 125, 126, 127, 128, 133, 134, 139, 141, 142, 143, 144, 200, 203, 204, 206, 209, 211, 216, 218, 219, 220, 221, 224, 229, 232, 233, 234, 235, 238, 239, 244, 245, 249, 251, 252, 254

Description: New closer

1	Surface Closer	351 O / P9 (type as required)	EN	SA
1	Balance of hardware	Existing to remain		OT

Set: 11.0

Doors: 111, 112, 135, 136, 205, 207, 217, 222, 223, 230, 231, 237, 246, 247, 253

Description: Existing add new closer and 481 stop

1	Surface Closer	351 O / P9 (type as required)	EN	SA
1	Door Stop	481H	US26D	RO
1	Balance of hardware	Existing to remain		OT

Set: 12.0

Doors: 2

Description: New 2N station

1	All hardware	Existing to remain		OT

Notes: Add new 2N station

Set: 13.0

Doors: 107, 118, 129, 411.2, 423.1, 403, 404, 411, 411.1
Description: Replace thumbturn

1	130KB	Thumbturn Kit	26D	SA
1	Balance of hardware	Existing to remain		OT

Set: 13.1

Doors: 316.1, 623.1
Description: Existing add 8204

1	Storeroom/Closet Lock	70 8204 LL	US26D	SA
1	Interchangeable Core	I/CK-7	626	BE
1	Const. Core	7190224	Green	BE
1	Balance of hardware	Existing to remain		OT

Set: 14.0

Doors: 301, 500, 520, 520.1, 530, 604, 608A, 617
Description: Existing add 491 stop

1	Door Stop & Holder	491S	US26D	RO
1	Balance of hardware	Existing to remain		OT

Set: 15.0

Doors: 613, 614
Description: Existing add 491 stop pair of doors

1	Door Stop & Holder	491S	US26D	RO
1	Balance of hardware	Existing to remain		OT

Set: 16.0

Doors: 422, 423
Description: Replace thumbturn and add 491 stop

1	130KB	Thumbturn Kit	26D	SA
1	Door Stop & Holder	491S	US26D	RO
1	Balance of hardware	Existing to remain		OT

Set: 17.0

Doors: 115.3
Description: Existing add 481 stops pair of doors

2	Door Stop	481H	US26D	RO
1	Balance of hardware	Existing to remain		OT

Set: 18.0

Doors: 316.2, 317, 318, 531, 532, 533
Description: New office/storage

4	Hinge, Full Mortise	TA2714	US26D	MK
1	Classroom Lock	70 8237 LL	US26D	SA
1	Interchangeable Core	I/CK-7	626	BE
1	Const. Core	7190224	Green	BE
1	Door Stop	462	US2C	RO
3	Silencer	608		RO

Set: 19.0

Doors: 534
Description: New storage pair

6	Hinge, Full Mortise	TA2714	US26D	MK
1	Surface Bolt	580-12	US26D	RO
1	Storeroom/Closet Lock	70 8204 LL	US26D	SA
1	Interchangeable Core	I/CK-7	626	BE
1	Const. Core	7190224	Green	BE
1	Surface Closer	351 O / P9 (type as required)	EN	SA
1	Door Stop	462	US2C	RO
3	Silencer	608		RO

Set: 20.0

Doors: MISC
Description: **Attic Stock - EVERY CAMPUS

1	Hydraulic Gate Closer & Hinge	MAMMOTH-180-HD	9005	OT
5	Quick Fix Bolts	MAMMOTH-P00006000		OT
5	Mullion Lock	98-2520		SA
5	Mullion Lock	98-2518		SA
5	8205 thumbturn kit	130KB	26D	SA
5	Classroom Security Intruder Lock Body	8238	US26D	SA
50	Interchangeable Core	I/CK-7	626	BE
50	Key Blanks	Best "A" Keyway		BE
12	Regular Hold Open Arm	25-H	EN	SA
12	Parallel Hold Open Arm	25-PSH	EN	SA
4	Electromagnetic Holder	994M 24VAC	689	RF
5	994M Magnetic Parts	Door Armature 994510M	689	RF
5	994M Magnetic Parts	Screw & Backplate 998300	689	RF
5	994M Magnetic Parts	Swivel Armature 900-3	689	RF
5	994M Magnetic Parts	Magnet Assembly 998369-3V	689	RF
5	994M Magnetic Parts	Wall Cover 998315M	689	RF
4	SN200 Reader	52 6027 (Exit / Lock)	26D	SA

Notes: All attic stock ships direct to
Director of Technical Services
Cy Fair ISD Lockshop
11430 Perry Road
Houston, Texas 77064

SECTION 08 71 02

DOOR HARDWARE – TRUITT MIDDLE SCHOOL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes commercial door hardware for the following:

1. Swinging doors.
2. Other doors to the extent indicated.

B. Door hardware includes, but is not necessarily limited to, the following:

1. Mechanical door hardware.
2. Electromechanical door hardware.
3. Cylinders specified for doors in other sections.

C. Related Sections:

1. Division 08 Section “Door Hardware Schedule”.
2. Division 08 Section “Hollow Metal Doors and Frames”.
3. Division 08 Section “Interior Aluminum Doors and Frames”.
4. Division 08 Section “Plastic Laminate Faced Wood Doors”.

D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
2. ICC/IBC - International Building Code.
3. NFPA 70 - National Electrical Code.
4. NFPA 80 - Fire Doors and Windows.
5. NFPA 101 - Life Safety Code.
6. NFPA 105 - Installation of Smoke Door Assemblies.
7. State Building Codes, Local Amendments.

E. Standards: All hardware specified herein shall comply with the following industry standards:

1. ANSI/BHMA Certified Product Standards - A156 Series
2. UL10C – Positive Pressure Fire Tests of Door Assemblies

1.3 SUBMITTALS

A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.

B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware

Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."

2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.

3. Content: Include the following information:

    a. Type, style, function, size, label, hand, and finish of each door hardware item.
    b. Manufacturer of each item.
    c. Fastenings and other pertinent information.
    d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
    e. Explanation of abbreviations, symbols, and codes contained in schedule.
    f. Mounting locations for door hardware.
    g. Door and frame sizes and materials.
    h. Warranty information for each product.

4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

C. Shop Drawings: Details of electrified access control hardware indicating the following:

1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:

    a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
    b. Complete (risers, point-to-point) access control system block wiring diagrams.
    c. Wiring instructions for each electronic component scheduled herein.

2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.

D. Proof of Certification: Provide copy of manufacturer(s) official certification or accreditation document indicating proof of status as a qualified installer of Windstorm assemblies.

E. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.

F. Informational Submittals:

1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

G. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Submittals.

1.4 QUALITY ASSURANCE

A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.

B. Installer Qualifications: A minimum 3 years documented experience hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

C. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

D. Integrated Wiegand, Wireless, and IP-Enabled Access Control Products Supplier Qualifications: Integrated access control products and accessories are required to be supplied and installed through current members of the ASSA ABLOY "Authorized Channel Partner" (ACP) and "Certified Integrator" (CI) programs. Suppliers are to be factory trained, certified prior to project bid, and a direct purchaser of the specified product. Installers are to be factory trained, certified prior to project bid, and are responsible for commissioning, servicing, and warranting the installed equipment specified for the project.

E. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.

1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated

F. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.

G. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:

1. Function of building, purpose of each area and degree of security required.
2. Plans for existing and future key system expansion.
3. Requirements for key control storage and software.
4. Installation of permanent keys, cylinder cores and software.
5. Address and requirements for delivery of keys.

H. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.

1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including

electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.

2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
3. Review sequence of operation narratives for each unique access controlled opening.
4. Review and finalize construction schedule and verify availability of materials.
5. Review the required inspecting, testing, commissioning, and demonstration procedures

I. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedule.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site.

B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

C. Deliver, as applicable, permanent keys, cylinders, cores and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.6 COORDINATION

A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

B. Door Hardware and Electrical Connections: Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.

C. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.7 WARRANTY

A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:

1. Structural failures including excessive deflection, cracking, or breakage.
2. Faulty operation of the hardware.
3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
4. Electrical component defects and failures within the systems operation.

C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.

D. Special Warranty Periods:

1. Lifetime for mortise locks and latches.
2. Five years for exit hardware.
3. Ten years for electric latch retraction exit motors
4. Twenty-five years for manual surface door closer bodies.
5. Two years for electromechanical door hardware.
6. Lifetime for SN200 readers.

1.8 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

1.9 OWNER STOCK – See Attic Stock at the end of Hardware Schedule.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.

B. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:

C. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.

D. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.2 HANGING DEVICES

A. Hinges: ANSI/BHMA A156.1 certified butt hinges with number of hinge knuckles as specified in the Door Hardware Sets.

1. Quantity: Provide the following hinge quantity, unless otherwise indicated:

a. Two Hinges: For doors with heights up to 60 inches.
b. Three Hinges: For doors with heights 61 to 90 inches.
c. Four Hinges: For doors with heights 91 to 120 inches.
d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.

2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:

    a. Widths up to 3’0”: 4-1/2” standard or heavy weight as specified.
    b. Sizes from 3’1” to 4’0”: 5” standard or heavy weight as specified.

3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:

    a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
    b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.

4. Hinge Options: Comply with the following where indicated in the Hardware Sets or on Drawings:

    a. Non-removable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the all out-swinging lockable doors.

5. Acceptable Manufacturers:

    a. Hager Companies (HA).
    b. McKinney Products (MK).
    c. Stanley Hardware (ST).

B. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 certified continuous geared hinge. with minimum 0.120-inch thick extruded 6060 T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.

1. Acceptable Manufacturers:

    a. McKinney Products (MK).
    b. Pemko Manufacturing (PE).
    c. Stanley Hardware (ST).

2.3 POWER TRANSFER DEVICES

A. Concealed Quick Connect Electric Power Transfers: Provide concealed wiring pathway housing mortised into the door and frame for low voltage electrified door hardware. Furnish with Molex™ standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.

1. Acceptable Manufacturers:

    a. Pemko Manufacturing (PE) – EL-CEPT Series.
    b. Securitron (SU) - EL-CEPT Series.
    c. Stanley Hardware (ST) EPT-12C Series.

B. Electric Door Wire Harnesses: Provide electric/data transfer wiring harnesses with standardized plug connectors to accommodate up to twelve (12) wires. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Provide sufficient number and type of concealed wires to accommodate electric function of specified hardware. Provide a connector for through-door electronic locking devices and from hinge to junction box above the opening. Wire nut

connections are not acceptable. Determine the length required for each electrified hardware component for the door type, size and construction, minimum of two per electrified opening.

1. Provide one each of the following tools as part of the base bid contract:
    a. McKinney Products (MK) - Electrical Connecting Kit: QC-R001.
    b. McKinney Products (MK) - Connector Hand Tool: QC-R003.

2.4 DOOR OPERATING TRIM

A. Flush Bolts and Surface Bolts: ANSI/BHMA A156.3 and A156.16, Grade 1, certified.

1. Manual flush bolts to be furnished with top rod of sufficient length to allow bolt location approximately six feet from the floor.
2. Furnish dust proof strikes for bottom bolts.
3. Surface bolts to be minimum 8” in length and U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable.
4. Provide related accessories (mounting brackets, strikes, coordinators, etc.) as required for appropriate installation and operation.

5. Acceptable Manufacturers:

    a. Ives (IV).
    b. Rockwood Manufacturing (RO).
    c. Trimco (TC).

B. Door Push Plates and Pulls: ANS/BHMA A156.6 certified door pushes and pulls of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.

1. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.
2. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.
3. Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
4. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets.

5. Acceptable Manufacturers:

    a. Ives (IV).
    b. Rockwood Manufacturing (RO).
    c. Trimco (TC).

2.5 CYLINDERS AND KEYING

A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.

B. Source Limitations: Obtain each type of keyed cylinder and keys from the same source manufacturer as locksets and exit devices, unless otherwise indicated.

1. Acceptable Manufacturers:

    a. Stanley Best (BE).
    b. Sargent Cylinder Housings

c. No Substitution.

C. Cylinders: Original manufacturer cylinders complying with the following:

1. Mortise Type: Threaded cylinders with rings and cams to suit hardware application.
2. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
3. Bored-Lock Type: Cylinders with tailpieces to suit locks.
4. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
5. Keyway: Match Facility Standard.

D. Keying System: Each type of lock and cylinders to be factory keyed.

1. Conduct specified "Keying Conference" to define and document keying system instructions and requirements.
2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
3. Existing System: Key locks to Owner's existing system.

E. Key Quantity: Provide the following minimum number of keys:

1. Change Keys per Cylinder: Two (2)
2. Twenty construction cores
3. 50 Key Blanks – Best “A” Keyway
4. Temporary (green) core keys: 1 key per lockset

F. Construction Keying: Provide temporary keyed construction cores. Green Best Cores No Substitution. All Best temporary cores to be returned to the district at the end of the project.

G. Key Registration List (Bitting List):

1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
2. Provide transcript list in writing or electronic file as directed by the Owner.

H. Key Control Cabinet: Provide a key control system including envelopes, labels, and tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet. Key control cabinet shall have expansion capacity of 150% of the number of locks required for the project. Provide a new cabinet to all new construction projects. Use Lund 1205-B as a basis of design.

1. Acceptable Manufacturers:

a. Lund Equipment (LU).
b. MMF Industries (MM).
c. Telkee (TK).

2.6 MECHANICAL LOCKS AND LATCHING DEVICES

A. Mortise Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.13. Locksets are to be manufactured with a corrosion resistant steel case and be field-reversible for handing without disassembly of the lock body.

1. Acceptable Manufacturers

a. Sargent Manufacturing (SA) 8200 Series – No substitutions

b. Sargent Manufacturing (SA) 10X Series - No substitutions
1) Use at student restrooms or as directed by Cy Fair ISD

2.7 AUXILIARY LOCKS

A. Tubular Deadlocks: Deadlocks to be products of the same source manufacturer and keyway as other specified locksets.

1. Acceptable Manufacturers:

a. Marks (MX) - 130 Series.
b. Sargent Manufacturing (SA) – 480 Series.

2.8 LOCK AND LATCH STRIKES

A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:

1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.

B. Standards: Comply with the following:

1. Strikes for Mortise Locks and Latches: BHMA A156.13.
2. Strikes for Auxiliary Deadlocks: BHMA A156.5.
3. Dustproof Strikes: BHMA A156.16.

2.9 CONVENTIONAL EXIT DEVICES

A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:

1. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.

2. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer’s catalog and template book for specific requirements.

3. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.

4. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.

5. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.

a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.

b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.

6. Rail Sizing: Provide exit device rails factory sized for proper door width application.

7. Through Bolt Installation: For exit devices and trim as indicated (TB) in Door Hardware Sets.

8. Provide Less Dogging (LD) at all exit devices.

9. Add 31- Prefix to all exit devices being provided at two inch aluminum doors.

10. No self-tapping screws allowed.

B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 certified panic and fire exit hardware devices furnished in the functions specified in the Hardware Sets. Exit device latch to be stainless steel, pullman type, with deadlock feature.

1. Acceptable Manufacturers:

a. Sargent Manufacturing (SA) - 80 Series.
b. No Substitution.

C. Tube Steel Removable Mullions: ANSI/BHMA A156.3 removable steel mullions with malleable-iron top and bottom retainers and a primed paint finish.

1. Provide keyed removable feature where specified in the Hardware Sets.

2. Provide stabilizers and mounting brackets as required.

3. Provide electrical quick connection wiring options as specified in the hardware sets.

4. Acceptable Manufacturers:

a. Stanley Precision (PR) - 822 Series.
b. No Substitution.

2.10 INTEGRATED WIEGAND OUTPUT ACCESS CONTROL EXIT DEVICES

A. Wiegand Output Integrated Card Reader Exit Hardware: Wiegand output ANSI 156.3 Grade 1 rim, mortise, and vertical rod exit device hardware with integrated proximity card reader, latchbolt and touchbar monitoring, and request-to-exit signaling, in one complete unit. Hard wired, solenoid driven locking/unlocking control of the lever handle exit trim with 3/4" throw latch bolt. U.L listed and labeled for either panic or "fire exit hardware" for use on up to 3 hour fire rated openings. Available with or without keyed high security cylinder override.

1. Open architecture, hard wired platform supports centralized control of locking units with new or existing Wiegand compatible access control systems. Inside push bar (request-to-exit) signaling and door position (open/closed status) monitoring (via separately connected DPS).
2. Reader supports either HID 125 kHz proximity (up to 39 bits, including Corporate 1000) or 13.56 MHz (2K-32K) iClass® credentials.
3. 12VDC external power supply required for reader, with optional 24VDC operation available with iClass® reader (125 kHz reader is always 12VDC). 24VDC required for solenoid operated exit trim (12VDC if applicable). Fail safe or fail secure options.
4. Installation requires only one cable run from the exit hardware to the access control panel without requirements for additional proprietary lock panel interface boards or modules.

5. Acceptable Manufacturers:

    a. Sargent Manufacturing (SA) - SN – 56-SN20080 Series Exits. x SPAR04867
    b. Sargent Manufacturing (SA) - SN – SN2008200 Series Locks.
    c. No Substitution.

2.11 DOOR CLOSERS

A. All door closers specified herein shall meet or exceed the following criteria:

1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers including installation and adjusting information on inside of cover.

2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.

3. Cycle Testing: Provide closers which have surpassed 15 million cycles in a test witnessed and verified by UL.

4. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the physically handicapped, provide units complying with ANSI ICC/A117.1.

5. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.

6. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.

7. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates, and through-bolt and security type fasteners as required for proper installation.

8. Through Bolt Installation: All door closers are to be installed with (TB) through bolting as indicated in Door Hardware Sets.

9. No self-tapping screws allowed.

B. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units standard.

1. Acceptable Manufacturers:

    a. Sargent Manufacturing (SA) – TB 351 Series.

2.12 SURFACE MOUNTED CLOSER HOLDERS

A. Electromagnetic Door Holders: Certified ANSI A156.15 electromagnetic door holder/releases with a minimum 20 to 40 pounds holding power and single coil construction able to accommodate.12VDC, 24VAC,

24VDC and 120VAC. Coils to be independently wound, employing an integral fuse and armatures to include a positive release button.

1. Acceptable Manufacturers:

    a. LCN Door Closers (LC) - SEM7800 Series.
    b. Rixson (RF) - 980/990 Series.
    c. Sargent Manufacturing (SA) - 1560 Series.

2.13 ARCHITECTURAL TRIM

A. Door Protective Trim

1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.

2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1” LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.

3. Protection Plates: ANSI/BHMA A156.6 certified protection plates (kick, armor, or mop), fabricated from the following:

    a. Stainless Steel: 300 grade, 050-inch thick.

4. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.

5. Acceptable Manufacturers:

    a. Ives (IV).
    b. Rockwood Manufacturing (RO).
    c. Trimco (TC).

2.14 DOOR STOPS AND HOLDERS

A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.

B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 certified door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.

1. Acceptable Manufacturers:

    a. Ives (IV).
    b. Rockwood Manufacturing (RO).
    c. Trimco (TC).

C. Overhead Door Stops and Holders: ANSI/BHMA A156.6, Grade 1 certified overhead stops and holders to be surface or concealed types as indicated in Hardware Sets. Track, slide, arm and jamb bracket to be constructed of extruded bronze and shock absorber spring of heavy tempered steel. Provide non-handed design with mounting brackets as required for proper operation and function.

1. Acceptable Manufacturers:

    a. Do not use overhead stops/holders

2.15 ARCHITECTURAL SEALS

A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.

B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.

1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.

C. Fire Labeled Gasketing: 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 UL-10C.

1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and UBC 7-2, Fire Tests of Door Assemblies.

D. No Replaceable Seal Strips allowed: Provide only those units where they can be screw applied..

E. Acceptable Manufacturers:

1. National Guard Products (NG).
2. Pemko Manufacturing (PE).
3. Reese Enterprises, Inc. (RE).

2.16 ELECTRONIC ACCESSORIES

A. Door Position Switches: Door position magnetic reed contact switches specifically designed for use in commercial door applications. On recessed models the contact and magnetic housing snap-lock into a 1" diameter hole. Surface mounted models include wide gap distance design complete with armored flex cabling. Provide SPDT, N/O switches with optional Rare Earth Magnet installation on steel doors with flush top channels.

1. Acceptable Manufacturers:

    a. Provided by Security

B. Switching Power Supplies: Provide UL listed or recognized filtered and regulated power supplies. Provide single, dual, or multi-voltage units as shown in the hardware sets. Units must be expandable up to eight Class 2 power limited outputs. Units must include the capability to incorporate a battery backup option with integral battery charging capability in addition to operating the DC load in event of line voltage failure. Provide the least number of units, at the appropriate amperage level, sufficient to exceed the required total draw for the specified electrified hardware and access control equipment.

1. Acceptable Manufacturers:

    a. Provided by Security

2.17 FABRICATION

A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.18 FINISHES

A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.

B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware.

C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.

B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.

1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.

B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:

1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."

2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.

C. Integrated Wiegand access control products are required to be installed through current members of the ASSA ABLOY "Certified Integrator" (CI) program.

D. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.

E. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."

F. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

G. No self-tapping screws allowed.

3.4 FIELD QUALITY CONTROL

A. Field Inspection: Supplier will perform a final inspection of installed door hardware and state in report whether work complies with or deviates from requirements, including whether door hardware is properly installed, operating and adjusted.

3.5 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

B. Final Adjustment: Installer shall return and make final adjustment of all hardware once all air conditioning test and balance is complete. Final adjustment shall be made while air conditioner system is operating. Coordinate with General Contractor and Owner.

3.6 CLEANING AND PROTECTION

A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.

B. Clean adjacent surfaces soiled by door hardware installation.

C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SETS

The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

A. Manufacturer's Abbreviations:

1. MK - McKinney
2. OT - OTHER
3. PE - Pemko
4. RO - Rockwood
5. PR - Precision
6. MX - Marks
7. SA - Sargent
8. AD - Adams Rite
9. BE - Best Access Systems
10. HS – HES
11. SU – Securitron
12. KD – Keedex
13. LO – Locinox

Hardware Sets

Set: 1.0

Doors: 18
Description: Sgle - exterior SN200 exit

1	Continuous Hinge	CFM HD1 x Dr. Ht.		PE
1	Rim Exit Device, Storeroom	LD 19 TB 43 56 70 SN200 8804 826	US32D	SA
1	Interchangeable Core	I/CK-7	626	BE
1	Const. Core	7190224	Green	BE
1	Door Closer	TB 351 O/P9 (type as required)	EN	SA
1	Door Stop	462	US2C	RO
1	Gasketing	2891APK (head & jambs)		PE
1	Rain Guard	346C x Frame Width		PE
1	Sweep	345ANB x Dr. Width		PE
1	Threshold	2005AT MSES25SS X Opening Width		PE
1	Door Loop	DL-2		AK

2	Viewer	622	CRM	RO

Set: 2.0

Doors: 2
Description: Existing add 2N station

1	Balance of hardware	Existing to remain		OT
1	2N Station	2N Station		OT

Set: 3.0

Doors: 5
Description: Existing add 8804 exit, 2891, 262 stop

1	Rim Exit Device, Storeroom	LD 19 TB 43 70 8804	US32D	SA
1	Interchangeable Core	I/CK-7	626	BE
1	Const. Core	7190224	Green	BE
1	Door Stop	462	US2C	RO
1	Gasketing	2891APK (head & jambs)		PE
1	Balance of hardware	Existing to remain		OT

Set: 4.0

Doors: 17, 6
Description: Existing add SN200 8504 and 8510, mullion, 462 stops

1	Mullion	L980A	US28	SA
1	Rim Exit Device, Storeroom	LD 19 TB 43 56 70 SN200 8504	US32D	SA
1	Rim Exit Device, Exit Only	LD 19 TB 43 8510 EO	US32D	SA
2	Interchangeable Core	I/CK-7	626	BE
2	Const. Core	7190224	Green	BE
1	Door Loop	DL-2		AK
1	Balance of hardware	Existing to remain		OT

Notes: modify strike to work with exit.

Set: 5.0

Doors: 19
Description: Existing add 2N station, 2891, 462 stop

1	Door Stop	462	US2C	RO
1	Gasketing	2891APK (head & jambs)		PE
1	Balance of hardware	Existing to remain		OT
1	2N Station	2N Station		OT

Set: 6.0

Doors: 20
Description: Existing add 2N station, 56-8804 exit, 2891, 462 stop

1	Rim Exit Device, Storeroom	LD 19 TB 43 56 70 8804	US32D	SA
1	Door Stop	462	US2C	RO
1	Gasketing	2891APK (head & jambs)		PE
1	Balance of hardware	Existing to remain		OT
1	2N Station	2N Station		OT

Set: 7.0

Doors: 24, 25, 26, 15, 22, 23
Description: Existing add SN200 8500 exit, 462 stop

1	Rim Exit Device, Storeroom	LD 19 TB 43 56 70 SN200 8504	US32D	SA
1	Interchangeable Core	I/CK-7	626	BE
1	Const. Core	7190224	Green	BE
1	Door Stop	462	US2C	RO
1	Door Loop	DL-2		AK
1	Balance of hardware	Existing to remain		OT

Notes: Field verify that these existing doors have card readers.

Set: 7.1

Doors: 16
Description: Existing add 8500 exit, 462 stop

1	Rim Exit Device, Storeroom	LD 19 TB 43 70 8504	US32D	SA
1	Interchangeable Core	I/CK-7	626	BE
1	Const. Core	7190224	Green	BE
1	Door Stop	462	US2C	RO
1	Balance of hardware	Existing to remain		OT

Set: 8.0

Doors: 1
Description: Existing add SN200 and 8810 exits, 462 stops

1	Rim Exit x SPAR04867/NC-E11	19 LD TB 43 70 56-SN200-8804	US32D	SA
1	Rim Exit Device, Exit Only	19 TB 43 8810 EO	US32D	SA
2	Door Stop	462	US2C	RO
1	Balance of hardware	Existing to remain		OT

Set: 9.0

Doors: 10, 11, 7, 8
Description: Existing SN200 exit, loop, 2891, 462 stops, anchor hinge

1	Anchor Hinge	TA392	US32D	MK
1	Rim Exit x SPAR04867/NC-E11	19 LD TB 43 70 56-SN200-8804	US32D	SA
1	Interchangeable Core	I/CK-7	626	BE
1	Const. Core	7190224	Green	BE
1	Door Stop	462	US2C	RO

1	Gasketing	2891APK (head & jambs)		PE
1	Door Loop	DL-2		AK
2	Viewer	622	CRM	RO
1	Balance of hardware	Existing to remain		OT

Set: 10.0

Doors: 13, 14
Description: Existing add SN200 exit, loop, 2891, 462 stops

1	Rim Exit x SPAR04867/NC-E11	19 LD TB 43 70 56-SN200-8804	US32D	SA
1	Interchangeable Core	I/CK-7	626	BE
1	Const. Core	7190224	Green	BE
2	Door Stop	462	US2C	RO
1	Gasketing	2891APK (head & jambs)		PE
1	Door Loop	DL-2		AK
4	Viewer	622	CRM	RO
1	Balance of hardware	Existing to remain		OT

Set: 11.0

Doors: 21.2
Description: Existing add 8500 exit only, mullion

1	Mullion Lock	98-2520		SA
1	Mullion	L980S	PC	SA
1	Rim Exit Device, Exit Only	LD 19 TB 43 8510 EO	US32D	SA
1	Balance of hardware	Existing to remain		OT

Set: 11.1

Doors: 21.1
Description: Existing add SN200 8500 exit, slider

1	Rim Exit Device, Storeroom	LD 19 TB 43 56 70 SN200 8504	US32D	SA
1	68-1375 8500	Mounting Rail Insert		SA
1	Interchangeable Core	I/CK-7	626	BE
1	Const. Core	7190224	Green	BE
1	Balance of hardware	Existing to remain		OT

Set: 12.0

Description: Existing add SN200 reader (NOT USED)

1	SN200 Reader	52 6027 (Exit / Lock)	26D	SA
1	Balance of hardware	Existing to remain		OT

Notes: reader for 400.3 to be installed on corridor side.

Set: 13.0

Doors: 27

Description: Existing add 462 stop

1	Door Stop	462	US2C	RO
1	Balance of hardware	Existing to remain		OT

Notes: Replace jamb reader with SN200 reader.

Set: 14.0

Doors: 130, 209, 220, 235, 401, 403, 409, 410, 421
Description: Existing add thumb turn

1	130KB	Thumbturn Kit	26D	SA
1	Balance of hardware	Existing to remain		OT

Set: 15.0

Doors: 420.1
Description: Existing add thumbturn kits, 491S

1	130KB	Thumbturn Kit	26D	SA
1	Door Stop & Holder	491S	US26D	RO
1	Balance of hardware	Existing to remain		OT

Set: 16.0

Doors: 115.3, 115.4
Description: Existing add 704 exit trim

1	Exit Trim	70-704 ETL	US32D	SA
1	Interchangeable Core	I/CK-7	626	BE
1	Const. Core	7190224	Green	BE
1	Balance of hardware	Existing to remain		OT

Set: 17.0

Doors: 105, 138, 207, 243
Description: Existing add brushed astragal

1	Astragal	354CP x Dr. Height		PE
1	Balance of hardware	Existing to remain		OT

Set: 18.0

Doors: 351, 613, 614, 623
Description: Existing add 491 stop

1	Door Stop & Holder	491-RKW	US26D	RO
1	Balance of hardware	Existing to remain		OT

Set: 19.0

Doors: 301

Description: New Classroom

4	Hinge, Full Mortise	TA2714	US26D	MK
1	Classroom Security Intruder Lock	V01 EMB 70 8238 VN1L 90-3/8" Collar	US26D	SA
2	Interchangeable Core	I/CK-7	626	BE
2	Const. Core	7190224	Green	BE
1	Door Closer	TB 351 O/P9 (type as required)	EN	SA
1	Door Stop	462	US2C	RO
3	Silencer	608		RO

Set: 20.0

Doors: 100, 101, 102, 104, 106, 111, 112, 114, 116, 117, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 134, 135, 136, 137, 140, 141, 142, 143, 144, 145, 200, 201, 202, 203, 204, 206, 208, 213, 214, 215, 216, 217, 218, 219, 224, 225, 226, 227, 228, 229, 231, 232, 233, 234, 239, 240, 241, 242, 244, 246, 247, 248, 249, 250, 254, 255, 310, 312

Description: Existing add 351 PS closer

1	Surface Closer	TB 351 PS	EN	SA
1	Balance of hardware	Existing to remain		OT

Set: 21.0

Doors: 316

Description: Existing add 351 PSH closer

1	Surface Closer	TB 351 PSH	EN	SA
1	Balance of hardware	Existing to remain		OT

Set: 22.0

Doors: 600, 600.1, 601

Description: Existing add 351 PSH and anchor hinge

2	Anchor Hinge	TA392	US32D	MK
2	Surface Closer	TB 351 PSH	EN	SA
1	Balance of hardware	Existing to remain		OT

Set: 23.0

Doors: 314.1

Description: Existing add 8238 and 351 PSH

1	Classroom Security Intruder Lock	V01 EMB 70 8238 VN1L 90-3/8" Collar	US26D	SA
2	Interchangeable Core	I/CK-7	626	BE
2	Const. Core	7190224	Green	BE
1	Surface Closer	TB 351 PSH	EN	SA
1	Balance of hardware	Existing to remain		OT

Set: 24.0

Doors: 301A, 303A, 331A, 512A

Description: New storage

4	Hinge, Full Mortise	TA2714	US26D	MK
1	Storeroom/Closet Lock	70 8204 LL	US26D	SA
1	Interchangeable Core	I/CK-7	626	BE
1	Const. Core	7190224	Green	BE
1	Door Stop	481H	US26D	RO
3	Silencer	608		RO

Set: 25.0

Doors: 500, 520
Description: New classroom w/ gasketing

4	Hinge, Full Mortise	TA2714	US26D	MK
1	Classroom Security Intruder Lock	V01 EMB 70 8238 VN1L 90-3/8" Collar	US26D	SA
2	Interchangeable Core	I/CK-7	626	BE
2	Const. Core	7190224	Green	BE
1	Door Closer	TB 351 O/P9 (type as required)	EN	SA
1	Door Stop	462	US2C	RO
1	Gasketing	S88BL		PE

Set: 26.0

Doors: 512, 513
Description: New office

4	Hinge, Full Mortise	TA2714	US26D	MK
1	Classroom Lock	70 8237 LL	US26D	SA
1	Interchangeable Core	I/CK-7	626	BE
1	Const. Core	7190224	Green	BE
1	Door Stop	462	US2C	RO
1	Gasketing	S88BL		PE

Set: 27.0

Description: New overhead door (NOT USED)

1	Mortise Cylinder	as required	US32D	SA
1	Interchangeable Core	I/CK-7	626	BE
1	Const. Core	7190224	Green	BE

Notes: Hardware by overhead door manufacturer. Verify cylinder requirements, if any.

Set: 28.0

Description: **Attic Stock - EVERY CAMPUS

5	Mullion Lock	98-2520		SA
5	Mullion Lock	98-2518		SA
5	Classroom Security Intruder Lock Body	8238	US26D	SA

5	130KB	Thumbturn Kit	26D	SA
50	Interchangeable Core	I/CK-7	626	BE
50	Key Blanks	Best "A" Keyway		BE
12	Regular Hold Open Arm	25-H	EN	SA
12	Parallel Hold Open Arm	25-PSH	EN	SA
4	SN200 Reader	52 6027 (Exit / Lock)	26D	SA

Notes: All attic stock ships direct to
Director of Technical Services
Cy Fair ISD Lockshop
11430 Perry Road
Houston, Texas 77064
All attic stock to ship directly to Cy Fair.
DO NOT ship to jobsite.

SECTION 28 46 00

FIRE DETECTION AND ALARM SYSTEM

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. 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.

B. 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.

C. Scope of Work:
1. Labay, Truit
Expand existing Siemens XLS fire alarm / voice evacuation system for remodel and addition. Verify and or provide equipment and programming for providing point address/description reporting to annunciator and monitoring station.
2. Cook
Replace existing system in its entirety to current district standards and code requirements. Existing system shall remain fully functional and monitored until new system is tested and accepted by the AHJ and owner, after which, all devices, panels, and wiring of existing system shall be removed. Coordinate with owner the return of equipment.

1.2 RELATED SECTIONS

A. Division 22 and Division 23

B. Sprinkler Systems

C. Elevators

D. Food Service

03/14/2025

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. Uniform Federal Accessibility Standards (UFAS).

D. Factory Mutual P7825 Approval Guide

E. American National Standards Institute (ANSI).

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

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

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

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

J. Local Accessibility Standards

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

L. State Insurance Code

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

N. Local & State Building Codes

O. 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. Submit sound and visual level to confirm that number and location of signaling devices will provide required sound and visual levels throughout the building.
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.

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Manufacturers acceptable contingent upon Products' compliance with the specifications:
   1. Notifier INSPIRE series or its successor
   2. Siemens-Cerberus PRO Modular

B. Additional Instructions
   1. All equipment, materials, accessories, devices, etc. covered by this standard and/or noted on the contract drawings shall be new and unused and be U.L. listed for their intended use.
   2. All equipment provided shall be available for purchase from at least two authorized distributors within the greater Houston metropolitan area. Single source proprietary

equipment is prohibited unless approved by CFISD.

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: Notification Appliance Circuit (NAC) shall be Style B supervised 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 B circuit. Plenum rated fire alarm cable shall have an outer jacket insulation color of red.

Minimum wire size shall be:
Initiating Circuits: 18 AWG
Strobe Circuits: 14 AWG
Relay Control Circuits: 18 AWG
Voice/Speaker Circuits: 16 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.

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. System Display:
1. The system shall support the following display mode options:
2. The display shall include a minimum 80-character backlit alphanumeric Liquid Crystal Display (LCD) or comprehensive LCD wide format display or graphic user interface (GUI).
3. The display shall annunciate status information and custom alphanumeric labels for all intelligent detectors, addressable modules, internal panel circuits, and software zones.
4. The display shall also provide Light-Emitting Diodes.
   a. The display shall provide minimum 8 Light-Emitting-Diodes (LEDs) that indicate the status of the following system parameters:
      AC POWER
      FIRE ALARM
      PRE-ALARM WARNING
      SECURITY ALARM
      SUPERVISORY SIGNAL
      SYSTEM TROUBLE
      DISABLED POINTS
      ALARM SILENCED
5. The display shall also provide keypad functions.
   a. The display keypad shall be an easy to use QWERTY type keypad, similar to a lap-top PC keyboard. This shall be part of the standard system and have the capability to command all system functions, entry of any alphabetic or numeric information, and field programming. Two different password levels shall be provided to prevent unauthorized system control or programming.

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.

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.
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. Network (IP) Interface Card:

1 IP Communicator module for fire alarm panel
2. Programmed for remote monitoring of system
3. Supervise IP Ethernet connection every 90-seconds or less
4. Coordinate with owner for address for campus data network
5. Program for Point ID, providing point address/description reporting to annunciator and monitoring station

W. Cellular Communicator:

1. UL 864 listed
2. Panel powered
3. Upload/Download capable
4. Transmit all signals and information from the DTMF communicator
5. Program for Point ID, providing point address/description reporting to annunciator and monitoring station

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 xenon 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. If required to be mounted in student toilets / restrooms, gymnasiums, student locker / dressing rooms shall have a protective cover.

C. Combination Alarm Signal and High Intensity Visual Signals:
1. Strobe lights shall be of the electronic flashing xenon strobe type and 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 be of the electronic flashing xenon strobe type and 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 xenon 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. Addressable Manual Pull Stations:
1. The manual station shall provide address-setting means using rotary decimal switches. No binary coding shall be required.
2. Manual stations shall be designed for semi-flush mounting on standard electrical box. The station shall be constructed of hi-impact red molded Lexan with instructions for station operation in raised white letters. Stations shall be of the dual action type.
3. Install Stopper STI1100 series covers with horns on all manual pull stations, except at the FACP and Remote Annunciator.
4. Do not specify or use ionization only type detectors unless reviewed and approved by CFISD. Multi-criteria detectors that include ionization detection as one of the criteria to initiate and alarm are acceptable.
5.

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. System sensor #CO1224 with 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.

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. A Very Early Warning Smoke Detection System similar to the VESDA VLI System shall be installed throughout the cooler and freezer storage areas 200 square feet and larger, and as an alternative to beam type detectors at high ceiling areas with difficult access.. 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

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. Printer and printer stand not required by owner.

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. 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.

F. 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.

G. 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.

H. 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.

I. 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.

J. Provide remote alphanumeric display annunciators in the administrative area in constantly attended area and additional annunciators where indicated on the drawings.

K. Provide remote paging units adjacent to each remote alphanumeric display annunciator for voice alarm systems.

L. 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.

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

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

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

P. Power for magnetic door holders shall be wired through fire alarm relay.

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

R. 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”)

S. 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.

T. 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.

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

V. 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.

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

X. Provide VESDA type detectors at the following locations when appropriate:
1. Atriums.
2. High ceiling corridors where maintenance of spot type detectors may be difficult.
3. Areas with skylights.

Y. Provide manual pull stations at FACP in MDF and adjacent to Fire Alarm Annunciator(s) only, unless required by code otherwise.

Z. 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.

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

BB. 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.

CC. Provide smoke detectors, pull stations with stopper covers, and speaker strobes in each classroom in all portable buildings, tied into the main campus fire alarm control panel.

DD. Provide properly rated and grounded surge suppression for all circuits leaving and entering the building.

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 Wire size shall be as follows:
1. Initiating Circuits: 18 AWG
2. Strobe Circuits: 14 AWG
3. Relay Control Circuits: 18AWG
4. Voice/Speaker Circuits: 16 AWG

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.

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 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 condition including: zone, device type, device location, and time of alarm. Location and zoning messages shall be custom field programmed to respective premises.
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. 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.
g. De-activate all HVAC systems including low speed high volume (LSHV) circulating blade type fans.
h. De-energize the kitchen hood supply/exhaust fans as required by local authority having jurisdiction.
i. Close all related smoke dampers.
j. Close all related smoke/fire dampers.
k. Release all magnetic door hold open devices.
l. Release the electric strike, unlocking, but not unlatching, locked doors controlled by an access control system.
m. Release Counter Shutters and hold-open devices on all fire and smoke doors.
n. Open all security grilles with emergency egress.

o. Activate to close all related fire and smoke doors and shutters.
p. Activate signaling connection to the elevator as required by the local authority having jurisdiction.
q. 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.
r. Activate automatic recall operation of elevators as required by local authority having jurisdiction.
s. 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 reset of the fire alarm control panel, HVAC units shall be capable of being started, and resume normal operation.
7. When the fire alarm panel is in alarm, the fire alarm panel shall signal the digital lighting control system, as required, to activate and turn all lights to full bright in all NFPA 101 paths of egress and as required by the Fire Marshall. Once the fire alarm (or drill) is cleared, the fire alarm panel shall signal the digital lighting control system as required to enable the digital lighting control system to revert to normal operation with the lights to remain illuminated until manually turned off using the digital lighting control system.

C. Activation of the manual evacuation (drill) switch shall operate the alarm indicating appliances 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 tag. The tag 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.

B. All addressable devices shall be labeled with point and module number. Provide label maker style

label on base of device. Verify exact requirements with Owner.

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 one smoke, heat and carbon monoxide detector testing kit. SDfire #TF2823 with Solo Testfire #2001 tester with 15-foot access pole and three 4-foot pole extensions, detector removal tool, and carrying bag.

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

E. 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

A. Provide two (2) color coded floor plan 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.

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 graphic floor plans with all fire alarm devices and equipment, with labels and addresses

matching system programming and reporting. The floor plan shall be provided in lexan protective covering and framed.

1. Minimum size 30x42 inches, mounted adjacent to FACP in MDF and at remote annunciator.
2. Provide digital copy of graphic floor plan in AutoCAD (.dwg) format.

D. Provide and mount framed signed FML certificate adjacent to FACP.

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. For campuses with existing fire alarm systems, the existing fire alarm system shall remain fully functional and monitored until the new system is fully installed, inspected, and accepted by the AHJ and owner.

B. 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.

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

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

E. 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.

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

G. 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.

H. Provide one dedicated alarm circuit for (future) portable (temporary) building(s) to the nearest main building egress exit discharge to the designated portable building location. Provide 100 feet of cable coiled and marked "FACP-ALARM-PORTABLES" above an accessible ceiling.

I. 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.

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

K. Provide control module relays to interface with the digital lighting control system; refer to specification Section 26 09 28 Digital Lighting Control System. Provide Form C dry contacts to indicate1) Fire alarm (including fire drill activation) and 2) Fire Alarm cleared.

L. Provide 40 initiating devices and two audible circuits for portable buildings. These shall be used to service existing portable buildings and remainder shall be left as spare above accessible ceiling.

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 prior to testing for the local Fire Marshall.

E. 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.

F. The testing and 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 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.

3.15 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 41 34 23.33

SPRAY PAINTING BOOTH

03/14/2025

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Paint spray booth and accessories.

B. Related Requirements:
1. Division 23 - Heating Ventilating, and Air Conditioning (HVAC) Work.
2. Division 26 - Electrical Work.

1.2 SUBMITTALS

A. General: Submit in accordance with SECTION 01 33 23 – SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.

B. Submit complete shop drawings and catalog data on entire spray booth assembly, including filters and accessories.

C. Show mechanical and electrical requirements.

1.3 QUALITY ASSURANCE

A. Paint Spray Booth: Product of manufacturer with a minimum of 5 years experience specializing in the engineering, design and manufacturing of spray booth systems who issues complete catalog data on such product.

PART 2 - PRODUCTS

2.1 PAINT SPRAY BOOTH

A. Open Faced Arrestor (Dry Filter) Spray Booth, self-supporting, IB-06-07-05-00-S as manufactured by RTT Engineered Solutions, Rockwall, TX. (Phone: 888-452-6684; website www.rttsolutions.com) or approved equivalent.

B. Regulatory Requirements: Booth shall meet and/or exceed all applicable OSHA and NFPA regulations.

C. Dimensions:
1. Exterior: 6’-4”W x 7’-2” H (not including exhaust stack) x 7’-8”L
2. Interior: 6’-0”W x 7’-0”H x 5’-0” L

D. Exhaust airflow system: Provide exhaust system and other mechanical components as part of the Work of this Section in coordination with mechanical work of this Project, and as required for operation and intended use by Owner.
1. 5,250 cfm exhaust air volume based at 1/2" static pressure.
2. A 24" tube axial belt driven exhaust fan, 1 hp electric motor, motor is totally enclosed rated 110v, 1 phase, 60 hz.
3. Exhaust fan package shall meet all NFPA standards for spray booth applications.
4. Non-sparking fan blades.
5. Top discharge.
6. Stackwork: As recommended by manufacturer but not less than the following:
   a. 18" diameter (round).
   b. Total length of exhaust stack shall be as required to accommodate actual roof height with appropriate extra length above roof for venting.
      1) Provide approximately six straight 48" long exhaust stacks.
      2) Provide one straight 48" long exhaust stack with clean out door.
   c. Damper exhaust cap.
   d. Roof flange to accommodate 1/4" per foot slope.
   e. Fan ring.

E. Filtration: 2-Stage filtration conforming to NESHAP.

F. Provide Control panel and other electrical components as part of the Work of this Section in coordination with electrical work of this Project, and as required for operation and intended use by Owner.

G. Construction:
   1. 18 gage, G90 grade, electro-galvanized sheet steel over heavy-gage steel beam construction.
   2. Panels constructed with flanges for additional strength.
   3. Panel seams sealed with caulk.

2.2 SPRAY BOOTH ACCESSORIES

A. LED Lighting: 2 ga. steel powder-coated white, 4000, lumens; ETSL listed for US with Class 1 Division 2, Group A, B, C, D and Class 2 Division 2, Group F and G ratings.

B. Safety-Valve: Electrically-operated solenoid air valve which prevents use of spray equipment until booth exhaust fan is on.

C. Spray booth accessories shall be furnished by spray booth manufacturer and installed by contractor in accordance with spray booth manufacturer's instructions.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install paint spray booth and accessories in accordance with the manufacturer's instructions and in such a manner as to comply with all applicable codes. This includes the furnishing of all labor and material required to accomplish this, even though not all required items are specifically mentioned or indicated in the Construction Documents.

END OF SECTION

WJHW

March 14, 2024

THEATRICAL ADDENDUM NO. 2 ITEMS

1. REVISED DRAWINGS

A. Sheet No. AV22-11D.1 – UNIT D-1 RENOVATION PLAN – LEVEL ONE
   1. Revised location of AV4

B. Sheet No. AV27.01 – ELEVATIONS
   1. Revised location of AV4

C. Sheet No. TL22-11D.1 – UNIT D-1 RENOVATION PLAN – LEVEL ONE
   1. Revised locations of CR2 and HL5

END OF WJHW ADDENDUM ITEMS

SITE PLAN NOTES

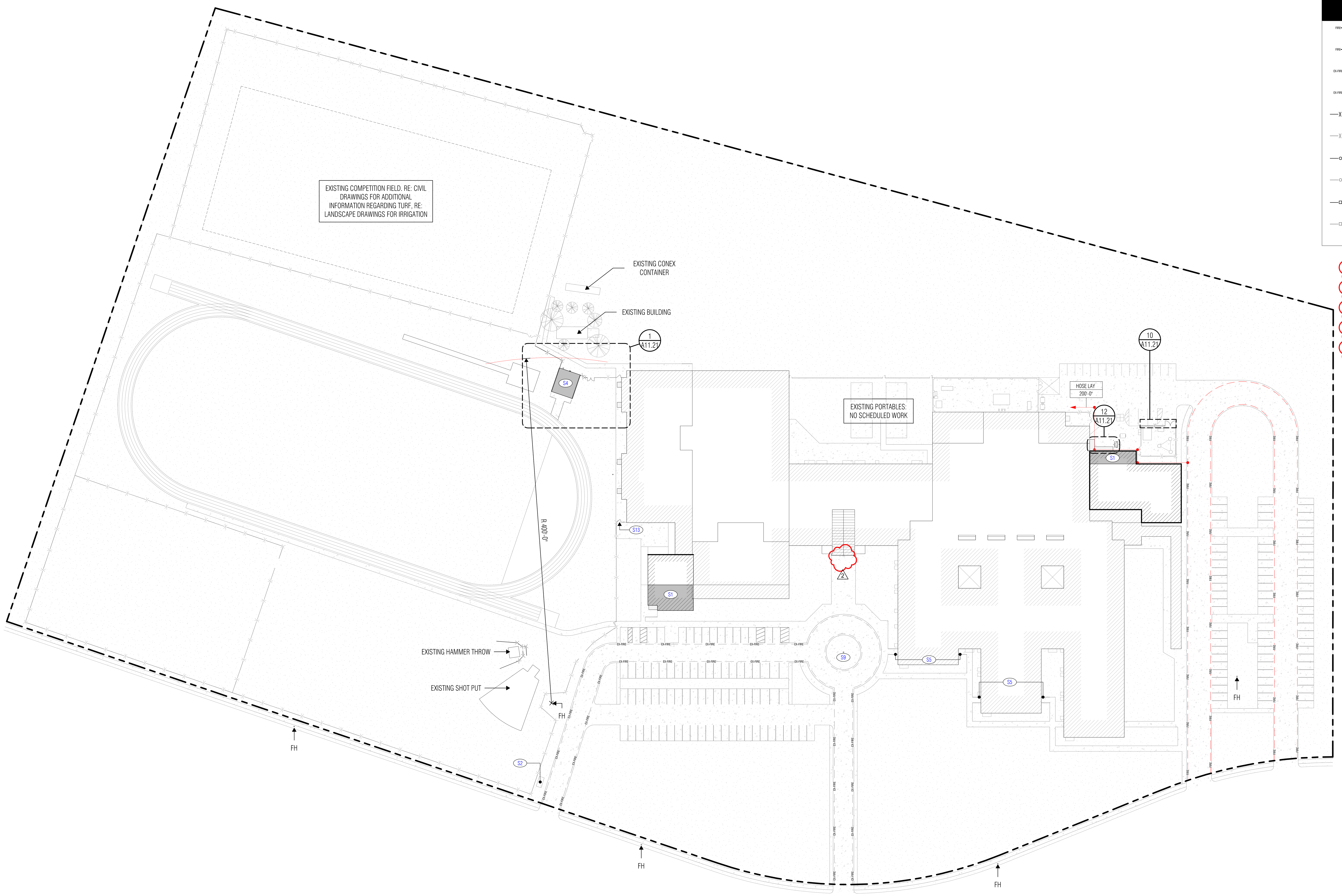
1. Verify and document existing dimensions and conditions at the site before beginning construction. Notify the Architect of conflicts or variations prior to commencement of construction.
2. To prevent damage to existing trees and shrubs in proximity to the Work, provide and maintain protective barriers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

SITE PLAN LEGEND

- FIRE LANE
- EXISTING FIRE LANE
- CHAIN LINK FENCE, See Plan for Heights
- EXISTING CHAIN LINK FENCE, See Plan for Heights
- WOOD FENCE, See Plan for Heights
- EXISTING WOOD FENCE, See Plan for Heights
- ORNAMENTAL FENCE, See Plan for Heights
- EXISTING ORNAMENTAL FENCE, See Plan for Heights

KEYNOTE LEGEND

S1	PROPOSED BUILDING ADDITION
S2	EXISTING F.D.C. TO REMAIN
S4	PROPOSED DETACHED P.E.M.B.
S5	NEW SIDEWALK. RE: CIVIL.
S9	EXISTING FLAG POLE
S13	PROVIDE KNOX BOX AT GATE.



TRUE NORTH

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

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CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

2024 Cook, Labay & Truitt MS Renovations

03/14/2025

ISSUED: February 24, 2025

REVISIONS

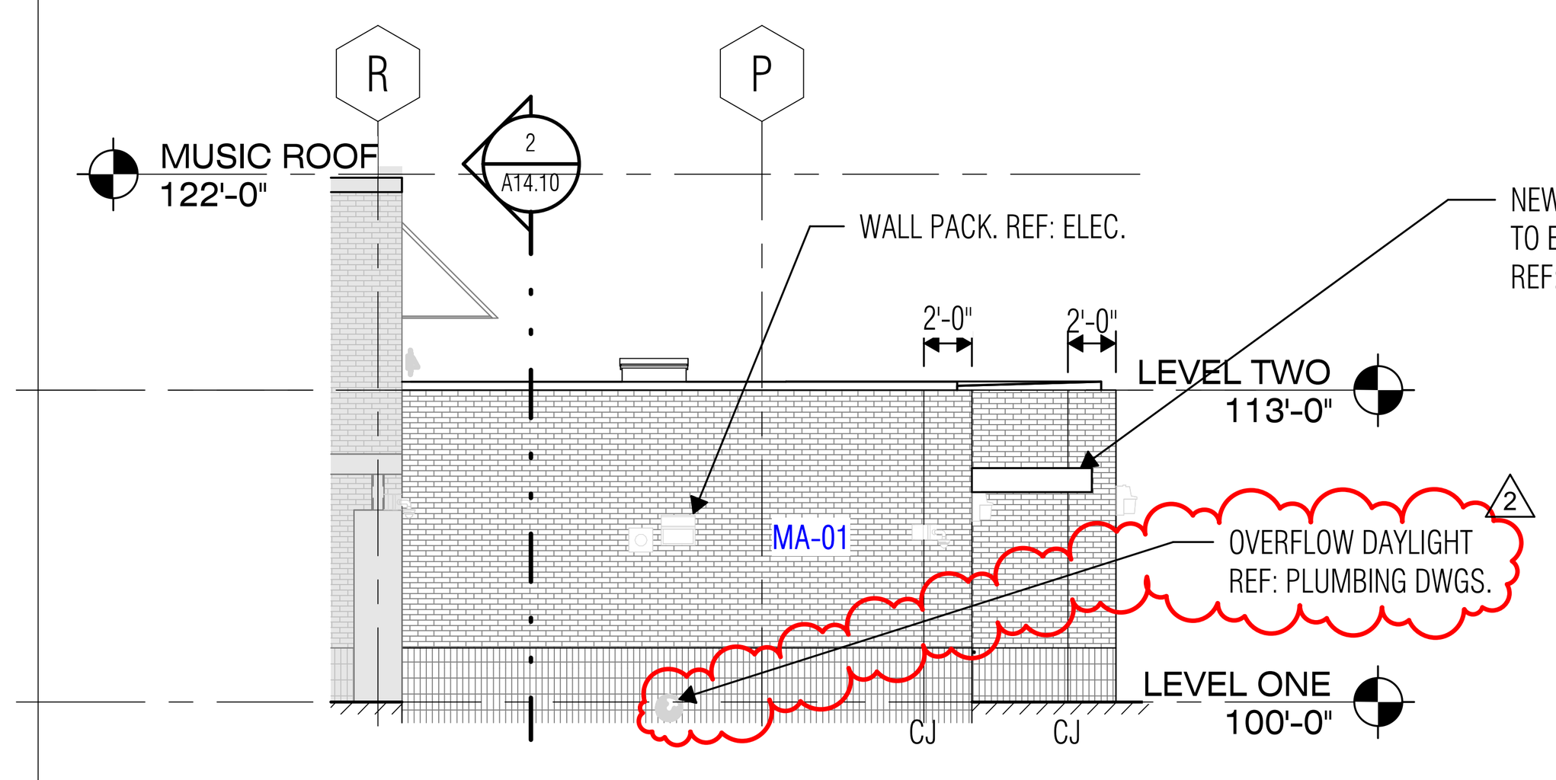
Revision No.		Revision Date
2	Addendum 2	03-14-2025

Director RSJ	Drawn By STH, KM
Designer	Quality Control
Proj. Arch. TQ	

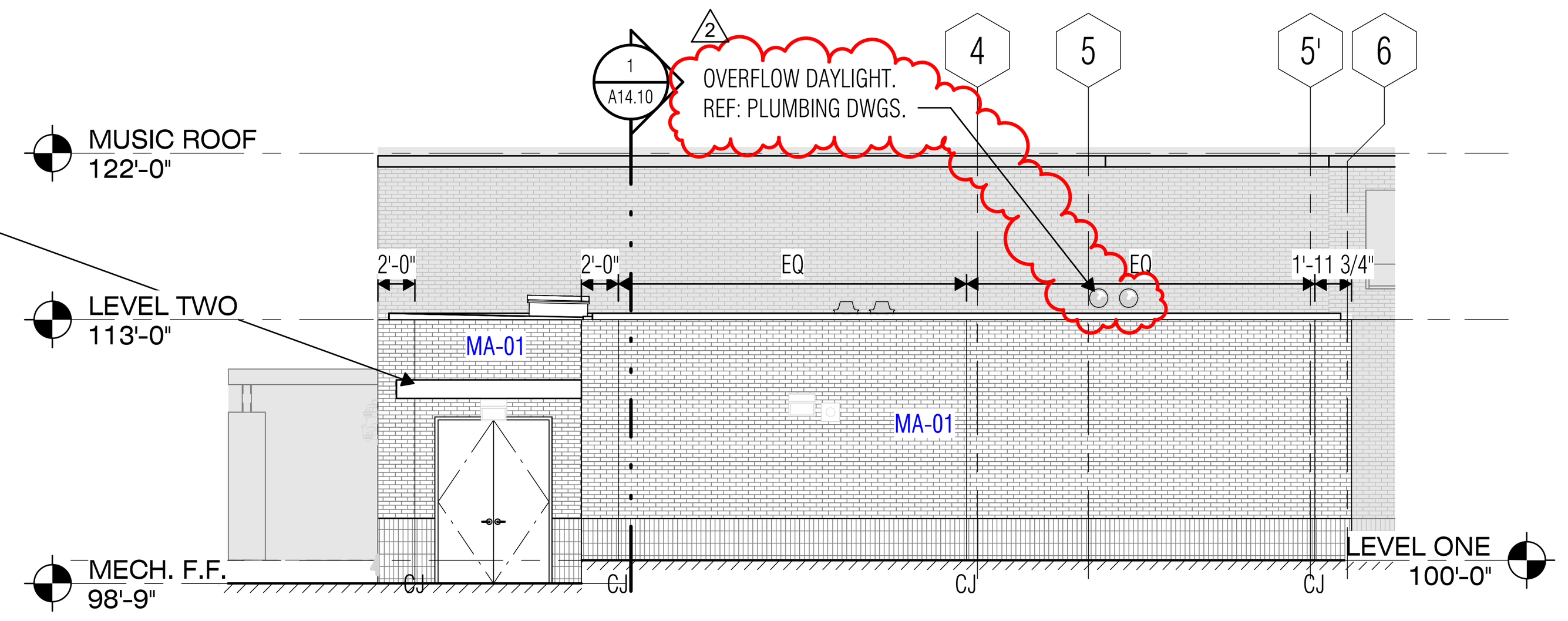
PROJECT NO.
24-010.00

SHEET TITLE
COOK - ARCHITECTURAL SITE PLAN

SHEET NO.
A11.11



1 ORCH. ADDITION - SOUTH ELEVATION
SCALE: 1/8" = 1'-0"



2 ORCH. ADDITION - EAST ELEVATION
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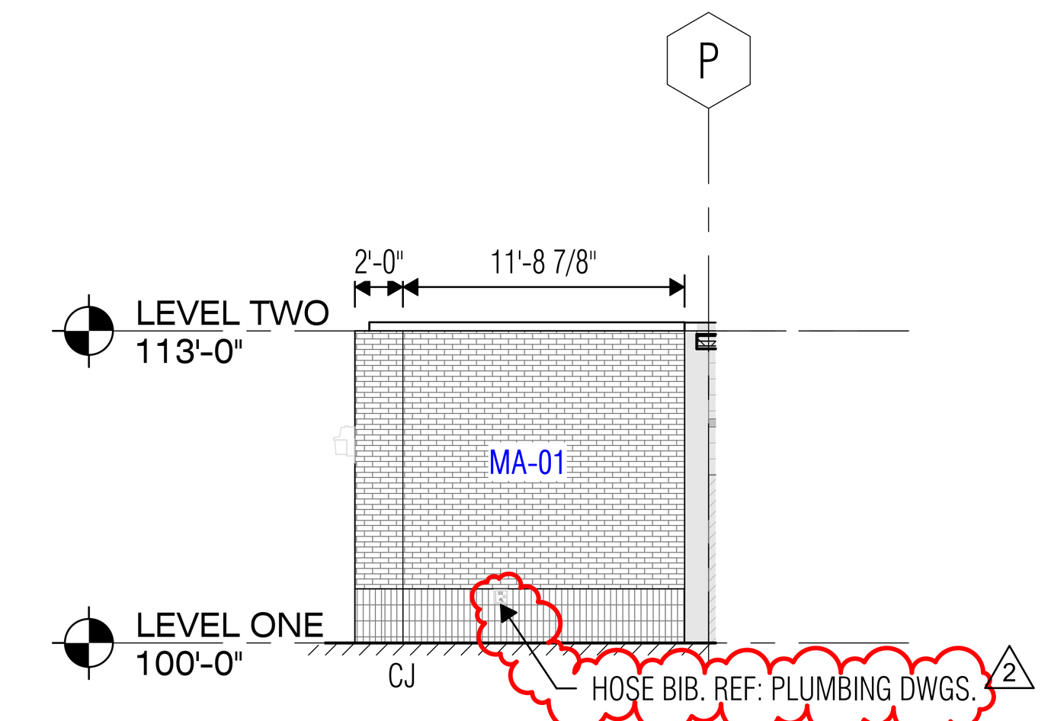

3 ORCH. ADDITION - NORTH ELEVATION
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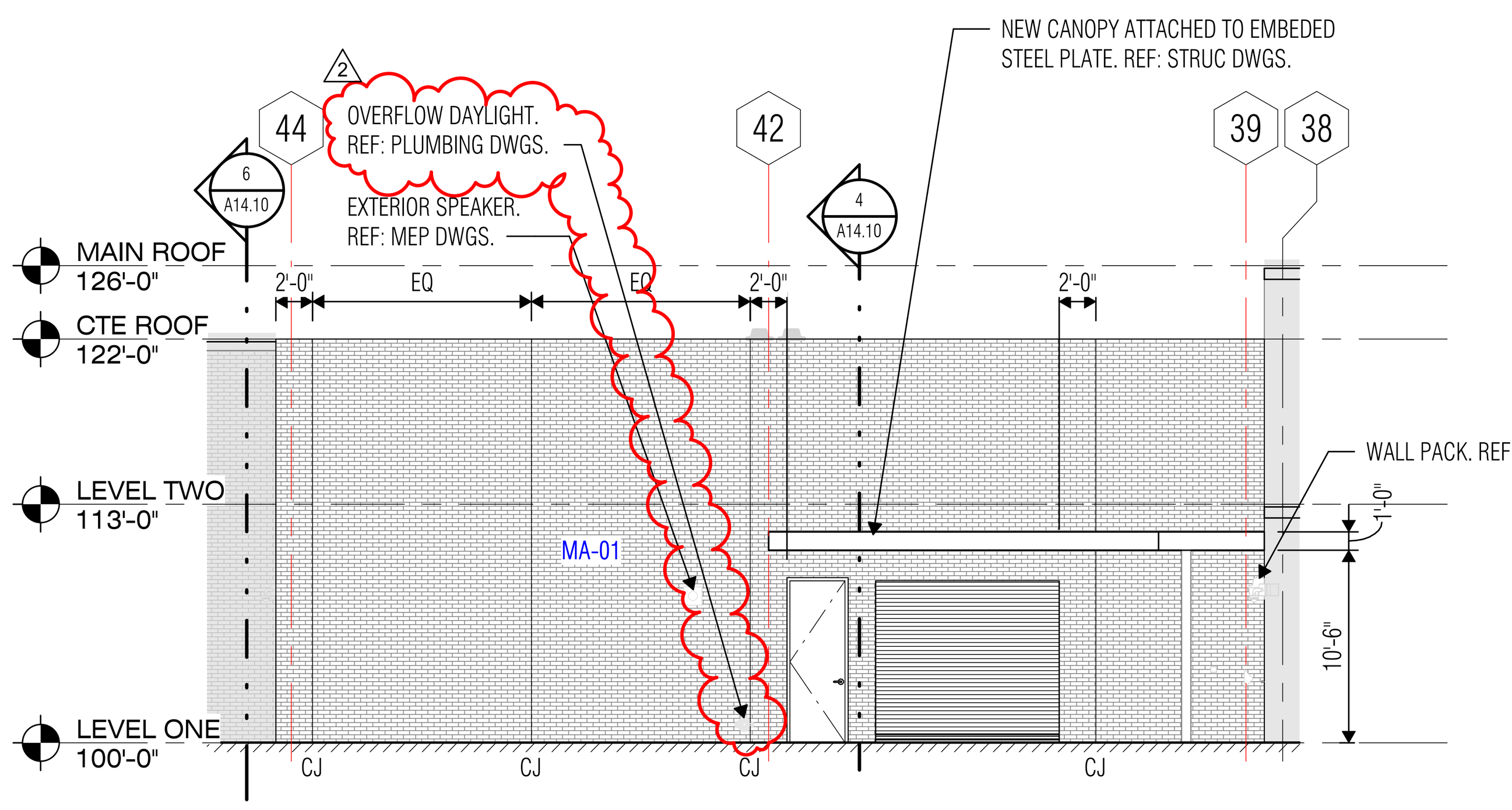

4 CTE ADDITION - WEST ELEVATION
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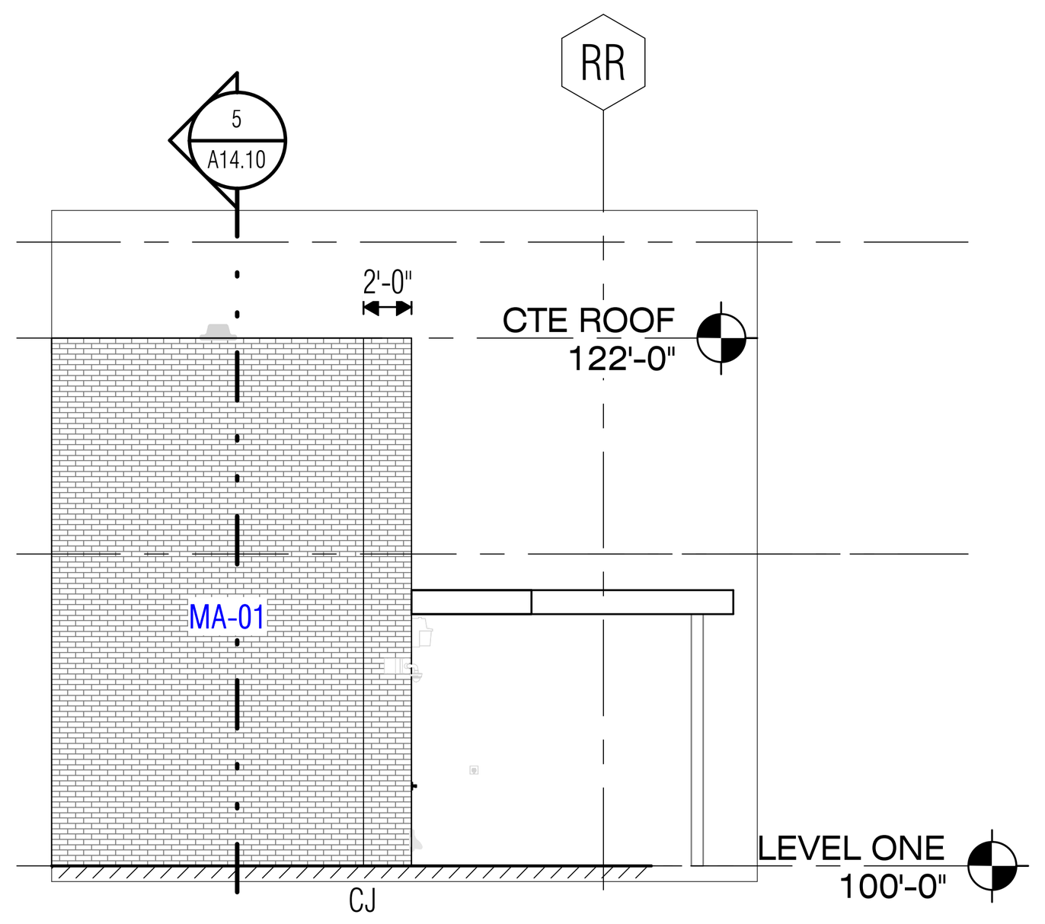
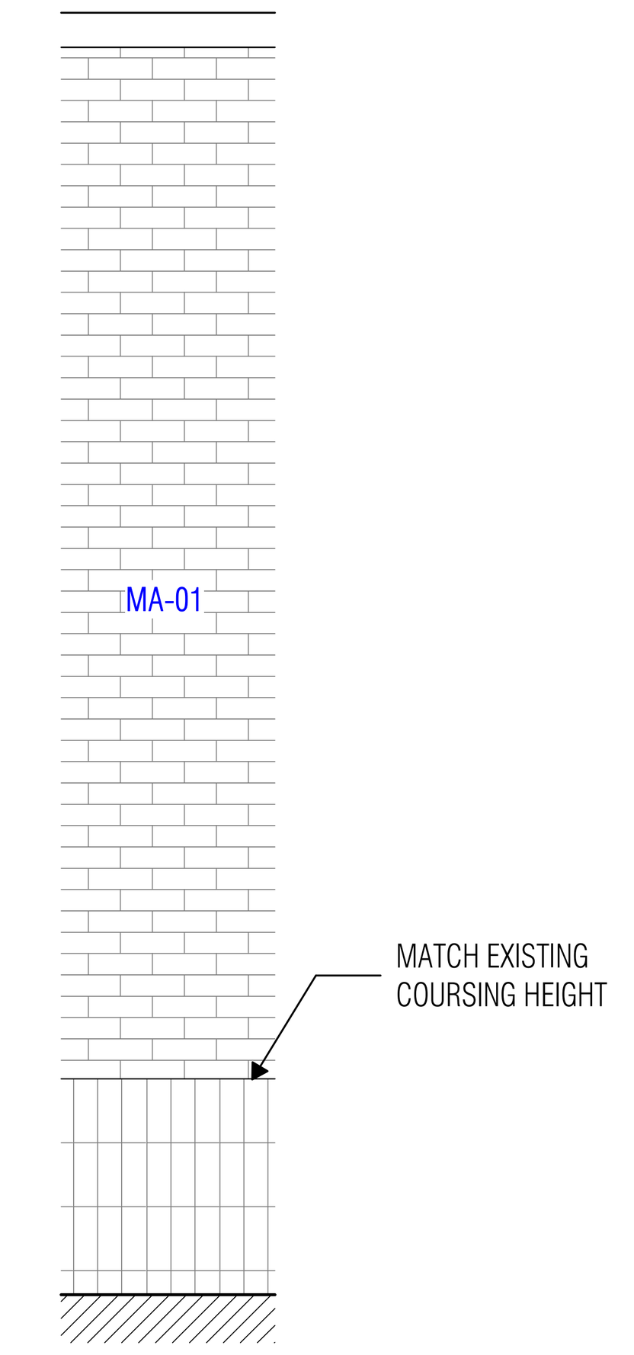
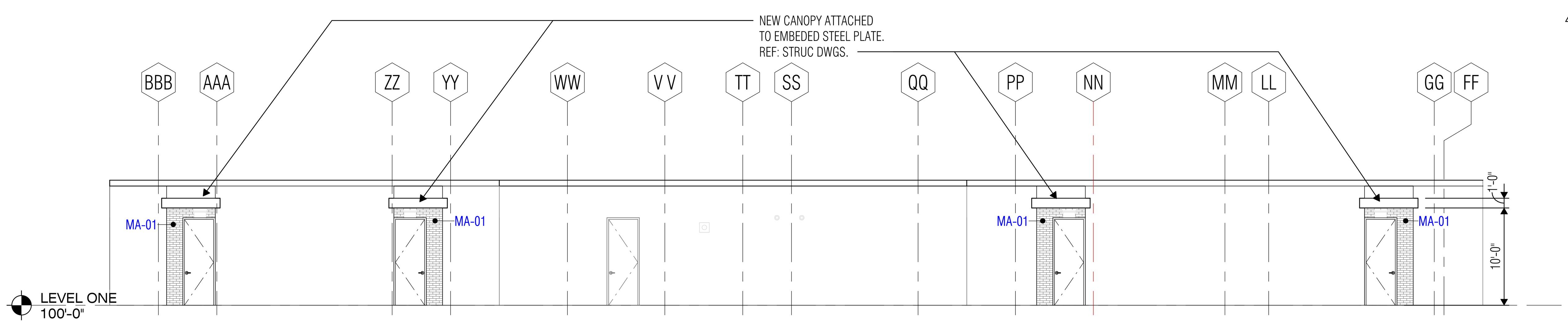


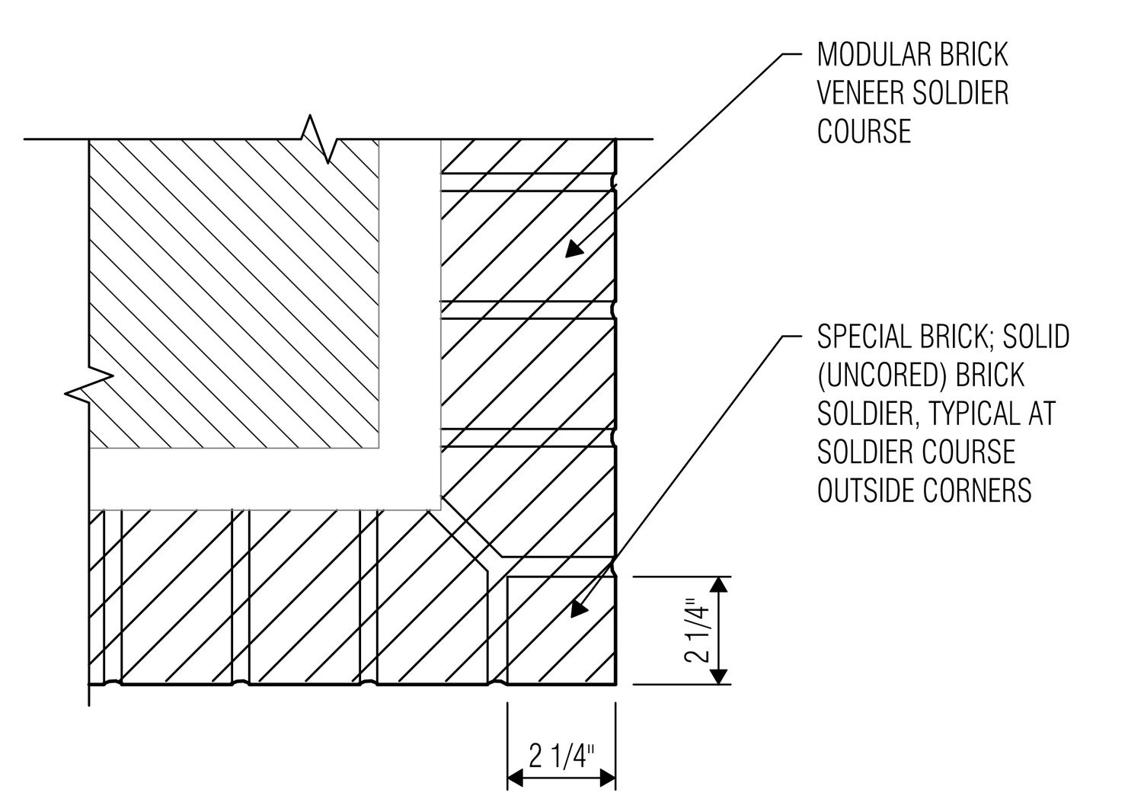
5 CTE ADDITION - NORTH ELEVATION
SCALE: 1/8" = 1'-0"



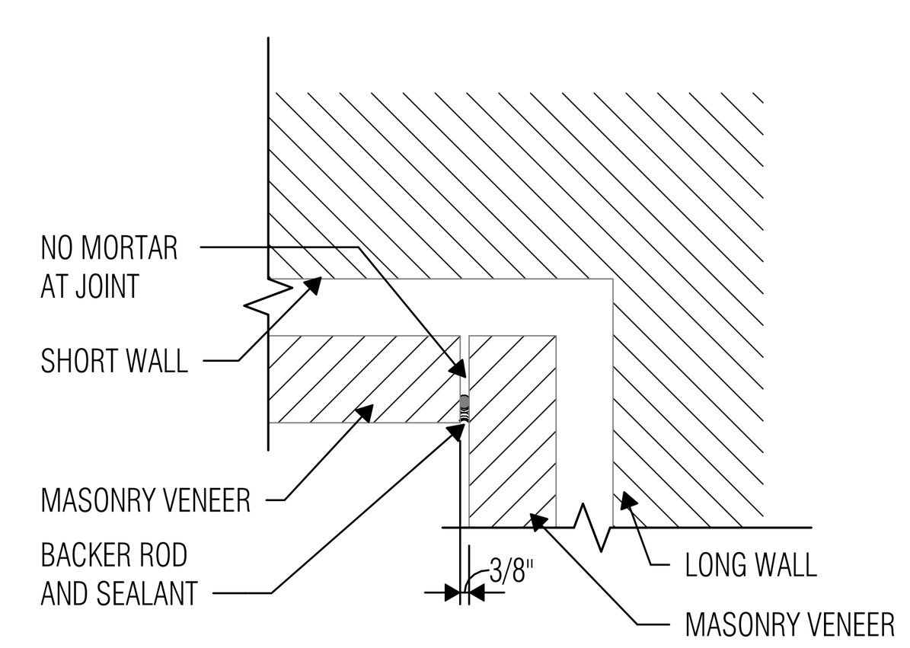
6 TYPICAL COURSING ELEVATION
SCALE: 1/2" = 1'-0"



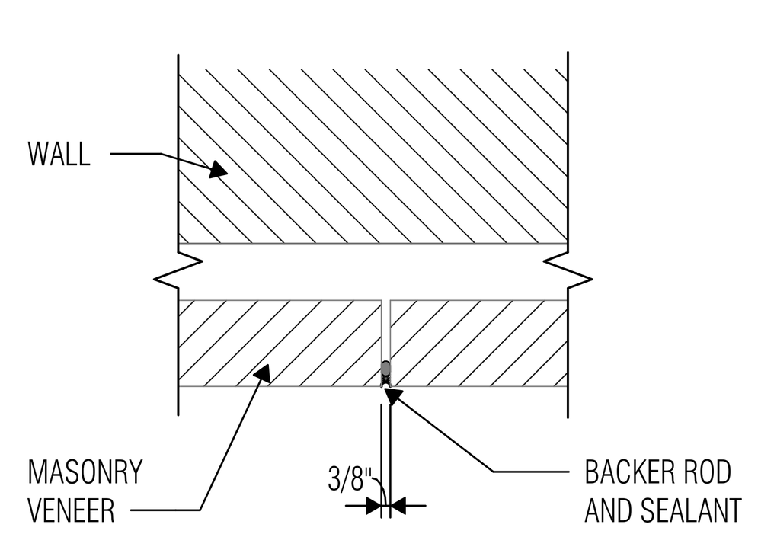
7 ATHLETICS - SOUTH ELEVATION
SCALE: 1/8" = 1'-0"



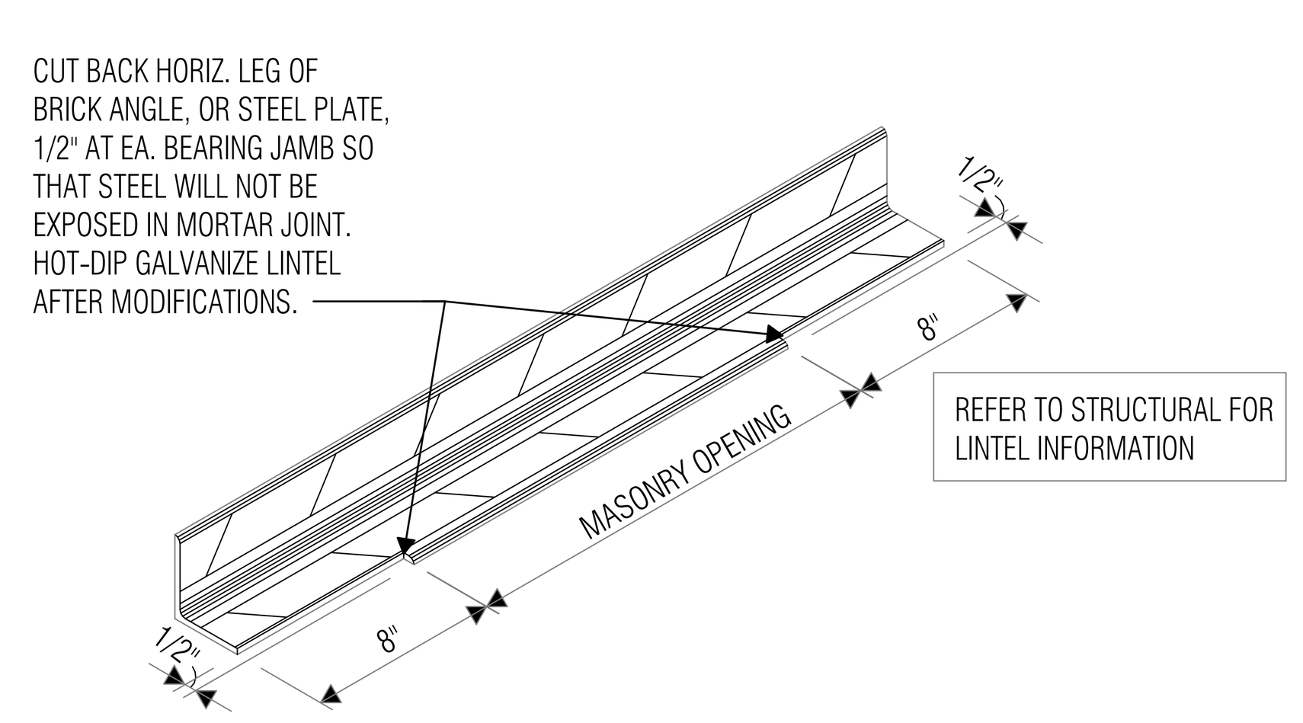
10 SOLDIER COURSE SPECIAL BRICK @ OUTSIDE CORNER
SCALE: 3" = 1'-0"



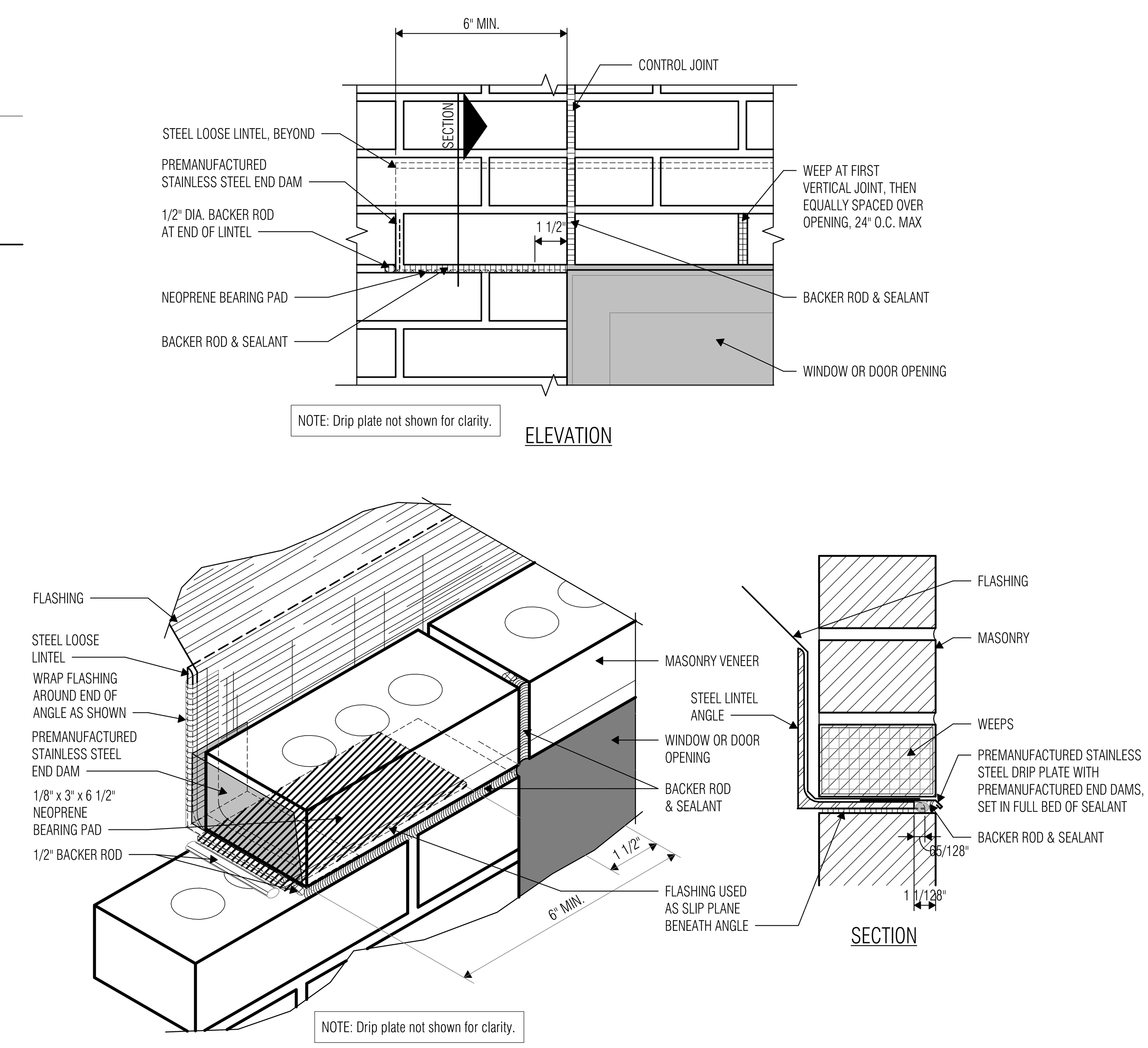
11 MASONRY VENEER CONTROL JOINT INSIDE CORNER
SCALE: 1 1/2" = 1'-0"



12 EXT. CONTROL JOINT
SCALE: 1 1/2" = 1'-0"



13 LOOSE LINTEL DETAIL, TYP.
SCALE: 1 1/2" = 1'-0"



14 MASONRY VENEER CONTROL JOINT AT LOOSE LINTEL
SCALE: 3" = 1'-0"

X400

EXTERIOR ELEVATION NOTES

1. Refer to Building Assembly Details Sheets 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.
4. Install cast stone in accordance with the recommendations of the Cast Stone Institute, unless specifically noted or detailed otherwise.
5. Refer to Building Assembly Details Sheet 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 Building Assembly Details sheets .
8. All blue exterior panels on the building will be removed and replaced even if not shown on the documents.

EXTERIOR ELEVATION LEGEND

A	BRICK VENEER, TYPE 'A'
B	BRICK VENEER, TYPE 'B'
DS	DOWNSPOUT
DSC	DOWNSPOUT W/ SCUPPER & CONDUCTOR HEAD REF. _/A_.__
OS	OVERFLOW SCUPPER, REF. _/A_.__
CJ	CONTROL JOINT, REF. _ & _/A_.__
EJ	EXPANSION JOINT, REF. _/A_.__
SXX	ALUMINUM STOREFRONT, REF. SHEET A7.11
(shaded)	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.

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CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

2024 Cook, Labay & Truitt MS Renovations

REGISTERED ARCHITECT STATE OF TEXAS 24200
03/14/2025

ISSUED: February 24, 2025

REVISIONS

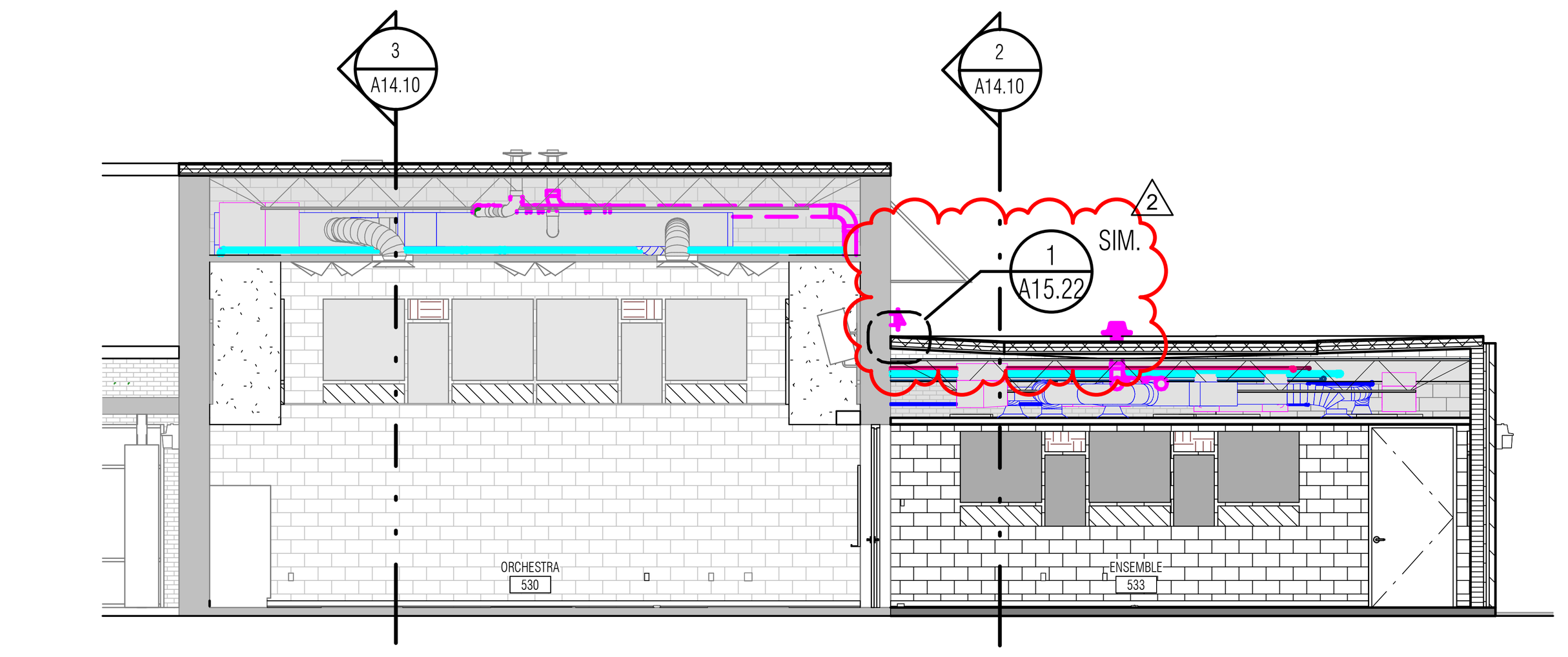
Revision No.		Revision Date
1	Addendum 1	03-06-2025
2	Addendum 2	03-14-2025

Director: RSJ
Drawn By: STH, KM
Designer
Quality Control
Proj. Arch.: TQ

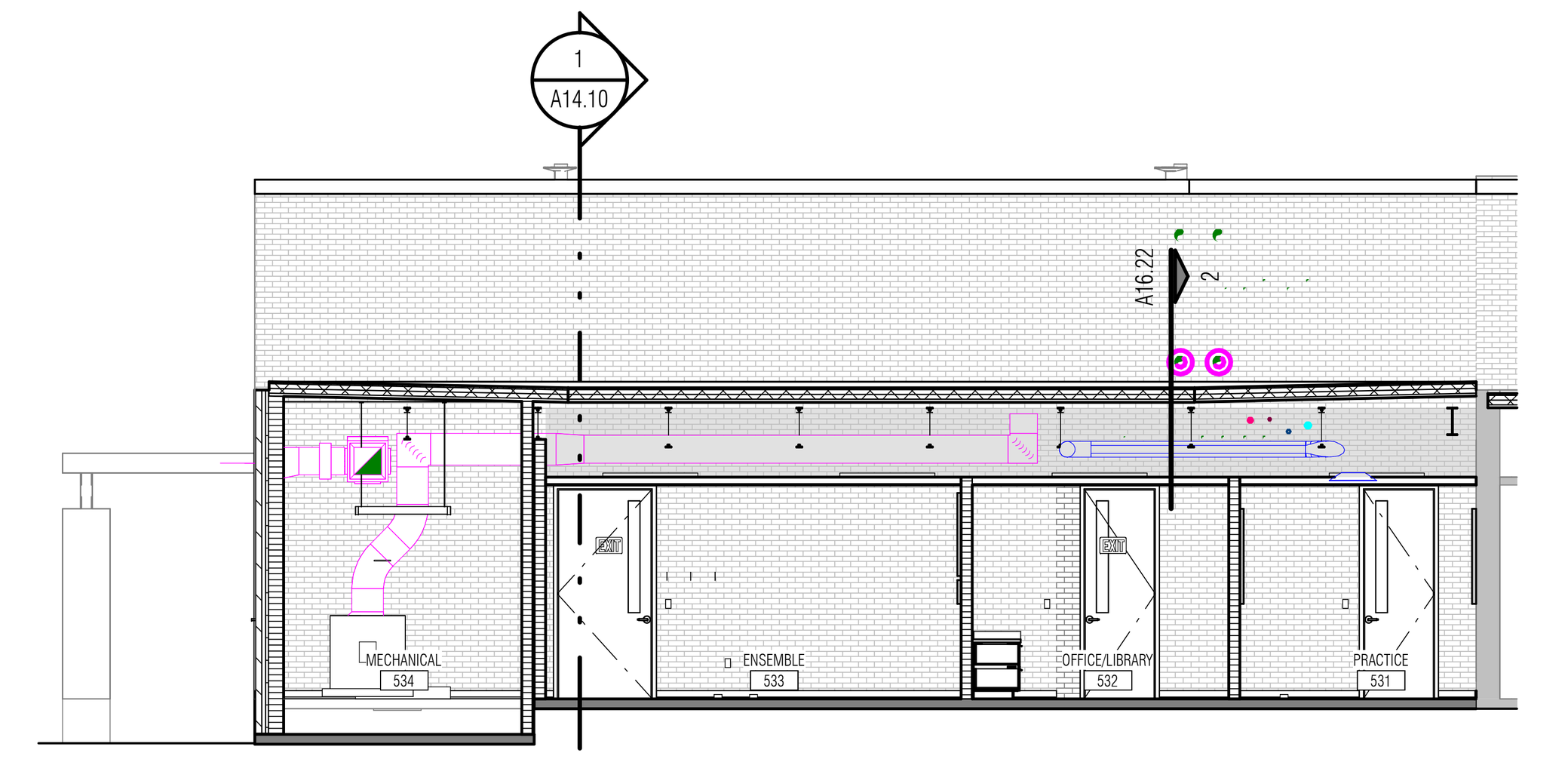
PROJECT NO.
24-010.00

SHEET TITLE
COOK - EXTERIOR ELEVATIONS & DETAILS

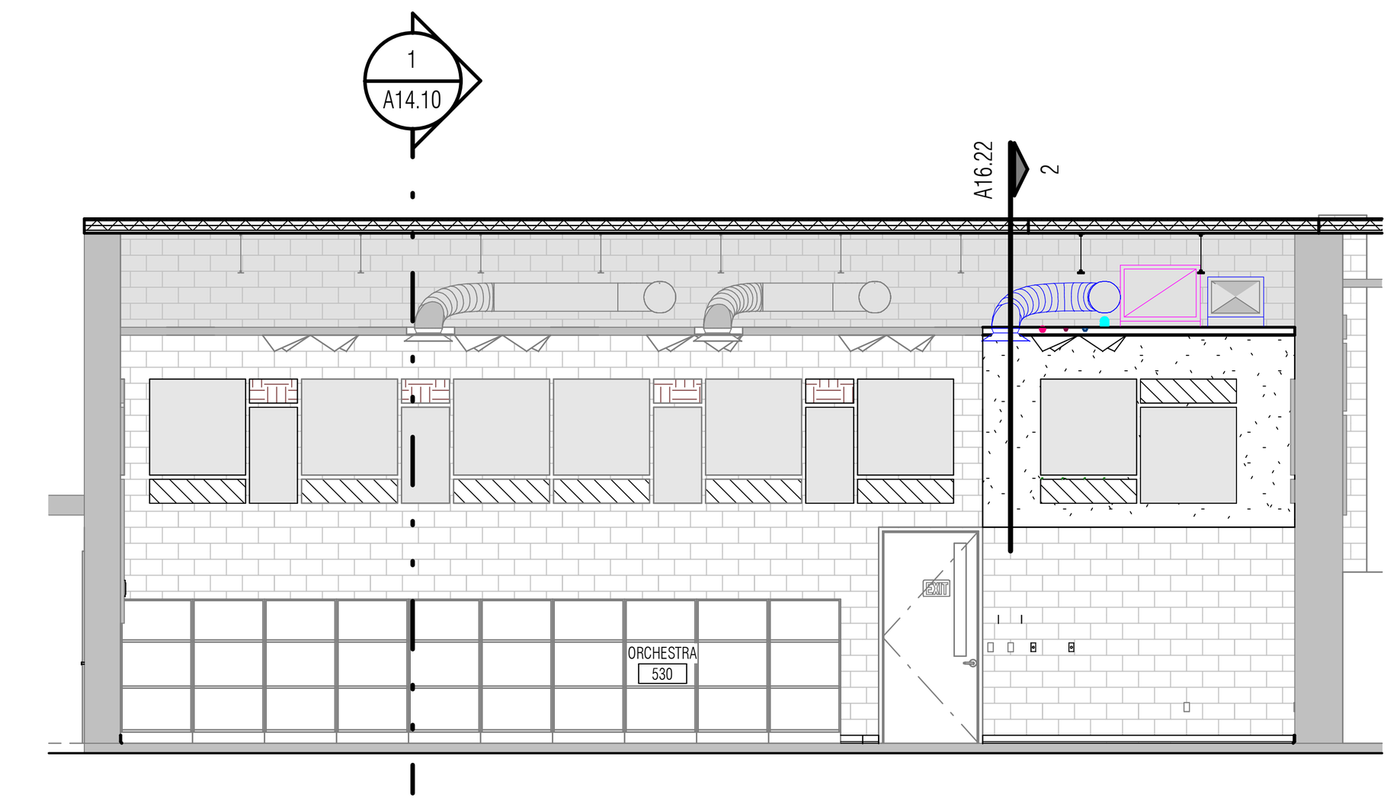
SHEET NO.
A13.11



1 BUILDING SECTION
SCALE: 1/8" = 1'-0"



2 BUILDING SECTION
SCALE: 1/8" = 1'-0"



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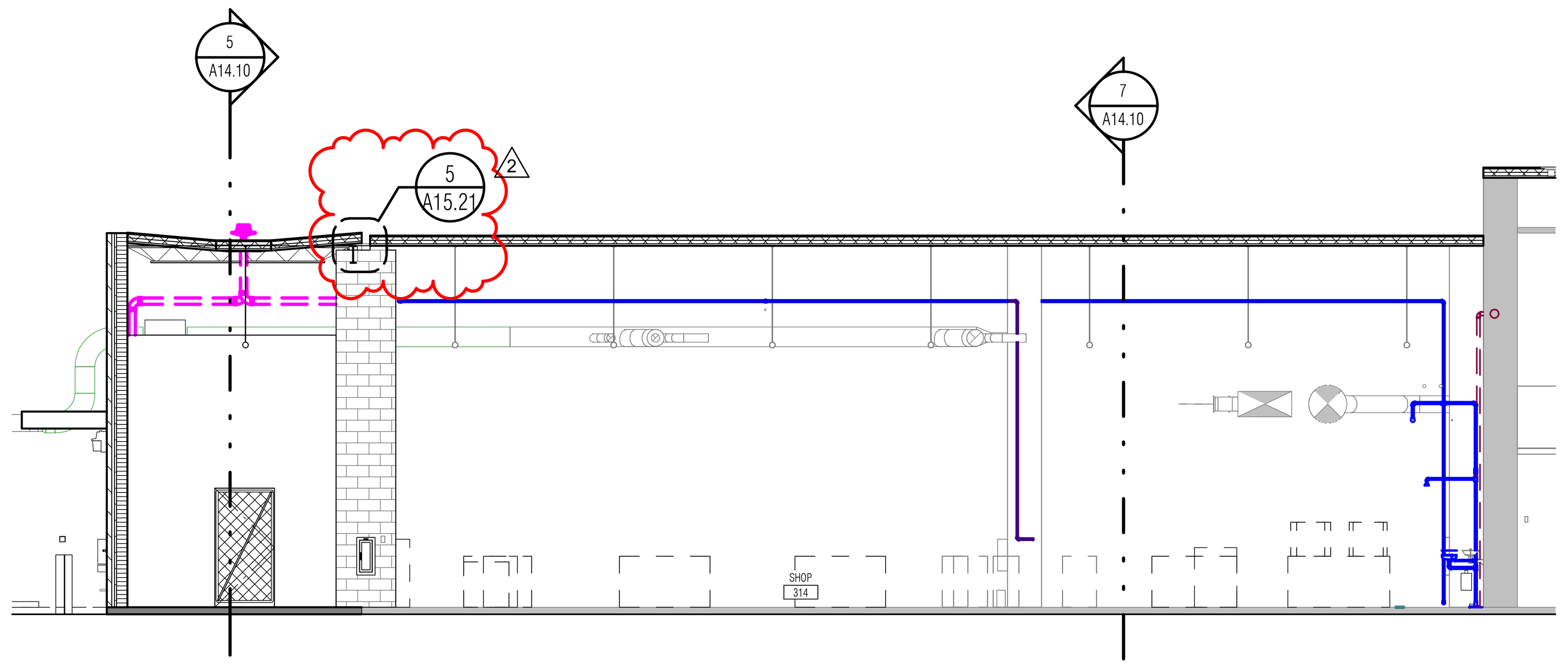
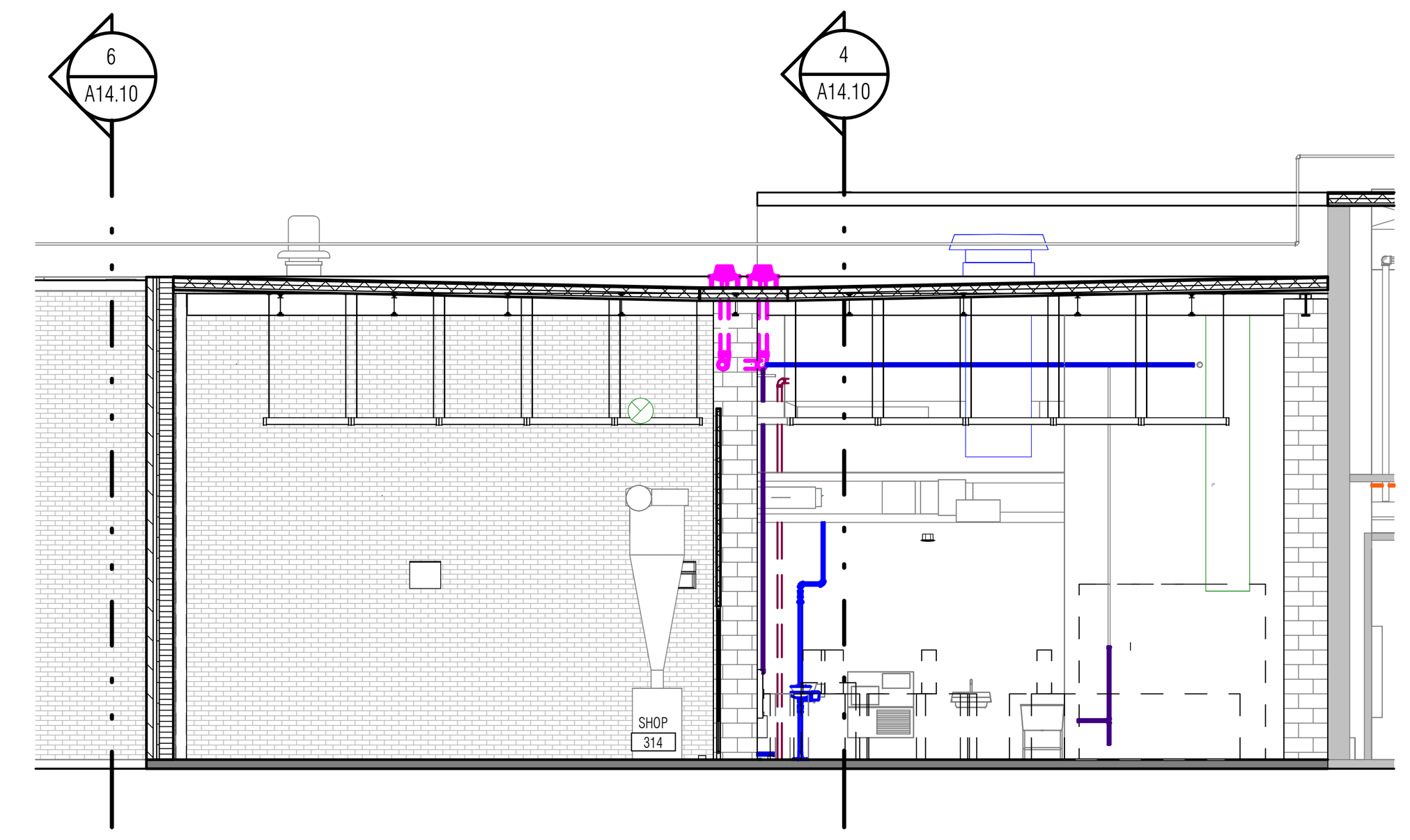


4 BUILDING SECTION
SCALE: 1/8" = 1'-0"



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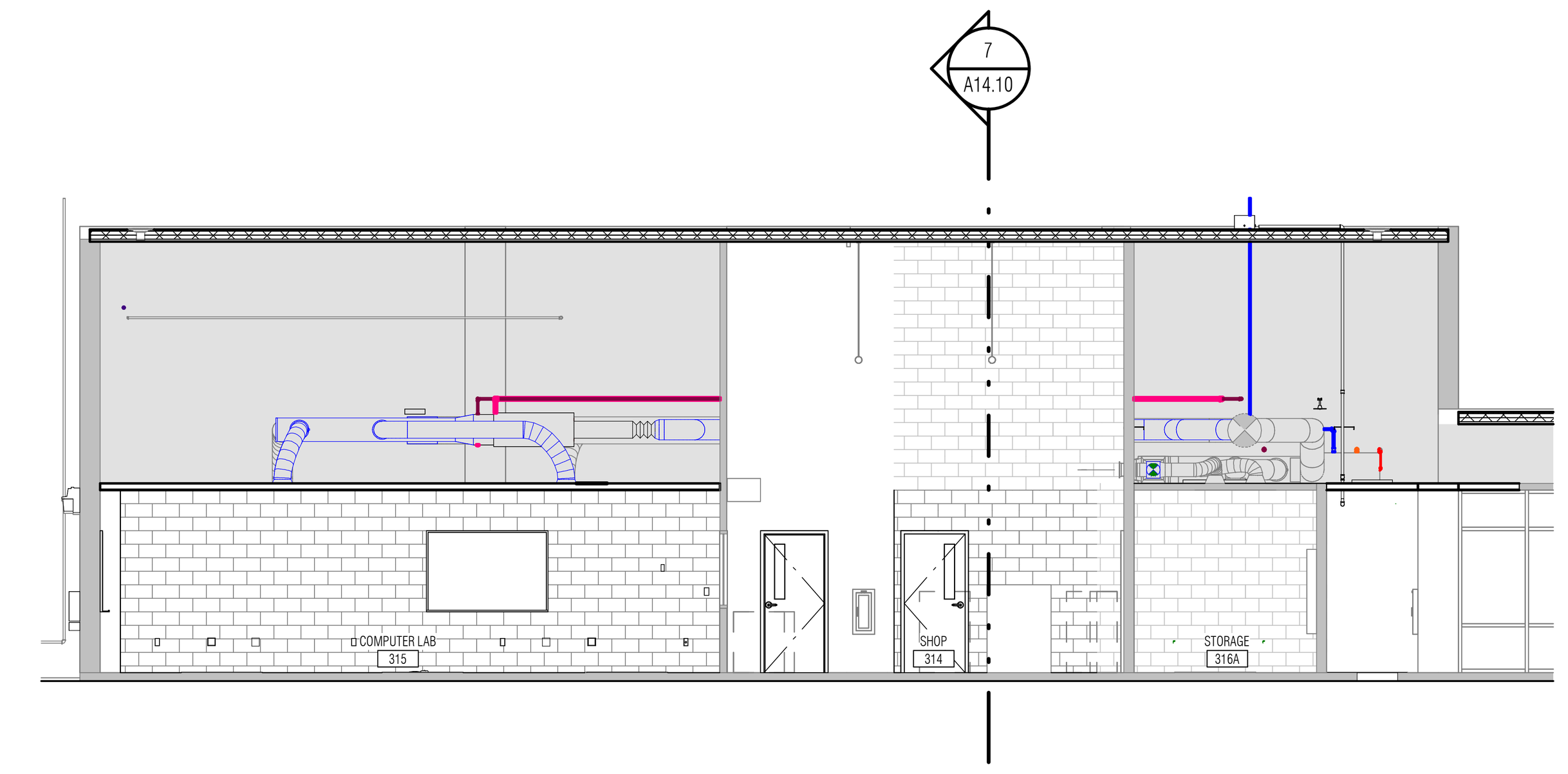
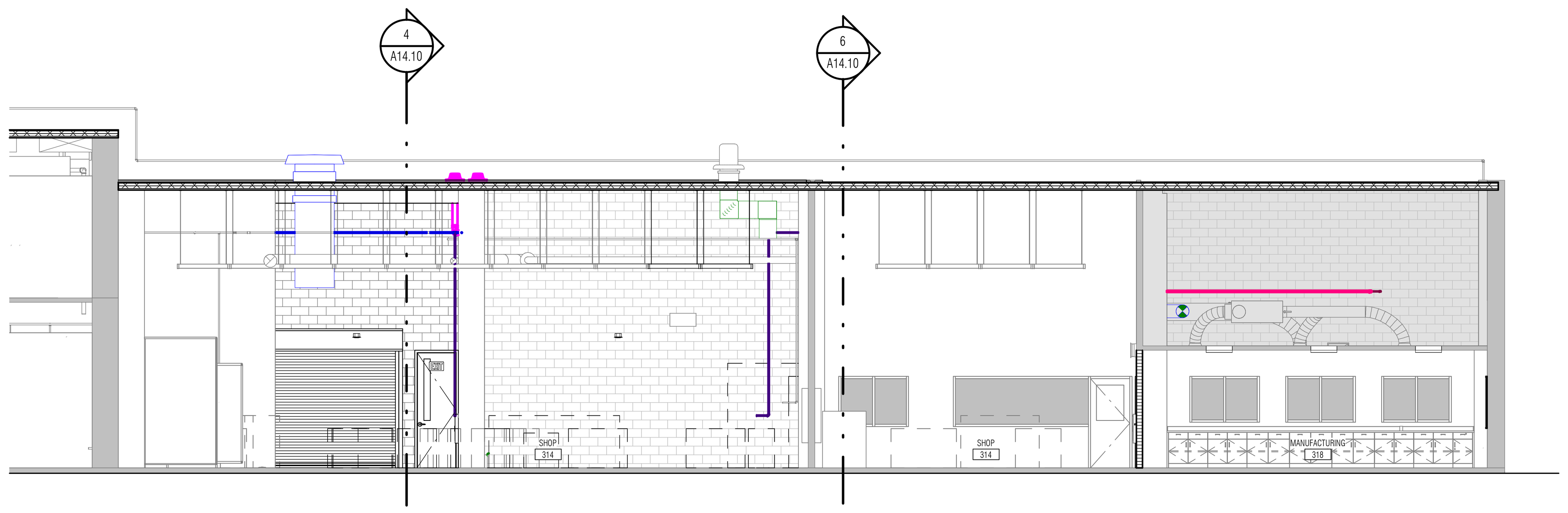
SCALE: 1/8" = 1'-0"



6 BUILDING SECTION
SCALE: 1/8" = 1'-0"



7 BUILDING SECTION
SCALE: 1/8" = 1'-0"

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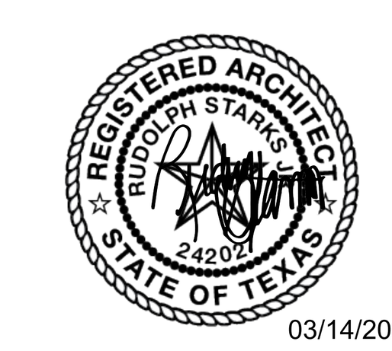

03/14/2025

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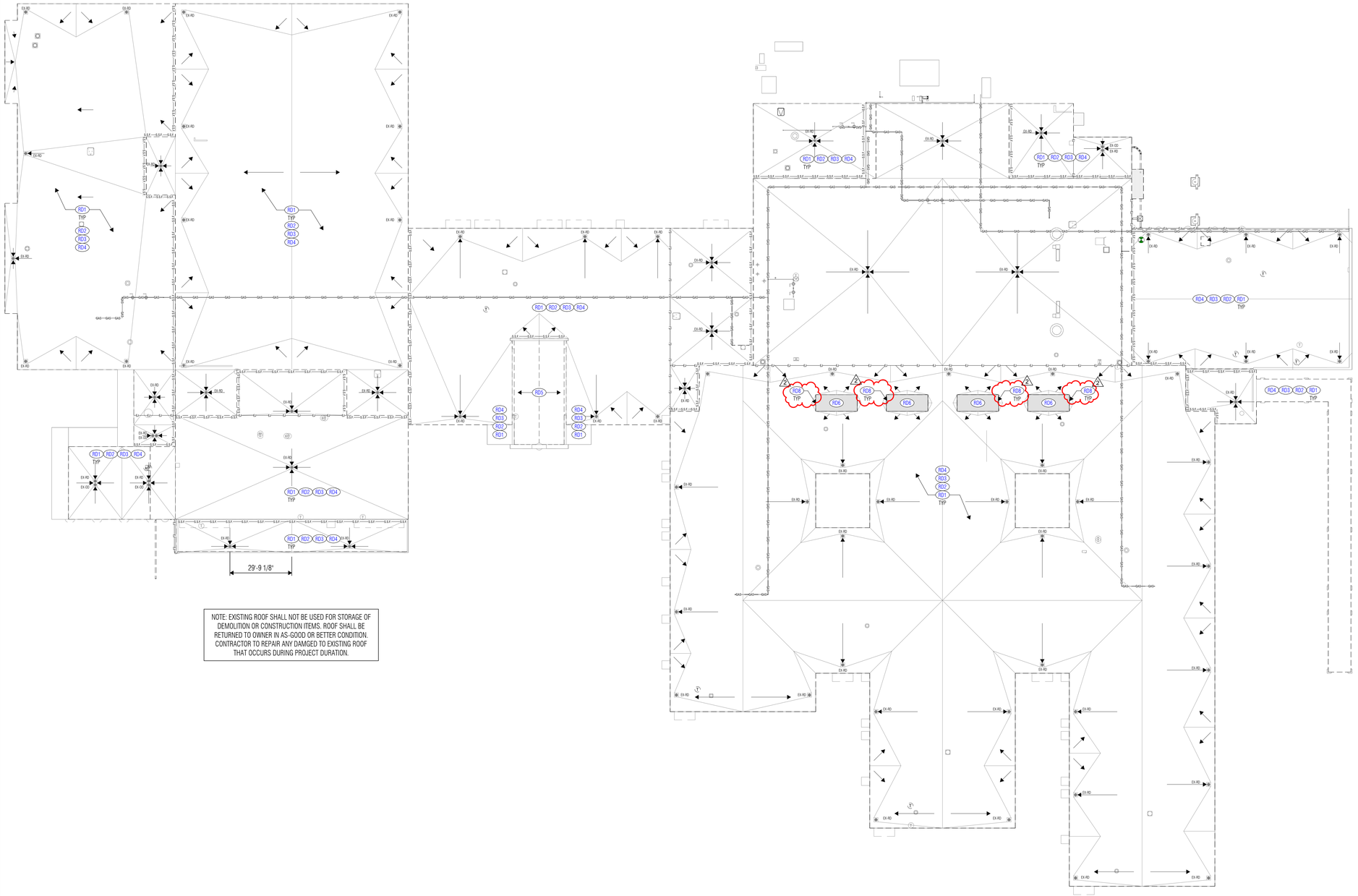
2	Addendum 2	03-14-2025

Director: RSJ
Drawn By: STH, KM
Designer
Quality Control
Proj. Arch.: TQ

PROJECT NO.
24-010.00

SHEET TITLE
COOK - BUILDING SECTIONS

SHEET NO.
A14.10



NOTE: EXISTING ROOF SHALL NOT BE USED FOR STORAGE OF DEMOLITION OR CONSTRUCTION ITEMS. ROOF SHALL BE RETURNED TO OWNER IN AS-GOOD OR BETTER CONDITION. CONTRACTOR TO REPAIR ANY DAMGED TO EXISTING ROOF THAT OCCURS DURING PROJECT DURATION.

1 OVERALL ROOF DEMO PLAN

SCALE: 3/64" = 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.
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.
9. Clean and paint strainer baskets.
10. All sheet metal fascia, gutters and downspouts shall be pre-finished aluminum. All metal flashings embedded in roof membrane and in though-wall conditions shall be stainless steel.

ROOF PLAN LEGEND

	NEW ROOF ASSEMBLY
EX-RD	EXISTING ROOF DRAIN
EX-OD	EXISTING OVERFLOW PLAN
CTES-TCT	EXISTING COAL-TAR PITCH ELASTOMERIC SHEET ROOFING OVER EXISTING TECTUM PANEL DECKING
CTES-LW	EXISTING COAL-TAR PITCH ELASTOMERIC SHEET ROOFING OVER EXISTING TECTUM PANEL DECKING
CTES-STRLLW	EXISTING COAL-TAR PITCH ELASTOMERIC SHEET ROOFING OVER EXISTING LIGHT WEIGHT CONCRETE DECKING
	EXISTING EXPANSION JOINT
	NEW STAINLESS STEEL THROUGH WALL FLASHING
	EXISTING FIRE HATCH
	EXISTING MECHANICAL, ELECTRICAL, PLUMBING UNITS
	DEMOLISHED ITEMS

ROOF PLAN LEGEND

BUR	BUILT-UP BITUMINOUS ROOFING
MBM	MODIFIED BITUMINOUS MEMBRANE ROOFING
CTES	COAL-TAR PITCH ELASTOMERIC SHEET ROOFING
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.
OD	OVERFLOW DRAIN WITH DOWNSPOUT NOZZLE, REF.
OS	OVERFLOW SCUPPER, REF. _/A_.__
DS	DOWNSPOUT, REF. _/A_.__
DSC	DOWNSPOUT WITH SCUPPER AND CONDUCTOR HEAD, REF. _/A_.__
SB	SPLASH BLOCK, CONCRETE, REF. _/A/__
SP	SPLASH PAN, REF. _/A_.__
MC	MANUFACTURED COPING, REF. _/A_.__
RH	ROOF HATCH, REF.
RL	ROOF LADDER, REF. _/A_.__
RTU	ROOFTOP UNIT, REF. MECHANICAL & _/A_.__
CU	CONDENSING UNIT, REF. FOOD SERVICE, M.E.P. & _/A_.__
GP	GAS PIPE PENETRATION, REF.
RV	RELIEF VENT, REF. M.E.P.
EF	EXHAUST FAN, REF. M.E.P.

DEMO KEYED NOTES

RD1	CLEAN AND PREPARE ROOF TO RECIEVE NEW CAP SHEET. CUT OUT AND REPAIR ANY DEFORMATIONS OR BUBBLES IN THE EXISTING ROOF LAYERS.
RD2	CAREFULLY REMOVE ALL EXISTING ROOF COPING AND ASSOCIATED FLASHING. EXISTING BLOCKING TO REMAIN, U.N.O. REMOVE AND REPLACE ANY DETERIORATED BLOCKING. PREPARE AREA FOR NEW CONSTRUCTION.
RD3	EXISTING ROOF TOP UNITS TO REMAIN, U.N.O. PROTECT IN PLACE. GC TO WALK WITH OWNER REPS TO VERIFY UNITS' FUNCTIONALITY. REF: MEP
RD4	REMOVE AND PROPERLY DISPOSE OF ABANDONED EQUIPMENT AND ASSOCIATED ITEMS ON EXISTING ROOF. COORDINATE WITH OWNER FOR SALVAGE.
RD5	REMOVE AND PROPERLY DISPOSE OF ROOF SHINGLES AND WATERPROOFING. SHEATHING AND INSULATION TO REMAIN. REPLACE ANY DAMAGED SHEATHING. CLEAN AND PREPARE FOR NEW CONSTRUCTION.
RD6	EXISTING SKYLIGHT TO REMAIN. PROTECT IN PLACE. CONSTRACTOR TO REPAIR ANY DAMAGE CAUSED AS A RESULT OF CONSTRUCTION ACTIVITIES.
RD8	CAREFULLY REMOVE, STORE, AND PROTECT SKYLIGHT COPING TO BE REINTALLED. REMOVE THE ALUMINUM FOIL FACE OF THE EXISTING VERAL ALUMINUM FLASHING PLY. PREPARE AREA FOR NEW CONSTRUCTION.

VLK|ARCHITECTS

ARCHITECT

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CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

2024 Cook, Labay & Truitt MS Renovations

REGISTERED ARCHITECT
ROBYN STAMPS
24209
STATE OF TEXAS
03/14/2025

ISSUED: February 24, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 1	03-06-2025
2	Addendum 2	03-14-2025

Director	Drawn By
RSJ	STH, KM
Designer	Quality Control
Proj. Arch.	
TQ	

PROJECT NO.

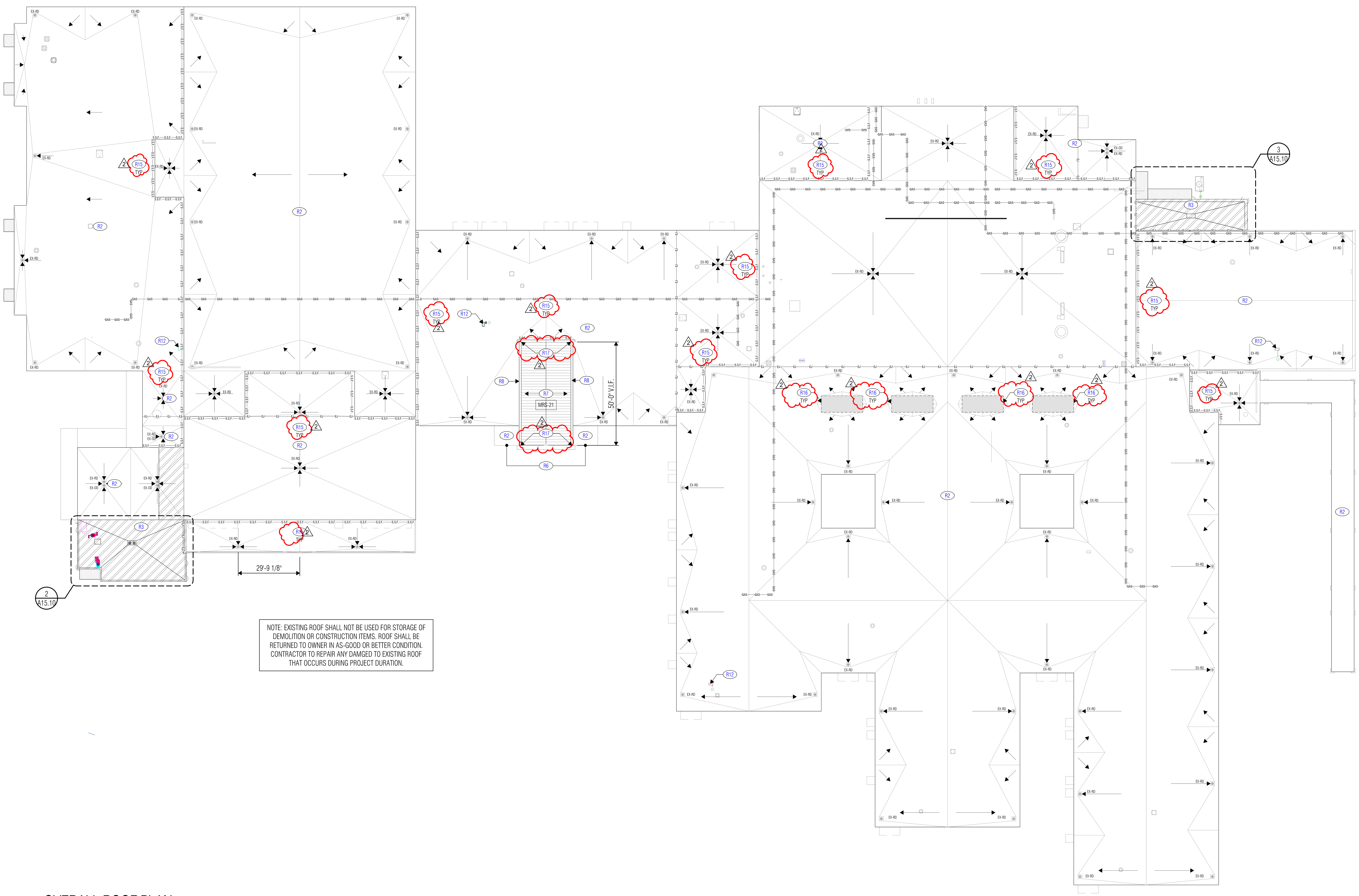
24-010.00

SHEET TITLE

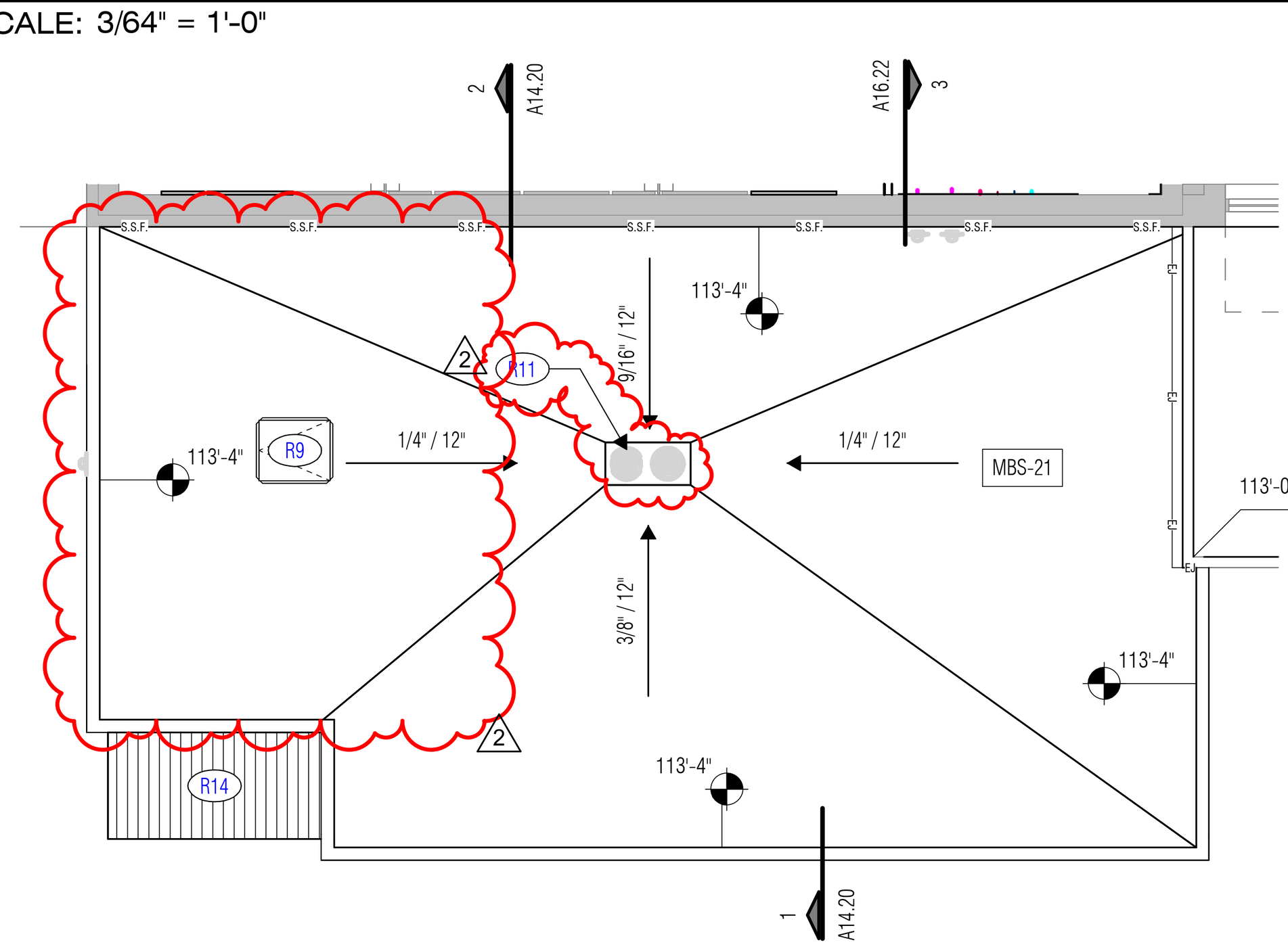
COOK - ROOF DEMO PLAN

SHEET NO.

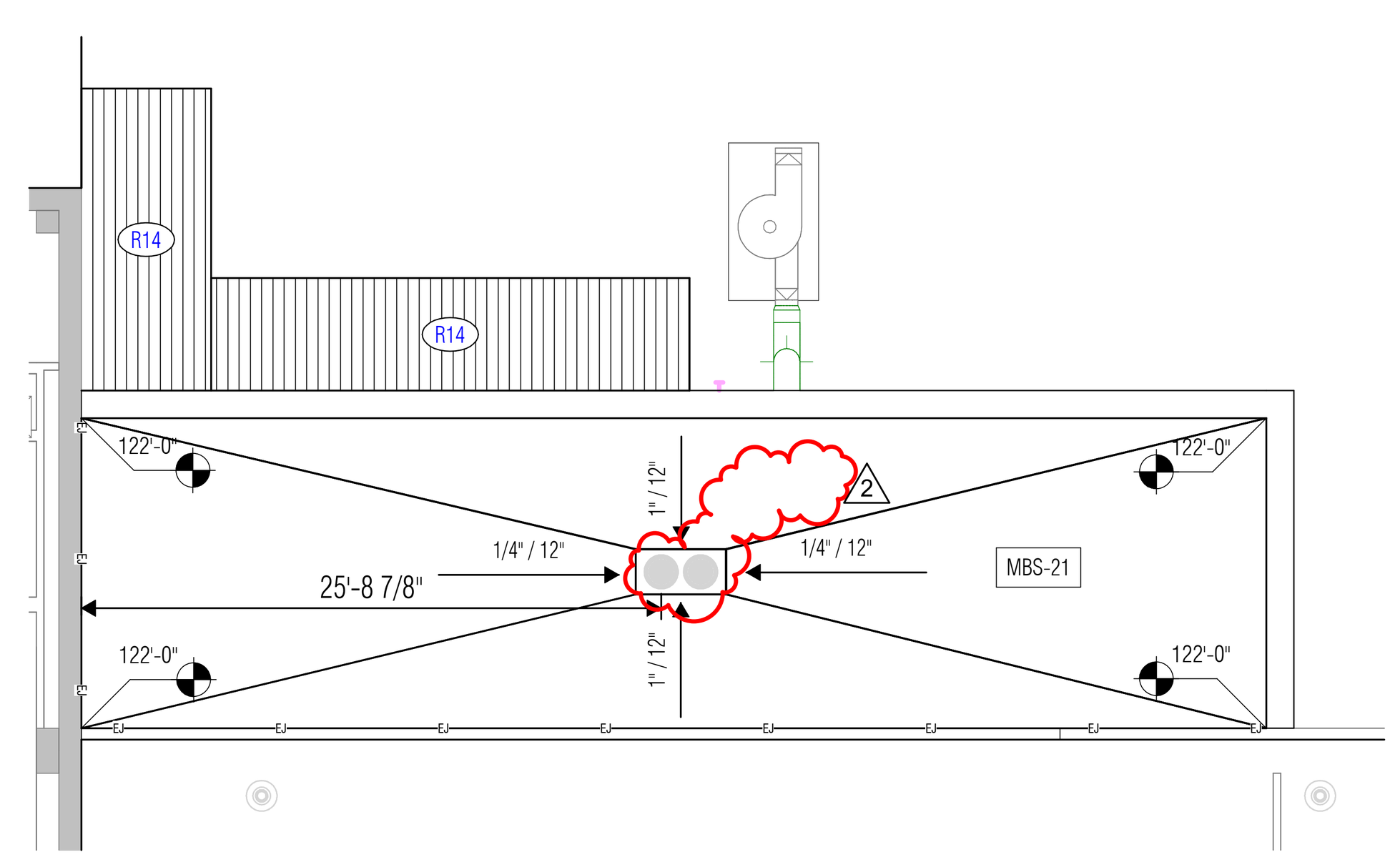
A15.01



1 OVERALL ROOF PLAN
SCALE: 3/64" = 1'-0"



2 ORCHESTRA ADDITION ROOF PLAN
SCALE: 1/8" = 1'-0"



3 CTE ADDITION ROOF PLAN
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.
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.
9. Clean and paint strainer baskets.
10. All sheet metal fascia, gutters and downspouts shall be pre-finished aluminum. All metal flashings embedded in roof membrane and in though-wall conditions shall be stainless steel.

ROOF PLAN LEGEND

(hatch)	NEW ROOF ASSEMBLY
EX-RD	EXISTING ROOF DRAIN
EX-OD	EXISTING OVERFLOW PLAN
CTES-TCT	EXISTING COAL-TAR PITCH ELASTOMERIC SHEET ROOFING OVER EXISTING TECTUM PANEL DECKING
CTES-LW	EXISTING COAL-TAR PITCH ELASTOMERIC SHEET ROOFING OVER EXISTING TECTUM PANEL DECKING
CTES-STRLLW	EXISTING COAL-TAR PITCH ELASTOMERIC SHEET ROOFING OVER EXISTING LIGHT WEIGHT CONCRETE DECKING
	EXISTING EXPANSION JOINT
	NEW STAINLESS STEEL THROUGH WALL FLASHING
	EXISTING FIRE HATCH
	EXISTING MECHANICAL, ELECTRICAL, PLUMBING UNITS
	DEMOLISHED ITEMS

ROOF PLAN LEGEND

BUR	BUILT-UP BITUMINOUS ROOFING
MBM	MODIFIED BITUMINOUS MEMBRANE ROOFING
CTES	COAL-TAR PITCH ELASTOMERIC SHEET ROOFING
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.
OD	OVERFLOW DRAIN WITH DOWNSPOUT NOZZLE, REF.
OS	OVERFLOW SCUPPER, REF. _/A_.__
DS	DOWNSPOUT, REF. _/A_.__
DSC	DOWNSPOUT WITH SCUPPER AND CONDUCTOR HEAD, REF._/A_.__
SB	SPLASH BLOCK, CONCRETE, REF. _A/__
SP	SPLASH PAN, REF. _/A_.__
MC	MANUFACTURED COPING, REF. _/A_.__
RH	ROOF HATCH, REF.
RL	ROOF LADDER, REF. _/A_.__
RTU	ROOFTOP UNIT, REF. MECHANICAL & _/A_.__
CU	CONDENSING UNIT, REF. FOOD SERVICE, M.E.P. & _/A_.__
GP	GAS PIPE PENETRATION, REF.
RV	RELIEF VENT, REF. M.E.P.
EF	EXHAUST FAN, REF. M.E.P.

KEYNOTE LEGEND

R2	PROVIDE NEW 2-PLY CAP SHEET OVER EXISTING ROOF. MAINTAIN POSITIVE DRAINAGE TO EXISTING ROOF DRAINS AND DOWNSPOUTS. CONTRACTOR TO PROVIDE NEW ROOF ASSEMBLY OVER ANY ABANDONDED PENETRATIONS. PROVIDE NEW STAINLESS STEEL COPING AND FLASHING AT ALL PREVIOUSLY EXISTING LOCATIONS AND NEW ROOF AREAS.
R3	NEW MOD. BIT. ROOF TO MATCH EXISITNG. REF: ROOFING DETAILS.
R6	FIX ANY ONGOING LEAKS AT ROOF CANOPIES.
R7	NEW CONCEALED FASTENER METAL ROOF OVER EXISTING STRUCTURE. REF: ROOFING DETAILS.
R8	PROVIDE NEW FLASHING AND TRANSITION TO MATCH EXISTING ROOF EDGE HEIGHT. PROVIDE NEW GUTTERS, DOWNSPOUTS AND SPLASH BLOCKS TO LOWER ROOF.
R9	PROVIDE NEW ROOF HATCH.
R11	PRIMARY AND OVERFLOW ROOF DRAINS. RE: ROOF DETAIL AND PLUMBING.
R12	INSTALL STAINLESS STEEL TUBES, ANCHORED TO STRUCTURE. COORDINATE LOCATIONS WITH NEW MINI-SPLIT CONDENSOR LOCATIONS. REINFORCE JOISTS AS AS NOTED ON STRUCTURAL DRAWINGS.
R14	NEW PREENGINEERED CANOPY. RE: WALL SECTION AND STRUCTURAL DRAWINGS.
R15	REMOVE AND REPLACE ALL EXISTING THROUGH WALL FLASHING ON ENTIRE FACILITY.
R16	PROVIDE NEW VERAL ALUMINUM FLASHING. RE: ROOF DETAILS.
R17	EXISITNG RECIEVER AND STEP FLASHING TO REMAIN IN PLACE. CONTRACTOR TO REPAIR DAMAGED RECIEVER OR STEP FLASHING CAUSED AS A RESULT BY CONSTRUCTION ACTIVITY.

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HOUSTON, TEXAS

2024 Cook, Labay & Truitt MS Renovations

03/14/2025

ISSUED: February 24, 2025

REVISIONS

Revision No.		Revision Date
2	Addendum 2	03-14-2025

Director: RSJ
Drawn By: STH, KM
Designer
Quality Control
Proj. Arch.: TQ

PROJECT NO.
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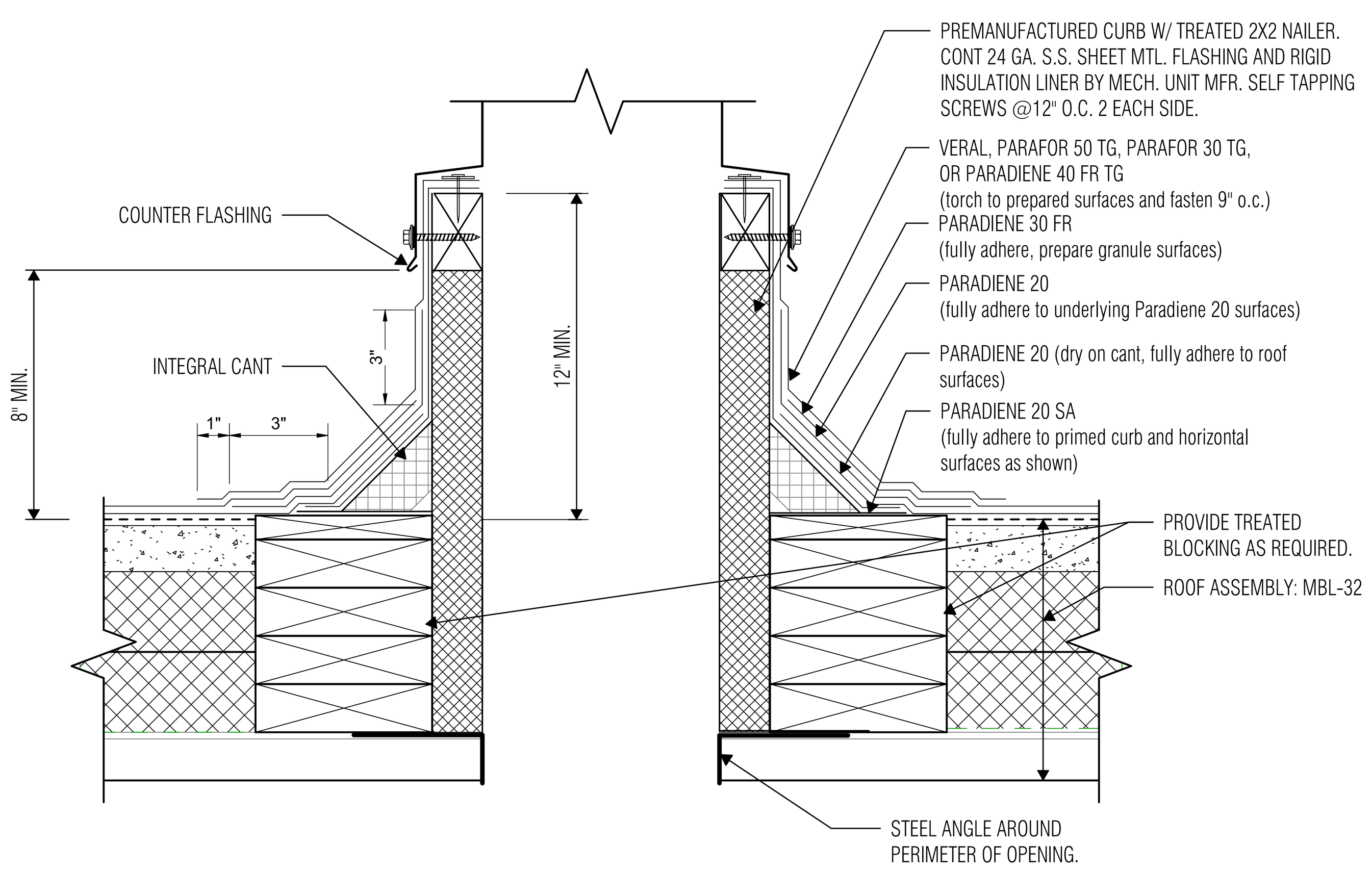
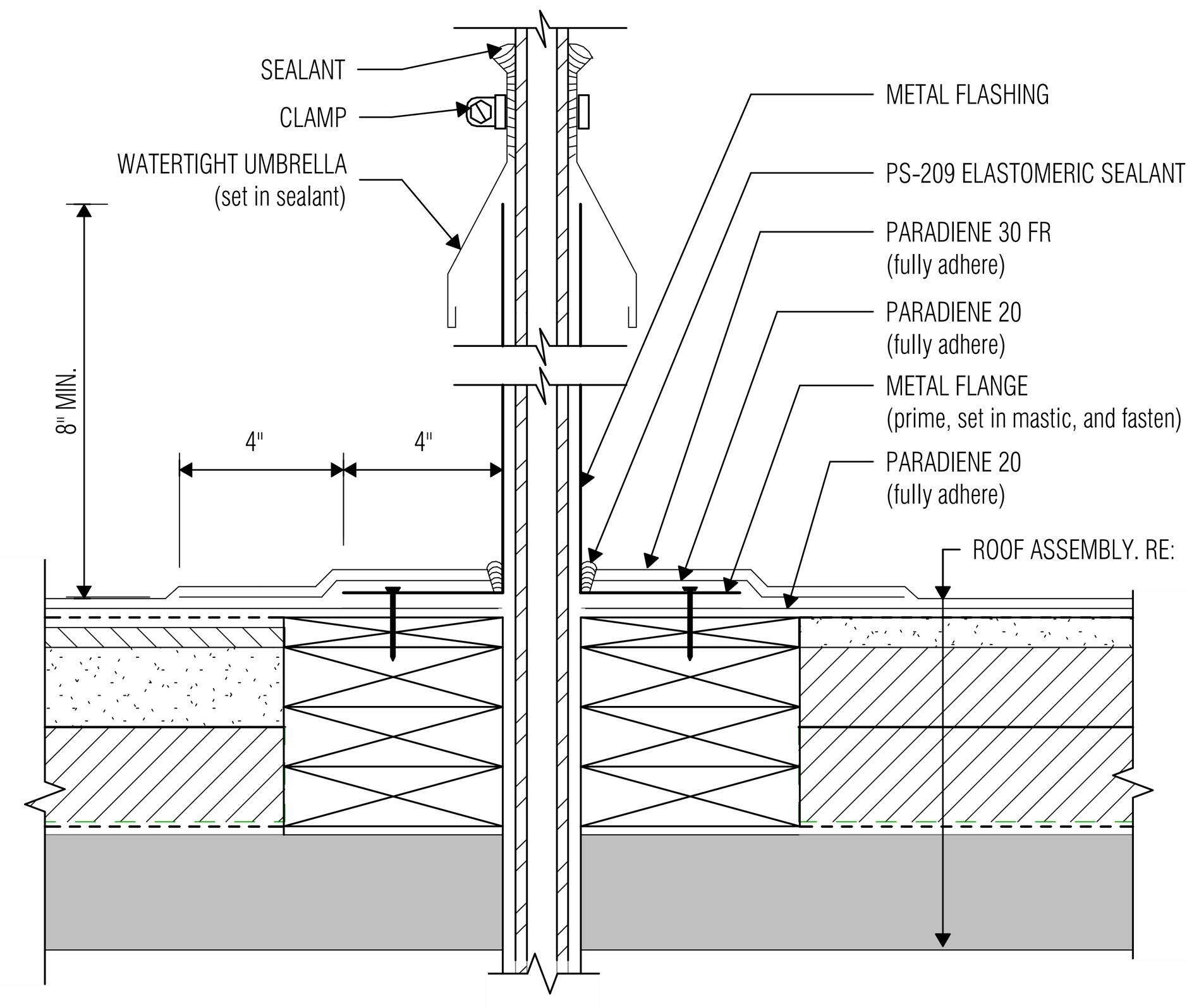
SHEET TITLE
COOK - ROOF PLANS

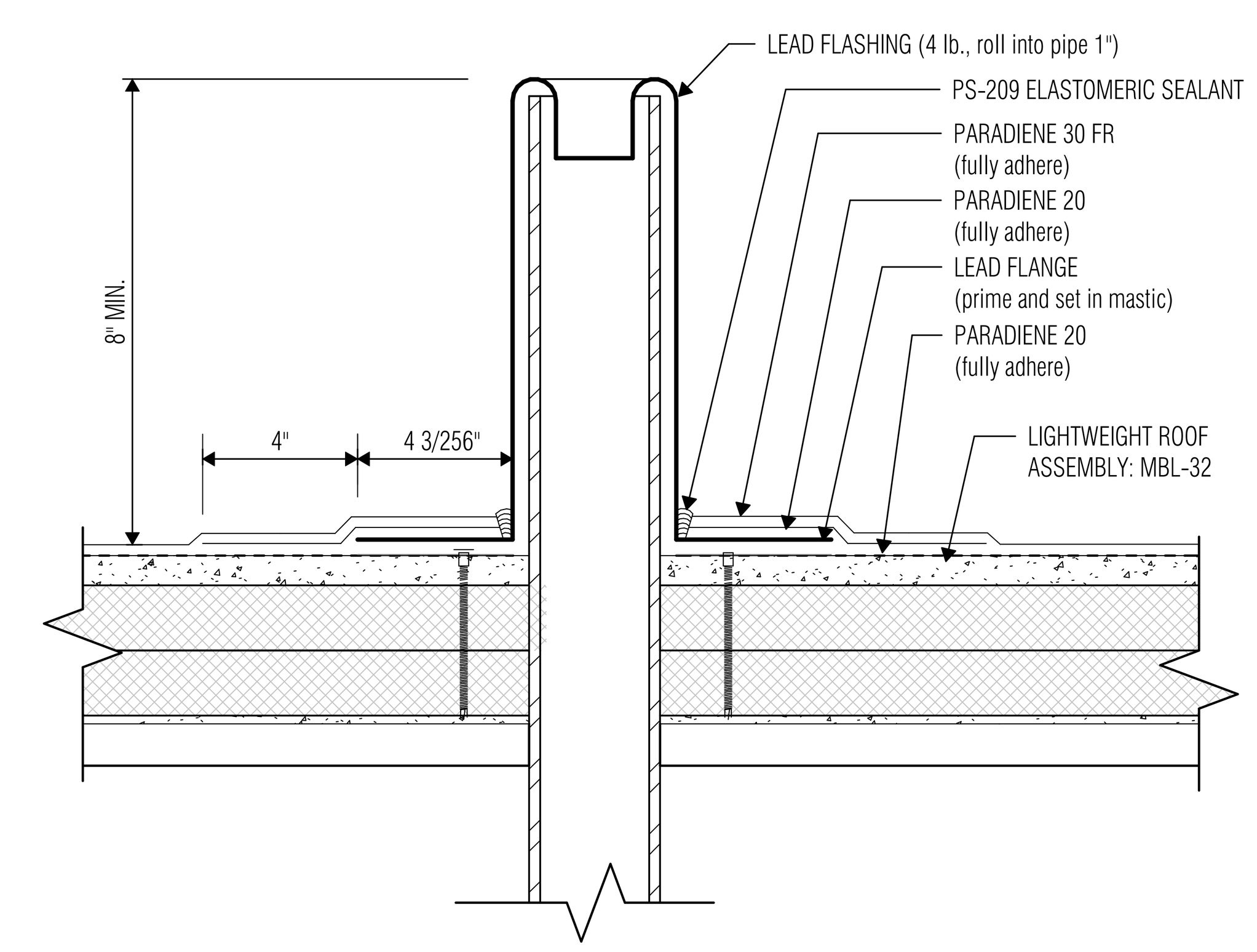
SHEET NO.
A15.10



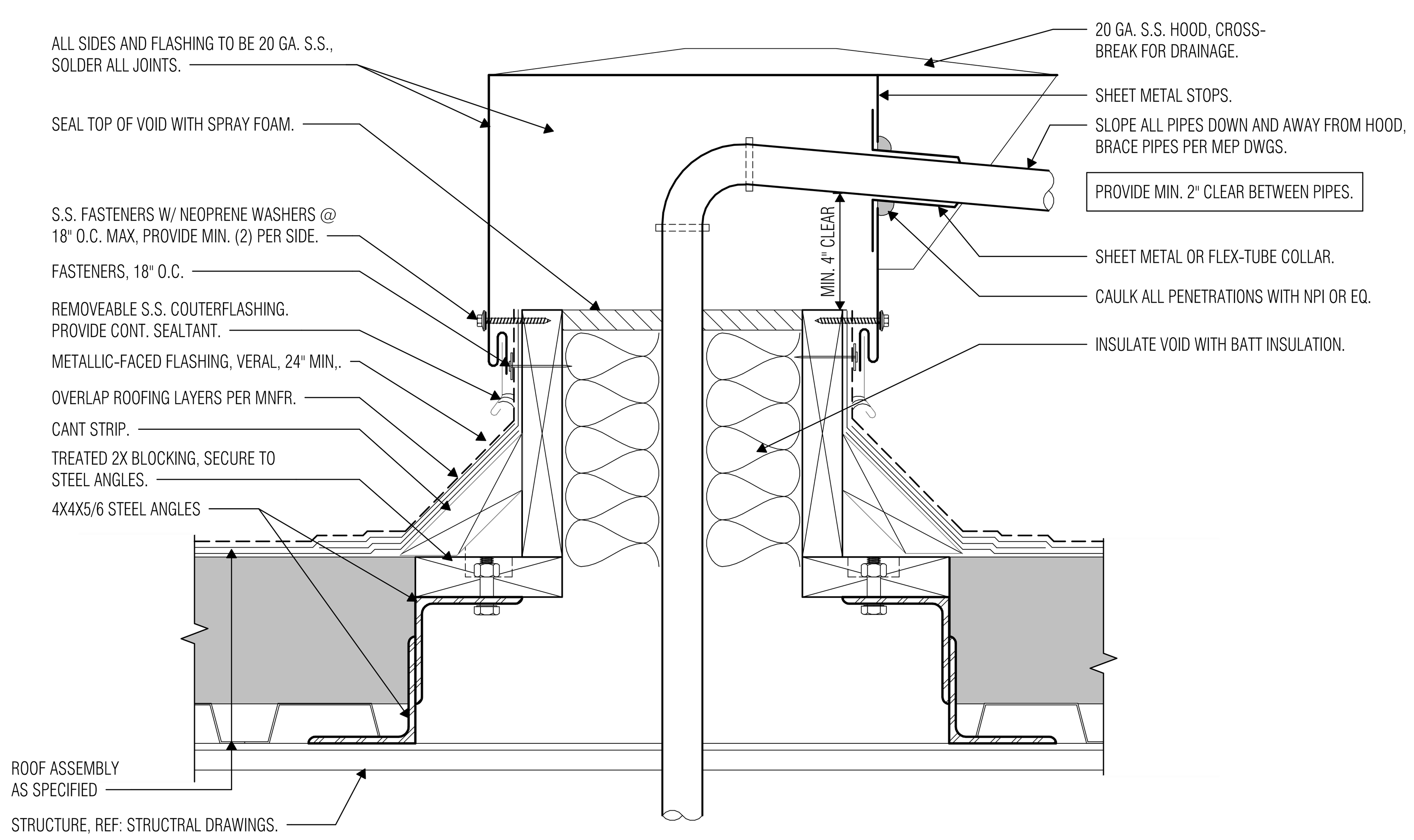
1 MECHANICAL CURB DETAIL
SCALE: 3" = 1'-0"



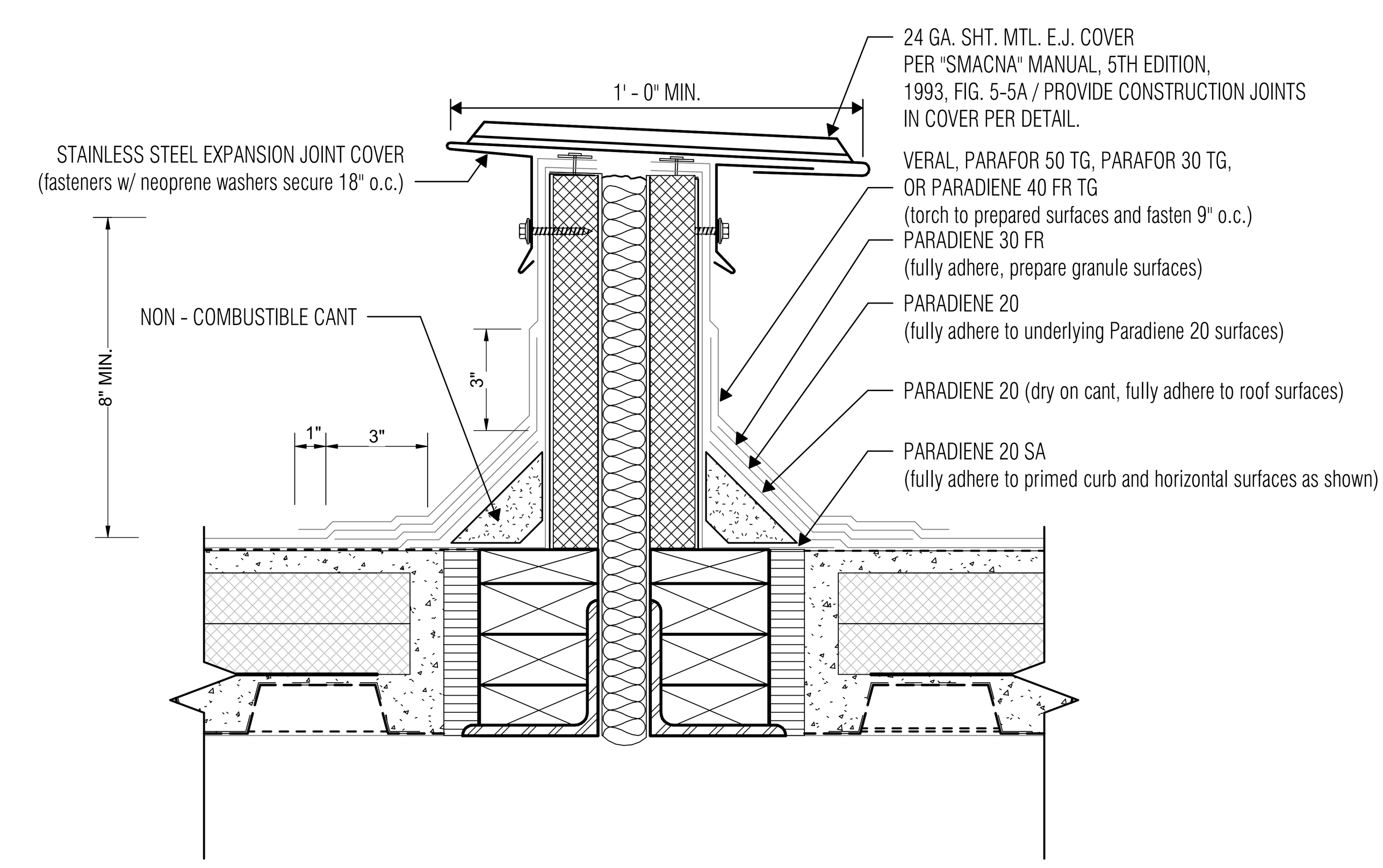
2 TYP PIPE FLASHING AT ROOF
SCALE: 3" = 1'-0"



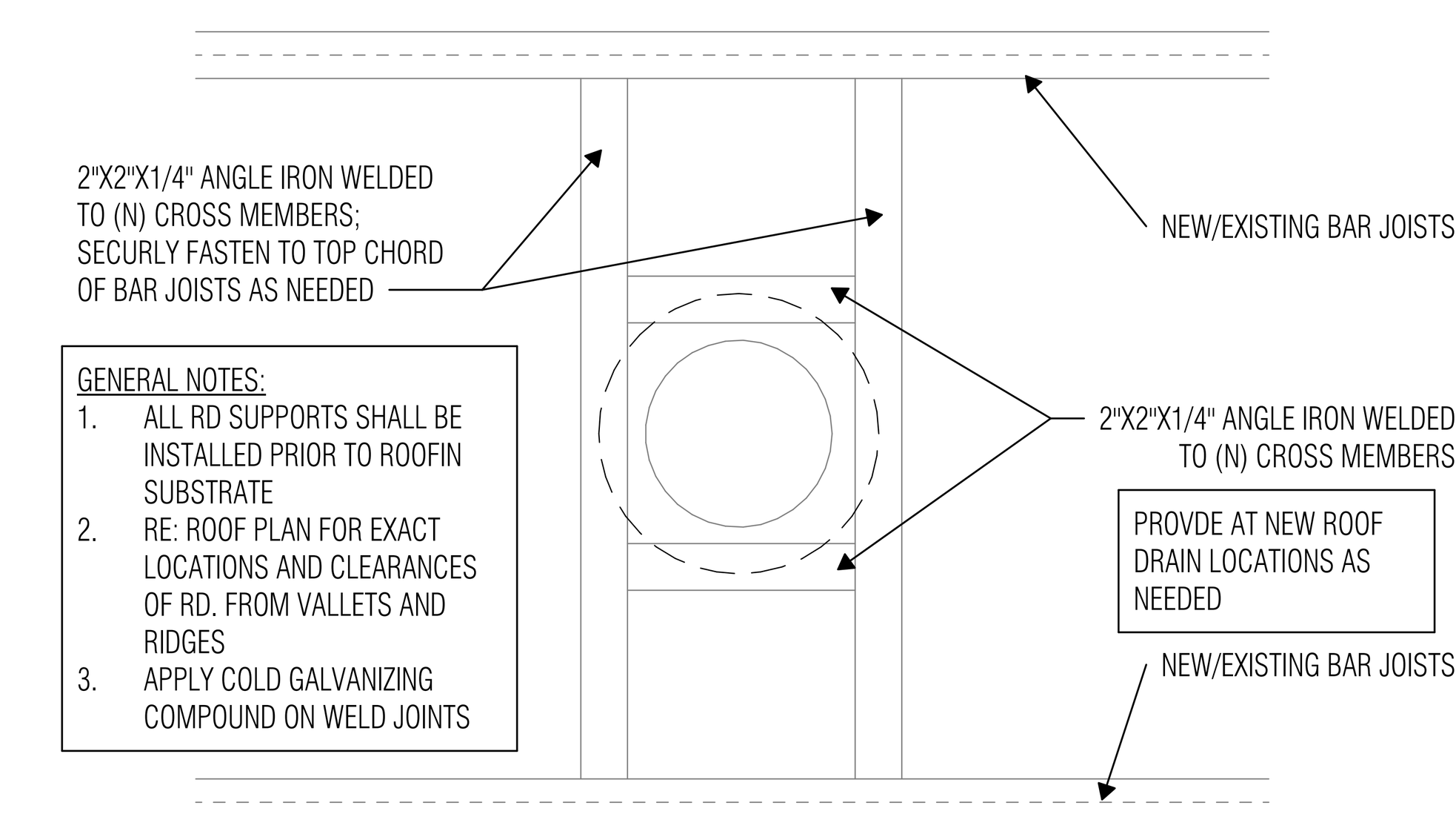
3 TYP. VENT STACK FLASHING
SCALE: 3" = 1'-0"



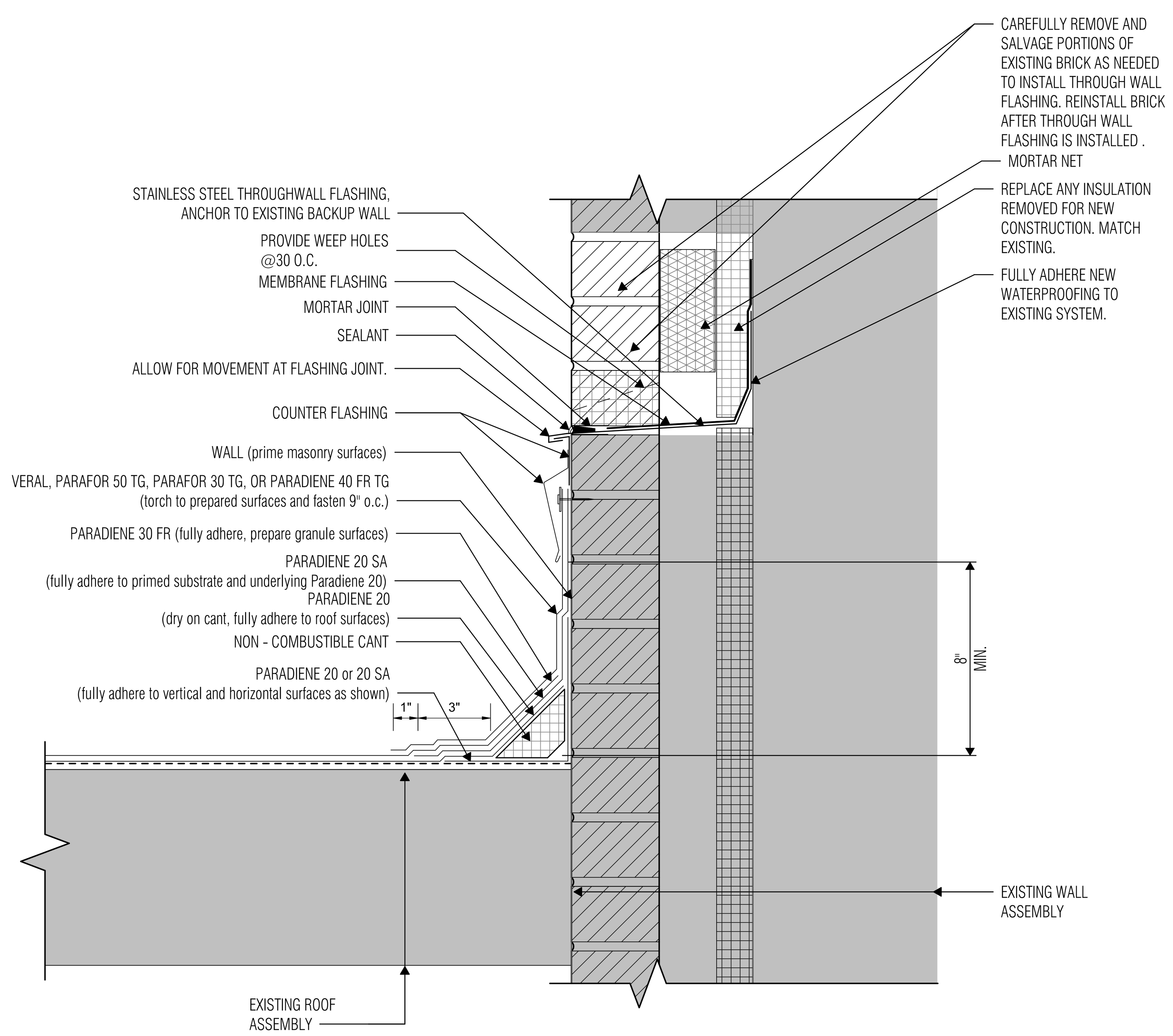
4 TYP PIPE PENETRATION HOOD
SCALE: 3" = 1'-0"



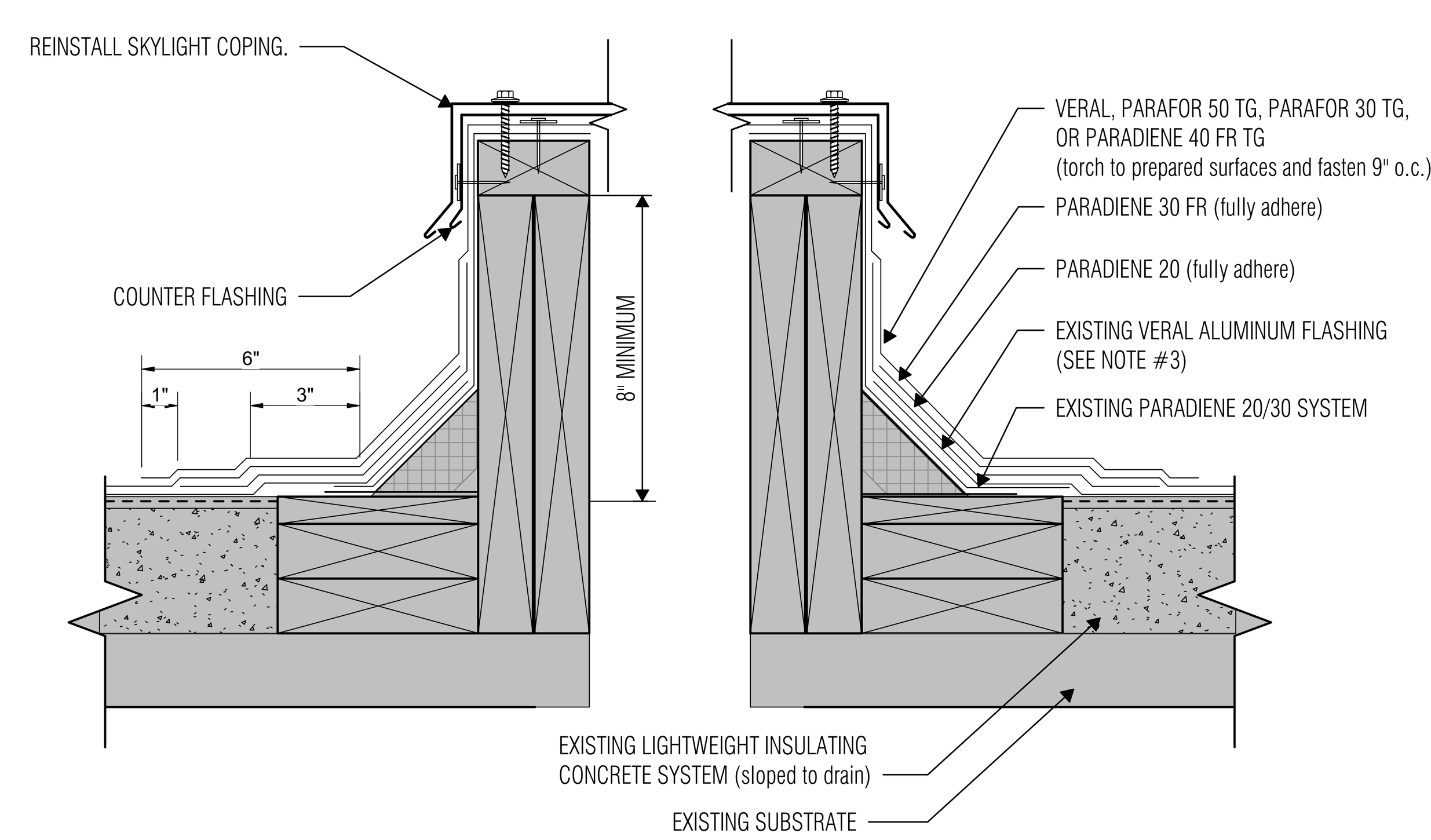
5 ROOF EXPANSION JT. COVER
SCALE: 3" = 1'-0"



6 ROOF DRAIN SUPPORT DETAIL
SCALE: 1 1/2" = 1'-0"



7 DETAIL AT COUNTERFLASHING
SCALE: 3" = 1'-0"



NOTES:
1. WHERE PRIMER IS INDICATED TO MAINTAIN PROPER ADHESION, USE PA-1125 OR PA-917 PRIMER. CONTACT SIPLAST FOR SPECIFIC REQUIREMENTS.
2. PREPARE GRANULE SURFACES UNDER THE FLASHING BY TORCH PREPARATION.
3. USING A TORCH, TOP HEAT AND CAREFULLY REMOVE THE ALUMINUM FOIL SURFACE OF THE EXISTING FLASHING, EXPOSING THE UNDERLYING BITUMINOUS MEMBRANE.
4. THE CARPENTRY AND METAL WORK SHOWN DEPICTS SHOP FABRICATION AND JOB-SITE ASSEMBLY. THESE COMPONENTS SHOULD BE DESIGNED/FABRICATED/INSTALLED ACCORDING TO GENERALLY ACCEPTED INDUSTRY PRACTICES, STANDARDS, AND APPROVALS.
5. DISSIMILAR METAL TYPES SUBJECT TO ELECTROLYTIC REACTION SHOULD BE PHYSICALLY SEPARATED.
6. REQUIREMENTS AND RECOMMENDATIONS DETAILED IN THE CURRENT SIPLAST SPECIFICATIONS SHALL APPLY IN ADDITION TO THE ABOVE DRAWING.

2

8 SKYLIGHT MEMBRANE OVERLAYMENT
SCALE: 3" = 1'-0"

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2024 Cook, Labay & Truitt MS Renovations

REGISTERED ARCHITECT · STATE OF TEXAS
03/14/2025

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REVISIONS

Revision No.		Revision Date
2	Addendum 2	03-14-2025

Director: RSJ
Drawn By: STH, KM
Designer
Quality Control
Proj. Arch.: TQ

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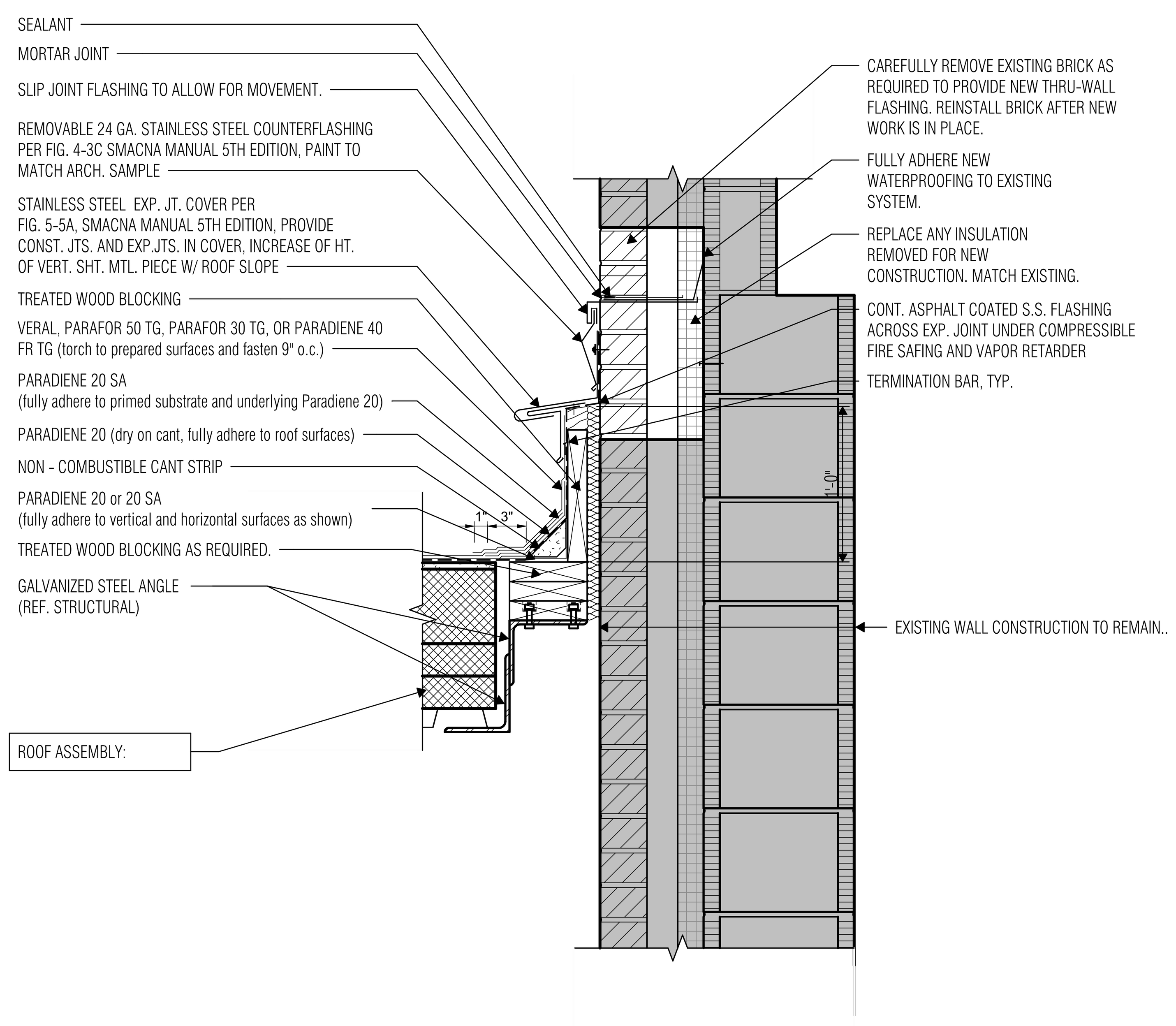
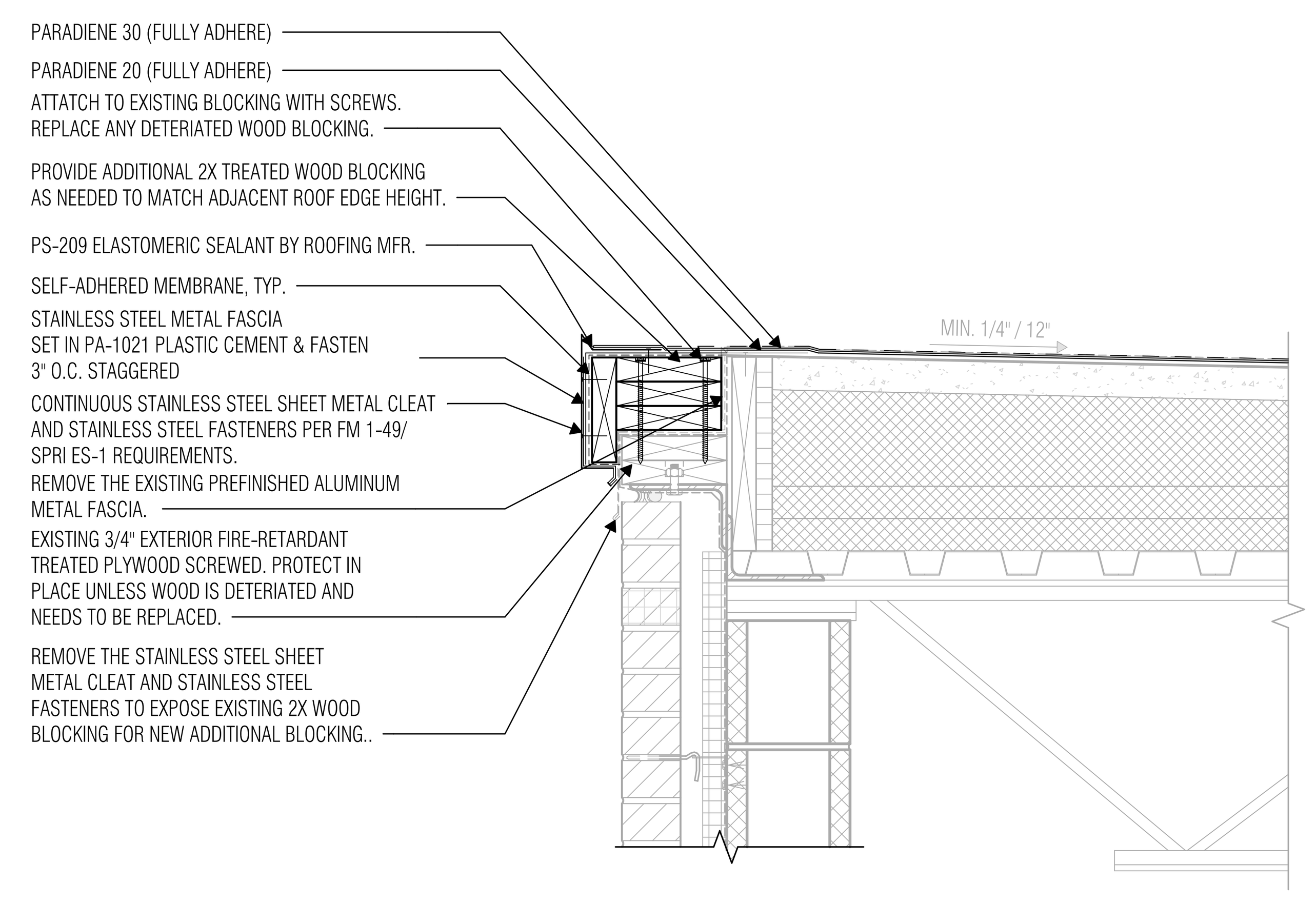
24-010.00

SHEET TITLE
COOK - ROOF DETAILS

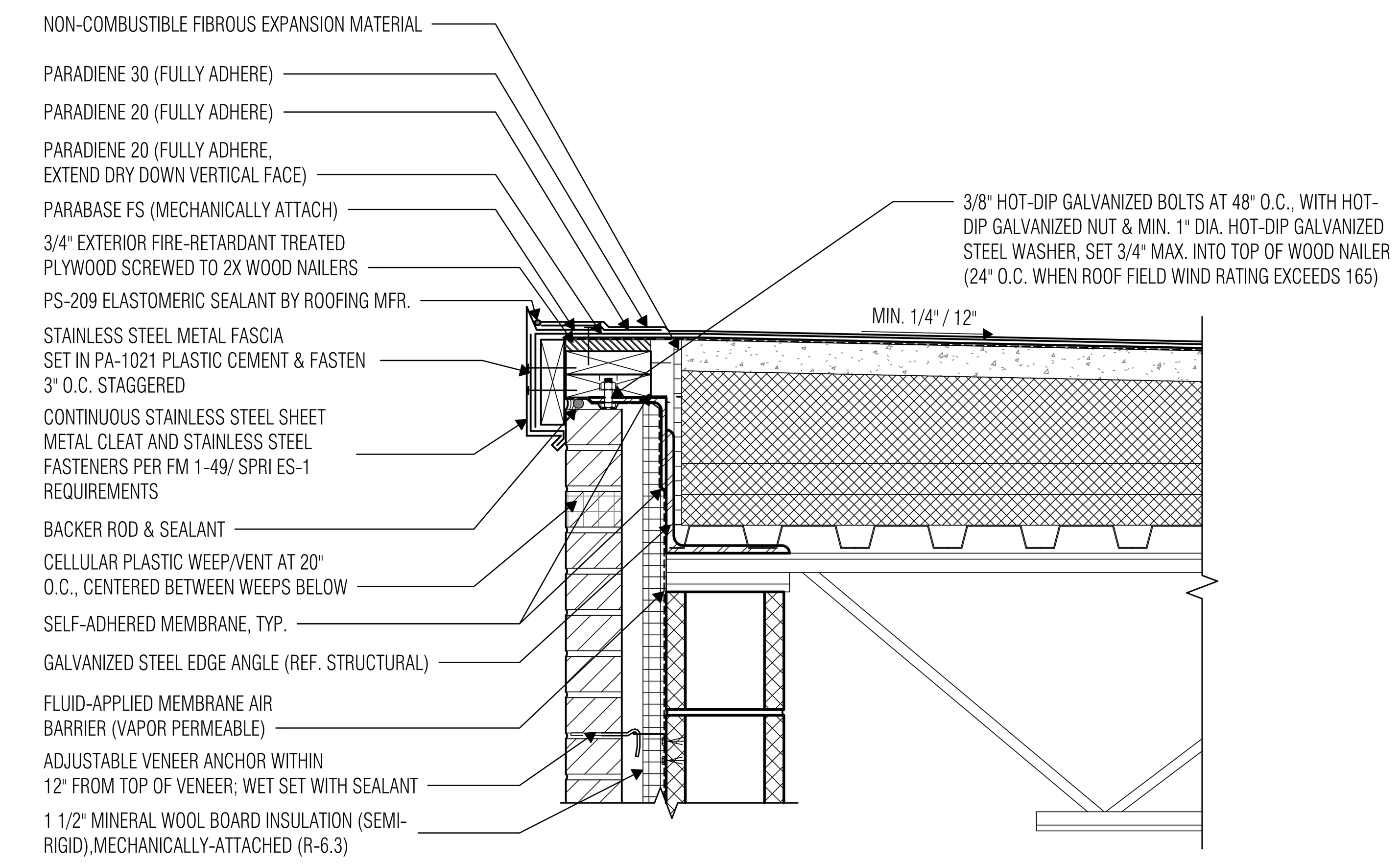
SHEET NO.
A15.21



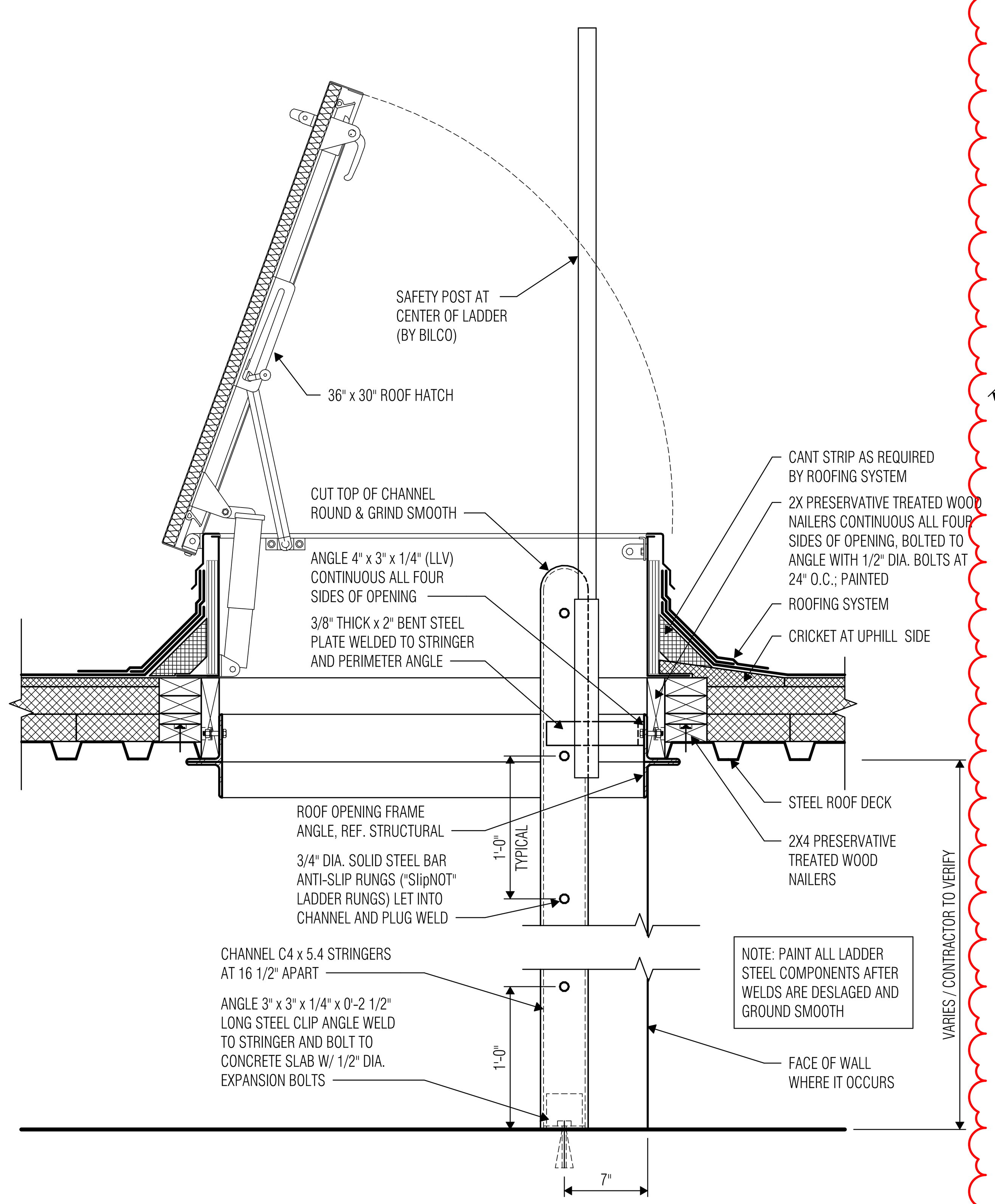
1 ROOF EXP. JOINT FLASH THRU DETAIL AT EXISTING WALL
SCALE: 1 1/2" = 1'-0"



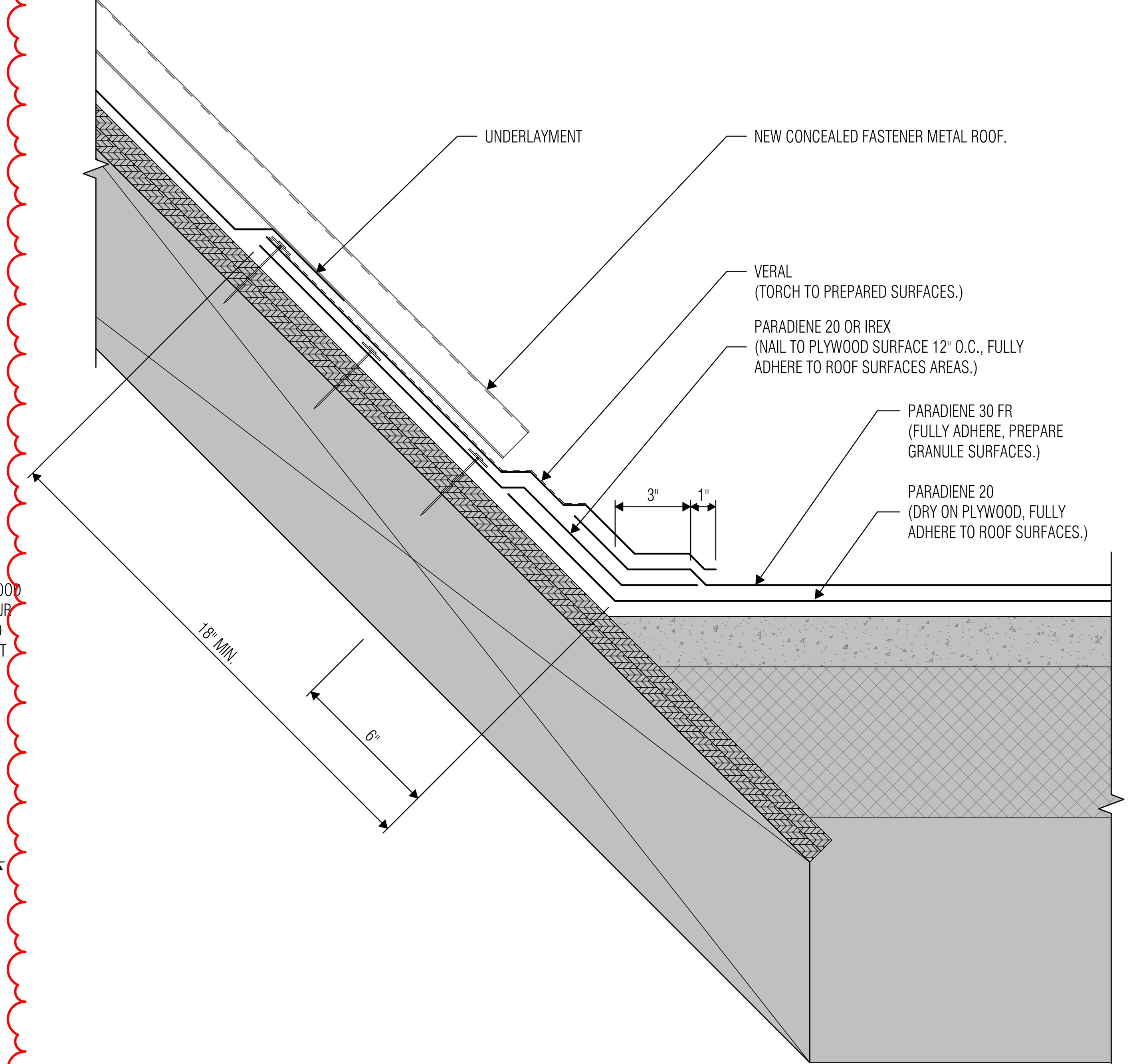
2 COOK- INFILLED ROOF EDGE DETAIL CMU
SCALE: 1 1/2" = 1'-0"



3 COOK - NEW ROOF EDGE DETAIL CMU
SCALE: 1 1/2" = 1'-0"



5 R600 - ROOF ACCESS LADDER & ROOF HATCH1
SCALE: 1 1/2" = 1'-0"



NOTES:
1. PREPARE GRANULE SURFACES UNDER VERAL FLASHING BY TORCH PREPARATION.
2. THE CARPENTRY SHOWN DEPICTS SHOP FABRICATION AND JOB-SITE ASSEMBLY. THESE COMPONENTS SHOULD BE DESIGNED/ FABRICATED/INSTALLED ACCORDING TO GENERALLY ACCEPTED INDUSTRY PRACTICES, STANDARDS AND APPROVALS.
3. REQUIREMENTS AND RECOMMENDATIONS DETAILED IN SIPLAST SPECIFICATIONS SHALL APPLY IN ADDITION TO THE ABOVE DRAWING.
4. THE SIPLAST GUARANTEE EXCLUDES ROOF MATERIALS NOT MANUFACTURED OR PROVIDED BY SIPLAST, AND THE CONNECTION OF SUCH MATERIALS TO THE SIPLAST MEMBRANE SYSTEM.

4 TIE-IN TO NEW METAL ROOF
SCALE: 3" = 1'-0"

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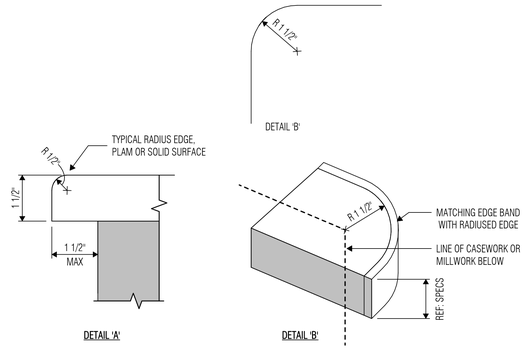
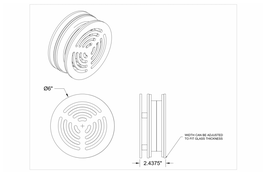
SHEET TITLE
COOK - ROOF DETAILS

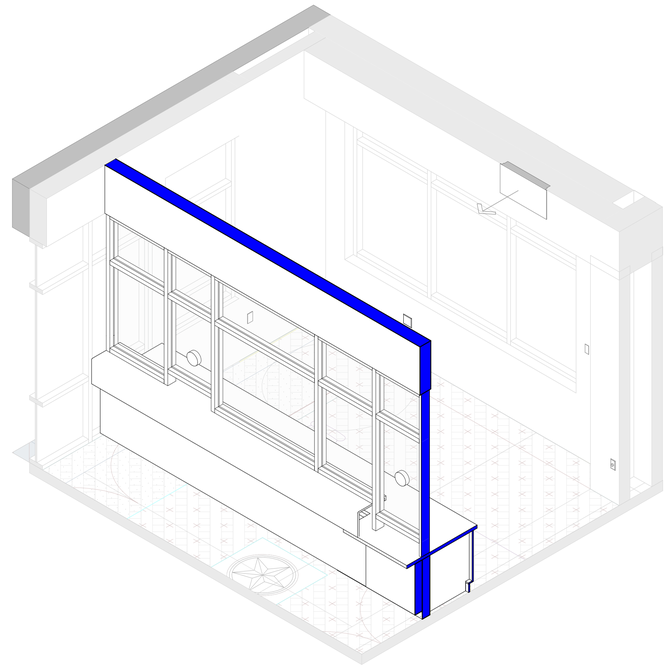
SHEET NO.
A15.22



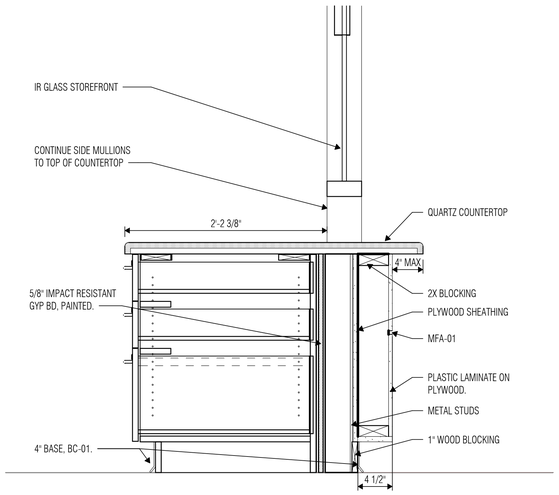
1 TYPICAL COUNTER EDGE DETAIL
SCALE: 6" = 1'-0"



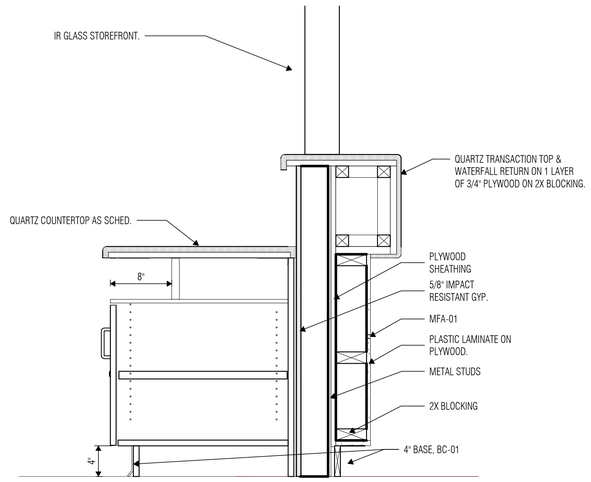
2 SPEAK-THRU DEVICE
SCALE: 1 1/2" = 1'-0"



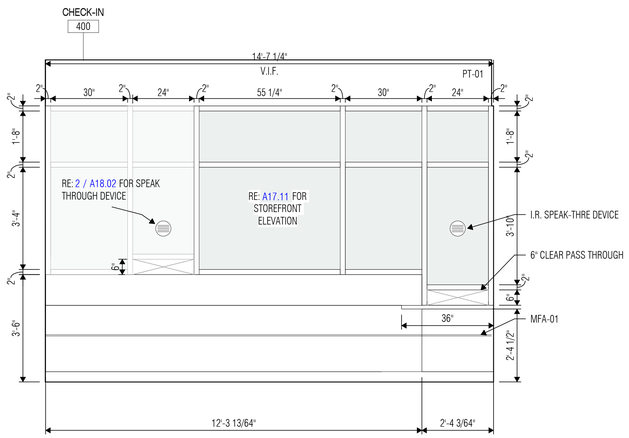
3 COOK RECEPTION DESK
SCALE:



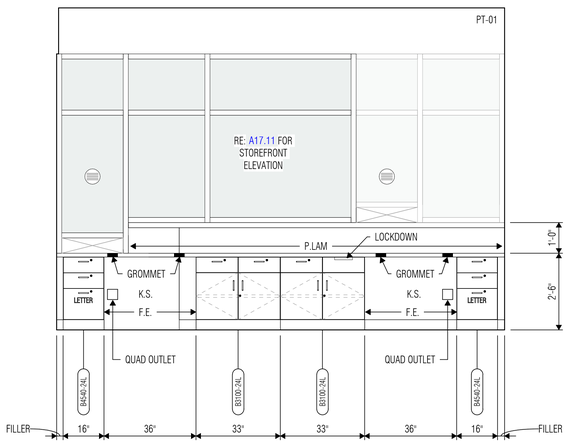
4 LOW COUNTER @ PASS THROUGH
SCALE: 1 1/2" = 1'-0"



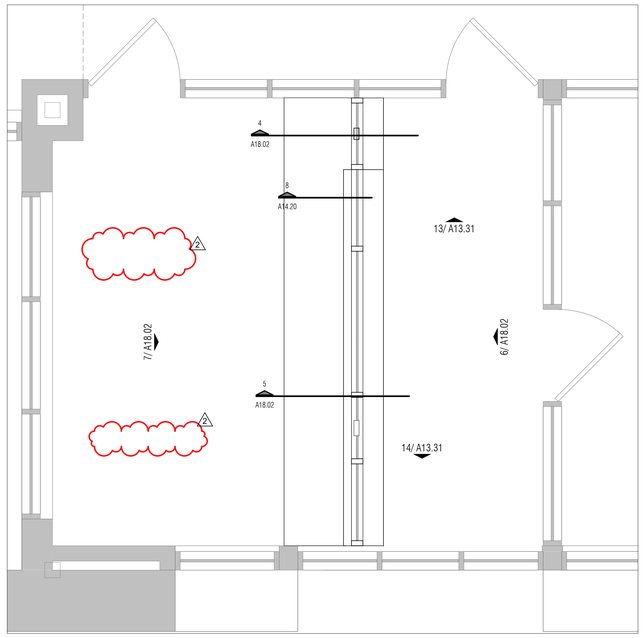
5 TRANSACTION COUNTER SECTION
SCALE: 1 1/2" = 1'-0"



6 INTERIOR ELEVATION
SCALE: 1/2" = 1'-0"



7 RECEPTION
SCALE: 1/2" = 1'-0"



8 COOK - NEW RECEPTION DESK PLAN
SCALE: 1/2" = 1'-0"

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HOUSTON, TEXAS

2024 Cook, Labay & Truitt MS Renovations

REGISTERED ARCHITECT THOMAS STAMPS 24202 STATE OF TEXAS

03/14/2025

ISSUED: February 24, 2025

REVISIONS

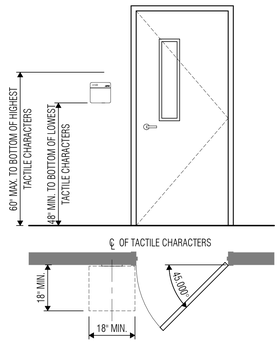
Revision No.		Revision Date
2	Addendum 2	03-14-2025

Director	Drawn By
RSJ	STH, KM
Designer	Quality Control
Proj. Arch.	
TQ	

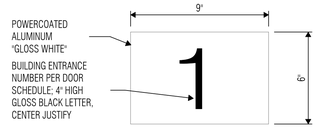
PROJECT NO.
24-010.00

SHEET TITLE
COOK - RECEPTION DESK CASEWORK PLANS, & DETAILS

SHEET NO.
A18.02

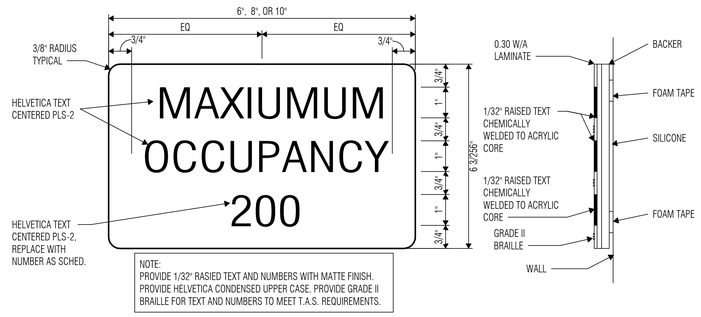


1 DETAIL/ELEV - DOOR SIGN
SCALE: 1/2" = 1'-0"



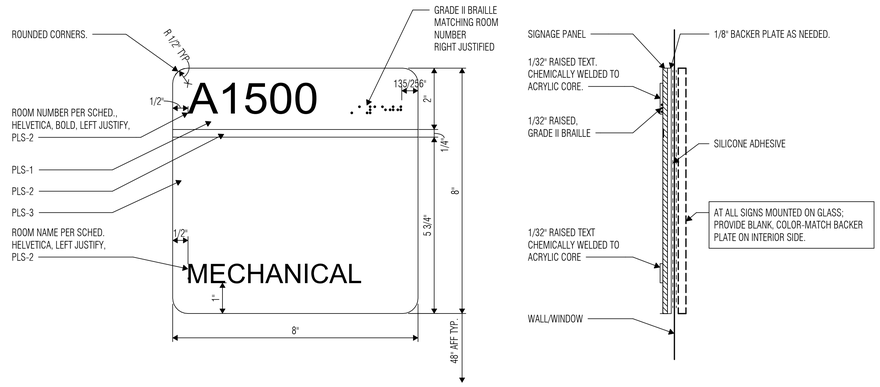
NOTE:
PROVIDE (2) SIGNS AT EACH ENTRANCE AS NOTED. ONE ON THE INTERIOR AND ONE ON THE EXTERIOR. BUILDING ENTRANCE SIGNS SHALL BE MOUNTED ABOVE AND CENTERED ON THE DOOR(S), WITH MECHANICAL FASTENERS (ON WALL) OR CLEAR DOUBLE SIDED VHB TAPE (ON GLAZING).

2 SIGN TYPE 'D'
SCALE: 3" = 1'-0"

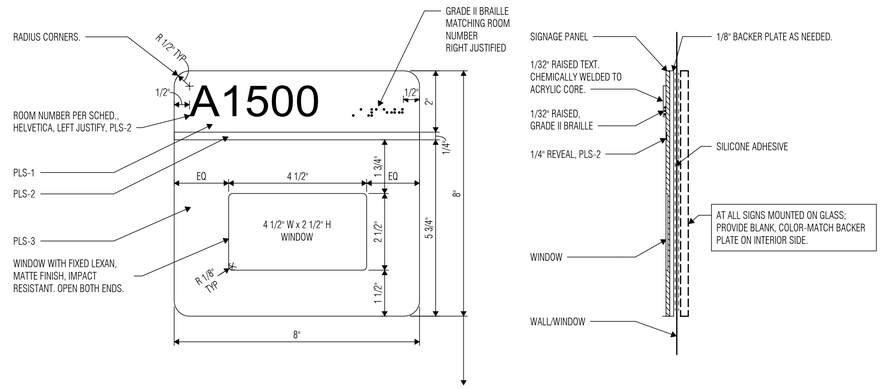


NOTE:
PROVIDE 1/32" RASIED TEXT AND NUMBERS WITH MATTE FINISH. PROVIDE HELVETICA CONDENSED UPPER CASE. PROVIDE GRADE II BRAILLE FOR TEXT AND NUMBERS TO MEET T.A.S. REQUIREMENTS.

3 SIGN TYPE 'C'1
SCALE: 6" = 1'-0"



4 SIGN TYPE 'A'1
SCALE: 6" = 1'-0"



5 SIGN TYPE 'B'1
SCALE: 6" = 1'-0"

GENERAL SIGNAGE NOTES

1. All signage to be protected in place, U.N.O. Contractor shall replace any damaged signage.
2. All new interior signs to match existing campus color schemes. Provide samples for Architect approval.
3. Provide sign type D fpr all exterior doors.
4. Refer to door schedule for signage locations.

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2024 Cook, Labay & Truitt MS Renovations

KEY PLAN

03/14/2025

ISSUED: February 24, 2025

REVISIONS

Revision No.		Revision Date
2	Addendum 2	03-14-2025

Director	Drawn By
RSJ	STH, KM
Designer	Quality Control
Proj. Arch. TQ	

PROJECT NO.
24-010.00

SHEET TITLE
COOK - ROOM SIGNAGE DETAILS

SHEET NO.
A19.20

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.
3. Contractor shall repair any damages to landscaping and paving after construction is complete.

SITE PLAN LEGEND

FIRE LANE

EXISTING FIRE LANE

CHAIN LINK FENCE, See Plan for Heights

EXISTING CHAIN LINK FENCE, See Plan for Heights

WOOD FENCE, See Plan for Heights

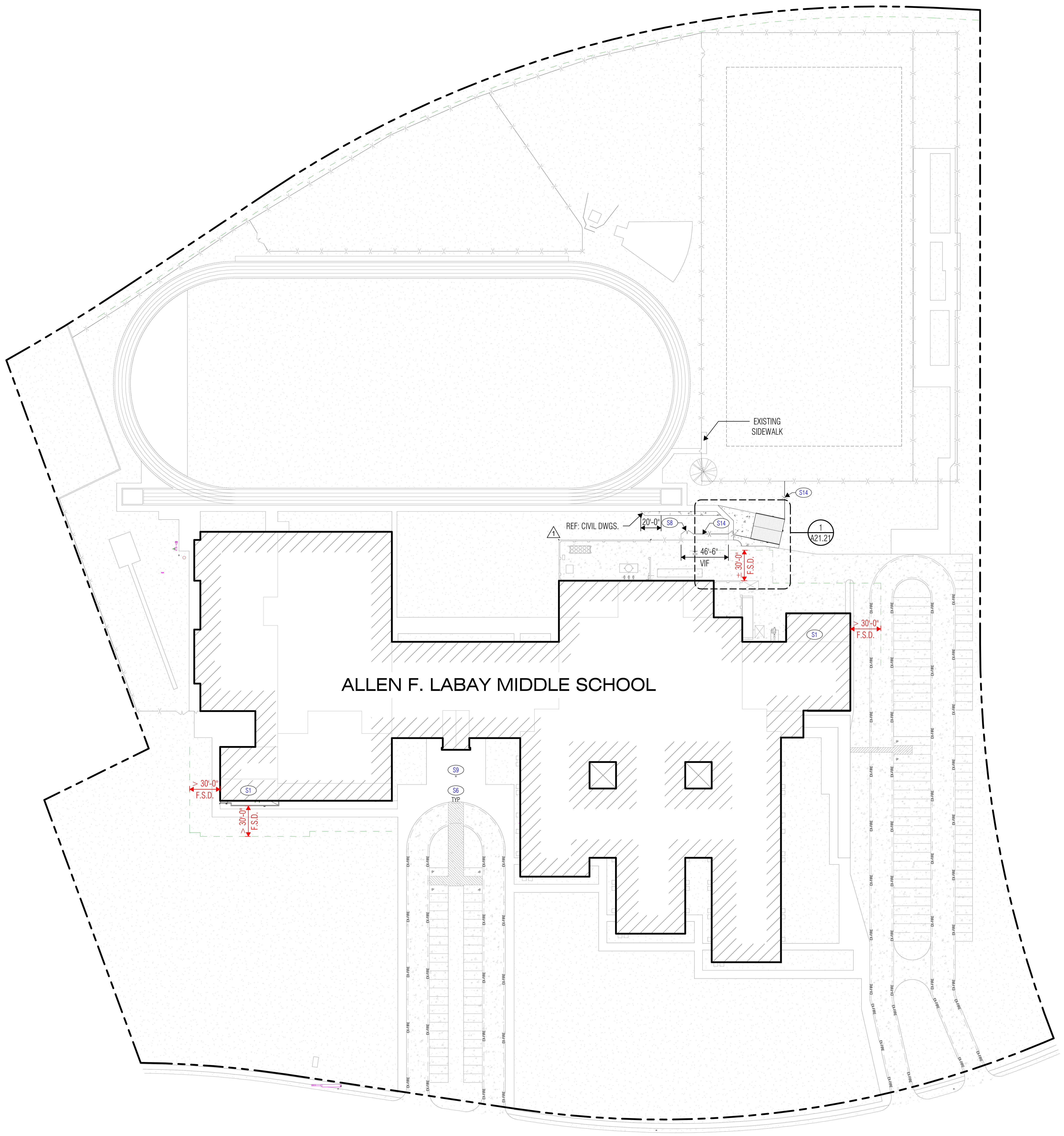
EXISTING WOOD FENCE, See Plan for Heights

ORNAMENTAL FENCE, See Plan for Heights

EXISTING ORNAMENTAL FENCE, See Plan for Heights

KEYNOTE LEGEND

S1	PROPOSED BUILDING ADDITION
S6	REMOVE AND REPLACE ALL JOINT SEALANT AT EXISTING PAVEMENT. INCLUDING ALL CONCRETE DRIVES, SIDEWALKS, JOINT AT BUILDING ENVELOPE, ETC THROUGHOUT ENTIRE SITE. RE: CIVIL DWGS.
S8	PROPOSED CHAINLINK GATE. HEIGHT TO MATCH ADJECENT FENCE. PROVIDE CHAIN AND PADLOCK WELDED TO GATE IN SEQUENCE.
S9	EXISTING FLAG POLE
S14	NEW 6'H CHAINLINK FENCE TO MATCH EXISTING.



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

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REGISTERED ARCHITECT — STATE OF TEXAS
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2	Addendum 2	03-14-2025

Director: RSJ
Drawn By: STH, KM
Designer
Quality Control
Proj. Arch.: TQ

PROJECT NO.
24-010.00

SHEET TITLE
LABAY - ARCHITECTURAL SITE PLAN

SHEET NO.
A21.11

1 UNIT "B" DEMOLITION PLAN - LEVEL ONE
SCALE: 1/8" = 1'-0"

GENERAL 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. Contractor shall notify Architect of any discrepencies between demolition and construction drawings prior to demolition.
2. Removal of any asbestos containing materials within the area of work shall be included in the Contractor's scope. Refer to asbestos abatement report and requirements.
3. Contractor shall protect existing items to remain from damage throughout all phases of the project. Contractor shall repair, at no cost to the owner, any damages they incur on the existing building and site not scheduled for alteration, as a result of construction activities. Contractor shall provide video documentation of existing conditions prior to start of construction and provide video to Architect.
4. Contractor to notify Architect if items shown as existing to remain need to be removed to make way for new work. Contractor is responsible for removing said items, unless noted otherwise, including but not limited to: furniture, equipment, shelving, fixtures, utilities, etc. Contractor shall carefully remove, protect, and reinstall items back to their original positions and make all original connections, when work in the affected area is complete. Any item damaged as a result of construction activity shall be replaced at Contractor's expense. This note shall apply to all areas with construction activity.
5. Refer to Civil, MEPT, and Structural drawings for additional demolition scope.
6. Patch/repair ceilings, walls, and flooring to match existing at all removed or demolished doors, windows, walls, millwork, lockers, and similar items. Refer to SECTION 01 36 13 for additional information regarding patch and repair.

DEMOLITION LEGEND

═ ═ ═	ITEMS TO BE DEMOLISHED
(grey box)	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.
(white box)	MAJOR ARCHITECTURAL WORK REQUIRED IN THIS AREA

KEYNOTE LEGEND

MD15	CAREFULLY REMOVE AND PROPERLY DISPOSE OF GYM BACKBOARDS, GOALS, MOTORS, AND SUPPORTS. PREPARE AREA FOR NEW GYM BACKBOARDS, GOALS, MOTORS, AND SUPPORTS.
WD6	CAREFULLY REMOVE AND DISPOSE GYM WALL PADDING. PREPARE WALLS TO RECIEVE NEW GYM WALL PADDING.

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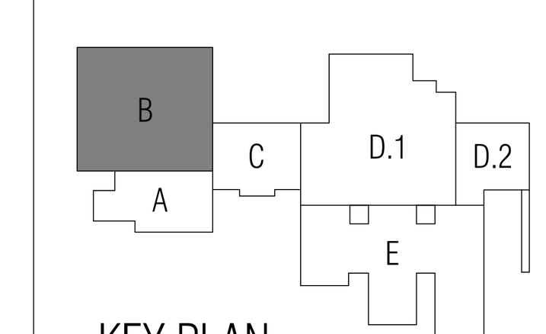

KEY PLAN

03/14/2025

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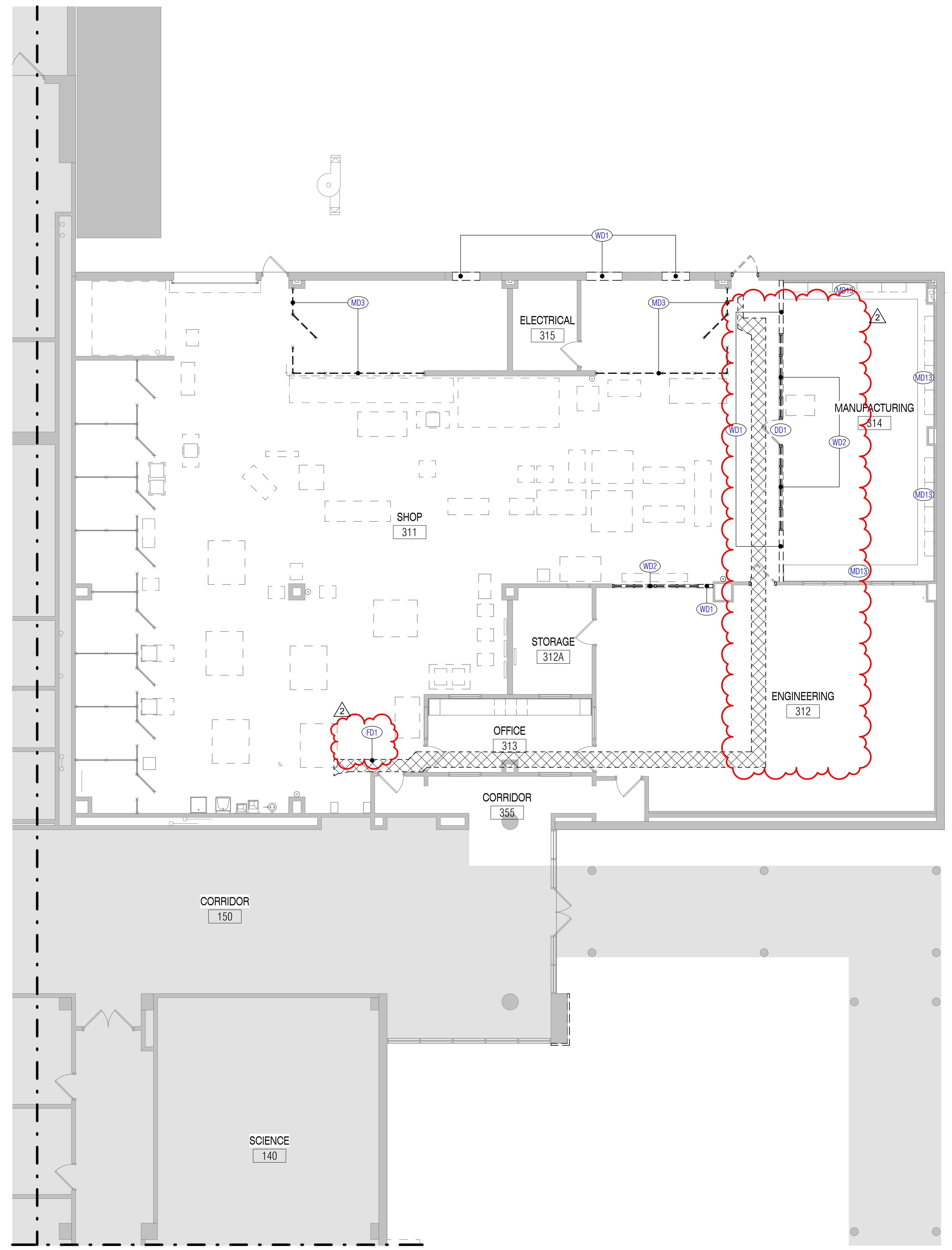
2	Addendum 2	03-14-2025

Director Approver	Drawn By STH, KM
Designer Designer	Quality Control
Proj. Arch. Checker	

PROJECT NO.
24-010.00

SHEET TITLE
LABAY- UNIT B DEMOLITION PLAN - LEVEL ONE

SHEET NO.
A22.01B



1 UNIT "D.2" DEMOLITION PLAN - LEVEL ONE
SCALE: 1/8" = 1'-0"

GENERAL 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. Contractor shall notify Architect of any discrepencies between demolition and construction drawings prior to demolition.
2. Removal of any asbestos containing materials within the area of work shall be included in the Contractor's scope. Refer to asbestos abatement report and requirements.
3. Contractor shall protect existing items to remain from damage throughout all phases of the project. Contractor shall repair, at no cost to the owner, any damages they incur on the existing building and site not scheduled for alteration, as a result of construction activities. Contractor shall provide video documentation of existing conditions prior to start of construction and provide video to Architect.
4. Contractor to notify Architect if items shown as existing to remain need to be removed to make way for new work. Contractor is responsible for removing said items, unless noted otherwise, including but not limited to: furniture, equipment, shelving, fixtures, utilities, etc. Contractor shall carefully remove, protect, and reinstall items back to their original positions and make all original connections, when work in the affected area is complete. Any item damaged as a result of construction activity shall be replaced at Contractor's expense. This note shall apply to all areas with construction activity.
5. Refer to Civil, MEPT, and Structural drawings for additional demolition scope.
6. Patch/repair ceilings, walls, and flooring to match existing at all removed or demolished doors, windows, walls, millwork, lockers, and similar items. Refer to SECTION 01 36 13 for additional information regarding patch and repair.

DEMOLITION LEGEND

ITEMS TO BE DEMOLISHED

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.

MAJOR ARCHITECTURAL WORK REQUIRED IN THIS AREA

KEYNOTE LEGEND

DD1	REMOVE AND PROPERLY DISPOSE OF DOOR, HARDWARE, AND FRAME. PREPARE AREA TO RECEIVE NEW CONSTRUCTION.
FD1	SAWCUT AND REMOVE SLAB AS SHOWN FOR NEW WORK. REF: PLUMBING DRAWINGS.
MD3	REMOVE AND PROPERLY DISPOSE WIRE MESH FENCING.
MD13	PROTECT EXISTING CASEWORK TO REMAIN. RE: GENERAL NOTE.
WD1	CAREFULLY REMOVE AND PROPERLY DISPOSE OF WALL AS SHOWN IN DASHED LINES. CLEAN AND PREPARE AREA FOR NEW CONSTRUCTION. CAP AND ABANDON ALL EXISTING UTILITIES IN WALL. RE: MEP DRAWINGS FOR ADDITIONAL INFORMATION.
WD2	CAREFULLY REMOVE AND PROPERLY DISPOSE OF STOREFRONT SYSTEM. CLEAN AND PREPARE AREA FOR NEW CONSTRUCTION.

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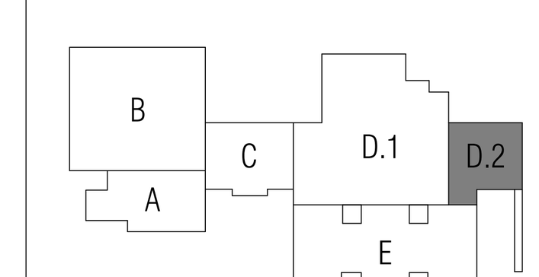
HOUSTON, TEXAS



KEY PLAN

03/14/2025

ISSUED: February 24, 2025

REVISIONS

Revision No.		Revision Date
2	Addendum 2	03-14-2025

Director: Approver
Drawn By: STH, KM
Designer: Designer
Quality Control
Proj. Arch.: Checker

PROJECT NO.
24-010.00

SHEET TITLE
LABAY - UNIT D.2 DEMOLITION PLAN - LEVEL ONE

SHEET NO.
A22.01D.2

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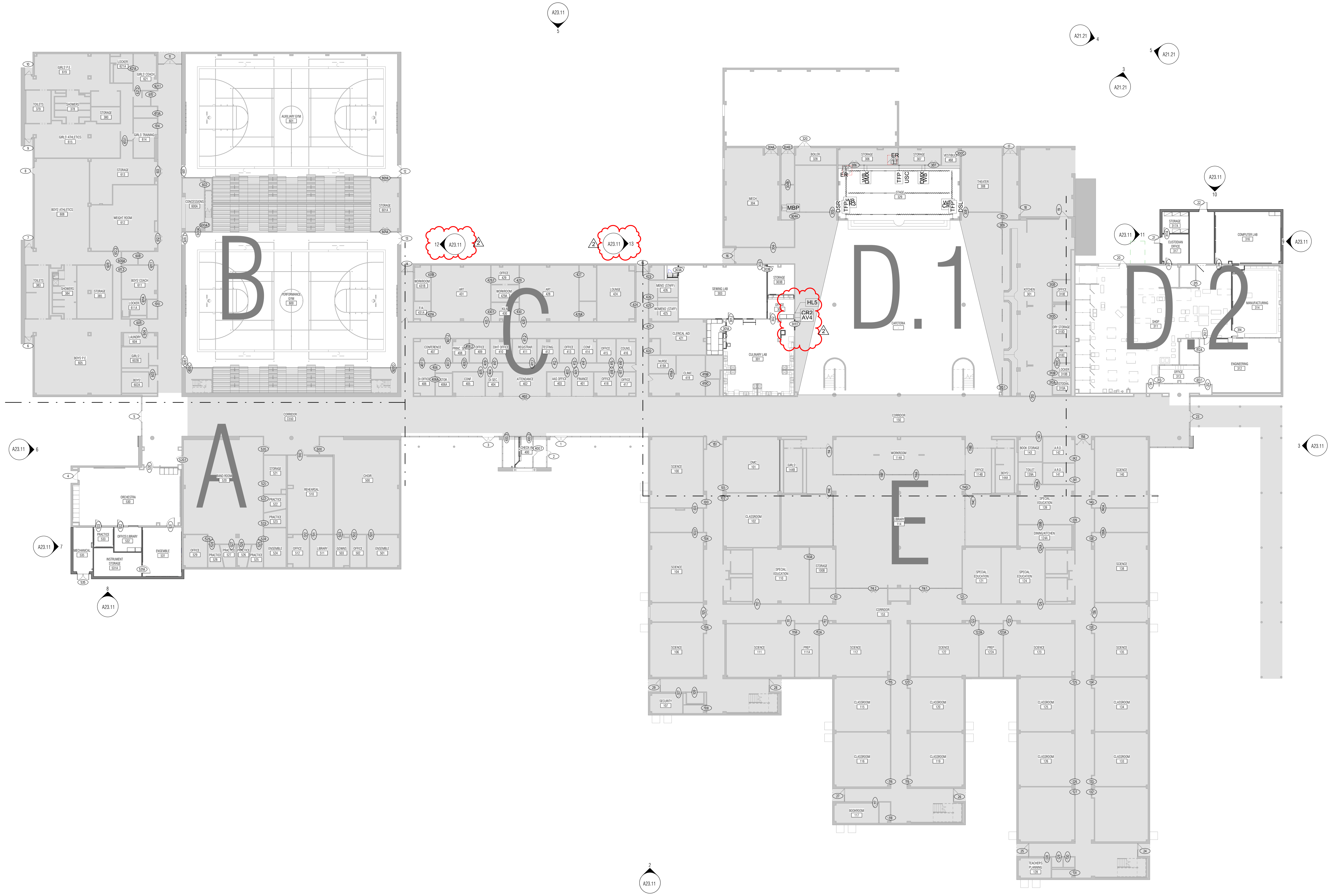

1 ORIENTATION RENOVATION PLAN - LEVEL ONE

SCALE: 3/64" = 1'-0"

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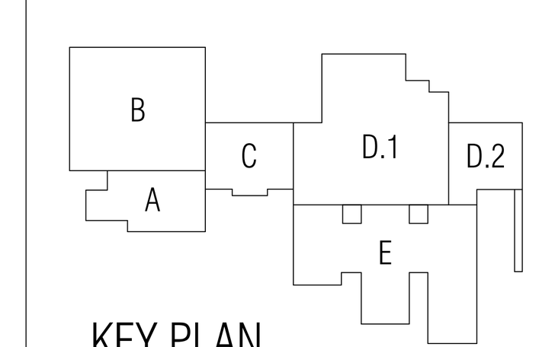
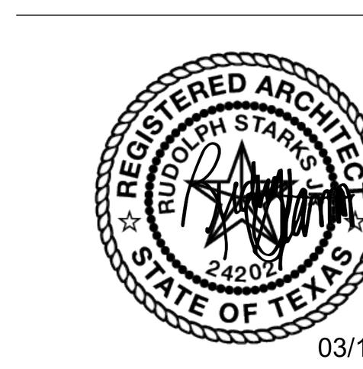


KEY PLAN



03/14/2025

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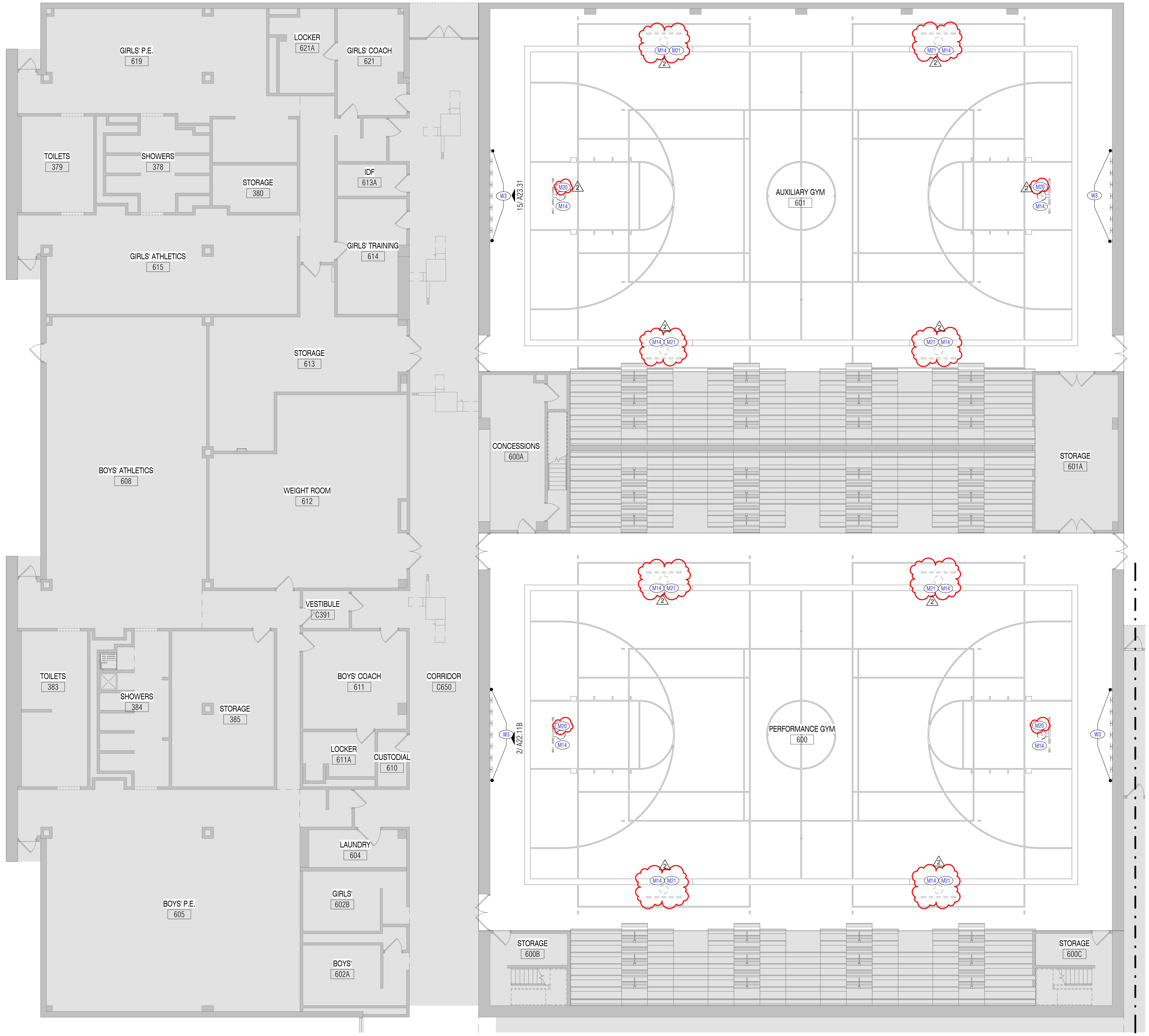
Revision No.		Revision Date
2	Addendum 2	03-14-2025

Director: RSJ
Drawn By: STH, KM
Designer
Quality Control
Proj. Arch.: TQ

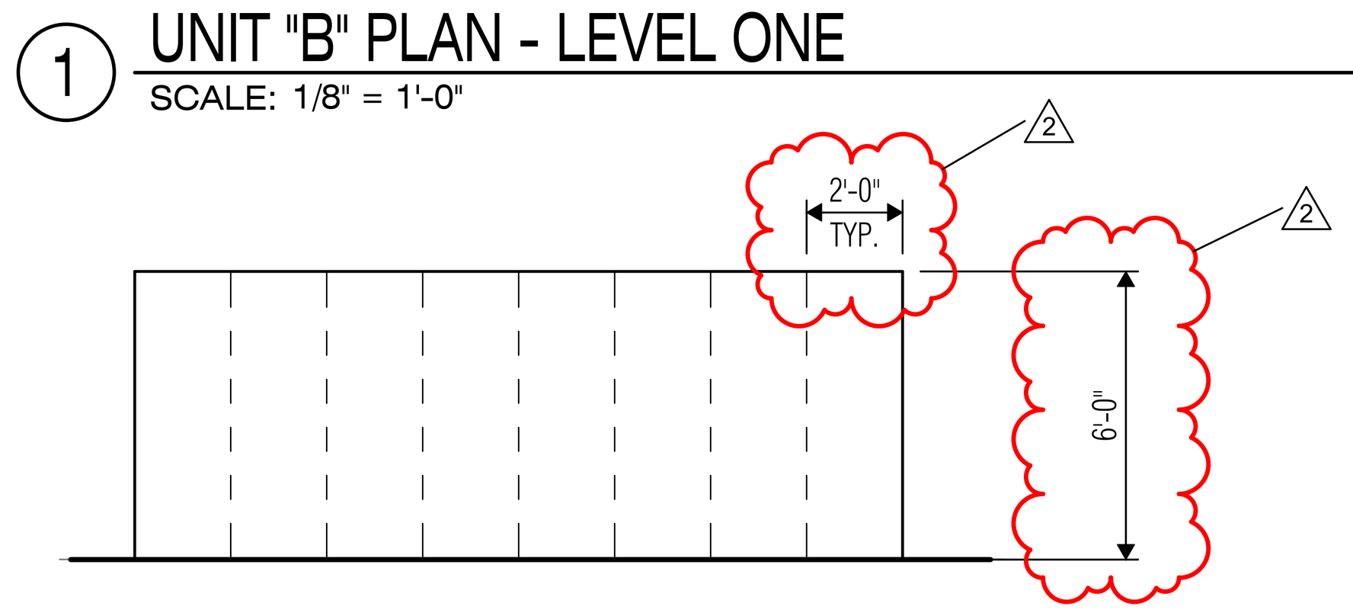
PROJECT NO.
24-010.00

SHEET TITLE
LABAY - ORIENTATION FLOOR PLAN - LEVEL ONE

SHEET NO.
A22.11



1 UNIT "B" PLAN - LEVEL ONE
SCALE: 1/8" = 1'-0"



2 GYM WALL PADDING
SCALE: 1/4" = 1'-0"

FLOOR PLAN NOTES

1. Refer to Civil Grading drawings for Primary Ground Level floor elevation relative to Mean Sea Level. Architectural Finish Floor (100'-0" datum) is equal to Civil FFE.
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 A' '4-series sheets for Wall Sections, and to A14.30, A24.30, A34.30 for Exterior Wall Assemblies.
5. Refer to Exterior Elevation Notes for control joint requirements at all inside corners of masonry veneer.
6. Refer to PARTITION TYPES (A12.21, A22.21, A32.21) for Partition Types Legend.
7. Interior partitions are Type "P6" unless noted otherwise.
8. Refer to Detail 4/A0.31 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 PARTITION DETAILS sheets for Typical Partition Penetration Details, including pipe, conduit and ductwork penetrations.
10. Refer to PARTITION DETAILS sheets for Typical Bracing at Non-Loadbearing CMU Partitions.
11. Refer to Exterior Elevations for exact locations of downspouts.
12. 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.
13. Provide 4" starter courses at all CMU walls and partitions unless noted otherwise.
14. 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.
15. Provide minimum 20 gage light-gage steel studs at all interior partitions scheduled to receive ceramic tile or plaster.
16. Provide minimum 18 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.
17. Provide minimum 18 gage cold-formed steel studs as designed by stud engineer for all interior partitions scheduled to receive adhered masonry or stone veneer.
18. At light-gage steel stud partitions that extend above the ceiling, provide diagonal 20 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.
19. 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 CASEWORK ELEVATIONS & DETAILS sheets for typical blocking requirements at various conditions.
20. At Mechanical, Electrical and Boiler Room partitions, seal tightly around all penetrations. Utilize fire safing material at rated partitions.
21. Provide sealant and/or fire safing at all floor penetrations, as applicable.
22. Existing equipment to remain U.N.O. Contractor to relocate equipment as needed to complete new construction. Contractor shall reinstall equipment upon completion of construction. All equipment to be in as good or better working condition as prior to the start of construction.

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 Reflected Ceiling Plan 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 Reflected Ceiling Plan for fire, smoke and sound-conditioned partitions that extend to deck above.

EXISTING WALL TO REMAIN.

WIDTH 16 36 DEPTH — MOVEABLE METAL SHELVING. Depth and Width dimensions match that of this legend, unless otherwise noted.

FURNITURE, FIXTURE OR EQUIPMENT BY OWNER. Coordinate with adjacent electrical devices, casework, etc.

MB	MARKERBOARD. Preceding number is length, in feet.
-SL	WITH HALF STAFF LINES
TB	TACKBOARD. Preceding number is length, in feet.
TS	TACK STRIP. Preceding number is length, in feet.
IM	INTERACTIVE MARKERBOARD
EX-	EXISTING
IFP	INTERACTIVE FLAT PANEL
FEC	FIRE EXTINGUISHER WITH CABINET AND BRACKET
FE	FIRE EXTINGUISHER WITH BRACKET
FHC	FIRE HOSE CABINET
HB	HORIZONTAL BLINDS
RS	ROLLING WINDOW SHADES
DS	DOWNSPOUT

KEYNOTE LEGEND

M14	CAREFULLY INSTALL NEW GYM BACKBOARDS, GOALS, MOTORS, AND SUPPORTS.
M20	WELDED DUAL POST REAR BRACED FRONT FOLDING BACKSTOP STRUCTURE.
M21	WELDED DUAL POST FRONT BRACED FRONT FOLDING BACKSTOP STRUCTURE.
W3	NEW GYM WALL PADDINGS.

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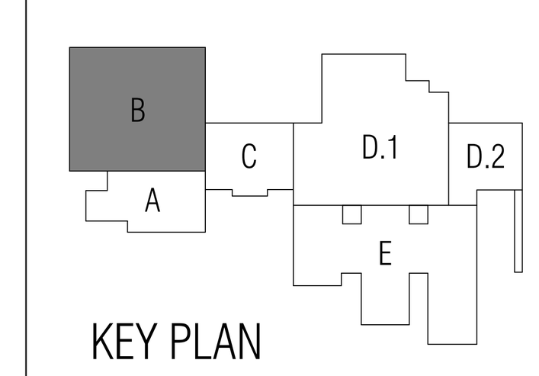

KEY PLAN

REGISTERED ARCHITECT STATE OF TEXAS
03/14/2025

ISSUED: February 24, 2025

REVISIONS

Revision No.		Revision Date
2	Addendum 2	03-14-2025

Director RSJ	Drawn By STH, KM
Designer	Quality Control
Proj. Arch. TQ	

PROJECT NO.
24-010.00

SHEET TITLE
LABAY- UNIT B FLOOR PLAN - LEVEL ONE

SHEET NO.
A22.11B

1 UNIT "D.1" PLAN - LEVEL ONE

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

FLOOR PLAN NOTES

1. Refer to Civil Grading drawings for Primary Ground Level floor elevation relative to Mean Sea Level. Architectural Finish Floor (100'-0" datum) is equal to Civil FFE.
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 A' '4-series sheets for Wall Sections, and to A14.30, A24.30, A34.30 for Exterior Wall Assemblies.
5. Refer to Exterior Elevation Notes for control joint requirements at all inside corners of masonry veneer.
6. Refer to PARTITION TYPES (A12.21, A22.21, A32.21) for Partition Types Legend.
7. Interior partitions are Type "P6" unless noted otherwise.
8. Refer to Detail 4/A0.31 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 PARTITION DETAILS sheets for Typical Partition Penetration Details, including pipe, conduit and ductwork penetrations.
10. Refer to PARTITION DETAILS sheets for Typical Bracing at Non-Loadbearing CMU Partitions.
11. Refer to Exterior Elevations for exact locations of downspouts.
12. 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.
13. Provide 4" starter courses at all CMU walls and partitions unless noted otherwise.
14. 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.
15. Provide minimum 20 gage light-gage steel studs at all interior partitions scheduled to receive ceramic tile or plaster.
16. Provide minimum 18 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.
17. Provide minimum 18 gage cold-formed steel studs as designed by stud engineer for all interior partitions scheduled to receive adhered masonry or stone veneer.
18. At light-gage steel stud partitions that extend above the ceiling, provide diagonal 20 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.
19. 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 CASEWORK ELEVATIONS & DETAILS sheets for typical blocking requirements at various conditions.
20. At Mechanical, Electrical and Boiler Room partitions, seal tightly around all penetrations. Utilize fire safing material at rated partitions.
21. Provide sealant and/or fire safing at all floor penetrations, as applicable.
22. Existing equipment to remain U.N.O. Contractor to relocate equipment as needed to complete new construction. Contractor shall reinstall equipment upon completion of construction. All equipment to be in as good or better working condition as prior to the start of construction.

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 Reflected Ceiling Plan 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 Reflected Ceiling Plan for fire, smoke and sound-conditioned partitions that extend to deck above.

EXISTING WALL TO REMAIN.

WIDTH / DEPTH — MOVEABLE METAL SHELVING. Depth and Width dimensions match that of this legend, unless otherwise noted.

FURNITURE, FIXTURE OR EQUIPMENT BY OWNER. Coordinate with adjacent electrical devices, casework, etc.

MB	MARKERBOARD. Preceding number is length, in feet.
-SL	WITH HALF STAFF LINES
TB	TACKBOARD. Preceding number is length, in feet.
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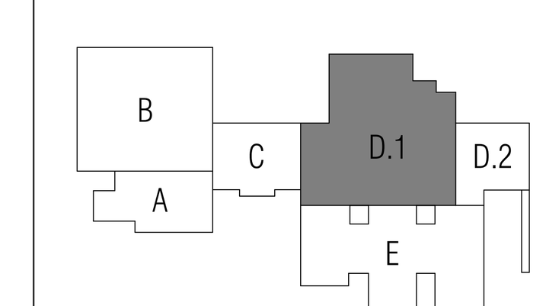


KEY PLAN

REGISTERED ARCHITECT · STATE OF TEXAS
03/14/2025

ISSUED: February 24, 2025

REVISIONS

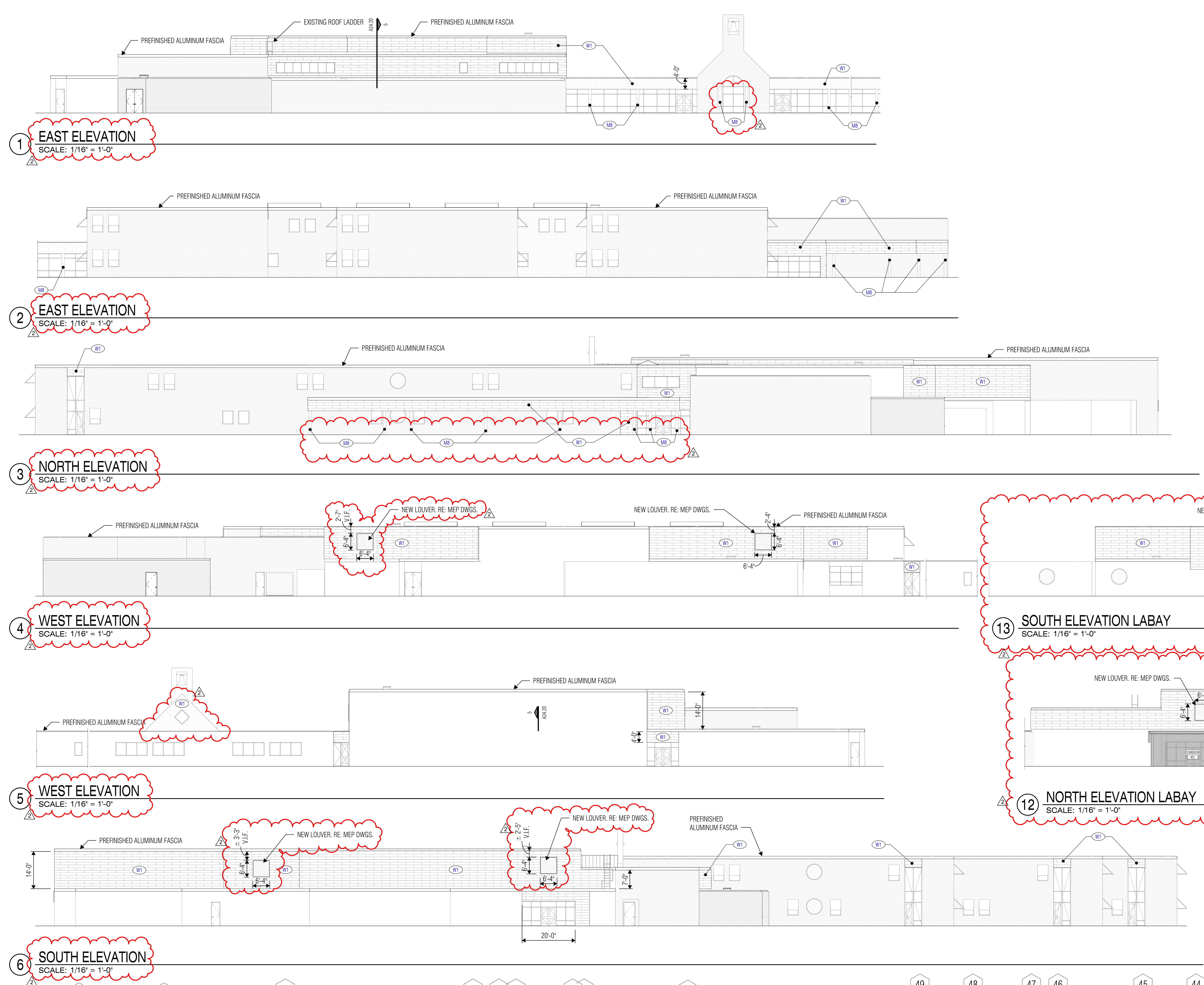
Revision No.		Revision Date
1	Addendum 1	03-06-2025
2	Addendum 2	03-14-2025

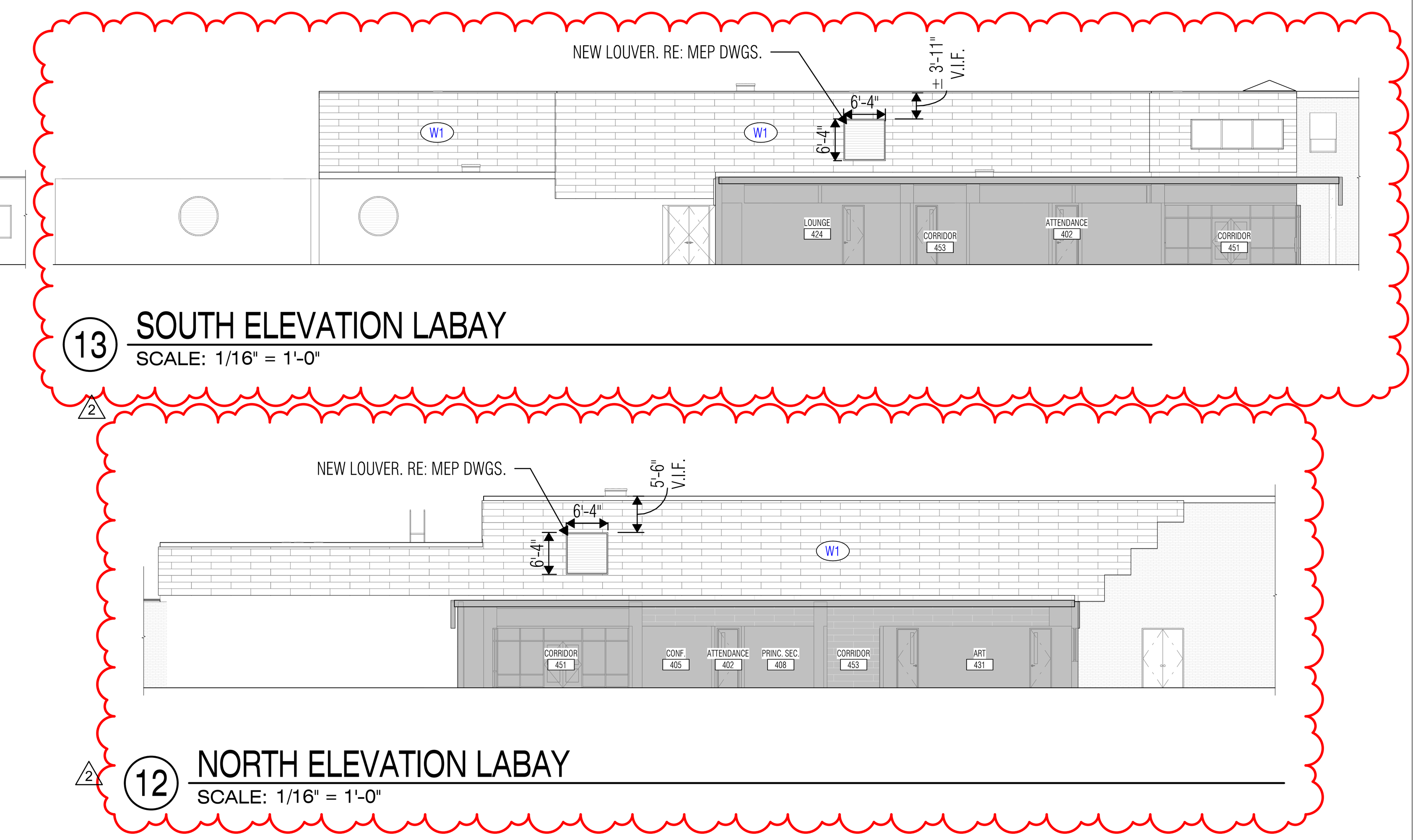
Director: RSJ
Drawn By: STH, KM
Designer
Quality Control
Proj. Arch.: TQ

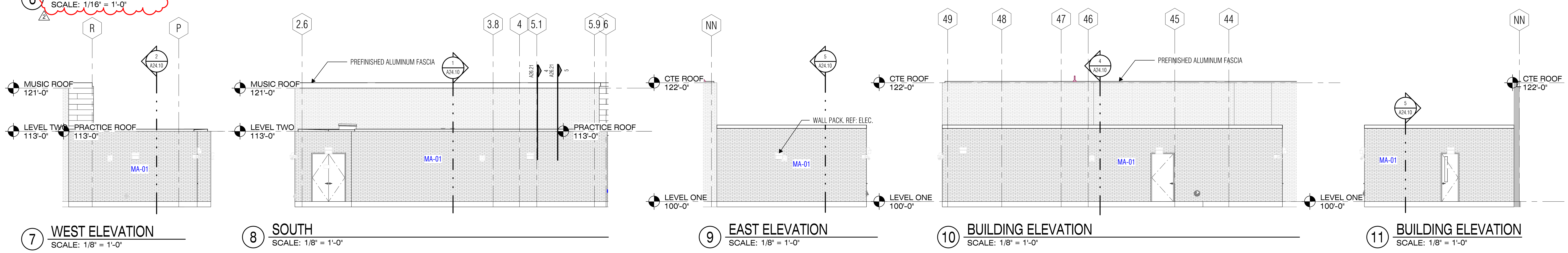
PROJECT NO.
24-010.00

SHEET TITLE
LABAY - UNIT D.1 FLOOR PLAN - LEVEL ONE

SHEET NO.
A22.11D.1







EXTERIOR ELEVATION NOTES

1. Refer to Building Assembly Details Sheets 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.
4. Install cast stone in accordance with the recommendations of the Cast Stone Institute, unless specifically noted or detailed otherwise.
5. Refer to Building Assembly Details Sheet 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 Building Assembly Details sheets .
8. All blue exterior panels on the building will be removed and replaced even if not shown on the documents.

EXTERIOR ELEVATION LEGEND

A	BRICK VENEER, TYPE 'A'
B	BRICK VENEER, TYPE 'B'
DS	DOWNSPOUT
DSC	DOWNSPOUT W/ SCUPPER & CONDUCTOR HEAD REF. _/A_.__
OS	OVERFLOW SCUPPER, REF. _/A_.__
CJ	CONTROL JOINT, REF. _ & _/A_.__
EJ	EXPANSION JOINT, REF. _/A_.__
SXX	ALUMINUM STOREFRONT, REF. SHEET A7.11
	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.

KEYNOTE LEGEND

M8	PAINT EXTERIOR COLUMNS.
W1	NEW METAL PANELS ON HAT CHANNELS. REF ASSEMBLY DETAILS.

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03/14/2025

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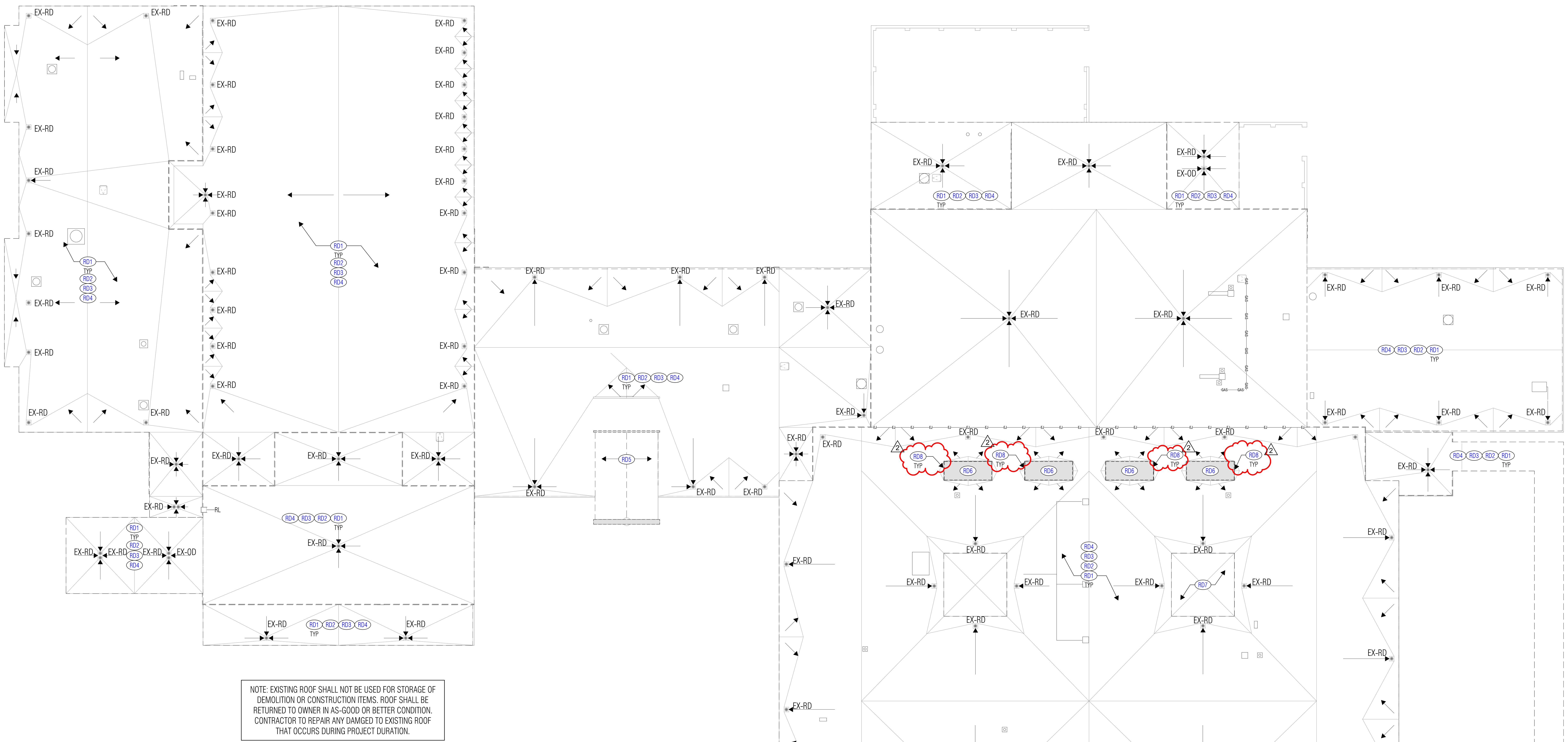
Drawn By: STH, KM
Designer
Quality Control
Proj. Arch.: TQ

PROJECT NO.
24-010.00

SHEET TITLE
LABAY - EXTERIOR ELEVATIONS & DETAILS

SHEET NO.
A23.11



NOTE: EXISTING ROOF SHALL NOT BE USED FOR STORAGE OF DEMOLITION OR CONSTRUCTION ITEMS. ROOF SHALL BE RETURNED TO OWNER IN AS-GOOD OR BETTER CONDITION. CONTRACTOR TO REPAIR ANY DAMGED TO EXISTING ROOF THAT OCCURS DURING PROJECT DURATION.

1 OVERALL ROOF DEMO PLAN
SCALE: 3/64" = 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.
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.
9. Clean and paint strainer baskets.
10. All sheet metal fascia, gutters and downspouts shall be pre-finished aluminum. All metal flashings embedded in roof membrane and in though-wall conditions shall be stainless steel.

ROOF PLAN LEGEND

(hatch)	NEW ROOF ASSEMBLY
EX-RD	EXISTING ROOF DRAIN
EX-OD	EXISTING OVERFLOW PLAN
CTES-TCT	EXISTING COAL-TAR PITCH ELASTOMERIC SHEET ROOFING OVER EXISTING TECTUM PANEL DECKING
CTES-LW	EXISTING COAL-TAR PITCH ELASTOMERIC SHEET ROOFING OVER EXISTING TECTUM PANEL DECKING
CTES-STRLLW	EXISTING COAL-TAR PITCH ELASTOMERIC SHEET ROOFING OVER EXISTING LIGHT WEIGHT CONCRETE DECKING
	EXISTING EXPANSION JOINT
	NEW STAINLESS STEEL THROUGH WALL FLASHING
	EXISTING FIRE HATCH
	EXISTING MECHANICAL, ELECTRICAL, PLUMBING UNITS
	DEMOLISHED ITEMS

ROOF PLAN LEGEND

BUR	BUILT-UP BITUMINOUS ROOFING
MBM	MODIFIED BITUMINOUS MEMBRANE ROOFING
CTES	COAL-TAR PITCH ELASTOMERIC SHEET ROOFING
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.
OD	OVERFLOW DRAIN WITH DOWNSPOUT NOZZLE, REF.
OS	OVERFLOW SCUPPER, REF. _/A_.__
DS	DOWNSPOUT, REF. _/A_.__
DSC	DOWNSPOUT WITH SCUPPER AND CONDUCTOR HEAD, REF. _/A_.__
SB	SPLASH BLOCK, CONCRETE, REF. _A/__
SP	SPLASH PAN, REF. _/A_.__
MC	MANUFACTURED COPING, REF. _/A_.__
RH	ROOF HATCH, REF.
RL	ROOF LADDER, REF. _/A_.__
RTU	ROOFTOP UNIT, REF. MECHANICAL & _/A_.__
CU	CONDENSING UNIT, REF. FOOD SERVICE, M.E.P. & _/A_.__
GP	GAS PIPE PENETRATION, REF.
RV	RELIEF VENT, REF. M.E.P.
EF	EXHAUST FAN, REF. M.E.P.

DEMO KEYED NOTES

RD1	CLEAN AND PREPARE ROOF TO RECIEVE NEW CAP SHEET. CUT OUT AND REPAIR ANY DEFORMATIONS OR BUBBLES IN THE EXISTING ROOF LAYERS.
RD2	CAREFULLY REMOVE ALL EXISTING ROOF COPING AND ASSOCIATED FLASHING. EXISTING BLOCKING TO REMAIN, U.N.O. REMOVE AND REPLACE ANY DETERIORATED BLOCKING. PREPARE AREA FOR NEW CONSTRUCTION.
RD3	EXISTING ROOF TOP UNITS TO REMAIN, U.N.O. PROTECT IN PLACE. GC TO WALK WITH OWNER REPS TO VERIFY UNITS' FUNCTIONALITY. REF: MEP
RD4	REMOVE AND PROPERLY DISPOSE OF ABANDONED EQUIPMENT AND ASSOCIATED ITEMS ON EXISTING ROOF. COORDINATE WITH OWNER FOR SALVAGE.
RD5	REMOVE AND PROPERLY DISPOSE OF ROOF SHINGLES AND WATERPROOFING. SHEATHING AND INSULATION TO REMAIN. REPLACE ANY DAMAGED SHEATHING. CLEAN AND PREPARE FOR NEW CONSTRUCTION.
RD6	EXISTING SKYLIGHT TO REMAIN. PROTECT IN PLACE. CONSTRACTOR TO REPAIR ANY DAMAGE CAUSED AS A RESULT OF CONSTRUCTION ACTIVITIES.
RD7	TRIM AND REMOVE ANY TREE BRANCHES OVERHANGING ROOF. PREPARE AREA FOR NEW CONSTRUCTION.
RD8	CAREFULLY REMOVE, STORE, AND PROTECT SKYLIGHT COPING TO BE REINTALLED. REMOVE THE ALUMINUM FOIL FACE OF THE EXISTING VERAL ALUMINUM FLASHING PLY. PREPARE AREA FOR NEW CONSTRUCTION.

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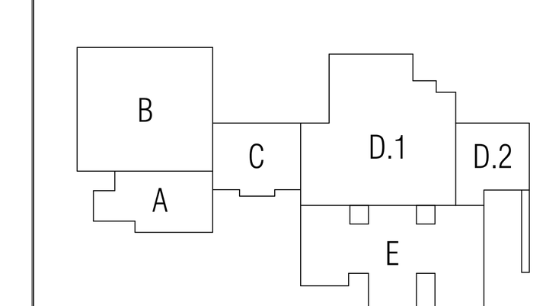

KEY PLAN

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REVISIONS

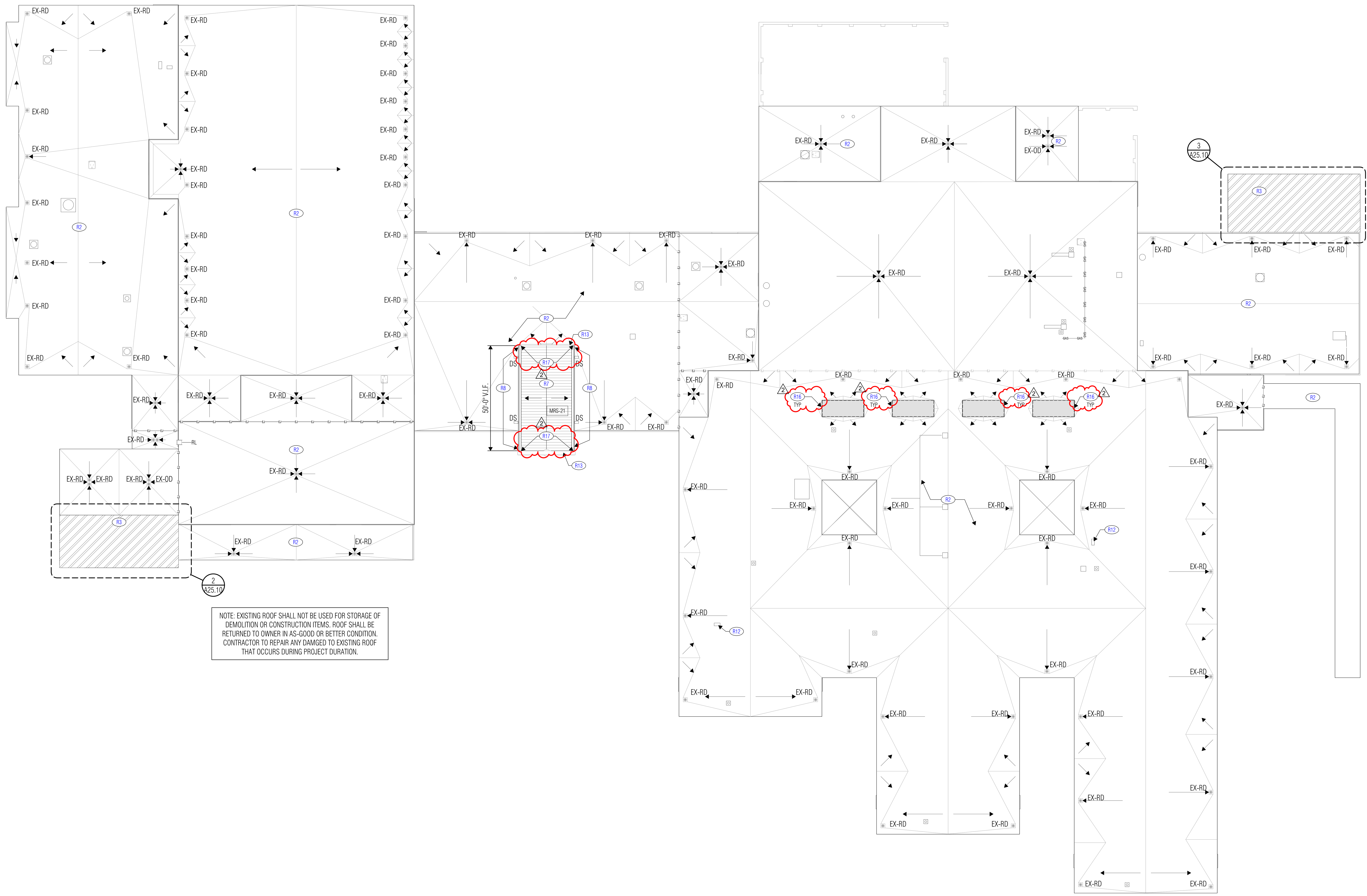
Revision No.		Revision Date
1	Addendum 1	03-06-2025
2	Addendum 2	03-14-2025

Director RSJ	Drawn By STH, KM
Designer	Quality Control
Proj. Arch. TQ	

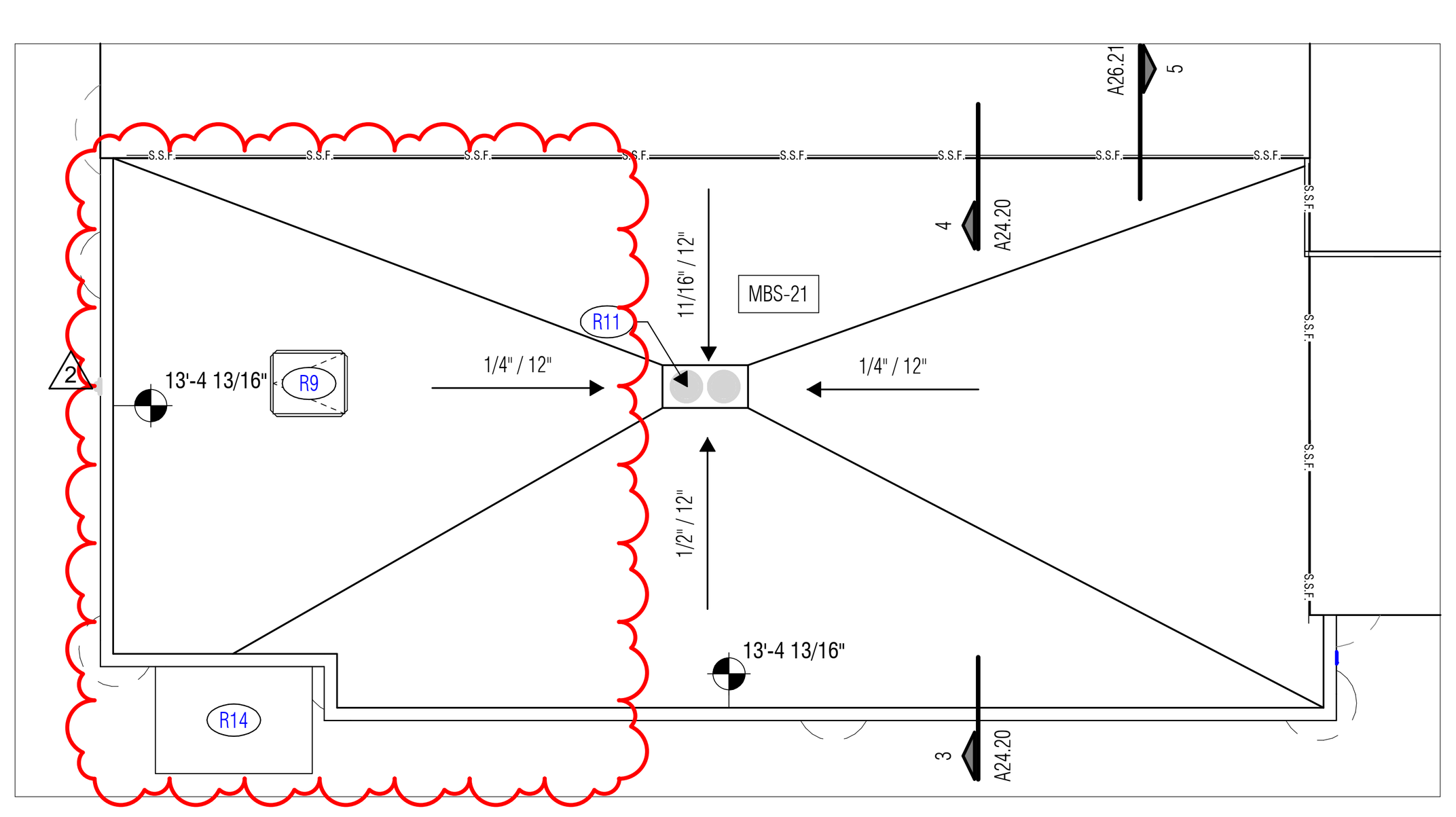
PROJECT NO.
24-010.00

SHEET TITLE
LABAY - ROOF DEMO PLANS

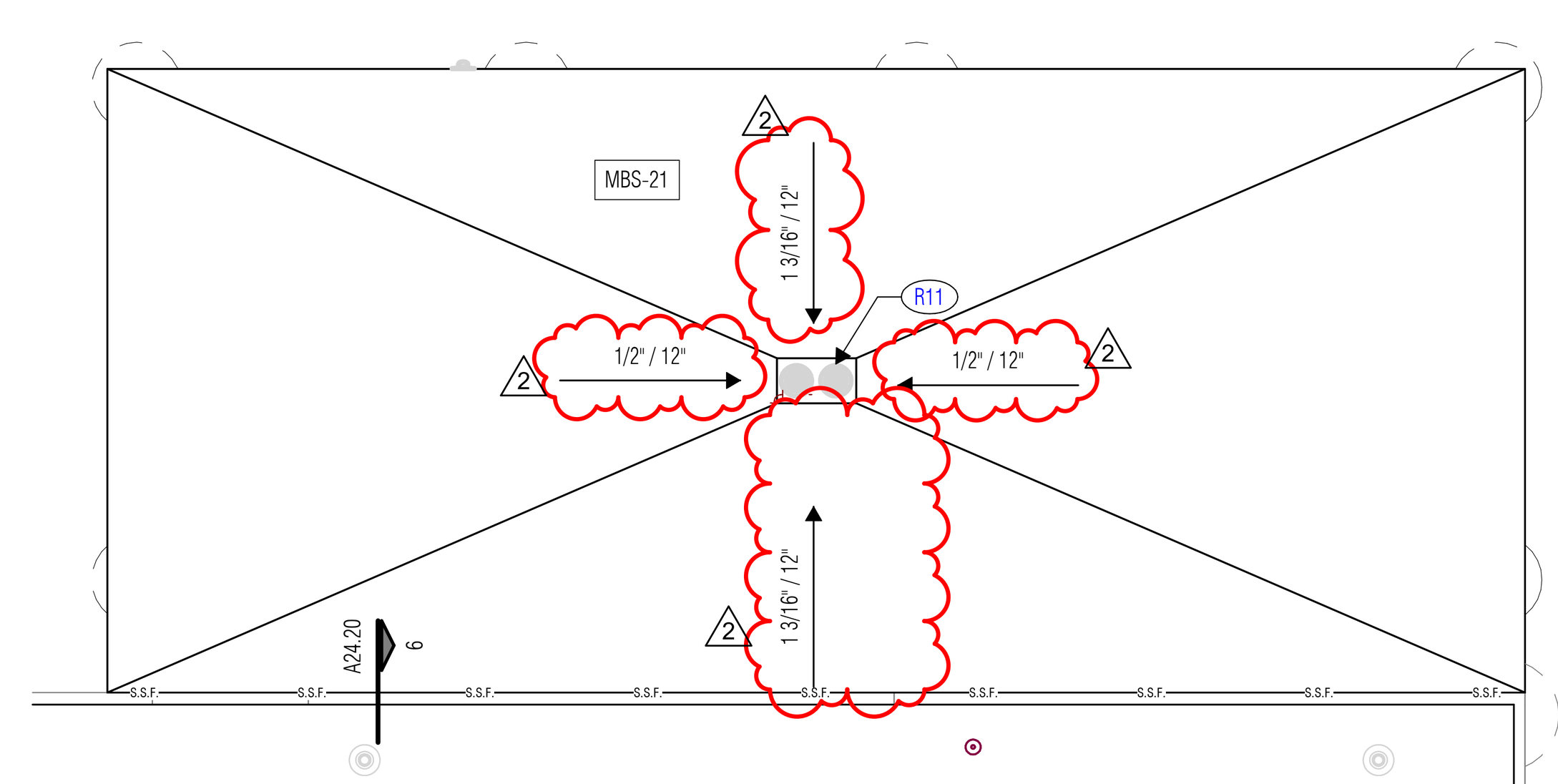
SHEET NO.
A25.01



1 OVERALL ROOF PLAN
SCALE: 3/64" = 1'-0"



2 ROOF PLAN
SCALE: 1/8" = 1'-0"



3 ROOF PLAN
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.
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.
9. Clean and paint strainer baskets.
10. All sheet metal fascia, gutters and downspouts shall be pre-finished aluminum. All metal flashings embedded in roof membrane and in though-wall conditions shall be stainless steel.

ROOF PLAN LEGEND

(hatch)	NEW ROOF ASSEMBLY
EX-RD	EXISTING ROOF DRAIN
EX-OD	EXISTING OVERFLOW PLAN
CTES-TCT	EXISTING COAL-TAR PITCH ELASTOMERIC SHEET ROOFING OVER EXISTING TECTUM PANEL DECKING
CTES-LW	EXISTING COAL-TAR PITCH ELASTOMERIC SHEET ROOFING OVER EXISTING TECTUM PANEL DECKING
CTES-STRLLW	EXISTING COAL-TAR PITCH ELASTOMERIC SHEET ROOFING OVER EXISTING LIGHT WEIGHT CONCRETE DECKING
	EXISTING EXPANSION JOINT
	NEW STAINLESS STEEL THROUGH WALL FLASHING
	EXISTING FIRE HATCH
	EXISTING MECHANICAL, ELECTRICAL, PLUMBING UNITS
	DEMOLISHED ITEMS

KEYNOTE LEGEND

R2	PROVIDE NEW 2-PLY CAP SHEET OVER EXISTING ROOF. MAINTAIN POSITIVE DRAINAGE TO EXISTING ROOF DRAINS AND DOWNSPOUTS. CONTRACTOR TO PROVIDE NEW ROOF ASSEMBLY OVER ANY ABANDONDED PENETRATIONS. PROVIDE NEW STAINLESS STEEL COPING AND FLASHING AT ALL PREVIOUSLY EXISTING LOCATIONS AND NEW ROOF AREAS.
R3	NEW MOD. BIT. ROOF TO MATCH EXISITNG. REF: ROOFING DETAILS.
R7	NEW CONCEALED FASTENER METAL ROOF OVER EXISTING STRUCTURE. REF: ROOFING DETAILS.
R8	PROVIDE NEW FLASHING AND TRANSITION TO MATCH EXISTING ROOF EDGE HEIGHT. PROVIDE NEW GUTTERS, DOWNSPOUTS AND SPLASH BLOCKS TO LOWER ROOF.
R9	PROVIDE NEW ROOF HATCH.
R11	PRIMARY AND OVERFLOW ROOF DRAINS. RE: ROOF DETAIL AND PLUMBING.
R12	INSTALL STAINLESS STEEL TUBES, ANCHORED TO STRUCTURE. COORDINATE LOCATIONS WITH NEW MINI-SPLIT CONDENSOR LOCATIONS. REINFORCE JOISTS AS AS NOTED ON STRUCTURAL DRAWINGS.
R13	PROVIDE NEW S.S. COPING CAP.
R14	NEW PREENGINEERED CANOPY. RE: WALL SECTION AND STRUCTURAL DRAWINGS.
R16	PROVIDE NEW VERAL ALUMINUM FLASHING. RE: ROOF DETAILS.
R17	EXISITNG RECIEVER AND STEP FLASHING TO REMAIN IN PLACE. CONTRACTOR TO REPAIR DAMAGED RECIEVER OR STEP FLASHING CAUSED AS A RESULT BY CONSTRUCTION ACTIVITY.

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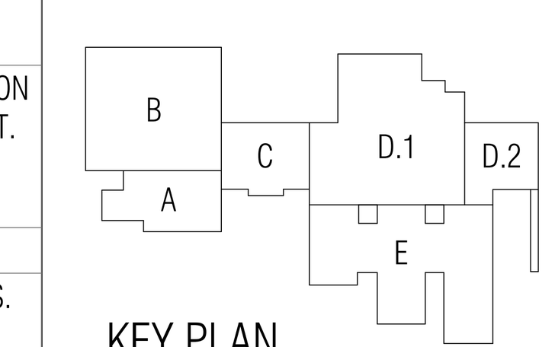
CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

2024 Cook, Labay & Truitt MS Renovations



KEY PLAN

REGISTERED ARCHITECT STATE OF TEXAS 24200
03/14/2025

ISSUED: February 24, 2025

REVISIONS

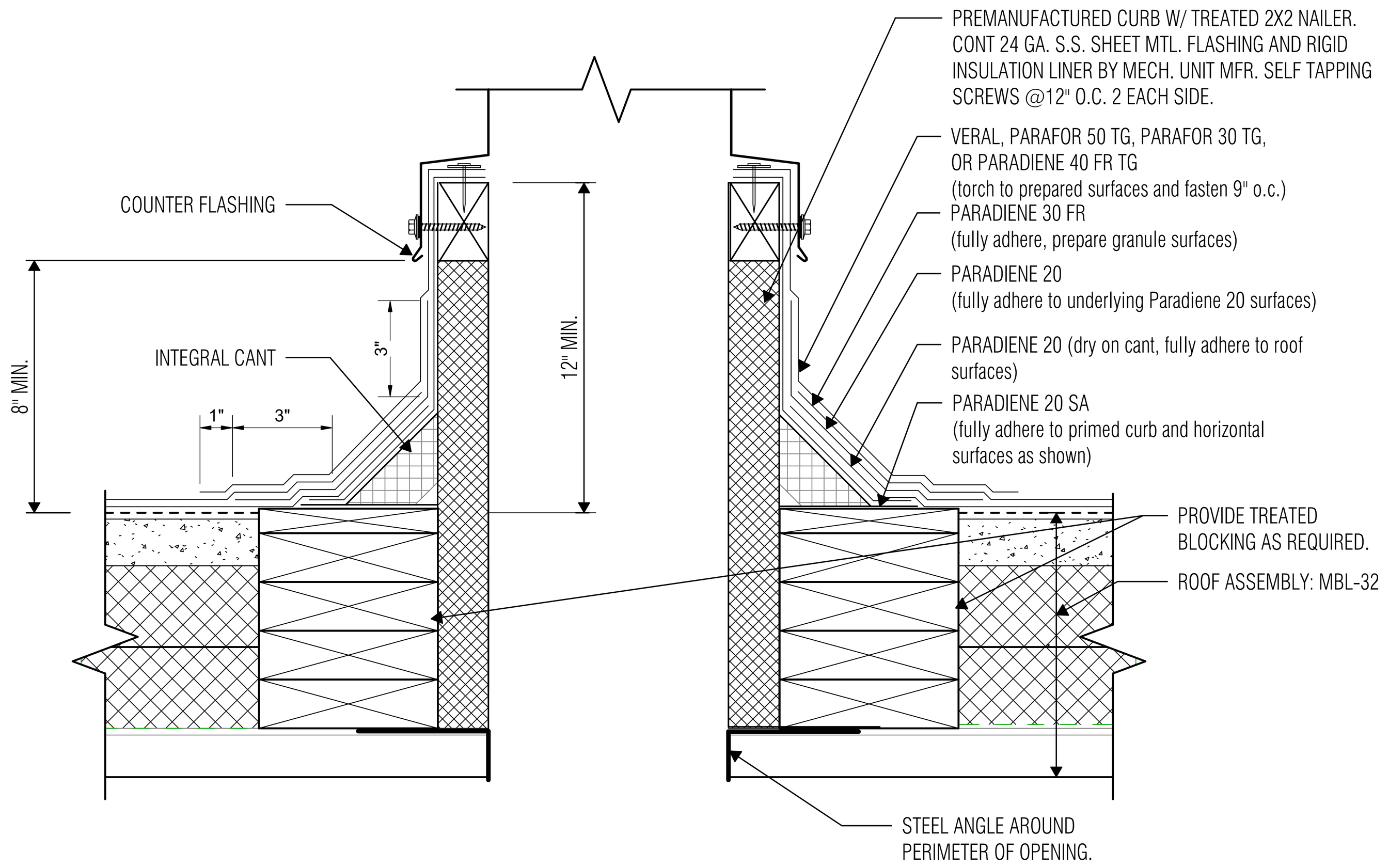
Revision No.		Revision Date
2	Addendum 2	03-14-2025

Director RSJ	Drawn By STH, KM
Designer	Quality Control
Proj. Arch. TQ	

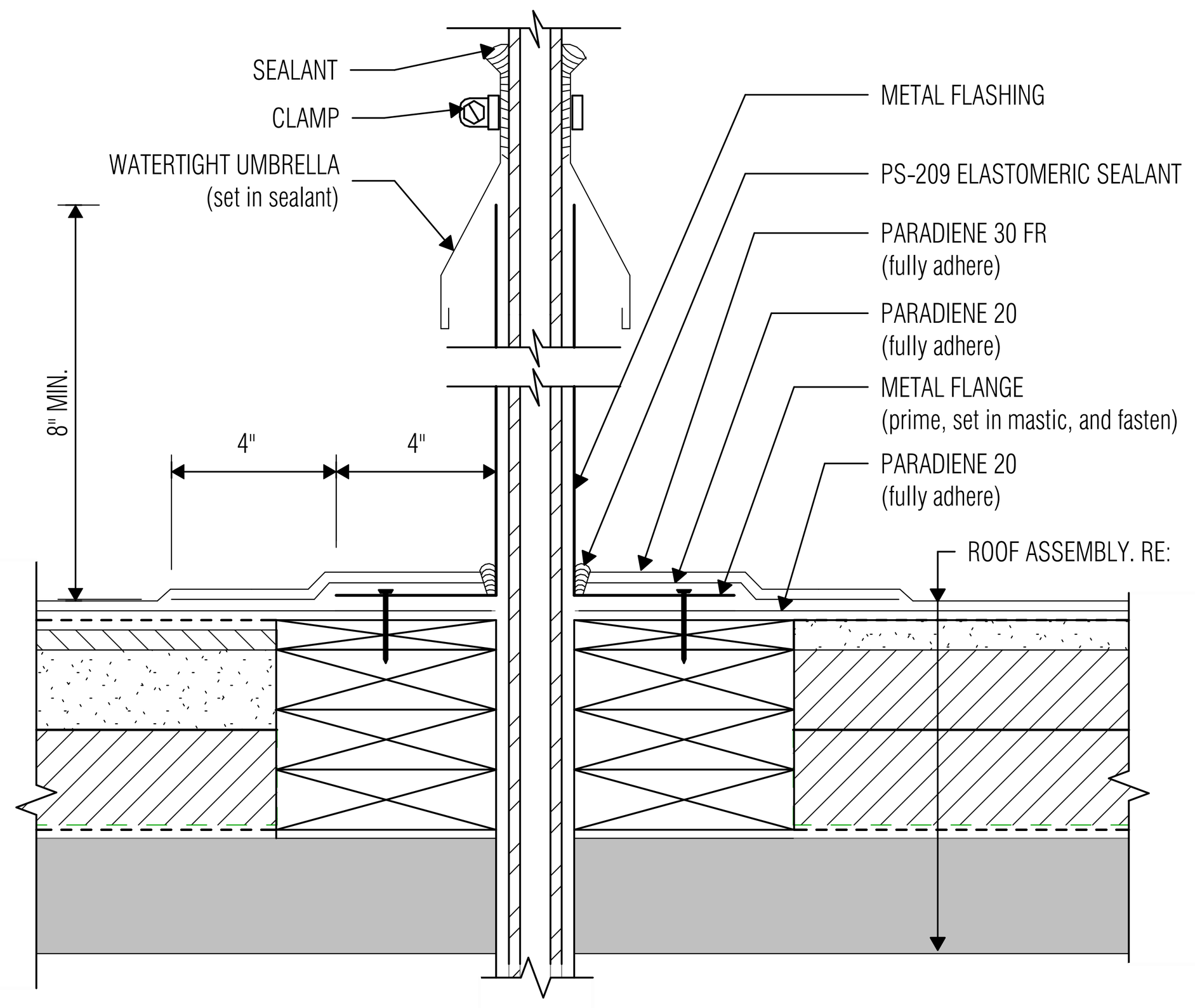
PROJECT NO.
24-010.00

SHEET TITLE
LABAY - ROOF PLANS

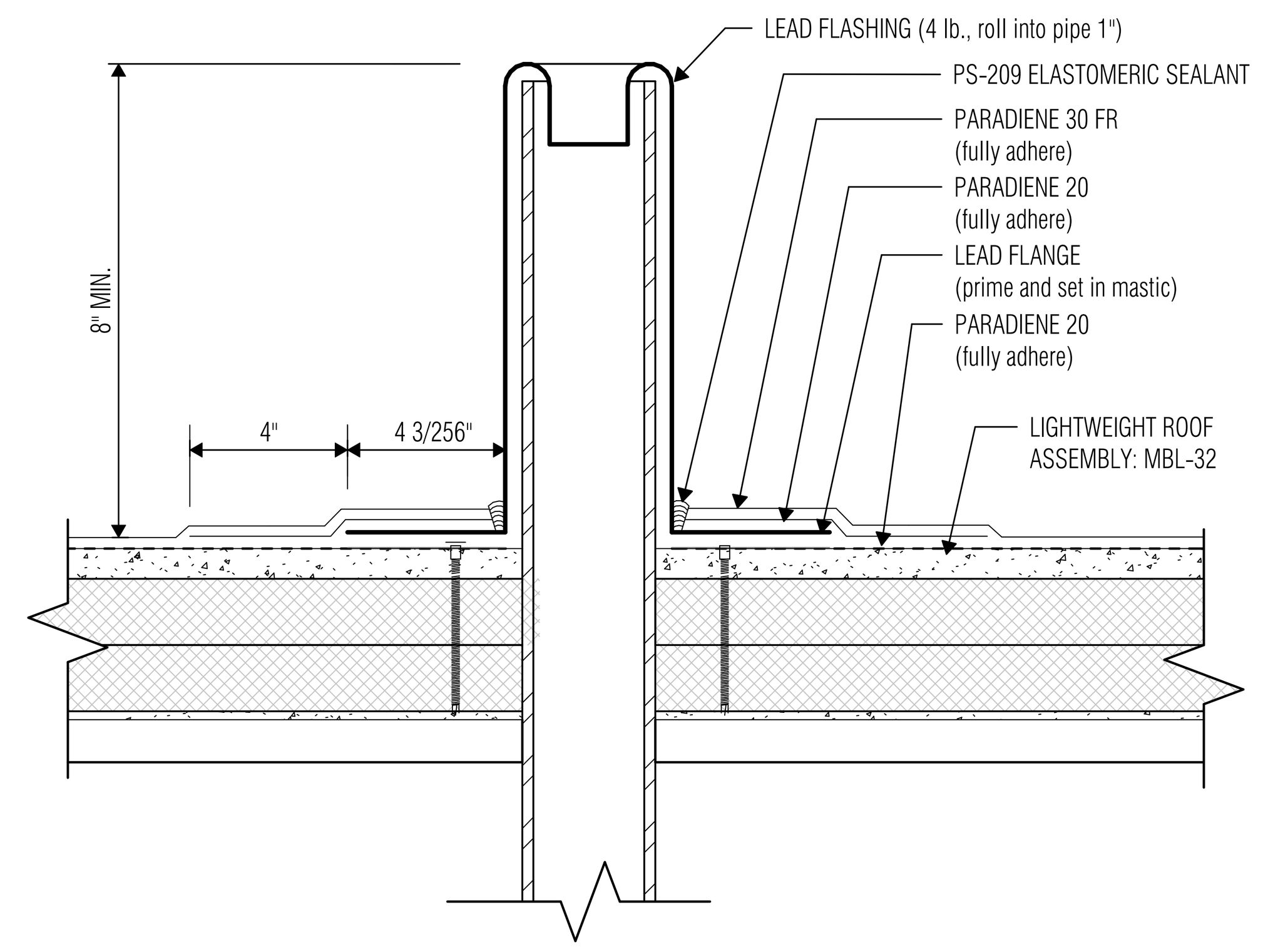
SHEET NO.
A25.10



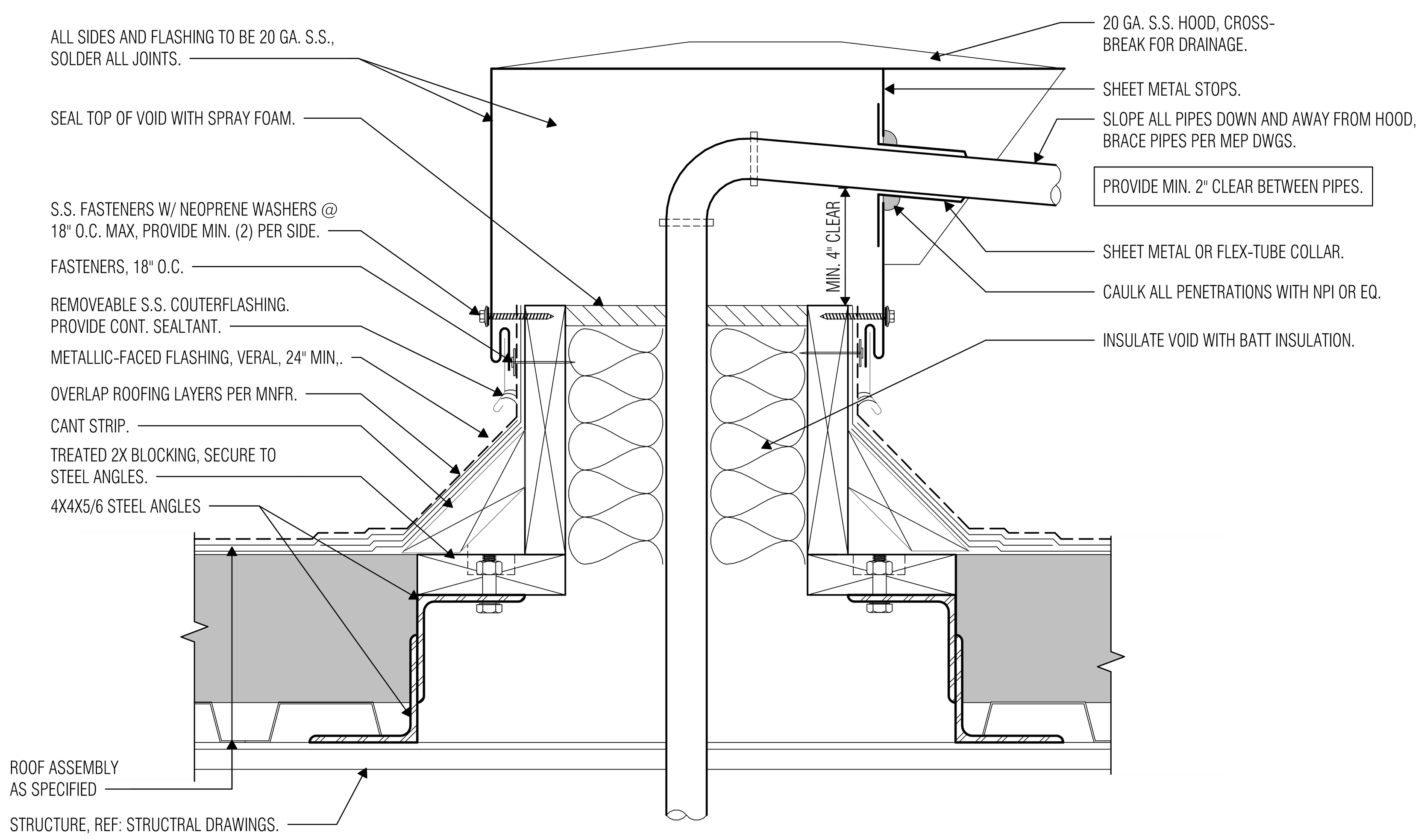
1 MECHANICAL CURB DETAIL
SCALE: 3" = 1'-0"



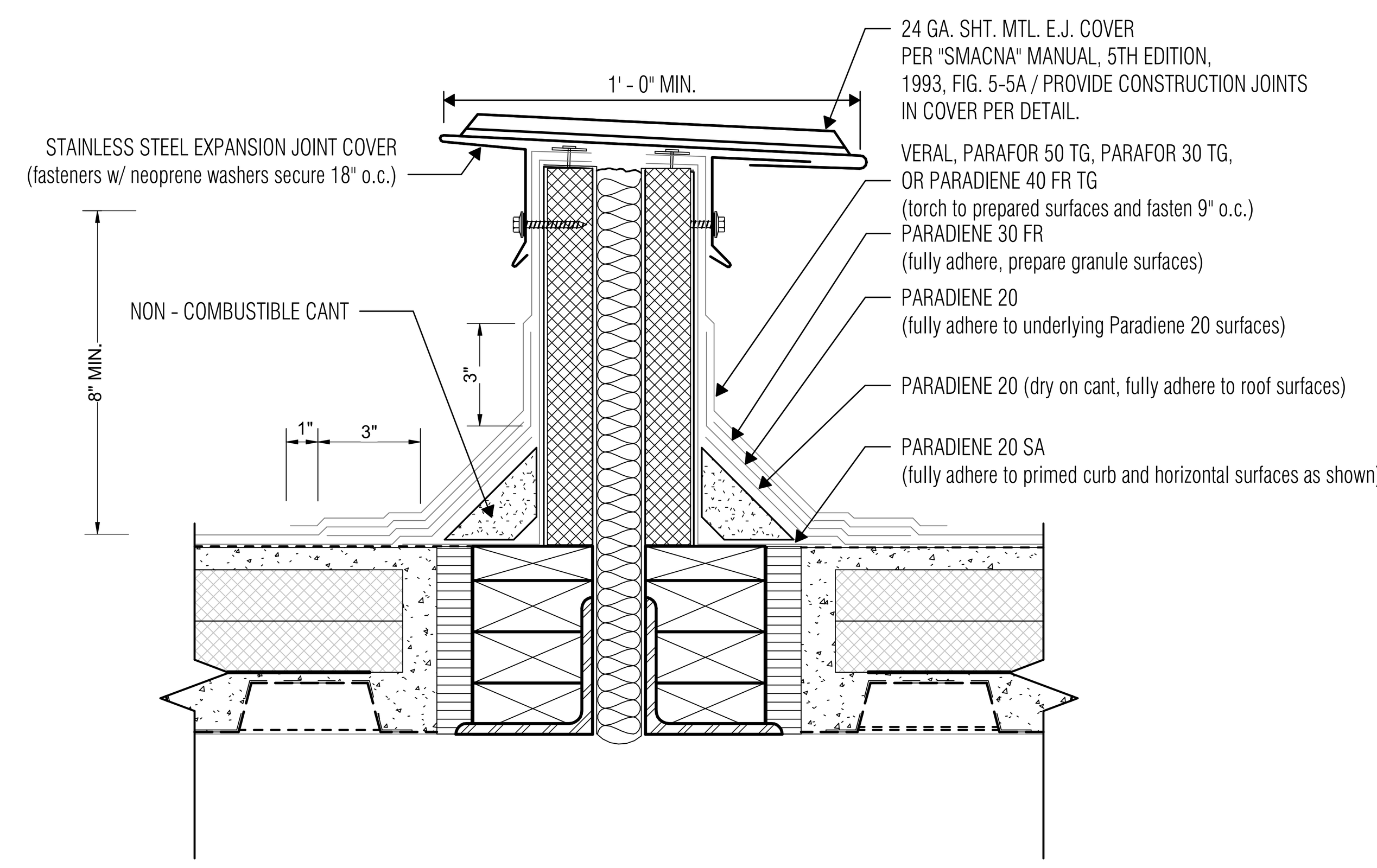
2 TYP PIPE FLASHING AT ROOF
SCALE: 3" = 1'-0"



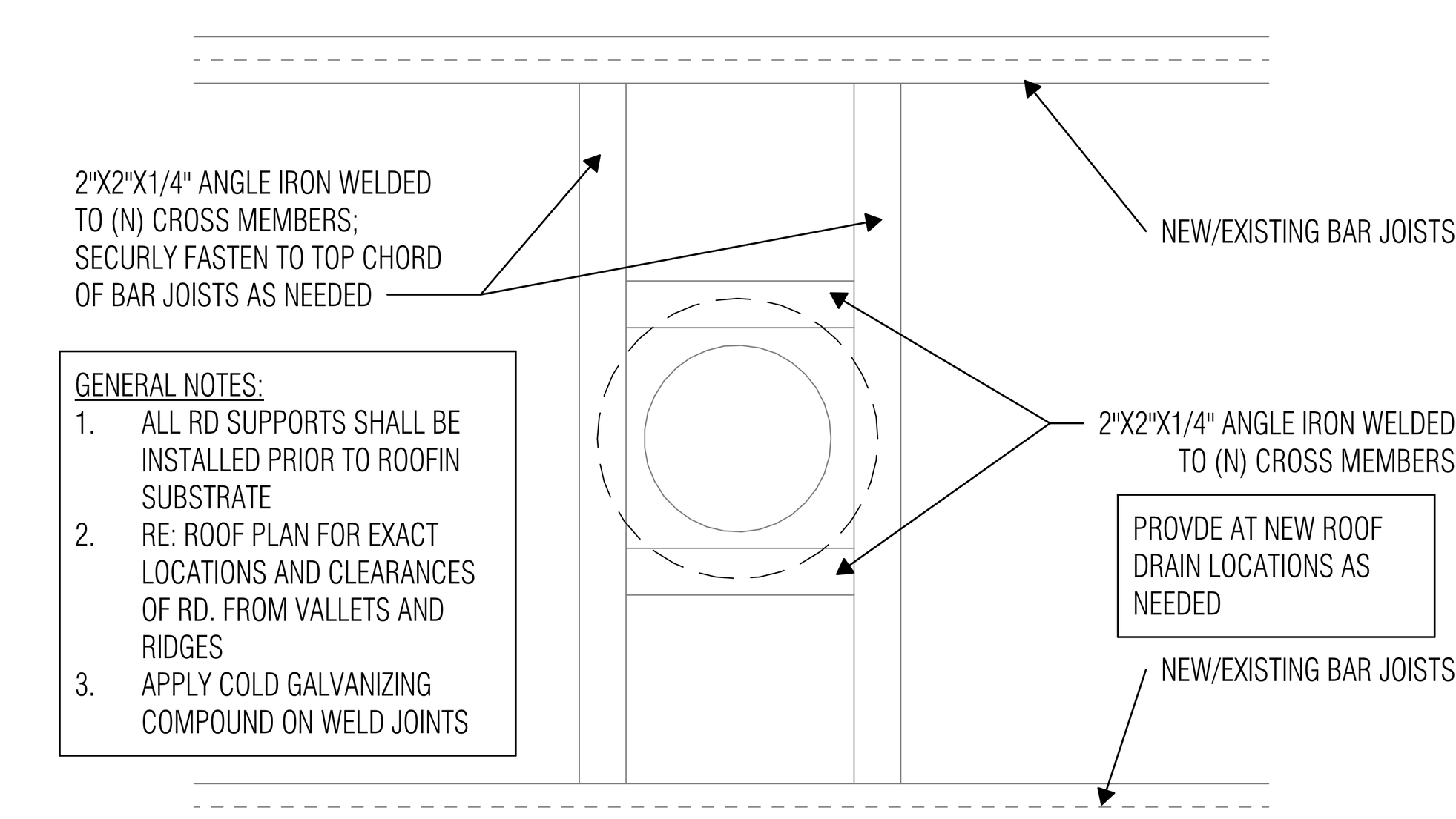
3 TYP. VENT STACK FLASHING
SCALE: 3" = 1'-0"



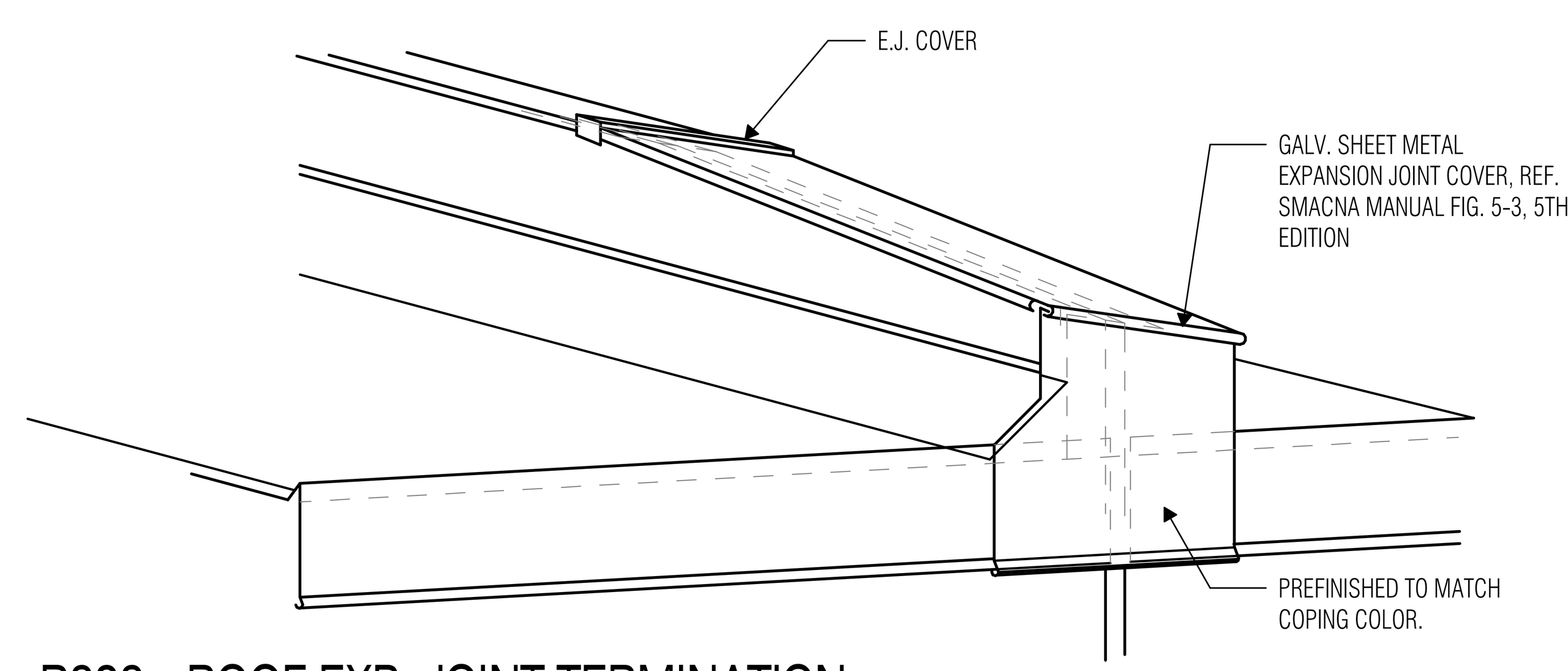
4 TYP PIPE PENETRATION HOOD
SCALE: 3" = 1'-0"



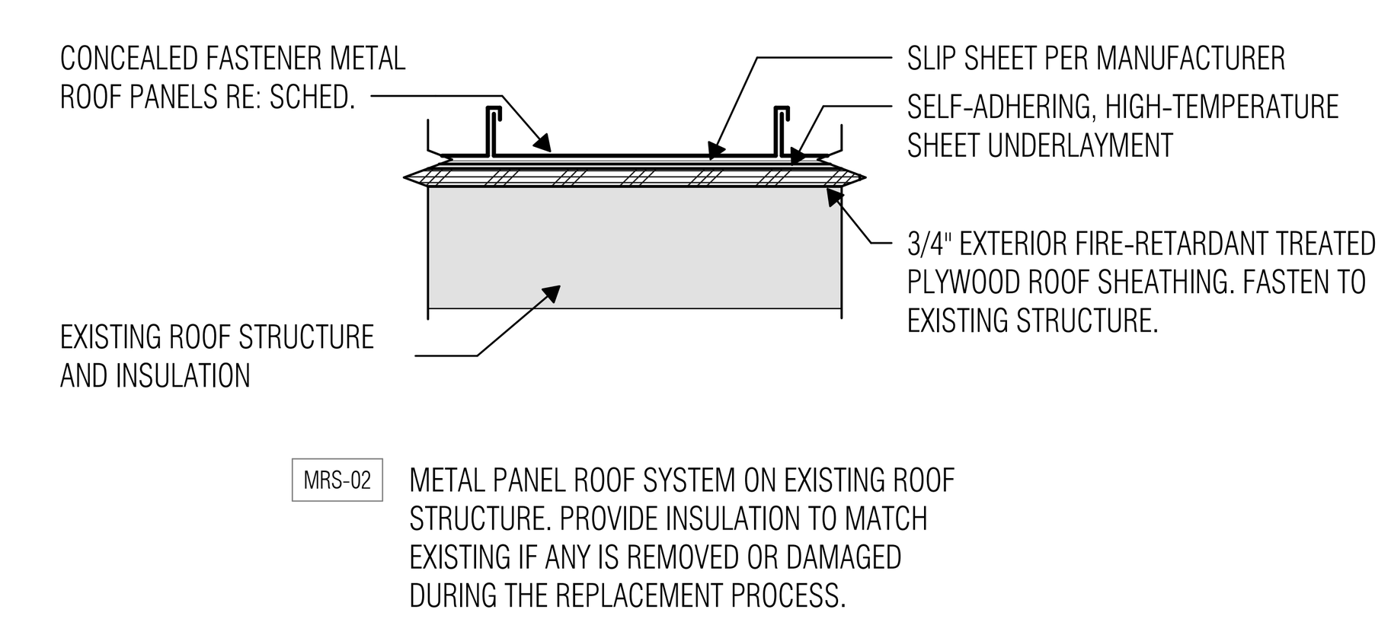
5 ROOF EXPANSION JT. COVER
SCALE: 3" = 1'-0"



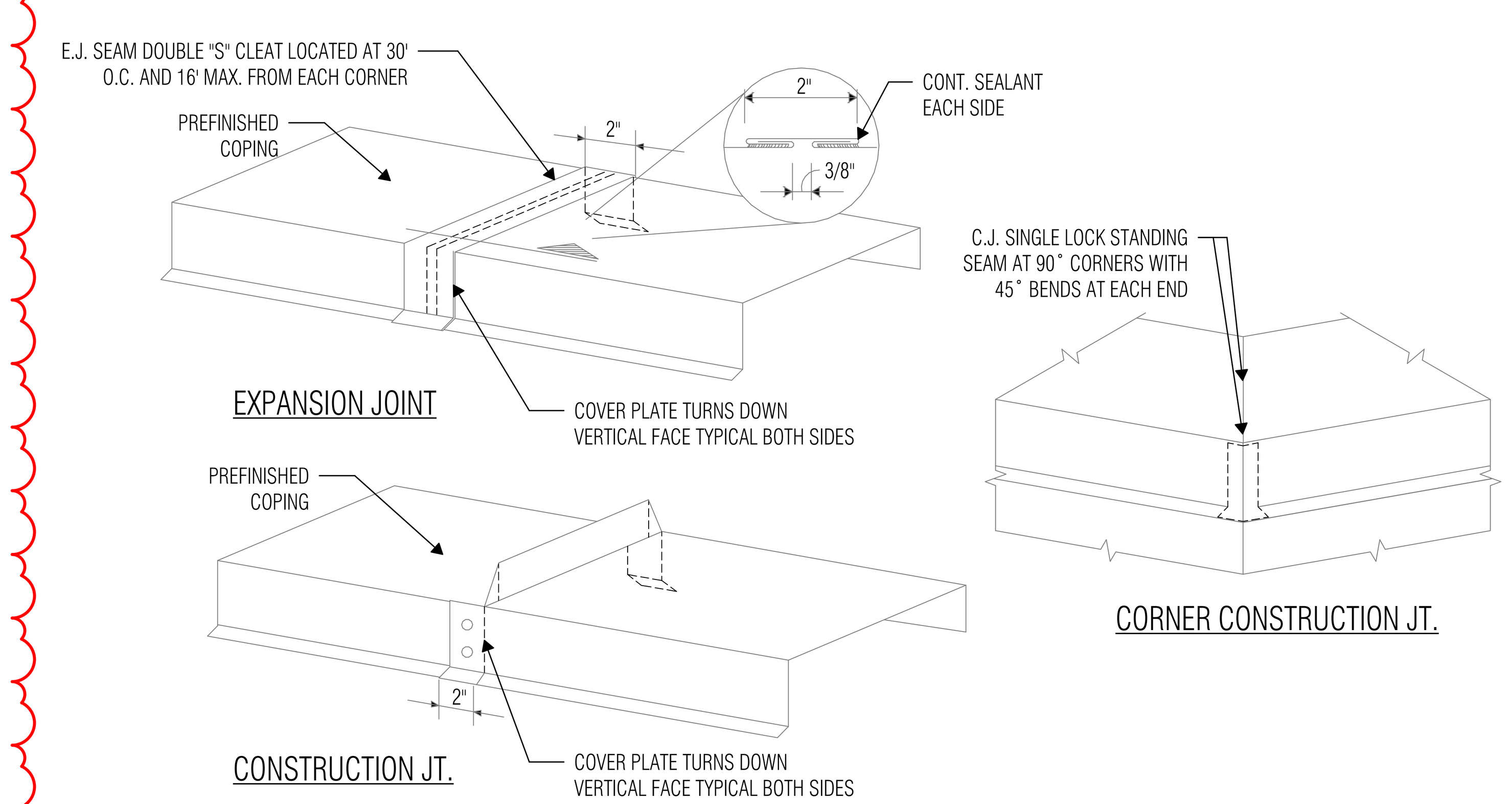
6 ROOF DRAIN SUPPORT DETAIL
SCALE: 1 1/2" = 1'-0"



8 R828 - ROOF EXP. JOINT TERMINATION
SCALE: 1 1/2" = 1'-0"



10 LABAY NEW STANDING SEAM METAL ROOF
SCALE: 1 1/2" = 1'-0"



9 PREFINISHED METAL COPING JOINTS_STANDING SEAM
SCALE: 1 1/2" = 1'-0"

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CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

2024 Cook, Labay & Truitt MS Renovations

REGISTERED ARCHITECT STATE OF TEXAS
03/14/2025

ISSUED: February 24, 2025

REVISIONS

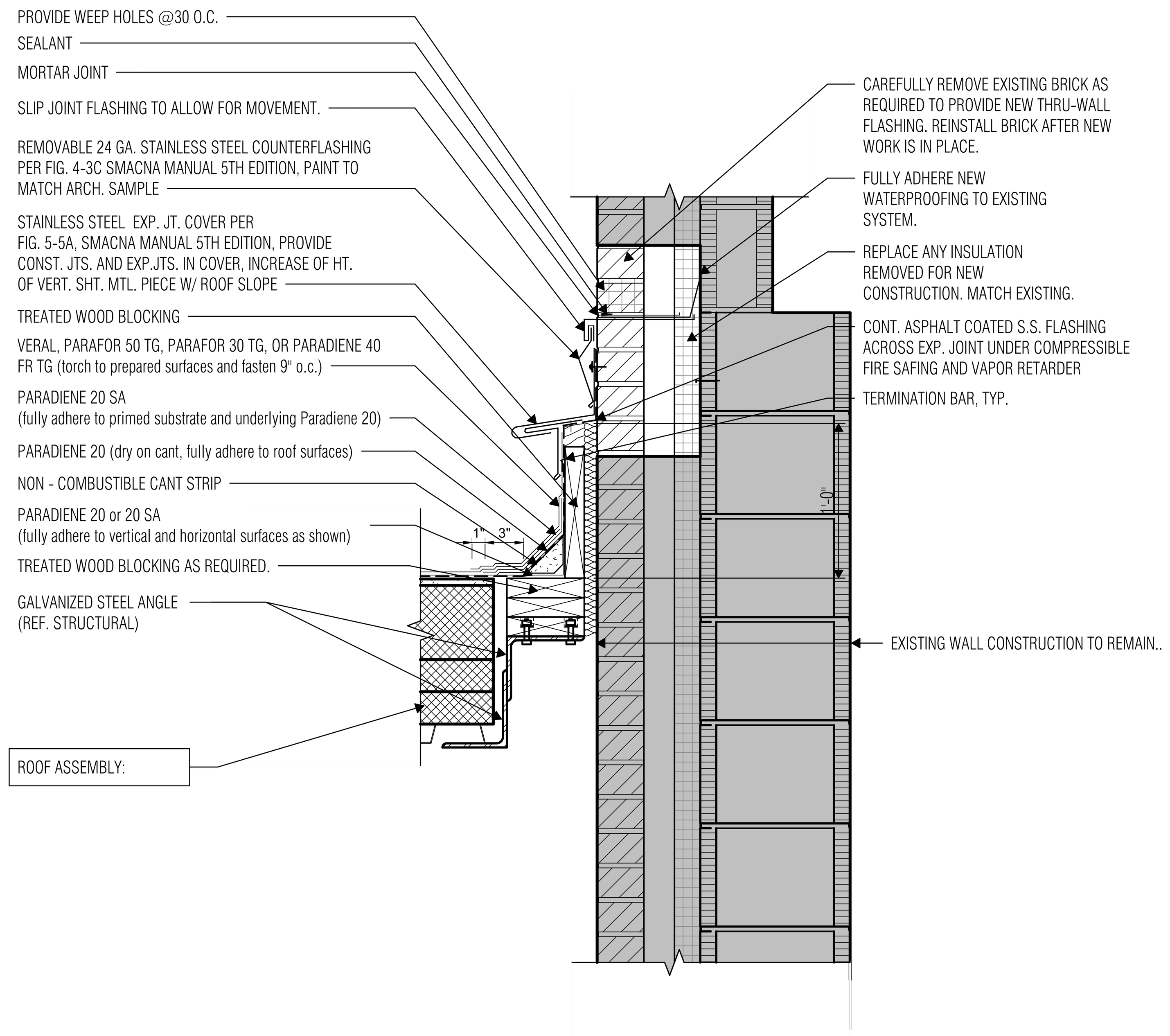
Revision No.		Revision Date
2	Addendum 2	03-14-2025

Director RSJ	Drawn By STH, KM
Designer	Quality Control
Proj. Arch. TQ	

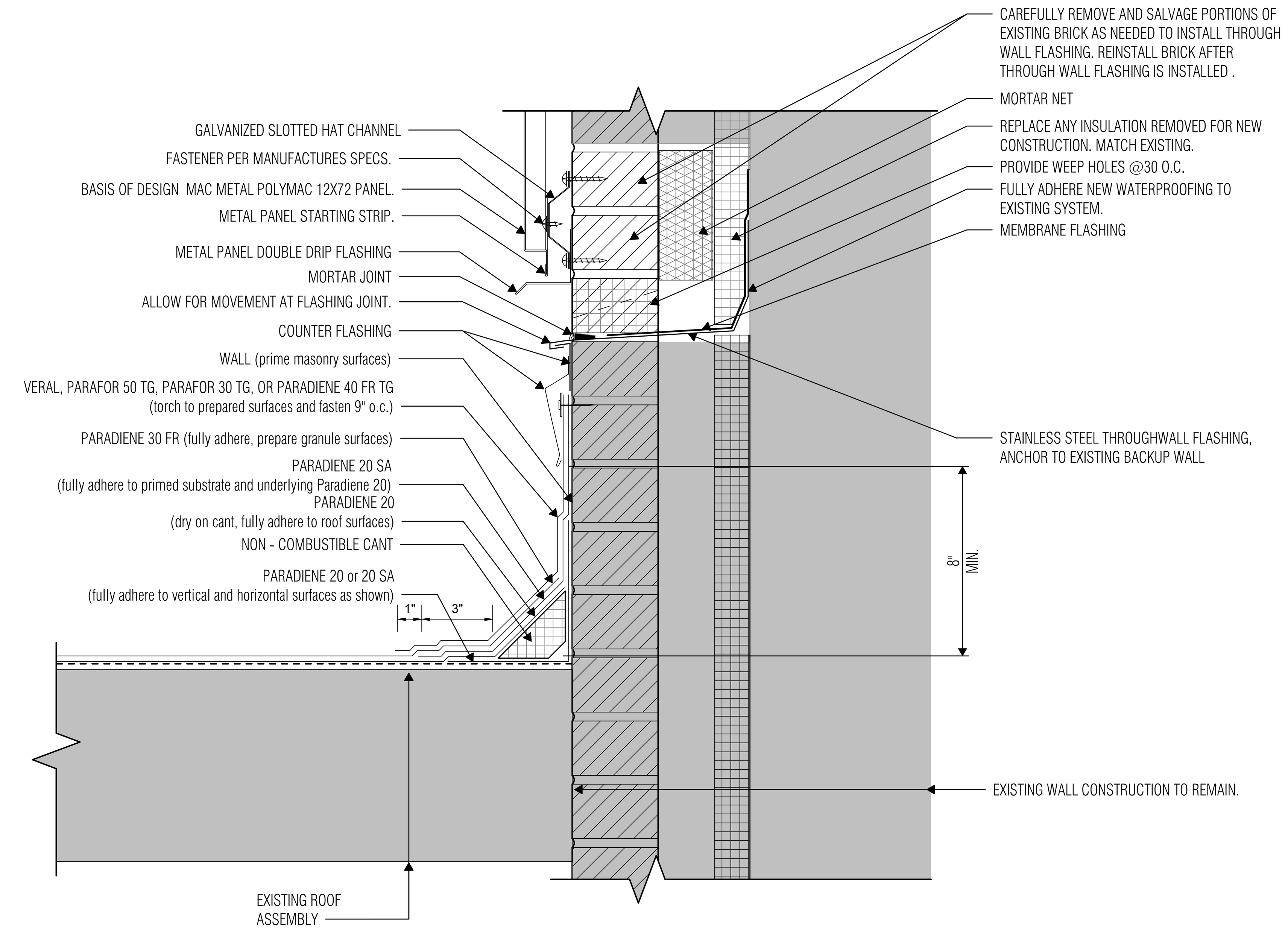
PROJECT NO.
24-010.00

SHEET TITLE
LABAY - ROOF DETAILS

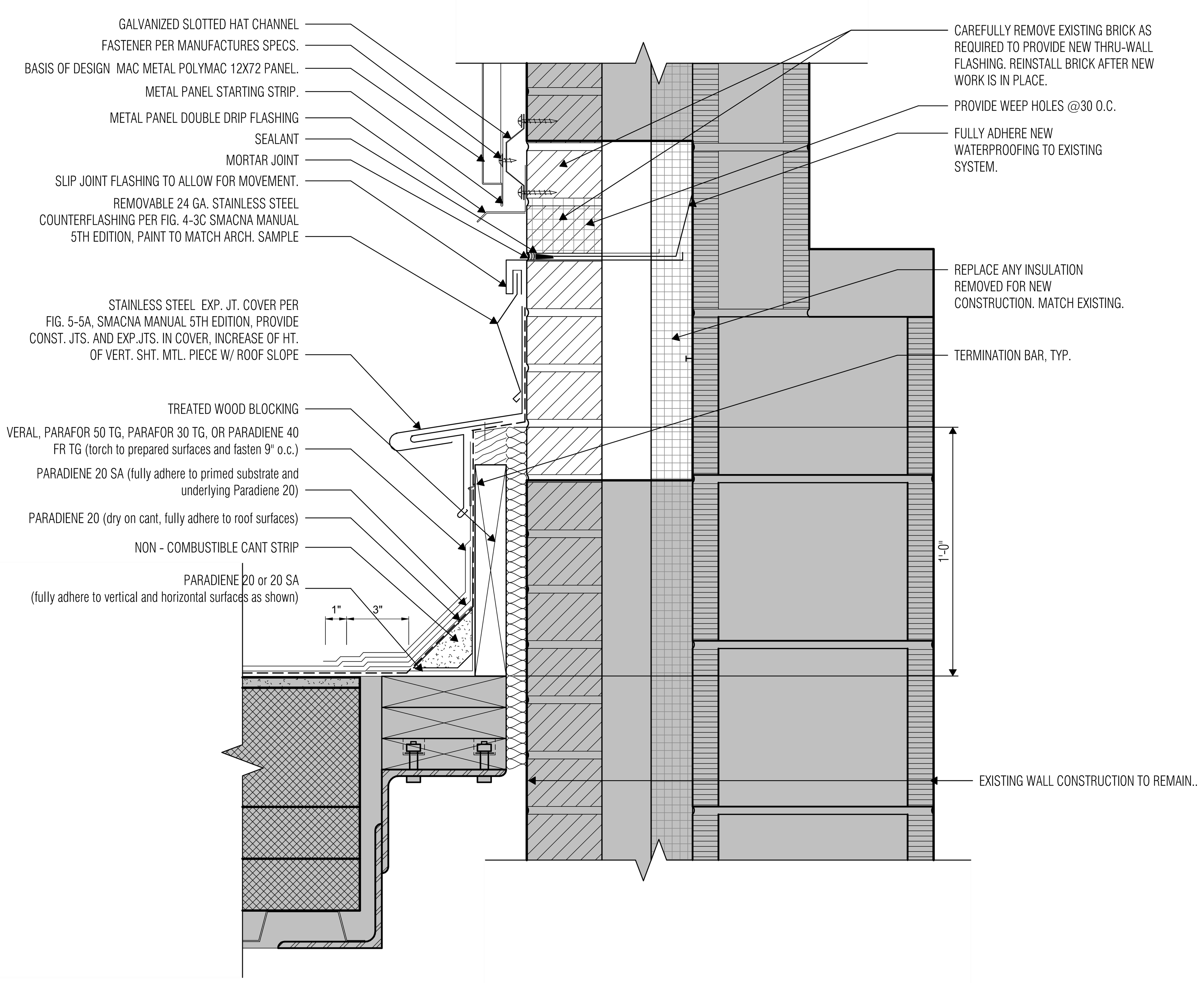
SHEET NO.
A25.21



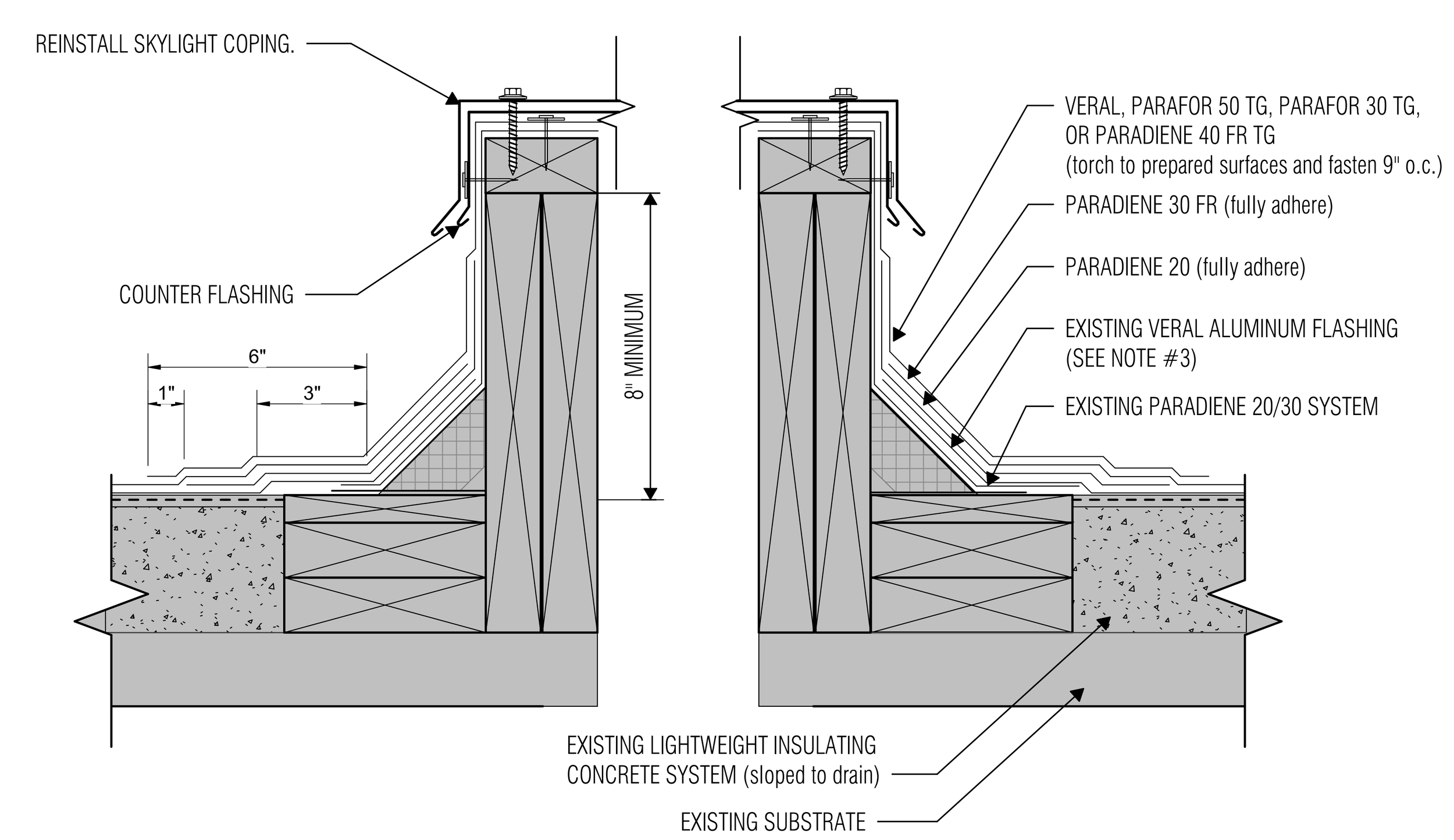
1 ROOF EXP. JOINT FLASH THRU DETAIL AT EXISTING WALL
SCALE: 1 1/2" = 1'-0"



2 EXISTING ROOF NEW COUNTERFLASHING & METAL PANEL
SCALE: 3" = 1'-0"



3 ROOF EXP. JOINT FLASH THRU WALL WITH METAL PANEL REPLACEMENT
SCALE: 3" = 1'-0"



NOTES:

1. WHERE PRIMER IS INDICATED TO MAINTAIN PROPER ADHESION, USE PA-1125 OR PA-917 PRIMER. CONTACT SIPLAST FOR SPECIFIC REQUIREMENTS.
2. PREPARE GRANULE SURFACES UNDER THE FLASHING BY TORCH PREPARATION.
3. USING A TORCH, TOP HEAT AND CAREFULLY REMOVE THE ALUMINUM FOIL SURFACE OF THE EXISTING FLASHING, EXPOSING THE UNDERLYING BITUMINOUS MEMBRANE.
4. THE CARPENTRY AND METAL WORK SHOWN DEPICTS SHOP FABRICATION AND JOB-SITE ASSEMBLY. THESE COMPONENTS SHOULD BE DESIGNED/FABRICATED/INSTALLED ACCORDING TO GENERALLY ACCEPTED INDUSTRY PRACTICES, STANDARDS, AND APPROVALS.
5. DISSIMILAR METAL TYPES SUBJECT TO ELECTROLYTIC REACTION SHOULD BE PHYSICALLY SEPARATED.
6. REQUIREMENTS AND RECOMMENDATIONS DETAILED IN THE CURRENT SIPLAST SPECIFICATIONS SHALL APPLY IN ADDITION TO THE ABOVE DRAWING.

2

5 SKYLIGHT MEMBRANE OVERLAYMENT
SCALE: 3" = 1'-0"

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CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

2024 Cook, Labay & Truitt MS Renovations

REGISTERED ARCHITECT
RUDOLPH STAINES
24200
STATE OF TEXAS
03/14/2025

ISSUED: February 24, 2025

REVISIONS

Revision No.		Revision Date
2	Addendum 2	03-14-2025

Director RSJ	Drawn By STH, KM
Designer	Quality Control
Proj. Arch. TQ	

PROJECT NO.
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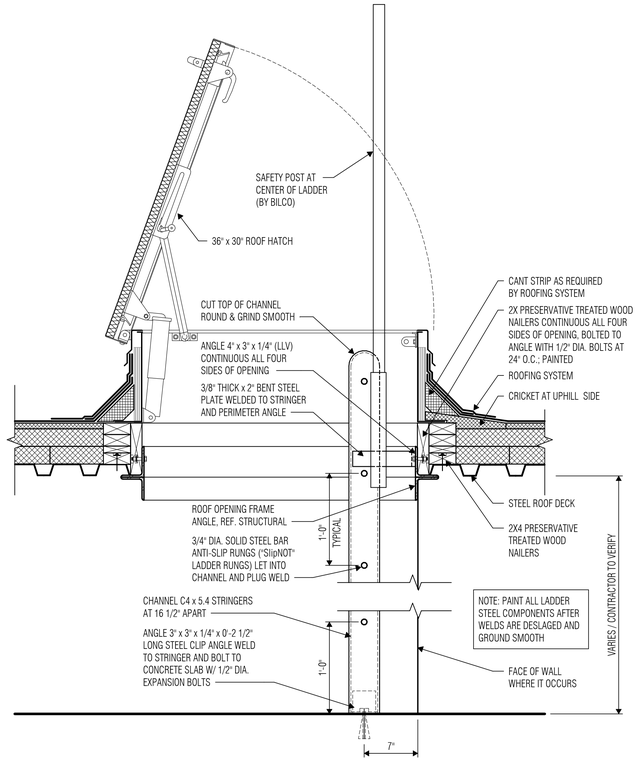
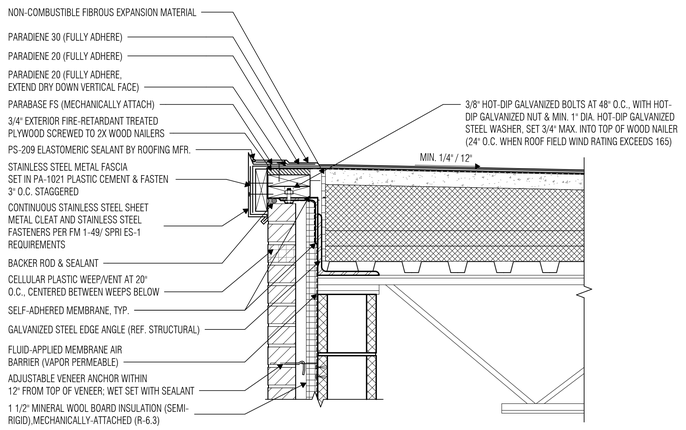
SHEET TITLE
LABAY - ROOF DETAILS

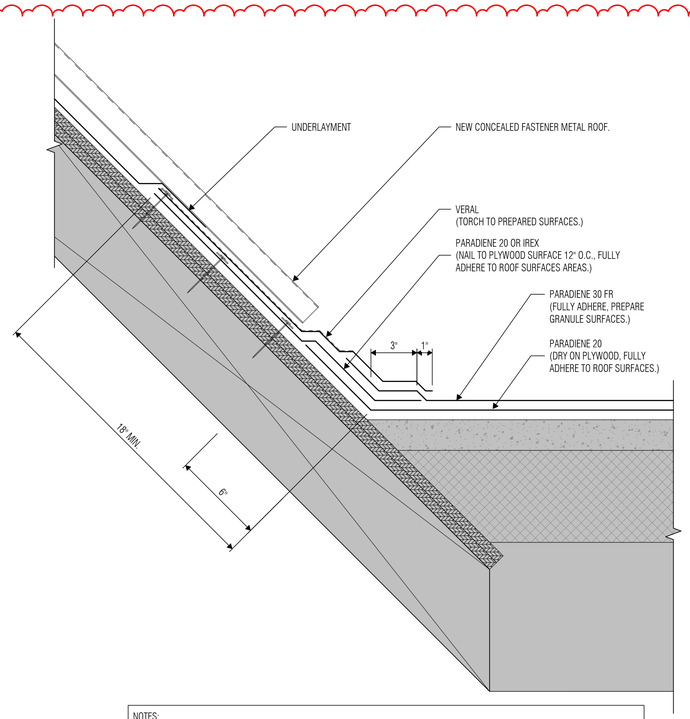
SHEET NO.
A25.22



1 R600 - ROOF ACCESS LADDER & ROOF HATCH
SCALE: 1 1/2" = 1'-0"



2 LABAY- ROOF EDGE DETAIL CMU
SCALE: 1 1/2" = 1'-0"



NOTES:

1. PREPARE GRANULE SURFACES UNDER VERAL FLASHING BY TORCH PREPARATION.
2. THE CARPENTRY SHOWN DEPICTS SHOP FABRICATION AND JOB-SITE ASSEMBLY. THESE COMPONENTS SHOULD BE DESIGNED/ FABRICATED/INSTALLED ACCORDING TO GENERALLY ACCEPTED INDUSTRY PRACTICES, STANDARDS AND APPROVALS.
3. REQUIREMENTS AND RECOMMENDATIONS DETAILED IN SIPLAST SPECIFICATIONS SHALL APPLY IN ADDITION TO THE ABOVE DRAWING.
4. THE SIPLAST GUARANTEE EXCLUDES ROOF MATERIALS NOT MANUFACTURED OR PROVIDED BY SIPLAST, AND THE CONNECTION OF SUCH MATERIALS TO THE SIPLAST MEMBRANE SYSTEM.

3 TIE-IN TO NEW METAL ROOF
SCALE: 3" = 1'-0"

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CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

2024 Cook, Labay & Truitt MS Renovations

REGISTERED ARCHITECT ROBERT SHANE JOHNSON 24208 STATE OF TEXAS
03/14/2025

ISSUED: February 24, 2025

REVISIONS

Revision No.		Revision Date
2	Addendum 2	03-14-2025

Director	Drawn By
RSJ	STH, KM
Designer	Quality Control
Proj. Arch. TQ	

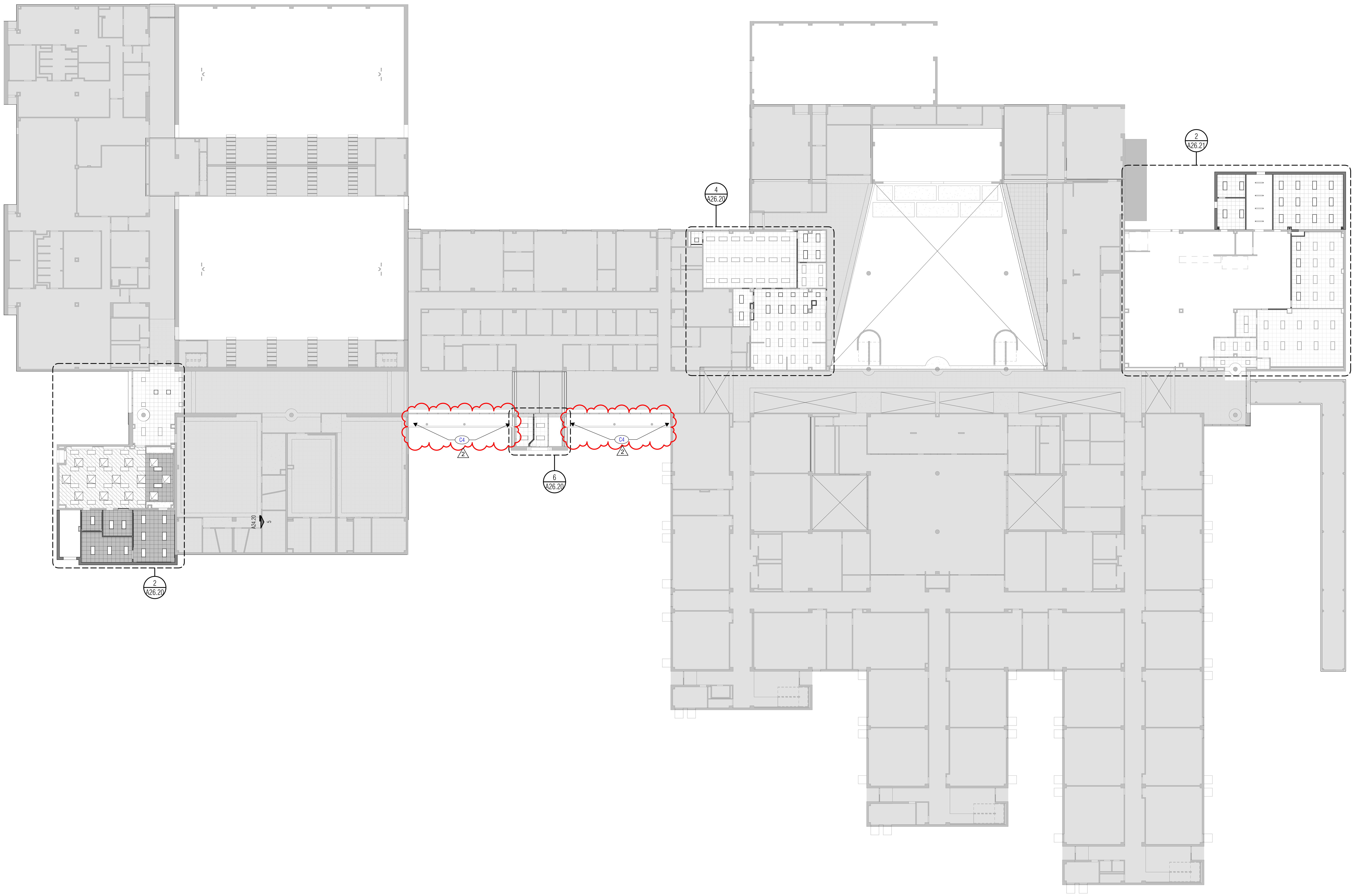
PROJECT NO.
24-010.00

SHEET TITLE
LABAY - ROOF DETAILS

SHEET NO.
A25.23

KEYNOTE LEGEND

C4	PROVIDE NEW METAL WALL PANEL AT ENTRANCE EXTERIOR SOFFIT.



1 REFLECTED CEILING PLAN - LEVEL ONE
SCALE: 3/64" = 1'-0"

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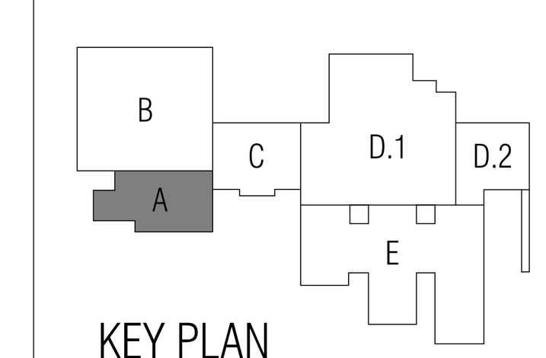
CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

2024 Cook, Labay & Truitt MS Renovations



KEY PLAN

03/14/2025

ISSUED: February 24, 2025

REVISIONS

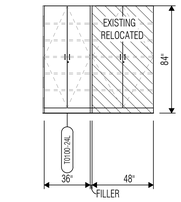
Revision No.		Revision Date
2	Addendum 2	03-14-2025

Director: RSJ
Drawn By: STH, KM
Designer
Quality Control
Proj. Arch.: TQ

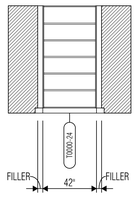
PROJECT NO.
24-010.00

SHEET TITLE
LABAY - REFLECTED CEILING PLAN - LEVEL ONE

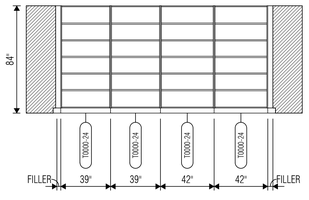
SHEET NO.
A26.11



1 OFFICE/LIBRARY
SCALE: 1/4" = 1'-0"



2 PANTRY
SCALE: 1/4" = 1'-0"



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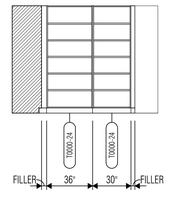

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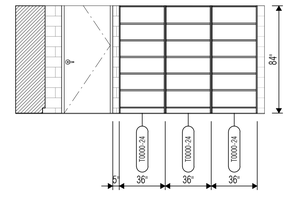
SCALE: 1/4" = 1'-0"



5 PANTRY
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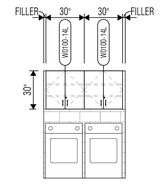
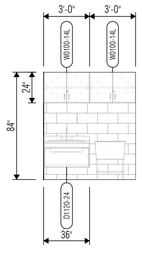
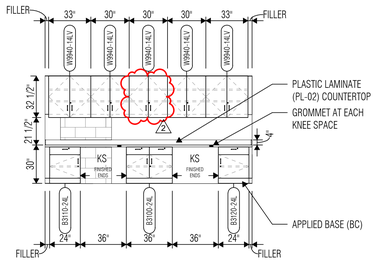


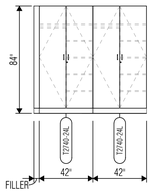
6 LAUNDRY
SCALE: 1/4" = 1'-0"



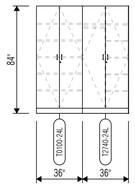
7 MANUFACTURING
SCALE: 1/4" = 1'-0"



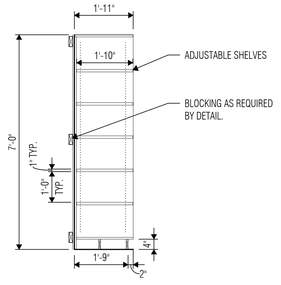
8 ELEVATION
SCALE: 1/4" = 1'-0"



9 ELEVATION
SCALE: 1/4" = 1'-0"



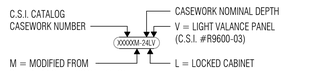
10 ELEVATION
SCALE: 1/4" = 1'-0"



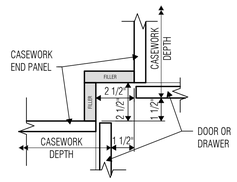
11 PANTRY SECTION
SCALE: 1/2" = 1'-0"

CASEWORK NOTES

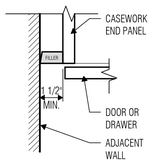
1. Casework shall meet criteria set forth in Americans with Disabilities Act and Texas Accessibility Standards.
2. All casework model numbers are based on Case Systems, Inc. Refer to casework elevations for height and width of each unit.
3. Coordinate locations of electrical and/or plumbing within casework and millwork. Notify Architect of any conflicts prior to installation.
4. Coordinate all column locations prior to installation of casework.
5. Refer to Floor Plan Notes for blocking requirements at stud partitions.
6. All adjustable shelves longer than 2'-3", and shelves of any length at open shelving units, shall be 1" thick..
7. Provide finished surface on all exposed surfaces.
8. Plastic Laminate on all casework shall be PL-_ U.N.O.
9. Provide fillers and finished end panels (F.E.) as required. Refer to Typical Casework Details for filler requirements.
10. Provide locks on all doors and drawers as indicated.
11. All counters shall have 4" high splashes, U.N.O.
12. At countertop locations, no joints in plastic laminate should occur over knee spaces, or within 24 inches of sinks and lavatories.
13. Casework cabinet doors and drawers shall be flush overlay.
14. Base cabinets should not extend to floor. Sub-base shall be separate and recessed 1/2" at sides of cabinet to receive rubber base.
15. Provide 1-1/2" thick divider panel between knee spaces and adjacent spaces (e.g. dishwasher openings, other knee spaces, etc.).
16. At front of casework, countertops shall extend 1/2" over base cabinet door/drawer (approximately 1-1/2" over base cabinet body). At ends of casework, countertops shall extend 1/2" over base cabinet body. Refer to Typical Casework Details.
17. Provide custom height at all file-size drawers to be a minimum of 1'-0" deep. Provide locks at all file-size drawers.



NOTE:
1. The height indicated at base cabinets includes the countertop.

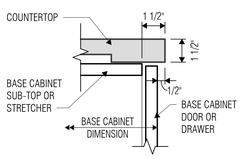


INSIDE CORNER FILLER
AT ADJACENT CABINETS

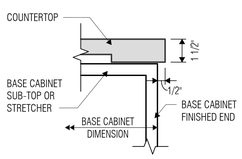


NOTE: MAX. FILLER SIZE IS 4"

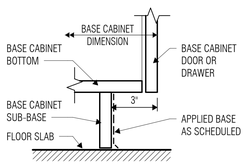
FILLER AT ADJACENT WALL



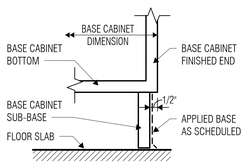
COUNTERTOP
FRONT OVERHANG



COUNTERTOP
END OVERHANG

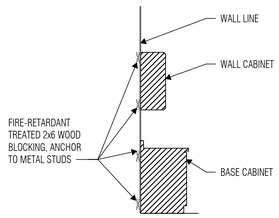


BASE CABINET TOE KICK
AT FRONT

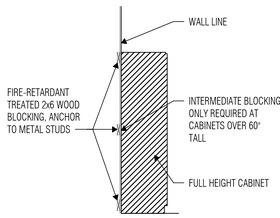


BASE CABINET SUB-BASE
AT FINISHED END

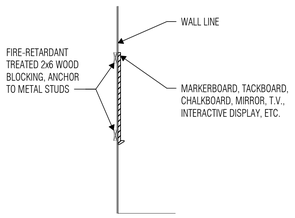
TYPICAL CASEWORK DETAILS
SCALE: 3" = 1'-0"



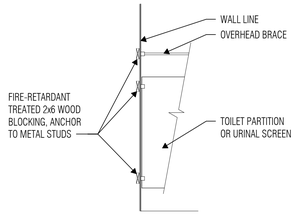
CONDITION A



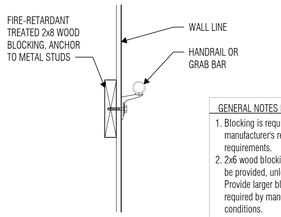
CONDITION B



CONDITION C

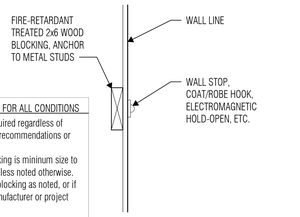


CONDITION D



CONDITION E
SCALE: 1 1/2" = 1'-0"

GENERAL NOTES FOR ALL CONDITIONS
1. Blocking is required regardless of manufacturer's recommendations or requirements.
2. 2x6 wood blocking is mininum size to be provided, unless noted otherwise. Provide larger blocking as noted, or if required by manufacturer or project conditions.
3. Verify exact location of blocking with manufacturer's installation requirements.



CONDITION F
SCALE: 1 1/2" = 1'-0"

MC005

TYPICAL WOOD BLOCKING DETAILS
SCALE: 3/8" = 1'-0"

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CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

2024 Cook, Labay & Truitt MS Renovations

REGISTERED ARCHITECT
JOSEPH STARKS
24208
STATE OF TEXAS
03/14/2025

ISSUED: February 24, 2025

REVISIONS

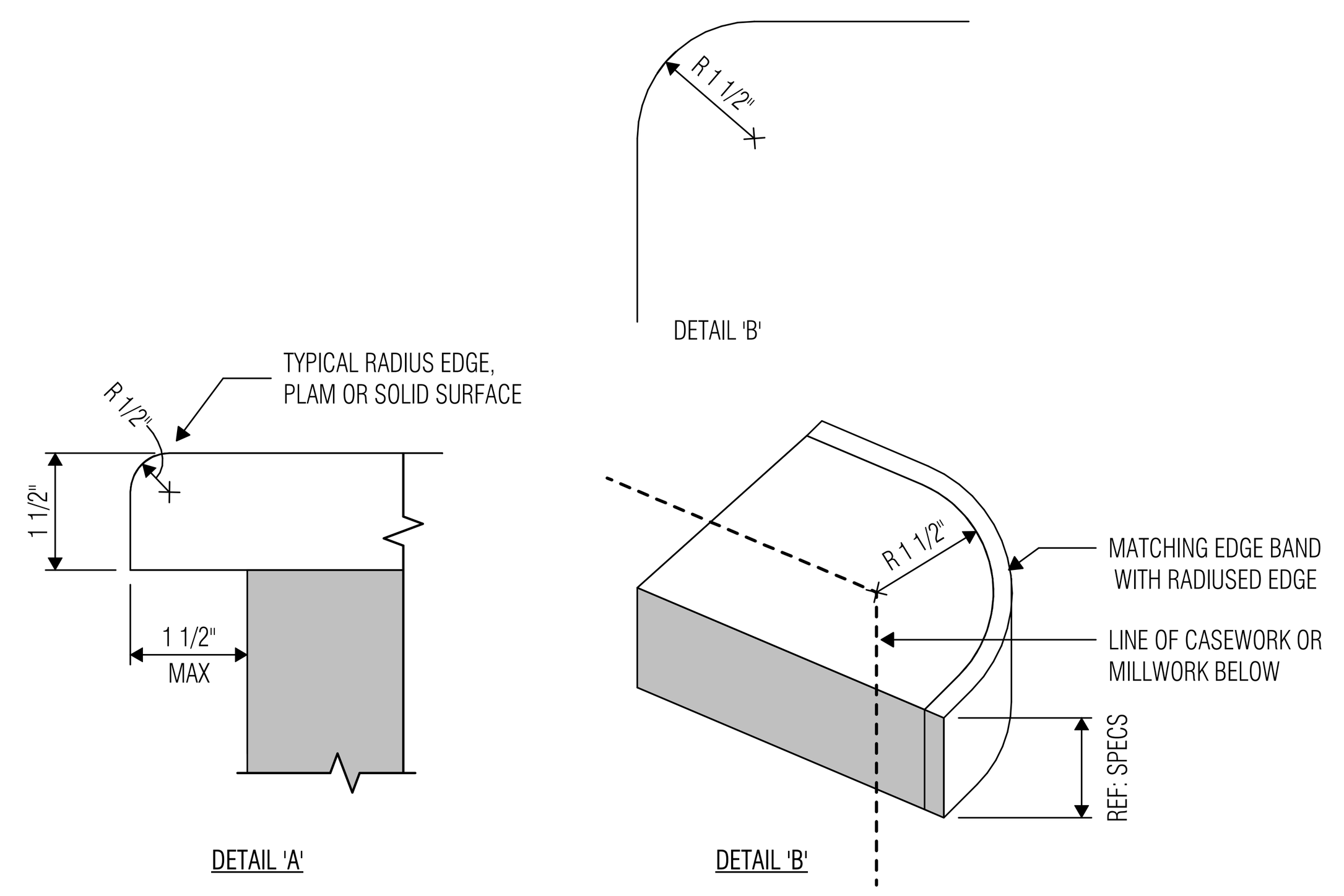
Revision No.		Revision Date
1	Addendum 1	03-06-2025
2	Addendum 2	03-14-2025

Director	Drawn By
RSJ	STH, KM
Designer	Quality Control
Proj. Arch. TQ	

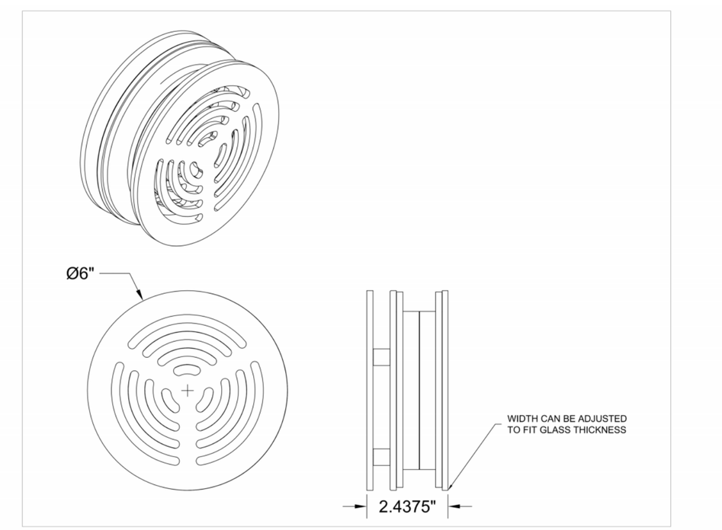
PROJECT NO.
24-010.00

SHEET TITLE
LABAY - CASEWORK ELEVATIONS & DETAILS

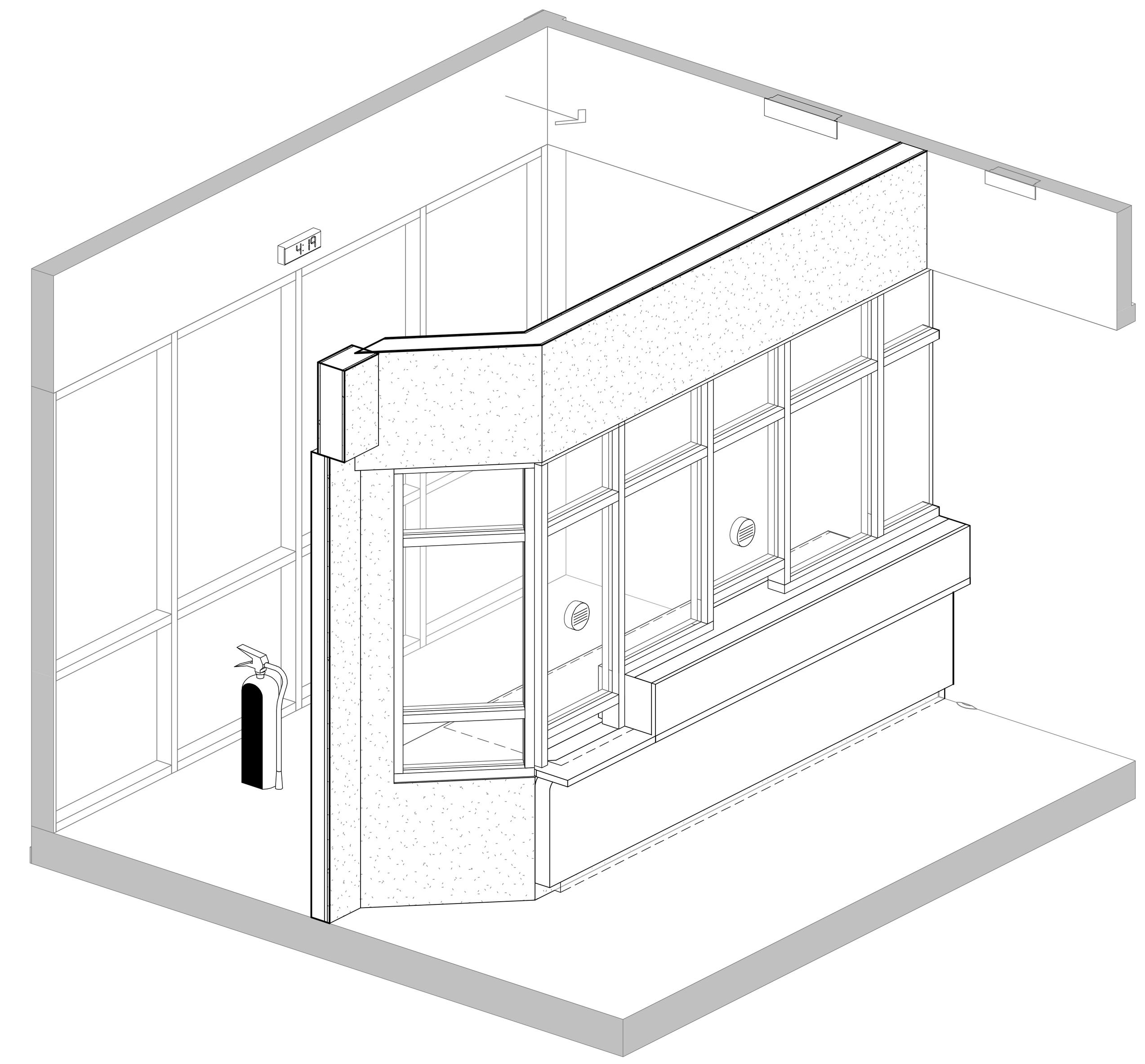
SHEET NO.
A28.01



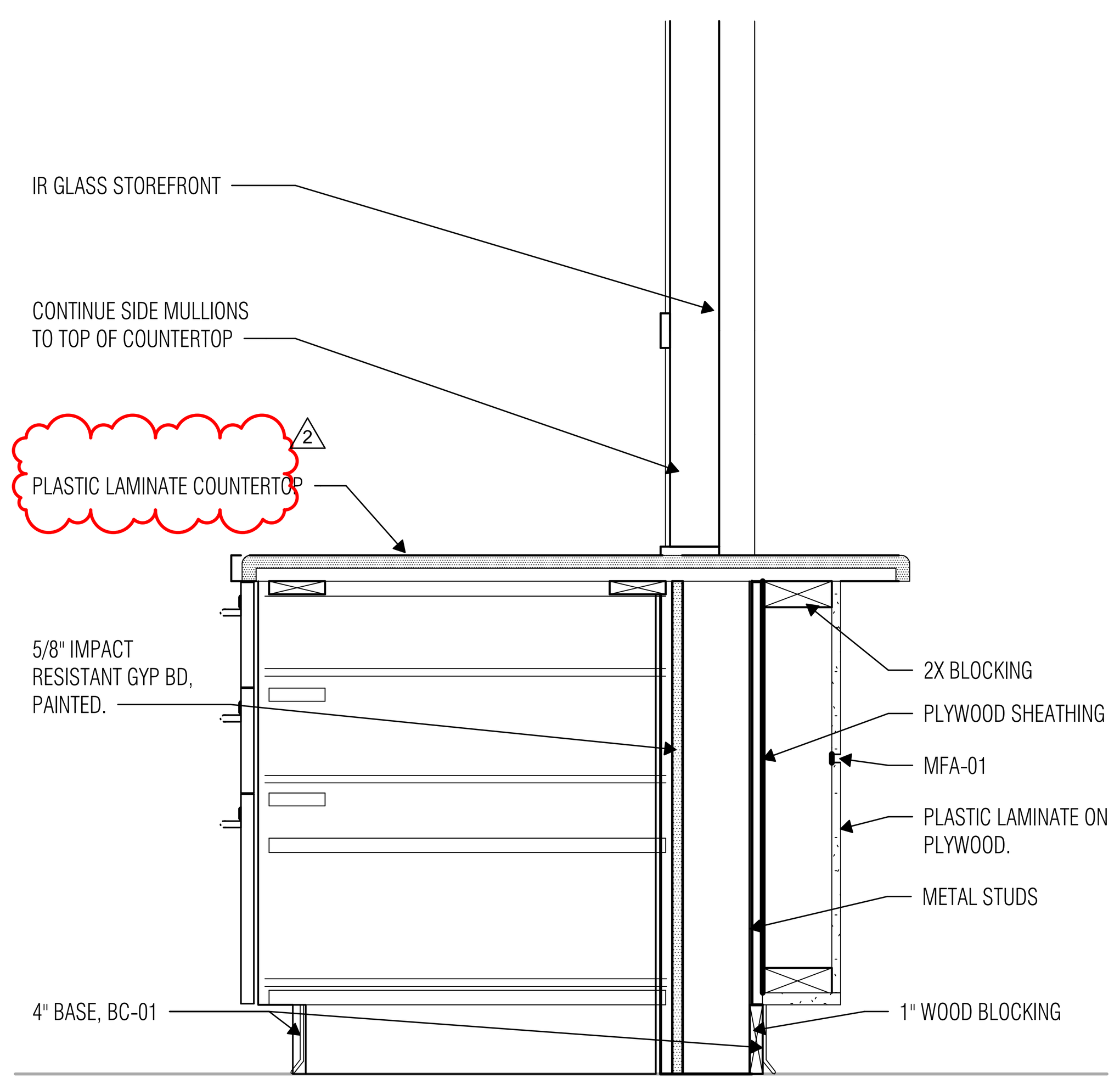
1 TYPICAL COUNTER EDGE DETAIL
SCALE: 6" = 1'-0"



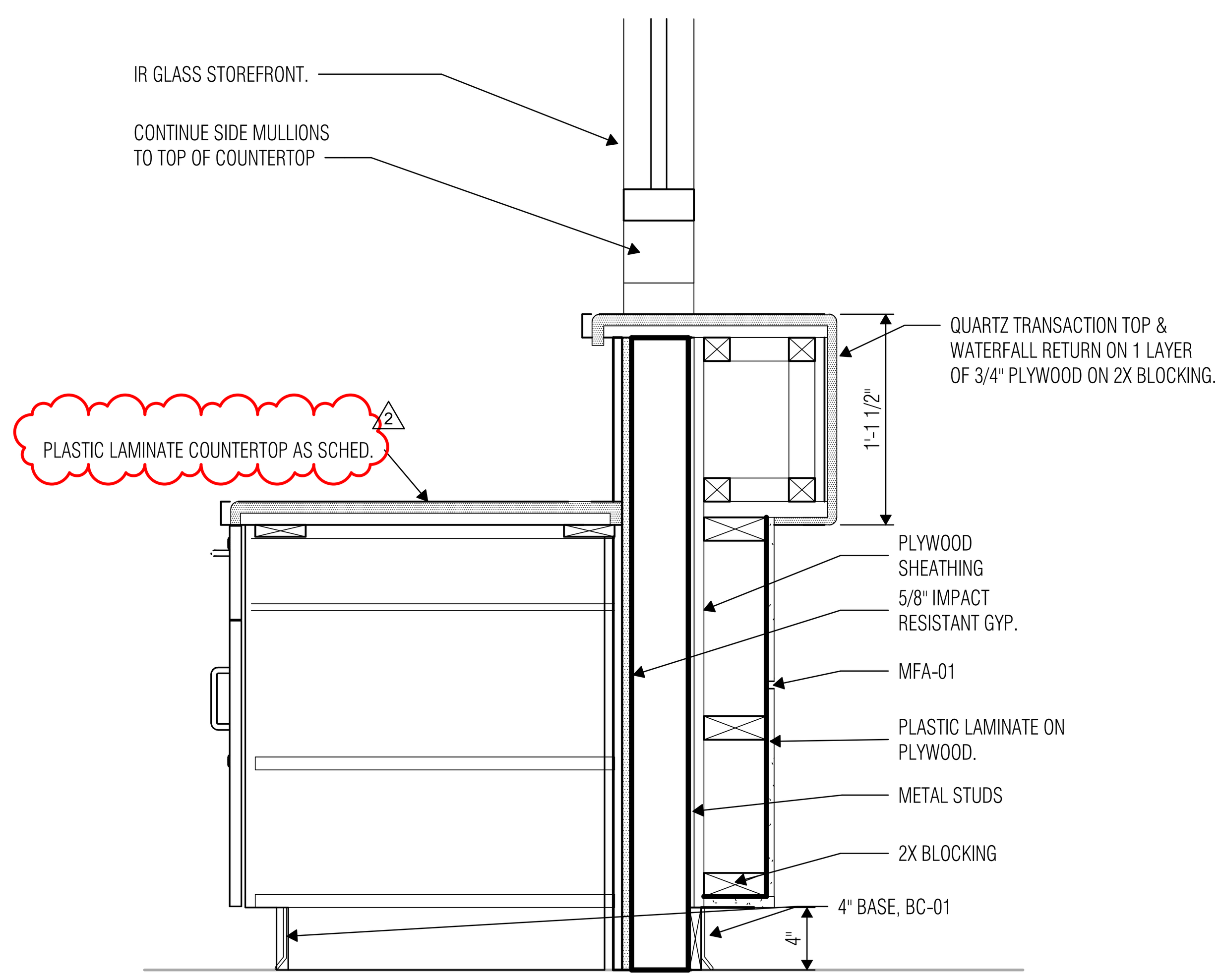
2 SPEAK-THRU DEVICE
SCALE: 1 1/2" = 1'-0"



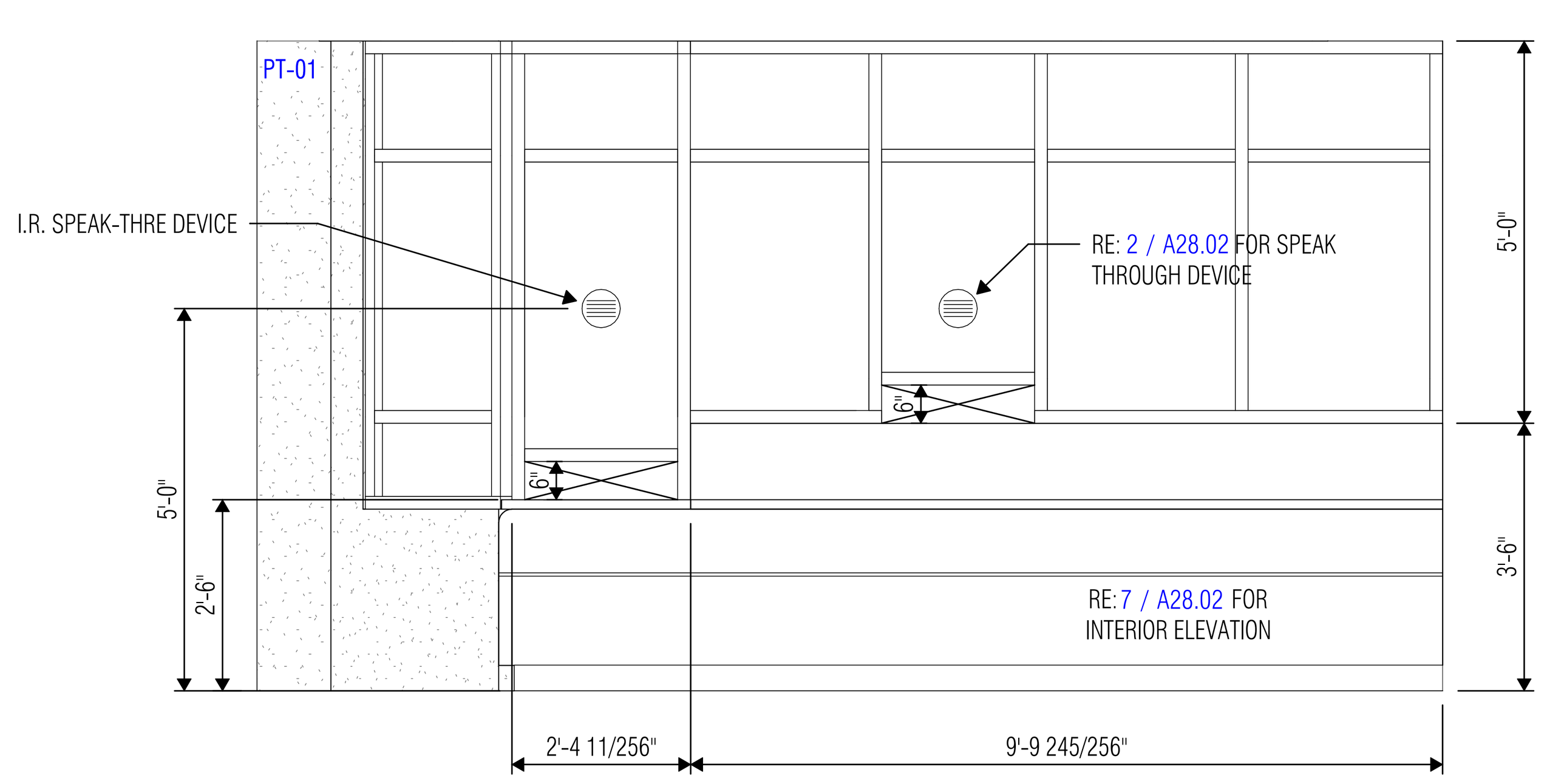
3 LABAY RECEPTION DESK AXO
SCALE:



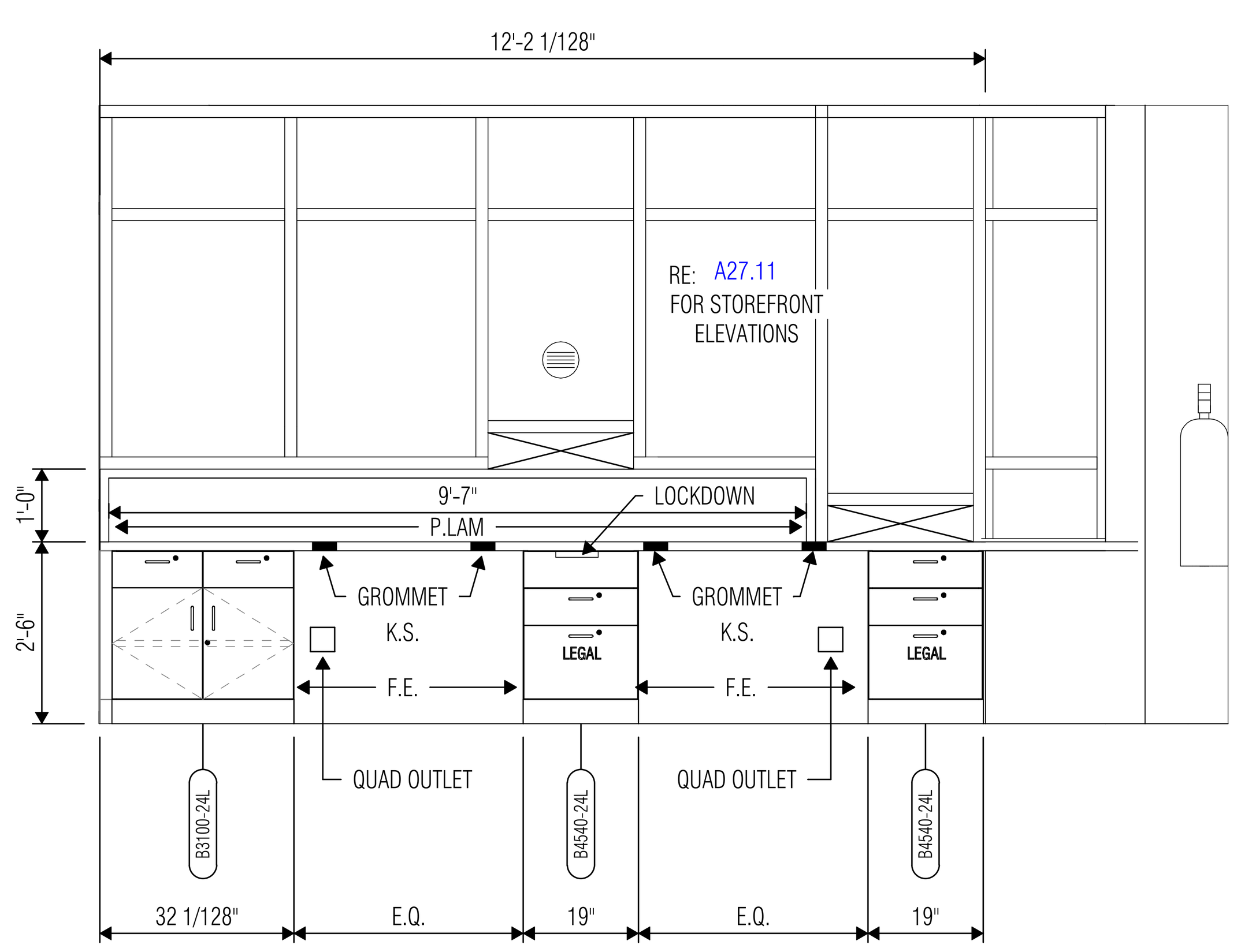
4 LOW COUNTER @ PASS THROUGH
SCALE: 1 1/2" = 1'-0"



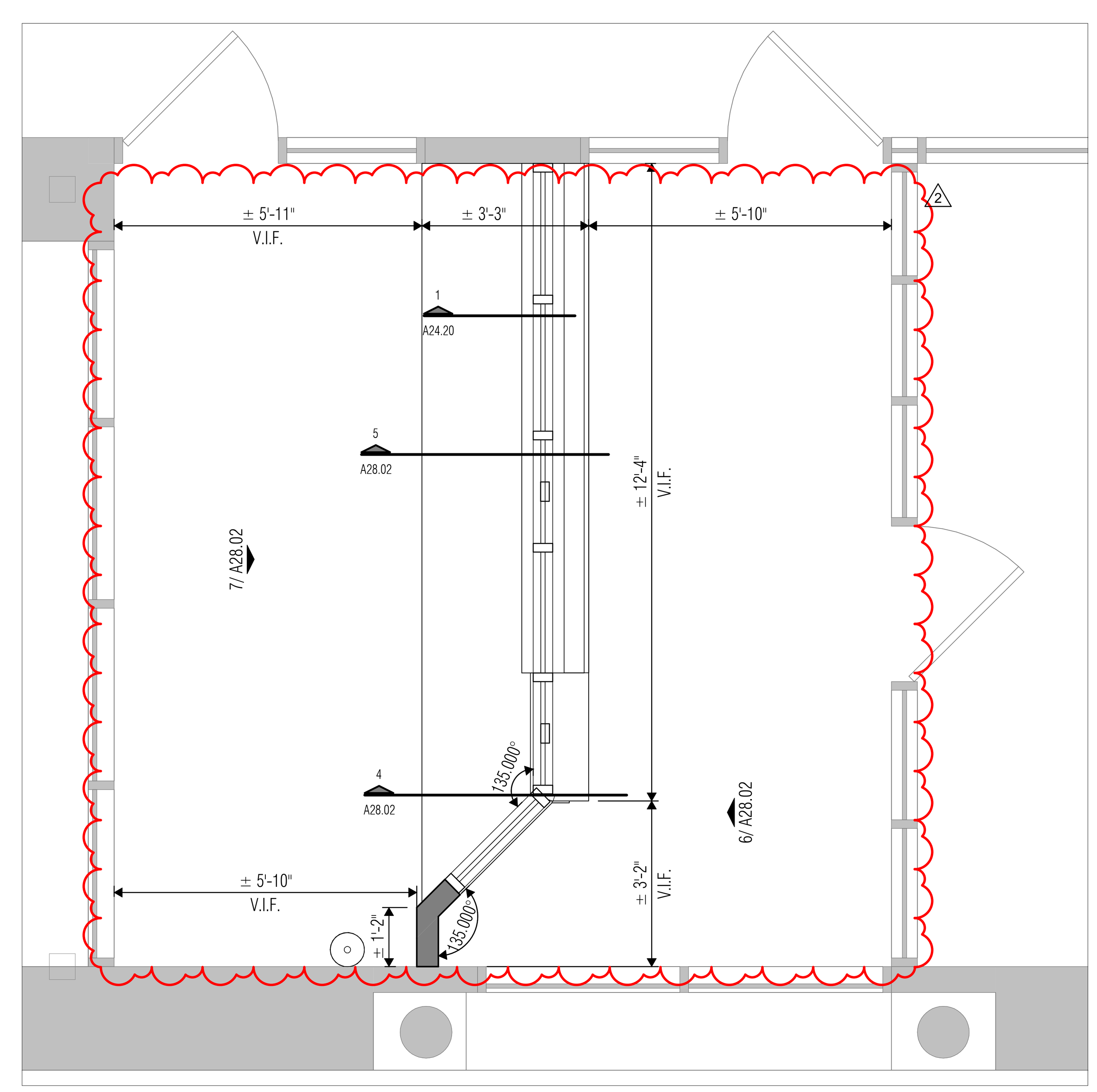
5 TRANSACTION COUNTER SECTION
SCALE: 1 1/2" = 1'-0"



6 INTERIOR ELEVATION
SCALE: 1/2" = 1'-0"



7 RECEPTION
SCALE: 1/2" = 1'-0"



8 LABAY - NEW RECEPTION DESK PLAN
SCALE: 1/2" = 1'-0"

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HOUSTON, TEXAS

2024 Cook, Labay & Truitt MS Renovations

03/14/2025

ISSUED: February 24, 2025

REVISIONS

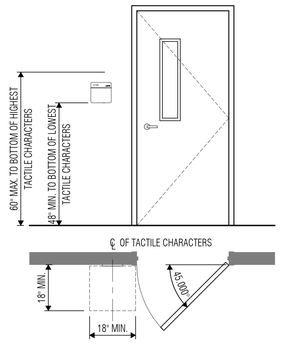
Revision No.		Revision Date
2	Addendum 2	03-14-2025

Director RSJ — Drawn By STH, KM
Designer — Quality Control
Proj. Arch. TQ

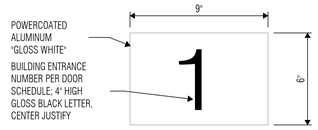
PROJECT NO.
24-010.00

SHEET TITLE
LABAY - RECEPTION DESK CASEWORK PLANS, & DETAILS

SHEET NO.
A28.02

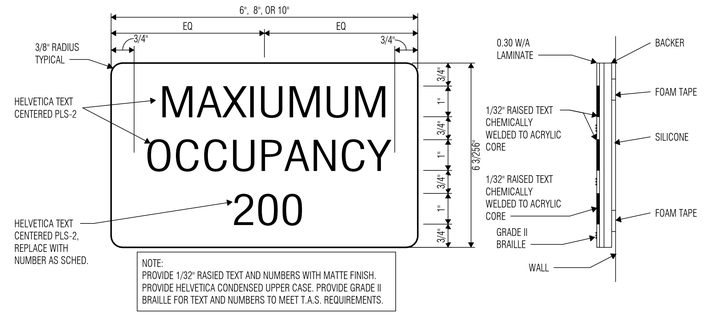


1 DETAIL/ELEV - DOOR SIGN
SCALE: 1/2" = 1'-0"



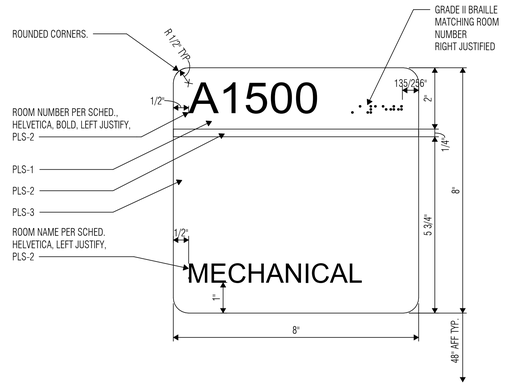
NOTE:
PROVIDE (2) SIGNS AT EACH ENTRANCE AS NOTED. ONE ON THE INTERIOR AND ONE ON THE EXTERIOR. BUILDING ENTRANCE SIGNS SHALL BE MOUNTED ABOVE AND CENTERED ON THE DOOR(S), WITH MECHANICAL FASTENERS (ON WALL) OR CLEAR DOUBLE SIDED VHB TAPE (ON GLAZING).

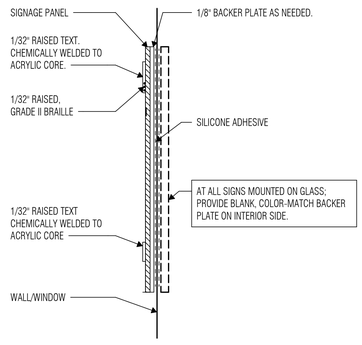
2 SIGN TYPE 'D'
SCALE: 3" = 1'-0"



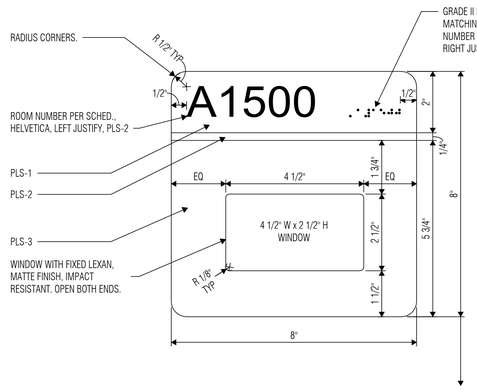
NOTE:
PROVIDE 1/32" RASIED TEXT AND NUMBERS WITH MATTE FINISH. PROVIDE HELVETICA CONDENSED UPPER CASE. PROVIDE GRADE II BRAILLE FOR TEXT AND NUMBERS TO MEET T.A.S. REQUIREMENTS.

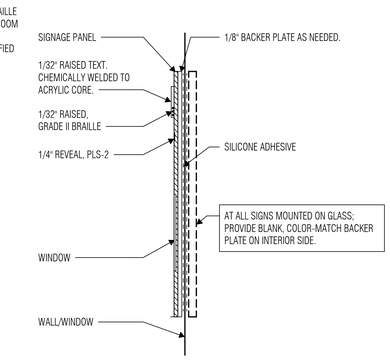
3 SIGN TYPE 'C'1
SCALE: 6" = 1'-0"





4 SIGN TYPE 'A'1
SCALE: 6" = 1'-0"





5 SIGN TYPE 'B'1
SCALE: 6" = 1'-0"

GENERAL SIGNAGE NOTES

2

1. All signage to be protected in place, U.N.O. Contractor shall replace any damaged signage.
2. All new interior signs to match existing campus color schemes. Provide samples for Architect approval.
3. Provide sign type D fpr all exterior doors.
4. Refer to door schedule for signage locations.

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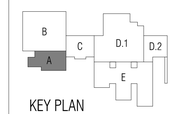
HOUSTON, TEXAS

2024 Cook, Labay & Truitt MS Renovations



KEY PLAN

REGISTERED ARCHITECT ROBYN STARNES 24209 STATE OF TEXAS
03/14/2025

ISSUED: February 24, 2025

REVISIONS

Revision No.		Revision Date
2	Addendum 2	03-14-2025

Director	Drawn By
RSJ	STH, KM
Designer	Quality Control
Proj. Arch.	
TQ	

PROJECT NO.
24-010.00

SHEET TITLE
LABAY - ROOM SIGNAGE DETAILS

SHEET NO.
A29.20

FINISH ACCESSORY, FURNITURE AND EQUIPMENT SCHEDULE

NOTE: ALL MATERIALS, PRODUCTS, SIZES, COLORS AND PATTERNS ARE THE BASIS OF DESIGN. REFERENCE PROJECT MANUAL FOR ADDITIONAL APPROVED MANUFACTURERS MEETING THE DESIGN INTENT. SUBSTITUTIONS WILL BE CONSIDERED WHEN SUBMITTED IN COMPLIANCE WITH SECTION 01 62 00 – PRODUCT OPTIONS.

MARK	DESCRIPTION	SPEC SECTION	MANUFACTURER INFO			SIZE	COMMENTS
			MANUFACTURER	SERIES/STYLE	COLOR/FINISH		
PTD				-		-	
EXTERIOR EQUIPMENT AND SPECIALTIES							
EJ	Expansion Joint Covers	07 95 00		As Specified		-	
PJS	PREFORMED JOINT SEAL	07 95 00		-		-	PREFORMED JOINT SEAL
EXTERIOR FINISH ACCESSORY							
EFA-01	PREFINISHED METAL TRIM	07 42 13		As Specified		-	
EFA-02	FIBER CEMENT TRIM	07 46 46		As Specified		-	
EFA-03	WOOD TRIM	07 46 23		As Specified		-	
FLOOR FINISH ACCESSORY							
FFA-01	FLOOR TRANSITION	09 68 00	Johnsonite	Wheeled Traffic Transition	Black 40	--	RF to CPT. Provide floor transition to match flooring thickness.
FFA-02	FLOOR TRANSITION	09 68 00	Johnsonite	Slim Line Transition	Black	--	CPT to EXST. Provide floor transition to match flooring thickness.
MILLWORK FINISH ACCESSORY							
MFA-01	MILLWORK REVEAL	09 21 16	Fry Reglet	Millwork Profiles/Millwork U Channel	To be selected by architect.	1/2"	At Reception Desk refer to Casework Elevations for details.
MISC.							
BV	BRICK VENT	05 50 00		As Specified		-	
CB	CONCRETE BOLLARD	12 93 00		As Specified		-	
DN	DOWNSPOUT NOZZLE	DIVISION 22		As Specified		-	
ISE	EXTERIOR JOINT SEALANT	07 92 00		As Specified			
2 L	LOUVER	08 91 00		As Specified	To be selected by architect.	-	AT LABAY
SPECIALTY EQUIPMENT							
ATH	Athletic Wall Pads	11 66 00		As Specified			AT LABAY
FEC	Fire Extinguisher Cabinet	10 44 13		As Specified		-	
HB	Horizontal Blinds	12 21 13		As Specified			
ID	IDENTIFYING DEVICES	10 14 00		As Specified			
MB	Markerboard - Premanufactured	10 11 16		As Specified			
PC-01	Platform Stage Curtain	10 21 23	KM Fabrics	Charisma	Black		COOK
PC-02	Platform Stage Curtain	10 21 23	KM Fabrics	Charisma	Navy		LABAY/TRUITT
TB	Tackboard	10 11 16		As Specified			

MATERIAL FINISH SCHEDULE

NOTE: ALL MATERIALS, PRODUCTS, SIZES, COLORS AND PATTERNS ARE THE BASIS OF DESIGN. REFERENCE PROJECT MANUAL FOR ADDITIONAL APPROVED MANUFACTURERS MEETING THE DESIGN INTENT. SUBSTITUTIONS WILL BE CONSIDERED WHEN SUBMITTED IN COMPLIANCE WITH SECTION 01 62 00 – PRODUCT OPTIONS.

MARK	DESCRIPTION	SPEC SECTION	MANUFACTURER INFO				COMMENTS
			MANUFACTURER	SERIES/STYLE	COLOR/FINISH	SIZE	
BASE FINISH							
BC	Base, Rubber Coved	09 65 00	Roppe	700 Series - Standard	193 Black Brown	4"	
PT-03	Paint - Base	09 91 00	Sherwin Williams	--	Architect to select.	VIF	Contractor to paint base at new CMU walls. base height to align to adjacent existing base.
CEILING FINISH							
ACT-01	Acoustic Ceiling Tile (24X24)	09 51 00	Armstrong	School Zone Fine Fissued	White	24"X24"	
ACT-02	Acoustic Ceiling Tile (24X24) - High NRC - New Tiles Only	09 51 00	Armstrong	Calla 2820	White	24"X24"	
ACT-03	Acoustic Ceiling Tile (24X24) - High NRC	09 51 00	Armstrong	Calla 2820	White	24"X24"	
EXTERIOR FINISH							
MA-01	4A-1 - Brick Veneer_King Labay	04 20 00	ACME		Steele Gray		
MP-01	Metal - Panel	07 42 13	Berridge		Architect to select.		Athletic Storage
MP-02	Metal - Roofing	07 42 13	Berridge		Architect to select.		Athletic Storage
FLOOR FINISH							
CO-01	Concrete - Sealed	03 30 00	--	--	--	--	
CO-02	Concrete - Polished	03 30 00	--	--	--	--	
CPT-01	Carpet - Broadloom	09 68 00	Tarkett	Aftermath II	Fleece 23508	Roll	
RF-01	Resilient Floor - Sheet Vinyl	09 65 44	Forbo	Marmoleum Fresco	Sparrow 3252	13" X 13"	
MILLWORK & ARCHITECTURAL FINISHES							
PL-01	Plastic Laminate - Vertical	08 14 23	Formica		5883-58 Pecan Woodline	--	
PL-02	Plastic Laminate - Casework Counters	12 32 16	Wilsonart	General Laminate - Type 107	Classic Linen 4943-38 - Fine Velvet Finish	--	
QTZ-01	Quartz surface - Counters	12 36 61.19	Wilsonart	Quartz	Isselburg - Q4013	--	
QTZ-02	Quartz surface - Window Sills	12 36 61.19	Wilsonart	Quartz	Isselburg - Q4013	--	
WALL FINISH							
AWP-01	Acoustic Wall Panel, Fabric Wrapped - Field	09 84 13	Carnegie	Xorel Meteor	(Tan) 766	--	
AWP-02	Acoustic Wall Panel, Fabric Wrapped - Light Blue Accent	09 84 13	Carnegie	Xorel Meteor	(Light Blue) 739	--	
AWP-03	Acoustic Wall Panel, Fabric Wrapped -Dark Blue Accent	09 84 13	Carnegie	Xorel Meteor	(Dark Blue) 746	--	
AWP-04	Acoustic Wall Panel, Fabric Wrapped -Red Accent	09 84 13	Carnegie	Xorel Meteor	(Red) 727	--	
AWP-05	Acoustic Wall Panel, Fabric Wrapped -Blue Accent	09 84 13	Guilford of Maine	Anchorage 2335	2026 Quarry Blue		
PT-01	Paint - Field	09 91 00	Sherwin Williams	--	Aesthetic White SW7035	--	
PT-02	Paint - Bronze Accent	09 91 00	Sherwin Williams	--	Urbane Bronze SW7048	--	
1 2 PT-04	Paint - Door Exterior Side	09 91 00	Sherwin Williams	--	Architect to select.	--	Refer to door schedule for full extents.

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HOUSTON, TEXAS

2024 Cook, Labay & Truitt MS Renovations

REGISTERED ARCHITECT JOSEPH STARKS 24208 STATE OF TEXAS

03/14/2025

ISSUED: February 24, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 1	03-06-2025
2	Addendum 2	03-14-2025

Director	Drawn By
RSJ	STH, KM
Designer	Quality Control
Proj. Arch. TQ	

PROJECT NO.

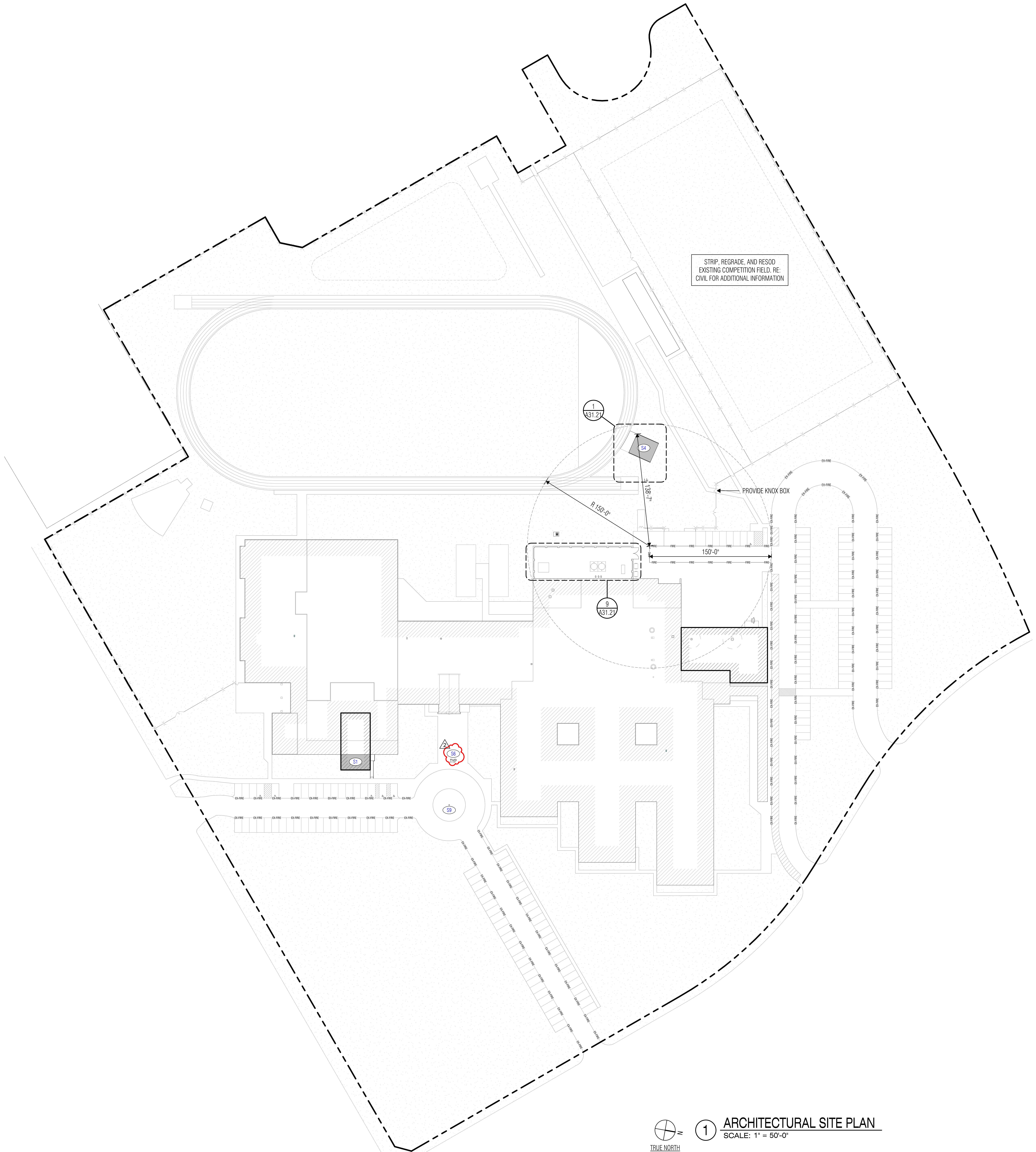
24-010.00

SHEET TITLE

LABAY - MATERIAL FINISH SCHEDULES

SHEET NO.

A29.01



1 ARCHITECTURAL 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.
3. Contractor shall repair any damages to landscaping and paving after construction is complete.

SITE PLAN LEGEND

- FIRE LANE
- EXISTING FIRE LANE
- CHAIN LINK FENCE, See Plan for Heights
- EXISTING CHAIN LINK FENCE, See Plan for Heights
- WOOD FENCE, See Plan for Heights
- EXISTING WOOD FENCE, See Plan for Heights
- ORNAMENTAL FENCE, See Plan for Heights
- EXISTING ORNAMENTAL FENCE, See Plan for Heights

KEYNOTE LEGEND

S1	PROPOSED BUILDING ADDITION
S4	PROPOSED DETACHED P.E.M.B.
S6	REMOVE AND REPLACE ALL JOINT SEALANT AT EXISTING PAVEMENT. INCLUDING ALL CONCRETE DRIVES, SIDEWALKS, JOINT AT BUILDING ENVELOPE, ETC THROUGHOUT ENTIRE SITE. RE: CIVIL DWGS.
S9	EXISTING FLAG POLE

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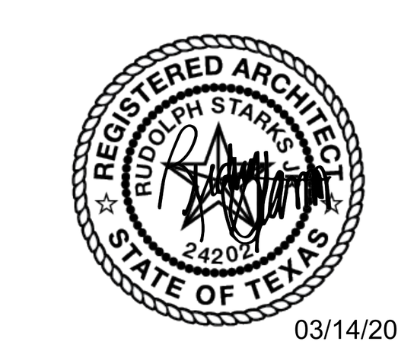


03/14/2025

ISSUED: February 24, 2025

REVISIONS

Revision No.		Revision Date
2	Addendum 2	03-14-2025

Director: RSJ
Drawn By: STH, KM
Designer
Quality Control
Proj. Arch.: TQ

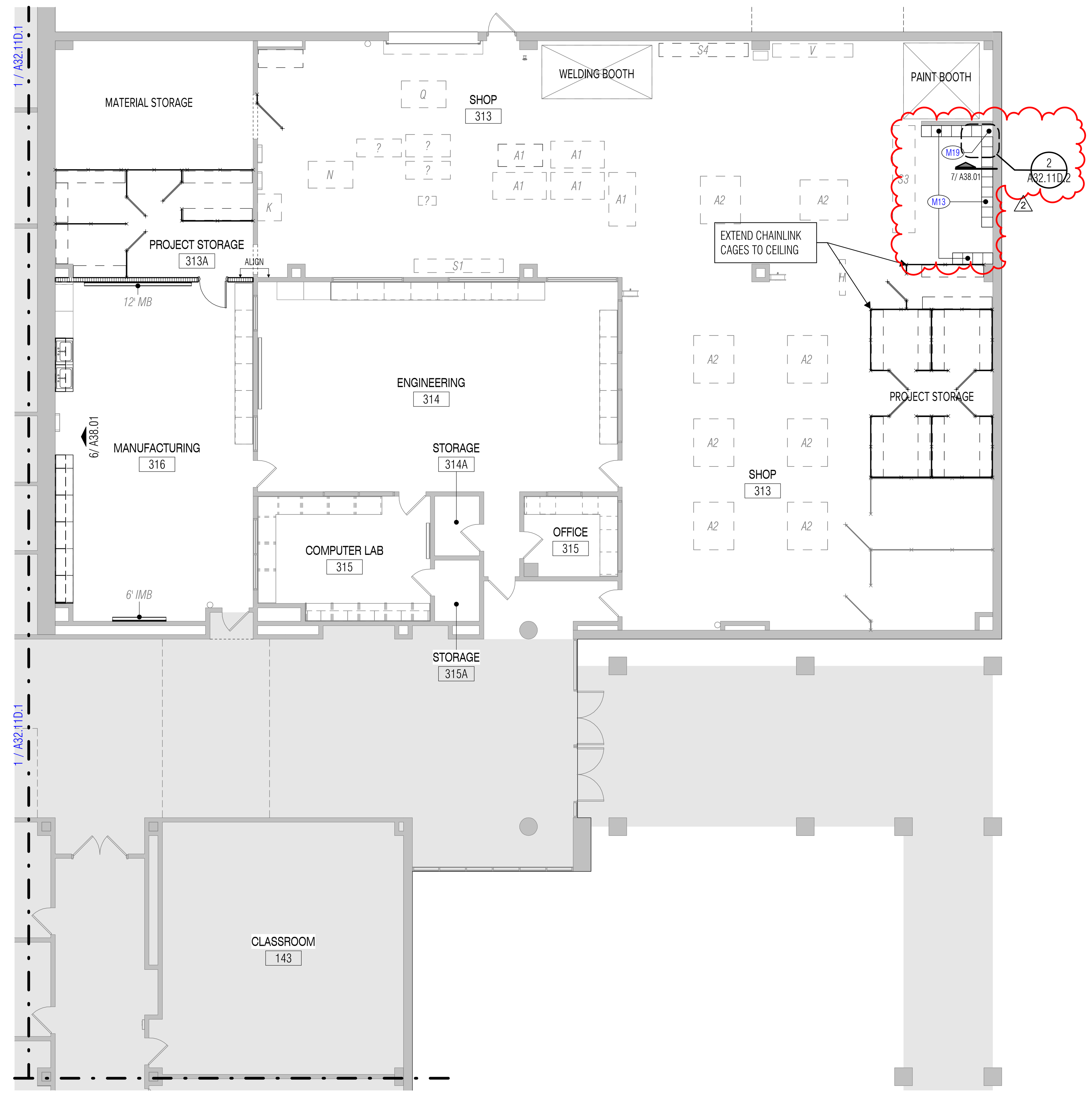
PROJECT NO.
24-010.00

SHEET TITLE
TRUITT - ARCHITECTURAL SITE PLAN

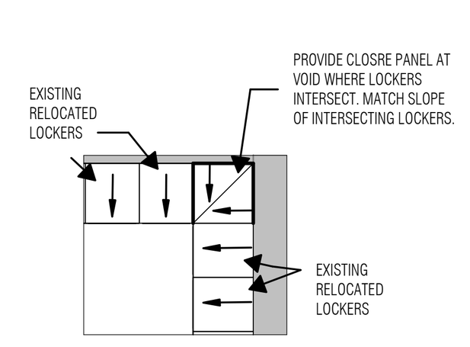
SHEET NO.
A31.11

SHOP EQUIPMENT - TRUITT

MARK	EQUIPMENT
A1	TABLE
A2	TABLE (BUTCHERBLOCK ON LOCKERS)
A3	GLUE-UP TABLE
B	DRILL PRESS
C1	LATHE (FLOOR)
C2	LATHE (TABLE)
D	SCROLL SAW
E	BAND SAW
F	SANDBLASTER
G1	SPINDLE SANDER
G2	SANDER
H	JOINTER
J	PLANER
K	HEAT TREAT OVEN
L	DRUM SANDER
M	TABLE SAW
N	SQUARING SHEARS
P	METAL MITER SAW
Q	CNC
R	LASER CUTTER
S1	METAL STORAGE RACK
S2	STORAGE CAGE (WELDING MASKS)
S3	CABINET
T	METAL BRAKE
U	CUTTING BLOCK



1 UNIT "D.2" PLAN - LEVEL ONE
SCALE: 1/8" = 1'-0"



2 CLOSURE PANEL DETAIL
SCALE: 1/4" = 1'-0"

FLOOR PLAN NOTES

1. Refer to Civil Grading drawings for Primary Ground Level floor elevation relative to Mean Sea Level. Architectural Finish Floor (100'-0" datum) is equal to Civil FFE.
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 A'4-series sheets for Wall Sections, and to A14.30, A24.30, A34.30 for Exterior Wall Assemblies.
5. Refer to Exterior Elevation Notes for control joint requirements at all inside corners of masonry veneer.
6. Refer to PARTITION TYPES (A12.21, A22.21, A32.21) for Partition Types Legend.
7. Interior partitions are Type "P6" unless noted otherwise.
8. Refer to Detail 4/A0.31 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 PARTITION DETAILS sheets for Typical Partition Penetration Details, including pipe, conduit and ductwork penetrations.
10. Refer to PARTITION DETAILS sheets for Typical Bracing at Non-Loadbearing CMU Partitions.
11. Refer to Exterior Elevations for exact locations of downspouts.
12. 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.
13. Provide 4" starter courses at all CMU walls and partitions unless noted otherwise.
14. 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.
15. Provide minimum 20 gage light-gage steel studs at all interior partitions scheduled to receive ceramic tile or plaster.
16. Provide minimum 18 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.
17. Provide minimum 18 gage cold-formed steel studs as designed by stud engineer for all interior partitions scheduled to receive adhered masonry or stone veneer.
18. At light-gage steel stud partitions that extend above the ceiling, provide diagonal 20 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.
19. 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 CASEWORK ELEVATIONS & DETAILS sheets for typical blocking requirements at various conditions.
20. At Mechanical, Electrical and Boiler Room partitions, seal tightly around all penetrations. Utilize fire safing material at rated partitions.
21. Provide sealant and/or fire safing at all floor penetrations, as applicable.
22. Existing equipment to remain U.N.O. Contractor to relocate equipment as needed to complete new construction. Contractor shall reinstall equipment upon completion of construction. All equipment to be in as good or better working condition as prior to the start of construction.

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 Reflected Ceiling Plan 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 Reflected Ceiling Plan for fire, smoke and sound-conditioned partitions that extend to deck above.
	EXISTING WALL TO REMAIN.
WIDTH / DEPTH	MOVEABLE METAL SHELVING. Depth and Width dimensions match that of this legend, unless otherwise noted.
	FURNITURE, FIXTURE OR EQUIPMENT BY OWNER. Coordinate with adjacent electrical devices, casework, etc.
MB	MARKERBOARD. Preceding number is length, in feet.
-SL	WITH HALF STAFF LINES
TB	TACKBOARD. Preceding number is length, in feet.
TS	TACK STRIP. Preceding number is length, in feet.
IM	INTERACTIVE MARKERBOARD
EX-	EXISTING
IFP	INTERACTIVE FLAT PANEL
FEC	FIRE EXTINGUISHER WITH CABINET AND BRACKET
FE	FIRE EXTINGUISHER WITH BRACKET
FHC	FIRE HOSE CABINET
HB	HORIZONTAL BLINDS
RS	ROLLING WINDOW SHADES
DS	DOWNSPOUT

KEYNOTE LEGEND

M13	~~RELOCATED SHOP LOCKERS~~
M19	CLOSURE PANEL AT VOID WHERE LOCKERS INTERSECT. MATCH LOCKER TOP SLOPE AT PANEL.

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CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

2024 Cook, Labay & Truitt MS Renovations

KEY PLAN
B, C, D.1, D.2, A, E

REGISTERED ARCHITECT — STATE OF TEXAS — 24200
03/14/2025

ISSUED: February 24, 2025

REVISIONS

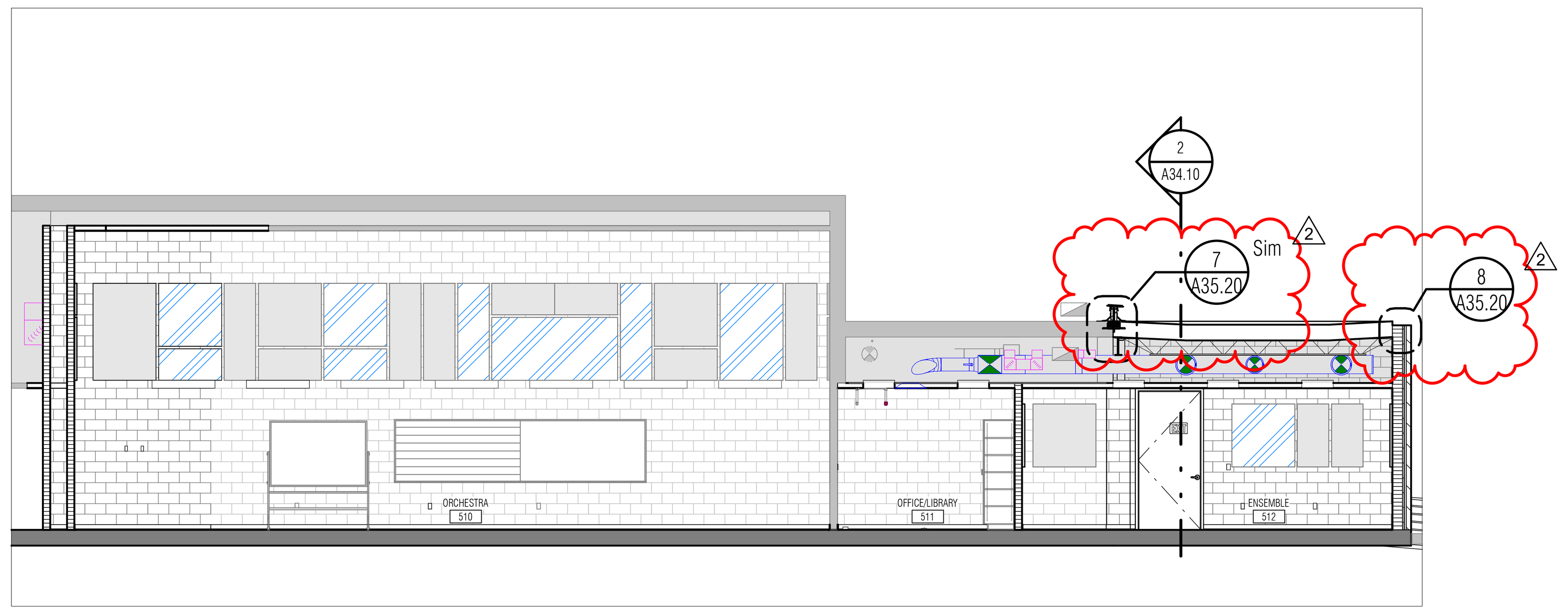
Revision No.		Revision Date
2	Addendum 2	03-14-2025

Director: RSJ
Drawn By: STH, KM
Designer
Quality Control
Proj. Arch.: TQ

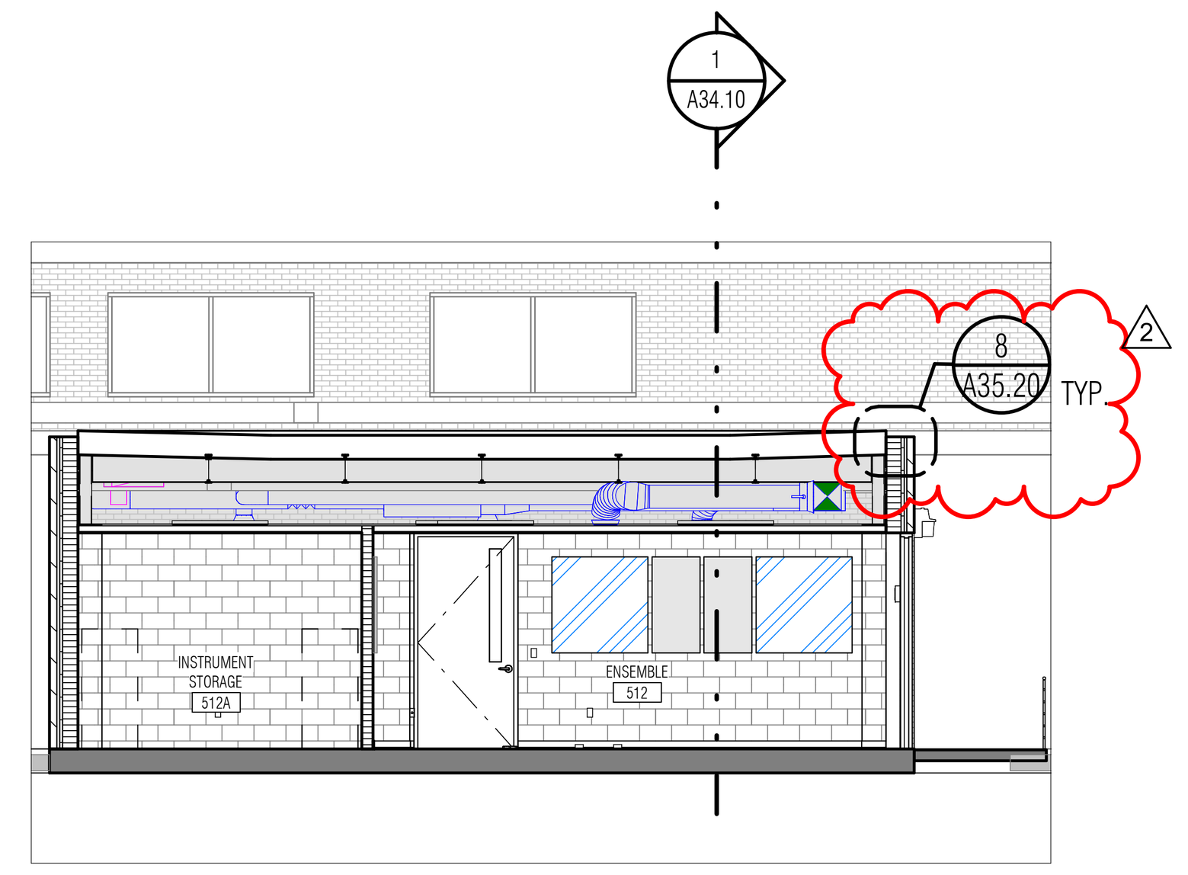
PROJECT NO.
24-010.00

SHEET TITLE
TRUITT - UNIT D.2 FLOOR PLAN - LEVEL ONE

SHEET NO.
A32.11D.2



1 BUILDING SECTION
SCALE: 1/8" = 1'-0"



2 BUILDING SECTION
SCALE: 1/8" = 1'-0"

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CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

2024 Cook, Labay & Truitt MS Renovations

03/14/2025

ISSUED: February 24, 2025

REVISIONS

Revision No.		Revision Date
2	Addendum 2	03-14-2025

Director RSJ	Drawn By STH, KM
Designer	Quality Control
Proj. Arch. TQ	

PROJECT NO.

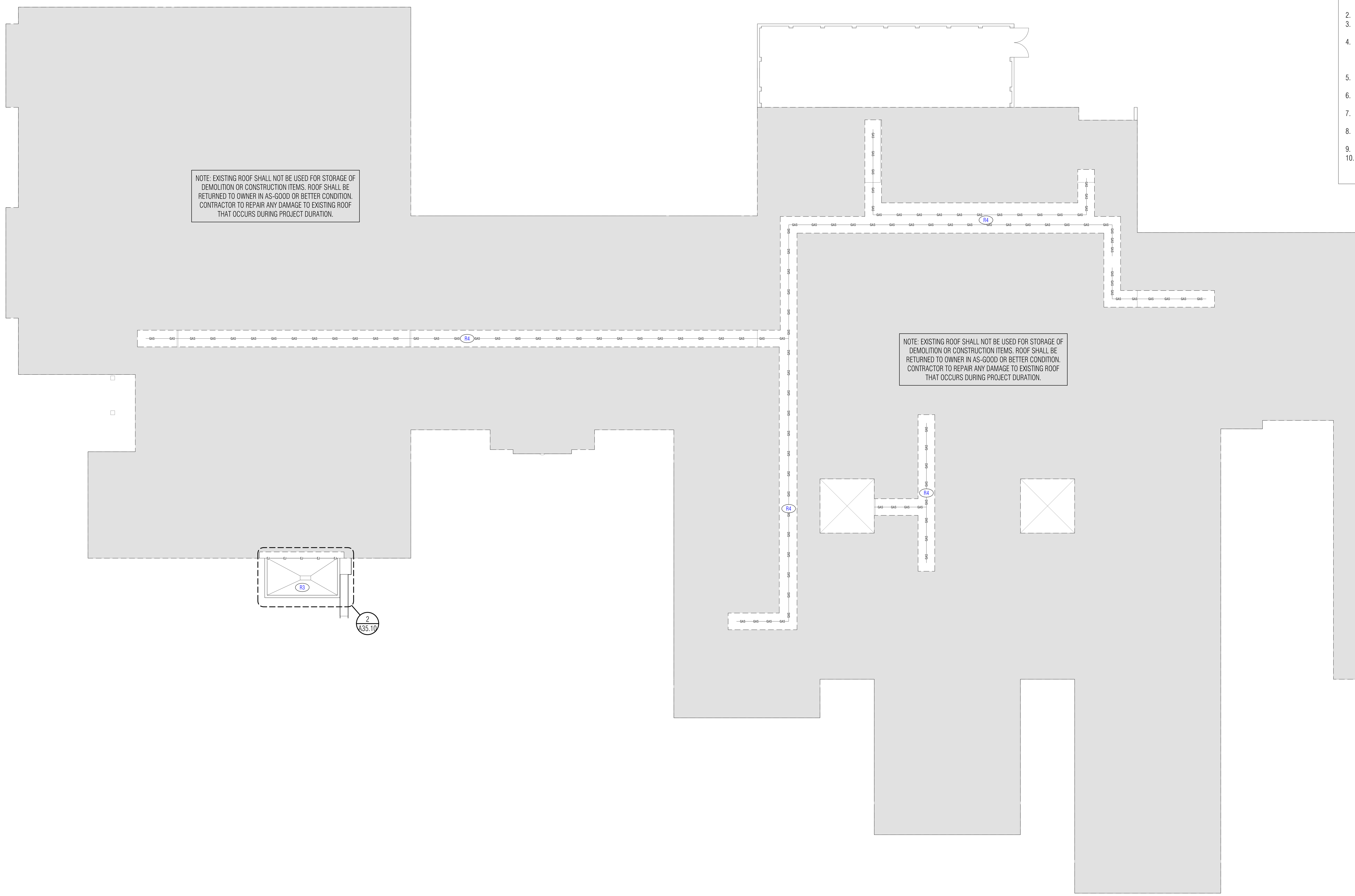
24-010.00

SHEET TITLE

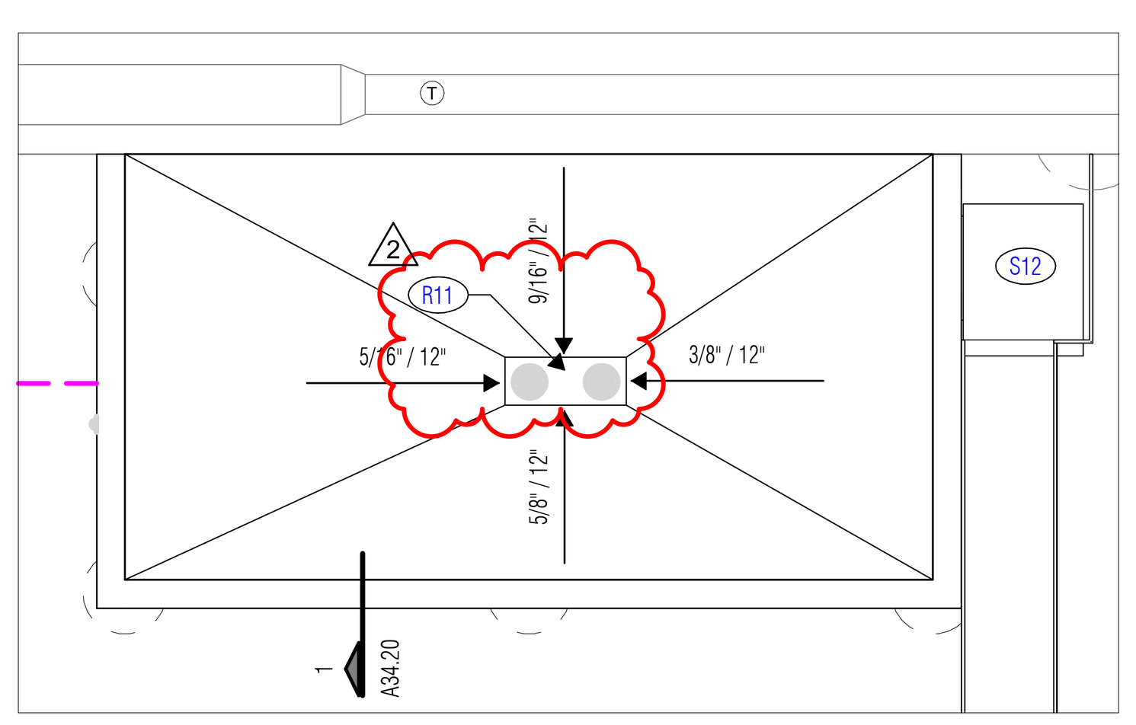
TRUITT - BUILDING SECTIONS

SHEET NO.

A34.10



1 OVERALL ROOF PLAN
SCALE: 3/64" = 1'-0"



2 ROOF PLAN
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.
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.
9. Clean and paint strainer baskets.
10. All sheet metal fascia, gutters and downspouts shall be pre-finished aluminum. All metal flashings e… shall be stainless ste…

ROOF PLAN LEGEND

BUR	BUILT-UP BITUMINOUS ROOFING
MBM	MODIFIED BITUMINOUS MEMBRANE ROOFING
CTES	COAL-TAR PITCH ELASTOMERIC SHEET ROOFING
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.
OD	OVERFLOW DRAIN WITH DOWNSPOUT NOZZLE, REF.
OS	OVERFLOW SCUPPER, REF. _/A_.__
DS	DOWNSPOUT, REF. _/A_.__
DSC	DOWNSPOUT WITH SCUPPER AND CONDUCTOR HEAD, REF._/A_.__
SB	SPLASH BLOCK, CONCRETE, REF. _A/__
SP	SPLASH PAN, REF. _/A_.__
MC	MANUFACTURED COPING, REF. _/A_.__
RH	ROOF HATCH, REF.
RL	ROOF LADDER, REF. _/A_.__
RTU	ROOFTOP UNIT, REF. MECHANICAL & _/A_.__
CU	CONDENSING UNIT, REF. FOOD SERVICE, M.E.P. & _/A_.__
GP	GAS PIPE PENETRATION, REF.
RV	RELIEF VENT, REF. M.E.P.
EF	EXHAUST FAN, REF. M.E.P.

R3	NEW MOD. BIT. ROOF TO MATCH EXISITNG. REF: ROOFING DETAILS.
R4	REPLACE ALL GAS LINES AND ASSOCIATED FITTINGS. PAINT YELLOW. TYPICAL FOR ALL GAS LINES ON ROOF, U.N.O. PROVDE NEW PIPE STANDS. REF: PLUMBING
R11	PRIMARY AND OVERFLOW ROOF DRAINS. RE: ROOF DETAIL AND PLUMBING.
S12	PREFINISHED CANOPY. ATTACH TO EMBEDDED STEEL PLATES. REF: STRUC.

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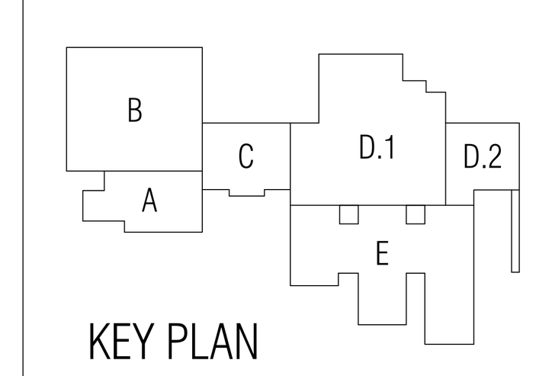
HOUSTON, TEXAS

2024 Cook, Labay & Truitt MS Renovations



KEY PLAN

REGISTERED ARCHITECT
STATE OF TEXAS
03/14/2025

ISSUED: February 24, 2025

REVISIONS

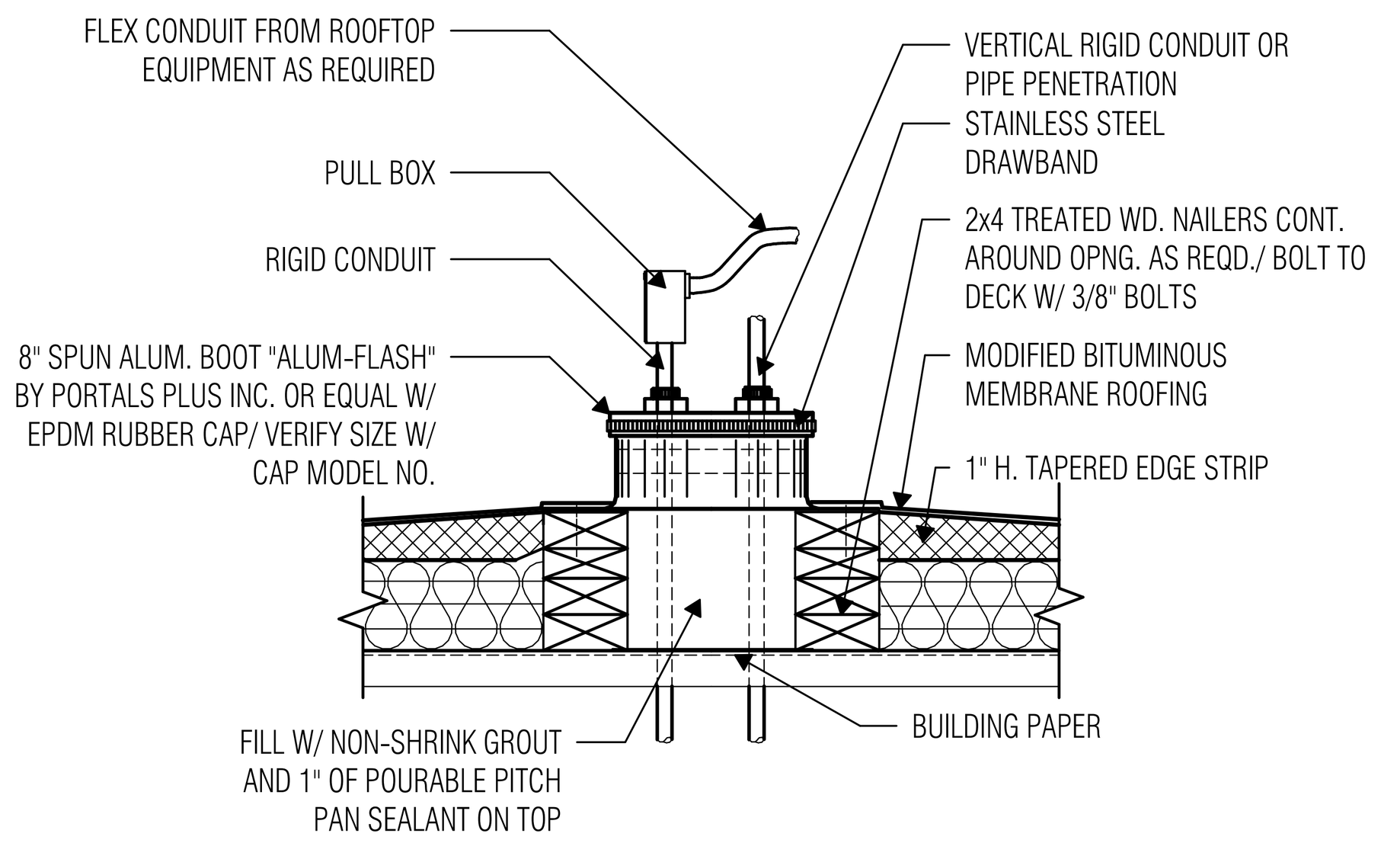
Revision No.		Revision Date
2	Addendum 2	03-14-2025

Director: RSJ
Drawn By: STH, KM
Designer
Quality Control
Proj. Arch.: TQ

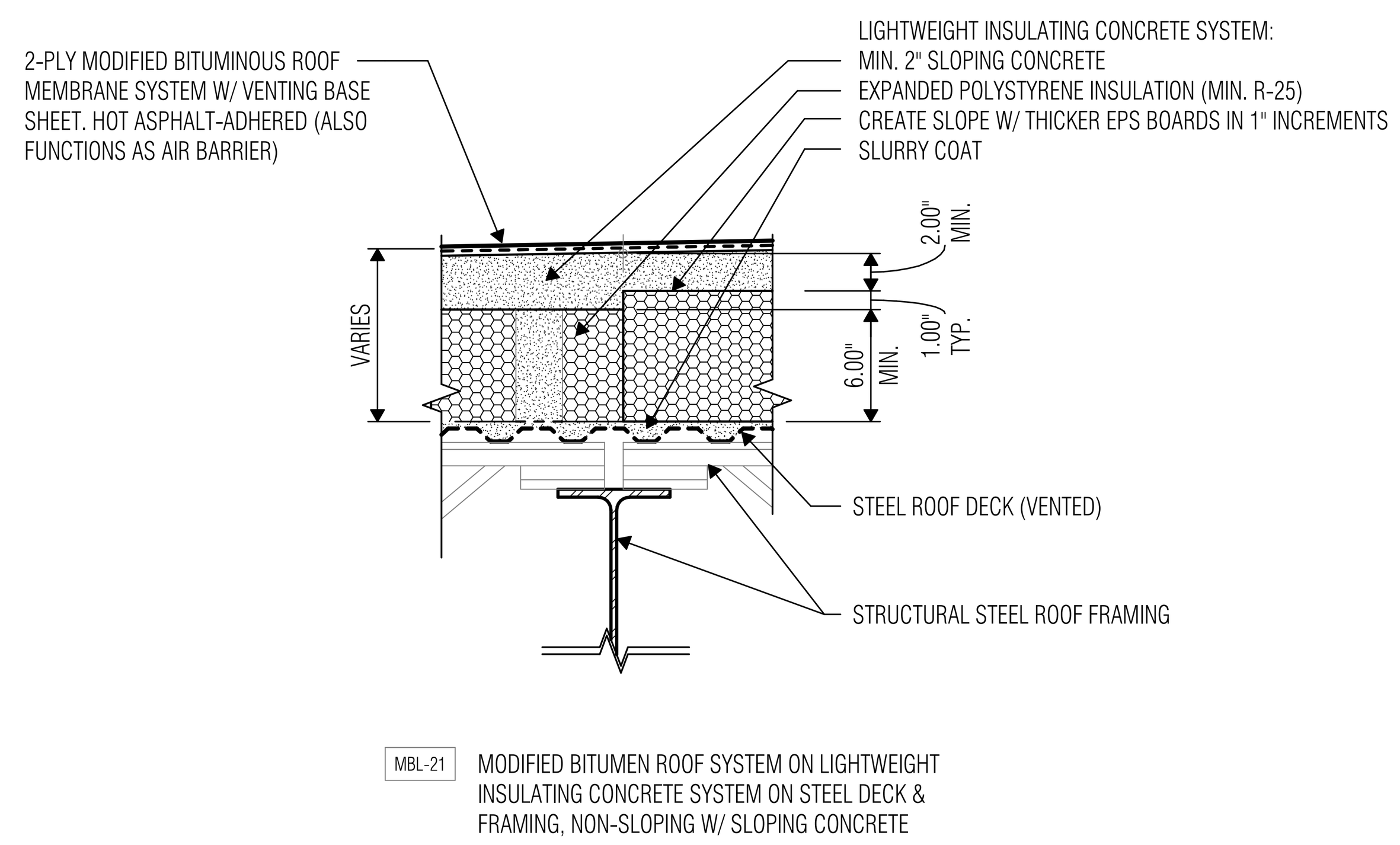
PROJECT NO.
24-010.00

SHEET TITLE
TRUITT - OVERALL ROOF PLAN

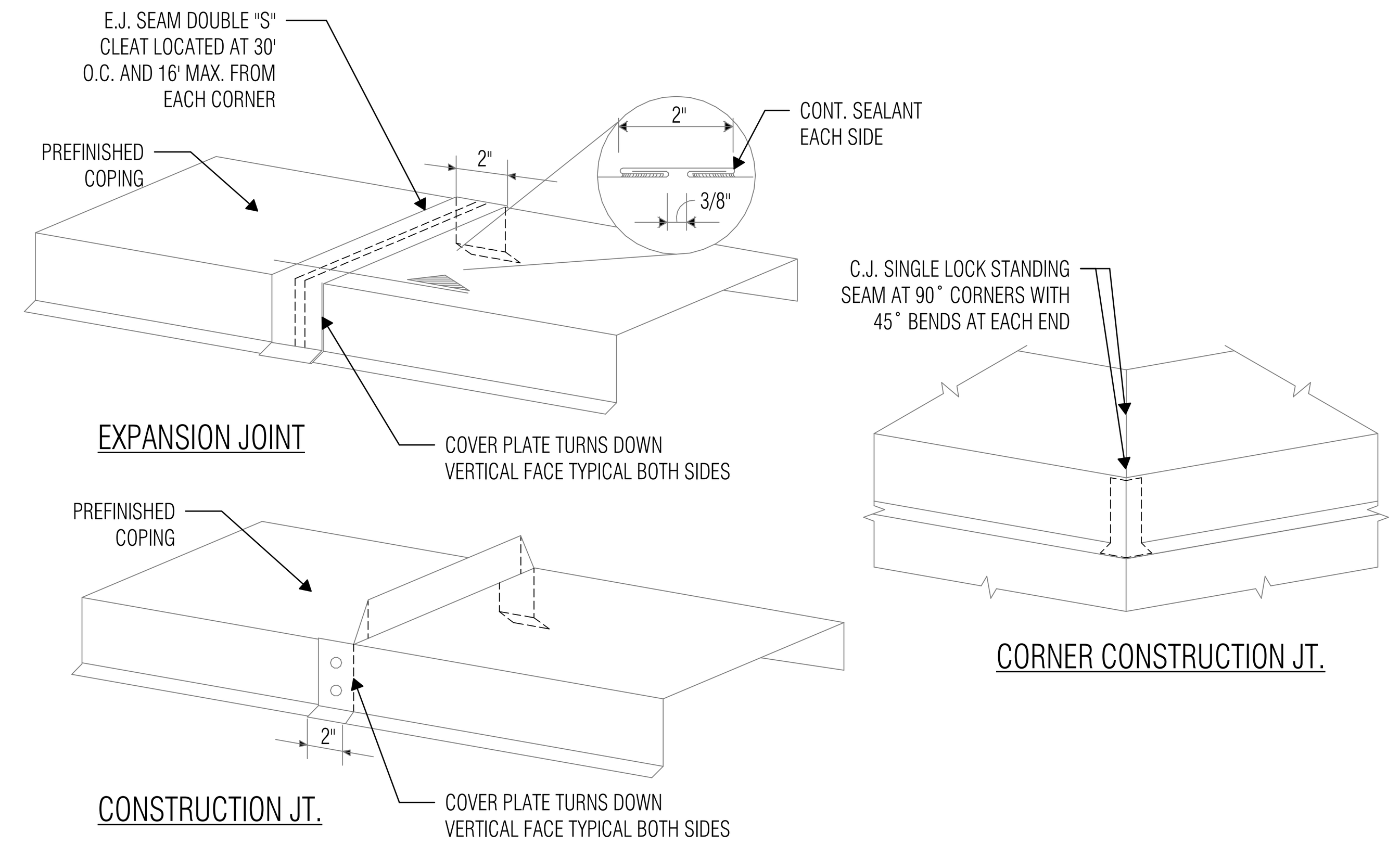
SHEET NO.
A35.10



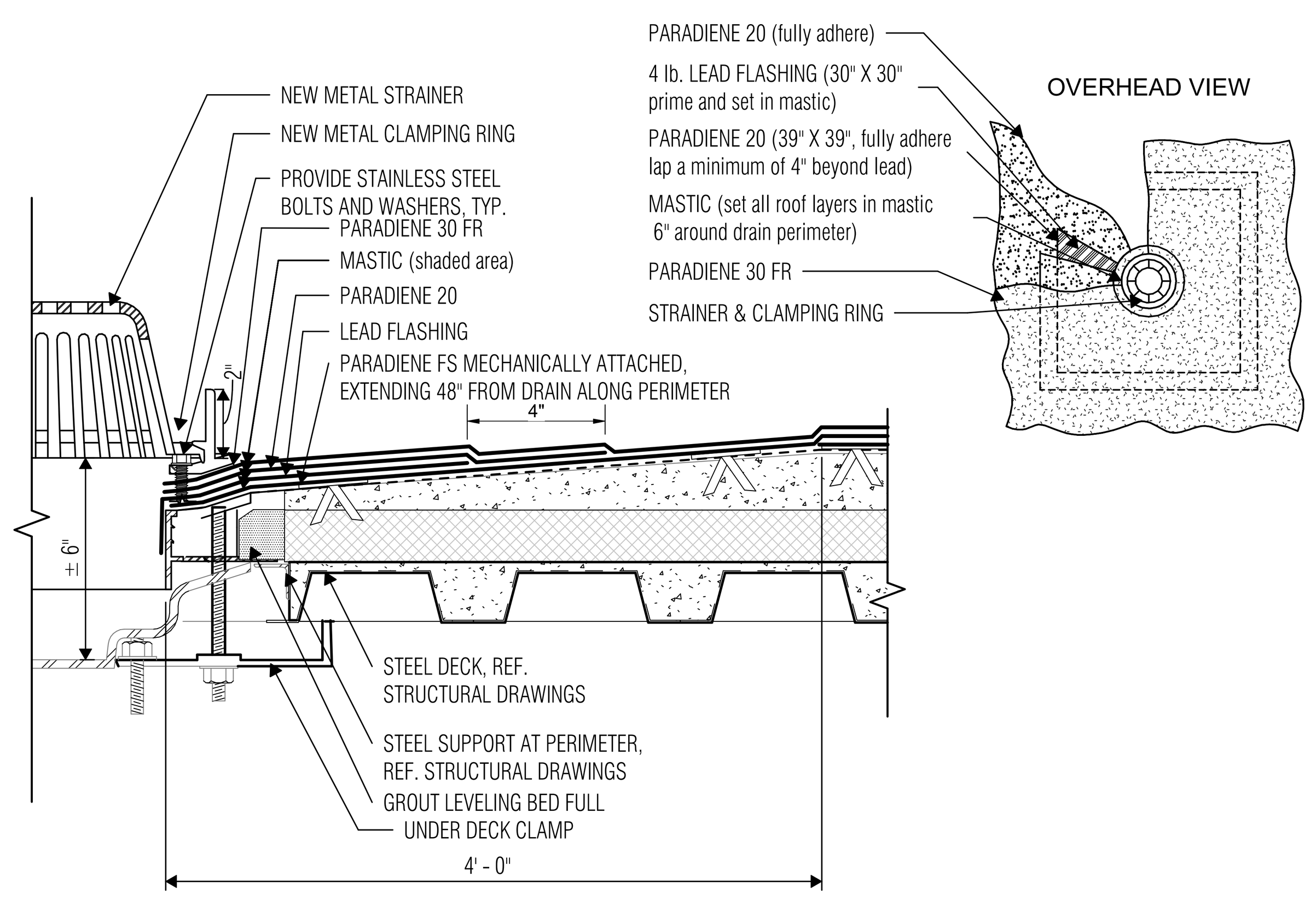
1 CONDUIT PENETRATION_MOD BIT ROOFING
SCALE: 1 1/2" = 1'-0"



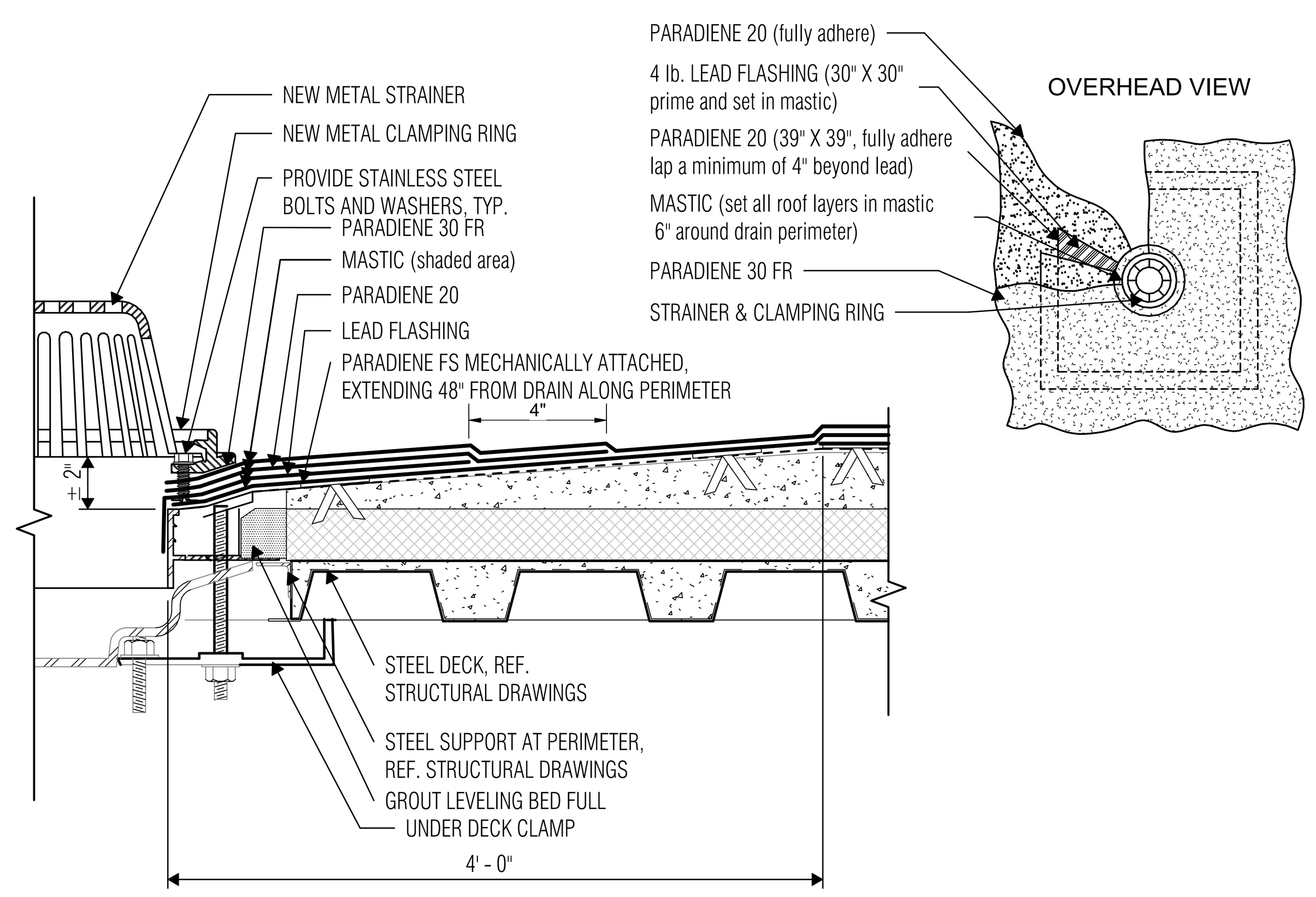
2 TYPICAL ROOF ASSEMBLY DETAIL
SCALE: 1 1/2" = 1'-0"



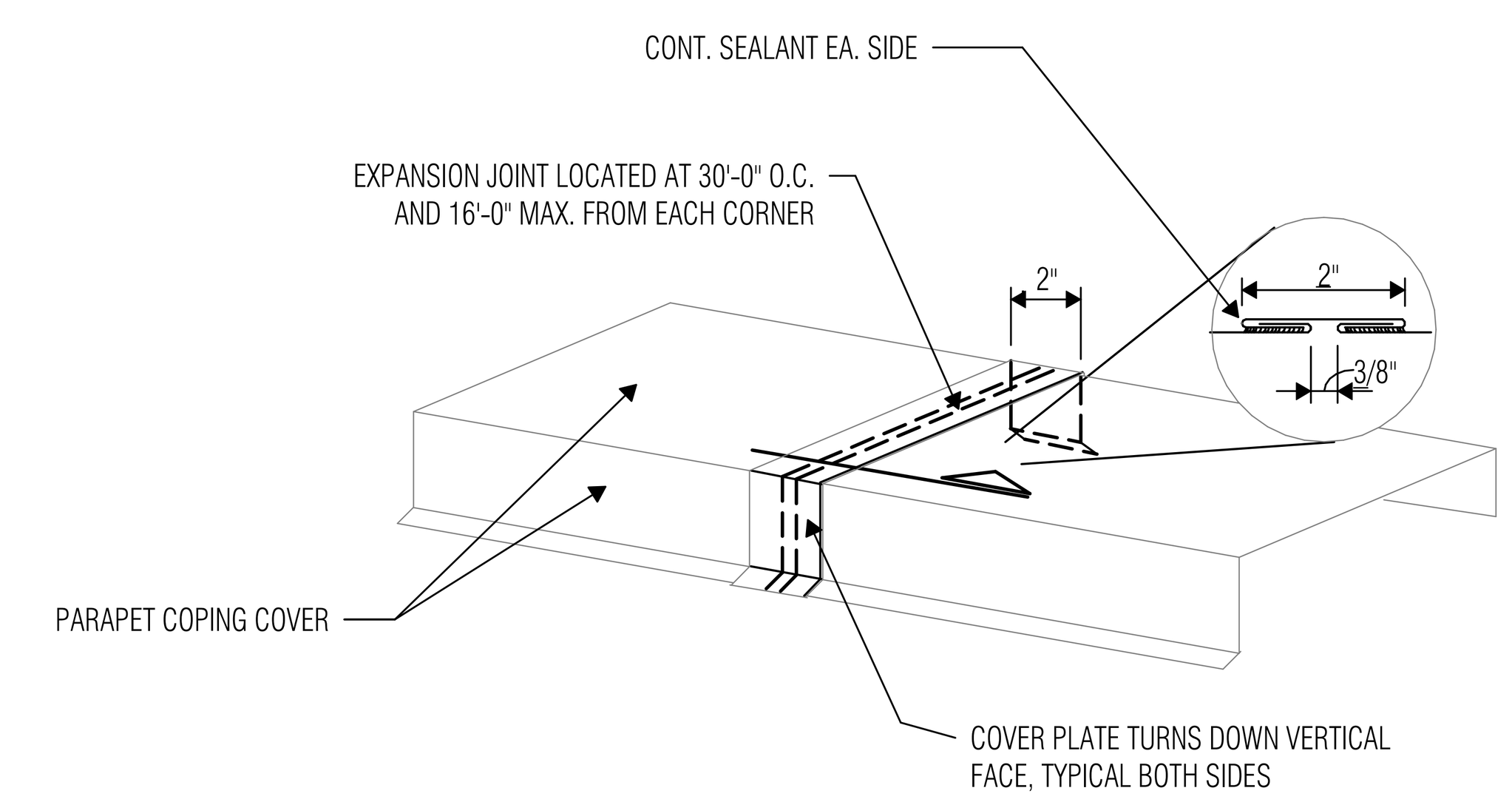
5 PREFINISHED METAL COPING JOINTS_STANDING SEAM
SCALE: 1 1/2" = 1'-0"



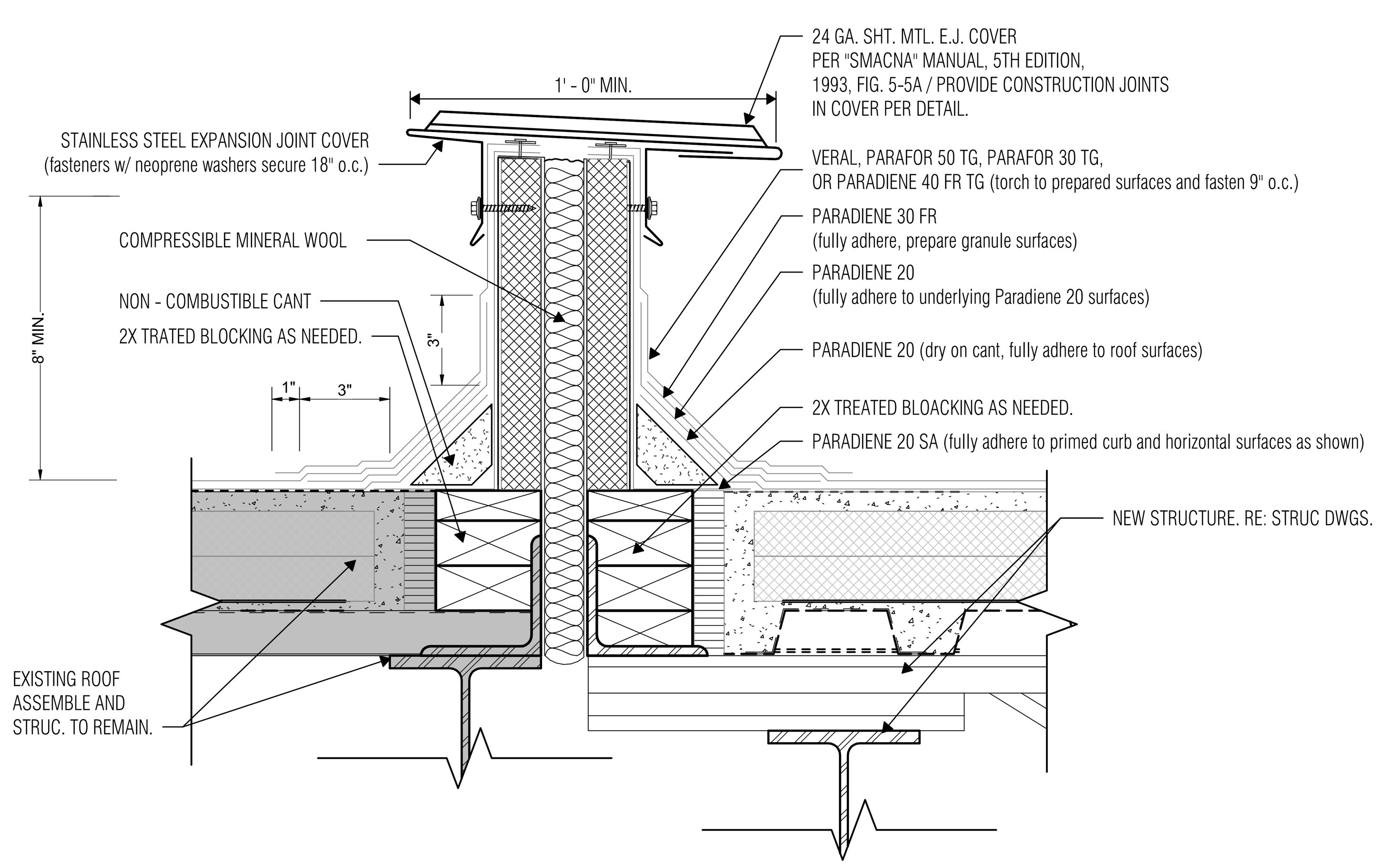
3 TYP OVERFLOW ROOF DRAIN DETAIL
SCALE: 3" = 1'-0"



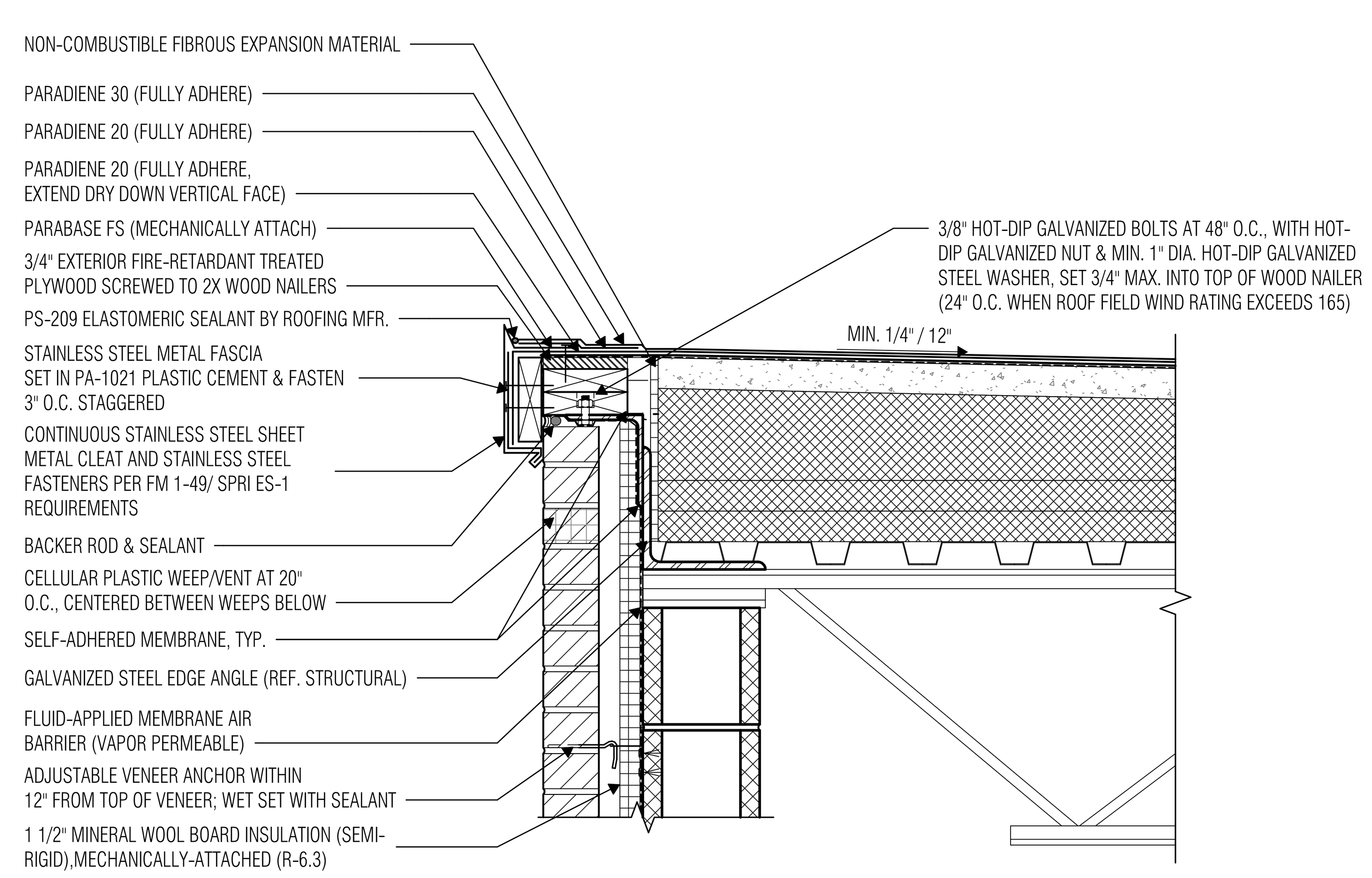
4 TYP ROOF DRAIN DETAIL
SCALE: 3" = 1'-0"



6 METAL COPING EXP. JOINT_DRIVE CLEAT
SCALE: 1 1/2" = 1'-0"



7 ROOF EXPANSION JT. COVER
SCALE: 3" = 1'-0"



8 TRUITT-ROOF EDGE DETAIL CMU
SCALE: 1 1/2" = 1'-0"

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2024 Cook, Labay & Truitt MS Renovations

REGISTERED ARCHITECT - STATE OF TEXAS
03/14/2025

ISSUED: February 24, 2025

REVISIONS

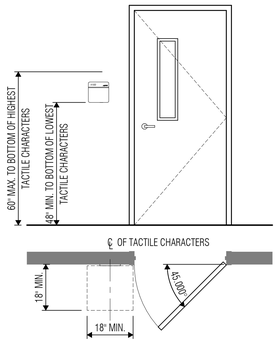
Revision No.		Revision Date
2	Addendum 2	03-14-2025

Director: RSJ
Drawn By: STH, KM
Designer
Quality Control
Proj. Arch.: TQ

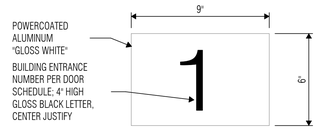
PROJECT NO.
24-010.00

SHEET TITLE
TRUITT - ROOF DETAILS

SHEET NO.
A35.20

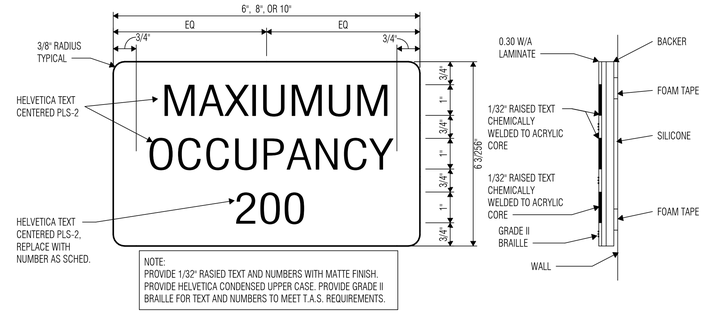


1 DETAIL/ELEV - DOOR SIGN
SCALE: 1/2" = 1'-0"



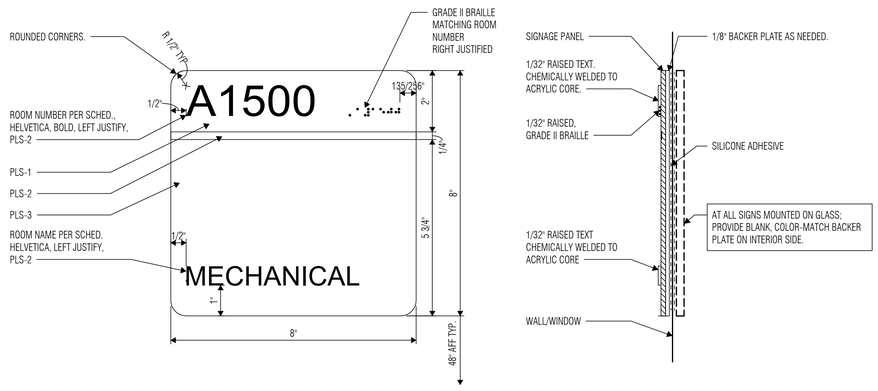
NOTE:
PROVIDE (2) SIGNS AT EACH ENTRANCE AS NOTED. ONE ON THE INTERIOR AND ONE ON THE EXTERIOR. BUILDING ENTRANCE SIGNS SHALL BE MOUNTED ABOVE AND CENTERED ON THE DOOR(S), WITH MECHANICAL FASTENERS (ON WALL) OR CLEAR DOUBLE SIDED VHB TAPE (ON GLAZING).

2 SIGN TYPE 'D'
SCALE: 3" = 1'-0"

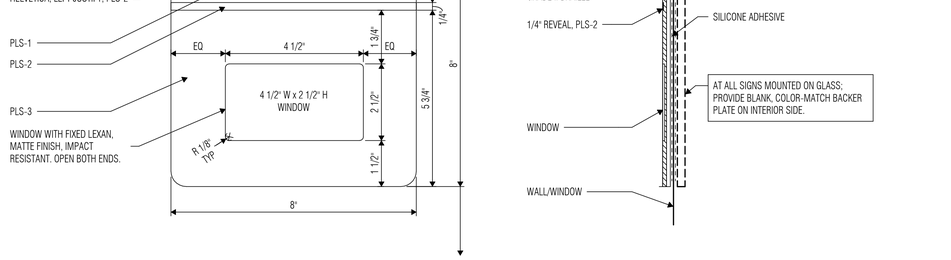


NOTE:
PROVIDE 1/32" RASIED TEXT AND NUMBERS WITH MATTE FINISH. PROVIDE HELVETICA CONDENSED UPPER CASE. PROVIDE GRADE II BRAILLE FOR TEXT AND NUMBERS TO MEET T.A.S. REQUIREMENTS.

3 SIGN TYPE 'C'1
SCALE: 6" = 1'-0"



4 SIGN TYPE 'A'1
SCALE: 6" = 1'-0"



5 SIGN TYPE 'B'1
SCALE: 6" = 1'-0"

GENERAL SIGNAGE NOTES

1. All signage to be protected in place, U.N.O. Contractor shall replace any damaged signage.
2. All new interior signs to match existing campus color schemes. Provide samples for Architect approval.
3. Provide sign type D fpr all exterior doors.
4. Refer to door schedule for signage locations.

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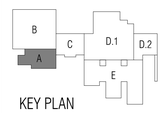


KEY PLAN

03/14/2025

ISSUED: February 24, 2025

REVISIONS

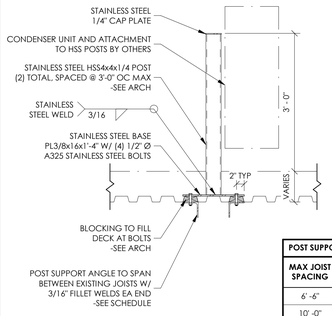
Revision No.		Revision Date
2	Addendum 2	03-14-2025

Director	Drawn By
RSJ	STH, KM
Designer	Quality Control
Proj. Arch. TQ	

PROJECT NO.
24-010.00

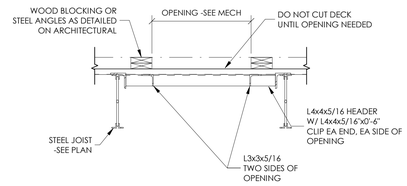
SHEET TITLE
TRUITT - ROOM SIGNAGE DETAILS

SHEET NO.
A39.20



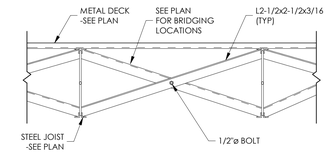
POST SUPPORT ANGLE SCHEDULE	
MAX JOIST SPACING	CURB SUPPORT ANGLE
6' -6"	L4X4X1/4
10' -0"	L5X5X5/16
12' -0"	L6X6X5/16

12 MEP CONDENSER POST SUPPORT AT EXISTING
SCALE: 3/4" = 1'-0"

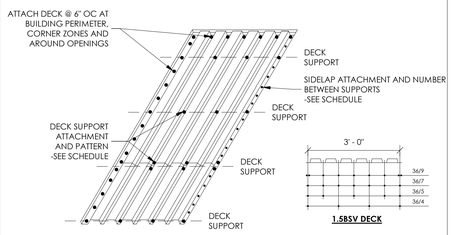


NOTES:
1. PROVIDE L3x3x1/4 FRAME FOR ROOF DRAIN SUPPORT (MIN) UNLESS NOTED OTHERWISE IN ARCHITECTURAL DRAWINGS
2. THIS DETAIL APPLIES FOR OPENINGS GREATER THAN 1'-1" IN ANY DIRECTION, FOR OPENINGS GREATER THAN 4' AND LESS THAN 1'-1" IN ANY DIRECTION, USE A 16 GAGE DOUBLER PLATE WITH A PLAN DIMENSION 3 TIMES THE OPENING SIZE. SCREW PLATE TO DECK WITH #12 SCREWS @ 6" OC.

8 TYPICAL ROOF OPENING DETAIL
SCALE: 3/4" = 1'-0"



4 TYPICAL JOIST X-BRIDGING DETAIL
SCALE: 3/4" = 1'-0"

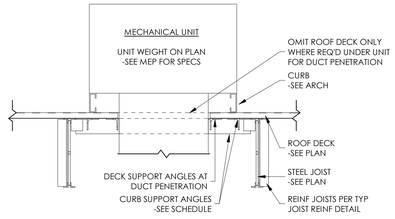


ROOF DECK SCHEDULE							
DECK TYPE	DECK GA	MIN Ix (in⁴/ft)	SUPPORT ATTACHMENT [1]	SUPPORT PATTERN	SIDE LAP ATTACHMENT	NUMBER OF SIDE LAPS	ALLOWABLE SHEAR (PLF)
1.5BSV	22	0.155	5/8"ø PW	36/5	#10 SCREW	5	490
			HILTI X-HSN 24	36/7	S-SLC 01 M HWH	7	485

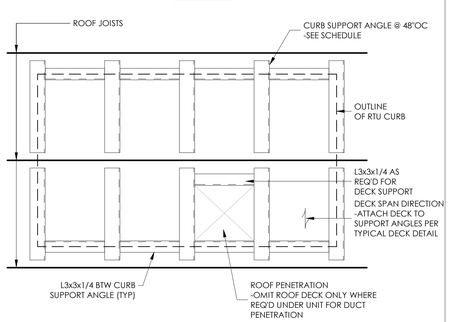
NOTE:
1. HILTI X-HSN 24 SHALL BE PROVIDED AT JOIST AND STEEL BEAMS WITH FLANGE THICKNESS LESS THAN 3/8". PROVIDE HILTI X-ENP-19-L15 AT STEEL BEAMS WITH FLANGE THICKNES 3/8" OR GREATER.
2. AT SPANDREL BEAMS OR DECK SUPPORT ANGLES, AND FOR ROOF CORNER ZONES, CONNECT DECK TO ALL SUPPORTS AT 6" OC.

11 TYPICAL STEEL ROOF DECK ATTACHMENT
SCALE: 1/2" = 1'-0"

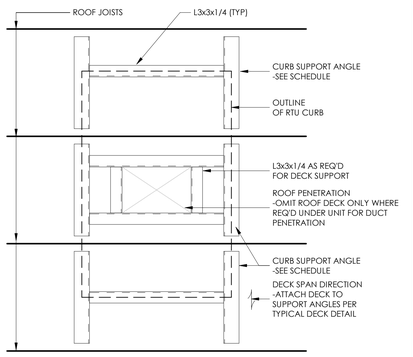
NOTES:
1. VERIFY SIZE OF FRAME W/ MECH CONTRACTOR
2. VERIFY UNIT LOCATION ON SITE PRIOR TO FRAME FABRICATION
3. CONTRACTOR TO VERIFY UNIT WEIGHT WITH WEIGHT SHOWN ON PLAN



CROSS SECTION



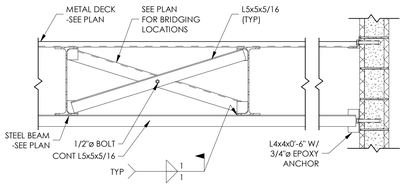
UNIT PARALLEL TO FRAMING



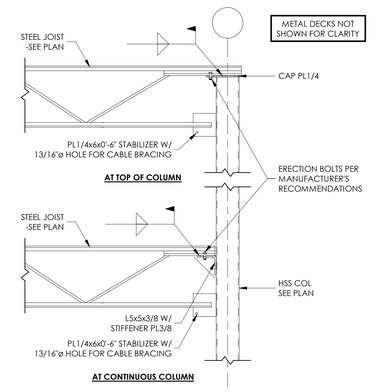
UNIT PERPENDICULAR TO FRAMING

CURB SUPPORT ANGLE SCHEDULE	
MAX JOIST SPACING	CURB SUPPORT ANGLE
6' -6"	L4x4x1/4
10' -0"	L5x5x5/16
12' -0"	L6x6x5/16

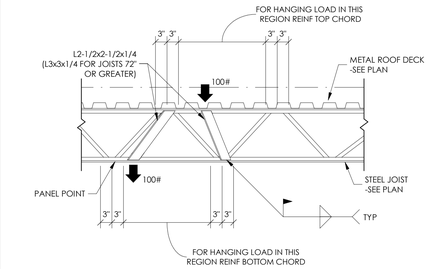
5 TYPICAL SUPPORT AT MECHANICAL UNIT DETAIL
SCALE: 3/4" = 1'-0"



3 TYPICAL BRIDGING DETAIL
SCALE: 3/4" = 1'-0"

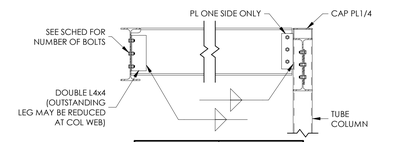


2 TYPICAL JOIST TO COLUMN CONNECTION DETAIL
SCALE: 3/4" = 1'-0"



NOTES:
1. ADDITIONAL ANGLES SHALL BE PLACED AT PANEL POINTS
2. USE FOR LOADS IN EXCESS OF THOSE SHOWN FOR TOP & BOTTOM CHORDS
3. DETAIL ALSO APPLIES AT EXISTING AND REPLACEMENT LOCATIONS OF BASKETBALL HOOPS IN THE GYMNASIUM WITHOUT EXISTING REINFORCEMENT

10 TYPICAL JOIST CHORD REINFORCEMENT DETAIL
SCALE: 3/4" = 1'-0"

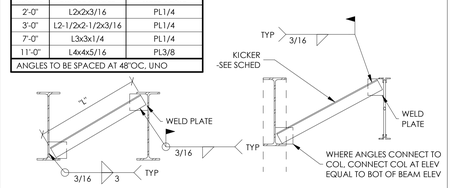


BEAM DEPTH	MIN. NO. 3/4"ø A325 BOLTS
8"	2
10"	2
12"	3
14"	3
16"	4
18"	5
21"	6
24"	6
27"	7
30"	8

NOTES:
1. PLATE THICKNESS SHALL BE 3/8" FOR CONNECTIONS UP TO 5 ROWS OF BOLTS.
2. PLATE THICKNESS SHALL BE 5/16" FOR CONNECTIONS WITH 6 ROWS OF BOLTS OR MORE.
3. SEE PLAN FOR LRFD BEAM REACTIONS. NUMBER OF BOLTS SHOWN IN TABLE ARE MINIMUMS. REFER TO STRUCTURAL STEEL NOTES FOR AISC CONNECTION DESIGN TABLES.

1 SIMPLE SHEAR CONNECTION DETAIL
SCALE: 3/4" = 1'-0"

KICKER BRACE ANGLE SCHEDULE		
MAX 'L'	BRACE ANGLE	WELD PLATE
2'-0"	L2x2x3/16	PL1/4
3'-0"	L2-1/2x2-1/2x3/16	PL1/4
7'-0"	L3x3x1/4	PL1/4
11'-0"	L4x4x5/16	PL3/8
ANGLES TO BE SPACED AT 48"OC, UNO		



9 ANGLE BRACE CONNECTION DETAIL
SCALE: 3/4" = 1'-0"

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CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

2024 Cook, Labay & Truitt MS Renovations

SARAH A. WILLIS
122156
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PROFESSIONAL ENGINEER
STATE OF TEXAS
TX F1114
3/14/25

ISSUED: 02/24/2025

REVISIONS

Revision No.	Revision Date
2 ADDENDUM 2	03/14/25

Director SW	Drawn By LM
Designer AB	Quality Control SW
Proj. Eng. AB	

PROJECT NO.
11365

SHEET TITLE
TYPICAL STEEL DETAILS

SHEET NO.
S20.30

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 SYSTEM.
2	ALL MECHANICAL SYSTEMS SHOWN ON THIS PLAN ARE FROM EXISTING DRAWINGS AND PRELIMINARY FIELD WORK. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL LOCATIONS AND SIZES OF MECHANICAL SYSTEMS PRIOR TO THE START OF WORK.

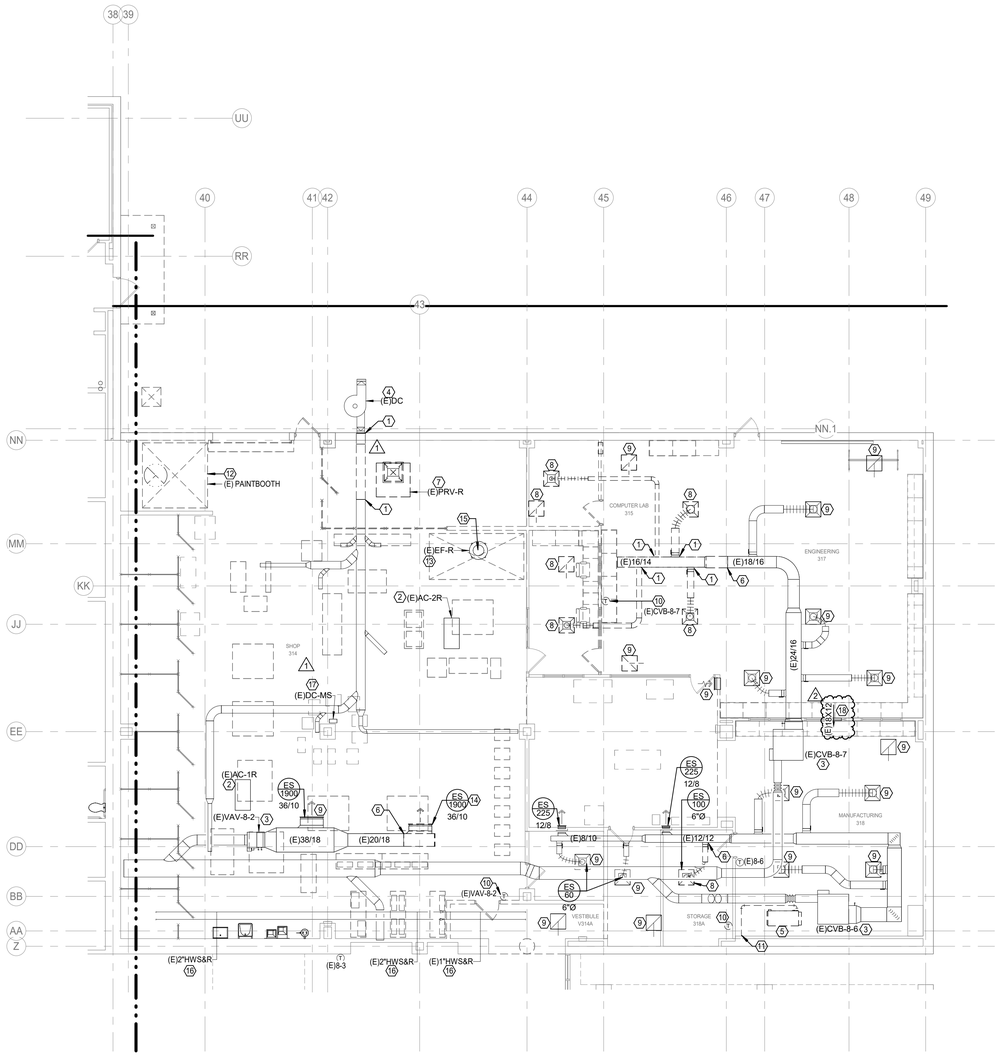
MECHANICAL DEMOLITION KEYED NOTES

1	REMOVE EXISTING DUCTWORK BACK TO POINT INDICATED.
2	EXISTING AIR RECIRCULATING UNIT TO REMAIN.
3	E XISTING TERMINAL UNIT TO REMAIN.
4	EXISTING DUST COLLECTOR AND ALL ASSOCIATED APPURTENANCES TO REMAIN AND BE REUSED.CONTRACTOR SHALL CLEAN, REPAIR, AND PROTECT FOR REUSE. REFER TO M12.03 FOR NEW LOCATION AND ROUTING.
5	REMOVE EXISTING SELF CONTAINED MINI MATE UNIT ALONG WITH ALL ASSOCIATED DUCTWORK AND APPURTENANCES.
6	REMOVE EXISTING DUCTWORK BACK TO POINT INDICATED. CAP, SEAL AND REINSULATE TO MATCH EXISTING.
7	REMOVE EXISTING INTAKE HOOD AND CURB ALONG WITH ALL ASSOCIATED APPURTENANCES.PATCH AND SEAL ROOF TO MATCH EXISTING CONDITIONS.
8	REMOVE EXISTING AIR DIFFUSER / GRILLE AND ASSOCIATED APPURTENANCES.
9	EXISTING AIR DIFFUSER/GRILLE SHALL REMAIN.
10	REMOVE EXISTING THERMOSTAT AND ALL ASSOCIATED WIRING.
11	REMOVE EXISTING CONDENSATE DRAIN ALONG WITH ALL ASSOCIATED APPURTENANCES.
12	REMOVE EXISTING PAINT BOOTH EXHAUST DUCT, FAN, HOOD, DUCTWORK AND ANY ASSOCIATED APPURTENANCES.PROVIDE TEMPORARY COVER TO ROOF OPENING. PREP FOR FUTURE REUSE.
13	EXISTING EXHAUST FAN TO REMAIN.
14	EXISTING GRILLE SHALL BE REMOVED AND RELOCATED. CONTRACTOR SHALL CLEAN, REPAIR, AND PROTECT FOR REUSE. RE: 1/M12.03 FOR NEW LOCATION.
15	REMOVE EXISTING EXHAUST DUCTWORK.
16	EXISTING CHILLED AND HOT WATER PIPING TO REMAIN.
17	EXISTING MOTOR STARTER AND ALL ASSOCIATED APPURTENANCES TO REMAIN AND BE REUSED. CONTRACTOR SHALL PROTECT FOR REUSE. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
18	EXISTING RETURN AIR OPENING ABOVE CEILING SHALL REMAIN

CONTRACTOR SHALL PROVIDE DEHUMIDIFICATION DURING THE ENTIRE CONSTRUCTION SCHEDULE. THE SCOPE IS TO MAINTAIN ACCEPTABLE HUMIDITY LEVELS WITHIN THE BUILDING: THE REMOVAL OF EXCESS HUMIDITY FROM THE AIR THROUGHOUT THE BUILDING. PROVIDE MOISTURE CONTROL RENTAL EQUIPMENT AND SOLUTION FOR PREVENTING THE LONG-TERM EFFECTS OF MOISTURE LEVELS THAT CAN DAMAGE INTERIOR BUILDING MATERIALS, BOOKS, AND ELECTRONIC EQUIPMENT.

CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL REQUIRED POWER GENERATING EQUIPMENT.

PIPE INSULATION SHALL BE INSTALLED ON CLEAN AND DRY SURFACES ONLY. CONTRACTOR SHALL COORDINATE REMOVAL OF EXISTING INSULATION AND RE-INSULATION OF EXISTING CHILLED AND HOT WATER PIPING WITH OWNER, ARCHITECT AND ENGINEER PRIOR TO STARTING WORK TO ENSURE ANY REQUIRED CHILLED AND HOT WATER SHUTDOWNS ARE SCHEDULE AND ACCEPTABLE TO ALL PARTIES.



N 1 **MECHANICAL DEMOLITION FLOOR PLAN - LEVEL 1 - C - UNIT D.2**
Scale: 1/8" = 1'-0"

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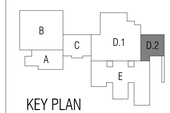
CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

2024 Cook, Labay & Truitt MS Renovations



KEY PLAN

Issue For Proposal

STATE OF TEXAS
BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
03-14-25

ISSUED: February 24, 2025

REVISIONS

Revision No.		Revision Date
1	ADDENDUM 01	03-06-2025
2	ADDENDUM 02	03-14-2025

Director	Drawn By
Approver	Author
Designer	Quality Control
Designer	
Proj. Coord.	
Checker	

PROJECT NO.

24-010.00

SHEET TITLE

COOK - MECHANICAL DEMOLITION FLOOR PLAN - LEVEL 1 - UNIT D.2

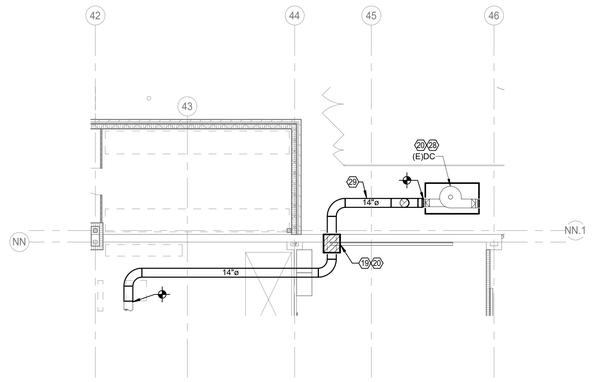
SHEET NO.

M10.03

Salas O'Brien

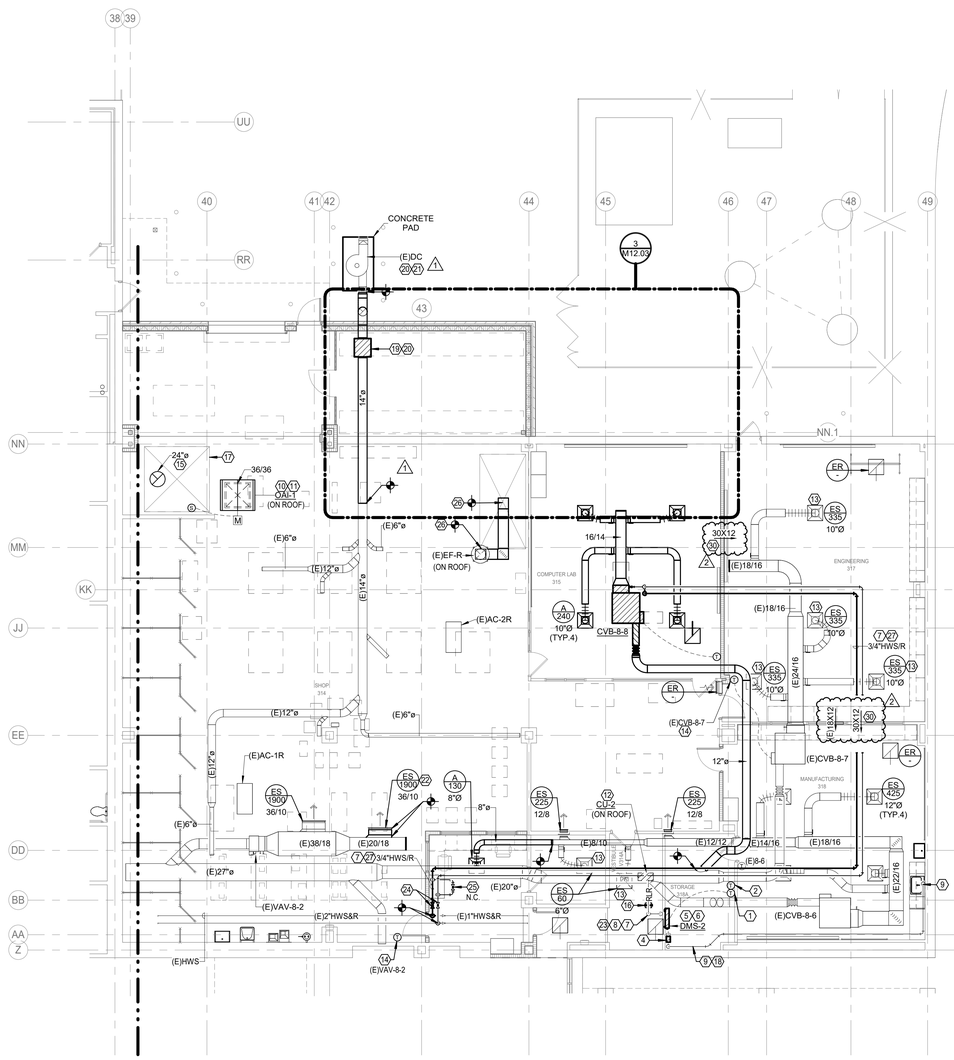
Houston
10930 W. Sam Houston Pkwy North, Suite 900
Houston, TX 77064
Salas O'Brien Registration: F-4111

Salas O'Brien Project Number: 2024-00901-00



3 MECHANICAL FLOOR PLAN - LEVEL 1 - C - UNIT D.2 - TEMPORARY DUST COLLECTOR LOCATION

Scale: 1/8" = 1'-0"



1 MECHANICAL FLOOR PLAN - LEVEL 1 - C - UNIT D.2

Scale: 1/8" = 1'-0"

MECHANICAL GENERAL NOTES

1	ALL DUCTS ARE INSIDE CLEAR DIMENSIONS. INCREASE ACCORDINGLY WHERE INTERIOR LINER IS SHOWN OR SPECIFIED.
2	COORDINATE IN THE FIELD THE EXACT LOCATION OF ALL CEILING MOUNTED GRILLES AND DIFFUSERS AND ARCHITECT'S REFLECTED CEILING PLAN.
3	THERMOSTATS SHALL BE MOUNTED AT +48" AFF, UNLESS OTHERWISE NOTED.
4	MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL POWER REQUIREMENTS.
5	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 SYSTEM.
6	CONTRACTOR 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.
7	THE USE OF CY-FAIR ISD MOBILE/NON-PERMANENT EQUIPMENT (I.E.: LADDERS, CART, DOLLIES, ETC.) IS STRICTLY PROHIBITED.

MECHANICAL KEYED NOTES

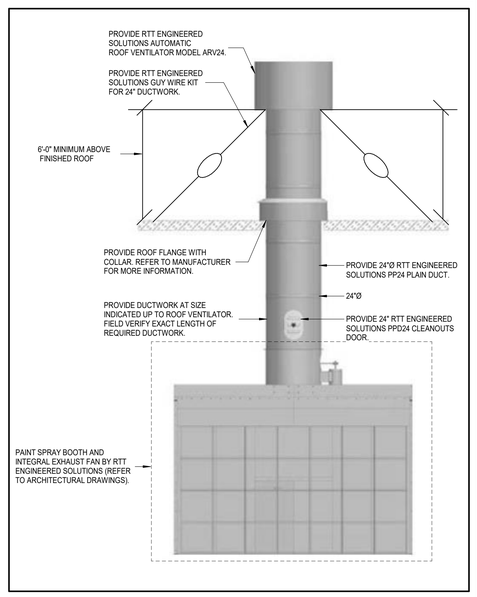
1	PROVIDE HARD WIRED THERMOSTAT.
2	PROVIDE THERMOSTAT FOR BMSC MONITOR.
4	PROVIDE WITH LITTLE GIANT CONDENSATE PUMP MODEL 554652 VCMA-20ULS-C-PRO, 1/30 HP, 115V/1PH/60HZ.
5	VERIFY SERVICE CLEARANCE FOR AIR FILTER REMOVAL WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
6	VERIFY SERVICE CLEARANCE FOR FAN SHAFT AND COIL REMOVAL WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
7	INSULATE ALL PIPINGS PER SPECIFICATIONS.
8	ROUTE REFRIGERANT PIPING FROM CONDENSING UNIT TO ASSOCIATED INDOOR UNIT. PIPING SHOWN SINGLE LINE FOR CLARITY.
9	ROUTE FULL SIZE CONDENSATE DRAIN/PIPE AS HIGH AS POSSIBLE AND GRAVITY DRAIN TO SINK WYE TAILPIECE. INSTALL TRAP AS RECOMMENDED BY MANUFACTURER. REFER TO PLUMBING FOR EXACT LOCATION.
10	PROVIDE AND INSTALL NEW INTAKE HOOD WITH MOTORIZED DAMPER. PROVIDE NEW ROOF OPENING AS NECESSARY.
11	ROOF MOUNTED EQUIPMENT SHALL BE MOUNTED ON ROOF CURB. RE: 10/M14.02
12	CONDENSING UNIT SHALL BE MOUNTED ON ROOF SUPPORT. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
13	BALANCE EXISTING SUPPLY AIR DIFFUSER TO CFM INDICATED.
14	PROVIDE ALL NEW, THERMOSTAT AND WIRE. REFER TO SPECIFICATIONS FOR MORE INFORMATION.
15	ROUTE NEW EXHAUST DUCT FROM PAINT BOOTH UP AND THROUGH ROOF.
16	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. REFER TO 3/M14.01.
17	RE: 2/M12.03 FOR PAINT SPRAY BOOTH ELEVATION.
18	PROVIDE PIPE SUPPORT. RE: M14.01 FOR DETAIL.
19	PROVIDE ECOMAXX NO RETURN EXPLOSION ISOLATION VALVE MODEL EM-NRV, WALL MOUNTED. PROVIDE REQUIRED SUPPORTS FOR WALL MOUNTING IN LOCATION SHOWN. INSTALL PER MANUFACTURER GUIDLINES.
20	VERIFY SERVICE CLEARANCE WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
21	FINAL LOCATION OF EXISTING DUST COLLECTOR WHEN ADDITION IS COMPLETED. PROVIDE WITH NEW 4" HOUSEKEEPING PAD.
22	NEW LOCATION OF EXISTING GRILLE.
23	INSTALL REFRIGERANT PIPES NOT LESS THAN 7'-3" AFF.
24	PROVIDE ISOLATION VALVE AT LOCATION SHOWN.
25	PROVIDE NEW BYPASS PIPING AND VALVES AS SHOWN TO ALLOW FOR ISOLATING THE NEW PIPING FROM THE EXISTING HYDRONIC LOOPS. TESTING, FLUSHING, AND TREATMENT OF NEW PIPING SHALL BE PERFORMED PRIOR TO OPENING THE NEW PIPING TO THE EXISTING HYDRONIC LOOPS. PURGERITE OR COMPARABLE COMPANY SHALL PROVIDE ASSISTANCE TO THE MECHANICAL CONTRACTOR PERFORM FLUSHING AND CLEANING AT DESIGN SYSTEM FLOW RATES. CHEMICAL TREATMENT MANUFACTURER SHALL TEST WATER TO CONFIRM COMPLIANCE OF FLUSHING AND TREATMENT OF WATER PRIOR TO OPENING THE NEW PIPING VALVES TO THE EXISTING HYDRONIC LOOPS.
26	ROUTE NEW EXHAUST AIR DUCTWORK FROM THE EXISTING HOOD UP TO EXISTING FAN ON ROOF. TRANSITION DUCTWORK AS NECESSARY TO MAKE COMPLETE CONNECTION. MATCH EXISTING CONDITIONS.
27	PROVIDE PIPE SUPPORT. RE:M14.01 FOR DETAILS.
28	TEMPORARY LOCATION OF EXISTING DUST COLLECTOR WHILE ADDITION IS BEING CONSTRUCTED. PROVIDE WITH 4" HOUSEKEEPING PAD.
29	PROVIDE DUCTWORK AS SHOWN TO CONNECT TO EXISTING DUST COLLECTOR FOR TEMPORARY RELOCATION.
30	PROVIDE RETURN AIR OPENING ABOVE CEILING AS SIZE INDICATED.

CONTRACTOR SHALL PROVIDE DEHUMIDIFICATION DURING THE ENTIRE CONSTRUCTION SCHEDULE. THE SCOPE IS TO MAINTAIN ACCEPTABLE HUMIDITY LEVELS WITHIN THE BUILDING: THE REMOVAL OF EXCESS HUMIDITY FROM THE AIR THROUGHOUT THE BUILDING. PROVIDE MOISTURE CONTROL RENTAL EQUIPMENT AND SOLUTION FOR PREVENTING THE LONG-TERM EFFECTS OF MOISTURE LEVELS THAT CAN DAMAGE INTERIOR BUILDING MATERIALS, BOOKS, AND ELECTRONIC EQUIPMENT.

CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL REQUIRED POWER GENERATING EQUIPMENT.

PRIOR TO BID, CONTRACTOR AND EQUIPMENT MANUFACTURER SHALL VISIT SITE TO INVESTIGATE EXISTING FIELD CONDITIONS, UNIT SIZES AND MECHANICAL ROOM ACCESSIBILITY TO ENSURE PROPER PROVISIONS ARE PROVIDED TO ALLOW FOR INSTALLATIONS.

PIPE INSULATION SHALL BE INSTALLED ON CLEAN AND DRY SURFACES ONLY. CONTRACTOR SHALL COORDINATE REMOVAL OF EXISTING INSULATION AND RE-INSULATION OF EXISTING CHILLED AND HOT WATER PIPING WITH OWNER, ARCHITECT AND ENGINEER PRIOR TO STARTING WORK TO ENSURE ANY REQUIRED CHILLED AND HOT WATER SHUTDOWNS ARE SCHEDULE AND ACCEPTABLE TO ALL PARTIES.



2 PAINT SPRAY BOOTH ELEVATION

Scale: 12" = 1'-0"

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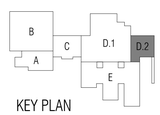
CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

2024 Cook, Labay & Truitt MS Renovations



KEY PLAN

Issue For Proposal

STATE OF TEXAS
BRADLEY KALMANS
80219
LICENSED
03-14-25

ISSUED: February 24, 2025

REVISIONS

Revision No.		Revision Date
1	ADDENDUM 01	03-06-2025
2	ADDENDUM 02	03-14-2025

Director	Drawn By
Approver	Author
Designer	Quality Control
Designer	
Proj. Coord.	
Checker	

PROJECT NO.

24-010.00

SHEET TITLE

COOK - MECHANICAL FLOOR PLAN - LEVEL 1 - UNIT D.2

SHEET NO.

M12.03

Salas O'Brien
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10930 W. Sam Houston Pkwy North, Suite 900
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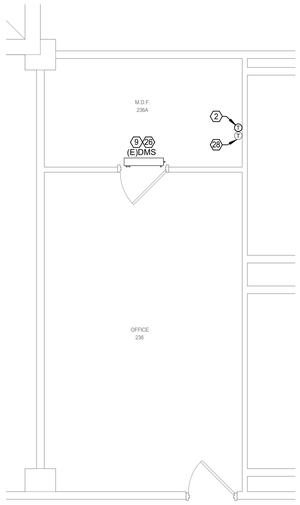
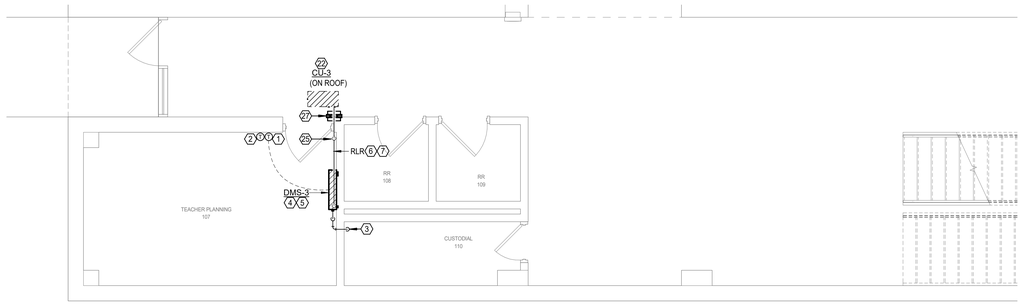
Salas O'Brien Registration: F-4111
Salas O'Brien Project Number: 2024-00901-00



N

6 MECHANICAL ENLARGED PLAN - MDF

Scale: 1/4" = 1'-0"



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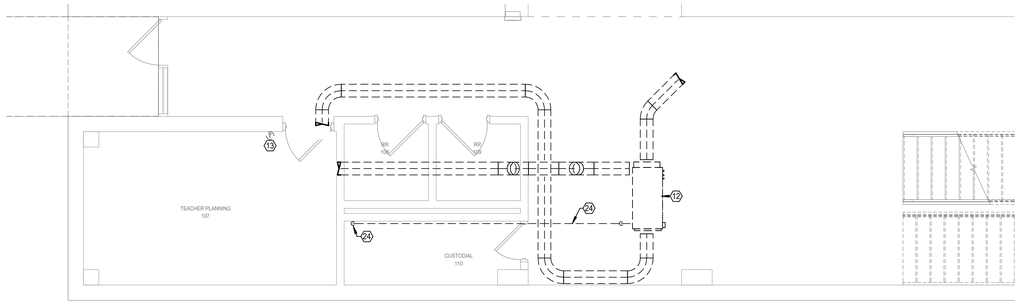
4 MECHANICAL ENLARGED PLAN - IDF E1

Scale: 1/4" = 1'-0"



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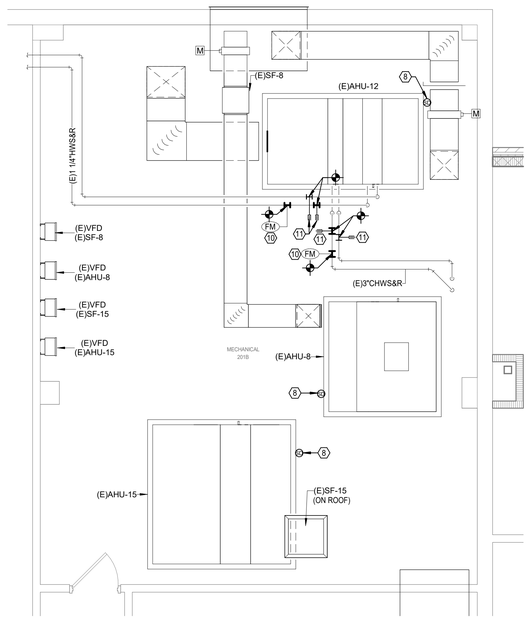
3 MECHANICAL DEMOLITION ENLARGED PLAN - IDF E

Scale: 1/4" = 1'-0"



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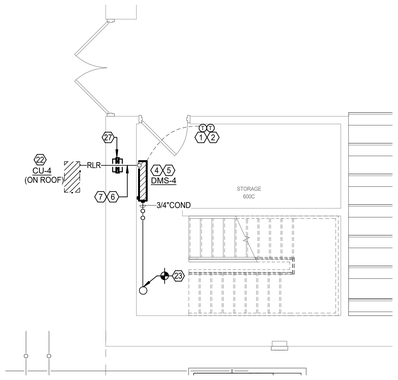
5 MECHANICAL ENLARGED PLAN - MECHANICAL D204

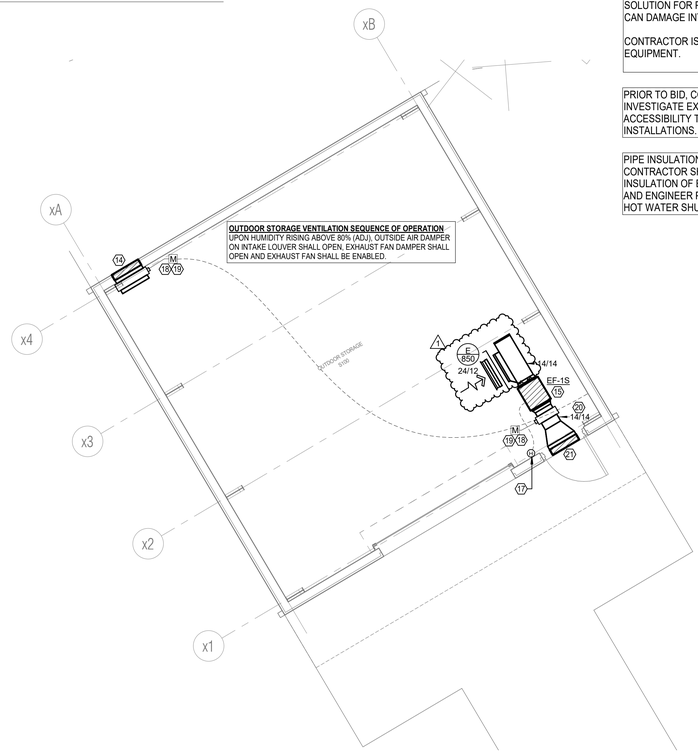
Scale: 1/4" = 1'-0"



N

2 MECHAICAL ENLARGED PLAN - IDF C

Scale: 1/4" = 1'-0"



N

1 MECHANICAL FLOOR PLAN - LEVEL 1 - C - OAS

Scale: 1/4" = 1'-0"

MECHANICAL GENERAL NOTES

1	ALL DUCTS ARE INSIDE CLEAR DIMENSIONS. INCREASE ACCORDINGLY WHERE INTERIOR LINER IS SHOWN OR SPECIFIED.
2	COORDINATE IN THE FIELD THE EXACT LOCATION OF ALL CEILING MOUNTED GRILLES AND DIFFUSERS AND ARCHITECT'S REFLECTED CEILING PLAN.
3	THERMOSTATS SHALL BE MOUNTED AT +48" AFF, UNLESS OTHERWISE NOTED.
4	MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL POWER REQUIREMENTS.
5	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 SYSTEM.
6	CONTRACTOR 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.
7	THE USE OF CY-FAIR ISD MOBILE/NON-PERMANENT EQUIPMENT (I.E.: LADDERS, CART, DOLLIES, ETC.) IS STRICTLY PROHIBITED.

MECHANICAL KEYED NOTES

1	PROVIDE HARD WIRED THERMOSTAT.
2	PROVIDE THERMOSTAT FOR BMCS MONITOR.
3	ROUTE FULL SIZE CONDENSATE DRAIN LINE AS HIGH AS POSSIBLE AND GRAVITY DRAIN TO THE MOP SINK AS INDICATED. INSTALL TRAP PER MANUFACTURER. REFER TO PLUMBING DRAWINGS FOR EXACT LOCATION.
4	VERIFY SERVICE CLEARANCE FOR AIR FILTER REMOVAL WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
5	VERIFY SERVICE CLEARANCE FOR FAN SHAFT AND COIL REMOVAL WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
6	INSULATE ALL PIPINGS PER SPECIFICATIONS.
7	ROUTE REFRIGERANT PIPING FROM CONDENSING UNIT TO ASSOCIATED INDOOR UNIT. PIPING SHOWN SINGLE LINE FOR CLARITY.
8	PROVIDE NEW SMOKE DETECTOR TO REPLACE EXISTING SMOKE DETECTOR ON EXISTING AHU.
9	EXISTING HIGH WALL MINI SPLIT TO REMAIN.
10	PROVIDE AND INSTALL FLOW METER IN CHILLED/HOT WATER SUPPLY PIPING TO BE USED IN CALCULATING AND LOGGING THE KITCHEN BTUH USAGE THROUGH THE BMCS. METER SHALL BE INSTALLED PER MANUFACTURERS REQUIREMENTS AND LOCATED DOWNSTREAM OF THE ISOLATION VALVES. REINSULATE PIPING AFTER INSTALLATION IS COMPLETE.
11	PROVIDE AND INSTALL CHILLED/HOT WATER SUPPLY AND RETURN TEMPERATURE SENSORS TO BE USED IN CALCULATING AND LOGGING THE KITCHEN BTUH USAGE THROUGH THE BMCS. SENSOR TO BE LOCATED DOWNSTREAM OF THE ISOLATION VALES. REINSULATE PIPING AFTER INSTALLATION IS COMPLETE.
12	REMOVE EXISTING SELF CONTAINED MINI MATE UNIT ALONG WITH ALL ASSOCIATED DUCTWORK AND APPURTENANCES.
13	REMOVE EXISTING TEMPERATURE SENSOR.
14	PROVIDE 24"W X 24"H INTAKE LOUVER, RUSKIN MODEL HZ700 OR EQUIVALENT, WITH A MINIMUM FREE AREA OF 1.77 SQUARE FEET. PROVIDE LOUVER WITH BIRDSCREEN AND MOTORIZED DAMPER. BOTTOM OF LOUVER SHALL BE MOUNTED AT 9'-0" AFF. COORDINATE FINAL MOUNTING HEIGHT WITH ARCHITECT. RE: 1/M14.01 FOR DETAIL.
15	EXHAUST FAN SHALL BE SUSPENDED WITH UNISTRUT RUNNERS AND PLATFORM SECURED TO STRUCTURE WITH THREADED HANGER RODS. INSTALL PER MANUFACTURER. COORDINATE WITH CRANE HOIST AND ALL OTHER TRADES NOT TO OBSTRUCT.
17	PROVIDE LINE VOLTAGE HUMIDITY SENSOR AT LOCATION SHOWN.
18	MOTORIZED DAMPER SHALL BE ON SAME VOLTAGE CIRCUIT AS ASSOCIATED EXHAUST FAN. REFER TO ELECTRICAL.
19	MOTORIZED DAMPER TO BE INTERLOCKED WITH EF-1S. INTERLOCK SHALL OPERATE AS FOLLOWS: WHEN EF-1S IS ENERGIZED, THE DAMPER SHALL OPEN. WHEN EF-1S IS DE-ENERGIZED, THE DAMPER SHALL CLOSE.
20	ROUTE EXHAUST AIR DUCT, AT SIZE SHOWN, TO EXHAUST LOUVER. PROVIDE TRANSITION AS NECESSARY TO COMPLETE CONNECTION TO FAN.
21	PROVIDE 24"W X 24"H EXHAUST LOUVER, RUSKIN MODEL HZ700 OR EQUIVALENT, WITH A MINIMUM FREE AREA OF 1.77 SQUARE FEET. PROVIDE LOUVER WITH BIRDSCREEN AND MOTORIZED DAMPER. BOTTOM OF LOUVER SHALL BE MOUNTED AT10'-0" AFF. COORDINATE FINAL MOUNTING HEIGHT WITH ARCHITECT. RE: 1/M14.01 FOR DETAIL.
22	CONDENSING UNIT SHALL BE MOUNTED ON ROOF SUPPORT. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
23	ROUTE FULL SIZE CONDENSATE DRAIN LINE AS HIGH AS POSSIBLE AND GRAVITY DRAIN. CONNECT TO EXISTING STORM DRAIN LINE IN THE VERTICAL. INSTALL TRAP PER MANUFACTURER.
24	REMOVE EXISTING CONDENSATE DRAIN PIPE ALONG WITH ALL ASSOCIATED APPURTENANCES.
25	RE: 1/M12.15 FOR CONTINUATION.
26	FLUSH AND CLEAN EXISTING CONDENSATE DRAIN.
27	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. REFER TO 3/M14.01
28	EXISTING THERMOSTAT AND ALL ASSOCIATED WIRING TO REMAIN.

CONTRACTOR SHALL PROVIDE DEHUMIDIFICATION DURING THE ENTIRE CONSTRUCTION SCHEDULE. THE SCOPE IS TO MAINTAIN ACCEPTABLE HUMIDITY LEVELS WITHIN THE BUILDING; THE REMOVAL OF EXCESS HUMIDITY FROM THE AIR THROUGHOUT THE BUILDING. PROVIDE MOISTURE CONTROL RENTAL EQUIPMENT AND SOLUTION FOR PREVENTING THE LONG-TERM EFFECTS OF MOISTURE LEVELS THAT CAN DAMAGE INTERIOR BUILDING MATERIALS, BOOKS, AND ELECTRONIC EQUIPMENT.

CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL REQUIRED POWER GENERATING EQUIPMENT.

PRIOR TO BID, CONTRACTOR AND EQUIPMENT MANUFACTURER SHALL VISIT SITE TO INVESTIGATE EXISTING FIELD CONDITIONS, UNIT SIZES AND MECHANICAL ROOM ACCESSIBILITY TO ENSURE PROPER PROVISIONS ARE PROVIDED TO ALLOW FOR INSTALLATIONS.

PIPE INSULATION SHALL BE INSTALLED ON CLEAN AND DRY SURFACES ONLY. CONTRACTOR SHALL COORDINATE REMOVAL OF EXISTING INSULATION AND RE-INSULATION OF EXISTING CHILLED AND HOTWATER PIPING WITH OWNER, ARCHITECT AND ENGINEER PRIOR TO STARTING WORK TO ENSURE ANY REQUIRED CHILLED AND HOT WATER SHUTDOWNS ARE SCHEDULE AND ACCEPTABLE TO ALL PARTIES.

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CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

2024 Cook, Labay & Truitt MS Renovations

Issue For Proposal

STATE OF TEXAS
BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
03-14-25

ISSUED: February 24, 2025

REVISIONS

Revision No.		Revision Date
1	ADDENDUM 02	03-14-2025

Director	Drawn By
Approver	Author
Designer	Quality Control
Designer	
Proj. Coord.	
Checker	

PROJECT NO.

24-010.00

SHEET TITLE

COOK - MECHANICAL ENLARGED PLAN

SHEET NO.

M13.01

Salas O'Brien

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Salas O'Brien Registration: F-4111

Salas O'Brien Project Number: 2024-00901-00

AIR HANDLING UNIT

MARK	FAN							COOLING							HEATING					PIPE SIZE TO COIL (IN.)		REMARKS
	SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT. STATIC PRESSURE (IN. W.C)	HORSE POWER	ELECTRICAL CHARAC. V	PH	F	AIR TEMPERATURE (°F) ENTERING DRY BULB	ENTERING WET BULB	LEAVING DRY BULB	LEAVING WET BULB	WATER ENTERING TEMP (°F)	GPM	PRESSURE DROP (FT.)	ENTERING AIR TEMPERATURE (°F)	MIN. HEATING CAPACITY (BTU/HR)	WATER ENTERING TEMP. (°F)	GPM	PRESSURE DROP (FT.)	CHILLED WATER	HOT WATER	
AHU-16	1,300	500	1.00	1.5	480	3	60	75.0	63.0	53.0	52.5	45	6.6	15.0	64.0	43,524	130.0	4.4	10.0	1 1/4"	1"	1-8

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 TWO-WAY HEATING CONTROL VALVES.
7. PROVIDE UNIT WITH ANGLED FILTER SECITON.
8. PRIOR TO BID, CONTRACTOR AND EQUIPMENT MANUFACTURER SHALL VISIT THE SITE TO INVESTIGATE EXISTING FIELD CONDITIONS, UNIT SIZES AND MECHANICAL ROOM ACCESSIBILITY TO ENSURE PROPER PROVISIONS ARE PROVIDED TO ALLOW FOR INSTALLATION.

SPLIT DEHUMIDIFICATION UNIT

MARK	FAN							COOLING							HEATING					PIPE SIZE TO COIL (IN.)		REMARKS
	SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT. STATIC PRESSURE (IN. W.C)	HORSE POWER	ELECTRICAL CHARAC. V	PH	F	AIR TEMPERATURE (°F) ENTERING DRY BULB	ENTERING WET BULB	LEAVING DRY BULB	LEAVING WET BULB	WATER ENTERING TEMP (°F)	GPM	PRESSURE DROP (FT.)	ENTERING AIR TEMPERATURE (°F)	MIN. HEATING CAPACITY	WATER ENTERING TEMP. (°F)	GPM	PRESSURE DROP (FT.)	CHILLED WATER	HOT WATER	
OAU-3	500	500	-	-	-	-	-	98.0	80.0	53.0	52.5	45	8.2	14.8	27.0	15,120	130.0	1.5	9.9	1 1/4"	3/4"	1-8

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 450 FPM ON COOLING COIL.
2. PROVIDE THREE-WAY COOLING CONTROL VALVES..
3. PROVIDE THREE-WAY HEATING CONTROL VALVES.
4. PROVIDE HOT WATER COIL IN PRE-HEAT POSITION.
5. PROVIDE UNIT WITH ANGLED FILTER SECTION.
6. SPLIT DEHUMIDIFICATION UNIT TO BE MOUNTED ON TOP OF THE ASSOCIATED AHU AND BE CONFIGURED TO SUPPLY AIR IN THE RETURN AIR SECTION OF THE ASSOCIATED AHU.
7. UNIT SHALL BE STACKED OAU FURNISHED WITH ASSOCIATED UNIT. UNIT INCLUDES ANGLED FILTER SECTION MIXING BOX, PREHEAT COIL, ACCESS SPACE, COOLING COIL AND DISCHARGE PLENUM.
8. PRIOR TO BID, CONTRACTOR AND EQUIPMENT MANUFACTURER SHALL VISIT THE SITE TO INVESTIGATE EXISTING FIELD CONDITIONS, UNIT SIZES AND MECHANICAL ROOM ACCESSIBILITY TO ENSURE PROPER PROVISIONS ARE PROVIDED TO ALLOW FOR INSTALLATION.

DUCTLESS MINI-SPLIT - OUTDOOR UNIT - COOLING ONLY

MARK	MIN. TOTAL CAPACITY (BTUH)	OUTDOOR AIR TEMP (°F)	MINIMUM EER/ SEER	CURRENT CHARAC. V	PH	F	RELATED UNIT MARK	MCA	MOCP	REMARKS
CU-1	23,403	98	12.2/21.3	208	1	60	DMS-1	19	25	1-3
CU-2	23,403	98	12.2/21.3	208	1	60	DMS-2	19	25	1-3
CU-3	23,403	98	12.2/21.3	208	1	60	DMS-3	19	25	1-3
CU-4	23,403	98	12.2/21.3	208	1	60	DMS-4	19	25	1-3

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 WITH LOW AMBIENT CONTROL DOWN TO 20°F.
2. PROVIDE WITH DISCONNECT SWITCH.
3. REFRIGERANT LINES TO BE SIZED PER MANUFACTURER'S REQUIREMENTS.

DUCTLESS MINI-SPLIT - INDOOR UNIT

MARK	FAN		CURRENT CHARAC.			AIR TEMPERATURE (°F)		COOLING		REMARKS	LOCATION
	SUPPLY AIR CFM	OUTSIDE AIR CFM	V	P	F	ENTERING DRY BULB	ENTERING WET BULB	MIN. TOTAL CAPACITY. (BTUH)	MIN. SENS. CAPACITY (BTUH)	MINIMUM EER/ SEER		
DMS-1	775	0	208	1	60	78.0	65.0	23,403	19,251	12.2/21.3	1-7	F.A / IDF 409 - AREA C - L1
DMS-2	775	0	208	1	60	78.0	65.0	23,403	19,251	12.2/21.3	1-7	STORAGE 318A - AREA D - L1
DMS-3	775	0	208	1	60	78.0	65.0	23,403	19,251	12.2/21.3	1-7	TEACHER PLANNING 107 - AREA E - L1
DMS-4	775	0	208	1	60	78.0	65.0	23,403	19,251	12.2/21.3	1-7	STORAGE 600 C / IDF - AREA B - L1

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. COOLING ONLY UNIT.
6. PROVIDE WITH LITTLE GIANT CONDENSATE PUMP MODEL 554652 VCMA-20ULS-C-PRO, 1/30 HP, 115V/1PH/60HZ. INSTALL PUMP OUTSIDE THE UNIT.
7. PRIOR TO BID, CONTRACTOR AND EQUIPMENT MANUFACTURER SHALL VISIT SITE TO INVESTIGATE EXISTING FIELD CONDITIONS, UNIT SIZES AND MECHANICAL ROOM ACCESSABILITY TO ENSURE PROPER PROVISIONS ARE PROVIDED TO ALLOW FOR INSTALLATIONS.

FAN SCHEDULE

TAG	LOCATION	CFM	EXT. STATIC PRESSURE (IN.W.C.)	MAX RPM	HORSE POWER	CURRENT CHAR V	P	F	LOCALLY SWITCHED	INTERLOCK WITH	FAN TYPE	DRIVE TYPE	MANUFACTURER	MODEL NUMBER	REMARKS
EF-1S	OUTSIDE ATHLETIC STORAGE	850	0.25	1048	0.25	120	1	60		HUMIDITY SENSOR	INLINE	DIRECT	COOK	SQND	1,2,3,4,5,6
SF-16	MECHANICAL 534	500	1.75	2194	0.5	120	1	60	-	AHU-16	INLINE	DIRECT	COOK	SQND	1,2,3,4

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. MINIMUM RECOMMENDED CLEARANCE AROUND UNIT IS 12 INCHES ON NON-SERVICE SIDES AND 30 INCHES ON SERVICE SIDES. 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 WITH DISCONNECT.
2. PROVIDE WITH LOW LEAK MOTORIZED DAMPER THAT SHALL CLOSE WHEN UNIT IS NOT OPERATING. PROVIDED BY BMCS INSTALLED IN DUCTWORK BY MECHANICAL CONTRACTOR.
3. SUSPEND UNIT WITH FOUR THREADED HANGER RODS ATTACHED TO TWO UNISTRUTT RUNNERS SECURES TO STRUCTURE. PROVIDE WITH SPRING ISOLATION. REFER TO MANUFACTURER FOR ADDITIONAL INSTALLATION REQUIREMENTS.
4. PROVIDE WITH EC MOTOR WITH SOLID SPEED CONTROLLER.
5. PROVIDE WITH VIBRATION ISOLATION, INULATED HOUSING, AND WHITE ALUMINUM GRILLE.
6. PROVIDE EXHAUST FAN WITH BACKDRAFT DAMPER.

GRILLE

MARK	SERVICE	TYPE	DAMPER	CONSTRUCTION MATERIAL	FINISH COLOR	MANUFACTURER	MODEL NUMBER	DESCRIPTION
A	SUPPLY AIR	DIFFUSER	-	ALUMINUM	WHITE	TITUS	TMS	EXPOSED T-BAR CEILING FRAME STYLE WITH 24"X24"FACE. CONE DIFFUSER.
B	RETURN AIR	DIFFUSER	-	ALUMINUM	WHITE	TITUS	350FL	EXPOSED T-BAR CEILING FRAME STYLE WITH 24"X24" FACE. LOUVERED FACE, 45 DEGREE DEFLECTION, 3/4" BLADE SPACING
C	SUPPLY AIR	GRILLE	-	ALUMINUM	WHITE	TITUS	300FL	DOUBLE DEFLECTION SIDEWALL GRILLE WITH HORIZONTAL FRONT BARS. SURFACE MOUNTED.
D	RETURN AIR	GRILLE	-	ALUMINUM	WHITE	TITUS	300FL	DOUBLE DEFLECTION SIDEWALL GRILLE WITH HORIZONTAL FRONT BARS. SURFACE MOUNTED.
1 E	EXHAUST AIR	GRILLE	-	ALUMINUM	WHITE	TITUS	350FL	DOUBLE DEFLECTION SIDEWALL GRILLE WITH HORIZONTAL FRONT BARS. SURFACE MOUNTED.
ER	RETURN AIR	DIFFUSER / GRILLE	-	-	-	-	-	EXISTING RETURN
ES	SUPPLY AIR	DIFFUSER / GRILLE	-	-	-	-	-	EXISTING SUPPLY

GENERAL NOTES:
1. DAMPERS NOTED AS U.L. SHALL BE 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

CONSTANT VOLUME TERMINAL BOX

MARK	MAXIMUM CFM	MINIMUM CFM	INLET DIAMETER SIZE (IN.)	CURRENT CHARAC. V	P	F	HOT WATER COIL ENTERING WATER TEMP (°F)	GPM	CONNECTING PIPE SIZE (IN.)	REMARKS
1 ECVB-8-7	1,360	510	14	277	1	60	130	2.4	3/4"	1
CVB-8-8	960	350	10	277	1	60	130	2.3	3/4"	-

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. PROVIDE SPRING ISOLATION. 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.
9. CVB MOTOR SIZE. BASED ON 0.35" ESP, AS FOLLOWS:
   A. 0-400 CFM REQUIRE 1/10 HORSEPOWER MOTOR
   B. 401-700 CFM REQUIRE A 1/4 HORSEPOWER MOTOR
   C. 701-1100 CFM REQUIRE A 1/2 HORSEPOWER MOTOR
   D. 1101-1500 CFM REQUIRE A 3/4 HORSEPOWER MOTOR

1 REMARKS:
1. REBALANCE EXISTING TERMINAL UNIT TO PERFORMANCE DATA AS SCHEDULE

RELIEF VENT & O.A. INTAKE

MARK	CFM	MAX. S.P. (IN.WC.)	MIN. THROAT AREA	MODEL	SERVES	REMARKS	LOCATION
OAI-1	8,000	0.11	16 SF	GI	PAINT BOOTH	1,2,3	WOODSHOP 314

REMARKS:
1. PROVIDE WITH ROOF CURB.
2. PROVIDE WITH BIRD SCREEN.
3. PROVIDE WITH MOTORIZED DAMPER.

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ISSUED: February 24, 2025

REVISIONS

Revision No.		Revision Date
1	ADDENDUM 02	03-14-2025

Director	Drawn By
Approver	Author
Designer	Quality Control
Designer	
Proj. Coord.	
Checker	

PROJECT NO.

24-010.00

SHEET TITLE

COOK - MECHANICAL SCHEDULES

SHEET NO.

M15.01

Salas O'Brien

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Houston, TX 77064
Salas O'Brien Registration: F-4111

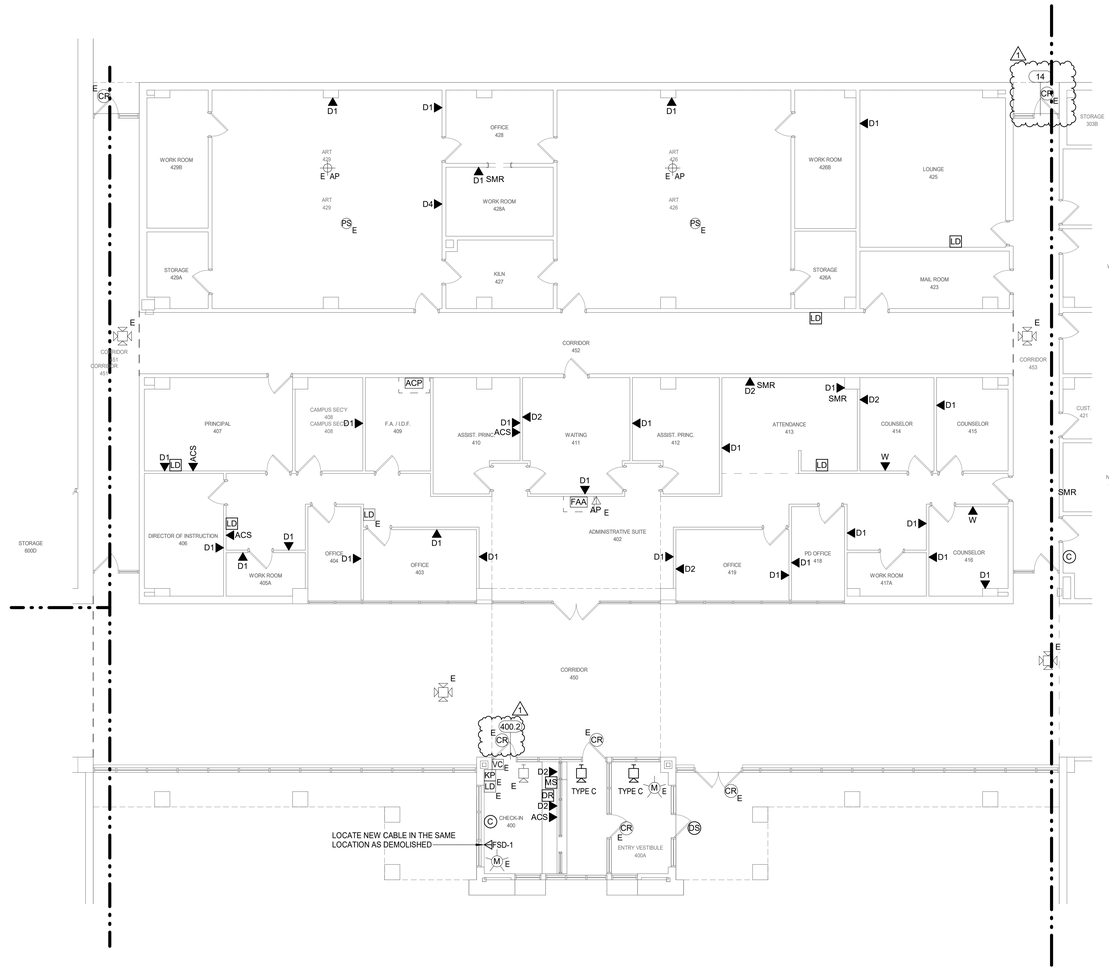
Salas O'Brien Project Number: 2024-00901-00

FIRE ALARM

A	FIRE ALARM SYSTEM IS A PERFORMANCE BASED PER SPECIFICATIONS 28 46 00. 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.

TECHNOLOGY PLAN GENERAL NOTES

A	COORDINATE ALL FINAL MOUNTING HEIGHTS, FOR WALL MOUNTED DEVICES, PRIOR TO ROUGH-IN. COORDINATE WITH ARCHITECT, OWNER AND ENGINEER.
B	COORDINATE ALL CEILING DEVICE LOCATIONS WITH ARCHITECTURAL DRAWINGS AND INTERIOR DESIGN CONSULTANT(IF APPLICABLE) PRIOR TO ROUGH-IN.
C	REFERENCE TECHNOLOGY SITE PLAN, COMPOSITE, NOTES & LEGENDS AND DETAILS FOR ADDITIONAL INFORMATION AND DEVICE/OUTLET LOCATIONS.
D	CONTRACTOR TO COORDINATE INTERCOM SPEAKER MOUNTING TYPES WITH ARCHITECTURAL CEILING PLANS PRIOR TO FINAL SPEAKER SELECTION. COORDINATE WITH ENGINEER ON ANY DISCREPANCIES.
E	CONTRACTOR TO COORDINATE ALL DROP LOCATIONS WITH FURNITURE. COORDINATE WITH ARCHITECT AND OWNER FOR MORE INFORMATION.
F	ALL EXISTING LOCKDOWN BUTTONS THAT ARE BEING REUSED SHALL HAVE EXISTING WIRING DEMOLISHED AND REPLACED BY CONTRACTOR WITH HOME RUNS TO HEAD END.
G	NEW DATA CABLING IN EXISTING ROOMS SHALL REUSE EXISTING DATA CABLING RACEWAY AND BACKBOXES UNLESS NOTED OTHERWISE. PROVIDE AND INSTALL NEW FACEPLATES.
H	DATA CABLING TO MECHANICAL ROOMS SHALL BE REPLACED ONE TO ONE. CONTRACTOR TO REUSE EXISTING RACEWAY AND BACKBOXES. PROVIDE AND INSTALL NEW FACEPLATES.
I	ALL EXISTING CLASSROOM CALL BUTTONS SHALL BE DISCONNECTED FROM EXISTING SPEAKERS AND RECONNECTED TO NEW IP SPEAKERS. CONTRACTOR TO FIELD VERIFY EXISTING CLASSROOM CB LOCATIONS.
J	GC TO COORDINATE WITH EC AND STRUCTURED CABLING CONTRACTOR ON REQUIRED PATHWAYS AND PENETRATIONS FOR NEW DATA CABLING INSTALLATION.



N

1 **TECHNOLOGY FLOOR PLAN - LEVEL 1 - C - UNIT C**
Scale: 1/8" = 1'-0"

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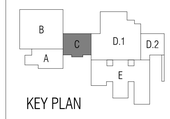
CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

2024 Cook, Labay & Truitt MS Renovations



KEY PLAN

Issue For Proposal

ISSUED: February 24, 2025

REVISIONS

Revision No.		Revision Date
1	ADDENDUM 02	03-14-2025

Director MS	Drawn By NY
Designer NY	Quality Control
Proj. Coord. AS	

PROJECT NO.

24-010.00

SHEET TITLE

COOK - TECHNOLOGY FLOOR PLAN - LEVEL 1 - UNIT C

SHEET NO.

T12.03

Salas O'Brien
Houston
10930 W. Sam Houston Pkwy North, Suite 900
Houston, TX 77064
Salas O'Brien Registration: F-4111
Salas O'Brien Project Number: 2024-00901-00

CONTRACTOR SHALL PROVIDE DEHUMIDIFICATION DURING THE ENTIRE CONSTRUCTION SCHEDULE. THE SCOPE IS TO MAINTAIN ACCEPTABLE HUMIDITY LEVELS WITHIN THE BUILDING: THE REMOVAL OF EXCESS HUMIDITY FROM THE AIR THROUGHOUT THE BUILDING. PROVIDE MOISTURE CONTROL RENTAL EQUIPMENT AND SOLUTION FOR PREVENTING THE LONG-TERM EFFECTS OF MOISTURE LEVELS THAT CAN DAMAGE INTERIOR BUILDING MATERIALS, BOOKS, AND ELECTRONIC EQUIPMENT.

CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL REQUIRED POWER GENERATING EQUIPMENT.

PRIOR TO BID, CONTRACTOR AND EQUIPMENT MANUFACTURER SHALL VISIT SITE TO INVESTIGATE EXISTING FIELD CONDITIONS, UNIT SIZES AND MECHANICAL ROOM ACCESSIBILITY TO ENSURE PROPER PROVISIONS ARE PROVIDED TO ALLOW FOR INSTALLATIONS.

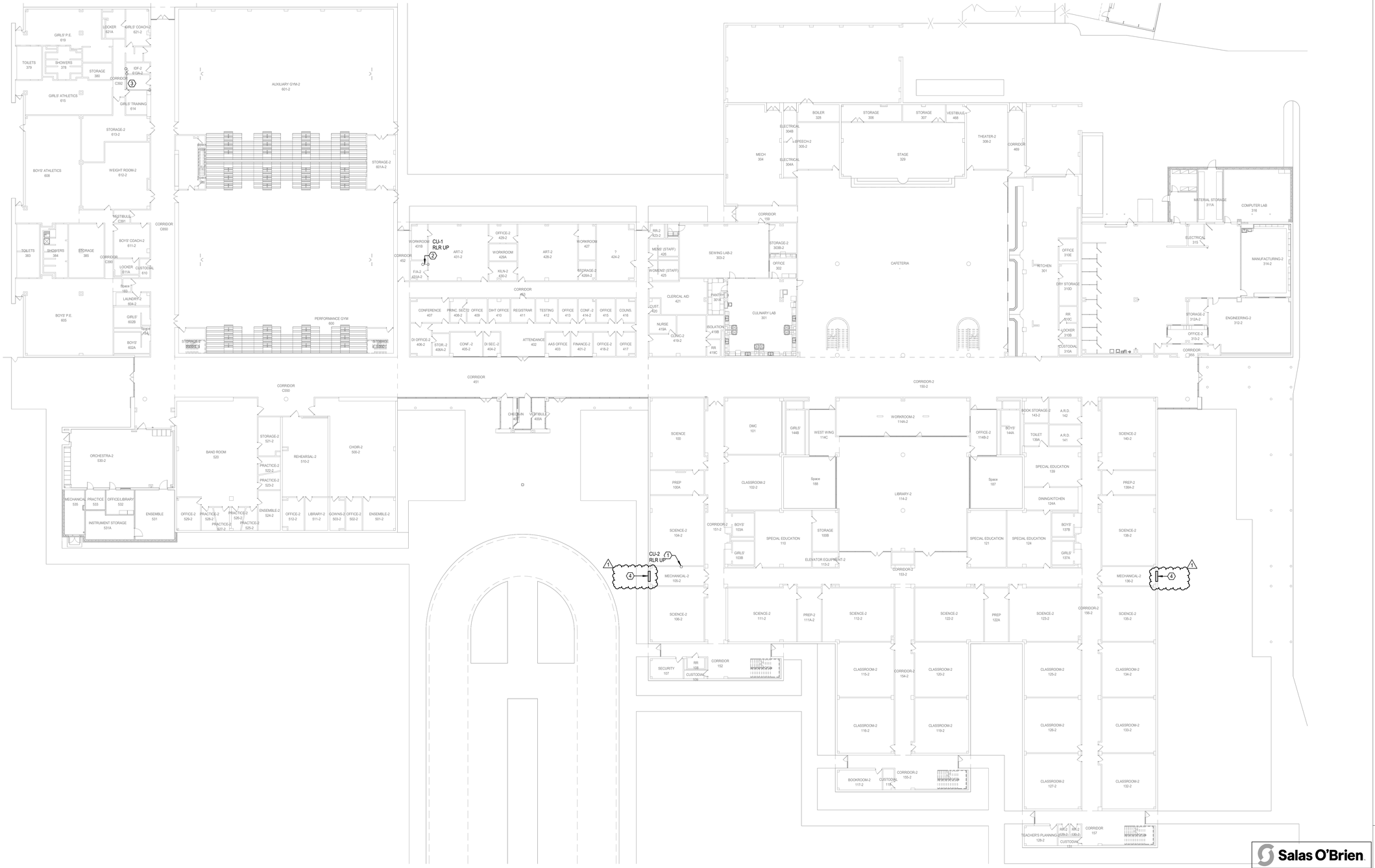
PIPE INSULATION SHALL BE INSTALLED ON CLEAN AND DRY SURFACES ONLY. CONTRACTOR SHALL COORDINATE REMOVAL OF EXISTING INSULATION AND RE-INSULATION OF EXISTING CHILLED WATER PIPING WITH OWNER, ARCHITECT AND ENGINEER PRIOR TO STARTING WORK TO ENSURE ANY REQUIRED CHILLED WATER SHUTDOWNS ARE SCHEDULE AND ACCEPTABLE TO ALL PARTIES.

MECHANICAL GENERAL NOTES

1	ALL DUCTS ARE INSIDE CLEAR DIMENSIONS. INCREASE ACCORDINGLY WHERE INTERIOR LINER IS SHOWN OR SPECIFIED.
2	COORDINATE IN THE FIELD THE EXACT LOCATION OF ALL CEILING MOUNTED GRILLES AND DIFFUSERS AND ARCHITECT'S REFLECTED CEILING PLAN.
3	THERMOSTATS SHALL BE MOUNTED AT +48" AFF, UNLESS OTHERWISE NOTED.
4	MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL POWER REQUIREMENTS.
5	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 OD ALL EQUIPMENT AND ROUTING OF ALL PIPING AND/OR DUCT SYSTEM.
6	CONTRACTOR 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.
7	THE USE OF CY-FAIR ISD MOBILE/NON-PERMANENT EQUIPMENT (I.E.: LADDERS, CART, DOLLIES, ETC.) IS STRICTLY PROHIBITED.

MECHANICAL KEYED NOTES

1	RE: 1/M21.02 FOR CONTINUATION.
2	RE: 1/M22.02 FOR CONTINUATION.
3	RE: 2/M21.01 FOR CONTINUATION.
4	EXISTING CIRCULAR INTAKE LOUVER TO REMAIN.



1 **MECHANICAL COMPOSITE FLOOR PLAN - LEVEL 1**
Scale: 1" = 20'-0"

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CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

LABAY MIDDLE SCHOOL

Issue For Proposal

BRADLEY KALMANS — 90219 — LICENSED PROFESSIONAL ENGINEER — STATE OF TEXAS
03-14-25

ISSUED: February 24, 2025

REVISIONS

Revision No.		Revision Date
1	ADDENDUM 02	03.14.2025

Director	Drawn By
Approver	Author
Designer	Quality Control
Designer	Checker
Proj. Coord.	
Checker	

PROJECT NO.

24-010.00

SHEET TITLE

LABAY - MECHANICAL COMPOSITE PLAN - LEVEL 1

SHEET NO.

M21.01

Salas O'Brien
Houston
10930 W. Sam Houston Pkwy North, Suite 900
Houston, TX 77064
Salas O'Brien Registration: F-4111
Salas O'Brien Project Number: 2024-00901-00

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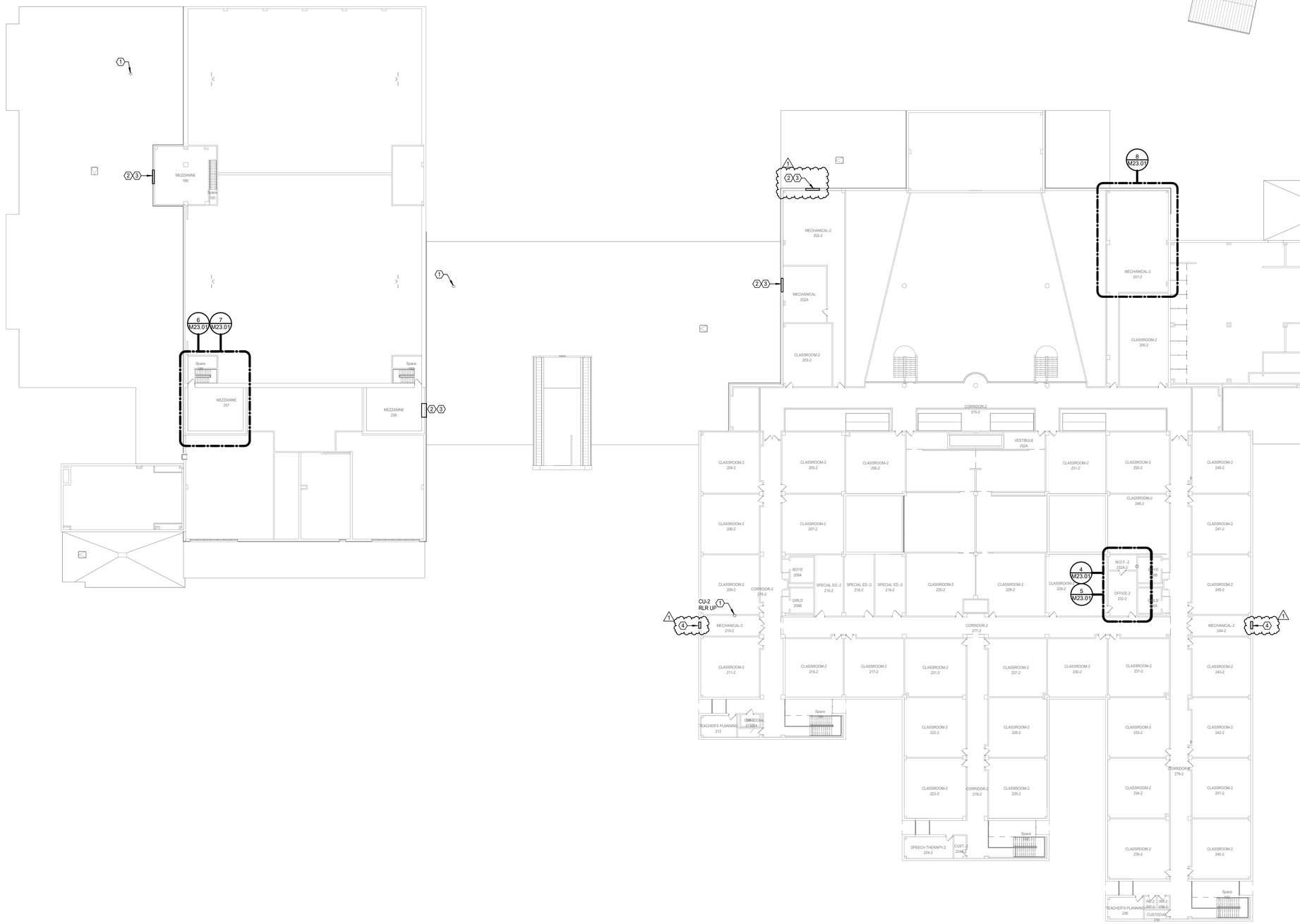
MECHANICAL KEYED NOTES

#	
1	RE: 1/M22.05 FOR CONTINUATION.
2	REMOVE EXISTING CIRCULAR LOUVER AND ASSOCIATED PLENUM. PROVIDE TEMPORARY WALL COVER.
3	PROVIDE TWO 38"W X 76"H INTAKE LOUVERS, RUSKIN MODEL HZ700. LOUVERS SHALL BE INSTALLED TO HAVE CONTINUOUS LOOK FOR OVERALL DIMENSION OF 76"W X 76"H. PROVIDE FULL SIZE PLENUM. SIZE AS REQUIRED TO COMPLETE CONNECTION OF EXISTING DUCTS. PROVIDE LOUVER WITH BIRDSCREEN. COORDINATE FINAL MOUNTING HEIGHT, SIZE AND COLOR WITH ARCHITECT.
4	EXISTING CIRCULAR INTAKE LOUVER TO REMAIN.

MECHANICAL GENERAL NOTES

1	ALL DUCTS ARE INSIDE CLEAR DIMENSIONS. INCREASE ACCORDINGLY WHERE INTERIOR LINER IS SHOWN OR SPECIFIED.
2	COORDINATE IN THE FIELD THE EXACT LOCATION OF ALL CEILING MOUNTED GRILLES AND DIFFUSERS AND ARCHITECT'S REFLECTED CEILING PLAN.
3	THERMOSTATS SHALL BE MOUNTED AT +48" AFF, UNLESS OTHERWISE NOTED.
4	MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL POWER REQUIREMENTS.
5	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 OD ALL EQUIPMENT AND ROUTING OF ALL PIPING AND/OR DUCT SYSTEM.
6	CONTRACTOR 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.
7	THE USE OF CY-FAIR ISD MOBILE/NON-PERMANENT EQUIPMENT (I.E.: LADDERS, CART, DOLLIES, ETC.) IS STRICTLY PROHIBITED.



N

1 **MECHANICAL COMPOSITE FLOOR PLAN - LEVEL 2**
Scale: 1" = 20'-0"

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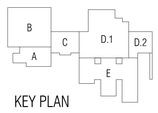
CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

LABAY MIDDLE SCHOOL



KEY PLAN

Issue For Proposal

03-14-25

ISSUED: February 24, 2025

REVISIONS

Revision No.		Revision Date
1	ADDENDUM 02	03.14.2025

Director	Drawn By
Approver	Author
Designer	Quality Control
Designer	Checker
Proj. Coord. Checker	

PROJECT NO.

24-010.00

SHEET TITLE

LABAY - MECHANICAL COMPOSITE PLAN - LEVEL 2

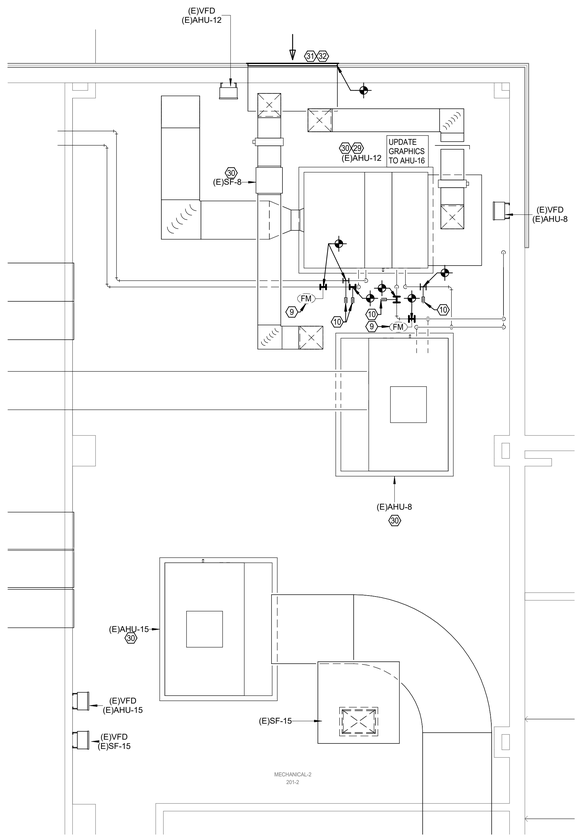
SHEET NO.

M21.02

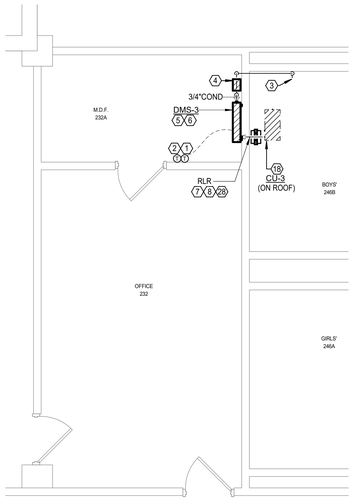
Salas O'Brien

Houston
10930 W. Sam Houston Pkwy North, Suite 900
Houston, TX 77064
Salas O'Brien Registration: F-4111

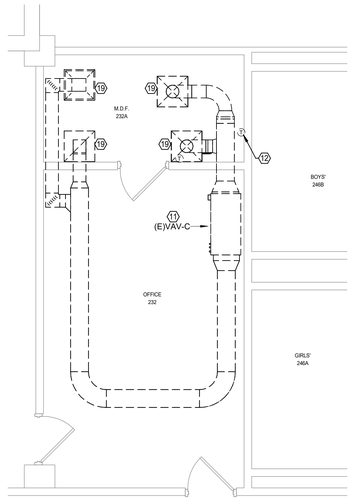
Salas O'Brien Project Number: 2024-00901-00



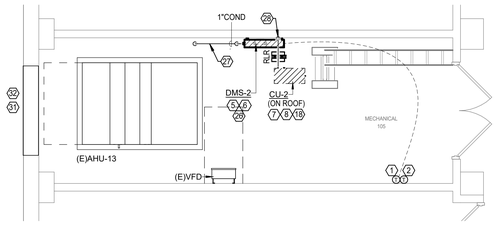
N 8 **MECHANICAL ENLARGED PLAN - MECHANICAL D2-4**
Scale: 1/4" = 1'-0"



N 5 **MECHANICAL ENLARGED PLAN - MDF**
Scale: 1/4" = 1'-0"



N 4 **MECHANICAL DEMOLITION ENLARGED PLAN - MDF**
Scale: 1/4" = 1'-0"



N 3 **MECHANICAL ENLARGED PLAN - IDF D**
Scale: 1/4" = 1'-0"

MECHANICAL GENERAL NOTES

1	ALL DUCTS ARE INSIDE CLEAR DIMENSIONS. INCREASE ACCORDINGLY WHERE INTERIOR LINER IS SHOWN OR SPECIFIED.
2	COORDINATE IN THE FIELD THE EXACT LOCATION OF ALL CEILING MOUNTED GRILLES AND DIFFUSERS AND ARCHITECTS REFLECTED CEILING PLAN.
3	THERMOSTATS SHALL BE MOUNTED AT +48" AFF, UNLESS OTHERWISE NOTED.
4	MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL ELECTRICAL POWER REQUIREMENTS.
5	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 OD ALL EQUIPMENT AND ROUTING OF ALL PIPING AND/OR DUCT SYSTEM.
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7	THE USE OF CY-FAIR ISD MOBILE/NON-PERMANENT EQUIPMENT (I.E.: LADDERS, CART, DOLLIES, ETC.) IS STRICTLY PROHIBITED.

MECHANICAL KEYED NOTES

#	
1	PROVIDE HARD WIRED THERMOSTAT.
2	PROVIDE THERMOSTAT FOR BMCS MONITOR.
3	ROUTE FULL SIZE CONDENSATE DRAIN PIPE TO SINK WYE TAILPIECE. INSTALL TRAP AS RECOMMENDED BY MANUFACTURER. REFER TO PLUMBING FOR EXACT LOCATION.
4	PROVIDE WITH LITTLE GIANT CONDENSATE PUMP MODEL 554652 VCMA-20ULS-C-PRO, 1/30 HP, 115V/1PH/60HZ
5	VERIFY SERVICE CLEARANCE FOR AIR FILTER REMOVAL WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
6	VERIFY SERVICE CLEARANCE FOR FAN SHAFT AND COIL REMOVAL WITH EQUIPMENT MANUFACTURER. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
7	INSULATE AND PROVIDE JACKETING ON ALL PIPING AS REQUIRED PER SPECIFICATIONS.
8	ROUTE REFRIGERANT PIPING FROM CONDENSING UNIT TO ASSOCIATED INDOOR UNIT. PIPING SHOWN SINGLE LINE FOR CLARITY. PROVIDE PIPE SUPPORT AND INSTALL PER MANUFACTURER. RE: 10&12/ M24.02 FOR DETAIL.
9	PROVIDE AND INSTALL FLOW METER IN CHILLED/HOT WATER SUPPLY PIPING TO BE USED IN CALCULATING AND LOGGING THE KITCHEN BTUH USAGE THROUGH THE BMCS. METER SHALL BE INSTALLED PER MANUFACTURERS REQUIREMENTS AND LOCATED DOWNSTREAM OF THE ISOLATION VALVES. REINSULATE PIPING AFTER INSTALLATION IS COMPLETE.
10	PROVIDE AND INSTALL CHILLED/HOT WATER SUPPLY AND RETURN TEMPERATURE SENSORS TO BE USED IN CALCULATING AND LOGGING THE KITCHEN BTUH USAGE THROUGH THE BMCS. SENSOR TO BE LOCATED DOWNSTREAM OF THE ISOLATION VALES. REINSULATE PIPING AFTER INSTALLATION IS COMPLETE.
11	REMOVE EXISTING SELF CONTAINED MINI MATE UNIT ALONG WITH ALL ASSOCIATED DUCTWORK AND APPURTENANCES.
12	REMOVE EXISTING THERMOSTAT ALONG WITH ALL ASSOCIATED WIRING.
13	PROVIDE 24"W X 24"H INTAKE LOUVER. RUSKIN MODEL HZ700 OR EQUIVALENT, WITH A MINIMUM FREE AREA OF 1.77 SQUARE FEET. PROVIDE LOUVER WITH BIRDSCREEN AND MOTORIZED DAMPER. BOTTOM OF LOUVER SHALL BE MOUNTED AT 9'-2" AFF. COORDINATE FINAL MOUNTING HEIGHT WITH ARCHITECT. RE:6/M24.02 FOR DETAIL.
14	EXHAUST FAN SHALL BE SUSPENDED WITH UNISTRUT RUNNERS AND PLATFORM SECURED TO STRUCTURE WITH THREADED HANGER RODS. INSTALL PER MANUFACTURER. COORDINATE WITH CRANE HOIST AND ALL OTHER TRADES NOT TO OBSTRUCT.
15	PROVIDE 24"W X 24"H EXHAUST LOUVER. RUSKIN MODEL HZ700 OR EQUIVALENT, WITH A MINIMUM FREE AREA OF 1.77 SQUARE FEET. PROVIDE LOUVER WITH BIRDSCREEN AND MOTORIZED DAMPER. BOTTOM OF LOUVER SHALL BE MOUNTED AT 9'-0" AFF. COORDINATE FINAL MOUNTING HEIGHT WITH ARCHITECT. RE:6/M24.02 FOR DETAIL.
16	EXISTING MINI SPLIT HIGH WALL UNIT TO REMAIN AND BE REUSED.
17	EXISTING CONDENSING UNIT TO REMAIN AND BE REUSED. FIELD VERIFY EXACT LOCATION.
18	CONDENSING UNIT SHALL BE MOUNTED ON ROOF SUPPORT. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
19	REMOVE EXISTING DIFFUSER/GRILLE, DUCTWORK AND ASSOCIATED APPURTERANCES.
20	PROVIDE LINE VOLTAGE HUMIDITY SENSOR AT LOCATION SHOWN.
21	MOTORIZED DAMPER SHALL BE ON SAME VOLTAGE CIRCUIT AS ASSOCIATED EXHAUST FAN. REFER TO ELECTRICAL.
22	MOTORIZED DAMPER TO BE INTERLOCKED WITH EF-1S. INTERLOCK SHALL OPERATE AS FOLLOWS: WHEN EF-1S IS ENERGIZED, THE DAMPER SHALL OPEN. WHEN EF-1S IS DE-ENERGIZED, THE DAMPER SHALL CLOSE.
23	ROUTE EXHAUST AIR DUCT, AT SIZE SHOWN, TO EXHAUST LOUVER. PROVIDE TRANSITION AS NECESSARY TO COMPLETE CONNECTION TO FAN.
25	EXISTING THERMOSTAT TO REMAIN AND BE REUSED.
26	BOTTOM OF HIGH WALL UNIT SHALL BE MOUNTED ABOVE 7'-3" A.F.F. COORDINATE WITH ALL TRADES NOT TO OBSTRUCT.
27	ROUTE FULL SIZE CONDENSATE DRAIN PIPING TO FLOOR DRAIN. INSTALL TRAP AS RECOMMENDED BY MANUFACTURER. REFER TO PLUMBING DRAWINGS FOR EXACT LOCATION.
28	RE: 1/M22.05 FOR CONTINUATION.
29	CONTROL VALVES TO BE REPLACED WITH NEW. REFER TO CONTROLS SCHEDULES FOR ADDITIONAL INFORMATION.
30	EXISTING EQUIPMENT AND ALL ASSOCIATED APPURTENANCES TO REMAIN.
31	REMOVE EXISTING CIRCULAR LOUVER AND ASSOCIATED PLENUM. PROVIDE TEMPORARY WALL COVER.
32	PROVIDE TWO 36"W X 76"H INTAKE LOUVERS, RUSKIN MODEL HZ700. LOUVERS SHALL BE INSTALLED TO HAVE CONTINUOUS LOOK FOR OVERALL DIMENSION OF 76"W X 76"H. PROVIDE FULL SIZE PLENUM, SIZE AS REQUIRED TO COMPLETE CONNECTION OF EXISTING DUCTS. PROVIDE LOUVER WITH BIRDSCREEN. COORDINATE FINAL MOUNTING HEIGHT, SIZE AND COLOR WITH ARCHITECT.

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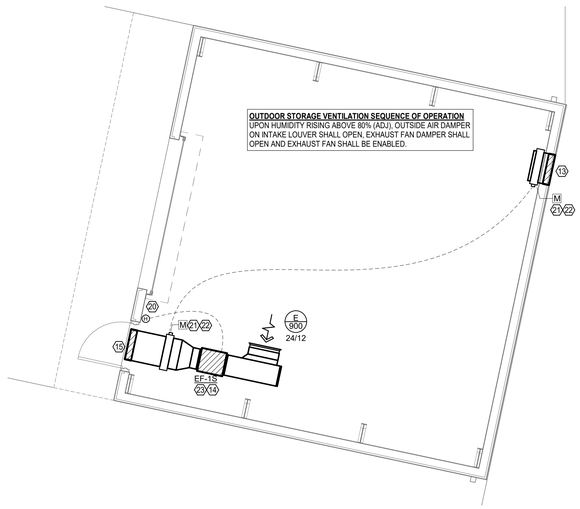
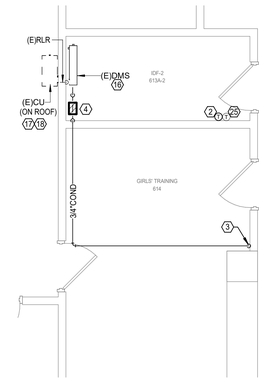
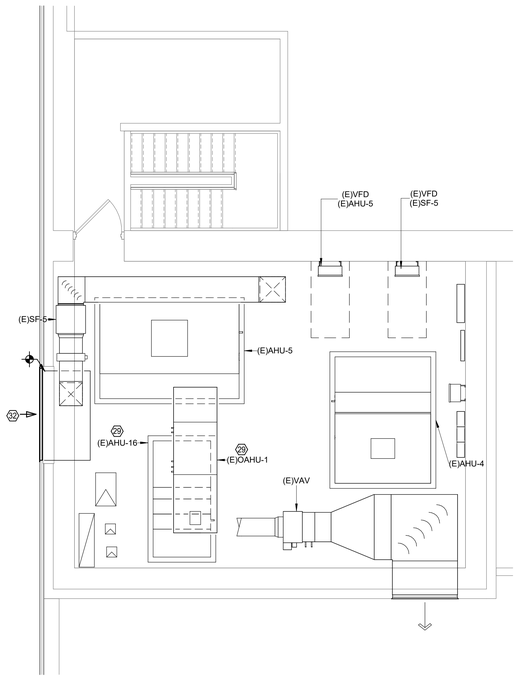


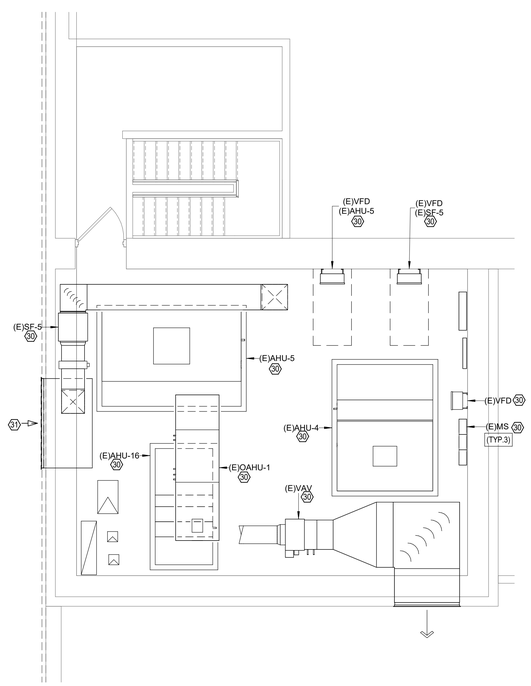
N 1 **MECHANICAL ENLARGED PLAN - OAS**
Scale: 1/4" = 1'-0"



N 2 **MECHANICAL ENLARGED PLAN - IDF C**
Scale: 1/4" = 1'-0"



N 7 **MECHANICAL ENLARGED PLAN - MEZZANINE B202**
Scale: 1/4" = 1'-0"



N 6 **MECHANICAL DEMOLITION ENLARGED PLAN - MEZZANINE B202**
Scale: 1/4" = 1'-0"

VLK|ARCHITECTS

ARCHITECT

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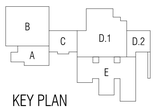
CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS



KEY PLAN

Issue For Proposal

BRADLEY KALMANS
60219
LICENSED
PROFESSIONAL ENGINEER
03-14-25

ISSUED: February 24, 2025

REVISIONS

Revision No.		Revision Date
1	ADDENDUM 02	03.14.2025

Director	Drawn By
Approver	Author
Designer	Quality Control
Designer	Checker
Proj. Coord.	
Checker	

PROJECT NO.

24-010.00

SHEET TITLE

LABAY - MECHANICAL ENLARGED PLAN

SHEET NO.

M23.01

LABAY MIDDLE SCHOOL

Salas O'Brien

Houston
10930 W. Sam Houston Pkwy North, Suite 900
Houston, TX 77064
Salas O'Brien Registration: F-4111

Salas O'Brien Project Number: 2024-00901-00

AIR HANDLING UNIT

MARK	FAN							COOLING							HEATING					PIPE SIZE TO COIL (IN.)		REMARKS
	SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT. STATIC PRESSURE (IN. W.C)	HORSE POWER	ELECTRICAL CHARAC. V	PH	F	AIR TEMPERATURE (°F) ENTERING DRY BULB	ENTERING WET BULB	LEAVING DRY BULB	LEAVING WET BULB	WATER ENTERING TEMP (°F)	GPM	PRESSURE DROP (FT.)	ENTERING AIR TEMPERATURE (°F)	MIN. HEATING CAPACITY (BTU/HR)	WATER ENTERING TEMP. (°F)	GPM	PRESSURE DROP (FT.)	CHILLED WATER	HOT WATER	
AHU-17	1,300	500	1.00	1.5	480	3	60	75.0	63.0	53.0	52.5	45	6.6	15.0	65.0	42,120	160.0	4.3	10.0	1 1/4"	1"	1-8

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 TWO-WAY HEATING CONTROL VALVES.
7. PROVIDE UNIT WITH ANGLED FILTER SECITON.
8. PRIOR TO BID, CONTRACTOR AND EQUIPMENT MANUFACTURER SHALL VISIT THE SITE TO INVESTIGATE EXISTING FIELD CONDITIONS, UNIT SIZES AND MECHANICAL ROOM ACCESSIBILITY TO ENSURE PROPER PROVISIONS ARE PROVIDED TO ALLOW FOR INSTALLATION.

SPLIT DEHUMIDIFICATION UNIT

MARK	FAN							COOLING							HEATING					PIPE SIZE TO COIL (IN.)		REMARKS
	SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT. STATIC PRESSURE (IN. W.C)	HORSE POWER	ELECTRICAL CHARAC. V	PH	F	AIR TEMPERATURE (°F) ENTERING DRY BULB	ENTERING WET BULB	LEAVING DRY BULB	LEAVING WET BULB	WATER ENTERING TEMP (°F)	GPM	PRESSURE DROP (FT.)	ENTERING AIR TEMPERATURE (°F)	MIN. HEATING CAPACITY (BTU/HR)	WATER ENTERING TEMP. (°F)	GPM	PRESSURE DROP (FT.)	CHILLED WATER	HOT WATER	
OAU-6	500	500	-	-	-	-	-	98.0	80.0	53.0	52.5	45	8.2	15.0	27.0	15,120	160.0	1.5	10.0	1 1/4"	3/4"	1-8

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 450 FPM ON COOLING COIL.
2. PROVIDE THREE-WAY COOLING CONTROL VALVES..
3. PROVIDE THREE-WAY HEATING CONTROL VALVES.
4. PROVIDE HOT WATER COIL IN PRE-HEAT POSITION.
5. PROVIDE UNIT WITH ANGLED FILTER SECITON.
6. SPLIT DEHUMIDIFICATION UNIT TO BE MOUNTED ON TOP OF THE ASSOCIATED AHU AND BE CONFIGURED TO SUPPLY AIR IN THE RETURN AIR SECTION OF THE ASSOCIATED AHU.
7. UNIT SHALL BE STACKED OAU FURNISHED WITH ASSOCIATED UNIT. UNIT INCLUDES ANGLED FILTER SECTION MIXING BOX, PREHEAT COIL, ACCESS SPACE, COOLING COIL AND DISCHARGE PLENUM.
8. PRIOR TO BID, CONTRACTOR AND EQUIPMENT MANUFACTURER SHALL VISIT THE SITE TO INVESTIGATE EXISTING FIELD CONDITIONS, UNIT SIZES AND MECHANICAL ROOM ACCESSIBILITY TO ENSURE PROPER PROVISIONS ARE PROVIDED TO ALLOW FOR INSTALLATION.

PACKAGED ROOFTOP UNIT - ELECTRIC HEAT

MARK	FAN				CURRENT CHARAC. V	P	F	COOLING AIR TEMPERATURE (°F) AMBIENT TEMP	ENTERING DRY BULB	ENTERING WET BULB	LAT DB	LAT WB	COOLING MIN. TOTAL CAPACITY (BTUH)	MIN. SENS. CAPACITY (BTUH)	MINIMUM EER/ SEER	NUMBER OF STAGES	HEATING ENTERING AIR TEMP.(°F)	MINIMUM CAPACITY (BTUH)	KW	NUMBER OF STAGES	MCA	MOCP	REMARKS
	SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT.STATIC PRESSURE (IN. W.C.)	HORSE POWER																		
RTU-5	2,400	360	1.00	3.0	480	3	60	98.0	78.4	65.6	53 °F	52.5 °F	93,996	65,966	-	MOD	65.5	76,298	22.4	SCR	52	60	1-12

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. PROVIDE UNIT WITH DISCONNECT SWITCH AND MOTORIZED OUTSIDE AIR DAMPER.
2. PROVIDE UNIT WITH FACTORY MOUNTED GFCI RECEPTACLE FOR UNIT WITH LOW AMBIENT CONTROL. ELECTRICIAN TO WIRE TO SEPARATE CIRCUIT.
3. PROVIDE WITH LOW AMBIENT CONTROL.
4. PROVIDE WITH TEMPERATURE AND HUMIDITY SENSOR.
5. 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.
6. PROVIDE UNIT DIFFERENTIAL ENTHALPY CONTROLLED ECONOMIZER AND POWERED EXHAUST. ECONOMIZER DAMPER SHALL BE ULTRA LOW LEAK EQUIVALENT TO RUSKIN CD60 OR BETTER.
7. PROVIDE SINGLE-ZONE VAV UNIT WITH VFD ON SUPPLY FAN CONTROLLED BY TEMPERATURE SENSOR IN THE SPACE.
8. PROVIDE WITH EVAPORATOR COIL LEAVING AIR TEMPERATURE SENSOR.
9. PROVIDE UNIT WITH VARIABLE CAPACITY COMPRESSOR AS SPECIFIED..
10. PROVIDE WITH ROOF CURB AS SPECIFIED.
11. PROVIDE UNIT WITH HOT GAS REHEAT.
12. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR ALL ELECTRICAL COSTS IF ALTERNATE UNIT IS PROVIDED WITH GREATER ELECTRICAL CHARACTERISTICS THAN SHOWN.

DUCTLESS MINI-SPLIT - OUTDOOR UNIT - COOLING ONLY

MARK	MIN. TOTAL CAPACITY (BTUH)	OUTDOOR AIR TEMP (°F)	MINIMUM EER/ SEER	CURRENT CHARAC. V	PH	F	RELATED UNIT MARK	MCA	MOCP	REMARKS
CU-1	23,403	98	12.2/21.3	208	1	60	DMS-1	19	25	1-3
CU-2	23,403	98	12.2/21.3	208	1	60	DMS-2	19	25	1-3
CU-3	23,403	98	12.2/21.3	208	1	60	DMS-3	19	25	1-3

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 WITH LOW AMBIENT CONTROL DOWN TO 20°F.
2. PROVIDE WITH DISCONNECT SWITCH.
3. REFRIGERANT LINES TO BE SIZED PER MANUFACTURER'S REQUIREMENTS.

DUCTLESS MINI-SPLIT - INDOOR UNIT

MARK	FAN		CURRENT CHARAC. V	P	F	AIR TEMPERATURE (°F) ENTERING DRY BULB	ENTERING WET BULB	COOLING MIN. TOTAL CAPACITY (BTUH)	MIN. SENS. CAPACITY (BTUH)	MINIMUM EER/ SEER	REMARKS	LOCATION
	SUPPLY AIR CFM	OUTSIDE AIR CFM										
DMS-1	775	0	208	1	60	78.0	65.0	23,403	19,251	12.2/21.3	1-5	IDF B, AREA C, LEVEL 1
DMS-2	775	0	208	1	60	78.0	65.0	23,403	19,251	12.2/21.3	1-5	IDF D, AREA E, LEVEL 1
DMS-3	775	0	208	1	60	78.0	65.0	23,403	19,251	12.2/21.3	1-7	MDF, AREA E, LEVEL 2

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. COOLING ONLY UNIT.
6. PROVIDE WITH LITTLE GIANT CONDENSATE PUMP MODEL 554652 VCMA-20ULS-C-PRO, 1/30 HP, 115V/1PH/60HZ. INSTALL PUMP OUTSIDE THE UNIT.
7. PRIOR TO BID, CONTRACTOR AND EQUIPMENT MANUFACTURER SHALL VISIT SITE TO INVESTIGATE EXISTING FIELD CONDITIONS, UNIT SIZES, AND MECHANICAL ROOM ACCESSIBILITY TO ENSURE PROPER PROVISIONS ARE PROVIDED TO ALLOW FOR INSTALLATIONS.

FAN SCHEDULE

TAG	LOCATION	CFM	EXT. STATIC PRESSURE (IN.W.C.)	MAX RPM	HORSE POWER	CURRENT CHAR V	P	F	LOCALLY SWITCHED	INTERLOCK WITH	FAN TYPE	DRIVE TYPE	MANUFACTURER	MODEL NUMBER	REMARKS
EF-1S	ATHLETIC STORAGE	900	0.25	1187	0.13	120	1	60	-	HUMIDITY SENSOR	INLINE	DIRECT	COOK	SQN	1,2,3,4,5,6
EF-C4	LAUNDRY	50	0.25	750	0.03	120	1	60	-	SWITCH	CEILING	DIRECT	COOK	GC	1,3,4,5,6
SF-17	MECH	500	1.75	2194	0.5	120	1	60	-	AHU-17	INLINE	DIRECT	COOK	SQND	1,2,3,4

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. MINIMUM RECOMMENDED CLEARANCE AROUND UNIT IS 12 INCHES ON NON-SERVICE SIDES AND 30 INCHES ON SERVICE SIDES. 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 WITH DISCONNECT.
2. PROVIDE WITH LOW LEAK MOTORIZED DAMPER THAT SHALL CLOSE WHEN UNIT IS NOT OPERATING. PROVIDED BY BMCS INSTALLED IN DUCTWORK BY MECHANICAL CONTRACTOR.
3. SUSPEND UNIT WITH FOUR THREADED HANGER RODS ATTACHED TO TWO UNISTRUTT RUNNERS SECURES TO STRUCTURE. PROVIDE WITH SPRING ISOLATION. REFER TO MANUFACTURER FOR ADDITIONAL INSTALLATION REQUIREMENTS.
4. PROVIDE WITH EC MOTOR WITH SOLID SPEED CONTROLLER.
5. PROVIDE WITH VIBRATION ISOLATION, INULATED HOUSING, AND WHITE ALUMINUM GRILLE.
6. PROVIDE EXHAUST FAN WITH BACKDRAFT DAMPER.

GRILLE

MARK	SERVICE	TYPE	DAMPER	CONSTRUCTION MATERIAL	FINISH COLOR	MANUFACTURER	MODEL NUMBER	DESCRIPTION
A	SUPPLY AIR	DIFFUSER	-	ALUMINUM	WHITE	TITUS	TMS	EXPOSED T-BAR CEILING FRAME STYLE WITH 24"X24"FACE. CONE DIFFUSER.
B	RETURN AIR	DIFFUSER	-	ALUMINUM	WHITE	TITUS	350FL	EXPOSED T-BAR CEILING FRAME STYLE WITH 24"X24" FACE. LOUVERED FACE, 45 DEGREE DEFLECTION, 3/4" BLADE SPACING
C	SUPPLY AIR	GRILLE	-	ALUMINUM	WHITE	TITUS	300FL	DOUBLE DEFLECTION SIDEWALL GRILLE WITH HORIZONTAL FRONT BARS. SURFACE MOUNTED.
D	RETURN AIR	GRILLE	-	ALUMINUM	WHITE	TITUS	350FL	DOUBLE DEFLECTION SIDEWALL GRILLE WITH HORIZONTAL FRONT BARS. SURFACE MOUNTED.
E	GRILLE	EXHAUST AIR	-	ALUMINUM	WHITE	TITUS	350FL	DOUBLE DEFLECTION SIDEWALL GRILLE WITH HORIZONTAL FRONT BARS. SURFACE MOUNTED.
ER	RETURN AIR	DIFFUSER/GRILLE	-	-	-	-	-	EXISTING RETURN
ES	SUPPLY AIR	DIFFUSER/GRILLE	-	-	-	-	-	EXISTING SUPPLY

GENERAL NOTES:
1. DAMPERS NOTED AS U.L. SHALL BE 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

RELIEF VENT & O.A. INTAKE

MARK	CFM	MAX. S.P. (IN.WC.)	MIN. THROAT AREA	MODEL	SERVES	REMARKS
OAI-02	3000	0.07 in-wg	8 SF	GI	WOOD SHOP	1-4

REMARKS:
1. PROVIDE WITH ROOF CURB .
2. PROVIDE WITH BIRD SCREEN.
3. PROVIDE WITH MOTORIZED DAMPLERS.
4. HOOD SHALL BE RATED FOR 150 MPH WIND LOADS.

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Salas O'Brien Project Number: 2024-00901-00

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CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

LABAY MIDDLE SCHOOL

Issue For Proposal

BRADLEY KALMANS — 80219 — LICENSED — STATE OF TEXAS — PROFESSIONAL ENGINEER
03-14-25

ISSUED: February 24, 2025

REVISIONS

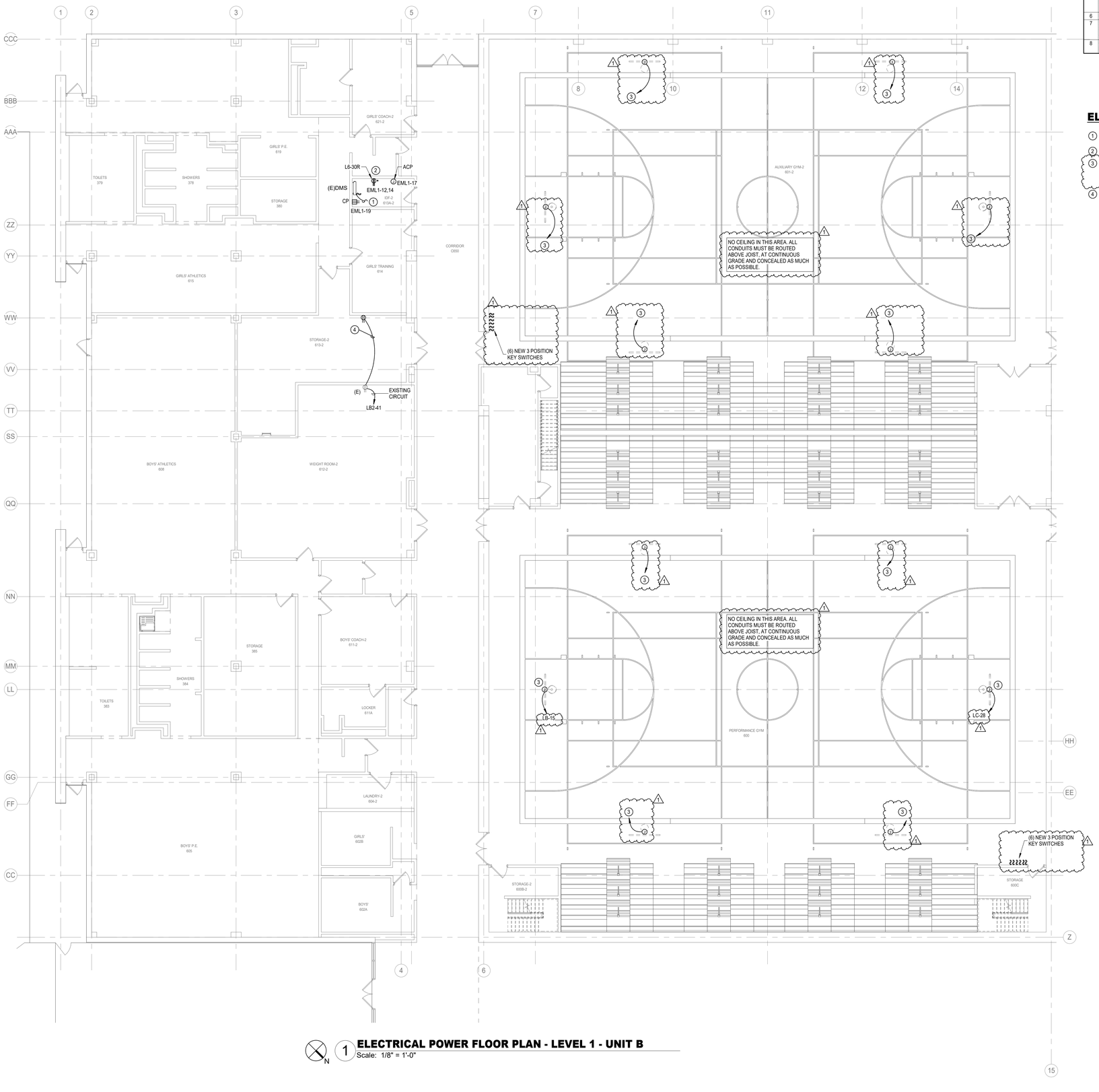
Revision No.	Revision Date
1 ADDENDUM 02	03.14.2025

Director | Drawn By
Approver | Author
Designer | Quality Control
Designer | Checker
Proj. Coord. Checker

PROJECT NO.
24-010.00

SHEET TITLE
LABAY - MECHANICAL SCHEDULES

SHEET NO.
M25.01



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.

ELECTRICAL KEYED NOTES:

1. PROVIDE MANUFACTURER RECOMMENDED WIRING FROM OUTDOOR UNIT TO INDOOR UNIT IN 1"C.
2. PROVIDE NEW L6-30R RECEPTACLE ON TOP OF THE RACK AS PER DETAIL.
3. RECONNECT EXISTING POWER CIRCUIT TO NEW MOTORIZED GOAL AND COORDIANTE POWER WITH GOAL CONTRACTOR. REPLACE EXISTING SWITCH WITH NEW KEY RAISE/LOWER SWITCH ON CMU WALL AND COORDINATE LOCATION OF SWITCH WITH ARCHITECT AND OWNER IN FIELD. VERIFY MOTOR VOLTAGE AND SIZE PRIOR TO INSTALLING WIRING.
4. CONNECT NEW OUTLET TO EXISTING OUTLET CIRCUIT AS INDICATED VIA 2#12, 1#12G IN 3/4"C.

1 ELECTRICAL POWER FLOOR PLAN - LEVEL 1 - UNIT B

Scale: 1/8" = 1'-0"

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CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

LABAY MIDDLE SCHOOL

KEY PLAN

Issue For Proposal

BRADLEY KALMANS 80219 LICENSED PROFESSIONAL ENGINEER 03-14-25

ISSUED: February 24, 2025

REVISIONS

Revision No.		Revision Date
1	ADDENDUM 02	03.14.2025

Director MS	Drawn By SA
Designer SA	Quality Control Checker
Proj. Coord. Checker	

PROJECT NO.

24-010.00

SHEET TITLE

LABAY - ELECTRICAL POWER FLOOR PLAN - LEVEL 1 - UNIT B

SHEET NO.

E23.02

Salas O'Brien
Houston
10930 W. Sam Houston Pkwy North, Suite 900
Houston, TX 77064
Salas O'Brien Registration: F-4111
Salas O'Brien Project Number: 2024-00901-00

Branch Panel: HA1

Location: MECHANICAL 257 | **Volts:** 277/480 Wye | **A.I.C. Rating:** 18,000
Supply From: | **Phases:** 3 | **Enclosure:** Type 1
Mounting: Surface | **Wires:** 4 | **Mains:** 100A MLO

THIS IS AN EXISTING PANEL — **Phase in kVA**

Note	CKT	Circuit Description	Wire	Breaker	A	B	C	Breaker	Wire	Circuit Description	CKT	Note
	1				0.0 / 0.0						2	
--	3	SPARE	--	20	3	0.0 / 0.0		3	20	-- SPARE	4	--
	5						0.0 / 0.0				6	
--	7	SPACE	--	20	1 0.0 / 0.0						8	
--	9	SPACE	--	--	1	0.0 / 0.0		3	20	-- SPARE	10	--
--	11	SPACE	--	--	1		0.0 / 0.0				12	
--	13	SPACE	--	20	1 0.0 / 0.0						14	
--	15	SPARE	--	20	1	0.0 / 0.0		3	20	-- SPARE	16	--
--	17	SPACE	--	20	1		0.0 / 0.0				18	
--	19	SPACE	--	--	1 0.0 / 0.0			1	--	-- SPACE	20	--
--	21	SPACE	--	--	1	0.0 / 0.0		1	--	-- SPACE	22	--
--	23	SPACE	--	--	1		0.0 / 0.0	1	--	-- SPACE	24	--
--	25	SPACE	--	20	1 0.0 / 0.0			1	--	-- SPACE	26	--
--	27	SPACE	--	20	1	0.0 / 0.3		1	20	#12 ORCHESTRA ADDITION LTG.	28	*
--	29	SPACE	--	--	1		0.0 / 0.5				30	
	31				0.8 / 1.0			3	30	#10 PANEL LAS	32	*
*	33	AHU-17 MECH. 535	#10	20	3	0.8 / 0.2					34	
	35						0.8 / 0.0	1	--	-- SPACE	36	--
--	37	SPARE	--	20	1 0.0 / 0.0			1	20	-- SPARE	38	--
--	39	SPARE	--	20	1	0.0 / 0.0		1	20	-- SPARE	40	--
--	41	SPARE	--	20	1		0.0 / 0.0	1	20	-- SPARE	42	--
			Total Load:		1.8 kVA	1.3 kVA	1.4 kVA					
			Total Amps:		7 A	5 A	5 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	2.5 kVA	100.00%	2.5 kVA		
Lighting	0.7 kVA	125.00%	0.8 kVA	**Total Conn. Load:**	4.5 kVA
Miscellaneous	1.0 kVA	100.00%	1.0 kVA	**Total Est. Demand:**	4.7 kVA
Receptacles	0.4 kVA	100.00%	0.4 kVA	**Total Conn. Current:**	5 A
				Total Est. Demand Current:	6 A

Notes:
*** INDICATES NEW CIRCUIT BREAKER TO BE ADDED

Abbreviations:
G - PROVIDE GFCI CIRCUIT BREAKER
LF - PROVIDE PERMANENT LOCK-OFF DEVICE
LO - PROVIDE PERMANENT LOCK-ON DEVICE

Branch Panel: LA1

Location: MECHANICAL 257 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 10,000
Supply From: | **Phases:** 3 | **Enclosure:** Type 1
Mounting: Surface | **Wires:** 4 | **Mains:** 100A MLO

THIS IS AN EXISTING PANEL — **Phase in kVA**

Note	CKT	Circuit Description	Wire	Breaker	A	B	C	Breaker	Wire	Circuit Description	CKT	Note
	1				0.0 / 0.0			1	20	-- SPARE	2	--
--	3	SPARE	--	30	3	0.0 / 0.0		1	20	-- SPARE	4	--
	5						0.0 / 0.0	1	20	-- SPARE	6	--
--	7	SPARE	--	20	1 0.0 / 0.0			1	20	-- SPARE	8	--
--	9	SPARE	--	20	1	0.0 / 0.0		1	20	-- SPARE	10	--
--	11	SPARE	--	20	1		0.0 / 0.0	1	20	-- SPARE	12	--
--	13	SPARE	--	20	1 0.0 / 0.0			1	20	-- SPARE	14	--
--	15	SPARE	--	20	1	0.0 / 0.0		1	20	-- SPARE	16	--
--	17	SPARE	--	20	1		0.0 / 0.0	1	20	-- SPARE	18	--
--	19	SPARE	--	20	1 0.0 / 0.0			1	20	-- SPARE	20	--
--	21	SPARE	--	20	1	0.0 / 0.0		1	20	-- SPARE	22	--
--	23	SPARE	--	20	1		0.0 / 0.0	1	20	-- SPARE	24	--
--	25	SPARE	--	20	1 0.0 / 0.0			1	20	-- SPARE	26	--
--	27	SPARE	--	20	1	0.0 / 0.0		1	20	-- SPARE	28	--
--	29	SPARE	--	20	1		0.0 / 0.9	1	20	#12 ORCHESTRA ADDITION RECEPTACLES	30	*
--	31	SPACE	--	--	1 0.0 / 0.0						32	
--	33	SPACE	--	--	1	0.0 / 0.0		3	100	-- SPARE	34	--
--	35	SPACE	--	--	1		0.0 / 0.0				36	
--	37	Receptacles OFFICE/LIBRARY 532	#12	20	1 0.5 / 0.0						38	
*	39	Receptacles ENSEMBLE/STORAGE 531	#12	20	1	0.7 / 0.0		3	60	-- SPARE	40	--
*	41	SF-17 MECH. 535	#12	20	1		0.2 / 0.0				42	
			Total Load:		0.5 kVA	0.7 kVA	1.1 kVA					
			Total Amps:		5 A	6 A	9 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	0.2 kVA	100.00%	0.2 kVA		
Receptacles	2.2 kVA	100.00%	2.2 kVA	**Total Conn. Load:**	2.4 kVA
				Total Est. Demand:	2.4 kVA
				Total Conn. Current:	7 A
				Total Est. Demand Current:	7 A

Notes:
*** INDICATES NEW CIRCUIT BREAKER TO BE ADDED

Abbreviations:
G - PROVIDE GFCI CIRCUIT BREAKER
LF - PROVIDE PERMANENT LOCK-OFF DEVICE
LO - PROVIDE PERMANENT LOCK-ON DEVICE

Branch Panel: EMH1

Location: MECHANICAL 602.1 | **Volts:** 277/480 Wye | **A.I.C. Rating:** 65,000
Supply From: | **Phases:** 3 | **Enclosure:** Type 1
Mounting: Surface | **Wires:** 4 | **Mains:** 100A MLO

THIS IS AN EXISTING PANEL — **Phase in kVA**

Note	CKT	Circuit Description	Wire	Breaker	A	B	C	Breaker	Wire	Circuit Description	CKT	Note
--	1	SPARE	--	20	1 0.0 / 0.0			1	20	-- SPARE	2	--
--	3	SPARE	--	20	1	0.0 / 0.0		1	20	-- SPARE	4	--
--	5	SPARE	--	20	1		0.0 / 0.0	1	20	-- SPARE	6	--
	7				0.0 / 0.0			1	--	-- SPACE	8	--
--	9	SPARE	--	25	3	0.0 / 0.2		1	20	#12 EM. LTG. ORCHESTRA ADDITION	10	*...
	11						0.0 / 0.2	1	20	#12 NEW COMPUTER LAB ADDITION LTG.	12	*
--	13	SPACE	--	--	1 0.0 / 0.0			1	--	-- SPACE	14	--
--	15	SPACE	--	--	1	0.0 / 0.0		1	--	-- SPACE	16	--
--	17	SPACE	--	--	1		0.0 / 0.0	1	--	-- SPACE	18	--
--	19	SPACE	--	--	1 0.0 / 0.0			1	--	-- SPACE	20	--
--	21	SPACE	--	20	1	0.0 / 0.0		1	--	-- SPACE	22	--
--	23	SPACE	--	20	1		0.0 / 0.0	1	--	-- SPACE	24	--
--	25	SPACE	--	--	1 0.0 / 0.0			1	--	-- SPACE	26	--
--	27	SPACE	--	--	1	0.0 / 0.0		1	--	-- SPACE	28	--
--	29	SPACE	--	--	1		0.0 / 0.0	1	--	-- SPACE	30	--
			Total Load:		0.0 kVA	0.2 kVA	0.2 kVA					
			Total Amps:		0 A	1 A	1 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	0.4 kVA	125.00%	0.5 kVA		
				Total Conn. Load:	0.4 kVA
				Total Est. Demand:	0.5 kVA
				Total Conn. Current:	0 A
				Total Est. Demand Current:	1 A

Notes:
*** INDICATES NEW CIRCUIT BREAKER TO BE ADDED

Abbreviations:
G - PROVIDE GFCI CIRCUIT BREAKER
LF - PROVIDE PERMANENT LOCK-OFF DEVICE
LO - PROVIDE PERMANENT LOCK-ON DEVICE

Branch Panel: EML1

Location: MECHANICAL 602.1 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 10,000
Supply From: | **Phases:** 3 | **Enclosure:** Type 1
Mounting: Surface | **Wires:** 4 | **Mains:** 60A MCB

THIS IS AN EXISTING PANEL — **Phase in kVA**

Note	CKT	Circuit Description	Wire	Breaker	A	B	C	Breaker	Wire	Circuit Description	CKT	Note
--	1	SPARE	--	20	1 0.0 / 0.0			1	20	-- SPARE	2	--
--	3	SPARE	--	20	1	0.0 / 0.0		1	20	-- SPARE	4	--
--	5	SPARE	--	20	1		0.0 / 0.0	1	20	-- SPARE	6	--
--	7	SPARE	--	20	1 0.0 / 0.0			1	20	-- SPARE	8	--
--	9	SPARE	--	20	1	0.0 / 0.0		1	20	-- SPARE	10	--
--	11	SPACE	--	--	1		0.0 / 1.5	2	30	#10 IDF UPS IDF-2	12	*
--	13	SPARE	--	20	1 0.0 / 1.5						14	
*	15	ACP STORAGE-2 312A-2	#12	20	1	0.5 / 1.5		2	30	#10 IDF UPS F/A-2 431A-2	16	*
*	17	ACP IDF-2 613A-2	#12	20	1		1.0 / 1.5				18	
*	19	CONDENSATE PUMPS IDF-2	#10	20	1 0.4 / 0.5			1	20	#12 ACP MECHANICAL-2 105-2	20	*
--	21	SPARE	--	20	2	0.0 / 0.2		1	20	#12 CONDENSATE PUMP MECHANICAL-2 105-2	22	*
	23						0.0 / 0.0				24	
			Total Load:		2.4 kVA	2.2 kVA	4.0 kVA					
			Total Amps:		20 A	18 A	34 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Miscellaneous	8.0 kVA	100.00%	8.0 kVA		
Receptacles	0.5 kVA	100.00%	0.5 kVA	**Total Conn. Load:**	8.5 kVA
				Total Est. Demand:	8.5 kVA
				Total Conn. Current:	24 A
				Total Est. Demand Current:	24 A

Notes:
*** INDICATES NEW CIRCUIT BREAKER TO BE ADDED

Abbreviations:
G - PROVIDE GFCI CIRCUIT BREAKER
LF - PROVIDE PERMANENT LOCK-OFF DEVICE
LO - PROVIDE PERMANENT LOCK-ON DEVICE

Branch Panel: CLM

Location: ELEC. 315 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 10,000
Supply From: | **Phases:** 3 | **Enclosure:** Type 1
Mounting: Surface | **Wires:** 4 | **Mains:** 225A MCB

THIS IS AN EXISTING PANEL — **Phase in kVA**

Note	CKT	Circuit Description	Wire	Breaker	A	B	C	Breaker	Wire	Circuit Description	CKT	Note
--	1	EXISTING LOAD	--	20	1 0.0 / 0.0			1	20	-- EXISTING LOAD	2	--
--	3	EXISTING LOAD	--	20	1	0.0 / 0.0		1	20	-- EXISTING LOAD	4	--
--	5	EXISTING LOAD	--	20	1		0.0 / 0.0	1	20	-- EXISTING LOAD	6	--
--	7	EXISTING LOAD	--	20	1 0.0 / 0.0			1	20	-- EXISTING LOAD	8	--
--	9	EXISTING LOAD	--	20	1	0.0 / 0.0		1	20	-- EXISTING LOAD	10	--
--	11	EXISTING LOAD	--	20	1		0.0 / 0.0	1	20	-- EXISTING LOAD	12	--
--	13	EXISTING LOAD	--	20	1 0.0 / 0.0			1	20	-- EXISTING LOAD	14	--
--	15	EXISTING LOAD	--	20	1	0.0 / 0.0		1	20	-- EXISTING LOAD	16	--
--	17	EXISTING LOAD	--	20	1		0.0 / 0.0	1	20	-- EXISTING LOAD	18	--
--	19	EXISTING LOAD	--	20	1 0.0 / 0.0			1	20	-- EXISTING LOAD	20	--
--	21	EXISTING LOAD	--	20	1	0.0 / 0.0		1	20	-- EXISTING LOAD	22	--
--	23	EXISTING LOAD	--	20	1		0.0 / 0.0	1	20	-- EXISTING LOAD	24	--
--	25	EXISTING LOAD	--	20	1 0.0 / 0.0			1	20	-- EXISTING LOAD	26	--
--	27	EXISTING LOAD	--	20	1	0.0 / 0.0		1	20	-- EXISTING LOAD	28	--
--	29	EXISTING LOAD	--	20	1		0.0 / 0.0	1	20	-- EXISTING LOAD	30	--
--	31	EXISTING LOAD	--	20	1 0.0 / 0.0			1	20	-- EXISTING LOAD	32	--
--	33	EXISTING LOAD	--	--	1	0.0 / 0.0		1	20	-- EXISTING LOAD	34	--
--	35	EXISTING LOAD	--	20	1		0.0 / 0.0	1	20	-- EXISTING LOAD	36	--
--	37	EXISTING LOAD	--	20	1 0.0 / 0.0			1	20	-- EXISTING LOAD	38	--
--	39	EXISTING LOAD	--	20	1	0.0 / 0.0		1	20	-- EXISTING LOAD	40	--
--	41	EXISTING LOAD	--	20	1		0.0 / 0.0	1	20	-- EXISTING LOAD	42	--
--	43	EXISTING LOAD	--	20	1 0.0 / 0.0			1	20	-- EXISTING LOAD	44	--
--	45	EXISTING LOAD	--	20	1	0.0 / 0.0		1	20	-- EXISTING LOAD	46	--
--	47	EXISTING LOAD	--	20	1		0.0 / 0.0	1	20	-- EXISTING LOAD	48	--
--	49	EXISTING LOAD	--	20	1 0.0 / 0.0			1	20	-- EXISTING LOAD	50	--
--	51	EXISTING LOAD	--	20	1	0.0 / 0.0		1	20	-- EXISTING LOAD	52	--
--	53	EXISTING LOAD	--	20	1		0.0 / 0.0	1	20	-- EXISTING LOAD	54	--
--	55	EXISTING LOAD	--	20	1 0.0 / 0.0			1	20	-- EXISTING LOAD	56	--
--	57	EXISTING LOAD	--	20	1	0.0 / 0.0		1	20	-- EXISTING LOAD	58	--
--	59	EXISTING LOAD	--	20	1		0.0 / 0.0	1	20	-- EXISTING LOAD	60	--
--	61	EXISTING LOAD	--	20	1 0.0 / 0.0			1	20	-- EXISTING LOAD	62	--
--	63	EXISTING LOAD	--	20	1	0.0 / 0.0		1	20	-- EXISTING LOAD	64	--
--	65	EXISTING LOAD	--	20	1		0.0 / 0.0	1	20	-- EXISTING LOAD	66	--
--	67	EXISTING LOAD	--	20	1 0.0 / 0.0			1	20	-- EXISTING LOAD	68	--
--	69	EXISTING LOAD	--	20	1	0.0 / 0.0		1	20	-- EXISTING LOAD	70	--
--	71	EXISTING LOAD	--	20	1		0.0 / 0.0	1	20	-- EXISTING LOAD	72	--
--	73	EXISTING LOAD	--	20	1 0.0 / 0.0			1	20	-- EXISTING LOAD	74	--
*	75	SPEAKERS IN LAB, MANUF. CLASSROOMS	#12	20	1	1.0 / 0.0		1	20	-- EXISTING LOAD	76	--
*	77	EMERGENCY SIGNALING SYSTEM	#12	20	1		0.5 / 0.0	1	20	-- EXISTING LOAD	78	--
*	79	Receptacles COMPUTER LAB 316	#12	20	1 1.1 / 1.1			1	20	#12 Receptacles COMPUTER LAB 316	80	*
--	81	SPARE	--	100	2	0.0 / 1.1		1	20	#12 Receptacles COMPUTER LAB 316	82	*
	83						0.0 / 0.9	1	20	#12 Receptacles Room 311-2, 317A-1, 317-1	84	*
			Total Load:		2.2 kVA	2.1 kVA	1.4 kVA					
			Total Amps:		19 A	18 A	12 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Miscellaneous	1.5 kVA	100.00%	1.5 kVA		
Receptacles	4.1 kVA	100.00%	4.1 kVA	**Total Conn. Load:**	5.6 kVA
				Total Est. Demand:	5.6 kVA
				Total Conn. Current:	16 A
				Total Est. Demand Current:	16 A

Notes:
*** INDICATES NEW CIRCUIT BREAKER TO BE ADDED

Abbreviations:
G - PROVIDE GFCI CIRCUIT BREAKER
LF - PROVIDE PERMANENT LOCK-OFF DEVICE
LO - PROVIDE PERMANENT LOCK-ON DEVICE

Branch Panel: EMH2

Location: ELECTRICAL 300B | **Volts:** 277/480 Wye | **A.I.C. Rating:** 65,000
Supply From: | **Phases:** 3 | **Enclosure:** Type 1
Mounting: Surface | **Wires:** 4 | **Mains:** 100A MCB

THIS IS AN EXISTING PANEL — **Phase in kVA**

Note	CKT	Circuit Description	Wire	Breaker	A	B	C	Breaker	Wire	Circuit Description	CKT	Note
--	1	EXISTING LOAD	--	20	1 0.0 / 0.0			1	20	-- EXISTING LOAD	2	--
--	3	EXISTING LOAD	--	20	1	0.0 / 0.0		1	20	-- EXISTING LOAD	4	--
--	5	EXISTING LOAD	--	20	1		0.0 / 0.0	1	20	-- EXISTING LOAD	6	--
--	7	EXISTING LOAD	--	20	1 0.0 / 0.0			1	20	-- EXISTING LOAD	8	--
--	9	EXISTING LOAD	--	20	1	0.0 / 0.0		1	--	-- SPACE	10	--
--	11	EXISTING LOAD	--	20	1		0.0 / 0.0	1	--	-- SPACE	12	--
	13				0.0 / 0.0						14	
--	15	EXISTING LOAD	--	70	3	0.0 / 0.0		3	25	-- EXISTING XFMR EML2	16	--
	17						0.0 / 0.0				18	
--	19	SPACE	--	--	1 0.0 / 0.0						20	
--	21	EXISTING LOAD	--	20	1	0.0 / 0.0		3	40	-- EXISTING PANEL EMH1	22	--
--	23	EXISTING LOAD	--	20	1		0.0 / 0.0				24	
--	25	SPACE	--	--	1 0.0 / 8.6						26	
--	27	SPACE	--	--	1	0.0 / 8.6		3	50	1-L PANEL EL VIA TEL	28	*
--	29	SPACE	--	--	1		0.0 / 7.2				30	
			Total Load:		8.6 kVA	8.6 kVA	7.2 kVA					
			Total Amps:		32 A	32 A	26 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Miscellaneous	24.2 kVA	100.00%	24.2 kVA		
Receptacles	0.2 kVA	100.00%	0.2 kVA	**Total Conn. Load:**	24.4 kVA
				Total Est. Demand:	24.4 kVA
				Total Conn. Current:	29 A
				Total Est. Demand Current:	29 A

Notes:
*** INDICATES NEW CIRCUIT BREAKER TO BE ADDED

Abbreviations:
G - PROVIDE GFCI CIRCUIT BREAKER
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LO - PROVIDE PERMANENT LOCK-ON DEVICE

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CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

LABAY MIDDLE SCHOOL

Issue For Proposal

BRADLEY KALMANS — 80219 — LICENSED PROFESSIONAL ENGINEER
03-14-25

ISSUED: February 24, 2025

REVISIONS

Revision No.	Revision Date
1 ADDENDUM 02	03.14.2025

Director	Drawn By
Approver	SA
Designer	Quality Control
SA	Checker
Proj. Coord.	
Checker	

PROJECT NO.
24-010.00

SHEET TITLE
LABAY - PANEL SCHEDULES

SHEET NO.
E24.01

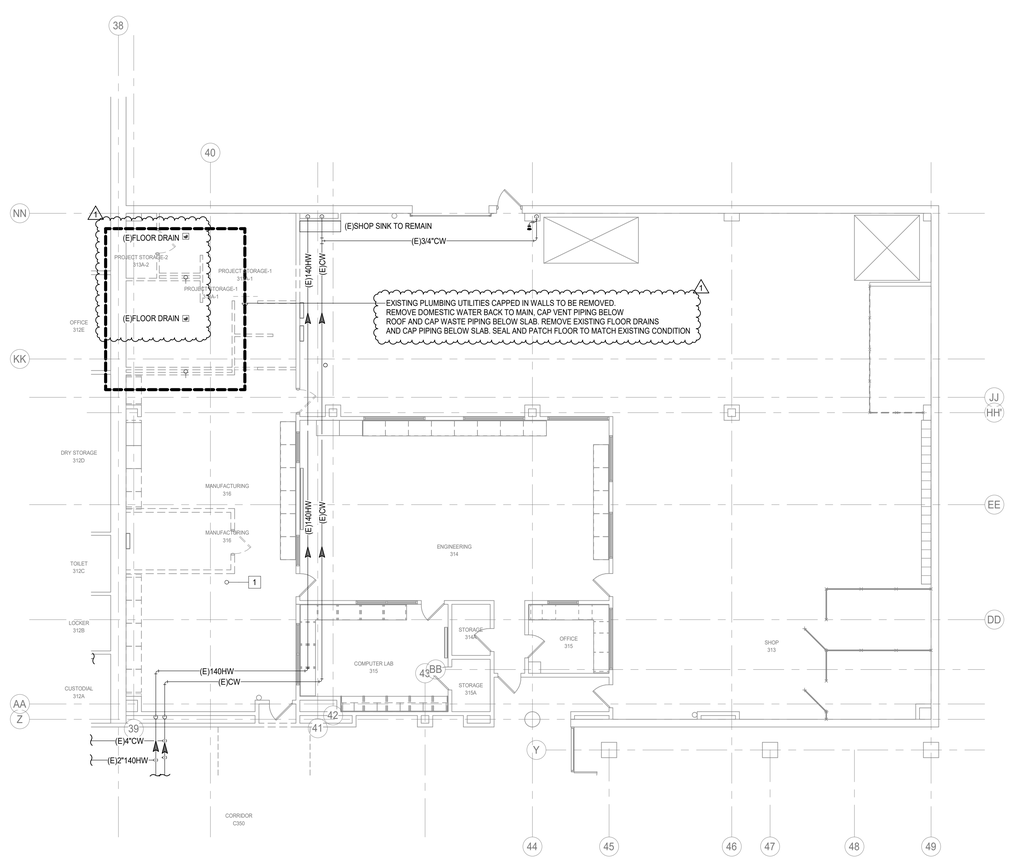
Salas O'Brien
Houston
10930 W. Sam Houston Pkwy North, Suite 900
Houston, TX 77064
Salas O'Brien Registration: F-4111
Salas O'Brien Project Number: 2024-00901-00

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 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 COMPRESSED AIR DROP TO ABOVE CEILING AND CAP.



N

1 **PLUMBING DEMOLITION FLOOR PLAN - LEVEL 1 - UNIT D.2**
Scale: 1/8" = 1'-0"

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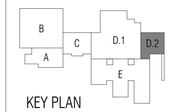
CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

TRUITT MIDDLE SCHOOL



KEY PLAN

Issue For Proposal

BRADLEY KALMANS
80219
LICENSED
PROFESSIONAL ENGINEER
03-14-25

ISSUED: February 24, 2025

REVISIONS

Revision No.		Revision Date
1	ADDENDUM 02	03-14-2025

Director	Drawn By
Approver	Author
Designer	Quality Control
Designer	Checker
Proj. Coord.	
Checker	

PROJECT NO.

24-010.00

SHEET TITLE

TRUITT - PLUMBING DEMOLITION FLOOR PLAN - LEVEL 1 - UNIT D.2

SHEET NO.

P30.02

Salas O'Brien

Houston
10930 W. Sam Houston Pkwy North, Suite 900
Houston, TX 77064
Salas O'Brien Registration: F-4111

Salas O'Brien Project Number: 2024-00901-00

FIRE ALARM

A	FIRE ALARM SYSTEM IS A PERFORMANCE BASED PER SPECIFICATIONS 28 46 00. 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	PROJECT SCOPE INCLUDES EXPANDING THE EXISTING FIRE ALARM SYSTEM IN ADDITION AND RENOVATION AREAS. FIRE ALARM SYSTEM SHALL BE FULLY OPERATIONAL THROUGHOUT ALL PHASES OF CONSTRUCTION.
D	EXISTING PULL STATIONS EXCLUDING PULL STATION AT FACP AND FAA ARE TO BE REMOVED AND RETURNED TO OWNER. CONTRACTOR TO PROVIDE A BLANK FACEPLATE OVER BACK BOX AND REMOVE ANY WALL ANCHORS ASSOCIATED WITH PLASTIC COVERS.

TECHNOLOGY PLAN GENERAL NOTES

A	COORDINATE ALL FINAL MOUNTING HEIGHTS, FOR WALL MOUNTED DEVICES, PRIOR TO ROUGH-IN. COORDINATE WITH ARCHITECT, OWNER AND ENGINEER.
B	COORDINATE ALL CEILING DEVICE LOCATIONS WITH ARCHITECTURAL DRAWINGS AND INTERIOR DESIGN CONSULTANT(IF APPLICABLE) PRIOR TO ROUGH-IN.
C	REFERENCE TECHNOLOGY SITE PLAN, COMPOSITE PLANS, NOTES & LEGENDS AND DETAILS FOR ADDITIONAL INFORMATION AND DEVICE/OUTLET LOCATIONS.
D	CONTRACTOR TO COORDINATE ALL DROP LOCATIONS WITH FURNITURE. COORDINATE WITH ARCHITECT AND OWNER FOR MORE INFORMATION.
E	ALL EXISTING LOCKDOWN BUTTONS THAT ARE BEING REUSED SHALL HAVE EXISTING WIRING DEMOLISHED AND REPLACED BY CONTRACTOR WITH HOMERUNS TO THE HEAD END.
F	NEW DATA CABLING IN EXISTING ROOMS SHALL REUSE EXISTING DATA CABLING RACEWAY AND BACKBOXES UNLESS NOTED OTHERWISE. PROVIDE AND INSTALL NEW FACEPLATES.
G	DATA CABLING TO MECHANICAL ROOMS SHALL BE REPLACED ONE TO ONE. CONTRACTOR TO REUSE EXISTING RACEWAY AND BACKBOXES. PROVIDE AND INSTALL NEW FACEPLATES.
H	ALL EXISTING CLASSROOM CALL BUTTONS SHALL BE DISCONNECTED FROM EXISTING SPEAKERS AND RECONNECTED TO NEW IP SPEAKERS. CONTRACTOR TO FIELD VERIFY EXISTING CLASSROOM CB LOCATIONS.
I	GC TO COORDINATE WITH EC AND STRUCTURED CABLING CONTRACTOR ON REQUIRED PATHWAYS AND PENETRATIONS FOR NEW DATA CABLING INSTALLATION.

N

1 **TECHNOLOGY FLOOR PLAN - LEVEL 1 - UNIT C**
Scale: 1/8" = 1'-0"

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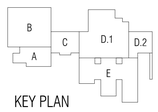
CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

TRUITT MIDDLE SCHOOL



KEY PLAN

Issue For Proposal

ISSUED: February 24, 2025

REVISIONS

Revision No.		Revision Date
1	ADDENDUM 02	03-14-2025

Director MS	Drawn By NY
Designer NY	Quality Control AY
Proj. Coord. AY	

PROJECT NO.

24-010.00

SHEET TITLE

TRUITT - TECHNOLOGY FLOOR PLAN - LEVEL 1 - UNIT C

SHEET NO.

T32.03

Salas O'Brien

Houston
10930 W. Sam Houston Pkwy North, Suite 900
Houston, TX 77064
Salas O'Brien Registration: F-4111

Salas O'Brien Project Number: 2024-00901-00

FIRE ALARM

A	FIRE ALARM SYSTEM IS A PERFORMANCE BASED PER SPECIFICATIONS 28 46 00. 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	PROJECT SCOPE INCLUDES EXPANDING THE EXISTING FIRE ALARM SYSTEM IN ADDITION AND RENOVATION AREAS. FIRE ALARM SYSTEM SHALL BE FULLY OPERATIONAL THROUGHOUT ALL PHASES OF CONSTRUCTION.
D	EXISTING PULL STATIONS EXCLUDING PULL STATION AT FACP AND FAA ARE TO BE REMOVED AND RETURNED TO OWNER. CONTRACTOR TO PROVIDE A BLANK FACEPLATE OVER BACK BOX AND REMOVE ANY WALL ANCHORS ASSOCIATED WITH PLASTIC COVERS.

TECHNOLOGY PLAN GENERAL NOTES

A	COORDINATE ALL FINAL MOUNTING HEIGHTS, FOR WALL MOUNTED DEVICES, PRIOR TO ROUGH-IN. COORDINATE WITH ARCHITECT, OWNER AND ENGINEER.
B	COORDINATE ALL CEILING DEVICE LOCATIONS WITH ARCHITECTURAL DRAWINGS AND INTERIOR DESIGN CONSULTANT(IF APPLICABLE) PRIOR TO ROUGH-IN.
C	REFERENCE TECHNOLOGY SITE PLAN, COMPOSITE PLANS, NOTES & LEGENDS AND DETAILS FOR ADDITIONAL INFORMATION AND DEVICE/OUTLET LOCATIONS.
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F	NEW DATA CABLING IN EXISTING ROOMS SHALL REUSE EXISTING DATA CABLING RACEWAY AND BACKBOXES UNLESS NOTED OTHERWISE. PROVIDE AND INSTALL NEW FACEPLATES.
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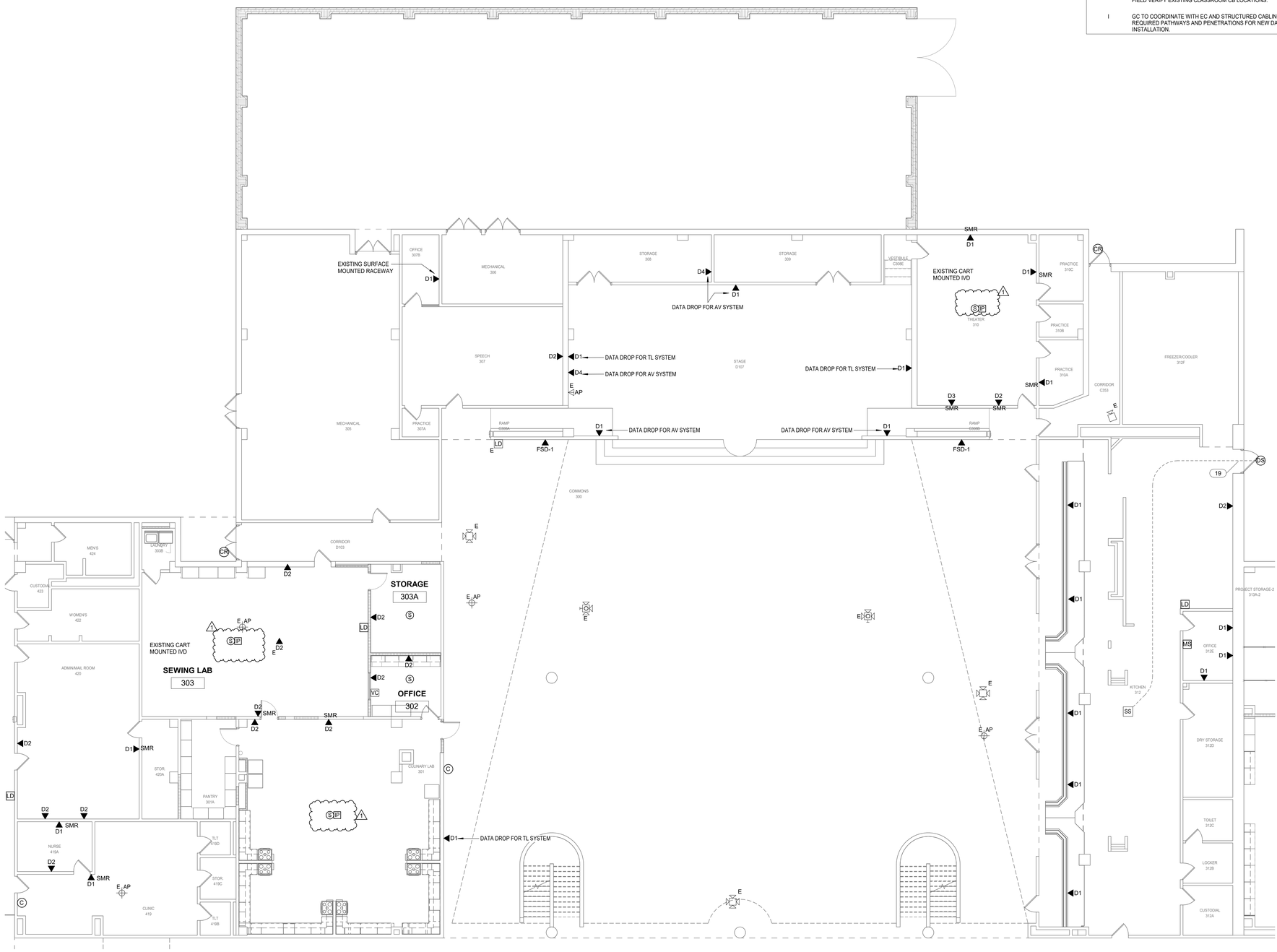

N

1 **TECHNOLOGY FLOOR PLAN - LEVEL 1 - D.1**
Scale: 1/8" = 1'-0"

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CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

TRUITT MIDDLE SCHOOL

KEY PLAN

Issue For Proposal

BRADLEY KALMANS 80219 LICENSED PROFESSIONAL ENGINEER 03-14-25

ISSUED: February 24, 2025

REVISIONS

Revision No.		Revision Date
1	ADDENDUM 02	03-14-2025

Director MS	Drawn By NY
Designer NY	Quality Control AY
Proj. Coord. AY	

PROJECT NO.

24-010.00

SHEET TITLE

TRUITT - TECHNOLOGY FLOOR PLAN - LEVEL 1 - UNIT D.1

SHEET NO.

T32.04

Salas O'Brien
Houston
10930 W. Sam Houston Pkwy North, Suite 900
Houston, TX 77064
Salas O'Brien Registration: F-4111
Salas O'Brien Project Number: 2024-00901-00

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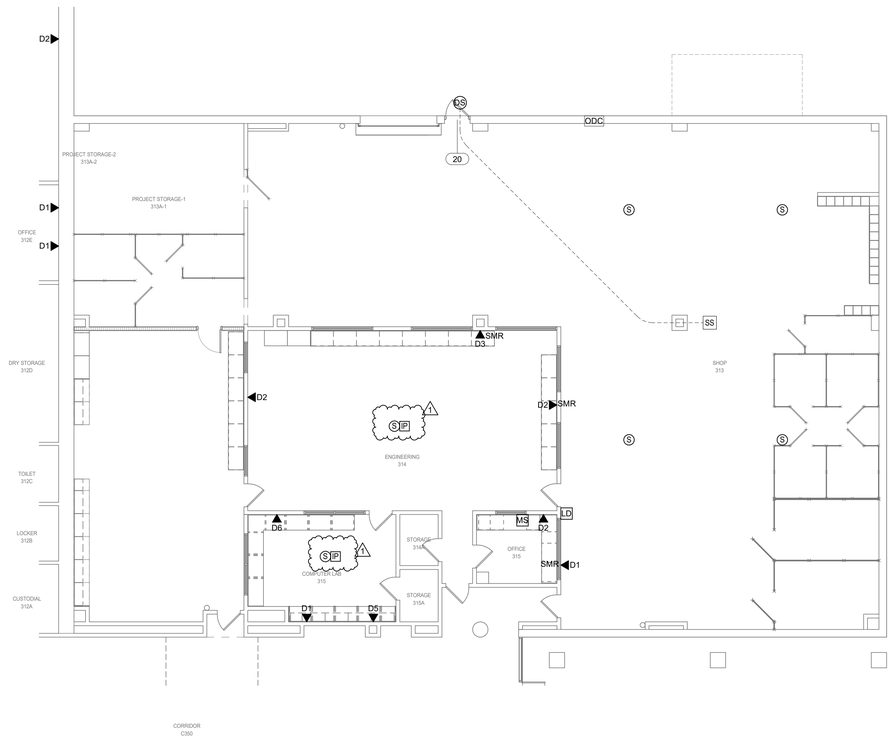

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1 **TECHNOLOGY FLOOR PLAN - LEVEL 1 - UNIT D.2**
Scale: 1/8" = 1'-0"

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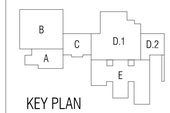
CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

TRUITT MIDDLE SCHOOL



KEY PLAN

Issue For Proposal

ISSUED: February 24, 2025

REVISIONS

Revision No.		Revision Date
1	ADDENDUM 02	03-14-2025

Director MS	Drawn By NY
Designer NY	Quality Control AY
Proj. Coord. AY	

PROJECT NO.

24-010.00

SHEET TITLE

TRUITT - TECHNOLOGY FLOOR PLAN - LEVEL 1 - UNIT D.2

SHEET NO.

T32.05

Salas O'Brien

Houston
10930 W. Sam Houston Pkwy North, Suite 900
Houston, TX 77064
Salas O'Brien Registration: F-4111

Salas O'Brien Project Number: 2024-00901-00

DATA OUTLETS LOCATED IN SINGLE SURFACE MOUNT RACEWAY THAT ROUTES UP TO CEILING.

DATA OUTLETS LOCATED IN SINGLE SURFACE MOUNT RACEWAY THAT ROUTES UP TO CEILING.

COMPUTER WORKSTATIONS

COMPUTER WORKSTATIONS

COMPUTER WORKSTATIONS

EXISTING CIRCULATION DESK. CONTRACTOR TO PROVIDE AND INSTALL SMALL DIAMATER CABLING IN THIS LOCATION.

TECHNOLOGY PLAN GENERAL NOTES

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N

1 **TECHNOLOGY FLOOR PLAN - LEVEL 1 - UNIT E**
Scale: 1/8" = 1'-0"

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CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

KEY PLAN

Issue For Proposal

BRADLEY KALMANS — 90219 — LICENSED PROFESSIONAL ENGINEER — STATE OF TEXAS
03-14-25

ISSUED: February 24, 2025

REVISIONS

Revision No.		Revision Date
1	ADDENDUM 02	03-14-2025

Director MS	Drawn By NY
Designer NY	Quality Control AY
Proj. Coord. AY	

PROJECT NO.

24-010.00

SHEET TITLE

TRUITT - TECHNOLOGY FLOOR PLAN - LEVEL 1 - UNIT E

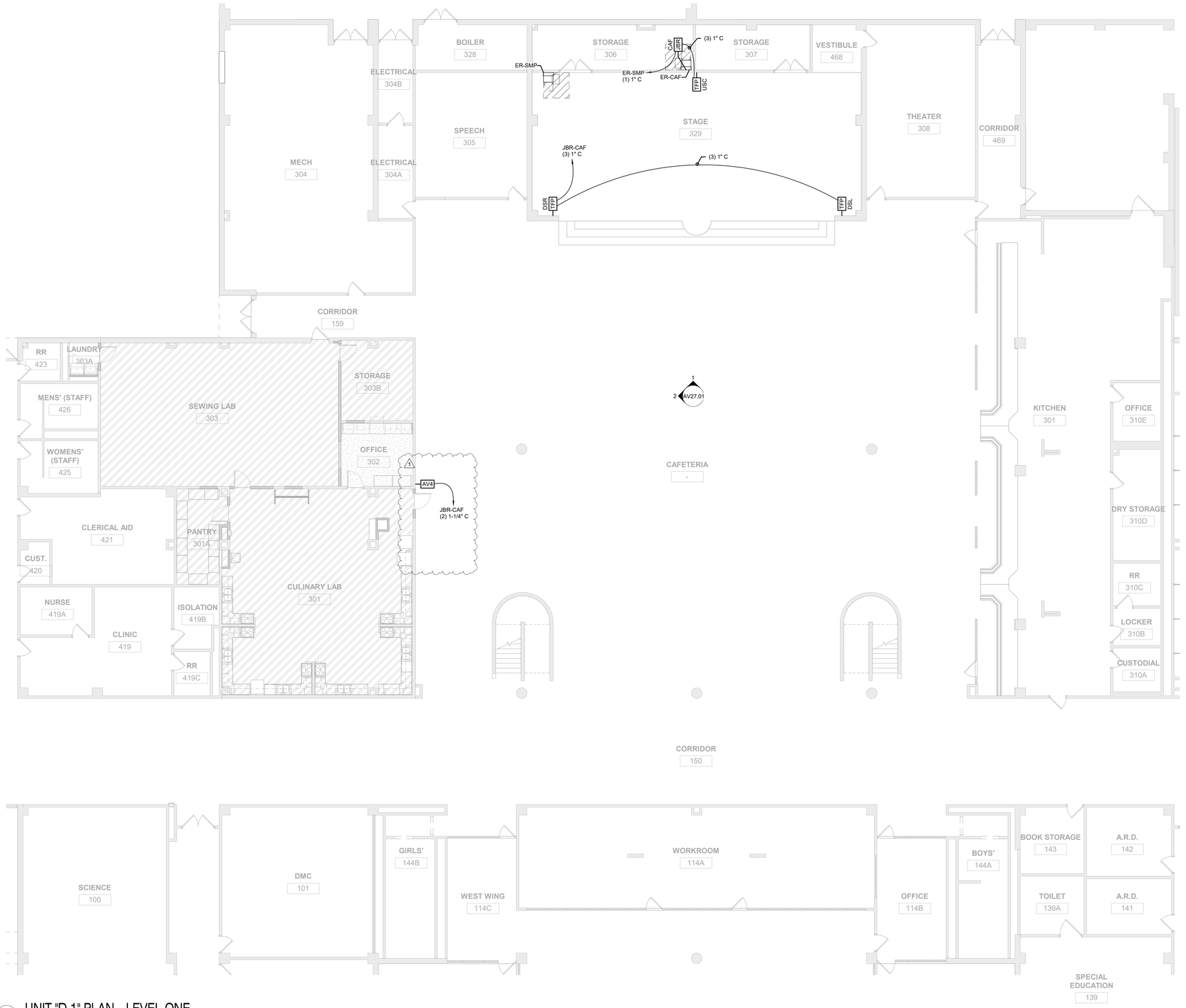
SHEET NO.

T32.06

TRUITT MIDDLE SCHOOL

Salas O'Brien
Houston
10930 W. Sam Houston Pkwy North, Suite 900
Houston, TX 77064
Salas O'Brien Registration: F-4111
Salas O'Brien Project Number: 2024-00901-00

KEYNOTES



1 UNIT "D.1" PLAN - LEVEL ONE
SCALE: 1/8" = 1'-0"

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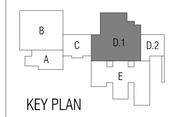
CYPRESS-FAIRBANKS INDEPENDENT SCHOOL DISTRICT
HOUSTON, TEXAS

2024 Cook, Labay & Truitt MS Renovations



KEY PLAN

Issue For Proposal

ISSUED: February 24, 2025

REVISIONS

Revision No.		Revision Date
1	Addendum 2	03/14/2025

Director	Drawn By
RSJ	WJHW
Designer	Quality Control
--	
Proj. Coord.	
TQ	

PROJECT NO.

24-010.00

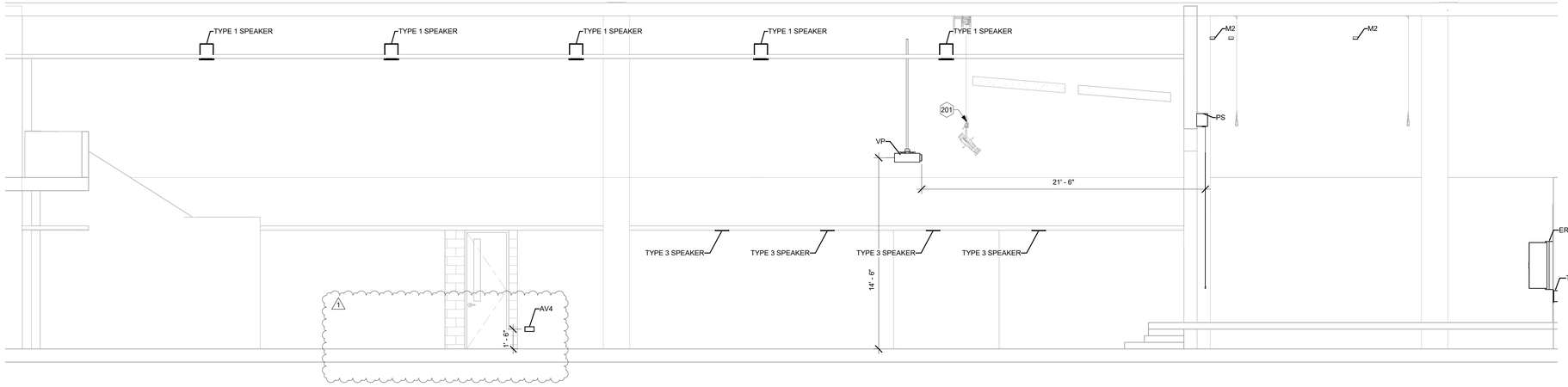
SHEET TITLE

UNIT D.1 RENOVATION
PLAN - LEVEL ONE

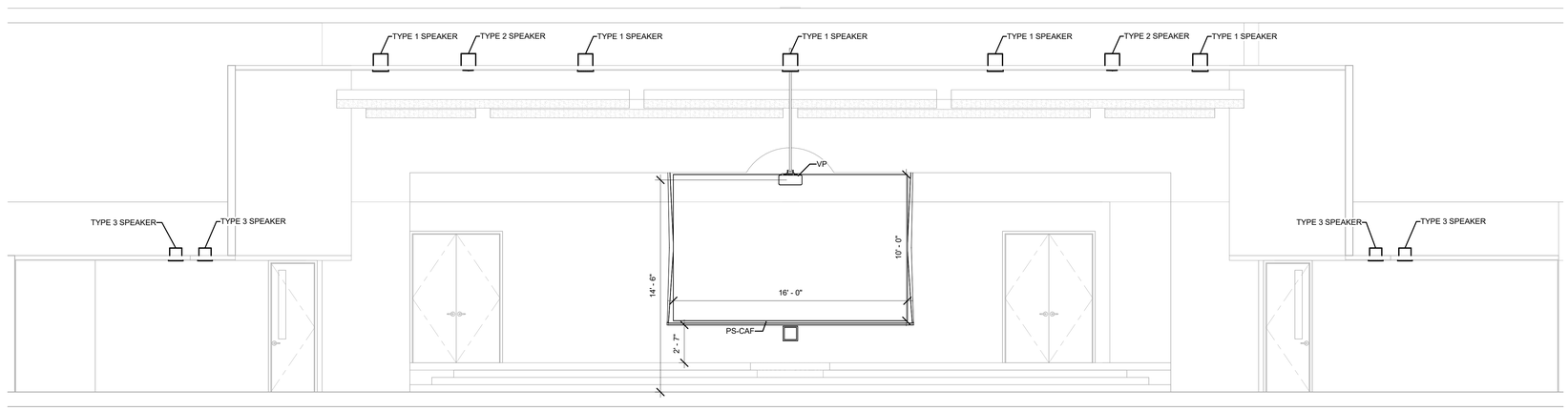
SHEET NO.

AV22.11D.1

KEYNOTES	
201	THEATRICAL EQUIPMENT SHOWN FOR COORDINATION PURPOSES ONLY



2 CAFETERIA SIDE ELEVATION
SCALE: 1/4" = 1'-0"



1 CAFETERIA FRONT ELEVATION
SCALE: 1/4" = 1'-0"

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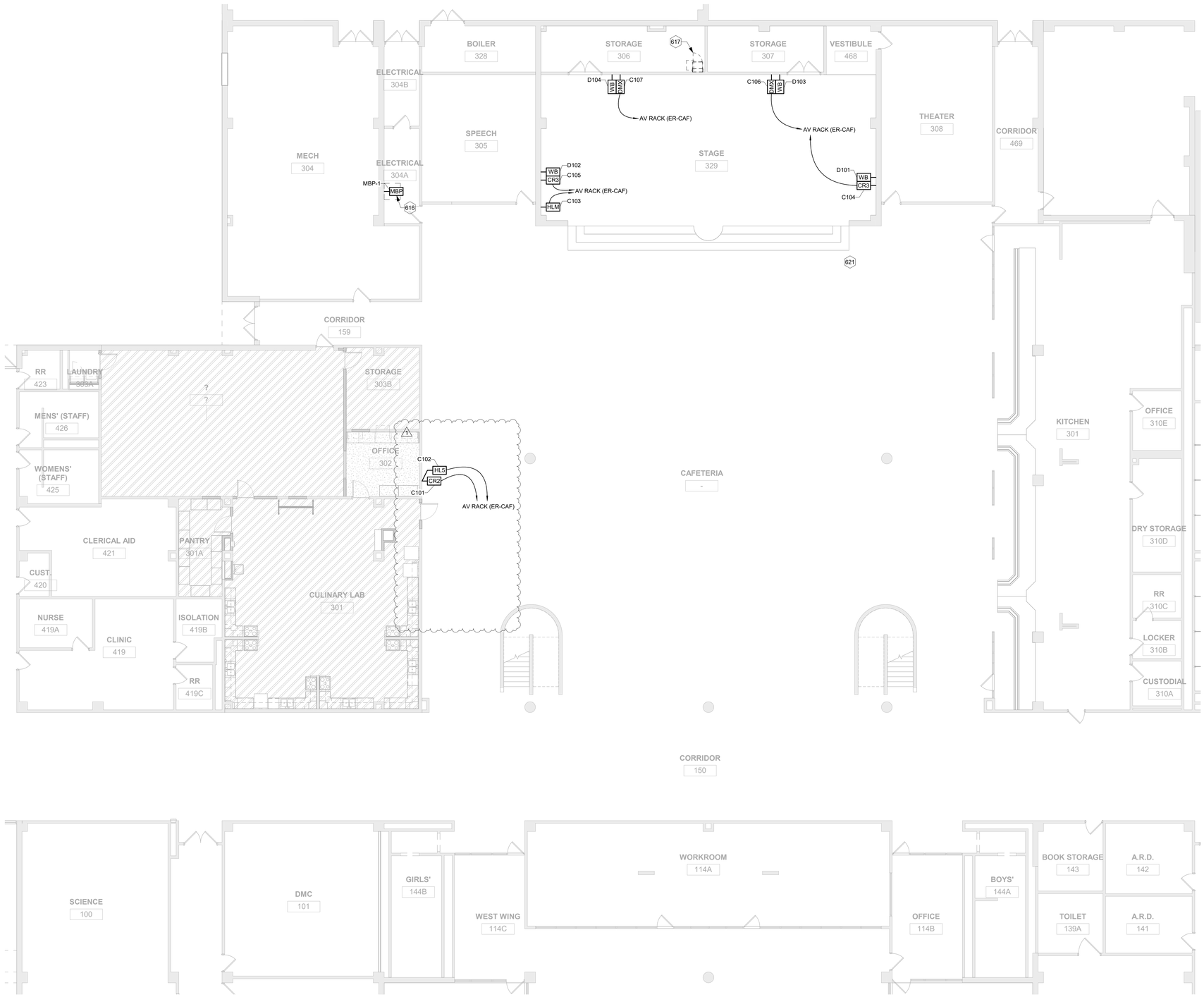
RSJ	WJHW
Designer	Quality Control
--	
Proj. Coord.	
TQ	

PROJECT NO.
24-010.00

SHEET TITLE
ELEVATIONS

SHEET NO.
AV27.01

KEYNOTES	
616	MOTORIZED BREAKER PANEL (MBP-1); 24-CIRCUIT DMX-CONTROLLED PANELBOARD. REF ELECTRICAL AND TL RISER.
617	AV EQUIPMENT RACK (ER-CAF); REFERENCE AV DRAWINGS. COORDINATE LOCATION OF TL CONTROL DEVICES WITHIN RACK.
621	CONTRACTOR SHALL COORDINATE THE REMOVAL AND STORAGE OF ALL EXISTING EQUIPMENT IN OWNER DESIGNATED LOCATION.



1 UNIT "D.1" PLAN - LEVEL ONE
SCALE: 1/8" = 1'-0"

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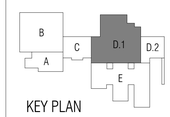

KEY PLAN

Issue For Proposal

ISSUED: February 24, 2025

REVISIONS

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1	Addendum 2	03/14/2025

Director	Drawn By
RSJ	WJHW
Designer	Quality Control
--	
Proj. Coord.	
TQ	

PROJECT NO.
24-010.00

SHEET TITLE
UNIT D.1 RENOVATION PLAN - LEVEL ONE

SHEET NO.
TL22.11D.1