TOWN OF DEDHAM

INVITAION FOR BID
Dedham Middle School Safety Vestibule Construction
Contract Number #20230012
Addendum Date: Tuesday April 18th, 2023
Original IFB Release Date: Wednesday March 22nd, 2023
Filed Sub Bids (**Metal Windows**): Wednesday May 3rd, 2023 @ 11:00 AM
Bids Due Date: Monday May 15th, 2023 @ 10:00 AM

Response to questions:

1. The Dedham Middle School IFB (including the one issued with the addendum) mentions the Glass and Glazing FSB, however, the filed sub-bid indicated in the specifications is actually a Metal Window Filed sub-bid that includes glazing. Can you confirm this is actually a Metal Window FSB, not a Glass and Glazing FSB?
   1.1The filed sub bid is in fact metal windows not glass and glazing. All vendors please take note this is no longer a glass and glazing filed sub bid but metal windows. Please note section 088000 has been replaced with section 08 000 1. Kindly find the attached section to this addendum.
2. Sheet A1.01 references new surface walk off mat with tapered aluminum frame. But the specifications ' 12 48 16 Entrance floor grilles' indicate recessed foot grilles and frames and provide drain pan and outlet. Please clarify
   REPLACE SECTION 12 48 16 of the Project Manual in its entirety with the attached file.

Point of Information:

1. General Contractor to coordinate all work and include the Owner's security vendor's cost estimate for material and labor in their base bid price.
   Equipment and labor cost for Setronics: - $26,472.00, cost estimate and scope of work proposed by Setronics are attached. (Titled Exhibit B)

2. <u>Clarification regarding Filed Sub Bids:</u>

We published a Central Register advertisement that went live on March 22nd, 2023, at that time the cost estimate we had indicated we would have filed sub bids of Masonry, Glass/Glazing/Openings, HVAC & Electrical. This was based on a cost estimate that was done in November of 2022. (categories of work estimated at $25,000 or more per DCAMM/ C149). A cost estimate was provided by the designer on March 21st, 2023 that indicated that the only filed sub bid category at $25,000 or more is the openings or DCAMM category Glass/Glazing, which includes glazing, doors, glazing aluminum curtainwall, etc.. There was a reduction in scope for Masonry, HVAC and Electrical.

At this time the ONLY filed Sub Bid category we are asking for bids for is Metal Windows, this filed sub bid was incorrectly filed as glazing.

Changes to the IFB:

1. General and Filed Sub Bid dates were changed to reflect the following changes:
   1.1 Filed Sub Bids (Metal Windows) now due Wednesday May 3rd, 2023 @ 11:00 AM
   1.2 General Bids now due Monday May 15th, 2023 @ 10:00 AM
2. The Town of Dedham is now adding an Ad Alt line in the bid form for level 3 bullet proof glass. Please see all the attached documents regarding this glass. Please note that this only an ad alt and does not affect the original scope. Please use the bid form ad alt line item and refer to the ballistic glass as add alt #1.

New Documents attached to the IFB:

1. 00 01 10 TABLE OF CONTENTS
2. 01 23 00 ALTERNATES
3. 01 12 00 SUMMARY OF MULTIPLE CONTRACTS
4. 08 34 53 BULLET RESISTANT OPENING PROTECTION
5. 08 44 13.13 GLAZED BALLISTIC RATED FRAMING SYSTEM
6. 08 00 01 METAL WINDOWS FILED SUB BID
7. 08 88 53 SECURITY GLAZING
8. 09 21 16 GYPSUM BOARD ASSEMBLIES
9. 12 48 16 ENTRANCE FLOOR GRILLES
10. 08 71 00 Door Hardware
11. Dedham Middle School Safety Vestibule Project drawings Addendum Set. Please note the architectural section item A1. 06 Add/Alt No.01 Ballistic Rated Construction.

Sincerely,
Rana Mana-Doerfer
Director of Procurement
PH: 781-751-9105
EM: rmanadoerfer@dedham-ma.gov
Pronouns: She/Her/Hers
CC: Denise Moroney, Director of Facilities & Maintenance
CC: Fenton Bradley, D21 Architects

ADDENDUM No. 2

Attachments:

00 01 10	TABLE OF CONTENTS
01 23 00	ALTERNATES
01 12 00	SUMMARY OF MULTIPLE CONTRACTS
08 34 53	BULLET RESISTANT OPENING PROTECTION
08 44 13.13	GLAZED BALLISTIC RATED FRAMING SYSTEM
08 00 01	METAL WINDOWS FILED SUB BID
08 88 53	SECURITY GLAZING
09 21 16	GYPSUM BOARD ASSEMBLIES
12 48 16	ENTRANCE FLOOR GRILLES

Change to Specifications

Section 00 01 10 Table of Contents
Add the following new Sections:

01 23 00	ALTERNATES
08 34 53	BULLET RESISTANT OPENING PROTECTION
08 44 13.13	GLAZED BALLISTIC RATED FRAMING SYSTEM** (included in FSB 08 00 01)
08 88 53	SECURITY GLAZING

Section 00 01 15 List of Drawings
Add the following new Drawing:

A1.06	ADD / ALTERNATE NO. 1 BALLISTIC RATED CONSTRUCTION

Section 01 12 00 Summary of Multiple Contracts
Section revised.

Section 03 45 00 Precast Architectural Concrete
Delete Paragraph 1.1 in its entirety.

Section 04 00 01 Masonry Filed Sub Bid**
Delete Section in its entirety.

Section 04 21 13 Brick Masonry
Delete Paragraph 1.1 in its entirety.

Section 08 00 01 Metal Windows Filed Sub Bid
Section revised.

Section 09 21 16 Gypsum Board Assemblies
Section revised.

Section 12 48 16 Entrance Floor Grilles
Section revised.

END OF SECTION

SECTION 01 23 00 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration.

C. Execute accepted alternates under the same conditions as other work of the Contract.

D. Schedule: A Schedule of Alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Alternate No. 1: Ballistic rated construction.

1. Provide glazed ballistic rated framing system including glazing and entrance doors, in lieu of glazed aluminum curtain wall and framing systems in accordance with Division 08 Section “Glazed Ballistic Rated Framing System.”
2. Provide bullet resistant wood door and bullet resistant hollow metal frame in lieu of flush wood door and hollow metal frame in accordance with Division 08 Sections “Bullet Resistant Opening Protection” and “Security Glazing.”
3. Provide bullet resistant transaction window in lieu of standard transaction window in accordance with Division 08 Section “Bullet Resistant Opening Protection.”
4. Provide bullet resistant fiberglass panels in accordance with “Gypsum Board Assemblies.”

END OF SECTION 01 23 00

SECTION 01 12 00 - SUMMARY OF MULTIPLE CONTRACTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes a summary of each contract, including responsibilities for coordination and temporary facilities and controls, and Filed Sub Bid requirements.

B. Related Sections include the following:

1. Division 01 Section "Summary" for the Work covered by the Contract Documents, restrictions on use of the premises, Owner-occupancy requirements, and work restrictions.
2. Division 01 Section “Alternates.”
3. Division 01 Section "Project Management and Coordination" for general coordination requirements.
4. Division 01 Section "Temporary Facilities and Controls" for specific requirements for temporary facilities and controls.
5. Divisions 03 through 26 Sections for additional Filed Sub Bid requirements.

1.3 DEFINITIONS

A. Permanent Enclosure: As determined by Architect, permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

1.4 COORDINATION

A. The Contractor shall be responsible for coordination between all Filed Subcontractors.

1.5 PROJECT COORDINATOR

A. Coordination activities of the Contractor include, but are not limited to, the following:

1. Provide overall coordination of the Work by the Contractor and Filed Subcontractors.
2. Coordinate shared access to workspaces.
3. Coordinate product selections for compatibility.
4. Provide overall coordination of temporary facilities and controls.
5. Coordinate, schedule, and approve interruptions of permanent and temporary utilities, including those necessary to make connections for temporary services.

6. Coordinate construction and operations of the Work with work performed by each contract and Owner's construction forces.
7. Coordinate sequencing and scheduling of the Work. Include the following:

    a. Initial Coordination Meeting: At earliest possible date, arrange and conduct a meeting with separate contractors for sequencing and coordinating the Work; negotiate reasonable adjustments to schedules.
    b. Prepare a combined Contractor's Construction Schedule for entire Project. Base schedule on Preliminary Construction Schedule. Secure time commitments for performing critical construction activities from separate contractors. Show activities of each contract on a separate sheet. Prepare a simplified summary sheet indicating combined construction activities of contracts.
    c. Complete mockups for Architect’s review in a timely manner.
    d. Distribute copies of schedules to Architect, Owner, Project Manager and separate contractors.

8. Provide quality-assurance and quality-control services specified in Division 01 Section "Quality Requirements."
9. Coordinate sequence of activities to accommodate tests and inspections, and coordinate schedule of tests and inspections.
10. Provide information necessary to adjust, move, or relocate existing utility structures affected by construction.
11. Locate existing permanent benchmarks, control points, and similar reference points, and establish permanent benchmarks on Project site.
12. Provide field surveys of in-progress construction.
13. Provide progress cleaning of common areas and coordinate progress cleaning of areas or pieces of equipment where more than one contractor has worked.
14. Coordinate cutting and patching.
15. Coordinate protection of the Work.
16. Coordinate completion of interrelated punch list items.
17. Coordinate preparation of Project Record Documents if information from more than one contractor is to be integrated with information from other contractors to form one combined record.
18. Print and submit Record CAD Drawings if installations by more than one contractor are indicated on the same Contract Drawing or Shop Drawing.
19. Collect Record Specification Sections from other contractors, collate Sections into numeric order, and submit complete set.
20. Coordinate preparation of operation and maintenance manuals if information from more than one contractor is to be integrated with information from other contractors to form one combined record.

B. Responsibilities of Contractor and Filed Subcontractors for temporary facilities and controls are specified in Division 01 Section “Temporary Facilities and Controls.”

1.6 GENERAL REQUIREMENTS OF CONTRACTS

A. Extent of Contract:

1. Unless otherwise indicated, the Work described in this Section for each contract shall be complete systems and assemblies, including products, components, accessories, and installation required by the Contract Documents.
2. Cutting and Patching: Provided by the Contractor and Filed Subcontractors for their own Work as required by Division 01 Section “Cutting and Patching.”

3. Within five working days after the initial Coordination Meeting, submit a matching preliminary schedule and preliminary network diagram showing construction operations sequenced and coordinated with overall construction.
4. Project closeout requirements.

B. Substitutions: Each contractor shall cooperate with other contractors involved to coordinate approved substitutions with remainder of the Work.

1. Contractor shall coordinate substitutions.

1.7 GENERAL CONSTRUCTION CONTRACT

A. Work in the General Construction Contract includes, but is not limited to, the following:

1. All work indicated on Drawings and in Specification with the exception of glazed aluminum curtainwall and associated glazing, glazed ballistic rated framing system (alternate), and glazing films.

B. Temporary facilities and controls in the General Construction Contract include, but are not limited to, the following:

1. Temporary facilities and controls that are not otherwise specifically assigned to Filed Subcontractors as indicated in Division 01 Section “Temporary Facilities and Controls.”
2. Project identification and temporary signs.
3. General waste disposal facilities.
4. Temporary fire-protection facilities.
5. Barricades, warning signs, and lights.
6. Security enclosure and lockup.
7. Environmental protection.

1.8 FILED SUBCONTRACTS

A. General: All Filed Subcontractors are required to review all Drawings for information as it relates to conditions of the Work for proper phasing, coordination, and execution of the Work.

1. Specification Sections included in each Filed Sub Bid category may contain additional scope requirements as referenced in separate Specification Sections.
2. The Contractor and each Filed Subcontractor must review and incorporate all Addenda items into the Contract Documents, and respective scopes of Work.

B. The Project includes the following Filed Sub-Bid categories and related Specification Sections. Refer to the Table of Contents and Divisions 03 through 26 for Filed Sub Bid Specification Sections.

~~1. Masonry Filed Sub Bid – 04 00 01.~~
2. Metal Windows Filed Sub Bid – 08 00 01.
~~3. Electrical – 26 00 00.~~

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 12 00

SECTION 08 34 53 – BULLET RESISTANT OPENING PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes the following:

1. Bullet resistant flush wood door, factory glazed and factory finished.
2. Bullet resistant hollow metal frame.
3. Bullet resistant transaction window and accessories, factory glazed.

B. Related Sections:

1. Division 01 Section “Alternates” for bidding requirements of this Section.
2. Division 06 Section “Miscellaneous Rough Carpentry” for wood blocking.
3. Division 07 Section "Joint Sealants" for joint sealants to the extent not specified in this Section.
4. Division 08 Section “Flush Wood Doors” for flush wood doors, and matching finish requirements for bullet resistant wood doors.
5. Division 08 Section “Glazed Ballistic Rated Framing System” for exterior bullet resistant framing and doors.
6. Division 08 Section “Door Hardware” for door hardware to the extent not specified in this Section.
7. Division 08 Section "Security Glazing” for bullet resistant glass for bullet resistant flush wood door.
8. Division 09 Section “Gypsum Board Assemblies” for bullet resistant fiberglass panels.
9. Division 09 Section “Painting” for field finishing of bullet resistant hollow metal frame.
10. Division 26 Electrical Sections.

1.3 PERFORMANCE REQUIREMENTS

A. Ballistics-Resistance Performance: Provide units identical to those tested for compliance with requirements indicated, and as follows:

1. Listed and labeled as bullet resisting according to UL 752, Level 3.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, core descriptions, label compliance, fire-resistance rating, and finishes for each type of detention doors and frames specified.

B. Shop Drawings: In addition to requirements below, provide a schedule using same reference numbers for details and openings as those on Drawings:

1. Elevations of each door design.
2. Direction of swing.
3. Details of doors, including vertical and horizontal edge details, and metal thicknesses.
4. Details of frames, including dimensioned profiles, and metal thicknesses.
5. Locations of reinforcement and preparations for hardware.
6. Details of each different wall opening condition.
7. Details of anchorages, joints, field splices, and connections.
8. Details of speaking apertures.
9. Details of moldings, removable stops, and glazing.
10. Details of conduit, junction boxes, and preparations for electrified door hardware.

C. Samples for Initial Selection: For factory-finished wood doors.

D. Samples for Verification:

1. Factory finishes applied to actual door face materials, approximately 8 by 10 inches, for each material and finish.
2. Corner sections of doors, approximately 8 by 10 inches, with door faces and edgings representing typical range of color and grain for each species of veneer and solid lumber required. Finish sample with same materials proposed for factory-finished doors.
3. Frames for light openings, 6 inches long, for each material, type, and finish required.
4. For the following items, prepared on Samples about 12 by 12 inches to demonstrate compliance with requirements for quality of materials and construction:

    a. Bullet Resistant Doors: Show vertical-edge, top, and bottom construction; insulation; face stiffeners; and hinge and other applied hardware reinforcement. Include separate section showing glazing if applicable.
    b. Bullet Resistant Frames: Show profile, welded corner joint, welded hinge reinforcement, grout-cover boxes, floor and wall anchors, and silencers. Include separate section showing fixed steel panels and glazing if applicable.

E. Coordination Drawings: Drawings of each bullet resistant door and frame, drawn to scale, on which connections and interface with electrified control systems are shown.

F. Qualification Data: For qualified Installer.

G. Welding certificates.

H. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency for detention doors and frames. Indicate metal thickness of each component of tested assembly and describe construction methods.

I. Field quality-control reports documenting inspections of installed products.

J. Warranties: Special warranties specified in this Section.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

B. Source Limitations: Obtain bullet resistant doors and frames from single source from single manufacturer.

C. Welding Qualifications: Qualify procedures and personnel according to the following:

1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
2. AWS D1.3, "Structural Welding Code - Sheet Steel."
3. AWS D1.6, "Structural Welding Code – Stainless Steel Sheet."

D. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section “Project Management and Coordination”.

1. Meet with Architect, security systems supplier, and installers whose work interfaces with or affects bullet resistant wood doors and frames.
2. Review requirements for type of cut-out and back box as part of the door and frame assembly.
3. Document proceedings, including receipt of samples and shop drawings of appropriate security contact devices and that drawings as submitted accurately represent the installation of the device, back box and conduit terminations required. Furnish copy of record to each participant.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver bullet resistant doors and frames palleted, wrapped, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.

B. Deliver bullet resistant frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.

C. Inspect units, on delivery, for damage. Minor damage may be repaired provided refinished items match new work and are approved by Architect; otherwise, remove and replace damaged items as directed.

D. Store bullet resistant doors and frames under cover at building site. Place units in a vertical position with heads up, spaced by blocking, on minimum 4-inch- high wood blocking. Avoid using nonvented plastic or canvas shelters that could create a humidity chamber.

1. Provide minimum 1/4-inch space between each stacked unit to permit air circulation.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and HVAC system is operating and maintaining temperature between 60 and 90 deg F and relative humidity between 25 and 55 percent during the remainder of the construction period.

1.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of bullet resistant hollow metal doors and frames that do not comply with requirements or that fail in materials or workmanship within specified warranty period.

1. Bullet Resistant Hollow Metal Frames, Wood Doors, and Transaction Windows:

    a. Warranty Period: One year from date of Substantial Completion.

B. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace bullet resistant wood doors that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

    a. Warping (bow, cup, or twist) more than 1/4 inch in a 42-by-84-inch section.
    b. Telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch span.

2. Warranty shall include installation and finishing that may be required due to repair or replacement of defective doors, distribution, glass and glazing and removal of defective doors.
3. Warranty Period for Solid-Core Interior Doors: Life of installation.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, CS (Commercial Steel), Type B.

B. Stainless-Steel Sheet: ASTM A 240/A 240M, austenitic stainless steel, Type 304.

C. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.

D. Concealed Bolts: ASTM A 307, Grade A unless otherwise indicated.

E. Masonry Anchors: Fabricated from same steel sheet as door face.

F. Postinstalled Expansion Anchors: With capability to sustain, without failure, a load equal to 4 times the load imposed, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency.

1. Corrosion Protection: Carbon-steel components zinc plated to comply with ASTM B 633, Class Fe/Zn 5 (0.005 mm) for Class SC 1 service condition (mild).

G. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

2.2 BULLET RESISTANT WOOD DOOR

A. Basis of Design Product: Subject to compliance with requirements, provide **VT Industries; Heritage BR-5** or comparable product by one of the following:

1. AMBICO Limited.
2. Overly Door Company.

B. Interior Bullet Resistant Wood Doors:

1. Grade: Custom (Grade A faces).
2. Thickness: 1-3/4 inches.
3. Species and Cut: Red oak, plain sliced.
4. Match between Veneer Leaves: Book Match.
5. Assembly of Veneer Leaves on Door Faces: Running match.
6. Ballistics Resistance: Level 3 when tested according to UL 752.
7. Core: Particleboard with bullet resistant reinforced fiberglass.
8. Construction: Five plies with stiles and rails bonded to core, then entire unit abrasive planed before veneering.
9. Stiles: 1-3/8 inch laminated strand lumber (LSL) with veneer band to match face.
10. Crossbands: Engineered fiber.
11. Top and Bottom Rails: 1-1/8 inch LSL or hardwood.

C. Factory Prefit doors to suit frame-opening sizes indicated, with the following uniform clearances and bevels, unless otherwise indicated:

1. Comply with clearance requirements of referenced quality standard for fitting. Comply with requirements in NFPA 80 for fire-rated doors.

D. Factory premachine doors for hardware that is not surface applied. Locate hardware to comply with “Door Hardware Institute-WDHS-3”. Comply with final hardware schedules, door frame Shop Drawings, “Door Hardware Institute – A115-W Series Standards, and hardware templates.

1. Coordinate measurements of hardware mortises in metal frames to verify dimensions and alignment before factory machining.
2. Drill all screw pilot holes for butt hinges and lock fronts at the factory.

E. Factory Glazing: Refer to Division 08 Section "Security Glazing" for glass view panels in flush wood doors. Factory install glass**.** Fill glazing bead nail holes in factory finished doors.

F. Prepare doors to receive security systems hardware in accordance with final security systems shop drawings and templates provide by security systems supplier.

1. Include an integral ½-inch diameter wire tube in doors to receive electrified locksets, exit devices, mortised electrical locksets, or electric strikes in the inactive leaf of pairs of doors to accommodate wiring associated with the power transfer hinges, knuckles, and electrified hardware within the door.

G. Finish doors at factory. Comply with referenced quality standard for factory finishing. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.

1. Finish faces, all four edges, edges of cutouts, and mortises. Stains and fillers may be omitted on top and bottom edges, edges of cutouts, and mortises.

H. Transparent Finish:

1. Grade: Premium.
2. Finish: AWI's "Architectural Woodwork Standards" System 11, catalyzed polyurethane.
3. Staining: Custom to match Architect’s sample.
4. Effect: Open finish.
5. Sheen: Satin.

2.3 BULLET RESISTANT HOLLOW METAL FRAMES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Bullet Resistant Hollow Metal Frame:

a. Armortex.
b. North American Bullet Proof, Inc.
c. U.S. Bullet Proofing, Inc.

B. General: Provide fully welded frames with integral stops, of seamless construction without visible joints or seams. Fabricate detention frames with contact edges closed tight and corners mitered, reinforced, and continuously welded full depth and width of detention frame.

1. Frame: Non-ricochet type, 16 gauge steel lined with bullet resistant fiberglass.

a. Bullet Resistance: Level 3 in accordance with UL 752.

2. Finish: Factory primed to be field finished by Division 09 Section “Painting.”

C. Provide two temporary steel spreaders spot welded to bottom of jambs to act as bracing during shipping and storage. Remove prior to installation.

D. Hardware Reinforcement: Fabricate reinforcing plates from same material as frame.

E. Hardware Enclosures: Provide enclosures and junction boxes for electrically operated detention door hardware, interconnected with UL-approved, 1/2-inch- diameter conduit and connectors.

F. Jamb Anchors: Weld jamb anchors to detention frames near hinges and directly opposite on strike jamb or as required to secure detention frames to adjacent construction.

1. Number of Anchors: Provide three anchors per jamb.
2. Masonry Anchors: Adjustable, corrugated or perforated, strap-and-stirrup anchors to suit detention frame size; formed of same material and thickness as detention frame; with strap not less than 2 inches wide by 10 inches long.
3. Postinstalled Expansion Anchors: Minimum 1/2-inch- diameter concealed bolts with expansion shields or inserts. Provide conduit spacer from detention frame to wall, welded to detention frame. Reinforce detention frames at anchor locations.

G. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, formed of same material and thickness as frame, and as follows:

1. Monolithic Concrete Slabs: Clip anchors, with two holes to receive fasteners, welded to bottom of jambs and mullions with at least four spot welds per anchor.

H. Rubber Door Silencers: Except on weather-stripped doors, drill stops in strike jambs to receive three silencers on single-door frames and drill head jamb stop to receive two silencers on double-door frames. Keep holes clear during construction.

I. Glazing: Factory glaze sidelights with bullet resistant glazing to requirements specified in Division 08 Section “Security Glazing.”

2.4 BULLET RESISTANT TRANSACTION WINDOW

A. Basis of Design Product: Subject to compliance with requirements, provide **Armortex; Model W1-TW-CT-NV** or one of the following:

1. Action Bullet Resistant; Model STW-2.
2. North American Bullet Proof, Inc.; Shotgard Model EXTW.

B. General: Provide fully welded frames with integral stops, of seamless construction without visible joints or seams. Fabricate detention frames with contact edges closed tight and corners mitered, reinforced, and continuously welded full depth and width of detention frame.

1. Frame: Non-ricochet type, extruded aluminum frame with bullet resistant fiberglass.

a. Bullet Resistance: Level 3 in accordance with UL 752.
b. Include stainless steel glazing cap at bottom mullion where deal tray is indicated.
c. Finish: Clear anodized.

C. Glass-Clad Polycarbonate Units: SC (Single Core) consisting of outer and inner lites of heat-strengthened float glass with an interior core consisting of one lite of polycarbonate sheet.

1. Bullet Resistance: Level 3 in accordance with UL 752.

D. Countertop: Furnished and installed by General Contractor.

1. Do not provide integral countertop with transaction windows.

E. Recessed, Nonricochet Deal Trays: Formed from stainless steel; fabricated with recessed bullet trap to ricochet bullets away from secure side, with exposed flanges for recessed installation into horizontal surface, and with sliding stainless-steel cover.

1. Basis of Design Product: Subject to compliance with requirements, provide the following or equal:

a. Armortex; RMD-NR 1012, non-ricochet deal tray.

2. Clear Opening Size: 16 inches wide by 8 inches deep by 1-1/2 inches high.
3. Bullet Trap Location: Secure side.
4. Ballistics Resistance: UL Level 3.
5. Listed and labeled as bullet resisting according to UL 752.

2.5 FABRICATION

A. Fabricate bullet resistant doors and frames rigid, neat in appearance, and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Weld exposed joints continuously; grind, fill, dress, and make smooth, flush, and invisible. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.

B. Glazing Stops: Finish glazing stops to match framing.

1. Secure-Side (Exterior) Glazing Stops: Welded or integral to framing.

2. Nonsecure-Side (Interior) Glazing Stops: Removable, coordinated with glazing indicated.

C. Coordinate rabbet width between fixed and removable stops with type of glass or panel and type of installation indicated.

D. Hardware Preparation: Factory prepare doors and frames to receive mortised hardware, including cutouts, reinforcement, mortising, drilling, and tapping, according to final door hardware schedule and templates provided by detention door hardware supplier.

1. Reinforce doors and frames to receive surface-mounted door hardware. Drilling and tapping may be done at Project site.
2. Locate door hardware as indicated on approved Shop Drawing.

E. Factory cut openings in bullet resistant doors.

F. Weld components to comply with referenced AWS standard. Weld before finishing components to greatest extent possible. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.

2.6 GENERAL FINISH REQUIREMENTS

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Finish bullet resistant hollow metal doors and frames after assembly.

2.7 STEEL SHEET FINISHES

A. Surface Preparation: Clean surfaces to comply with SSPC-SP 1, "Solvent Cleaning"; remove dirt, oil, grease, or other contaminants that could impair paint bond. Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 3, "Power Tool Cleaning," or SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."

B. Factory Priming for Field-Painted Finish: Apply shop primer specified below immediately after surface preparation and pretreatment. Apply a smooth coat of even consistency to provide a uniform dry film thickness of not less than 0.7 mils.

1. Shop Primer: Manufacturer's or fabricator's standard, fast-curing, corrosion-inhibiting, lead- and chromate-free, universal primer complying with ANSI A250.10 acceptance criteria; compatible with substrate and field-applied finish paint system indicated; and providing a sound foundation for field-applied topcoats despite prolonged exposure.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of detention doors and frames.

B. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of detention doors and frames.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Remove welded-in shipping spreaders installed at factory.

B. Prior to installation and with shipping spreaders removed, adjust detention frames for squareness, alignment, twist, and plumbness to the following tolerances:

1. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb and perpendicular to frame head.
2. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of face.
3. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of door rabbet.
4. Plumbness: Plus or minus 1/16 inch, measured at jambs on a perpendicular line from head to floor.

3.3 INSTALLATION OF BULLET RESISTANT FRAMES AND DOORS

A. General: Install bullet resistant doors and frames plumb, rigid, properly aligned, and securely fastened in place, complying with Drawings, schedules, and manufacturer's written recommendations.

B. Anchorage: Set bullet resistant frame anchorage devices according to details on Shop Drawings and per anchorage device manufacturer's written instructions.

1. Postinstalled Expansion Anchors: Drill holes in existing construction at locations to match bolt locations and install bolt expansion shields or inserts.

C. Assemble frames fabricated in sections. Install angle splices at each corner, of same material and thickness as detention frame, and extend at least 4 inches on both sides of joint.

1. Field splice only at approved locations. Weld, grind, and finish as required to conceal evidence of splicing on exposed faces.
2. Continuously weld and finish smooth joints between faces of abutted, multiple-opening, detention frame members.
3. Field Welding: Comply with the following requirements:

    a. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
    b. Obtain fusion without undercut or overlap.
    c. Remove welding flux immediately.
    d. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

D. Placing Frames: Install frames of sizes and profiles indicated. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces and spreaders, leaving surfaces smooth and undamaged.

1. Postinstalled Expansion Anchors: Install bolt. After bolt is tightened, weld bolt head to provide nonremovable condition. Grind, dress, and finish smooth welded bolt head.
2. At fire-rated openings, install detention frames according to NFPA 80.
3. Install frames with removable stops located on non-inmate side of opening.

E. Doors: Fit non-fire-rated doors accurately in their frames, with the following clearances:

1. Between Doors and Frames at Jambs and Head: 1/8 inch.
2. Between Edges of Pairs of Doors: 1/8 inch.
3. At Door Sills with Threshold: 3/8 inch.
4. At Door Sills without Threshold: 3/4 inch.
5. Between Door Bottom and Nominal Surface of Floor Covering: 1/2 inch.

F. Factory prefit and premachined door: Align in frames for uniform clearance at each edge.

1. Prefitting includes trimming to net size allowing for head, jamb and sill, clearances; rabbeting, and other detail work, beveling both jambs and easing edges.
2. Premachining includes complete preparation for finish hardware other than surface applied items and screws, including drilling, mortising, routing, cutting, boring and other work required.

G. Installation Tolerances: Comply with installation tolerances indicated in HMMA 863.

H. Glazing: Furnished and installed by Division 08 Section "Security Glazing", unless otherwise indicated for bullet resistant transaction windows.

3.4 ERECTION TOLERANCES

A. Install aluminum-framed systems to comply with the following maximum erection tolerances:

1. Location and Plane: Limit variation from true location and plane to 1/8 inch in 12 feet; 1/4 inch over total length.
2. Alignment:

a. Where surfaces abut in line, limit offset from true alignment to 1/16 inch.
b. Where surfaces meet at corners, limit offset from true alignment to 1/32 inch.

B. Diagonal Measurements: Limit difference between diagonal measurements to 1/8 inch.

3.5 FIELD QUALITY CONTROL

A. Inspect installed products to verify compliance with requirements. Prepare inspection reports and indicate compliance with and deviations from the Contract Documents.

B. Remove and replace work where inspections indicate that work does not comply with specified requirements.

C. Perform additional inspections to determine compliance of replaced or additional work. Prepare inspection reports.

D. Prepare field quality-control certification that states installed products and their installation comply with requirements in the Contract Documents.

3.6 ADJUSTING AND CLEANING

A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including detention doors and frames that are warped, bowed, or otherwise unacceptable.

B. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying primer.

1. After finishing smooth field welds, apply air-drying primer.

C. Stainless-Steel Surfaces: Clean surfaces according to manufacturer's written instructions.

END OF SECTION 08 34 53

SECTION 08 44 13.13 - GLAZED BALLISTIC RATED FRAMING SYSTEM

PART 1 - GENERAL

1.1 GENERAL PROVISIONS – FILED SUB-BID REQUIRED AS PART OF 08 00 01 METAL WINDOWS FILED SUB BID

A. Work of this Section requires Filed Sub-Bids and is governed by the provisions of the Massachusetts General Laws (MGL), Public Bidding Law Chapter 149, Sections 44A to 44J inclusive; and applicable Section of the MGL, Public Contract Law Chapter 30 as amended.

1.2 RELATED DOCUMENTS

A. The Contractor, Subcontractors, and/or suppliers providing goods or services referenced in or related to this Section shall also be bound by the Documents identified in Division 01 Section “Summary”, Paragraph 1.1A, entitled “Related Documents.”

1.3 SUMMARY

A. Section includes:

1. Glazed ballistic rated aluminum curtain walls (storefront).
2. Glazed ballistic rated aluminum entrance doors.
3. Ballistic rated glazing for interior and exterior glazed ballistic rated curtain walls and doors.
4. Brake metal fabrications to match curtainwall framing.

B. Related Sections:

1. Division 01 Section "Alternates" for bidding requirements of this Section.
2. Division 06 Section “Miscellaneous Rough Carpentry” for wood blocking.
3. Division 07 Section “Sheet Metal Flashing and Trim” for brake metal sill flashing furnished and installed by this Section.
4. Division 07 Section "Joint Sealants" for joint sealants furnished and installed with aluminum-framed systems and for sealants to the extent not specified in this Section.
5. Division 07 Section “Spray Foam Sealants.”

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.5 PERFORMANCE REQUIREMENTS

A. General Performance: Comply with performance requirements specified, as determined by preconstruction testing of manufacturer's standard glazed ballistic rated curtain walls representing those indicated for this Project without failure due to defective manufacture, fabrication, installation, or other defects in construction.

1. Glazed ballistic rated curtain walls shall withstand movements of supporting structure indicated on Drawings including, but not limited to, story drift, twist, column shortening, long-term creep, and deflection from uniformly distributed and concentrated live loads.
2. Failure also includes the following:

    a. Thermal stresses transferring to building structure.
    b. Glass breakage.
    c. Noise or vibration created by wind and thermal and structural movements.
    d. Loosening or weakening of fasteners, attachments, and other components.
    e. Failure of operating units.

B. Structural Loads:

1. Wind Loads: Provide glazed ballistic rated curtain wall systems capable of withstanding wind-load design pressures calculated using a “design wind pressure” as determined from the Massachusetts State Building Code, and as indicated on Structural Drawings, whichever is greater, and as determined by the Fabricator’s design engineer.

    a. Basic Wind Speed: 140 mph (129 mph).
    b. Exposure Category: Exposure B.
    c. Risk Category: III.

2. Seismic Loads: Provide glazed ballistic rated curtain wall systems capable of withstanding the effects of earthquake motions calculated according to the Massachusetts State Building Code, and as indicated on Structural Drawings, whichever is greater, as determined by the Fabricator’s design engineer.

C. Structural-Test Performance: Test according to ASTM E 330 as follows:

1. When tested at positive and negative wind-load design pressures, assemblies do not evidence deflection exceeding specified limits.
2. When tested at 150 percent of positive and negative wind-load design pressures, assemblies, including anchorage, do not evidence material failures, structural distress, and permanent deformation of main framing members exceeding 0.2 percent of span.
3. Test Durations: As required by design wind velocity, but not less than 10 seconds.

D. Deflection of Framing Members: At design wind pressure, as follows:

1. Deflection Normal to Wall Plane: Limited to 1/175 of clear span for spans up to 13 feet 6 inches and to 1/240 of clear span plus 1/4 inch for spans greater than 13 feet 6 inches or an amount that restricts edge deflection of individual glazing lites to 3/4 inch, whichever is less.
2. Deflection Parallel to Glazing Plane: Limited to amount not exceeding that which reduces glazing bite to less than 75 percent of design dimension and that which reduces edge clearance between framing members and glazing or other fixed components directly below them to less than 1/8 inch and clearance between members and operable units directly below them to less than 1/16 inch.
3. Cantilever Deflection: Where framing members overhang an anchor point, limit deflection to two times the length of cantilevered member, divided by 175.

E. Water Penetration under Static Pressure: Provide aluminum-framed systems that do not evidence water penetration through fixed glazing and framing areas when tested according to ASTM E 331 at a minimum static-air-pressure difference of 20 percent of positive wind-load design pressure, but not less than 15 lbf/sq. ft.

F. Thermal Movements: Allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures:

1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.
2. Test Performance: No buckling; stress on glass; sealant failure; excess stress on framing, anchors, and fasteners; or reduction of performance when tested according to The 2003 IECC and ASHRAE/IESNA 90.1 require that all fenestration be certified and labeled by the manufacturer for energy performance, based on ratings established by NFRC. Verify which manufacturers have tested glazed aluminum curtain walls and can demonstrate compliance with NFRC. Verify requirements of authorities having jurisdiction.

G. Energy Performance: Glazed ballistic rated curtain walls shall have certified and labeled energy performance ratings in accordance with NFRC.

1. Thermal Transmittance (U-factor): Fixed glazing and framing areas shall have U-factor of not more than 0.38 Btu/sq. ft. x h x deg F as determined according to NFRC 102.
2. Air Infiltration: Maximum air leakage through fixed glazing and framing areas of 0.06 cfm/sq. ft. of fixed wall area as determined according to ASTM E 283 at a minimum static-air-pressure differential of 6.24 lbf/sq. ft.
3. Solar Heat Gain Coefficient: SHGC of not more than 0.38.

H. Ballistics-Resistance Performance: Installed bullet-resistant glazing shall withstand ballistic impact loads and forces without damage to the glazing beyond that allowed by referenced standards:

1. Listed and labeled as bullet resisting according to UL 752, Level 3.

1.6 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Provide structural-sealant-glazed curtain walls that comply with test-performance requirements indicated, as evidenced by reports of tests performed on manufacturer's standard assemblies by a qualified testing agency.

B. Preconstruction Sealant Testing: Perform sealant manufacturer's standard tests for compatibility with and adhesion of each material that will come in contact with sealants and each condition.

1. Test a minimum five production-run samples each of metal, glazing, and other material.
2. Prepare samples using techniques and primers required for installed assemblies.
3. Perform tests under environmental conditions that duplicate those under which assemblies will be installed.
4. For materials that fail tests, determine corrective measures necessary to prepare each material to ensure compatibility with and adhesion of sealants including, but not limited to, specially formulated primers. After performing these corrective measures on the minimum number of samples required for each material, retest materials.

1.7 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Shop Drawings: For glazed ballistic rated curtain walls. Include plans, elevations, sections, details, and attachments to other work prepared by or under the supervision of a qualified professional engineer licensed in the Commonwealth of Massachusetts.

1. Include details of provisions for assembly expansion and contraction and for draining moisture occurring within the assembly to the exterior.
2. Include full-size isometric details of each vertical-to-horizontal intersection of glazed ballistic rated curtain walls, showing the following:

a. Joinery, including concealed welds.
b. Anchorage.
c. Expansion provisions.
d. Glazing.
e. Flashing and drainage.

C. Delegated-Design Submittal: For aluminum-framed systems indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer licensed in the Commonwealth of Massachusetts responsible for their preparation.

1. Detail fabrication and assembly of aluminum-framed systems.
2. Include design calculations.
3. Include structural analysis of story drift and deflection from anticipated live loads and determine if receptor heads are required.

D. Samples for Initial Selection: For units with factory-applied color finishes.

E. Samples for Verification: For each type of exposed finish required, in manufacturer's standard sizes.

1. Sheet Metal Flashing: 12 inches long by actual width of unit, including finished seam and in required profile. Include fasteners, cleats, clips, closures, and other attachments.
2. Trim, Metal Closures, Expansion Joints, Joint Intersections, and Miscellaneous Fabrications: 12 inches long and in required profile. Include fasteners and other exposed accessories.
3. Accessories and Miscellaneous Materials: Full-size Sample.

F. Fabrication Sample: Of each vertical-to-horizontal intersection of assemblies, made from 12-inch lengths of full-size components and showing details of the following:

1. Joinery, including concealed welds.
2. Anchorage.
3. Expansion provisions.
4. Glazing.
5. Flashing and drainage.

G. Coordination Drawings: Drawings of each bullet resistant door and frame, drawn to scale, on which connections and interface with electrified control systems are shown.

1.8 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer.

B. Seismic Qualification Certificates: For glazed ballistic rated curtain walls, doors, accessories, and components, from manufacturer.

1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.

C. Welding certificates.

D. Energy Performance Certificates: For glazed ballistic rated curtain walls, accessories, and components, from manufacturer.

1. Basis for Certification: NFRC-certified energy performance values for each glazed aluminum curtain wall.

E. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified preconstruction testing agency, for glazed ballistic rated curtain walls, indicating compliance with performance requirements.

F. Warranties: Sample of special warranties.

1.9 CLOSEOUT SUBMITTALS

A. Maintenance Data: For glazed ballistic rated curtain walls to include in maintenance manuals.

1.10 QUALITY ASSURANCE

A. Manufacturer Qualifications: A manufacturer capable of fabricating glazed ballistic rated curtain walls that meet or exceed energy performance requirements indicated and of documenting this performance by certification, labeling, and inclusion in lists.

B. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

C. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in the Commonwealth of Massachusetts and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of curtainwall framing that are similar to those indicated for this project in material, design and extent.

1. The engineer shall make two visits to the site (once during installation and once after completion of the work) to inspect their respective components for conformance with the approved shop drawings.

D. Product Options: Information on Drawings and in Specifications establishes requirements for aesthetic effects and performance characteristics of assemblies. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction.

1. Do not revise intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If revisions are proposed, submit comprehensive explanatory data to Architect for review.

E. Source Limitations for Aluminum-Framed Systems: Obtain glazed ballistic rated aluminum curtain walls and ballistic rated doors from a single source from a single manufacturer.

F. Welding Qualifications: Qualify procedures and personnel according to the following:

1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
2. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."

G. Accessible Entrances: Comply with applicable provisions in AAB and 2010 ADA Standards**.**

H. Energy Performance Standards: Comply with NFRC for minimum standards of energy performance, materials, components, accessories, and fabrication. Comply with more stringent requirements if indicated.

1. Provide NFRC-certified glazed ballistic rated curtain walls with an attached label.

I. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.

1. Build mockup of typical wall area as directed by the Architect.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.11 PROJECT CONDITIONS

A. Field Measurements: Verify actual locations of structural supports for glazed ballistic rated curtain walls by field measurements before fabrication and indicate measurements on Shop Drawings.

1.12 WARRANTY

A. Special Assembly Warranty: Standard form in which manufacturer agrees to repair or replace components of glazed ballistic rated curtain walls that do not comply with requirements or that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including, but not limited to, excessive deflection.
b. Noise or vibration created by wind and thermal and structural movements.
c. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
d. Water penetration through fixed glazing and framing areas.
e. Failure of operating components.

2. Warranty Period: One year from date of Substantial Completion.

B. Special Finish Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components on which finishes do not comply with requirements or that fail in materials or workmanship within specified warranty period. Warranty does not include normal weathering.

1. Warranty Period: 20 years from date of Substantial Completion.

C. Special Project Warranty: Submit Installer's warranty, signed by Installer, covering Work of this Section, including all installation components of aluminum framing system for the following warranty period:

1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.

1. Sheet and Plate: ASTM B 209.
2. Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221.
3. Extruded Structural Pipe and Tubes: ASTM B 429.
4. Structural Profiles: ASTM B 308/B 308M.
5. Welding Rods and Bare Electrodes: AWS A5.10/A5.10M.

B. Steel Reinforcement: Manufacturer's standard zinc-rich, corrosion-resistant primer complying with SSPC-PS Guide No. 12.00; applied immediately after surface preparation and pretreatment. Select surface preparation methods according to recommendations in SSPC-SP COM and prepare surfaces according to applicable SSPC standard.

1. Structural Shapes, Plates, and Bars: ASTM A 36/A 36M.
2. Cold-Rolled Sheet and Strip: ASTM A 1008/A 1008M.
3. Hot-Rolled Sheet and Strip: ASTM A 1011/A 1011M.

2.2 BALLISTIC RATED ALUMINUM FRAMING

A. Ballistic Rated Aluminum Framing: Flush glazed, thermally broken, extruded aluminum framed, ballistic resistant curtain wall.

1. Basis of Design Product: Subject to compliance with requirements, provide **Total Security Solutions; TSS-650 Thermal Ballistic Framing System** or one of the following:

a. Insulgard Security Products; Stormdefend TTH600 Framing.
b. U.S. Bullet Proofing, Inc.; USAW-400.

B. Framing Members: Manufacturer's standard extruded- or formed-aluminum framing members of minimum wall thickness of 0.093-inch to 0.125-inch and reinforced as required to support imposed loads.

1. Construction: Thermally improved.
2. Glazing System: Retained mechanically with gaskets on four sides.
3. Depth of Frame: 6-1/2 inches, not less than 6 inches.
4. Face of Frame: 2-1/2 inches.

C. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

D. Fasteners: Zinc coated, with no exposed fasteners.

E. Gasket Material: Composition of thermoplastic elastomer (Type 65AB) and polyolefin foam concentrate, with a Shore A durometer of 55 to 65.

F. Ballistic Armor: UL Level 3, totally concealed within the framing system.

G. Glazing: Bullet resistant, Level 3, factory installed.

1. Provide bullet resistant units for interior framing.
2. Provide bullet resistant insulated units for exterior framing.

2.3 BALLISTIC RATED ALUMINUM DOORS

A. Ballistic Rated Aluminum Doors: Extruded aluminum framed, ballistic resistant entrance doors.

1. Basis of Design Product: Subject to compliance with requirements, provide **Total Security Solutions; Ballistic Aluminum Storefront Doors** or one of the following:

a. Insulgard Security Products; Stormdefend TTH350 Aluminum Door System.
b. U.S. Bullet Proofing, Inc.; USAD-1000.

B. Entrance Doors: Manufacturer's standard glazed entrance doors for manual-swing operation.

1. Door Construction: 2-3/4-inch overall thickness, with minimum 0.125-inch- thick, extruded-aluminum tubular rail and stile members. Mechanically fasten corners with reinforcing brackets that are deeply penetrated and fillet welded or that incorporate concealed tie rods.
2. Door Design: Wide stile (monumental); 5-/16-inch nominal width.

a. Accessible Doors: Smooth surfaced for width of door in area within 10 inches above floor or ground plane.

3. Glazing Stops and Gaskets: Square, snap-on, extruded-aluminum stops and preformed gaskets.

a. Provide nonremovable glazing stops on outside of door.

4. Provide an integral 1/2-inch diameter wire tube in doors to receive electrified locksets, panic bars, mortised electric locksets, or electric strikes in the inactive leaf of pairs of doors to accommodate wiring associated with power transfer hinges, knuckles, and electrified hardware within the door.

C. Fasteners: Zinc coated, with no exposed fasteners.

D. Gasket Material: Composition of thermoplastic elastomer (Type 65AB) and polyolefin foam concentrate, with a Shore A durometer of 55 to 65.

E. Ballistic Armor: UL Level 3, totally concealed within the framing system.

F. Glazing: Bullet resistant, Level 3, factory installed.

1. Provide bullet resistant units for interior doors.
2. Provide bullet resistant insulated units for exterior doors.

G. Door Hardware: Provide manufacturer's standard door hardware as follows:

1. Hinges: Heavy duty concealed continuous hinge.
2. Closer: Surface mounted.
3. Weatherstripping.
4. Sweep.
5. Threshold: ADA compliant.
6. Balance of Door Hardware: Comply with Division 08 Section "Door Hardware."

2.4 BALLISTIC RATED GLAZING

A. Insulating Ballistic Rated Glazing: Factory-assembled units, consisting of sealed lites of glazing material indicated separated by a dehydrated interspace, qualified according to ASTM E2190

1. Sealing System: Dual seal, with manufacturer's standard primary and secondary sealants.
2. Spacer: Aluminum with mill or clear anodic finish.

a. Provide custom filler at locations of standard insulated glass units installed in ballistic rated framing.

3. Desiccant: Molecular sieve or silica gel, or blend of both.

B. Interior Bullet Resistant Glazing: Nonsymmetrical clear laminated glass and polycarbonate with glass plies on the attack or threat side, polycarbonate plies on the interior, and glass ply on the witness side.

1. Basis of Design Product: Subject to compliance with requirements, provide **Total Security Solutions; TSS 003 LS 1-1/4"** or comparable product by one of the following:

a. Global Security Glazing.
b. LTI Smart Glass, Inc.
c. Oldcastle Building Envelope.
d. Patriot Armor.

2. Ballistics Resistance: Level 3 per UL 752.
3. Overall Nominal Unit Thickness: 1-1/4 inches.
4. Makeup:

a. Outer Glass Ply: 3/8 inch heat-strengthened float glass.
b. Interlayer Thickness: 0.025 inch urethane.
c. First Inner Glass Ply: 3/8 inch heat-strengthened float glass.
d. Interlayer Thickness: 0.050 inch urethane.
e. Inner Polycarbonate Ply: 1/8 inch Type I (standard, UV-stabilized) polycarbonate.

f. Interlayer Thickness: 0.050 inch urethane.
g. Outer Glass Ply (Secure Layer): 3/16 inch heat-strengthened float glass.

C. Exterior Insulated Bullet Resistant Glazing: Low-e-coated, clear insulating security glazing. Outdoor lite is made of monolithic glass and indoor lite is made of glass-clad polycarbonate.

1. Basis of Design Product: Subject to compliance with requirements, provide **Total Security Solutions; TSS 003 LS 1-1/4”** or comparable product by one of the following:

a. Global Security Glazing.
b. LTI Smart Glass, Inc.
c. Oldcastle Building Envelope.
d. Patriot Armor.

2. Ballistics Resistance: Level 3 per UL 752.
3. Overall Unit Thickness: 2 inches nominal.
4. Outdoor Lite: Clear fully tempered float glass, 1/4 inch thickness.
5. Low-E Coating: Sputtered on second surface.
6. Interspace Content (Air Gap): Argon, ½ inch air gap.
7. Indoor Lite:

a. Outer Glass Ply: 3/8 inch heat-strengthened float glass.
b. Interlayer Thickness: 0.025 inch urethane.
c. First Inner Glass Ply: 3/8 inch heat-strengthened float glass.
d. Interlayer Thickness: 0.075 inch urethane.
e. Inner Polycarbonate Ply: 1/8 inch Type I (standard, UV-stabilized) polycarbonate.
f. Interlayer Thickness: 0.075 inch urethane.
g. Outer Glass Ply (Secure Layer): 3/16 inch heat-strengthened float glass.

8. Overall Visible Light Transmittance: 65 percent minimum.
9. Winter Nighttime U-Factor: 0.24 maximum.
10. Solar-Heat-Gain Coefficient: 0.38 maximum.
11. Provide safety glazing labeling.

D. Comply with Division 08 Section “Glazing” for glazing and Low E coating requirements.

2.5 ACCESSORY MATERIALS

A. Joint Sealants: Furnish and install exterior joint sealants to comply with Division 07 Section "Joint Sealants."

B. Bituminous Paint: Cold-applied asphalt-mastic paint complying with SSPC-Paint 12 requirements except containing no asbestos, formulated for 30-mil thickness per coat.

2.6 FABRICATION

A. Form or extrude aluminum shapes before finishing.

B. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.

C. Fabricate components that, when assembled, have the following characteristics:

1. Profiles that are sharp, straight, and free of defects or deformations.
2. Accurately fitted joints with ends coped or mitered.
3. Physical and thermal isolation of glazing from framing members.
4. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
5. Provisions for field replacement of glazing from exterior.
6. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.

D. Fabricate components that, when assembled, have the following characteristics:

1. Internal guttering system or other means to drain water passing joints, condensation occurring within framing members, and moisture migrating within glazed aluminum curtain wall to exterior.
2. Pressure-equalized system or double barrier design with primary air and vapor barrier at interior side of glazed aluminum curtain wall and secondary seal weeped and vented to exterior.

E. Curtain-Wall Framing: Fabricate components for assembly using screw-spline system.

F. Mullions: Provide mullions and cover plates as shown, matching curtainwall units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of curtainwall units due to thermal expansion and building deflections, as indicated. Provide mullions and cover plates capable of withstanding design loads of curtainwall units.

G. Factory-Assembled Frame Units:

1. Rigidly secure nonmovement joints.
2. Seal joints watertight unless otherwise indicated.

H. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

2.7 ALUMINUM FINISHES

A. High-Performance Organic Finish: Two-coat fluoropolymer finish complying with AAMA 2605 and containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

1. Colors:

a. Framing: Custom to match existing (Sherwin Williams SW 6523 Denim).
b. Doors: Custom to match existing (Sherwin Williams #SW 6300 Burgundy).

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General:

1. Comply with manufacturer's written instructions.
2. Do not install damaged components.
3. Fit joints to produce hairline joints free of burrs and distortion.
4. Rigidly secure nonmovement joints.
5. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration and to prevent impeding movement of moving joints.
6. Weld components in concealed locations to minimize distortion or discoloration of finish. Protect glazing surfaces from welding.
7. Seal joints watertight unless otherwise indicated.

B. Metal Protection:

1. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape or installing nonconductive spacers as recommended by manufacturer for this purpose.
2. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

C. Install components to drain water passing joints, condensation occurring within framing members, and moisture migrating within glazed aluminum curtain wall to exterior.

D. Install components plumb and true in alignment with established lines and grades.

E. Furnish and ballistic rated glazing as specified in this Section.

F. Furnish and install exterior perimeter joint sealants specified in Division 07 Section "Joint Sealants", to produce weathertight installation.

3.3 ERECTION TOLERANCES

A. Erection Tolerances: Install glazed ballistic rated curtain walls to comply with the following maximum tolerances:

1. Plumb: 1/8 inch in 10 feet; 1/4 inch in 40 feet.
2. Level: 1/8 inch in 20 feet; 1/4 inch in 40 feet.
3. Alignment:

a. Where surfaces abut in line or are separated by reveal or protruding element up to 1/2 inch wide, limit offset from true alignment to 1/16 inch.
b. Where surfaces are separated by reveal or protruding element from 1/2 to 1 inch wide, limit offset from true alignment to 1/8 inch.
c. Where surfaces are separated by reveal or protruding element of 1 inch wide or more, limit offset from true alignment to 1/4 inch.

4. Location: Limit variation from plane to 1/8 inch in 12 feet; 1/2 inch over total length.

3.4 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified third party testing agency to perform tests and inspections and prepare test reports.

B. Test Area: Perform tests on representative areas of glazed ballistic rated curtain walls.

C. Testing Services: Testing and inspecting of installed glazed aluminum curtain walls shall take place as follows:

1. Testing Methodology: Testing of curtain walls for water resistance shall be performed according to AAMA 503, at rated laboratory performance pressure.
2. Testing Extent: Test curtain walls as selected by the Commissioning agent, Architect, Contractor, and a qualified independent testing and inspecting agency. Curtain walls shall be tested immediately after complete installation.

a. Water test three (3) units prior to installation of 10 percent of each size/type. Perform corrective action and retesting until specified levels of performance are achieved.
b. Test two (2) additional, randomly selected units between installation of 25 and 50 percent of each size/type.

3. Test Reports: Shall be prepared according to AAMA 503.

D. Glazed ballistic rated curtain walls will be considered defective if they do not pass tests and inspections.

E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements. Retesting to include compensation for Commissioning Agent to witness re-testing.

F. Prepare test and inspection reports.

3.5 ADJUSTING, CLEANING, AND PROTECTION

A. Clean aluminum surfaces immediately after installing curtain wall systems. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.

B. Clean glass immediately after installation. Comply with manufacturer's written recommendations for final cleaning and maintenance. Remove nonpermanent labels, and clean surfaces.

C. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.

D. Protect curtain wall surfaces from contact with contaminating substances resulting from construction operations. In addition, monitor surfaces adjacent to and below exterior concrete and masonry surfaces during construction for presence of dirt, scum, alkaline deposits, stains, or other contaminants. If contaminating substances do contact surfaces, remove contaminants immediately according to manufacturer's written recommendations.

END OF SECTION 08 44 13.13

SECTION 08 00 01 – METAL WINDOWS FILED SUB BID

PART 1 - GENERAL

1.1 GENERAL PROVISIONS – FILED SUB-BID REQUIRED

A. Work of this Section requires Filed Sub-Bids and is governed by the provisions of the Massachusetts General Laws (MGL), Public Bidding Law Chapter 149, Sections 44A to 44J inclusive; and applicable Section of the MGL, Public Contract Law Chapter 30 as amended.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.3 REQUIREMENTS FOR FILING SUB-BIDS

A. Time, Manner and Requirements for Submitting Sub-Bids:

1. Sub-bids for work under this Section shall be for the complete work and shall be submitted electronically as stipulated in the “ebidding Instructions to Bidders.”
2. Sub-bidders must be DCAMM Certified in the listed trade and shall include a current DCAMM sub-bidder Certificate of Eligibility and Update Statement with the bid.
3. Each sub-bid submitted for work under this Section shall be on forms furnished by the Awarding Authority as required by Section 44F of Chapter 149 of the General Laws, as amended.
4. Sub-bids filed with the Awarding Authority shall be accompanied by Bid Bond, Cash, Certified Check, Treasurer’s Check, or Cashier’s Check issued by a responsible bank or trust company payable to the Town of Dedham in the amount of 5 percent of the sub-bid. A sub-bid accompanied by any other form of bid deposit than those specified will be rejected.

B. Sub Sub-Bid Requirements: None required under this Section.

1.4 DESCRIPTION OF WORK

A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including the following Specification Sections:

1. Division 08 Section “Glazed Aluminum Curtain Walls.”
2. Division 08 Section "Glazed Ballistic Rated Framing System.”
3. Division 08 Section "Glazing” for partial work of this Section.
4. Division 08 Section "Glazing Films.”

B. The Work of this Section is shown on the following Drawings:

AG0.01	ABBREVIATIONS, SYMBOLS, MATERIAL AND LEGEND
AD1.01	PARTIAL DEMOLITION PLAN
A1.01	FLOOR PLAN, INTERIOR ELEVATIONS
A1.02	REFLECTED CEILING PLAN, EXTERIOR ELEVATIONS, WALL SECTIONS
A1.03	SECTION DETAILS
A1.04	GLAZING TYPES, DOOR TYPES, PLAN DETAILS
A1.05	REFERENCE IMAGES
A1.06	ADD / ALTERNATE NO. 1 BALLISTIC RATED CONSTRUCTION

The Filed Subcontractor shall also review all other Drawings and all other Sections of the Specifications for coordination requirements therein affecting the Work of this Section, not just those pertaining to this Sub-trade.

C. Alternates: Refer to Division 01 Section “Alternates.”

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 08 00 01

SECTION 08 88 53 - SECURITY GLAZING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes glazing for the following products and applications and of the following types:

1. Products and applications specified in other sections where glazing requirements are specified by reference to this Section:

a. Bullet resistant wood doors (factory glazed).

2. Security glazing types:

a. Non-symmetrical glass-clad polycarbonate units.

B. Related Sections include the following:

1. Division 01 Section “Alternates” for bidding requirements of this Section.
2. Division 08 Section “Bullet Resistant Opening Protection” for factory glazed bullet resistant transaction windows and flush wood doors.
3. Division 08 Section “Glazed Ballistic Rated Framing System” for bullet resistant glazing installed in glazed ballistic rated curtain walls and entrance doors.
4. Division 08 Section "Glazing" for nonsecurity-glazing.

1.3 PERFORMANCE REQUIREMENTS

A. General: Provide security glazing materials capable of complying with performance requirements indicated under the following conditions:

1. Exposure to other security-related loads and forces without damage to the glazing materials beyond that allowed for each performance requirement.
2. Thicknesses of glazing materials indicated are minimums and are for detailing only. Confirm glazing material thicknesses by analyzing Project loads and in-service conditions. Provide glazing material for various size openings in nominal thicknesses indicated, but not less than thicknesses and in strengths required to meet or exceed performance criteria.

B. Forced-Entry Resistance: Provide glazing materials capable of resisting forced entry at ratings indicated as determined from testing identical materials according to HPW-TP-0500.03.

C. Ballistics Resistance: Provide glazing materials capable of resisting ballistic impact at levels indicated as determined from testing identical materials according to UL 752.

1.4 SUBMITTALS

A. Product Data: For each glazing material indicated.

B. Samples: For each glazing lite and glazing sealant product, in 12-inch- square Samples for glass and 12-inch- long Samples for sealants. Install sealant Samples between two strips of material representative in color of the adjoining framing system.

C. Glazing Schedule: Use same designations indicated on Drawings and on Door Schedule for glazed openings in preparing a schedule listing glass types and thicknesses for each size opening and location.

D. Product Certificates: Signed by manufacturers of glass and glazing products certifying that products furnished comply with requirements.

E. Qualification Data: For Installer.

F. Preconstruction Adhesion and Compatibility Test Report: From glazing sealant manufacturer indicating glazing sealants were tested for adhesion to glazing materials and glazing channel substrates and for compatibility with glazing materials.

G. Product Test Reports: For each type of security glazing product indicated.

H. Warranties: Special warranties specified in this Section.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed glazing similar in material, design, and extent to that indicated for this Project; whose work has resulted in glazing installations with a record of successful in-service performance; and who employs glazing installers for this Project who are certified under the National Glass Association Glazier Certification Program as Level 2 (Senior Glaziers) or Level 3 (Master Glaziers).

B. Source Limitations for Glazing Accessories: Obtain glazing accessories from one source for each product and installation method indicated.

C. Glazing Sealant Product Testing: Obtain sealant test results for "Product Test Reports" Paragraph in "Submittals" Article from a qualified testing agency based on testing current sealant formulations within a 36-month period.

1. Sealant Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated, as documented according to ASTM E 548.
2. Test elastomeric glazing sealants for compliance with requirements specified by reference to ASTM C 920 and, where applicable, to other standard test methods.

D. Preconstruction Adhesion and Compatibility Testing: Submit to glazing sealant manufacturers, for testing indicated below, samples of each glazing material type, tape sealant, gasket, glazing accessory, and glass-framing member that will contact or affect elastomeric glazing sealants.

1. Use ASTM C 1087 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of glazing sealants to glass, tape sealants, gaskets, and glazing channel substrates.

2. Submit no fewer than eight pieces of each type of material, including joint substrates, shims, joint-sealant backings, secondary seals, and miscellaneous materials.
3. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
4. For materials failing tests, obtain sealant manufacturer's written instructions for corrective measures, including the use of specially formulated primers.

E. Testing will not be required if elastomeric glazing sealant manufacturers submit data based on previous testing of current sealant products for adhesion to, and compatibility with, glazing materials matching those submitted.

F. Safety Glass: Category II materials complying with testing requirements in 16 CFR 1201.

1. Subject to compliance with requirements, permanently mark safety glass with certification label of Safety Glazing Certification Council or another certification agency acceptable to authorities having jurisdiction.

G. Glazing Publications: Comply with published recommendations of glazing product manufacturers and organization below, unless more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this Section or in referenced standards.

1. GANA Publications: GANA'S "Glazing Manual" and "Laminated Glass Design Guide."
2. Fire-Test-Response Characteristics: Provide plastic sheets identical to those tested for the following fire-test-response characteristics per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify plastic sheets with appropriate markings of applicable testing and inspecting agency.

    a. Self-Ignition Temperature: 650 deg F or more when tested per ASTM D 1929 on plastic sheets in thicknesses indicated for the Work.
    b. Smoke density of 75 or less when tested per ASTM D 2843 on plastic sheets in thicknesses indicated for the Work.
    c. Relative Burning Characteristics: As follows, when tested per ASTM D 635:
    d. Burning extent of 1 inch or less when tested on monolithic polycarbonate plastic glazing with a nominal thickness of 0.060 inch or thickness indicated for the Work.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Protect glazing materials according to manufacturer's written instructions and as needed to prevent damage to glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Do not proceed with glazing when ambient and substrate temperature conditions are outside limits permitted by glazing material manufacturers and when glazing channel substrates are wet from rain, frost, condensation, or other causes.

1. Do not install liquid glazing sealants when ambient and substrate temperature conditions are outside limits permitted by glazing sealant manufacturer or below 40 deg F.

1.8 WARRANTY

A. Manufacturer's Special Warranty for Glass-Clad Polycarbonate: Manufacturer's standard form in which glass-clad polycarbonate manufacturer agrees to replace glass-clad polycarbonate that deteriorates within specified warranty period. Deterioration is defined as defects developed from normal use that are not attributed to glass breakage or to maintaining and cleaning glass-clad polycarbonate contrary to manufacturer's written instructions. Defects include edge separation, delamination materially obstructing vision through glazing, blemishes exceeding those allowed by referenced glass-clad polycarbonate standard, yellowing, and loss of light transmission.

1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GLASS PRODUCTS

A. Heat-Treated Float Glass: ASTM C 1048; Type I (transparent flat glass); Quality q3; class, kind, and condition as indicated in other Part 2 articles.

1. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed, unless otherwise indicated.

B. Laminated Glass: ASTM C 1172, kinds of laminated glass as specified in other Part 2 articles.

1. Interlayers: Type as indicated below and of thickness indicated or required to comply with performance requirements and with a proven record of no tendency to bubble, discolor, or lose physical and mechanical properties after laminating to glass and installation:

a. Manufacturer's standard interlayer material, clear.

2. Fabrication: Laminate glass to interlayers to produce laminated lites free of foreign substances, air, and glass pockets.

C. Glass-Clad Polycarbonate: ASTM C 1349, kinds and other requirements as specified in other Part 2 articles.

2.2 POLYCARBONATE GLAZING PRODUCTS

A. Polycarbonate Sheet: ASTM C 1349, Appendix X1, type as specified in other Part 2 articles.

B. Laminated Assemblies: Laminated security glass assemblies are to be bonded with polyvinyl and/or aliphatic polyurethane interlayers, as required, and fabricated in an autoclave using heat, plus pressure producing products free of foreign substances and air pockets.

2.3 ELASTOMERIC GLAZING SEALANTS

A. General: Provide products of type indicated, complying with the following requirements:

1. Compatibility: Select glazing sealants that are compatible with one another and with other materials they will contact, including glazing lites, seals of insulating-glass and air-gap glazing units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
2. Suitability: Comply with sealant and glazing unit manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
3. VOC Content: For sealants used inside of the weatherproofing system, not more than 250 g/L when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
4. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range.

B. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 50, Use NT.

1. Products: Subject to compliance with requirements, provide one of the following:

   a. Dow Corning Corporation; 791.
   b. GE Advanced Materials - Silicones; SilPruf NB SCS9000.
   c. Pecora Corporation; 895NST.

2. Applications: For all locations of security glazing, with the exception of cells.

C. Glazing Sealant: Single-Component, nonsag, tamper resistant elastomeric joint sealant complying with ASTM C 920, Type S, Grade NS, Class 12.5, for Use NT.

1. Products: Subject to compliance with requirements, provide the following:

   a. Pecora Corporation; Dynaflex SC.

2. Applications: For all cell locations with security glazing.

2.4 GLAZING TAPES

A. Back-Bedding Mastic Glazing Tape: Preformed, butyl-based elastomeric tape with a solids content of 100 percent; nonstaining and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glazing unit manufacturers for application indicated; packaged on rolls with a release paper backing; and complying with ASTM C 1281 and AAMA 800 for products indicated below:

1. AAMA 804.3 tape, where indicated.
2. AAMA 806.3 tape, for glazing applications in which tape is subject to continuous pressure.
3. AAMA 807.3 tape, for glazing applications in which tape is not subject to continuous pressure.

B. Expanded Cellular Glazing Tape: Closed-cell, PVC foam tape; factory coated with adhesive on both surfaces; packaged on rolls with release liner protecting adhesive; and complying with AAMA 800 for the following types:

1. Type 1, for glazing applications in which tape acts as the primary sealant.
2. Type 2, for glazing applications in which tape is used in combination with a full bead of liquid sealant.

2.5 MISCELLANEOUS GLAZING MATERIALS

A. General: Provide products of material, size, and shape complying with referenced glazing standard and requirements of manufacturers of glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.

B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.

C. Setting Blocks: Elastomeric material with a Shore A durometer hardness of 85, plus or minus 5.

D. Spacers: Elastomeric blocks or continuous extrusions with a Shore A durometer hardness required by glazing unit manufacturer to maintain glazing units in place for installation indicated.

E. Edge Blocks: Elastomeric material of hardness needed to limit lateral movement (side walking) of glazing units.

F. Cylindrical Glazing Sealant Backing: ASTM C 1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.

2.6 FABRICATION OF GLAZING UNITS

A. General: Fabricate glazing units in sizes required to glaze openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing standard, to comply with system performance requirements.

2.7 NONSYMMETRICAL LAMINATED-GLASS-AND-POLYCARBONATE UNITS

A. Nonsymmetrical Laminated-Glass-and-Polycarbonate Units: Consisting of laminated glass on the attack side and laminated-polycarbonate sheet on the witness side.

1. Basis of Design Product: Subject to compliance with requirements, provide **Oldcastle Building Envelope; ArmorResist Plus 223000** or comparable product by one of the following:

    a. Global Security Glazing; Armor-Gard BALULN25.
    b. LTI Smart Glass, Inc.; Smartgard-BR3.
    c. Standard Bent Glass; SP-311.

2. Overall Unit Thickness: 1.22-inches.
3. Laminated-Glass Lite on attack side:

    a. Outer Lite: Class 1 (clear) Kind HS (heat-strengthened), Condition A (uncoated glass) 3 mm float glass laminated to a multiply glass core.

4. Laminated-Polycarbonate Lite: Type II (coated, mar-resistant, UV-stabilized) polycarbonate.
5. Ballistics Resistance: Level 3 per UL 752.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine framing for glazing, with Installer present, for compliance with the following:

1. Manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.
2. Presence and functioning of weep system.
3. Minimum required face or edge clearances.
4. Effective sealing between joints of glazing-unit-framing members.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean glazing channels and other framing members receiving glazing units immediately before glazing. Remove coatings not firmly bonded to substrates.

3.3 GLAZING, GENERAL

A. Comply with combined written instructions of manufacturers of glazing lites, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.

B. Glazing channel dimensions, as indicated on Drawings or determined by glazing material thicknesses and by other requirements indicated, provide necessary bite on lites, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances. Adjust as required by Project conditions during installation.

C. Protect glazing-lite edges from damage during handling and installation. Remove damaged glazing lites from Project site and legally dispose of off Project site. Damaged glazing lites are those with edge damage or other imperfections that, when installed, could weaken glazing lites and impair performance and appearance.

D. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction sealant-substrate testing.

E. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glazing unit manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

F. Do not exceed edge pressures stipulated by glazing unit manufacturers for installing lites.

G. Provide spacers for glazing lites where the length plus width is larger than 50 inches as follows:

1. Locate spacers directly opposite each other on both inside and outside faces of glazing lites. Install correct size and spacing to preserve required face clearances unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.

2. Provide 1/8-inch minimum bite of spacers on glazing lites and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.

H. Provide edge blocking where indicated or needed to prevent glazing lites from moving sideways in glazing channel, as recommended in writing by glazing unit manufacturer and according to requirements in referenced glazing publications.

I. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.

3.4 TAPE GLAZING

A. Position tapes on fixed stops so that, when compressed by glazing units, their exposed edges are flush with or protrude slightly above sightline of stops.

B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.

C. Where framing joints are vertical, cover joints by applying tapes to heads and sills first and then to jambs. Where framing joints are horizontal, cover joints by applying tapes to jambs first and then to heads and sills.

D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.

E. Do not remove release paper from tape until just before each glazing unit is installed.

F. Apply heel bead of elastomeric sealant.

G. Center glazing units in openings on setting blocks and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.

H. Apply cap bead of elastomeric sealant over exposed edge of tape.

3.5 SEALANT GLAZING (WET)

A. Install continuous spacers, or spacers combined with cylindrical sealant backing, between glazing units and glazing stops to maintain face clearances and to prevent sealant from extruding into glazing channel and blocking weep systems until sealants cure. Secure spacers or spacers and backings in place and in position to control depth of installed sealant relative to edge clearance for optimum sealant performance.

B. Force sealants into glazing channels to eliminate voids and to ensure complete wetting or bond of sealant to glazing unit and channel surfaces.

C. Tool exposed surfaces of sealants to provide a substantial wash away from glazing units.

3.6 PROTECTION AND CLEANING

A. Protect exterior glazing units from damage immediately after installation by attaching crossed streamers to framing held away from glazing unit. Do not apply markers to glazing unit surfaces. Remove nonpermanent labels, and clean surfaces.

B. Protect glazing units from contact with contaminating substances resulting from construction operations, including weld splatter. If, despite such protection, contaminating substances do come into contact with glazing units, remove substances immediately as recommended in writing by glazing unit manufacturer.

C. Examine glazing unit surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for build-up of dirt, scum, alkaline deposits, or stains; remove as recommended in writing by glazing unit manufacturer.

D. Remove and replace glazing units that are broken, chipped, cracked, or abraded or that are damaged from natural causes, accidents, or vandalism during construction period.

E. Wash glazing units on both exposed surfaces in each area of Project not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glazing units as recommended by glazing unit manufacturer.

END OF SECTION 08 88 53

SECTION 09 21 16 - GYPSUM BOARD ASSEMBLIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Exterior non-load-bearing wall framing.
2. Non-load-bearing steel framing members for the following applications:

    a. Interior framing systems (e.g., supports for partition walls, framed soffits, and furring).

3. Interior gypsum board.
4. Exterior gypsum board (patching and repair of existing).
5. Bullet resistant fiberglass panels.

B. Related Sections include the following:

1. Division 01 Section “Alternates” for bidding requirements of this Section for bullet resistant panels.
2. Division 06 Section "Miscellaneous Rough Carpentry" for wood blocking built into gypsum board assemblies.
3. Division 06 Section “Sheathing” for exterior gypsum sheathing.
4. Division 07 Section "Thermal Insulation" for insulation installed in assemblies that incorporate gypsum board.
5. Division 07 Section “Joint Sealants” for acoustical sealants furnished and installed by this Section in gypsum board assemblies.
6. Division 09 Section “Painting” for primers applied to gypsum board surfaces.

1.3 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide interior and exterior non-load-bearing metal framing capable of withstanding design loads within limits and under conditions indicated.

1. Design Loads: In accordance with the Massachusetts State Building Code and as indicated on Structural Drawings.
2. Deflection Limits: Design framing systems to withstand design loads without deflections greater than the following:

    a. Exterior Non-Load-Bearing Framing for Masonry: Horizontal deflection of 1/600 of the wall height.
    b. Interior Framing Systems:

1) Maximum Deflection: L/240 at 5 psf, maximum stud spacing at 16 inches o.c.

3. Design framing systems to provide for movement of framing members without damage or overstressing, sheathing failure, connection failure, undue strain on fasteners and anchors, or other detrimental effects when subject to a maximum ambient temperature change of 120 deg F.
4. Design framing system to maintain clearances at openings, to allow for construction tolerances, and to accommodate live load deflection of primary building structure as follows:

   a. Upward and downward movement of 3/4 inch.

5. Design jamb studs, jack studs cripple studs, sills and headers to support weight of wall components (dead load) and horizontal loads.

B. Cold-Formed Steel Framing, General: Design according to AISI's "Standard for Cold-Formed Steel Framing - General Provisions."

1. Design exterior non-load-bearing wall framing to accommodate horizontal deflection without regard for contribution of sheathing materials.
2. Provide interior framing systems sized to accommodate maximum deflection using limiting heights of metal studs without contribution of gypsum wallboard (non-composite).

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Control Joint Locations: Submit plan with proposed locations of control joints for approval. Architect to provide final determination of all locations.

C. Shop Drawings: Show layout, spacings, sizes, thicknesses, and types of cold-formed metal framing; fabrication; and fastening and anchorage details, including mechanical fasteners. Show reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details, and attachment to adjoining work.

1. For non-load-bearing metal framing indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional structural engineer licensed in the Commonwealth of Massachusetts responsible for their preparation.
2. Include calculations for span capabilities of cold-formed metal framing for deflection criteria specified.

D. Samples: For the following products:

1. Trim Accessories: Full-size Sample in 12-inch- long length for each trim accessory indicated.

E. Qualification Data: For professional engineer.

F. Product Test Reports: From a qualified testing agency, unless otherwise stated, indicating that each of the following complies with requirements, based on evaluation of comprehensive tests for current products:

1. Steel sheet.
2. Expansion anchors.
3. Power-actuated anchors.
4. Mechanical fasteners.

G. Research/Evaluation Reports: For cold-formed metal framing.

H. Warranty: Special warranties included in this Section.

1.5 QUALITY ASSURANCE

A. Engineering Responsibility: Preparation of Shop Drawings, design calculations, and other structural data by a qualified professional engineer.

B. Professional Engineer Qualifications: A professional structural engineer who is legally qualified to practice in the Commonwealth of Massachusetts and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of cold-formed metal framing that are similar to those indicated for this Project in material, design, and extent.

C. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM E 329 to conduct the testing indicated.

D. Product Tests: Mill certificates or data from a qualified independent testing agency indicating steel sheet complies with requirements, including base-metal thickness, yield strength, tensile strength, total elongation, chemical requirements, and metallic-coating thickness.

E. AISI Specifications and Standards: Comply with AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members" and its "Standard for Cold-Formed Steel Framing - General Provisions."

F. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

G. Mockups: Before beginning gypsum board installation, install mockups of at least 100 sq. ft. in surface area to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Install mockups for the following:

   a. Each level of gypsum board finish indicated for use in exposed locations.

2. Apply or install final decoration indicated, including painting and wallcoverings, on exposed surfaces for review of mockups.
3. Simulate finished lighting conditions for review of mockups.
4. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Protect cold-formed metal framing from corrosion, deformation, and other damage during delivery, storage, and handling.

B. Store cold-formed metal framing, protect with a waterproof covering, and ventilate to avoid condensation.

C. Store materials inside under cover and keep them dry and protected against damage from weather, condensation, direct sunlight, construction traffic, and other causes. Stack gypsum panels flat to prevent sagging.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.

B. Do not install interior products until installation areas are enclosed and conditioned.

C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

1.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace bullet resistant fiberglass panels that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 EXTERIOR NON-LOAD-BEARING WALL FRAMING

A. Manufacturers: Subject to compliance with requirements, provide cold-formed metal framing by one of the following:

1. ClarkDietrich Building Systems.
2. MarinoWare; a division of Ware Industries.
3. SCAFCO Steel Stud Company.

B. Framing Members, General: Comply with ASTM C 754 for conditions indicated.

1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal unless otherwise indicated.

2. Protective Coating: ASTM A 653/A 653M, G60, hot-dip galvanized.

C. Steel Studs: ASTM C 645, manufacturer's standard C-shaped steel studs, of web depths indicated, punched, with stiffened flanges, and as follows:

1. Minimum Base-Metal Thickness: As required by structural performance.
2. Flange Width: 1-5/8 inches.

D. Steel Track: ASTM C 645, manufacturer's standard U-shaped steel track, of web depths indicated, unpunched, with unstiffened flanges, and as follows:

1. Minimum Base-Metal Thickness: As required by structural performance.
2. Flange Width: 1-1/4 inches.

E. Single Deflection Track: Manufacturer's single, deep-leg, U-shaped steel track; unpunched, with unstiffened flanges, of web depth to contain studs while allowing free vertical movement, with flanges designed to support horizontal and lateral loads and transfer them to the primary structure, and as follows:

1. Minimum Base-Metal Thickness: As required by structural performance.
2. Flange Width: 1 inch plus the design gap for 1-story structures and 1 inch plus twice the design gap for other applications.

2.2 INTERIOR NON-LOAD-BEARING STEEL FRAMING

A. Manufacturers: Subject to compliance with requirements, provide cold-formed metal framing by one of the following:

1. ClarkDietrich Building Systems; ProSTUD Series.
2. MarinoWare; a division of Ware Industries.
3. SCAFCO Steel Stud Company.

B. Interior Framing Members, General: Comply with ASTM C 645 for conditions indicated.

1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal.
2. Protective Coating: Comply with ASTM C 645; roll-formed from hot-dipped galvanized steel; complying with ASTM A 1003/A 1003M and ASTM A 653/A 653M G40 or having a coating that provides equivalent corrosion resistance. A40 galvannealed products are not acceptable.

a. Coatings shall demonstrate equivalent corrosion resistance with an evaluation report acceptable to the authority having jurisdiction.

C. Steel Studs and Runners: ASTM C 645.

1. Non-Structural Studs: Cold-formed galvanized steel C-studs as per ASTM C 645 for conditions indicated below:

a. Flange Size: 1-1/4-inch.
b. Web Depth: As indicated on Drawings.

1) Minimum Thickness: 0.033 inch.
2) Minimum Design Thickness: 0.0346 inch.

D. Slip-Type Head Joints: Where indicated, provide the following:

1. Deflection Track: Slotted steel sheet top track manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.

2.3 INTERIOR GYPSUM BOARD

A. General: Complying with ASTM C 36 or ASTM C 1396, as applicable to type of gypsum board indicated and whichever is more stringent.

B. Size: Provide in maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

C. Moisture- and Mold-Resistant Gypsum Board: ASTM C 1396/C 1396M. With moisture- and mold-resistant core and coated surfaces.

1. Products: Subject to compliance with requirements, provide one of the following:

a. CertainTeed; M2Tech.
b. G-P Gypsum; ToughRock Moisture-Guard Gypsum Board.
c. National Gypsum Company; Gold Bond XP Gypsum Board.
d. USG Corporation; Mold Tough Panels.

2. Thickness: 5/8 inch, Type X.
3. Long Edges: Tapered.
4. Mold Resistance: ASTM D 3273, score of 10.

D. Abuse-Resistant and Moisture- and Mold-Resistant Gypsum Board (A.R.G.B.): Manufactured to produce greater resistance to surface indentation and abrasion than standard, regular-type and Type X gypsum board.

1. Products: Subject to compliance with requirements, provide one of the following:

a. CertainTeed; AirRenew Extreme Abuse Resistant Gypsum Board.
b. National Gypsum Company; Gold Bond Hi-Abuse Brand XP Gypsum Board.
c. USG Corporation; Mold Tough AR Panels.

2. Core: 5/8 inch, Type X.
3. Long Edges: Tapered.
4. Mold Resistance: ASTM D 3273, score of 10.
5. Abuse-Resistant Performance: Comply with ASTM C 1629 and the following:

a. Surface Abrasion: ASTM D 4977 modified with 25 lbs of additional weight, 0.059” maximum (Level 2 minimum).
b. Surface Indentation: ASTM D 5420, 0.10” maximum (Level 1).
c. Soft-Body Impact: ASTM E 695, surface failure at 195 ft.-lbs minimum (Level 2).
d. Hard-Body Impact: ASTM E 1629 Annex A.1, surface failure at 50 ft.-lbs minimum (Level 1).

2.4 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.

1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized steel sheet.
2. Shapes:

    a. Cornerbead.
    b. LC-Bead: J-shaped; exposed long flange receives joint compound.
    c. U-Bead: J-shaped; exposed short flange does not receive joint compound.
    d. Expansion (control) joint.

2.5 EXTERIOR GYPSUM BOARD FOR CEILINGS

A. Exterior Gypsum Board: ASTM C 931/C 931M or ASTM C 1396/C 1396M, with manufacturer's standard edges.

1. Products: Subject to compliance with requirements, provide one of the following:

    a. CertainTeed; Exterior Soffit Board.
    b. G-P Gypsum; ToughRock Soffit Board.
    c. National Gypsum Company; Gold Bond Exterior Soffit Board.
    d. USG Corporation; SHEETROCK Brand Exterior Gypsum Ceiling Board.

2. Core: 1/2 inch.

2.6 BULLET RESISTANT FIBERGLASS PANELS

A. Bullet Resistant Fiberglass Panels: Non-ricochet type permitting the encapture and retention of an attacking projectile lessening the potential of a random injury or lateral penetration.

1. Product: Subject to compliance with requirements, provide one of the following:

    a. Action Bullet Resistant, Inc.; ArmorCore Level 3.
    b. Armortex, Inc.; O.F. 300.
    c. North American Bullet Proof, Inc.; Shotgard BB-3.

2. Panels: Multiple layers of starch-oil woven roving ballistic grade fiberglass cloth impregnated with a thermoset polyester resin and compressed into flat rigid sheets.
3. Security Level: UL 752, rated for performance Level 3.
4. Thickness: 7/16-inch, or as required for performance level.
5. Weight: 4.00 lbs./sq.ft. minimum (varies by manufacturer).

2.7 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape:

1. Interior Gypsum Wallboard: Paper.
2. Exterior Gypsum Soffit Board: Paper.

C. Joint Compound for Interior Gypsum Wallboard: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Prefilling: At open joints and damaged surface areas, use setting-type taping compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.

    a. Use setting-type compound for installing paper-faced metal trim accessories.

3. Fill Coat: For second coat, use drying-type, all-purpose compound.
4. Finish Coat: For third coat, use drying-type, all-purpose compound.

D. Joint Compound for Exterior Applications:

1. Exterior Gypsum Soffit Board: Use setting-type taping compound and setting-type, sandable topping compound.

2.8 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.

B. Acoustical Sealant: As specified in Division 07 Section "Joint Sealants."

C. Thermal Insulation: As specified in Division 07 Section "Thermal Insulation."

D. Isolation Strip at Exterior Walls: Provide the following:

1. Foam Gasket: Adhesive-backed, closed-cell vinyl foam strips that allow fastener penetration without foam displacement, 1/8 inch thick, in width to suit steel stud size.

2.9 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.

1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

B. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.

1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance.

B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected. Commencement of work indicates acceptance of areas and substrates.

3.2 INSTALLATION, GENERAL

A. Installation Standard: ASTM C 754, except comply with framing sizes and spacing indicated.

1. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.

B. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.

C. Install bracing at terminations in assemblies.

D. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.3 EXTERIOR NON-LOAD-BEARING WALL INSTALLATION

A. Install continuous tracks sized to match studs. Align tracks accurately and securely anchor to supporting structure as indicated.

B. Fasten both flanges of studs to top and bottom track, and to bottom track only where deflection track is indicated. Space studs as follows:

1. Stud Spacing: 16 inches o.c.

C. Set studs plumb, except as needed for diagonal bracing or required for nonplumb walls or warped surfaces and similar requirements.

D. Isolate non-load-bearing steel framing from building structure to prevent transfer of vertical loads while providing lateral support.

1. Install single-leg deflection tracks and anchor to building structure, where indicated.

E. Install horizontal bridging in wall studs, spaced in rows indicated on Shop Drawings but not more than 48 inches apart. Fasten at each stud intersection.

1. Top Bridging for Single Deflection Track: Install row of horizontal bridging within 12 inches of single deflection track. Install a combination of flat, taut, steel sheet straps of width and thickness indicated and stud or stud-track solid blocking of width and thickness matching studs. Fasten flat straps to stud flanges and secure solid blocking to stud webs or flanges.

a. Install solid blocking at 96-inch centers.

F. Install miscellaneous framing and connections, including stud kickers, web stiffeners, clip angles, continuous angles, anchors, fasteners, and stud girts, to provide a complete and stable wall-framing system.

3.4 INTERIOR NON-LOAD-BEARING WALL INSTALLATION

A. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.

B. Install studs so flanges within framing system point in same direction.

1. Space studs for all applications at 16 inches o.c., unless otherwise indicated.

C. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts penetrating partitions above ceiling.

1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.

    a. Install two studs at each jamb, unless otherwise indicated.
    b. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2-inch clearance from jamb stud to allow for installation of control joint in finished assembly.
    c. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.

3. Other Framed Openings: Frame openings other than door openings the same as required for door openings, unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
4. Fire-Resistance-Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure.

    a. Firestop Track: Where indicated, install to maintain continuity of fire-resistance-rated assembly indicated.

5. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated.

D. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch from the plane formed by faces of adjacent framing.

3.5 APPLYING AND FINISHING PANELS, GENERAL

A. Comply with ASTM C 840.

B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.

C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.

D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.

E. Form control and expansion joints with space between edges of adjoining gypsum panels.

F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings), except in chases braced internally.

1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
2. Fit gypsum panels around ducts, pipes, and conduits.
3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- wide joints to install sealant.

G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch- wide spaces at these locations, and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

I. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and with manufacturer's written recommendations for locating edge trim and closing off sound-flanking paths around or through assemblies, including sealing partitions above acoustical ceilings.

3.6 APPLYING INTERIOR GYPSUM BOARD

A. Install interior gypsum board in the following locations:

1. Moisture- and Mold-Resistant Type X Gypsum Board: All wall and ceiling locations, unless otherwise noted.
2. Abuse-Resistant Type X: Wall types, as indicated on Drawings.

B. Single-Layer Application:

1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing, unless otherwise indicated.
2. On partitions/walls, apply gypsum panels either vertically (parallel to framing) or horizontally (perpendicular to framing), unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.

a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
b. At high walls, install panels horizontally, unless otherwise indicated or required by fire-resistance-rated assembly.

3. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

3.7 APPLYING EXTERIOR GYPSUM PANELS FOR CEILINGS AND SOFFITS

A. Apply panels perpendicular to supports, with end joints staggered and located over supports.

1. Install with 1/4-inch open space where panels abut other construction or structural penetrations.
2. Fasten with corrosion-resistant screws.

3.8 INSTALLATION OF BULLET RESISTANT FIBERGLASS PANELS

A. Install bullet resistant panels in accordance with manufacturer's written recommendations. Method of application shall maintain the bullet resistive rating at junctures with the floor slab, bullet resistive door and window frames, and all required penetrations.

1. Install bullet resistant panels behind all electrical devices.

B. Reinforce all joints with a back-up layer of bullet resistant material. The bullet resistance of the joint, as reinforced, shall be at least equal to that of the panel. Minimum width of reinforcing layer at joint to be 4-inches wide.

3.9 INSTALLING TRIM ACCESSORIES

A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

B. Control Joints: Install control joints at locations indicated on Drawings, or if not indicated, according to ASTM C 840 and in specific locations approved by Architect for visual effect.

C. Interior Trim: Install in the following locations:

1. Cornerbead: Use at outside corners.
2. LC-Bead: Use at exposed panel edges.

3.10 FINISHING GYPSUM BOARD

A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.

B. Prefill open joints and damaged surface areas.

C. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.

D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:

1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
2. Level 4: At panel surfaces that will be exposed to view, unless otherwise indicated.

3.11 PROTECTION

A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

B. Remove and replace panels that are wet, moisture damaged, and mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 09 21 16

SECTION 12 48 16 – ENTRANCE FLOOR GRILLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes:

1. Surface mounted foot grilles and frames.

1.3 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide foot grilles and frames capable of withstanding the following loads and stresses:

1. Uniform floor load of 350 lbf/sq. ft.

1.4 QUALITY ASSURANCE

A. Source Limitations: Obtain foot grilles and frames through one source from a single manufacturer.

B. Accessibility Requirements: Provide installed foot grilles that comply with 2010 ADA Standards and AAB.

C. Static Coefficient of Friction: Provide products with the following values as determined by testing identical products per ASTM C 1028:

1. Level Surfaces: Minimum 0.60.

1.5 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace foot grilles that fail in performance, materials, or workmanship within specified warranty period.

1. Warranty Period: 5 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Aluminum Sheet: ASTM B 209, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with not less than strength and durability properties of Alloy 5005-H15.

B. Extruded Aluminum: ASTM B 221, Alloy 6061-T6 or Alloy 6063-T5, T6, or T52 as standard with manufacturer. Coat surface of frame in contact with cementitious materials with manufacturer's standard protective coating.

2.2 FOOT GRILLES

A. General: Provide manufacturer's standard foot-grille assemblies consisting of treads of type and profile indicated, interlocked or joined together by cross members, and other components needed to produce a complete installation.

1. Product: Subject to compliance with requirements, provide the following, or equal:

a. Construction Specialties; PediTred LP G3.

B. Aluminum Foot Grille: Provide manufacturer's standard foot grilles, bolt-through design, with extruded members, top-surfaced tread rails, and as follows:

1. Tread Rails: Extruded-aluminum tread rails.

a. Aluminum Color: Clear anodized.

2. Tread Rail Spacing: 1-1/2 inches o.c. with 1/8- to 3/16-inch- o.c. wide openings between treads, with top surface ~~alternating with serrated aluminum and~~ exterior carpet.
~~3. Top Surface: Serrated aluminum.~~

~~a. Top Surface Color: Match tread rail.~~

4. Top Surface: Exterior carpet, solution dyed polypropylene fibers, fusion bonded to a two-ply backing, 32 oz./sq. yd.

a. Top Surface Color: As selected by Architect from manufacturer’s full range.

5. Thickness: 1/2 inch.
6. Grille Size: As indicated, with module size of at least 12’-0” in width, 3’-0” in length.

2.3 FRAMES

A. Provide manufacturer's standard frames of size and style for grille type, for permanent recessed installation in subfloor, complete with installation anchorages and accessories. Fabricate frame of same material and finish as grilles.

1. Interior Frame: Surface mounted aluminum frame, 2 1/2" wide 6063-T6 aluminum alloy and permanently positions mat for surface mounted applications.

~~2.4 DRAIN PANS~~

~~A. Provide manufacturer's standard, 16 gauge aluminum sheet drain pan with NPS 2 drain outlet for each exterior floor grille unit. Coat bottom of pan with protective coating recommended by manufacturer.~~

2.5 FABRICATION

A. Shop fabricate foot grilles and mats to greatest extent possible in sizes as indicated. Unless otherwise indicated, provide each grille as a single unit; do not exceed manufacturer's recommended maximum sizes for units that are removed for maintenance and cleaning. Where joints in grilles are necessary, space symmetrically and away from normal traffic lanes.

B. Fabricate frame members in single lengths or, where frame dimensions exceed maximum available lengths, provide minimum number of pieces possible, with hairline joints equally spaced and pieces spliced together by straight connecting pins.

2.6 ALUMINUM FINISHES

A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

B. Clear Anodic Finish: AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker.

END OF SECTION 12 48 16

SECTION 08 71 00 - DOOR HARDWARE

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.

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

1. Mechanical door hardware.
2. Electromechanical door hardware.
3. Automatic operators.

C. Related Sections:

1. Division 01 Section “Alternates.”
2. Division 08 Section “Hollow Metal Frames”.
3. Division 08 Section “Flush Wood Doors”.
4. Division 08 Section "Bullet Resistant Opening Protection.”
5. Division 08 Section “Glazed Aluminum Curtain Walls.”
6. Division 08 Section "Glazed Ballistic Rated Framing System.”
7. Division 26 Electrical Section.

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

1. ICC/IBC - International Building Code.
2. NFPA 70 - National Electrical Code.
3. NFPA 80 - Fire Doors and Windows.
4. NFPA 101 - Life Safety Code.
5. NFPA 105 - Installation of Smoke Door Assemblies.
6. UL/ULC and CSA C22.2 - Standards for Automatic Door Operators Used on Fire and Smoke Barrier Doors and Systems of Doors.
7. State Building Codes, Local Amendments.
8. 521 CMR - Massachusetts Architectural Board Regulations.

E. Standards: All hardware specified herein shall comply with the following industry standards as applicable. Any undated reference to a standard shall be interpreted as referring to the latest edition of that standard:

1. ANSI/BHMA Certified Product Standards - A156 Series.
2. UL10C - Positive Pressure Fire Tests of Door Assemblies.
3. ANSI/UL 294 - Access Control System Units.
4. UL 305 - Panic Hardware.

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. 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.

E. 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.

F. 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 Procedures.

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. Certified Products: Where specified, products must maintain a current listing in the Builders Hardware Manufacturers Association (BHMA) Certified Products Directory (CPD).

C. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door 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.

D. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical 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.

E. Automatic Operator Supplier Qualifications: Power operator products and accessories are required to be supplied and installed through the Norton Preferred Installer (NPI) program. Suppliers are to be factory trained, certified, and a direct purchaser of the specified power operators and be responsible for the installation and maintenance of the units and accessories indicated for the Project.

F. 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.

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

H. 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.

I. 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

J. 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. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.

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, access control credentials, software 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 standard and electrified 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. Warranty Period: Unless otherwise indicated, warranty shall be one year from date of Substantial Completion.

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.

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:

1. 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.

C. 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 butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.

1. Quantity: Provide the following hinge quantity:

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” heavy weight.

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:

a. Non-removable Pins: With the exception of electric through wire hinges, 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. Manufacturers:

a. Hager Companies (HA) - BB Series, 5 knuckle.
b. McKinney (MK) - TA/T4A Series, 5 knuckle.
c. dormakaba Best (ST) - F/FBB Series, 5 knuckle.

B. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 continuous geared hinge. with minimum 0.120-inch thick extruded 6063-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. Manufacturers:.

a. Hager Companies (HA).
b. Ives (IV).
c. Pemko (PE).

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. Manufacturers:

a. Pemko (PE) - EL-CEPT Series.
b. Securitron (SU) - EL-CEPT Series.
c. Von Duprin (VD) - EPT-10 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 (MK) - Electrical Connecting Kit: QC-R001.
b. McKinney (MK) - Connector Hand Tool: QC-R003.

2. Manufacturers:

a. Hager Companies (HA) - Quick Connect.
b. McKinney (MK) - QC-C Series.
c. Von Duprin (VD) - Connect.

2.4 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. Cylinder Types: Original manufacturer cylinders able to supply the following cylinder formats and types:

1. Threaded mortise cylinders with rings and cams to suit hardware application.
2. Rim cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
3. Bored or cylindrical lock cylinders with tailpieces as required to suit locks.
4. Tubular deadlocks and other auxiliary locks.
5. 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.
6. Keyway: Match Facility Restricted Keyway.

C. Small Format Interchangeable Cores: Provide small format interchangeable cores (SFIC) as specified, core insert, removable by use of a special key; usable with other manufacturers' cylinders.

D. Patented Cylinders: ANSI/BHMA A156.5, Grade 1 Certified Products Directory (CPD) listed cylinders employing a utility patented and restricted keyway requiring the use of a patented key. Cylinders are to be protected from unauthorized manufacture and distribution by manufacturer’s United States patents.

1. Patented key systems shall not be established with products that have an expired patent. Expired systems shall only be specified and supplied to support existing systems.

2. Manufacturers:

a. Medeco (MC) - X4.
b. No Substitution.

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

1. Supplier shall conduct a "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: Field verify and key cylinders to match Owner's existing system.

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

1. Change Keys per Cylinder: Two (2)
2. Master Keys (per Master Key Level/Group): Five (5).
3. Construction Keys (where required): Ten (10).
4. Construction Control Keys (where required): Two (2).
5. Permanent Control Keys (where required): Two (2).

G. Construction Keying: Provide construction master keyed cylinders.

H. Construction Keying: Provide temporary keyed construction cores.

I. 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.

2.5 MECHANICAL LOCKS AND LATCHING DEVICES

A. Mortise Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.13, Series 1000, Operational Grade 1 Certified Products Directory (CPD) listed. Locksets are to be manufactured with a corrosion resistant steel case and be field-reversible for handing without disassembly of the lock body.

1. Heavy duty mortise locks shall have a ten-year warranty.

2. Mortise locks to be certified Security Grade 1.

3. Extended cycle test: Locks to have been cycle tested in ordinance with ANSI/BHMA 156.13 requirements to 14.5 million cycles or greater.

4. Manufacturers:

a. Corbin Russwin Hardware (RU) - ML2000 Series.
b. Sargent Manufacturing (SA) - 8200 Series.
c. Schlage (SC) - L9000 Series.

2.6 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. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
4. Short-lipped strikes: For locks at double doors.

B. Standards: Comply with the following:

1. Strikes for Mortise Locks and Latches: BHMA A156.13.
2. Strikes for Bored Locks and Latches: BHMA A156.2.
3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
4. Dustproof Strikes: BHMA A156.16.

2.7 ELECTRIC STRIKES

A. Standard Electric Strikes: Electric strikes conforming to ANSI/BHMA A156.31, Grade 1, for use on non-rated or fire rated openings. Strikes shall be of stainless steel construction tested to a minimum of 1500 pounds of static strength and 70 foot-pounds of dynamic strength with a minimum endurance of 1 million operating cycles. Provide strikes with 12 or 24 VDC capability, fail-secure unless otherwise specified. Where specified provide latchbolt and latchbolt strike monitoring indicating both the position of the latchbolt and locked condition of the strike.

1. Manufacturers:

   a. HES (HS) - 1500/1600 Series.

B. Provide electric strikes with in-line power controller and surge suppressor by the same manufacturer as the strike with the combined products having a five year warranty.

2.8 CONVENTIONAL EXIT DEVICES

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

1. Exit devices shall have a five-year warranty.

2. 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.

3. 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.

4. Except on fire rated doors, provide exit devices with keyed cylinder dogging device to hold the pushbar and latch in a retracted position.

5. 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.

6. 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.

7. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.

8. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2” wide stiles.

9. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.

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

11. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.

B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed 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. Manufacturers:

a. Corbin Russwin Hardware (RU) - ED4000 / ED5000 Series.
b. Sargent Manufacturing (SA) - 80 Series.
c. Von Duprin (VD) - 35A/98 XP Series.

2.9 ELECTROMECHANICAL EXIT DEVICES

A. Electromechanical Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed panic and fire exit hardware devices subject to same compliance standards and requirements as mechanical exit devices. Electrified exit devices to be of type and design as specified below and in the hardware sets.

1. Where conventional power supplies are not sufficient, include any specific controllers required to provide the proper inrush current.

2. Motorized Electric Latch Retraction: Devices with an electric latch retraction feature must use motors which have a maximum current draw of 600mA. Solenoid driven latch retraction is not acceptable.

3. Manufacturers:

a. Corbin Russwin Hardware (RU) - ED5000 Series.
b. Sargent Manufacturing (SA) - 80 Series.
c. Von Duprin (VD) - 35A/98 XP Series.

2.10 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.

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.

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 Americans with Disabilities Act, 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 as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.

B. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed 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. Heavy duty surface mounted door closers shall have a 30-year warranty.

2. Manufacturers:

a. Corbin Russwin Hardware (RU) - DC8000 Series.
b. Norton Rixson (NO) - 7500 Series.
c. Sargent Manufacturing (SA) - 351 Series.

2.11 ELECTROHYDRAULIC DOOR OPERATORS

A. General: Provide low energy operators of size recommended by manufacturer for door size, weight, and movement; for condition of exposure; and for compliance with UL 325. Coordinate operator mechanisms with door operation, hinges, and activation devices.

1. Fire-Rated Doors: Provide door operators for fire-rated door assemblies that comply with NFPA 80 for fire-rated door components and are listed and labeled by a qualified testing agency.

B. Standard: Conforming to ANSI/BHMA A156.19.

C. Performance Requirements:

1. Opening Force if Power Fails: Not more than 15 lbf required to release a latch if provided, not more than 30 lbf required to manually set door in motion, and not more than 15 lbf required to fully open door.
2. Entrapment Protection: Not more than 15 lbf required to prevent stopped door from closing or opening.

D. Configuration: Surface mounted or in-ground as required. Door operators to control single swinging and pair of swinging doors.

E. Operation: Power opening and spring closing operation capable of meeting ANSI A117.1 accessibility guideline. Provide time delay for door to remain open before initiating closing cycle as required by ANSI/BHMA A156.19. When not in automatic mode, door operator to function as manual door closer with fully adjustable opening and closing forces, with or without electrical power.

F. Features: Operator units to have full feature adjustments for door opening and closing force and speed, backcheck, motor assist acceleration from 0 to 30 seconds, time delay, vestibule interface delay, obstruction recycle, and hold open time from 0 up to 30 seconds.

G. Provide outputs and relays on board the operator to allow for coordination of exit device latch retraction, electric strikes, magnetic locks, card readers, safety and motion sensors and specified auxiliary contacts.

H. Brackets and Reinforcements: Manufacturer's standard, fabricated from aluminum with nonferrous shims for aligning system components.

I. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Norton Rixson (NO) - 6000 Series.

2.12 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. Where plates are applied to fire rated doors with the top of the plate more than 16” above the bottom of the door, provide plates complying with NFPA 80. Consult manufacturer’s catalog and template book for specific requirements for size and applications.

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

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

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

6. Manufacturers:

   a. Hiawatha, Inc. (HI).
   b. Rockwood (RO).
   c. Trimco (TC).

2.13 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 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. Manufacturers:

   a. Hiawatha, Inc. (HI).
   b. Rockwood (RO).
   c. Trimco (TC).

C. Overhead Door Stops and Holders: ANSI/BHMA A156.8, Grade 1 Certified Products Directory (CPD) listed 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. Manufacturers:

   a. Norton Rixson (RF).
   b. Rockwood (RO).
   c. Sargent Manufacturing (SA).

2.14 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 NPFA 252, Standard Methods of Fire Tests of Door Assemblies.

D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.

E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.

F. Manufacturers:

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

2.15 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. Manufacturers:

a. Sargent Manufacturing (SA) - 3280 Series.
b. Security Door Controls (SD) - DPS Series.
c. Securitron (SU) - DPS Series.

B. Intelligent Switching Power Supplies: Provide power supplies with single, dual or multi-voltage configurations at 12 and/or 24VDC. Power Supply shall have battery backup function with an integrated battery charging circuit. The power supply shall have a standard, integrated Fire Alarm Interface (FAI). The power supply shall provide capability for secondary voltage, power distribution, direct lock control and network monitoring through add on modules. The power supply shall be expandable up to 16 individually protected outputs. Output modules shall provide individually protected, continuous outputs and/or individually protected, relay controlled outputs. Network modules shall provide remote monitoring functions such as status reporting, fault reporting and information logging.

1. 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.

2. Manufacturers:

a. Securitron (SU) - AQL Series.
b. Altronix (AS) - Maximal 11F.

2.16 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.

2.17 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. DHI TDH-007-20: Installation Guide for Doors and Hardware.
3. Where indicated to comply with accessibility requirements, comply with AAB.
4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.

C. Power Operator products and accessories are required to be installed through current members of the manufacturer's "Power Operator Preferred Installer" 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 doors in full bed of sealant complying with requirements specified in Division 07 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.

3.4 FIELD QUALITY CONTROL

A. Field Inspection (Punch Report): Reference Division 01 Sections “Closeout Procedures”. Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.

1. Organization of List: Include separate Door Opening and Deficiencies and Corrective Action Lists organized by Mark, Opening Remarks and Comments, and related Opening Images and Video Recordings.

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.

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

A. 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.

1. Quantities listed are for each pair of doors, or for each single door.

2. The supplier is responsible for handing and sizing all products.

3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.

B. Manufacturer’s Abbreviations:

1. MK - McKinney
2. PE - Pemko
3. SA - SARGENT
4. MC - Medeco
5. HS - HES
6. RF - Rixson
7. NO - Norton
8. RO - Rockwood
9. SU - Securitron

Hardware Sets

Set: 1.0

Doors: 101
Description: Alum Security Vest - Card Access; Auto; Remote Release

1	Continuous Hinge	CFM-SLF-HD1 EL-CEPTx32D Series		PE
1	Exit Device (rim, NL,EL,RX,LX,CD)	16 53 55 56 70 8804	US32D	SA
1	Offset Pull	862	US32D	SA
2	Small Format Inter Core	Medeco X4 keyed to existing	26	MC
1	Concealed Overhead Stop	1-X36	630	RF
1	Automatic Opener	6061; 6071 D	689	NO
1	Threshold (coord w/ details)	273x292AFGPK FHSL14SS-2		PE
1	Sweep	315CN		PE
1	Door Wiring Harness	QC Series (hinge to device)		MK
1	Frame Wiring Harness	QC Series (jamb to J-box)		MK
1	Position Switch	DPS Series (coord w/ security)		SU
2	Door Switch	671		NO
1	Power Supply	AQL4-R8E1		SU
1	Weather/Perimeter Seals	Supplied with door/frame assembly		
1	Card Reader	By Security		
1	Remote Release Switch	By Security		

Notes:
Operation: Door is normally closed and locked. Valid card at reader or signal from remote switch retracts latch for momentary access, then enables outside actuator. Inside actuator retracts latch, then auto opens door. Monitoring by door position switch. During a loss of power the door will default to secure. Free egress at all times. Lock status will not change when the fire detection/suppression systems are activated. Depressing pushrail will activate request to exit switch for appropriate monitor by EAC systems. Outside key override.

Set: 2.0

Doors: 102
Description: Admin Office - Card Access; Auto; Remote Release

4	Hinge, Full Mortise, Hvy Wt	T4A3786 4-1/2" x 4-1/2"	US26D	MK
1	Storeroom Lock	70 8204 LNL	US26D	SA
1	Small Format Inter Core	Medeco X4 keyed to existing	26	MC
1	Electric Strike	1500C-LM	630	HS
1	SMART Pac Bridge Rectifier	2005M3 x 2004M		HS
1	Concealed Overhead Stop	1-X36	630	RF
1	Automatic Opener	6061; 6071 D	689	NO
1	Kick Plate	K1050 10" 4BE CSK	US32D	RO
1	Gasketing	S88BL		PE
1	Sweep	18061CNB		PE
1	Request to Exit	By Security		
1	Frame Wiring Harness	QC Series (jamb to J-box)		MK
1	Position Switch	DPS Series (coord w/ security)		SU
2	Door Switch	671		NO
1	Power Supply	AQL4-R8E1		SU
1	Card Reader	By Security		
1	Remote Release Switch	By Security		

Notes:
Operation: Door is normally closed and locked. Valid card at reader or signal from remote switch unlocks door for momentary access, then enables outside actuator. Inside actuator unlocks, then auto opens door. Monitoring by door position switch. During a loss of power the door will default to secure. Free egress at all times. Lock status will not change when the fire detection/suppression systems are activated. Outside key override.

Set: 3.0
Doors: 103
Description: Alum Security Vest/Lobby - Card Access; Auto; Remote Release

1	Continuous Hinge	CFM-SLF-HD1 EL-CEPTx32D Series		PE
1	Exit Device (rim, NL,EL,RX,LX,CD)	16 53 55 56 70 8804	US32D	SA
1	Offset Pull	862	US32D	SA
2	Small Format Inter Core	Medeco X4 keyed to existing	26	MC
1	Concealed Overhead Stop	1-X36	630	RF
1	Automatic Opener	6061; 6071 D	689	NO
1	Threshold (coord w/ details)	271A FHSL14SS		PE
1	Sweep	315CN		PE
1	Door Wiring Harness	QC Series (hinge to device)		MK
1	Frame Wiring Harness	QC Series (jamb to J-box)		MK
1	Position Switch	DPS Series (coord w/ security)		SU
2	Door Switch	671		NO
1	Power Supply	AQL4-R8E1		SU
1	Weather/Perimeter Seals	Supplied with door/frame assembly		
1	Card Reader	By Security		
1	Remote Release Switch	By Security		

Notes:
Operation: Door is normally closed and locked. Valid card at reader or signal from remote switch retracts latch for momentary access, then enables outside actuator. Inside actuator retracts latch, then auto opens door. Monitoring by door position switch. During a loss of power the door will default to secure. Free egress at all times. Lock status will not change when the fire detection/suppression systems are activated. Depressing pushrail will activate request to exit switch for appropriate monitor by EAC systems. Outside key override.

END OF SECTION 08 71 00

DEDHAM MIDDLE SCHOOL
SAFETY VESTIBULE PROJECT

APRIL 18, 2023

ARCHITECT

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MECH. / ELEC. ENGINEERS / FIRE ALARM / FIRE PROTECTION

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STRUCTURAL

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MALDEN, MA 02148
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COST ESTIMATOR

ELLANA CONSTRUCTION CONSULTANTS
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SPECIFICATIONS

ARCHITX, LLC
5 TOPSY DRIVE
STAFFORD SPRINGS, CT 06076
TEL. (860) 872-9627

DEDHAM PUBLIC SCHOOLS

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BID SET
ADDENDUM # 2

D21 PROJECT 22003.00 DMS - SAFETY VESTIBULE PROJECT

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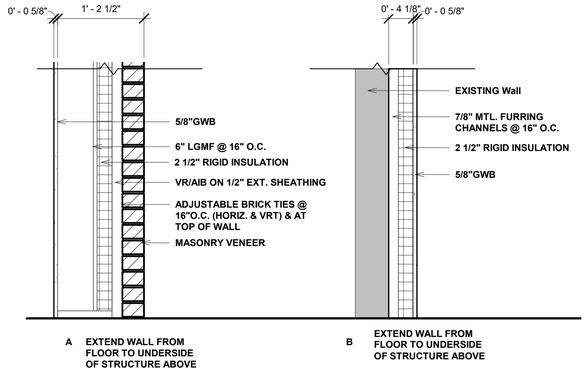
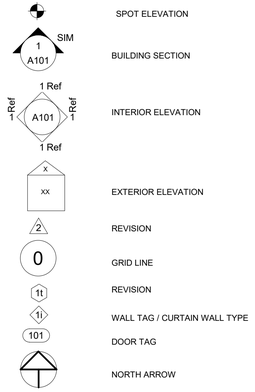
WALL TYPES



GRAPHIC SYMBOLS



CODE INFORMATION

CODE TYPE APPLICABLE CODE
(MODEL CODE BASIS)

780 CMR: MASSACHUSETTS STATE BUILDING CODE, 9TH EDITION
(AMENDED 2015 INTERNATIONAL BUILDING CODE (IBC))
(AMENDED 2015 INTERNATIONAL EXISTING BUILDING CODE (IEBC))
FIRE PREVENTION
527 CMR 1: MASSACHUSETTS FIRE PREVENTION REGULATIONS
(AMENDED 2015 NFPA 1)
M.G.L. CHAPTER 148 SECTION 26G – SPRINKLER PROTECTION
ACCESSIBILITY 521 CMR: MASSACHUSETTS ARCHITECTURAL ACCESS BOARD REGULATIONS
ELECTRICAL 527 CMR 12: MASSACHUSETTS ELECTRICAL CODE
(AMENDED 2020 NATIONAL ELECTRICAL CODE)
ELEVATORS 524 CMR: MASSACHUSETTS ELEVATOR CODE
(AMENDED 2013 ASME A17.1)
MECHANICAL 2015 INTERNATIONAL MECHANICAL CODE (IMC)
PLUMBING 248 CMR: MASSACHUSETTS PLUMBING CODE ENERGY
CONSERVATION 2018 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)

INTERNATIONAL EXISTING BUILDING CODE
THE 2015 INTERNATIONAL EXISTING BUILDING CODE WITH MASSACHUSETTS AMENDMENTS
ALLOWS FOR 3 SEPARATE COMPLIANCE METHODS, THE PRESCRIPTIVE METHOD (IN GENERAL, ALTERED AREAS MUST COMPLY WITH THE CODE FOR NEW CONSTRUCTION), WORK AREA METHOD (LEVEL OF COMPLIANCE IS BASED ON THE CLASSIFICATION OF WORK), AND PERFORMANCE COMPLIANCE METHOD (NUMERICAL METHOD THAT ALLOWS TRADEOFFS FOR DEFICIENCIES). THIS REPORT IS BASED ON THE WORK AREA METHOD.
1. WORK AREA AND CLASSIFICATION OF WORK:
THE PROPOSED WORK INCLUDES THE CREATION OF A NEW SECURITY VESTIBULE ADJACENT TO THE CURRENT ENTRY AND UNDER THE EXISTING ROOF OVERHANG. THE WORK IS CLASSIFIED AS A LEVEL 2 ALTERATION. LEVEL 2 ALTERATIONS INCLUDE THE RECONFIGURATION OF SPACES, THE ADDITION OR ELIMINATION OF DOORS AND WINDOWS, THE RECONFIGURATION OR EXTENSION OF SYSTEMS, AND/OR THE INSTALLATION OF ADDITIONAL EQUIPMENT IN LESS THAN 50% OF THE AGGREGATE AREA OF THE BUILDING. THEREFORE, THE WORK MUST COMPLY WITH IEBC CHAPTERS 7 & 8. ALSO SINCE THE PROJECT SCOPE INCLUDES ENCLOSING EXTERIOR SPACE, THE RENOVATION MUST ALSO COMPLY WITH IEBC CHAPTER 11 AS AN ADDITION.

OCCUPANCY CLASSIFICATION:
BASED ON THE CODE SUMMARY PLAN FROM THE ORIGINAL DESIGN PLANS, THE SCHOOL
CONSISTS OF 4 BUILDINGS SEPARATED BY FIREWALLS. THE BUILDINGS INCLUDE THE
FOLLOWING USES:
BUILDING A
• E (EDUCATIONAL)
BUILDING B
SEPARATED MIXED USES:
• A-1 (AUDITORIUM)
• A-3 (MEDIA CENTER)
• E (EDUCATIONAL)
BUILDING C (CONTAINS THE WORK AREA FOR THIS PROJECT)
SEPARATED MIXED USES:
• A-3 (GYMNASIUM, CAFETERIA)
• E (EDUCATIONAL)
BUILDING D
• E (EDUCATIONAL)

CONSTRUCTION TYPE:
BASED ON THE ORIGINAL CODE SUMMARY PLAN, THE BUILDING CONSTRUCTION TYPE IS TYPE IIB CONSTRUCTION (CORRESPONDS TO TYPE 2C FROM 780 CMR, 6TH EDITION). BASED ON THIS CONSTRUCTION TYPE, THE NEW EXTERIOR WALLS MUST BE CONSTRUCTED OF
NONCOMBUSTIBLE MATERIALS OR FIRE RETARDANT TREATED WOOD (780 CMR 602.2 & 603.1).
ALTHOUGH THE NEWLY ENCLOSED SPACE IS CONSIDERED AN ADDITION TO THE BUILDING, IT IS NOT INCREASING THE EXISTING BUILDING AREA SINCE THE ENCLOSED SPACE IS LOCATED BELOW THE EXISTING ROOF OVERHANG AS SUPPORTED BY THE FOLLOWING DEFINITION (780 CMR 202):
THEREFORE SINCE THE NEW VESTIBULE IS NOT INCREASING THE HEIGHT NOR THE AREA OF THE BUILDING, THE BUILDING IS NOT SUBJECT TO THE HEIGHT AND AREA LIMITATIONS OF 780CHAPTER 5 (IEBC 1102.1 & 1102.2).

FIRE RESISTANCE RATINGS:
THE PROJECT SCOPE DOES NOT INCLUDE ANY NEW BUILDING ELEMENTS THAT REQUIRE A FIRE RESISTANCE RATING.

EXTERIOR WALL REQUIREMENTS
THE NEW NONBEARING EXTERIOR WALLS MUST COMPLY WITH THE FIRE RESISTANCE RATING
AND OPENING LIMITATION REQUIREMENTS FOR NEW CONSTRUCTION. THE EXTERIOR WALL RATING REQUIREMENTS AND OPENING LIMITATIONS ARE BASED ON THE FIRE SEPARATION DISTANCE FOR EACH WALL. THE FIRE SEPARATION DISTANCE IS MEASURED PERPENDICULAR TO THE EXTERIOR WALL TO THE CENTERLINE OF A PUBLIC STREET, AN INTERIOR LOT LINE, OR AN IMAGINARY LOT LINE BETWEEN TWO BUILDINGS ON THE SAME LOT (780 CMR 202.0). SINCE THE FIRE SEPARATION DISTANCE FOR THE NEW WALLS IS MORE THAN 10 FT., THE WALLS ARE NOT REQUIRED TO BE FIRE RESISTANCE RATED AND THE ALLOWABLE AREA OF OPENINGS IS NOT LIMITED (780 CMR TABLE 602 AND 705.8.1 EXC. 2).

INTERIOR FINISHES:
THE EXISTING INTERIOR FINISH OF WALLS AND CEILINGS IN THE EXITS AND CORRIDORS IN THE WORK AREA MUST COMPLY WITH THE CODE REQUIREMENTS FOR NEW CONSTRUCTION (IEBC 803.4). ALL NEWLY INSTALLED WALL AND CEILING FINISHES, AND INTERIOR TRIM MATERIALS MUST ALSO COMPLY WITH 780 CMR TABLE WALLS & CEILINGS (IBC TABLE 803.11)
USE GROUP: A-3 E EXIT ENCLOSURES N/A N/A EXIT ACCESS CORRIDORS CLASS B CLASS C ROOMS & ENCLOSED SPACES CLASS C CLASS C

MEANS OF EGRESS:
THE MEANS OF EGRESS INCLUDING THE EXIT SIGNS, EGRESS LIGHTING, NUMBER OF EXITS AND EGRESS CAPACITY MUST BE SUFFICIENT FOR THE NUMBER OF OCCUPANTS ON ALL FLOORS (780 CMR 102.6.4). SINCE THE PROPOSED ALTERATIONS ARE NOT INCREASING THE OCCUPANT LOAD OF THE BUILDING AND INCREASING THE AVAILABLE EGRESS CAPACITY FROM THE BUILDING, THE BUILDING WILL CONTINUE TO BE PROVIDED WITH SUFFICIENT EGRESS AS INDICATED ON THE ORIGINAL CONSTRUCTION DOCUMENTS (780 CMR TABLE 1004.1.2, TABLE 1006.3.1, AND SECTION 1005.3).
THE NEW BUILDING ELEMENTS MUST COMPLY WITH THE FOLLOWING APPLICABLE REQUIREMENTS CONTAINED IN 780 CMR (IEBC 1101.1):
• SINCE THE NEW DOORS SERVE ROOMS WITH MORE THAN 49 PEOPLE, THEY MUST SWING IN THE DIRECTION OF EGRESS AND BE PROVIDED WITH PANIC HARDWARE (780 CMR 1010.1.2.1 & 1010.1.10).
• THE NEW VESTIBULE MUST BE PROVIDED WITH EGRESS LIGHTING AND EXIT SIGNS WITH AN EMERGENCY POWER SUPPLY TO ASSURE CONTINUED ILLUMINATION FOR NOT LESS THAN 1.5 HOURS IN CASE OF PRIMARY POWER LOSS (780 CMR 1008.2, 1008.3.4, & 1013.1). SINCE THE VESTIBULE PROVIDES AN ACCESSIBLE EXIT FROM THE BUILDING, THE NEW EXIT SIGNS MUST INCLUDE THE INTERNATIONAL SYMBOL OF ACCESSIBILITY (521 CMR 41.1.3).

REQUIRED FIRE PROTECTION SYSTEMS:
THE BUILDING CONTAINS THE FOLLOWING FIRE PROTECTION SYSTEMS THAT MUST BE MAINTAINED AND EXTENDED INTO THE NEW VESTIBULE IF NEEDED TO PROVIDE PROPER COVERAGE (IEBC 703.1 & 1102.3):
• AUTOMATIC SPRINKLER SYSTEM
• FIRE ALARM SYSTEM
• FIRE EXTINGUISHERS – FIRE EXTINGUISHERS MUST BE LOCATED THROUGHOUT THE BUILDING

ENERGY CODE PROVISIONS FOR EXISTING BUILDINGS THE RENOVATION PROJECT IS SUBJECT TO THE 2018 INTERNATIONAL ENERGY CONSERVATION CODE (IECC) OR ANSI/ASHRAE/IESNA 90.1 WITH MASSACHUSETTS AMENDMENTS (MASSACHUSETTS ENERGY CODE). THE MASSACHUSETTS STRETCH CODE AS ADOPTED BY THE TOWN OF DEDHAM DOES NOT APPLY TO EXISTING BUILDINGS (780 CMR APPENDIX AA 104).

VENTILATION REQUIREMENTS
THE VESTIBULE MUST BE PROVIDED WITH VENTILATION THAT COMPLIES WITH THE IMC (IEBC 1101.1). SINCE THE AREA OF THE EXTERIOR DOORS OF THE VESTIBULE EXCEEDS 4% OF THE FLOOR AREA OF THE VESTIBULE, SUFFICIENT NATURAL VENTILATION WILL BE PROVIDED AS REQUIRED BY IMC 402.2. THE LARGEST PROPOSED VESTIBULE AREA APPEARS TO BE ~260 SF AND THE DOUBLE DOOR OPENING IS ~48 SF (48 SF / 260 SF = 18%).

STRUCTURAL PROVISIONS FOR EXISTING BUILDINGS STRUCTURAL ALTERATIONS TO BUILDING, IF ANY, MUST BE EVALUATED BY A REGISTERED STRUCTURAL ENGINEER TO DETERMINE COMPLIANCE WITH THE IEBC.
ACCESSIBILITY FOR PERSONS WITH DISABILITIES MASSACHUSETTS ARCHITECTURAL ACCESS BOARD REGULATIONS ALTERATIONS TO THE BUILDING MUST COMPLY WITH THE REQUIREMENTS OF THE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD REGULATIONS (521 CMR). FOR EXISTING BUILDING ALTERATIONS THE REQUIREMENTS OF 521 CMR ARE BASED ON THE COST OF THE PROPOSED WORK:

PROJECT GENERAL NOTES

1. THE CONTRACTOR SHALL PROTECT EXISTING, IN-PLACE, AND NEW WORK.
2. THE CONTRACTOR SHALL INVESTIGATE JOB SITE TO COMPARE CONTRACT DOCUMENTS, CONDITIONS, AND VERIFY DIMENSIONS SHOWN ON THESE DRAWINGS.
3. SHALL NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES, OMISSIONS, CONFLICTS, AND/OR ANY RESTRICTIONS RELATED TO THE EXECUTION OF WORK, BEFORE COMMENCEMENT OF WORK. COMMENCEMENT OF WORK SHALL CONSTITUTE ACCEPTANCE OF ALL NEW OR EXIST. CONDITIONS. THE CONTRACTOR SHALL COMPLY AND COORDINATE ALL WORK W/ BUILDING OWNER REGARDING HEAT, WATER, ELECTRICITY, DELIVERIES, ACCESS, ELEVATOR AVAILABILITY, NOISE CONTROL, TRASH AND DEBRIS REMOVAL, HOISTING, AND ANY OTHER UTILITIES OR OWNER'S RULES AND REGULATIONS CONCERNING THE PROJECT SITE.
4. THE CONTRACTOR SHALL COORDINATE SCHEDULING, PROVISIONS FOR INSTALLATION, LOCATIONS, AND THE ACTUAL INSTALLATION OF ITEMS FURNISHED BY OWNER OR BY OTHERS.
5. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND IS RESPONSIBLE FOR ALL PHASES, INCLUDING BIDDING, FABRICATION, COORDINATION, AND CONSTRUCTION. THE DRAWINGS INDICATE THE GENERAL EXTENT OF WORK. THE DRAWINGS ARE NOT INTENDED TO INDICATE OR DESCRIBE ALL WORK REQUIRED FOR THE FULL PERFORMANCE AND COMPLETION OF THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. REPETITIVE FEATURES NOT NOTED ON THE DRAWINGS SHALL BE COMPLETELY PROVIDED AS IF DRAWN IN FULL.
6. DO NOT SCALE DRAWINGS TO OBTAIN DIMENSIONS, DIMENSIONS GOVERN.
7. LARGE SCALE DRAWINGS GOVERN OVER SMALL SCALE DETAILS.
8. MECHANICAL AND ELECTRICAL, INFORMATION ON THE ARCHITECTURAL DRAWINGS IS PROVIDED FOR CLARITY AND/OR LOCATION PURPOSES ONLY. SEE RELEVANT DISCIPLINE DRAWINGS FOR SPECIFIC INFO
9. PERFORM ALL WORK AND INSTALL MATERIALS IN STRICT ACCORDANCE TO APPLICABLE INDUSTRY AND MANUFACTURER'S PUBLISHED STANDARDS AND SPECIFICATIONS FOR QUALITY OF MATERIALS AND WORKMANSHIP, AS WELL AS REQUIREMENTS IN THESE DRAWINGS AND SPECIFICATION. ANY CONFLICTING REQUIREMENTS OF THE SOURCES LISTED ABOVE SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION PRIOR TO PROCEEDING W/ THE WORK.
10. MANUFACTURERS ARE REFERENCED TO ESTABLISH STYLE, SIZE, COLOR, AND MATERIAL CHARACTERISTICS, AND ARE NOT INTENDED TO LIMIT SELECTIONS FROM OTHER MANUFACTURERS. WHEN AN ALTERNATE SELECTION IS SUBMITTED, SUBMITTALS SHALL HAVE INCLUDED THE MATERIAL LISTED FOR COMPARISON.
11. THE CONTRACTOR SHALL EXAMINE ALL SURFACES TO DETERMINE THAT THEY ARE SOUND, DRY, CLEAN AND READY TO RECEIVE FINISHES PRIOR TO INSTALLATION. START OF INSTALLATION SHALL IMPLY ACCEPTANCE OF SUBSTRATE AND SHALL NOT BE GROUNDS FOR CLAIMS AGAINST IMPROPER PERFORMANCE OF INSTALLED MATERIALS. ADVISE ARCHITECT OF ANY EXIST. CONSTRUCTION NOT LEVEL, SMOOTH, AND PLUMB WITHIN INDUSTRY STANDARDS PRIOR TO START OF CONSTRUCTION.
12. THE CONTRACTOR SHALL INSTALL AND MAINTAIN ALL NECESSARY COVERINGS, PROTECTIVE ENCLOSURES, TEMPORARY DOORS, PARTITIONS, AND DUST BARRIERS TO PROTECT ALL OCCUPANTS AND EXIST. WORK AND FINISHES TO REMAIN. LOCATION OF SUCH PROTECTION SHALL BE VERIFIED W/ OWNER AND LOCAL CODE OFFICIAL FOR EGRESS CONFORMANCE, PRIOR TO COMMENCING WORK, AND IN COORDINATION W/ PROGRESSION OF WORK SCHEDULE. PERFORM WORK IN A MANNER THAT WILL AVOID HAZARDS TO PERSONS IN ADJACENT AREAS AND THAT WON'T INTERFERE W/ WORK OR PASSAGE TO ANY OF THESE REPAIR AND REPLACE ANY DAMAGES CAUSED BY IMPROPER PROTECTIONS AT NO ADDITIONAL CHARGE TO THE OWNER.
13. WORK DAMAGED DURING CONSTRUCTION OR NOT CONFORMING TO SPECIFIED STANDARDS, TOLERANCES, OR MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION SHALL BE REPLACED, BY THE CONTRACTOR, AT NO ADDITIONAL CHARGE TO THE OWNER.
14. ANY AREA OUTSIDE THE LIMITS OF CONSTRUCTION DISTURBED BY OPERATIONS OF THE CONTRACTOR SHALL BE RESTORED AT THE CONTRACTOR'S EXPENSE.
15. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING EXIT LIGHTING, FIRE PROTECTION DEVICES, AND LIFE SAFETY SYSTEMS IN WORKING ORDER. CONTRACTOR TO PROVIDE TEMPORARY FIRE EXTINGUISHERS DURING THE COURSE OF CONSTRUCTION AS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION.
16. EXIT DOORS, EGRESS DOORS, AND OTHER DOORS REQUIRED FOR MEANS OF EGRESS SHALL BE OPERABLE FROM THE INSIDE WITHOUT USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT.
17. DIMENSIONS ARE FROM FACE OF MASONRY OR FACE OF METAL FRAMING, TYPICAL UNLESS NOTED OTHERWISE.
18. ALL CONCEALED WOOD FRAMING, AND PLYWOOD SHEATHING SHALL BE FIRE RETARDANT TREATED (FRT). ALL WOOD BLOCKING IN FIRE RATED ASSEMBLIES TO BE FIRE RETARDANT.
19. ALL DISSIMILAR MATERIALS SHALL BE ISOLATED FROM EACH OTHER TO AVOID GALVANIC CORROSION. WHERE TWO DISSIMILAR METALS MEET, PAINT FACE OF ONE W/ BITUMINOUS PROVIDE SEALANT BETWEEN DISSIMILAR MATERIALS, SUCH AS GYPSUM BOARD AND MASONRY, MASONRY AND CONCRETE, COUNTERTOPS AND WALLS, ETC.
20. ALL PENETRATIONS THROUGH GYPSUM BOARD AND MASONRY SURFACES, INCLUDING BUT NOT LIMITED TO WINDOWS, DOORS, PIPE PENETRATIONS, CONDUIT, DUCTWORK, GRILLES, REGISTERS, DEVICE BOXES, HANGER RODS, ETC. SHALL HAVE THEIR COMMON JOINTS W/ GYPSUM BOARD AND/OR MASONRY CAULKED. ALL PENETRATIONS SHALL BE SEALED AROUND THE ENTIRE PERIMETER W/ SEALANT (BOTH ON EXTERIOR AND INTERIOR SIDES).
21. IN ALL INSTANCES WHERE WORK IS BEING CORRECTED OR REPAIRED, CONTRACTOR IS TO REPAINT ENTIRE WALL TO NEARESTCORNER OR BREAK LINE WHERE WALL CHANGES DIRECTION.
22. CONTRACTOR SHALL REMOVE ANY STRAY PAINT, DIRT, OR STAINS INCURRED DURING THE CONSTRUCTION PROCESS.
23. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL TEMPORARY EQUIPMENT COVERINGS USED DURING CONSTRUCTION, AND SHALL ALSO BE RESPONSIBLE FOR REMOVING THEIR TRASH OFF OF THE JOB SITE DAILY.
24. CONTRACTOR SHALL COMPLY WITH MANUFACTURER'S INSTRUCTIONS WHEN RELOCATING AND/OR INSTALLING ANY EQUIPMENT AND FURNISHINGS.

D21 ARCHITECTS
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WEST BRIDGEWATER, MA
02379
(508)807-8043
WWW.D21ARCHITECTS.COM

STAMP:

CONSULTANT:

TOWN OF DEDHAM
MIDDLE SCHOOL Dedham

DEDHAM MIDDLE SCHOOL
70 WHITING AVENUE
DEDHAM, MA 02026

SAFETY VESTIBULE PROJECT

PROJECT STATUS:

BID SET
ADDENDUM #2

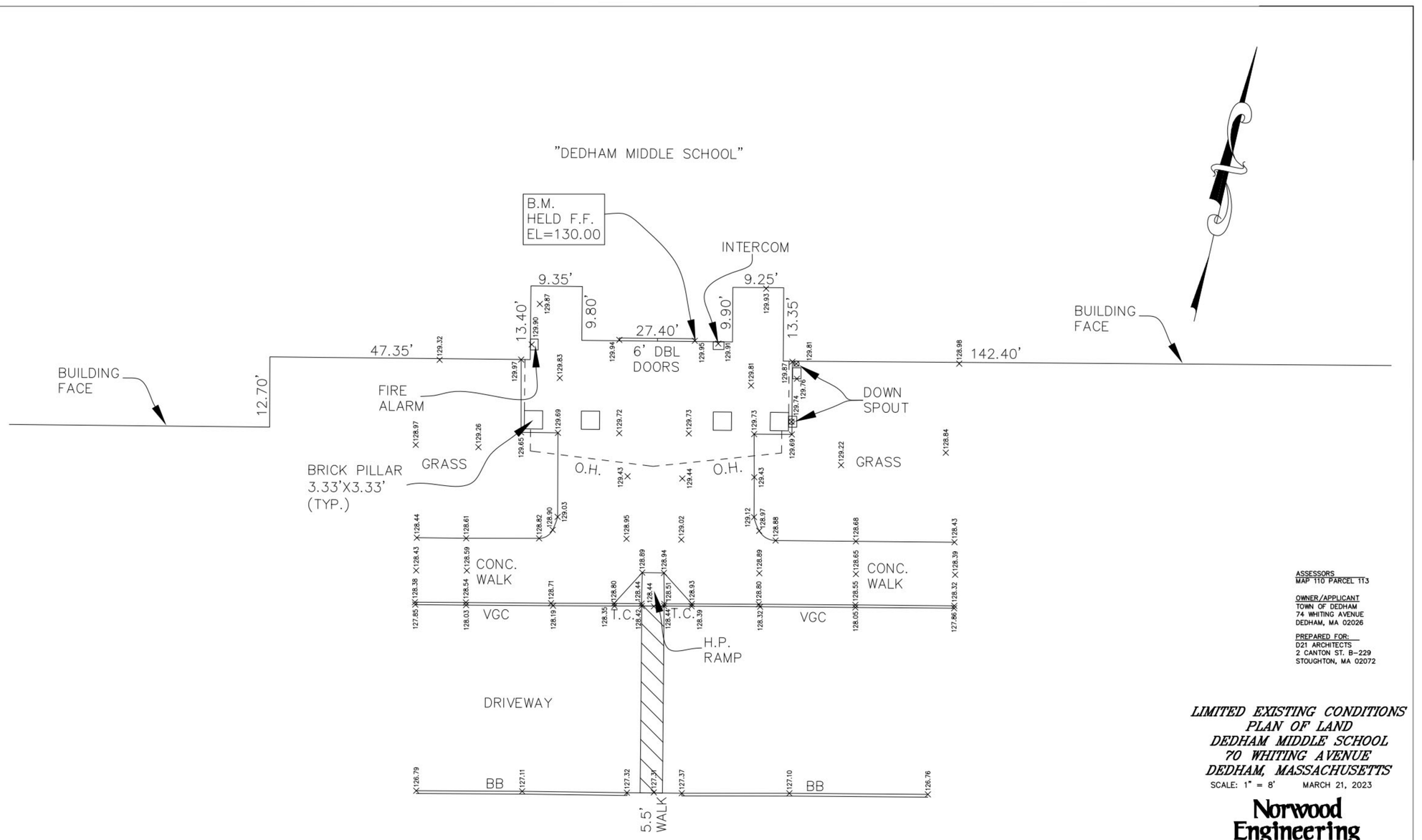
DATE:	4/18/2023
PROJECT NO:	22.003
DRAWN BY:	FPB
CHECKED BY:	FPB

REVISIONS:

1	03/31/23	

DRAWING TITLE:
ABBREVATIONS SYMBOLS MATERIALS & LEGEND

DRAWING NO.:
AG0.01



ASSESSORS
MAP 110 PARCEL 113

OWNER/APPLICANT
TOWN OF DEDHAM
74 WHITING AVENUE
DEDHAM, MA 02026

PREPARED FOR:
D21 ARCHITECTS
2 CANTON ST. B-229
STOUGHTON, MA 02072

LIMITED EXISTING CONDITIONS
PLAN OF LAND
DEDHAM MIDDLE SCHOOL
70 WHITING AVENUE
DEDHAM, MASSACHUSETTS

SCALE: 1" = 8' MARCH 21, 2023

Norwood Engineering

Norwood Engineering Company, Inc.
Consulting Engineers, Land Surveyors
1410 ROUTE ONE, NORWOOD, MA 02062
TEL. (781)762-0143 FAX (781)762-8595

METERS 0 2 4 8
FEET 0 4 8 16 24

DATE	REVISIONS

SHEET 2 OF 2 11499-01

1149901 HP Ramp 11-2022.dwg

D21 ARCHITECTS
234 WEST CENTER STREET
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STAMP:

CONSULTANT:

TOWN OF DEDHAM
MIDDLE SCHOOL Dedham

DEDHAM MIDDLE
SCHOOL
70 WHITING AVENUE
DEDHAM, MA 02026

SAFETY VESTIBULE PROJECT

PROJECT STATUS:

BID SET
ADDENDUM #2

DATE:	4/18/2023
PROJECT NO:	22.003
DRAWN BY:	NE
CHECKED BY:	FPB

REVISIONS:

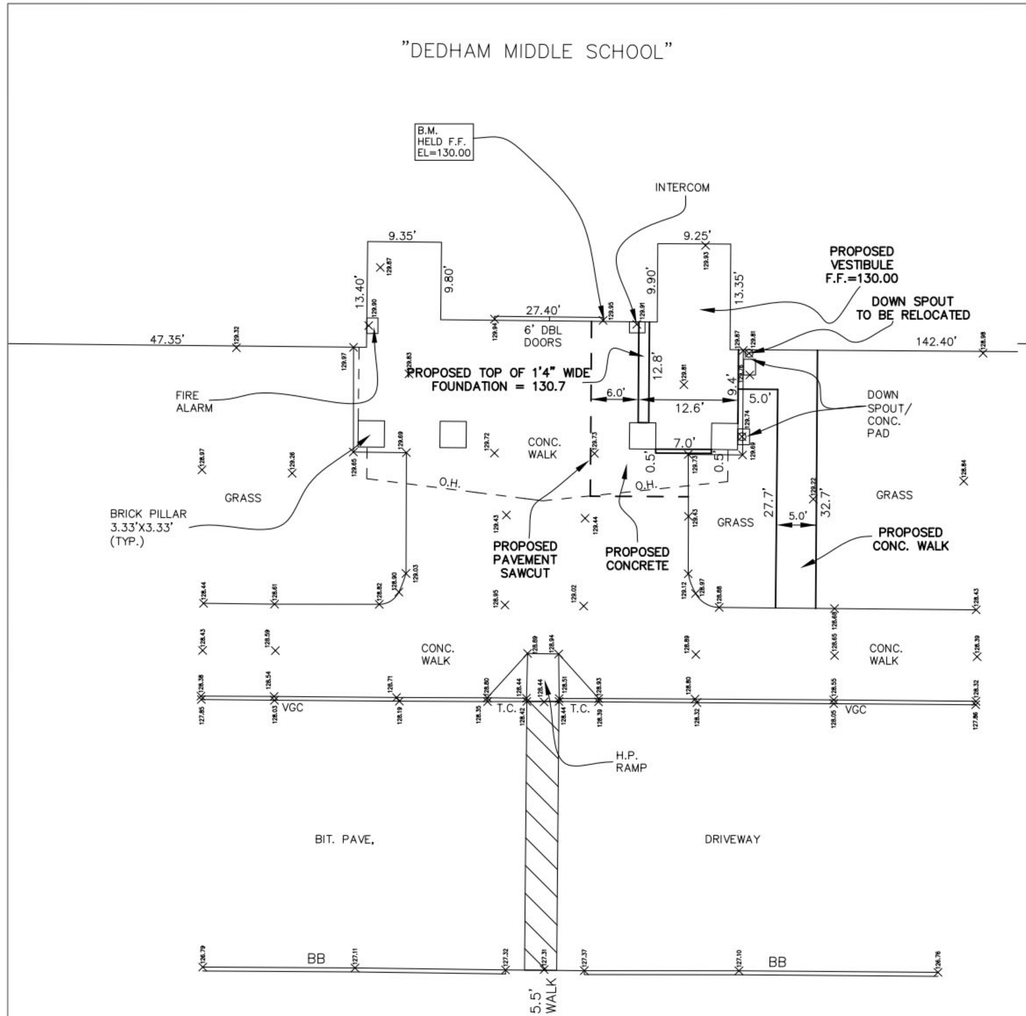
1	03/31/23	

DRAWING TITLE:

LIMITED EXISTING
CONDITIONS PLAN

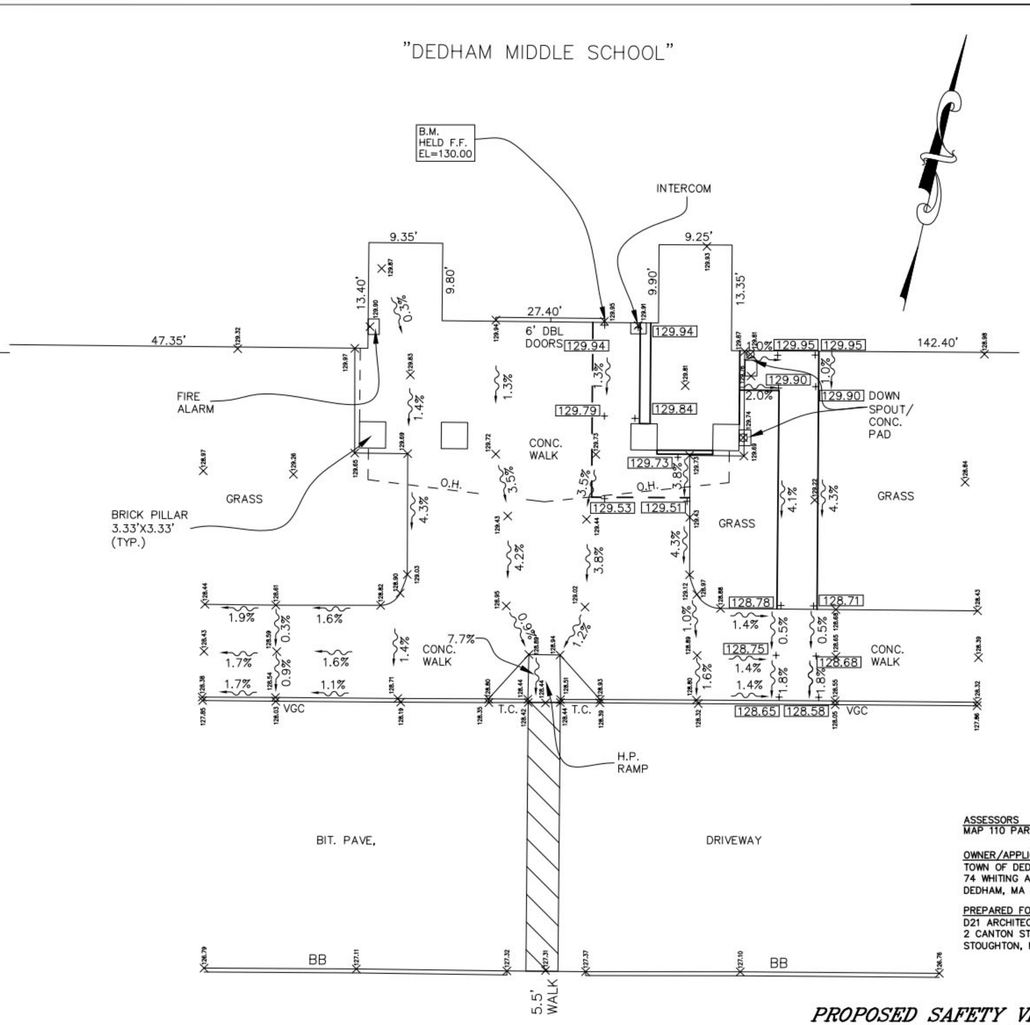
DRAWING NO.:

C1.01



PROPOSED VESTIBULE

NOTE:
SEE ARCHITECT PLAN "SAFETY VESTIBULE ADDITION AT THE DEDHAM MIDDLE SCHOOL" BY D21 ARCHITECTS.



PROPOSED SLOPES/
CONCRETE WALKS

NOTE:
THIS PLAN SHOWS SLOPES OF EXISTING GRADES TO REMAIN AS WELL AS PROPOSED GRADES.

SIDEWALK CONSTRUCTION

	CEMENT CONCRETE CONSTRUCTION
SURFACE:	4" CEMENT CONCRETE (6" AT DRIVEWAYS) (4000 PSI, 3/4", 610)
SUBBASE:	8" GRAVEL BORROW (TYPE "B")

NOTE:
THIS PLAN SHOWS PROPOSED GRADING FOR PROPOSED CONCRETE WALK TO THE EAST OF THE PROPOSED VESTIBULE AND FOR PROPOSED CONCRETE AROUND THE PROPOSED ADDITION. THIS PLAN DOES NOT SHOW EXISTING UNDERGROUND UTILITIES. CONTRACTOR TO NOTIFY DIG SAFE AND NOTIFY ARCHITECT OF ANY UNDERGROUND UTILITIES IN THIS AREA.

ASSESSORS
MAP 110 PARCEL 113

OWNER/APPLICANT
TOWN OF DEDHAM
74 WHITING AVENUE
DEDHAM, MA 02026

PREPARED FOR:
D21 ARCHITECTS
2 CANTON ST. B-229
STOUGHTON, MA 02072

PROPOSED SAFETY VESTIBULE GRADING PLAN OF LAND DEDHAM MIDDLE SCHOOL 70 WHITING AVENUE DEDHAM, MASSACHUSETTS

SCALE: 1" = 8' MARCH 21, 2023

Norwood Engineering
Norwood Engineering Company, Inc.
Consulting Engineers, Land Surveyors
1410 ROUTE ONE, NORWOOD, MA 02062
TEL. (781)762-0143 FAX (781)762-8595

METERS 0 2 4 8
FEET 0 4 8 16 24

DATE	REVISIONS

SHEET 1 OF 2 11499-01

1149901 Dedham Proposed Vestibule 2-2023.dwg

D21 ARCHITECTS
234 WEST CENTER STREET
WEST BRIDGEWATER, MA
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(508)807-8043
WWW.D21ARCHITECTS.COM

STAMP:

CONSULTANT:

TOWN OF DEDHAM
MIDDLE SCHOOL Dedham

DEDHAM MIDDLE SCHOOL
70 WHITING AVENUE
DEDHAM, MA 02026

SAFETY VESTIBULE PROJECT

PROJECT STATUS:
BID SET
ADDENDUM #2

DATE:	4/18/2023
PROJECT NO:	22.003
DRAWN BY:	NE
CHECKED BY:	FPB

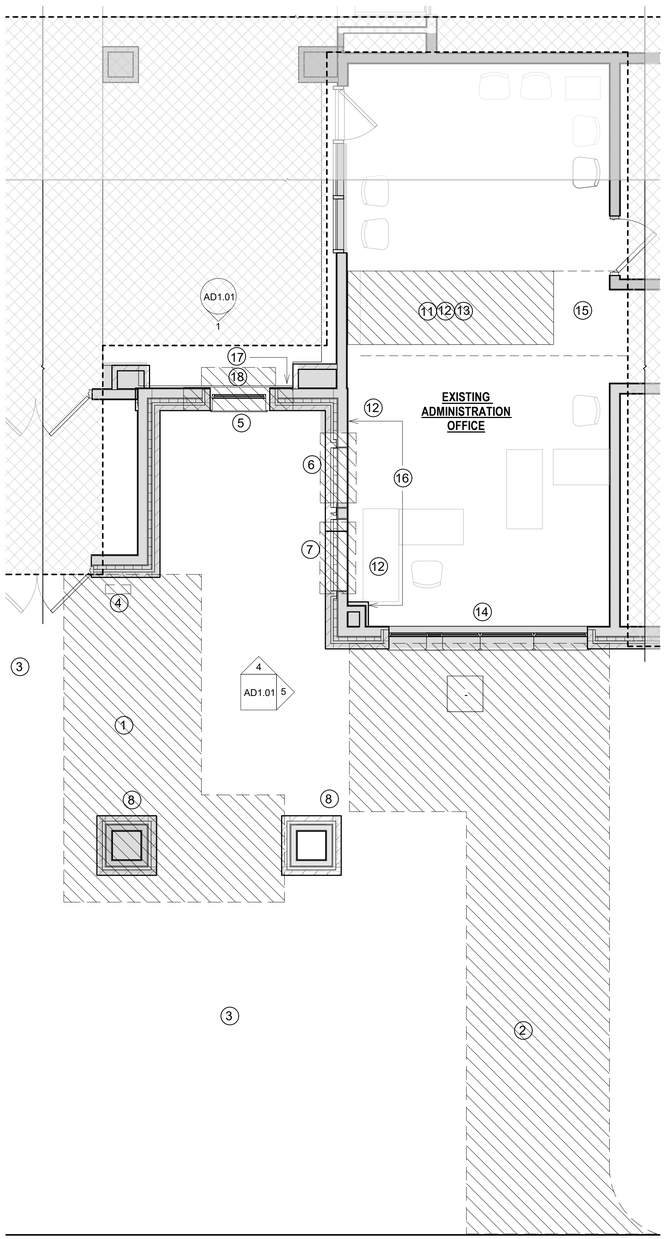
REVISIONS:

1	03/31/23	

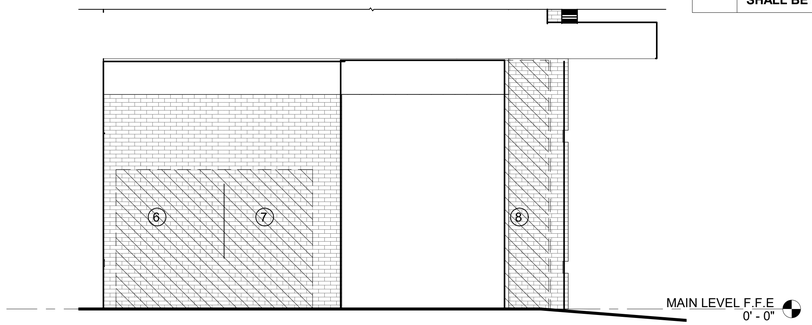
DRAWING TITLE:
PROPOSED SLOPES / CONCRETE WALK

DRAWING NO.:
C1.02

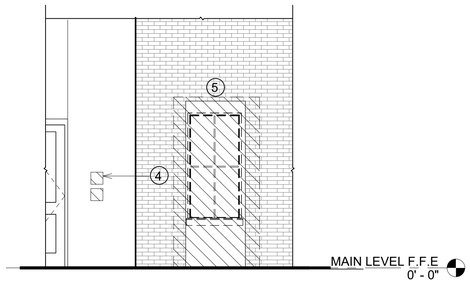
REFERENCE IMAGES OF EXISTING MAIN ENTRY



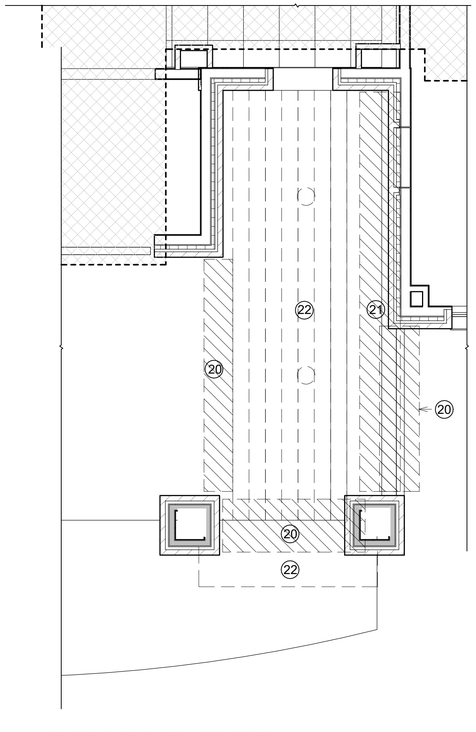
3 PARTIAL DEMOLITION PLAN
1/4" = 1'-0"



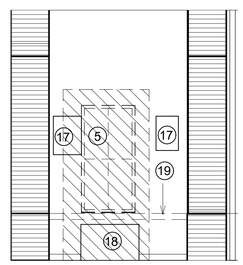
5 DEMOLITION WEST ELEVATION
1/4" = 1'-0"



4 PARTIAL DEMOLITION SOUTH ELEVATION
1/4" = 1'-0"



2 SELECTIVE DEMOLITION REFLECTED CEILING PLAN
1/4" = 1'-0"



1 PARTIAL LOBBY DEMOLITION ELEVATION
1/4" = 1'-0"

SCHEDULED DEMOLITION NOTES

#	NOTE TEXT
1	SAWCUT, REMOVE AND DISPOSE OF EXISTING CONCRETE SIDEWALK TO ALLOW FOR NEW FOUNDATION WALL. SEE STRUCTURAL PLANS
2.	PREPARE FOR NEW CONCRETE SLAB AND WALKWAY
3.	EXISTING CONCRETE SIDEWALK TO REMAIN
4.	REMOVE EXISTING INTERCOM ENTRY PANEL; SWIPE CARD ACCESS PANEL RELOCATED
5.	REMOVE AND SALVAGE EXISITNG WINDOW, DEMOLISH/PREPARE FOR NEW ENTRY DOOR
6.	PARTIAL DEMOLISH OF EXTERIOR WALL / PREPARE FOR NEW ENTRY DOOR
7.	PARTIAL DEMOLISH OF EXTERIOR WALL / PREPARE FOR NEW SLIDING TRANSACTION WINDOW
8.	CONTRACTOR TO SAW CUT EXISITNG COLUMN. ,TAKE CARE NOT TO DISTURB OR DAMAGE EXISTING FOOTING, PIER, BASE PLATE, AND ANCHOR BOLTS.
9.	NOT USED
10.	NOT USED
11.	INTERCOM SYSTEM TO BE RELOCATED, (HANDLE W/ CARE).
12.	RELOCATE EXISTING POWER AND DATA OUTLETS
13.	REMOVE EXISTING CASEWORK
14.	REMOVE HORIZONTAL BLINDS
15.	REMOVE CARPET / TILE
16.	REMOVE WALL AND WALL BASE, FLOOR TO CEILING
17.	REMOVE AND STORE EXISTING WALL PLAQUES PER DIRECTION OF OWNER.
18.	EXISTING UNIT HEATER TO BE DEMOLISHED.DISCONNECT AND MAKE SAFE FOR REMOVAL. REMOVEEXISTING CONDUIT AND WIRE BACK TO THE PANEL.
19.	REMOVE AND SALVAGE WALL TRIM FOR REUSE
20.	DEMOLISH EXISTING BUILDING ENVELOPE TO ACCOMMODATE NEW CURTAIN WALL SYSTEM
21.	DEMOLISH EXISTING GYPSUM BOARD SOFFIT
22.	DEMOLISH EXISTING OUTDOOR CEILING, REMOVE , SALVAGE EXISTING LIGHTING FIXTURE AND RETURN TO OWNER. ALL EXISTING LIGHT FIXTURES AND DEVICES, POWER AND DATA FIXTURES, ASSOCIATED WIRING AND RACEWAYS SHALL BE REMOVED BACK TO ITS POINT OF ORIGIN. ASSOCIATED CIRCUIT BREAKER SHALL BE MAINTAINED FOR RE-USEUNLESS OTHERWISE NOTED.

DEMOLITION PLAN NOTES:

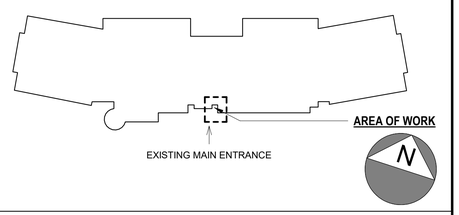
1. ANY WORK NOT COMPLETED BY DATE OF SUBSTANTIAL COMPLETION SHALL OCCUR DURING 2ND SHIFT AND SCHOOL VACATION.
2. THE EXISTING MAIN ENTRY VESTIBULE SHALL REMAIN OPERATIONAL FOR THE DURATION OF THE CONSTRUCTION PERIOD. THE GENERAL CONTRACTOR SHALL PHASE AND COORDINATE ALL WORK.

DEMOLITION PLAN LEGEND

EXISTING WALL TO REMAIN

DEMOLISHED

KEY PLAN



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SAFETY VESTIBULE PROJECT

PROJECT STATUS:

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CHECKED BY:	FPB

REVISIONS:

DRAWING TITLE:

PARTIAL DEMOLITION PLAN

DRAWING NO.:

AD1.01

FLOOR PLAN SYMBOLS

NEW DOOR; SEE DOOR SCHEDULE

EXISTING DOOR TO REMAIN

EXISTING TO REMAIN

NEW WALL CONSTRUCTION; SEE WALL TYPES ON DRAWINGS

LIMIT OF WORK AREA

NEW CONCRETE SLAB ON GRADE - SEE STRUCTURAL DRAWINGS

N.I.C — NOT INCLUDED IN CONTRACT, EXISTING TO REMAIN

CR — CARD READER BY GENERAL CONTRACTOR

EC — EXTERIOR CAMERA BY GENERAL CONTRACTOR'S ELECTRICAL CONTRACTOR

I — INTERCOM DEVICE - RELOCATED BY GENERAL CONTRACTOR'S ELECTRICAL CONTRACTOR

DO — ADA PUSHBUTTON DOOR ACTIVATION BUTTON BY GENERAL CONTRACTORS ELECTRICAL CONTRACTOR

RD — RELOCATED DATA RECEPTACLES - SEE ELECTRICAL DRAWINGS

RP — RELOCATED POWER RECEPTACLES - SEE ELECTRICAL DRAWINGS

P — NEW POWER RECEPTACLES - SEE ELECTRICAL DRAWINGS

F — NEW MANUAL PULL STATION - SEE FIRE ALARM DRAWINGS

V.I.F. CONTRACTOR TO VERIFY IN FIELD

GENERAL SCOPE OF WORK

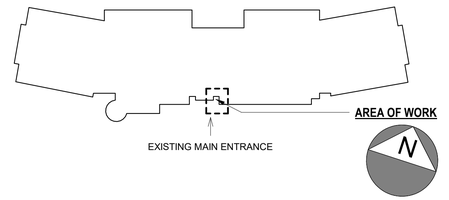
SCOPE OF WORK INCLUDED IN THE BID CONSIST OF BUT NOT LIMITED TO:

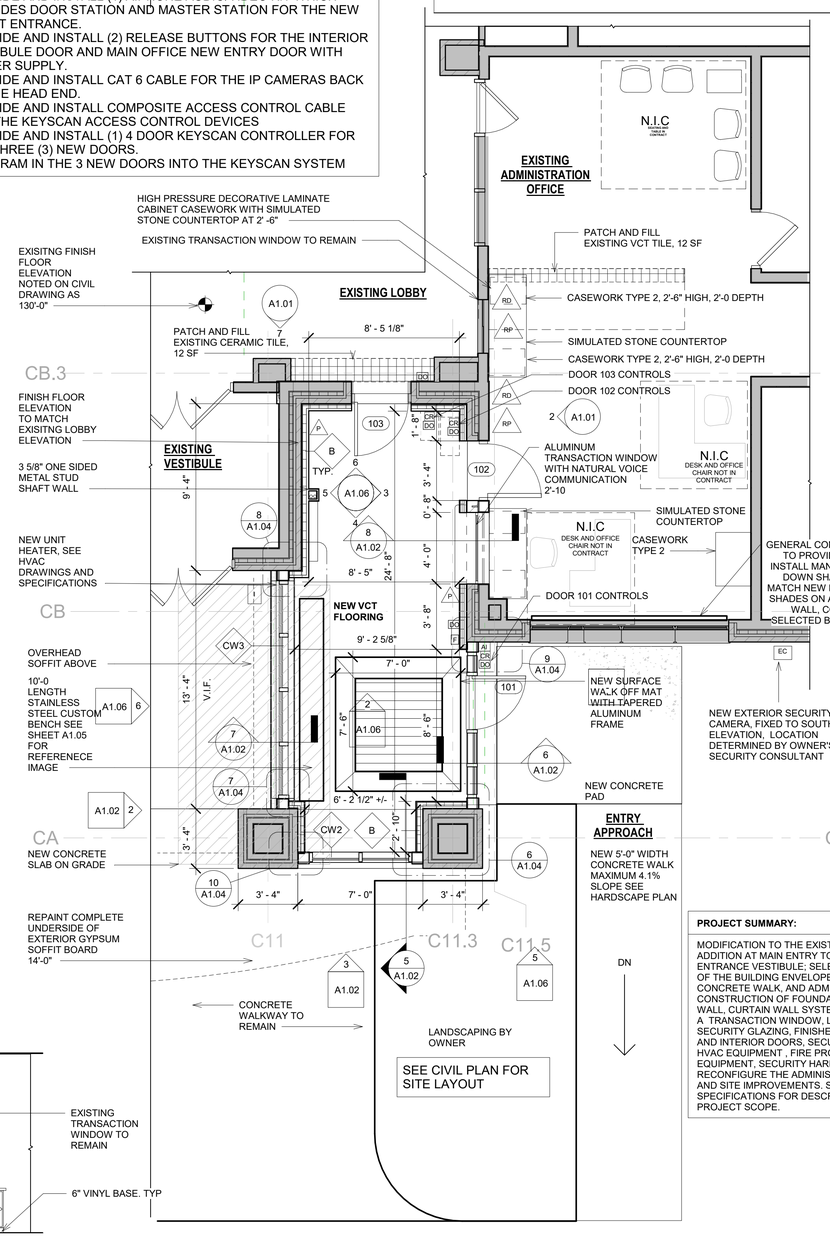
1. SITE PREPARATION AND TEMPORARY FACILITIES: PREPARE SITE FOR DEMOLITION WORK INCLUDING TEMPORARY CONSTRUCTION FENCING AND GATES, SECURITY, EROSION AND SEDIMENT CONTROL, DUST CONTROL AND SWEEPING, WASTE CONTAINERS AND WASTE SEPARATION, TEMPORARY SHEDS AND OFFICES, FIRE PROTECTION, TEMPORARY WATER SOURCE FOR CONSTRUCTION PURPOSES, AND ALL OTHER TEMPORARY FACILITIES FOR EXECUTION OF THE WORK.
2. SELECTIVE BUILDING AND SITE DEMOLITION: DEMOLITION REMOVAL SHALL INCLUDE LOCATIONS NOTED ON THE DRAWINGS AND SPECIFICATIONS.
3. REMOVE ON-SITE ELEMENTS TO CONSTRUCT NEW FOUNDATION, WALKWAYS, AND OTHER SITE IMPROVEMENTS AS INDICATED ON DRAWINGS.
4. BUILDING UTILITIES: UTILITIES SERVICING THE BUILDING SHALL BE DISCONNECTED OR REMOVED BY GENERAL CONTRACTOR AS REQUIRED.
5. BACKFILLING OF DISTURBED AREAS WITH CLEAN COMPACTED FILL
6. SALVAGING OF BUILDING MATERIALS AND FURNISHINGS FOR FUTURE USE BY OWNER: CAREFULLY REMOVE AND SALVAGE AND CLEAN ALL ITEMS INDICATED ON THE DRAWINGS. MATERIAL SHALL BE STORED AT A LOCATION IN TOWN AS DESIGNATED BY THE OWNER.
7. CONSTRUCT NEW CONCRETE FOOTING AND FOUNDATION, NEW MASONRY WALLS.
8. INSTALL INTERIOR FLOORING - ABOVE EXISTING EXTERIOR SLAB.
9 CONSTRUCT EXTERIOR CONCRETE SLAB AND WALKWAY - SLOPED IN FRONT OF ENTRANCE AWAY FROM BUILDING.
10. INSTALL EXTERIOR DOORS (1 LEAF), NEW INTERIOR DOORS AND TRANSOM (1 LEAF).
11. INSTALL UNIT VENT/HEAT AT VESTIBULE HEATER.
12. PAINT ALL NEW AND EXISTING WALLS IN ADMINISTRATION MAIN OFFICE TO MATCH EXISTING COLOR, PAINT WALLS WITHIN THE LIMIT OF WORK AREA IN EXISTING LOBBY TO MATCH THE ADJACENT SURFACE COLORS.
13. INSTALL INTERIOR HORIZONTAL SLIDING PASS-THRU WINDOW WITH ALUMINUM FRAME AND SASH.
14. CONSTRUCT NEW METAL STUD WALLS.
15 INSTALL NEW CURTAINWALL WINDOW AND DOOR ASSEMBLY AND SECURITY WINDOW FILM, CONTRACTOR TO APPLY SECURITY FILM ON INSIDE FACE OF GLASS.
16. PROVIDE POWER AND DATA OUTLETS, REFER TO THE ELECTRICAL DRAWINGS AND SPECIFICATIONS. RELOCATED EXISTING POWER, DATA OUTLETS, AND INTERCOM DEVICES. REFER TO THE ELECTRICAL DRAWINGS AND SPECIFICATIONS.
17. INSTALLATION OF FIRE PROTECTION EQUIPMENT.
18. PROVIDE STEEL LINTELS TO SUPPORT EXISTING MASONRY WALL ABOVE NEW SLIDING TRANSACTION WINDOW.
19. PROVIDE NEW BRICK TO MATCH EXISTING BRICK ADJACENT TO WORK AREA IN ALL NEW CONSTRUCTION LOCATIONS. REFER TO THE DRAWINGS AND SPECIFICATIONS.

SECURITY SCOPE OF WORK

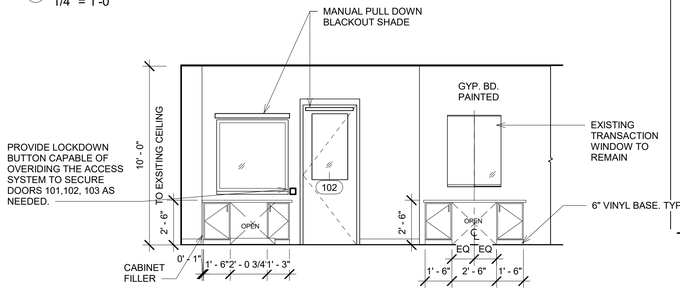
1. PROVIDE AND INSTALL (3) AWID CARD READERS FOR TWO NEW EXTERIOR AND INTERIOR DOUBLE DOORS AND (1) DOOR LEADING INTO THE MAIN OFFICE LEADING INTO THE DEDHAM MIDDLE SCHOOL.
2. PROVIDE AND INSTALL (5) DOOR CONTACTS FOR THE TWO NEW DOORS.
3. PROVIDE AND INSTALL (3) REX MOTIONS FOR THE DOORS.
4. PROVIDE AND INSTALL POWER SUPPLY FOR THE ELECTRONIC DOOR LOCKING HARDWARE.
5. PROVIDE AND INSTALL (1) 5MP IP AXIS DOME CAMERA ON THE EXTERIOR OF THE BUILDING FOR THE FRONT ENTRANCE.
6. PROVIDE AND INSTALL (1) 6MP 360 IP DOME CAMERA FOR THE INTERIOR OF THE NEW VESTIBULE.
7. PROVIDE AND INSTALL (2) EXACQ IP CAMERA LICENSES.
8. PROVIDE AND INSTALL (1) AIPHONE AUDIO/VIDEO KIT WHICH INCLUDES DOOR STATION AND MASTER STATION FOR THE NEW FRONT ENTRANCE.
9. PROVIDE AND INSTALL (2) RELEASE BUTTONS FOR THE INTERIOR VESTIBULE DOOR AND MAIN OFFICE NEW ENTRY DOOR WITH POWER SUPPLY.
10. PROVIDE AND INSTALL CAT 6 CABLE FOR THE IP CAMERAS BACK TO THE HEAD END.
11. PROVIDE AND INSTALL COMPOSITE ACCESS CONTROL CABLE FOR THE KEYSCAN ACCESS CONTROL DEVICES
12. PROVIDE AND INSTALL (1) 4 DOOR KEYSCAN CONTROLLER FOR THE THREE (3) NEW DOORS.
13. PROGRAM IN THE 3 NEW DOORS INTO THE KEYSCAN SYSTEM

KEY PLAN

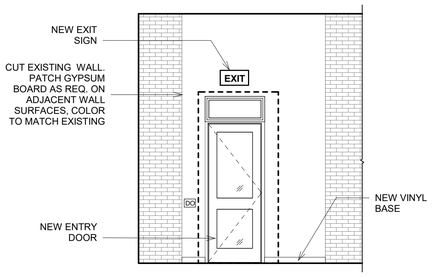




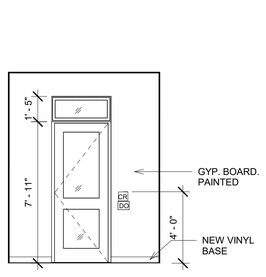
1 PROPOSED VESTIBULE PLAN
1/4" = 1'-0"



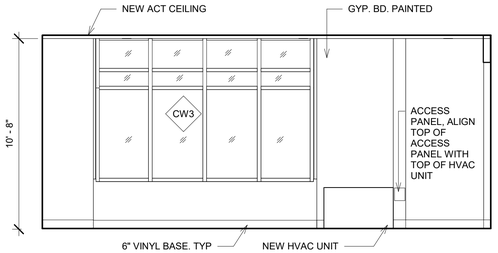
2 PARTIAL ADMINISTRATION INTERIOR ELEVATION
1/4" = 1'-0"



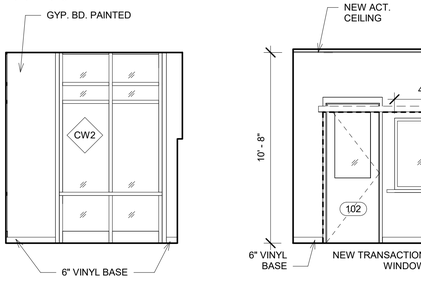
7 PARTIAL LOBBY INTERIOR ELEVATION
1/4" = 1'-0"



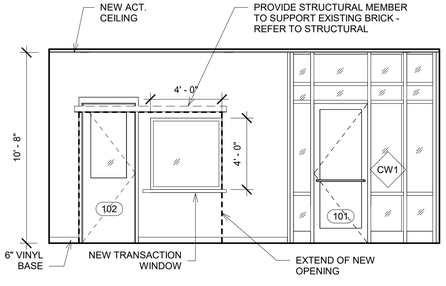
6 VESTIBULE NORTH INTERIOR ELEVATION
1/4" = 1'-0"



5 PARTIAL WEST INTERIOR ELEVATION
1/4" = 1'-0"



4 PARTIAL SOUTH INTERIOR ELEVATION
1/4" = 1'-0"



3 VESTIBULE EAST INTERIOR ELEVATION
1/4" = 1'-0"

NOTE: FIELD VERIFY ALL DIMENSIONS IN THE FIELD

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SAFETY VESTIBULE PROJECT

PROJECT STATUS:	BID SET ADDENDUM #2
DATE:	4/18/2023
PROJECT NO:	22.003
DRAWN BY:	MC
CHECKED BY:	FPB
REVISIONS:	

PROJECT SUMMARY:

MODIFICATION TO THE EXISTING SCHOOL AND ADDITION AT MAIN ENTRY TO CREATE A NEW ENTRANCE VESTIBULE; SELECTIVE DEMOLITION OF THE BUILDING ENVELOPE, EXTERIOR CONCRETE WALK, AND ADMINISTRATIVE OFFICE; CONSTRUCTION OF FOUNDATION AND MASONRY WALL, CURTAIN WALL SYSTEM; INSTALLATION OF A TRANSACTION WINDOW, LAMINATE FILM SECURITY GLAZING, FINISHES, NEW EXTERIOR AND INTERIOR DOORS, SECURITY CAMERAS, HVAC EQUIPMENT , FIRE PROTECTION EQUIPMENT, SECURITY HARDWARE, AND RECONFIGURE THE ADMINISTRATIVE OFFICE, AND SITE IMPROVEMENTS. SEE DRAWINGS AND SPECIFICATIONS FOR DESCRIPTION OF FULL PROJECT SCOPE.

DRAWING TITLE:

FLOOR PLAN, INTERIOR ELEVATIONS

DRAWING NO.:

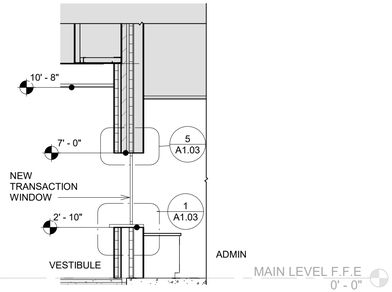
A1.01

PRECAST CONCRETE SILL NOTES:

SUBMIT SHOP DRAWINGS PREPARED BY OR UNDER SUPERVISION OF A QUALIFIED PROFESSIONAL ENGINEER SHOWING COMPLETE INFORMATION FOR THE FABRICATION AND INSTALLATION OF PRECAST CONCRETE UNITS AND THE ANCHORING SYSTEM.
INDICATE NUMBER, DIMENSIONS AND CROSS-SECTION; FABRICATION TOLERANCES; LOCATION, SIZE AND TYPE OF REINFORCEMENT, INCLUDING SPECIAL REINFORCEMENT AND LIFTING DEVICES NECESSARY FOR HANDLING AND ERECTION.

COLD FORM METAL FRAMING NOTES:

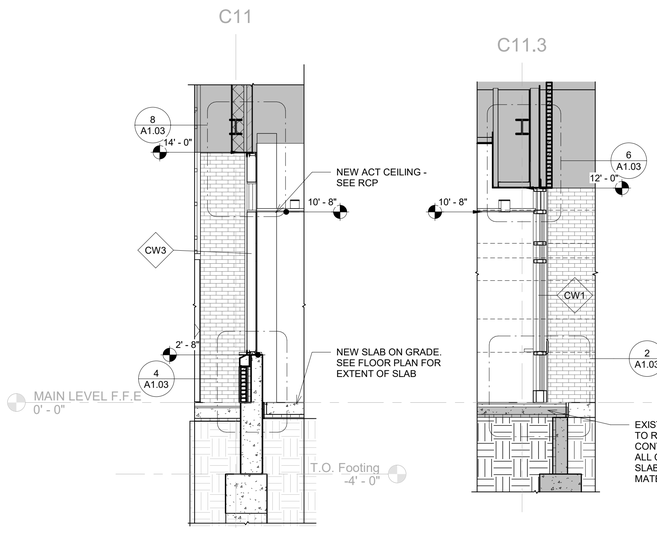
SUBMIT SHOP DRAWINGS PREPARED BY OR UNDER SUPERVISION OF A QUALIFIED PROFESSIONAL ENGINEER SHOWING COMPLETE INFORMATION FOR THE FABRICATION AND INSTALLATION OF COLD FORM METAL FRAMING , INCLUDING COMPREHENSIVE ENGINEERING ANALYSIS BY A QUALIFIED MASSACHUSETTS LICENSED PROFESSIONAL ENGINEER, USING PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA INDICATED.



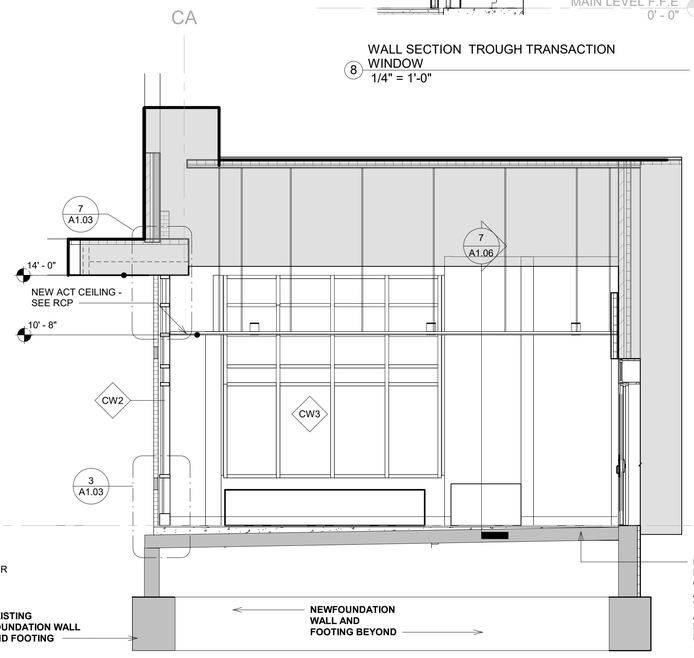
WALL SECTION TROUGH TRANSACTION WINDOW
8 1/4" = 1'-0"

REFLECTED CEILING PLAN SYMBOLS

	GYP. BD. CEILING/SOFFIT
	EXISTING GYP. BD. CEILING/SOFFIT
	SUSPENDED ACOUSTIC TILE CEILING
	EXISTING SUSPENDED ACOUSTIC TILE CEILING
C.J.	GYP. BD. CONTROL JOINT
	LIGHT FIXTURES; SEE ELECTRICAL DWGS.
	EXIT SIGN; SEE ELECTRICAL DWGS.
OS	OCCUPANCY SENSOR - CEILING MOUNTED, SEE ELECTRICAL DWGS.
SD	SMOKE DETECTOR; SEE ELECTRICAL DWGS.
	MECHANICAL RETURN/SUPPLY DIFFUSER; SEE MECHANICAL DWGS.
	SPRINKLER HEAD; SEE FIRE-PROTECTION DWGS.
IC	360 IP DOME CAMERA FOR THE INTERIOR OF THE NEW VESTIBULE
	VISUAL ONLY SOUND ALARM; SEE FIRE ALARM DWGS.

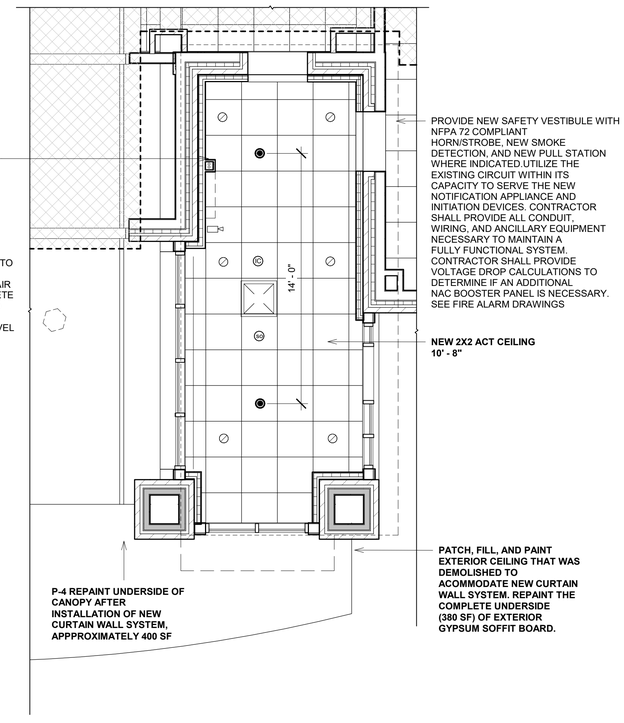


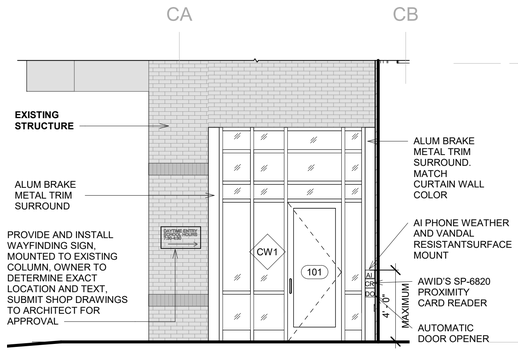
7 PARTIAL WEST - EAST SECTION
1/4" = 1'-0"



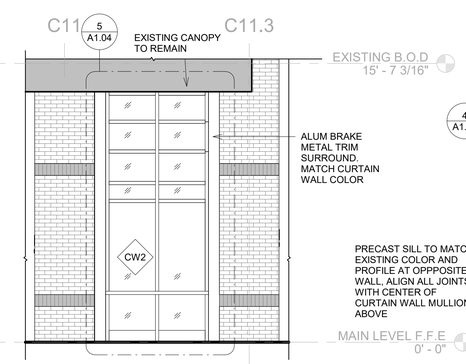
6 WALL SECTION - EAST
1/4" = 1'-0"

5 PARTIAL SOUTH-NORTH BUILDING SECTION
1/4" = 1'-0"

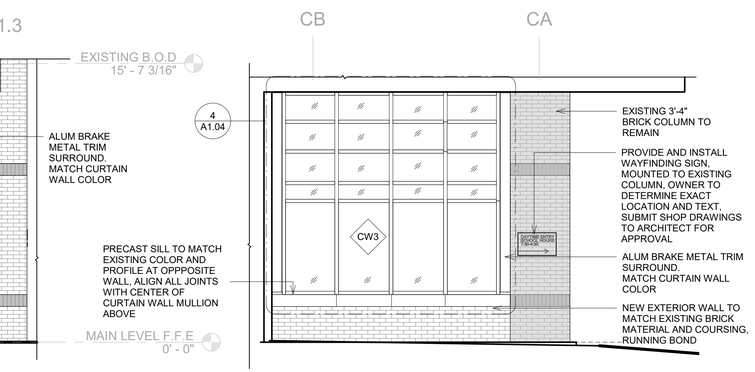




4 PARTIAL EAST ELEVATION
1/4" = 1'-0"



3 PARTIAL SOUTH FRONT ELEVATION
1/4" = 1'-0"



2 PARTIAL WEST ELEVATION
1/4" = 1'-0"

NOTE: FIELD VERIFY ALL DIMENSIONS IN THE FIELD

1 PROPOSED REFLECTED CEILING PLAN
1/4" = 1'-0"

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REVISIONS:

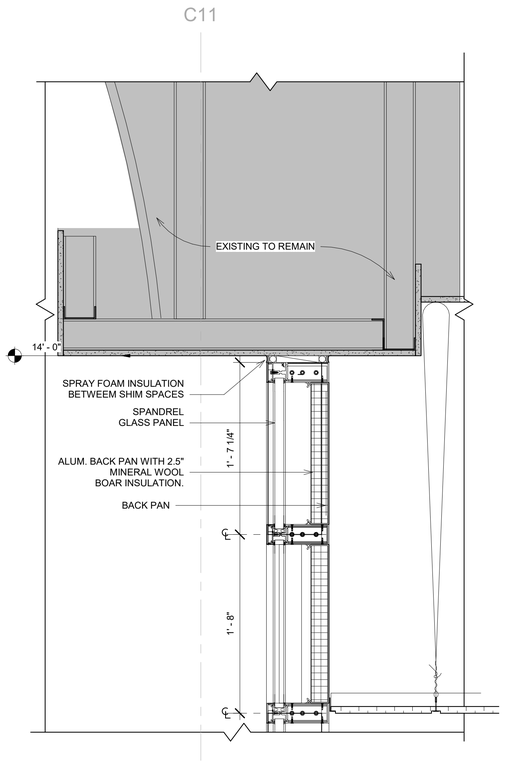
1	03/31/23	

DRAWING TITLE:

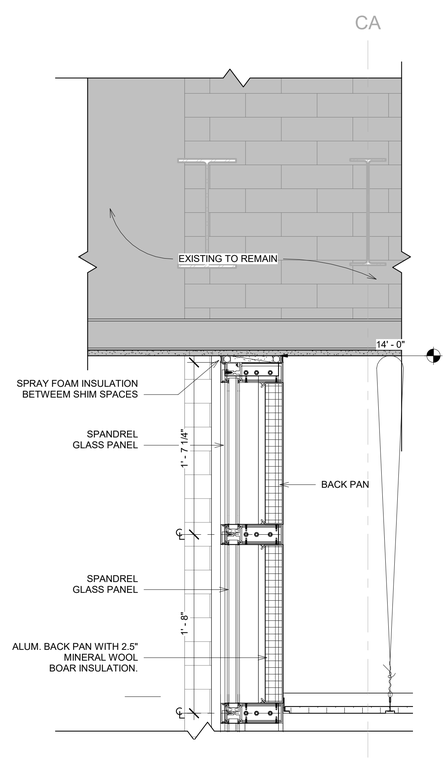
REFLECTED CEILNG PLAN,EXTERIOR ELEVATIONS, WALL SECTIONS

DRAWING NO.:

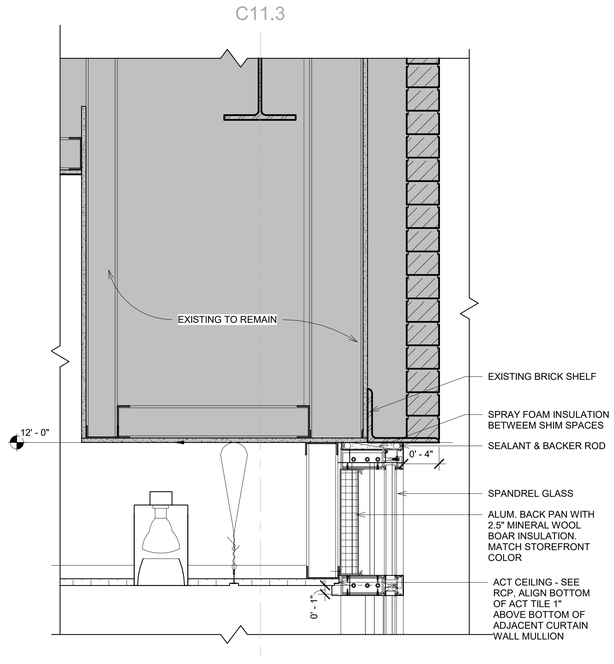
A1.02



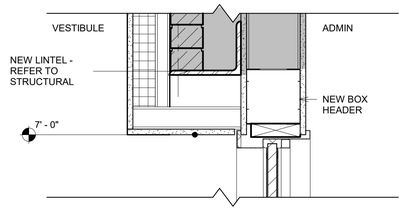
8 HEAD DETAIL - CW 3
1 1/2" = 1'-0"



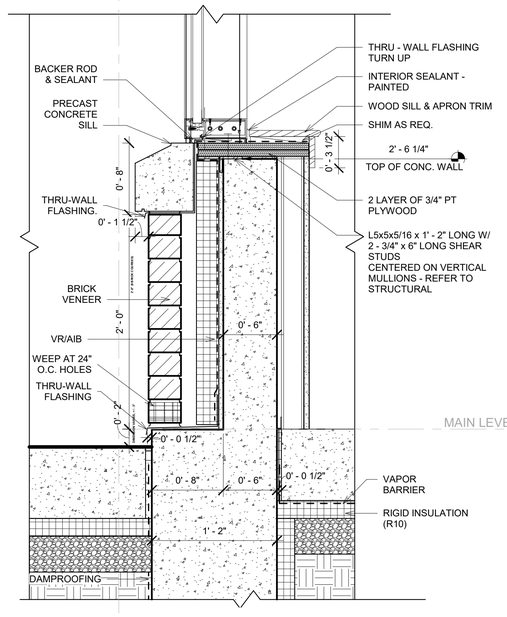
7 HEAD DETAIL - CW 2
1 1/2" = 1'-0"



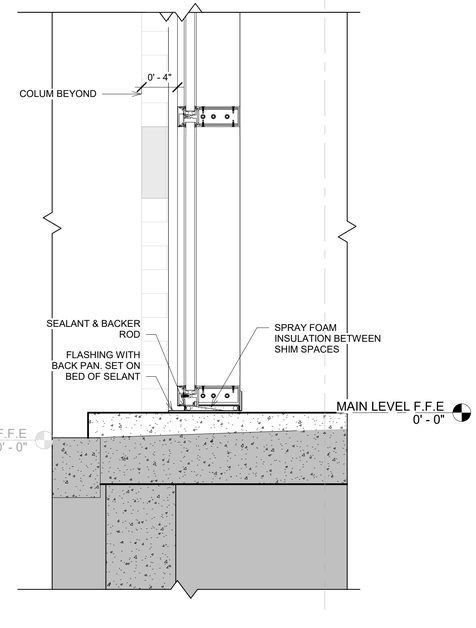
6 HEAD DETAIL - CW 1
1 1/2" = 1'-0"



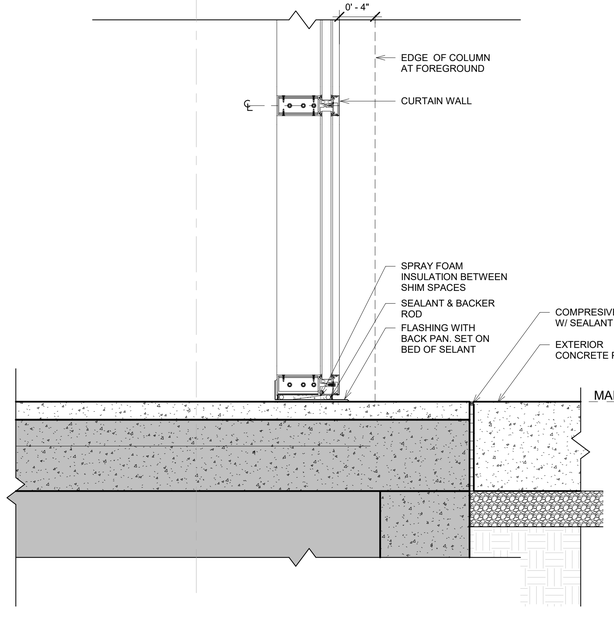
5 TRANSACTION WINDOW HEAD
1 1/2" = 1'-0"



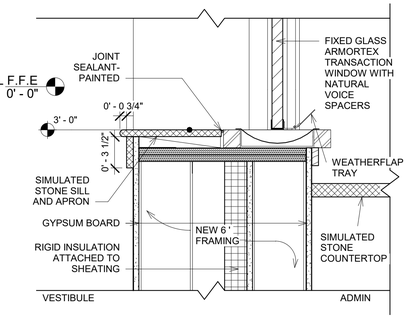
4 SILL DETAIL CW 3
1 1/2" = 1'-0"



3 SILL DETAIL CW 2
1 1/2" = 1'-0"



2 SILL DETAIL - CW 1
1 1/2" = 1'-0"



1 TRANSACTION WINDOW SILL
1 1/2" = 1'-0"

NOTE: FIELD VERIFY ALL DIMENSIONS IN THE FIELD

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CONSULTANT:

TOWN OF DEDHAM

MIDDLE SCHOOL Dedham

DEDHAM MIDDLE SCHOOL
70 WHITING AVENUE
DEDHAM, MA 02026

SAFETY VESTIBULE PROJECT

PROJECT STATUS:

BID SET
ADDENDUM #2

DATE:	4/18/2023
PROJECT NO:	22.003
DRAWN BY:	MC
CHECKED BY:	FPB

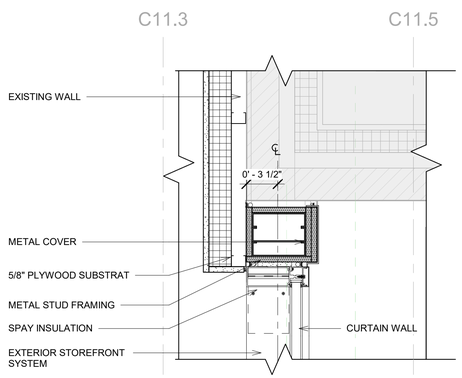
REVISIONS:

DRAWING TITLE:

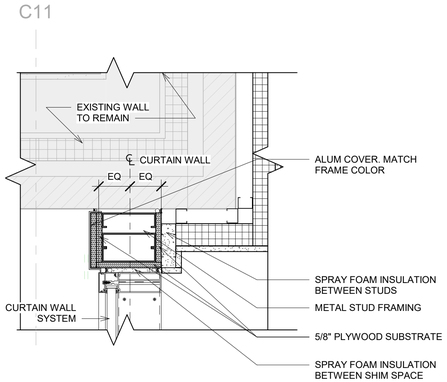
SECTION DETAILS

DRAWING NO.:

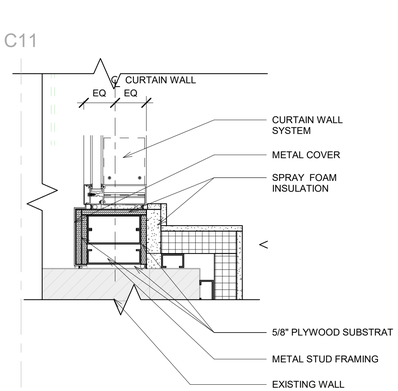
A1.03



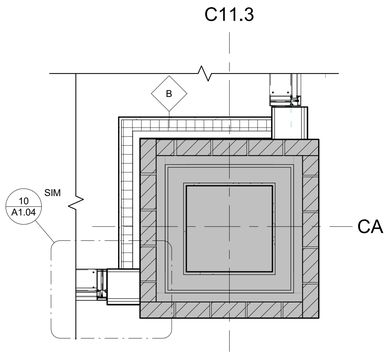
9 PROPOSED VESTIBULE PLAN - Callout 4
1 1/2" = 1'-0"



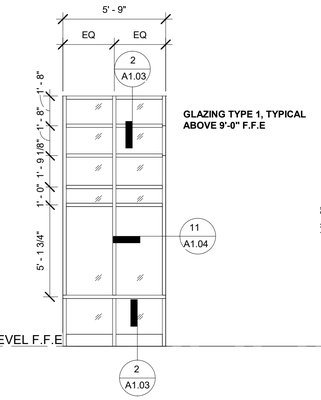
8 CURTAIL WALL JAMB - TYP
1 1/2" = 1'-0"



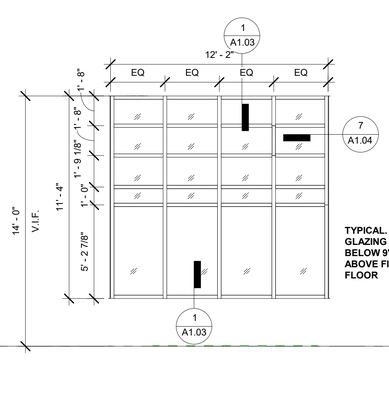
7 PROPOSED VESTIBULE PLAN - Callout 2
1 1/2" = 1'-0"



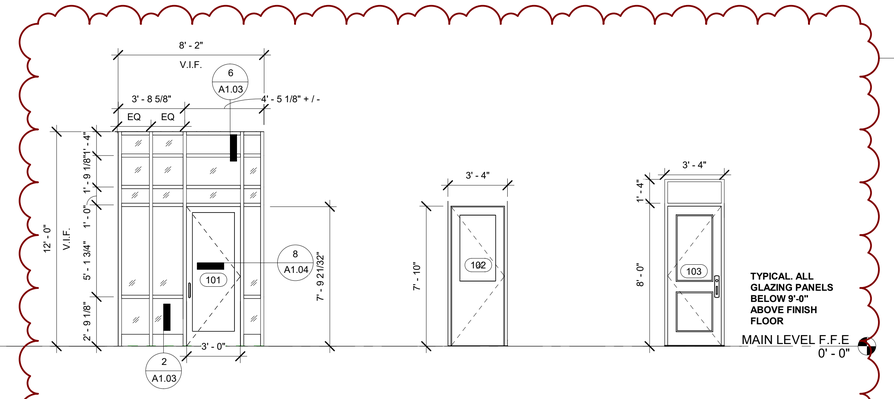
6 PLAN DETAIL - EXISTING COLUMN
3/4" = 1'-0"



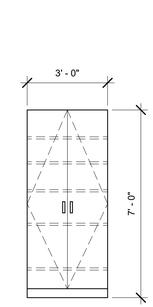
5 CURTAIN WALL TYPE 2
1/4" = 1'-0"



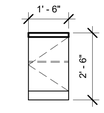
4 CURTAIN WALL TYPE 3
1/4" = 1'-0"



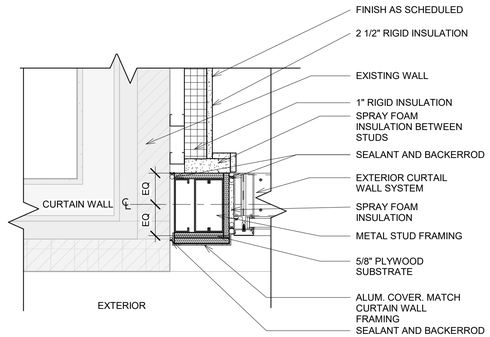
3 CURTAIN WALL TYPE 1
1/4" = 1'-0"



12 CASEWORK TYPE 1
3/8" = 1'-0"



11 CASEWORK TYPE 2
3/8" = 1'-0"



10 EXTERIOR CURTAINWALL JAMB DETAIL - TYP
1 1/2" = 1'-0"

GLAZING NOTES :
GLAZING TYPE 1,TYPICAL 9'-0" ABOVE MAIN LEVEL 0'- 0"
GLAZING TYPE 2,TYPICAL 9'-0" BELOW MAIN LEVEL 0'- 0

NOTE: FIELD VERIFY ALL DIMENSIONS IN THE FIELD

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DEDHAM, MA 02026

SAFETY VESTIBULE PROJECT

PROJECT STATUS:

BID SET
ADDENDUM #2

DATE:	4/18/2023
PROJECT NO:	22.003
DRAWN BY:	MC
CHECKED BY:	FPB

REVISIONS:

1	3.31.23	Door Hardware Schedule

DRAWING TITLE:

GLAZING TYPES, DOOR TYPES, PLAN DETAILS

DRAWING NO.:

A1.04

Door Schedule

Door Number	Door Type	Door Width	Door Height	Door Thickness	Door Material	Door Finish	Hardware	Frame Type	Frame Material	Frame Finish	Comments
101	1	3' - 0"	7'-10"	0' - 2"	ALUMINUM	CUSTOM COLOR TO MATCH EXISITNG ENTRY DOORS	HW SET 1	1	ALUMINUM	CUSTOM COLOR TO MATCH EXISTING CURTAIN WALL SYSTEM FRAMING	
102	2	3' - 0"	7' - 10"	0' - 2 3/4"	WOOD	STAIN FINISH PER SPECIFICATIONS	HW SET 2	2	HOLLOW METAL	CUSTOM COLOR TO MATCH EXISTING CURTAIN WALL SYSTEM FRAMING	
103	1	3' - 0"	7' - 10"	0' - 2"	ALUMINUM	CUSTOM COLOR TO MATCH EXISITNG ENTRY DOORS	HW SET 3	1	ALUMINUM	CUSTOM COLOR TO MATCH EXISTING CURTAIN WALL SYSTEM FRAMING	

Hardware Sets
HW-1

Doors: 101
Description: Alum Security Vest - Card Access; Auto; Remote Release

1	Continuous Hinge	CFM-SLF-HD1 EL-CEPTx32D Series	PE
1	Exit Device (rim, NL,EL,RX,LX,CD)	16 53 55 56 70 8804	US32D SA
1	Offset Pull	862	US32D SA
2	Small Format Inter Core	Medeco X4 keyed to existing	26 MC
1	Concealed Overhead Stop	1-X36	630 RF
1	Automatic Opener	6061; 6071 D	689 NO
1	Threshold (coord w/ details)	273x292AFGPK FHSL14SS-2	PE
1	Sweep	315CN	PE
1	Door Wiring Harness	QC Series (hinge to device)	MK
1	Frame Wiring Harness	QC Series (jamb to J-box)	MK
1	Position Switch	DPS Series (coord w/ security)	SU
2	Door Switch	671	NO
1	Power Supply	AQL4-R8E1	SU
1	Weather/Perimeter Seals	Supplied with door/frame assembly	
1	Card Reader	By Security	
1	Remote Release Switch	By Security	

NOTES: OPERATION: DOOR IS NORMALLY CLOSED AND LOCKED. VALID CARD AT READER OR SIGNAL FROM REMOTE SWITCH RETRACTS LATCH FOR MOMENTARY ACCESS, THEN ENABLES OUTSIDE ACTUATOR. INSIDE ACTUATOR RETRACTS LATCH, THEN AUTO OPENS DOOR. MONITORING BY DOOR POSITION SWITCH. DURING A LOSS OF POWER THE DOOR WILL DEFAULT TO SECURE. FREE EGRESS AT ALL TIMES. LOCK STATUS WILL NOT CHANGE WHEN THE FIRE DETECTION/SUPPRESSION SYSTEMS ARE ACTIVATED. DEPRESSING PUSHRAIL WILL ACTIVATE REQUEST TO EXIT SWITCH FOR APPROPRIATE MONITOR BY EAC SYSTEMS. OUTSIDE KEY OVERRIDE.

Hardware Sets
HW-3

Doors: 103
Description: Alum Security Vest/Lobby - Card Access; Auto; Remote Release

1	Continuous Hinge	CFM-SLF-HD1 EL-CEPTx32D Series	PE
1	Exit Device (rim, NL,EL,RX,LX,CD)	16 53 55 56 70 8804	US32D SA
1	Offset Pull	862	US32D SA
2	Small Format Inter Core	Medeco X4 keyed to existing	26 MC
1	Concealed Overhead Stop	1-X36	630 RF
1	Automatic Opener	6061; 6071 D	689 NO
1	Threshold (coord w/ details)	271A FHSL14SS	PE
1	Sweep	315CN	PE
1	Door Wiring Harness	QC Series (hinge to device)	MK
1	Frame Wiring Harness	QC Series (jamb to J-box)	MK
1	Position Switch	DPS Series (coord w/ security)	SU
2	Door Switch	671	NO
1	Power Supply	AQL4-R8E1	SU
1	Weather/Perimeter Seals	Supplied with door/frame assembly	
1	Card Reader	By Security	
1	Remote Release Switch	By Security	

NOTES: OPERATION: DOOR IS NORMALLY CLOSED AND LOCKED. VALID CARD AT READER OR SIGNAL FROM REMOTE SWITCH RETRACTS LATCH FOR MOMENTARY ACCESS, THEN ENABLES OUTSIDE ACTUATOR. INSIDE ACTUATOR RETRACTS LATCH, THEN AUTO OPENS DOOR. MONITORING BY DOOR POSITION SWITCH. DURING A LOSS OF POWER THE DOOR WILL DEFAULT TO SECURE. FREE EGRESS AT ALL TIMES. LOCK STATUS WILL NOT CHANGE WHEN THE FIRE DETECTION/SUPPRESSION SYSTEMS ARE ACTIVATED. DEPRESSING PUSHRAIL WILL ACTIVATE REQUEST TO EXIT SWITCH FOR APPROPRIATE MONITOR BY EAC SYSTEMS. OUTSIDE KEY OVERRIDE.

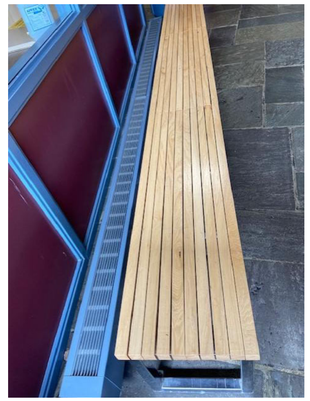
Hardware Sets
HW-2

Doors: 102
Description: Admin Office - Card Access; Auto; Remote Release

4	Hinge, Full Mortise, Hvy Wt	T4A3786 4-1/2" x 4-1/2"	US26D MK
1	Storeroom Lock	70 8204 LNL	US26D SA
1	Small Format Inter Core	Medeco X4 keyed to existing	26 MC
1	Electric Strike	1500C-LM	630 HS
1	SMART Pac Bridge Rectifier	2005M3 x 2004M	HS
1	Concealed Overhead Stop	1-X36	630 RF
1	Automatic Opener	6061; 6071 D	689 NO
1	Kick Plate	K1050 10" 4BE CSK	US32D RO
1	Gasketing	S88BL	PE
1	Sweep	18061CNB	PE
1	Request to Exit	By Security	
1	Frame Wiring Harness	QC Series (jamb to J-box)	MK
1	Position Switch	DPS Series (coord w/ security)	SU
2	Door Switch	671	NO
1	Power Supply	AQL4-R8E1	SU
1	Card Reader	By Security	
1	Remote Release Switch	By Security	

MATCH EXISTING BENCH AT HIGH SCHOOL LOBBY IN ALL RESPECTS OF MATERIALS AND CONSTRUCTION. CONTRACTORS ARE REQUIRED TO PROVIDE DETAILED SHOP DRAWINGS AND MATERIALS SUBMITTALS TO ARCHITECT.

HARDWOOD SLATS FOR BENCH. PROVIDE SHOP DRAWINGS. SLATS SHALL BE OF AMERICAN HICKORY, CLEAR HEART, VERTICAL GRAIN, FREE OF KNOTS, KILN DRIED, AND HAND SELECTED FOR TRUE, STRAIGHT LENGTHS. NHLA GRADE OF F.A.S. SELECTS "PRIME GRADE". JANKA HARDNESS RATING GREATER THAN 1700. DIMENSIONS AS INDICATED ON DRAWINGS. ALL SLATS SHALL BE FINISHED WITH EASED EDGES, AND SANDED SMOOTH FOR CLEAR FINISH. SLATS SHALL BE SHOP FABRICATED AND PANELS OF SLATS SHALL BE PRE-ASSEMBLED ON STEEL ANGLES TO ENSURE UNIFORMITY OF SPACING. FINISH SHALL BE SHOP-APPLIED. ALL FASTENER LOCATIONS SHALL BE PRE MEASURED AND PRE-DRILLED TO ENSURE SECURE AND PERMANENT CONNECTIONS WITH NO CRACKING OR SPLITTING OF WOOD, FOLLOWING BEST TRADE PRACTICES. AS PRODUCED BY BAIRD BROS. FINE HARDWOODS, 7060 CRORY RD. CANFIELD, OH 44406 1-800-732-1697 OR EQUAL."



4 STAINLESS STEAL HARDWOOD BENCH
NOT TO SCALE

3 SOUTH EAST VIEW

2 SOUT WEST VIEW

1 SOUTH VIEW

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CONSULTANT:

TOWN OF DEDHAM
MIDDLE SCHOOL Dedham

DEDHAM MIDDLE SCHOOL
70 WHITING AVENUE
DEDHAM, MA 02026

SAFETY VESTIBULE PROJECT

PROJECT STATUS:

BID SET
ADDENDUM #2

DATE:	4/18/2023
PROJECT NO:	22.003
DRAWN BY:	FPB
CHECKED BY:	FPB

REVISIONS:

1	3.31.23	Door Hardware Schedule

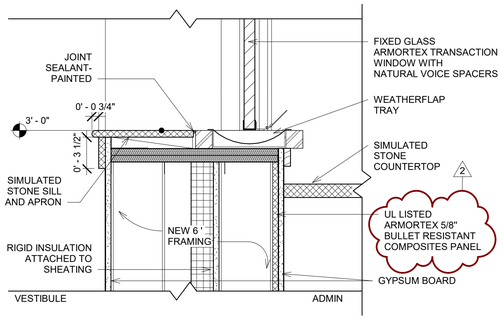
DRAWING TITLE:

REFERENCE IMAGES

DRAWING NO.:

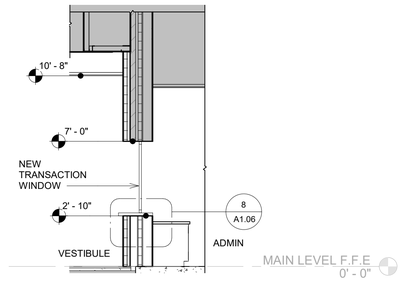
A1.05

Door Schedule 1-ADD/ALTERNATE NO.1											
Door Number	Type	Door				Finish	Hardware	Frame			Comments
		Width	Height	Thickness	Material			Type	Material	Finish	
101	1	3' - 0"	7' - 9 3/4"	0' - 2"	ALUMINUM	CUSTOM COLOR TO MATCH EXISITNG ENTRY DOORS	HW SET 1	1	ALUMINUM	CUSTOM COLOR TO MATCH EXISTING CURTAIN WALL SYSTEM FRAMING	BALLISTICS RESISTANCE: LEVELI 3 WHEN TESTED ACCORDING to UL 752.
102	2	3' - 0"	7' - 10"	0' - 2 3/4"	WOOD	STAIN FINISH PER SPECIFICATIONS	HW SET 2	2	HOLLOW METAL	CUSTOM COLOR TO MATCH EXISTING CURTAIN WALL SYSTEM FRAMING	BALLISTICS RESISTANCE: LEVELI 3 WHEN TESTED ACCORDING to UL 752.
103	1	3' - 0"	7' - 10"	0' - 2"	ALUMINUM	CUSTOM COLOR TO MATCH EXISITNG ENTRY DOORS	HW SET 3	1	ALUMINUM	CUSTOM COLOR TO MATCH EXISTING CURTAIN WALL SYSTEM FRAMING	BALLISTICS RESISTANCE: LEVELI 3 WHEN TESTED ACCORDING to UL 752.

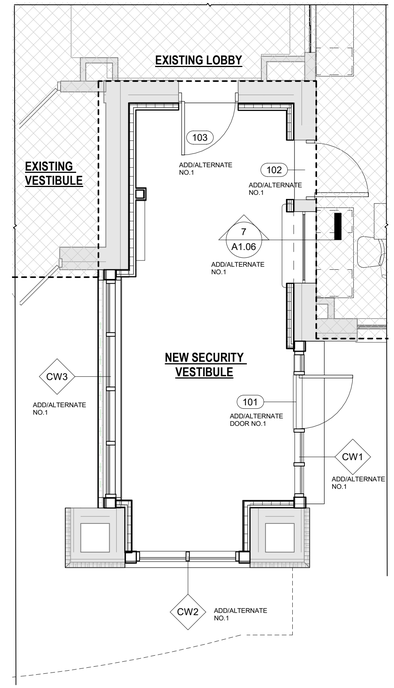


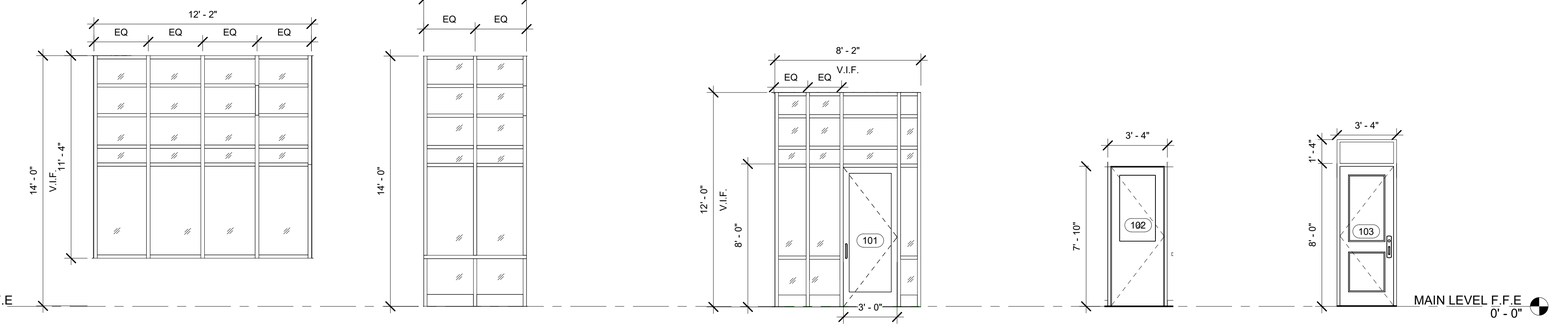
NOTE:
UL LISTED ARMORTEX 5/8" BULLET RESISTANT COMPOSITES PANEL ADDED TO WALL ASSEMBLY AS PART OF ADDEDNDUM NO.2

8 TRANSACTION WINDOW SILL 1-ADD/ALTERNATE NO.1
1 1/2" = 1'-0"



7 WALL SECTION TROUGH TRANSACTION WINDOW-ADD/ALTERNATE NO.1
1/4" = 1'-0"





6 CURTAIN WALL 3- ADD/ALTERNATE NO.1
1/4" = 1'-0"

5 CURTAIN WALL 2- ADD/ALTERNATE NO.1
1/4" = 1'-0"

4 CURTAIN WALL 1- ADD/ALTERNATE NO.1
1/4" = 1'-0"

3 DOOR TYPE 2-ADD/ALTERNATE NO.1
1/4" = 1'-0"

2 DOOR TYPE 1-ADD/ALTERNATE NO.1
1/4" = 1'-0"

1 PROPOSED VESTIBULE PLAN _ ADD/ALTERNATE NO.1
1/4" = 1'-0"

NOTE: FIELD VERIFY ALL DIMENSIONS IN THE FIELD

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DEDHAM, MA 02026

SAFETY VESTIBULE PROJECT

PROJECT STATUS:

BID SET
ADDENDUM #2

DATE:	4/18/2023
PROJECT NO:	22.003
DRAWN BY:	JPJ
CHECKED BY:	FPB

REVISIONS:

2	4.12.23	Add/Alternate No.1

DRAWING TITLE:

ADD/ALTERNATE NO.01
BALLISTIC RATED CONSTRUCTION

DRAWING NO.:

A1.06

GENERAL NOTES

G1. THE INTENT OF THE STRUCTURAL DRAWINGS IS TO SHOW THE MAIN STRUCTURAL FEATURES AND DESIGN FOR THE COMPLETED PROJECT. ARCHITECTURAL DETAILS AND OTHER COMPONENTS THAT MAY BE NECESSARY TO CONSTRUCT THE PROJECT ARE SHOWN INCIDENTALLY ONLY AND NOT COMPLETELY. THEREFORE, ALL CONTRACT DRAWINGS AND SPECIFICATIONS MUST BE USED IN CONJUNCTION WITH THE STRUCTURAL DRAWINGS DURING ALL PHASES OF CONSTRUCTION. DISCREPANCIES BETWEEN STRUCTURAL DRAWINGS AND ARCHITECTURAL DRAWINGS, IF NOT CLARIFIED IN THE ADDENDA AT THE REQUEST OF THE CONTRACTOR, SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT DURING CONSTRUCTION FOR CLARIFICATIONS. THE CONTRACTOR SHALL TAKE THIS INTO CONSIDERATION IN HIS BID.

G2. THE CONTRACTOR SHALL INFORM THE ARCHITECT OF ALL DISCREPANCIES BETWEEN DRAWINGS OF DIFFERENT TRADES PRIOR TO INITIATION OF ANY WORK.

G3. THE DESIGN IS IN ACCORDANCE WITH THE NINTH EDITION OF THE MASSACHUSETTS STATE BUILDING CODE.

G4. THE CONTRACTOR SHALL BE COMPLETELY RESPONSIBLE FOR THE SAFETY OF ADJACENT STRUCTURES, PROPERTY, AND THE PUBLIC. THE CONTRACTOR SHALL SHORE, BRACE, AND PROTECT THE EXISTING BUILDING AS REQUIRED FOR CONSTRUCTION OF NEW WORK.

G5. REFER TO ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR VERIFICATION OF LOCATIONS AND DIMENSIONS OF ALL CHASES, SLOTS, INSERTS, CURBS, OPENINGS, SLEEVES, ANCHOR BOLTS, FLOOR PITCHES, ANGLE FRAMES, AND ALL OTHER PROJECT REQUIREMENTS NOT SHOWN ON STRUCTURAL DRAWINGS. WORK NOT INDICATED ON A PART OF THE DRAWINGS BUT REASONABLY IMPLIED TO BE SIMILAR TO THAT SHOWN AT CORRESPONDING LOCATIONS SHALL BE INCLUDED.

G6. DETAILS SHOWN AS TYPICAL ARE APPLICABLE TO ALL SIMILAR CONDITIONS.

G7. ALL CONTRACTORS ARE REQUIRED TO EXAMINE THE DRAWINGS AND SPECIFICATIONS CAREFULLY, VISIT THE SITE, AND FULLY INFORM THEMSELVES AS TO ALL EXISTING CONDITIONS AND LIMITATIONS, PRIOR TO SUBMITTING THE PROPOSAL. FAILURE TO VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS AND LIMITATIONS WILL IN NO WAY RELIEVE THE SUCCESSFUL BIDDER FROM FURNISHING ANY MATERIALS OR PERFORMING ANY WORK IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS WITHOUT ADDITIONAL COST TO THE OWNER.

G8. DIMENSIONS AND ELEVATIONS OF EXISTING STRUCTURE SHOWN ON STRUCTURAL DRAWINGS HAVE BEEN OBTAINED FROM EXISTING DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING WITH FIELD MEASUREMENTS OF ALL DIMENSIONS AND ELEVATIONS WHICH ARE REQUIRED FOR FABRICATION AND INSTALLATION OF ADDITIONS TO EXISTING STRUCTURE THAT ARE BEING MADE UNDER THIS CONTRACT.

FOUNDATION NOTES

F1. THE FOUNDATION DESIGN IS BASED ON THE INFORMATION PROVIDED IN THE EXISTING DRAWINGS PERTAINING TO RECOMMENED SOIL BEARING CAPACITY FOR THE DESIGN OF THE EXISTING SCHOOL.

F3. ALL BACKFILL UNDER STRUCTURAL SLABS, AND FOOTINGS WILL BE ENGINEERED STRUCTURAL FILL COMPACTED IN SPECIFIED LIFTS TO 95 PERCENT OF MAXIMUM DRY DENSITY, UNLESS NOTED OTHERWISE.

F5. FOUNDATIONS AND SLABS SHALL NOT BE POURED IN WATER OR ON FROZEN GROUND.

F6. VERIFY LOCATIONS AND REQUIREMENTS FOR INSERTS, SLEEVES, CONDUITS, EMBEDMENTS, AND PENETRATIONS WITH RESPECTIVE TRADES BEFORE PLACING CONCRETE.

F8. DOWELS FROM FOUNDATIONS INTO PIERS, PILE CAPS, COLUMNS, BUTTRESSES, OR WALLS SHALL BE THE SAME SIZE AND NUMBER AS REINFORCEMENT IN PIERS, COLUMNS, BUTTRESSES, OR WALLS ABOVE, EXCEPT AS OTHERWISE SHOWN.

F14. CONTRACTOR SHALL INFORM THE ARCHITECT AND RELOCATE ANY EXISTING UTILITY LINES AS REQUIRED THAT MAY INTERFERE WITH NEW FOUNDATIONS. CONTRACTOR SHALL REMOVE ANY EXISTING UTILITY LINES THAT ARE BEING ABANDONED IN THE VICINITY OF THE NEW FOUNDATION AND BACKFILL THE AREA WITH COMPACTED STRUCTURAL FILL.

F17. CONCRETE SHALL REACH 75 PERCENT OF ITS 28 DAY COMPRESSIVE STRENGTH (fC) BEFORE BACKFILLING RETAINING WALLS WITH GREATER THAN 2' - 0" UNBALANCED FILL.

REINFORCED CONCRETE NOTES

R1. ALL CONCRETE WORK SHALL CONFORM TO ACI-318-14 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" AND TO THE NINTH EDITION OF THE MASSACHUSETTS STATE BUILDING CODE IN CASE OF CONFLICT, THE MASSACHUSETTS STATE BUILDING CODE SHALL GOVERN.

R2. ALL CONCRETE SHALL BE CONTROLLED, MIXED, AND PLACED UNDER THE SUPERVISION OF AN APPROVED CONCRETE TESTING AGENCY, PROVIDED BY OWNER.

R3. ALL CONCRETE EXPOSED TO THE WEATHER SHALL BE NORMAL WEIGHT CONCRETE WITH A MINIMUM 5,000 PSI 28 DAY COMPRESSION STRENGTH AND CONTAIN AN AIR ENTRAINMENT ADMIXTURE.

R4. UNLESS OTHERWISE NOTED, ALL CONCRETE SHALL BE NORMAL WEIGHT AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 POUNDS PER SQUARE INCH AT THE END OF 28 DAYS. CONCRETE SLABS ON GRADE AND SUPPORTED CONCRETE SLABS SHALL BE NORMAL WEIGHT AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 POUNDS PER SQUARE INCH AT THE END OF 28 DAYS.

R5. CONCRETE QUALITY IN ACCORDANCE WITH THE REQUIREMENTS OF THESE DRAWINGS AND SPECIFICATIONS IS ESSENTIAL TO THE STRUCTURAL PERFORMANCE OF THIS BUILDING. CONCRETE THAT IS NOT IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS WILL NOT BE ACCEPTED.

R6. CONCRETE SHALL REACH THE 40 PERCENT OF ITS 28 DAY COMPRESSIVE STRENGTH (fC) BEFORE FORMS OR SHORES FOR WALLS MAY BE REMOVED. NO FORMS CAN BE REMOVED UNLESS CONCRETE HAS ATTAINED SUFFICIENT STRENGTH TO SUPPORT ITS OWN WEIGHT.

R7. CONSTRUCTION JOINT LOCATIONS, OTHER THAN SHOWN ON THE DRAWINGS, ARE PERMITTED SUBJECT TO PRIOR APPROVAL OF THE ENGINEER. EXPANSION JOINT AND CONTROL JOINT LOCATIONS ARE MANDATORY,AS SHOWN.

R8. REINFORCING BARS SHALL CONFORM TO ASTM A615 WITH 60,000 POUNDS PER SQUARE INCH YIELD STRENGTH, AS INDICATED AND SHALL HAVE THE FOLLOWING CONCRETE COVER, UNLESS NOTED OTHERWISE ON THE DRAWINGS.

A. SURFACES PLACED IN CONTACT WITH THE GROUND - 3"
B. FORMED SURFACE EXPOSED TO GROUND - 2"
C. INSIDE FACE OF FORMED WALL - 1 1/2"
D. WALL PIER TIES - 1 1/2"
E. SLAB REINFORCING - 3/4" TOP & BOTTOM

R9. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185; LAP TWO SQUARES AT ALL SPLICES AND TIE AT 3 FOOT CENTERS.

R10. ALL LAP REINFORCING TO DEVELOP FULL TENSION CAPACITY OF THE SMALLER BAR REINFORCEMENT UNLESS OTHERWISE NOTED ON THE DRAWINGS.

R11. PROVIDE BAR SUPPORTS, SPACES, AND ACCESSORIES RECOMMENDED IN THE LATEST ADDITION OF THE ACI DETAILING MANUAL, PUBLICATION SP-66. ALL REINFORCEMENT DETAILING, LAP SPLICES, AND EMBEDMENTS SHALL CONFORM TO THIS MANUAL. ALL ACCESSORIES, SUCH AS SLAB BOLSTERS AND BEAM AND SLAB CHAIRS IN CONTACT WITH EXPOSED SURFACES, SHALL BE ZINC COATED OR PLASTIC TYPE.

R12. PIPES OR CONDUITS SHALL NOT BE PLACED IN SLABS ON GRADE.

R14. DETAILING OF REINFORCEMENT SHALL BE ACCORDING TO THE LATEST EDITION OF ACI 315 "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES".

R15. SET SECURELY AND TIE ALL REINFORCEMENT BEFORE PLACING CONCRETE. SETTING DOWELS AND REINFORCEMENT INTO WET CONCRETE IS PROHIBITED.

R16. ALL REINFORCING WILL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS.

R20. ALL KEYS SHALL BE 2"x4" (NOMINAL) UNLESS SHOWN OTHERWISE ON DRAWINGS.

R21. THE LAP LENGTH OF #4 REINFORCING SHALL SHALL BE 24" LONG.

STRUCTURAL STEEL NOTES

S1. ALL STEEL WORK SHALL CONFORM TO THE AISC 360-10 SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION AND TO THE NINTH EDITION OF THE MASSACHUSETTS STATE BUILDING CODE. IN CASE OF CONFLICT, THE MASSACHUSETTS STATE BUILDING CODE SHALL GOVERN.

S2. THE STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING:

A. BARS, PLATES, CHANNELS, AND CONNECTION ANGLES: ASTM A36, UNLESS NOTED OTHERWISE.

S3. ALL WELDING SHALL BE IN ACCORDANCE WITH THE AWS D1.1 STRUCTURAL WELDING CODE.

S4. THE CONTRACTOR SHALL SUPPLY ALL PLATES, CLIPS, SET ANGLES, CONNECTIONS, ETC. AS REQUIRED FOR COMPLETION OF THE STRUCTURE, EVEN IF SUCH ITEMS ARE NOT EXPLICITLY CALLED FOR ON THE ARCHITECTURAL OR STRUCTURAL DRAWINGS.

S5. THE CONTRACTOR SHALL PROVIDE ALL EMBEDDED PLATES, SLEEVES, BOX-OUTS, CONDUITS, ETCETERAS, AS REQUIRED BY OTHER TRADES IN THE CONCRETE STRUCTURE.

DESIGN LOADS

D1. FLOOR LIVE LOADS
PUBLIC GATHERING AREAS ..... 100 PSF

D2. WIND LOADS
AS PER THE NINTH EDITION OF THE MASSACHUSETTS STATE BUILDING CODE,
BASIC WIND SPEED 110 M.P.H.
IMPORTANCE FACTOR, Iw = 1.15
EXPOSURE - B
WIND LOADS IN ACCORDANCE WITH ASCE7-10

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DEDHAM MIDDLE SCHOOL
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SAFETY VESTIBULE PROJECT

PROJECT STATUS:
BID SET
ADDENDUM #2

DATE:	03 / 21 / 2023
PROJECT NO:	
DRAWN BY:	PAS
CHECKED BY:	MVD

REVISIONS:

DRAWING TITLE:
GENERAL NOTES

DRAWING NO.:
S0.01

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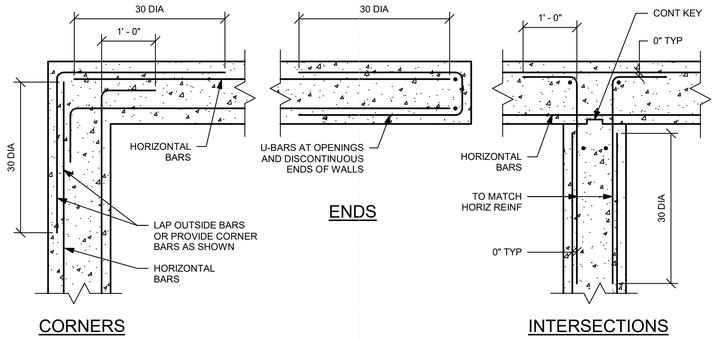
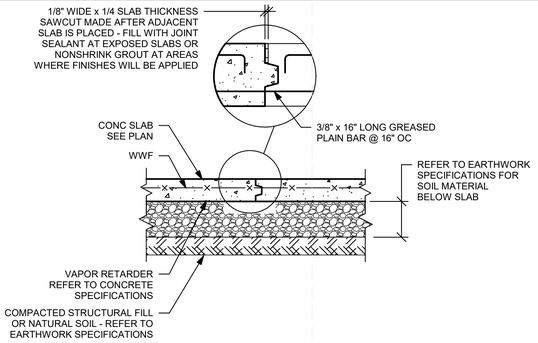


TYPICAL PLAN OF HORIZONTAL REINFORCING OF CONCRETE WALLS DETAIL

1

NO SCALE



TYPICAL SLAB ON GRADE CONSTRUCTION JOINT DETAIL

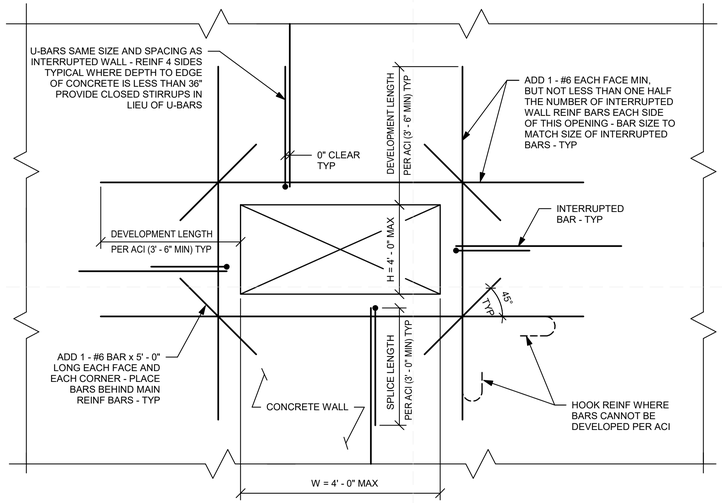
NOTE:
SUBMIT A PLAN SHOWING PROPOSED LOCATIONS OF ALL THE CONTROL JOINTS AND CONSTRUCTION JOINTS FOR REVIEW BY THE ENGINEER PRIOR TO PLACEMENT OF CONCRETE FOR THE SLAB.

2

NO SCALE

3

NO SCALE



TYPICAL REINFORCEMENT AT OPENINGS IN REINFORCED CONCRETE WALLS DETAIL

NOTES:

1.) FOR QUANTITY, LOCATION, AND SIZES REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS.

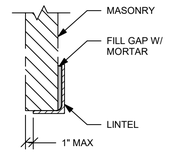
2.) TREAT EACH CONDUIT AS A SEPARATE OPENING.

3.) PROVIDE A MINIMUM OF 12" CLEAR CONCRETE BETWEEN TOP OF PENETRATION AND TOP OF WALL.

4

NO SCALE

LINTEL SCHEDULE	
MASONRY OPENING	LINTEL SIZE
UP TO 4' - 6"	L 4" x 3-1/2" x 5/16" (4" LEG VERTICAL)
4' - 7" TO 6' - 0"	L 5" x 3-1/2" x 5/16" (5" LEG VERTICAL)
6' - 1" TO 8' - 4"	L 6" x 3-1/2" x 3/8" (6" LEG VERTICAL)



TYPICAL SECTION SINGLE WYTHE MASONRY

NOTES:

1.) PROVIDE LINTELS OVER ALL MASONRY OPENINGS UNLESS OTHERWISE NOTED OR DETAILED.

2.) PROVIDE ONE ANGLE FOR EACH 4" OF WALL THICKNESS. FOR 6" WALLS PROVIDE TEE, DOUBLE ANGLE OR BUILT-UP SECTION WITH PROPERTIES EQUAL TO OR GREATER THAN 1-1/2" TIMES ANGLE PROPERTIES FOR 4" WALL.

3.) PROVIDE 8" OF BEARING EACH END OF ALL LINTELS.

4.) SPAN LENGTH = CENTERLINE TO CENTERLINE OF BEARING.

5.) ALL EXTERIOR LINTELS SHALL BE GALVANIZED. PROVIDE 1/4" THICK CLOSURE PLATE OVER AIR SPACE AT OPENINGS UNLESS NOTED OR DETAILED OTHERWISE ON ARCHITECTURAL DRAWINGS.

6.) FOR CURVED/BENT LINTELS USE CHORD LENGTH IN CONJUNCTION WITH SCHEDULE ABOVE. PROVIDE HORIZONTAL ANGLES AT EACH END OF LINTEL FOR 8" OF BEARING. HORIZONTAL ANGLES SHALL MATCH LINTEL SIZE AND SHALL BE WELDED TO CURVED ANGLE WITH FULL PENETRATION WELD.

7.) LOOSE LINTELS SHALL BE FURNISHED BY METAL FABRICATIONS (SPECIFICATION 055000) AND INSTALLED BY UNIT MASONRY ASSEMBLIES (SPECIFICATION 042000).

8.) LOOSE LINTELS ARE REQUIRED FOR ALL OPENINGS INCLUDING DOORS, WINDOWS, MECHANICAL DUCTS, PIPES ETC...

9.) ALL THE LINTELS NOT ATTACHED TO STRUCTURAL STEEL ARE IN THE SCOPE OF THE METAL FABRICATION CONTRACTOR (SPECIFICATION 055000). SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. ALL THE LINTELS WELDED TO STRUCTURAL STEEL ARE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND THE STRUCTURAL STEEL FABRICATOR.

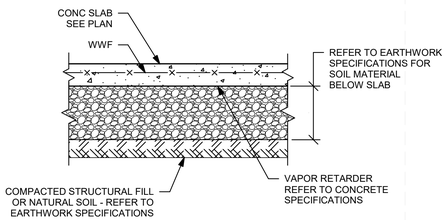
TYPICAL STEEL LINTEL SCHEDULE

5

NO SCALE

6

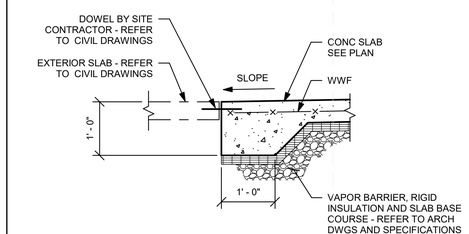
NO SCALE



TYPICAL SLAB ON GRADE DETAIL

7

NO SCALE

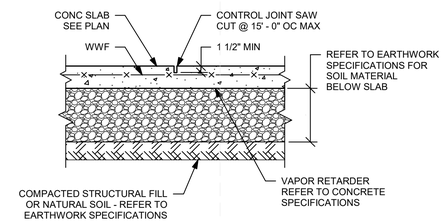


TYPICAL EXTERIOR SLAB TO SITE SLAB DETAIL

NOTE:
REFER TO ARCHITECTURAL AND CIVIL DRAWINGS FOR SLAB SLOPE AND EXTENTS.

8

NO SCALE

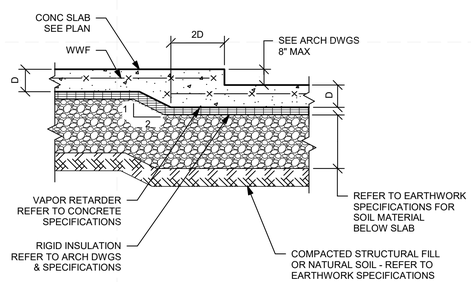


TYPICAL SLAB ON GRADE CONTROL JOINT DETAIL

NOTE:
SUBMIT A PLAN SHOWING PROPOSED LOCATIONS OF ALL THE CONTROL JOINTS AND CONSTRUCTION JOINTS FOR REVIEW BY THE ENGINEER PRIOR TO PLACEMENT OF CONCRETE FOR THE SLAB. CONTROL JOINTS SHALL TERMINATE AT SLAB EDGE OR CONSTRUCTION JOINT.

9

NO SCALE



TYPICAL DEPRESSED SLAB ON GRADE DETAIL

10

NO SCALE

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SAFETY VESTIBULE PROJECT

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CHECKED BY:	MVD

REVISIONS:

DRAWING TITLE:

TYPICAL DETAILS

DRAWING NO.:

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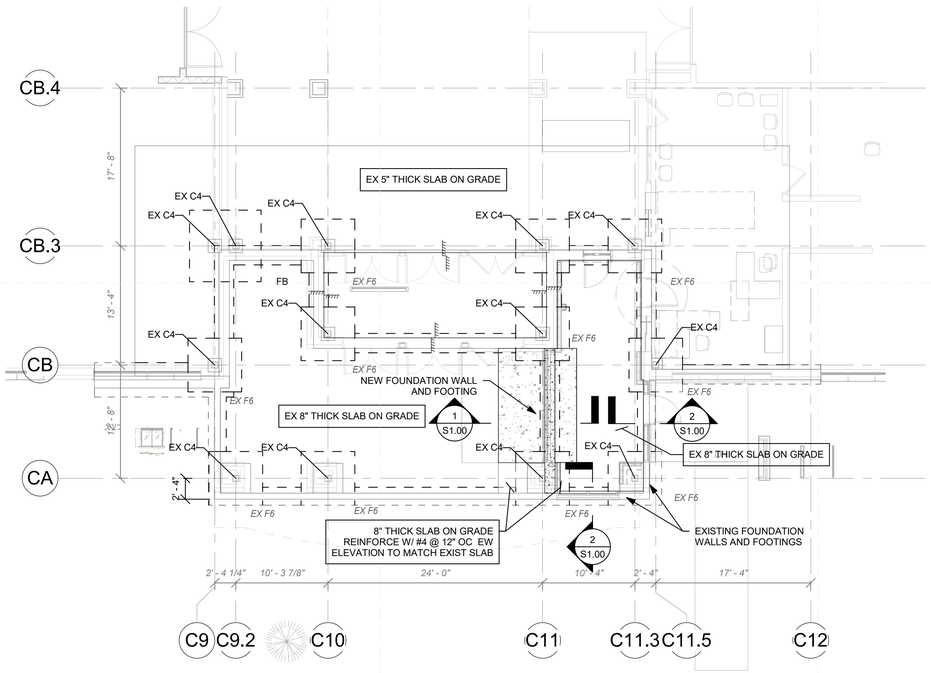
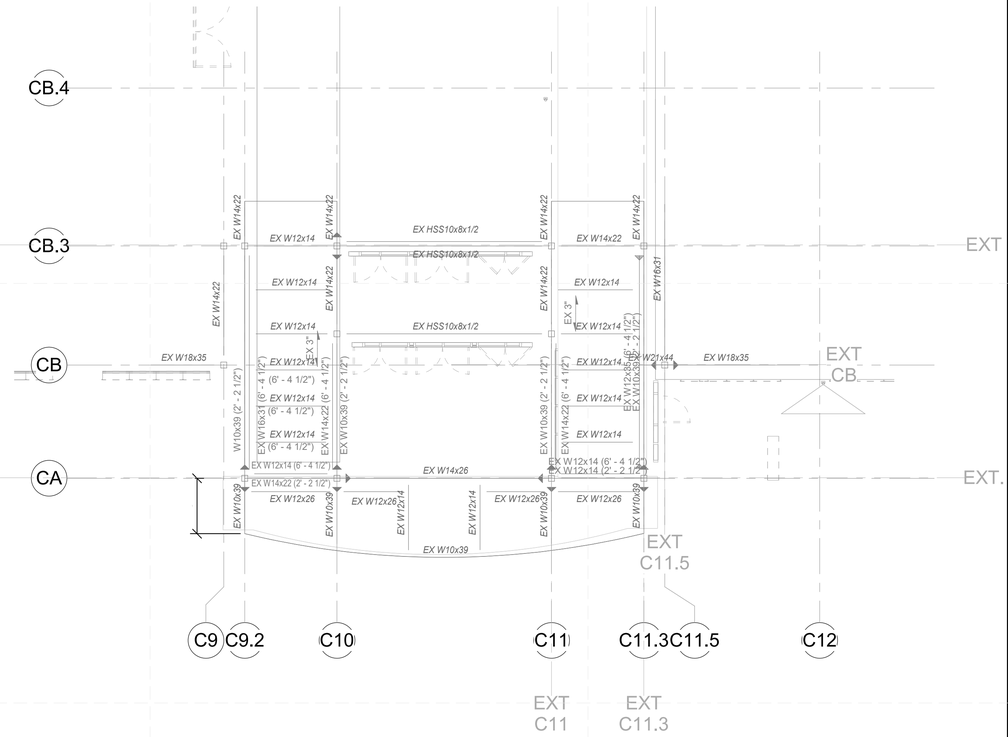


FOUNDATION PLAN

1/8" = 1' - 0"



1ST FLOOR FRAMING PLAN

1/8" = 1' - 0"

GENERAL NOTES:

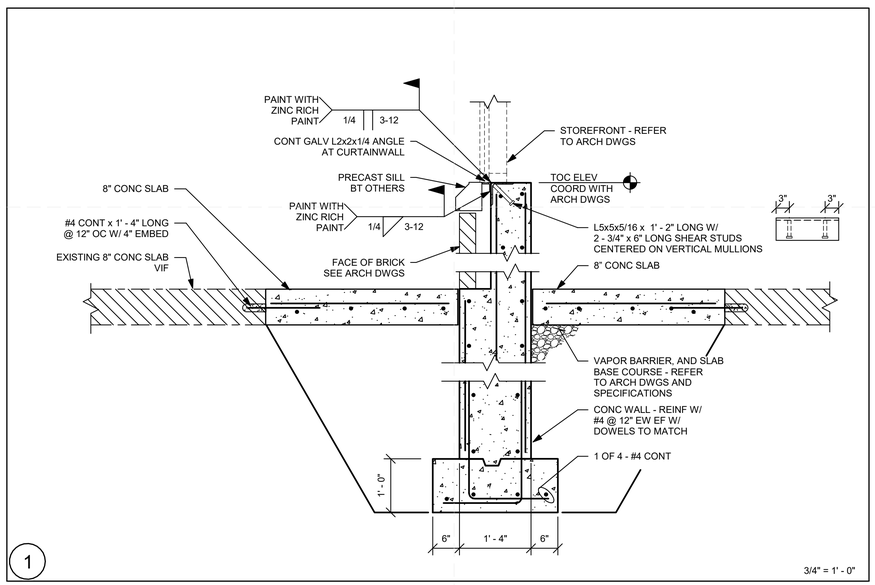
G1.) FOR GENERAL NOTES REFER TO S0.01 AND FOR TYPICAL DETAILS REFER TO S0.02

FRAMING NOTES:

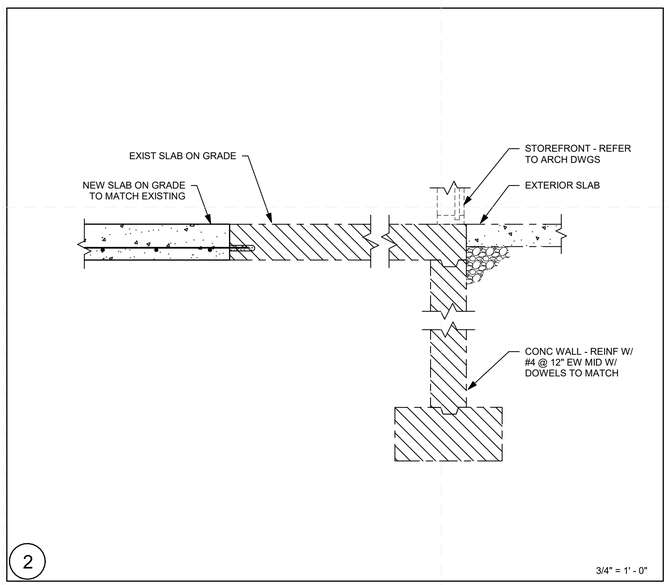
F1.) REFER TO ARCHITECTURAL DRAWINGS FOR ELEVATIONS AND VERTICAL DIMENSIONS.

F2.) FOR EDGE OF SLAB DIMENSIONS. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.

F3.) FOR DIMENSIONS AND ELEVATIONS NOT GIVEN, REFER TO ARCHITECTURAL DRAWINGS.



1 — 3/4" = 1' - 0"



2 — 3/4" = 1' - 0"

3 — 3/4" = 1' - 0"

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SAFETY VESTIBULE PROJECT

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REVISIONS:

DRAWING TITLE:

FRAMING PLANS AND SECTIONS

DRAWING NO.:

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GENERAL NOTES

1. THE CONTRACTOR SHALL FURNISH LABOR, MATERIALS, TOOLS AND OTHER EQUIPMENT REQUIRED TO INSTALL THE WORK INDICATED. THE CONTRACTOR SHALL FURNISH AND INSTALL ITEMS NECESSARY FOR A COMPLETE FIRE PROTECTION SYSTEM. MATERIALS SHALL BE NEW AND SHALL BEAR UL LISTING / FM APPROVAL. WORK SHALL CONFORM WITH ALL APPLICABLE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS AND APPLICABLE FEDERAL, STATE AND LOCAL CODES. CONTRACTOR SHALL SECURE PERMITS AND PAY THE FEES REQUIRED TO CARRY OUT HIS WORK. THE CONTRACTOR SHALL FURNISH COPIES OF CERTIFICATES AND PERMITS TO THE ARCHITECT.
2. ALL WORK SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES AND REGULATIONS. IN EVENT OF CONFLICT BETWEEN OR AMONG SPECIFIED REQUIREMENTS AND PERTINENT CODES OR REGULATIONS, MORE STRINGENT REQUIREMENTS SHALL GOVERN.
3. THE FIRE PROTECTION CONTRACTOR SHALL DEVELOP AND WORKING PLANS (SHOP DRAWINGS) FOR THE SPECIFIED SYSTEMS IN ACCORDANCE WITH NFPA 13 AND APPLICABLE INSURANCE REQUIREMENTS. WORKING PLANS SHALL BE APPROVED BY THE ENGINEER, IN WRITING PRIOR TO SUBMITTAL TO THE AUTHORITY HAVING JURISDICTION. WORKING PLANS SHALL BE DEVELOPED UNDER THE DIRECTION OF AND BEAR THE STAMP OF EITHER A REGISTERED PROFESSIONAL ENGINEER IN THE APPLICABLE STATE OR THE LICENSE NUMBER OF A NICET LEVEL III OR IV FIRE PROTECTION TECHNICIAN. IF THE JURISDICTION REQUIRES A LICENSED ENGINEER TO STAMP WORKING PLANS, THEN THE CONTRACTOR SHALL RETAIN A PROFESSIONAL ENGINEER AT NO ADDITIONAL COST TO THE OWNER.
4. WORKING PLANS SHALL BEAR THE NAME, LICENSE NUMBER, AND EXPIRATION DATE OF THE SPRINKLER FITTER LICENSE (WHERE APPLICABLE).
5. THE FIRE PROTECTION CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL, CUTTING, AND STORAGE OF CEILING TILES TO ACCOMMODATE THE INSTALLATION OF SPRINKLERS. THE CONTRACTOR SHALL REPLACE ANY DAMAGED CEILING TILES.
6. DESIGN INTENT IS TO PROVIDE ALL AREAS WITH FULL NFPA 13 SPRINKLER COVERAGE WITH MAINS ROUTED AND SIZED AS INDICATED ON CONTRACT DRAWINGS.
7. SPRINKLERS SHALL BE THOSE SCHEDULED OR AN APPROVED EQUAL (REFER TO SPECIFICATIONS). TEMPERATURE RATING SHALL BE AS SCHEDULED EXCEPT WHERE NFPA 13 REQUIRES A HIGHER TEMPERATURE RATING. SHOULD FIELD CONDITIONS REQUIRED HIGHER TEMPERATURE RATED SPRINKLERS, NOTIFY THE ENGINEER PROMPTLY AND IN WRITING.
8. INTENT IS THAT SPRINKLERS IN AREAS WITH FINISHED CEILINGS BE INSTALLED IN THE LOCATION INDICATED ON CONTRACT DOCUMENTS. ANY DEVIATIONS SHALL BE INDICATED ON SHOP DRAWINGS.
9. SPRINKLER LOCATIONS IN AREAS WITHOUT FINISHED CEILINGS ARE DIAGRAMMATIC AND ARE INTENDED TO SHOW AN APPROXIMATE QUANTITY OF CEILING-LEVEL SPRINKLERS REQUIRED. CONTRACTOR SHALL REVIEW EXISTING CONDITIONS, STRUCTURAL, MECHANICAL, AND ARCHITECTURAL DRAWINGS TO ENSURE PROPER COVERAGE. FULL COVERAGE, COORDINATED WITH ALL OBSTRUCTIONS PER NFPA 13, SHALL BE PROVIDED.
10. UNLESS NOTED OTHERWISE, ABOVE-CEILING AREAS ARE CONSIDERED CONCEALED SPACES WITH MINIMAL COMBUSTIBLE LOADING AND SHALL NOT REQUIRE SPRINKLER PROTECTION PER NFPA 13 §8.15.1.2. UNLESS NOTED OTHERWISE. CONTRACTOR SHALL ADVISE THE ENGINEER, IN WRITING, IF FIELD CONDITIONS VARY FROM DESIGN DRAWINGS SUCH THAT ABOVE-CEILING SPRINKLER PROTECTION IS REQUIRED.
11. AT TIME OF BID, THE SPRINKLER CONTRACTOR SHALL SUBMIT UNIT PRICES FOR ADDITIONAL SPRINKLERS THAT MAY BE REQUIRED BASED UPON DESIGN CHANGES. UNIT PRICE FOR ADDITIONAL SPRINKLERS SHALL INCLUDE ALL REQUIRED LABOR AND MATERIALS TO ADD A SPRINKLER INCLUDING SPRINKLER INSTALLATION, TAPPING BRANCH PIPING, ARMOVER / RUNOUT PIPING, SPRINKLER, DRAINDOWN, ETC..
12. PIPING INSTALLED ABOVE SENSITIVE AREAS (ELECTRICAL ROOMS, DATA ROOMS, ETC.) SHALL BE LIMITED TO THE PIPING REQUIRED TO SERVE THE SPACE. NO OTHER FIRE PROTECTION PIPING SHALL BE PERMITTED WITHIN THESE AREAS. PIPING SERVING THE SENSITIVE AREA SHOULD BE FED FORM ABOVE THE DOOR TO AVOID ROUTING OVER EQUIPMENT.
13. FIRE PROTECTION SYSTEM PIPE ROUTING AS SHOWN IS DIAGRAMMATIC AND FOR REFERENCE ONLY. DRAWINGS SHOW A SUGGESTED PIPING ROUTE ONLY AND ARE NOT INTENDED TO SHOW ALL REQUIRED OFFSETS. FIRE PROTECTION CONTRACTOR MAY ALTER PIPING WITH WRITTEN APPROVAL OF ENGINEER. PIPE ROUTING SHALL BE ADJUSTED FOR ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL CLEARANCES AND LIMITATIONS AND FOR EQUIPMENT SELECTION. FURNISH AND INSTALL ALL ELEMENTS REQUIRED TO COMPLETE INTENDED PIPING SYSTEMS WHETHER OR NOT THESE ELEMENTS ARE SPECIFICALLY SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS. IN FINISHED AREAS OR WHERE OTHERWISE REQUIRED BY ARCHITECTURAL DRAWINGS.
14. PAINT ALL EXPOSED PIPING. REFER TO ARCHITECTURAL SPECIFICATIONS AND COORDINATE COLOR WITH ARCHITECT.
15. DRAWINGS ARE NOT INTENDED TO SHOW ALL REQUIRED TAKEOFFS / TAPS FROM EXISTING PIPING. FIRE PROTECTION CONTRACTOR SHALL INSTALL NEW PIPING TAKE-OFFS WHERE NECESSARY TO PROVIDE ADEQUATE COVERAGE, TO AVOID SUSPENDED CEILING FRAMING, OR TO COORDINATE WITH OTHER TRADES.
16. ALL PIPING CUT DURING DEMO PHASE SHALL BE CAPPED WHETHER INDICATED ON DRAWING OR NOT.
17. CONSULT ALL DRAWINGS, NOTE ARCHITECTURAL DETAILS AND ALL CONDITIONS THAT MAY AFFECT THE WORK AND CARE FOR SAME, WHILE EXECUTING THE WORK UNDER THIS SECTION. COOPERATE AND COORDINATE WITH THE ARCHITECT, ALL OTHER TRADES, BUILDING MANAGEMENT, AND THE OWNER.
18. TAKE ALL MEASURES REQUIRED TO PROTECT OWNER'S PROPERTY AND EQUIPMENT DURING COURSE OF WORK. SHOULD DAMAGE TO OWNER'S PROPERTY OR EQUIPMENT OCCUR, REPAIR DAMAGE PROMPTLY AT NO COST TO OWNER.
19. INSTALL ALL EQUIPMENT AND MATERIALS IN STRICT CONFORMANCE WITH EQUIPMENT AND MATERIALS MANUFACTURERS' WRITTEN RECOMMENDATIONS.
20. LOCATE PIPES TO FALL WITHIN PARTITIONS, WALLS, OR ROOF CAVITIES AND TO PRECLUDE FURRING, OTHER THAN THAT SHOWN ON ARCHITECTURAL DRAWINGS. DO NOT ROUTE PIPE IN LOCATIONS SUBJECT TO FREEZING. IF DURING THE COURSE OF CONSTRUCTION A AREA SUBJECT TO FREEZING IS IDENTIFIED IDENTIFY THE ENGINEER PROMPTLY AND IN WRITING.
21. ALL FIRE PROTECTION EQUIPMENT, VALVES, ETC. SHALL BE INSTALLED WITH CLEARANCE FOR SERVICING AS RECOMMENDED BY THE MANUFACTURER.

FIRE PROTECTION EQUIPMENT COORDINATION

FIRE PROTECTION CONTRACTOR SHALL PROVIDE AND INSTALL ALL SUPERVISORY AND FLOW SWITCHES FOR SYSTEM OPERATION. FIRE ALARM CONTRACTOR SHALL PROVIDE AND INSTALL REQUIRED INTERFACE MODULES AS WELL AS THE ELECTRIC BELL. FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR WIRING ALL SUPERVISORY AND ALARM SWITCHES TO THE ASSOCIATED INTERFACE MODULE AND / OR ELECTRIC BELL.

HYDRAULIC DESIGN REQUIREMENTS

THE SPRINKLER SYSTEM SHALL DELIVER THE MINIMUM REQUIRED DISCHARGE DENSITIES AS REQUIRED BY NFPA 13, AND AS SPECIFIED BELOW:

1. MAXIMUM SPRINKLER COVERAGE AREA LISTED IS FOR STANDARD COVERAGE SPRINKLERS UNDER SMOOTH FLAT CEILINGS. THIS SHALL BE ADJUSTED AS REQUIRED BY CODE FOR OTHER SITUATIONS.
2. MAXIMUM SPRINKLER COVERAGE AREA IS PERMITTED TO BE REDUCED WHERE ALLOWED BY THE §11.2.3.2.3.1 OF NFPA 13.
3. ROOM DESIGN METHOD OF §11.2.3.3 OF NFPA 13 IS PERMITTED.

OCCUPANCY CLASSIFICATION	LIGHT HAZARD
SYSTEM TYPE	WET PIPE
DISCHARGE DENSITY	0.10 GPM / SF
MAX SPRINKLER COVERAGE AREA	225 SF (UPR/PEN); 196 SF (SIDEWALL)
MAXIMUM AREA OF APPLICATION	1,500 SF
HOSE ALLOWANCE	100 GPM
NOTES: UNLESS NOTED OTHERWISE.	

SUBMITTAL PROCESS AND CLOSEOUT DOCUMENTATION

1. REQUIRED SUBMITTALS (REFERENCE SPECIFICATIONS) MUST BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO SUBMISSION TO OWNER'S INSURER AND AUTHORITY HAVING JURISDICTION.
2. THE ENGINEER SHOULD BE NOTIFIED AT THE FOLLOWING INTERVALS: START OF CONSTRUCTION, ROUGH-IN COMPLETE, COMPLETION OF WORK.
3. PRIOR TO PROJECT CLOSEOUT AND ISSUANCE OF FINAL CONSTRUCTION CONTROL DOCUMENTS (WHERE APPLIANCE) THE FOLLOWING DOCUMENTS MUST BE RECEIVED REVIEWED, AND ACCEPTED BY THE ENGINEER:
   A. CERTIFICATION OF COMPLIANCE (REQUIRED 5 DAYS PRIOR TO SIGNOFF). WRITTEN CERTIFICATION ON COMPANY LETTERHEAD FROM THE SUBCONTRACTOR (OR GENERAL CONTRACTOR) ADDRESSED TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE STATING THAT TO THE BEST OF THE CONTRACTOR'S KNOWLEDGE AND BELIEF THAT CONSTRUCTION WAS PERFORMED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS AND APPLICABLE CODES AND STANDARDS. APPLICABLE CODES AND STANDARDS SHOULD BE LISTED, INCLUDING THE APPLICABLE YEAR OF NFPA STANDARDS.
   B. AS-BUILT DRAWINGS (REQUIRED 5 DAYS PRIOR TO SIGNOFF). THE FIRE PROTECTION CONTRACTOR SHALL SUBMIT ACCURATE AS-BUILT DOCUMENTS WILL BE REJECTED.
   C. PUNCH LIST ITEMS COMPLETE (REQUIRED 3 DAYS PRIORS TO SIGNOFF). WRITTEN CERTIFICATION THAT ALL CODE-RELATED PUNCH LIST ITEMS HAVE BEEN COMPLETED. THE ENGINEER WILL IDENTIFY, ON THE PUNCH LIST, WHICH ITEMS ARE REQUIRED FOR SIGNOFF TO BE ISSUED.
   D. ACCEPTANCE TEST COMPLETED (REQUIRED 5 DAYS PRIOR TO SIGNOFF). **NOTIFY THE ENGINEER IN WRITING AT LEAST 3 DAYS PRIOR TO PERFORMANCE OF ACCEPTANCE TEST SO THAT HE OR SHE MAY ATTEND AT HIS OR HER SOLE DISCRETION.** ALL CODE-REQUIRED ACCEPTANCE TESTS MUST BE PERFORMED AND SUBMITTED IN WRITING TO THE ENGINEER, INCLUDING THE FOLLOWING:
      a. NFPA 13 CONTRACTOR'S MATERIAL TEST CERTIFICATE FOR ABOVEGROUND PIPING. A COMPLETE FORM IS REQUIRED FOR EACH SYSTEM/ZONE.

DEVICE LEGEND

SPRINKLER TAGS

OPTIONAL TYPE DESIGNATORS

"BLANK"	-	SPRINKLER WITH NO OPTION
"SG"	-	STANDARD RESPONSE / GASKETED
"CC"	-	COMBUSTIBLE CONCEALED
"S"	-	STANDARD RESPONSE
"C"	-	CORROSION RESISTANT
"G"	-	GASKETED
"W"	-	WINDOW
"V"	-	VERTICAL

SPRINKLER SYMBOLS	SPRINKLER SYMBOL DESCRIPTION
●	- CONCEALED PENDENT
▣	- CONCEALED PENDENT K8.0
◕	- CONCEALED PENDENT EXTENDED COVERAGE
◉	- CONCEALED PENDENT SPECIAL APPLICATION
◐	- DRY CONCEALED PENDENT
◉	- PENDENT
⊠	- PENDENT K8.0
⊛	- PENDENT STORAGE
◍	- DRY PENDENT
○	- UPRIGHT
⊠	- UPRIGHT K8.0
∅	- UPRIGHT STORAGE
⊙	- UPRIGHT SPECIAL APPLICATION
▼	- CONCEALED SIDEWALL
◥	- CONCEALED SIDEWALL EXTENDED COVERAGE
▾	- CONCEALED SIDEWALL SPECIAL APPLICATION
▼	- DRY SIDEWALL CONCEALED
▼	- DRY SIDEWALL RECESSED

ABBREVIATIONS

AD	AUTOMATIC BALL DRIP DRAIN
AV	ALARM VALVE
CP	COMPRESSOR
CONTR	CONTRACTOR
CLDI	CEMENT-LINED DUCTILE IRON
DI	UNLINED DUCTILE IRON
DN	DOWN
DP	DROP
DR	DRAIN RISER
DSV	DRY SYSTEM VALVE
DWG	DRAWING
EA	EACH
FBOC	FURNISHED BY OTHER CONTRACTOR
GPM	GALLONS PER MINUTE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PEN	PENDENT SPRINKLER
PSI	POUNDS PER SQUARE INCH
RCV	RISER CHECK VALVE
RS	RISE
RTI	RESPONSE TIME INDEX
RM	ROOM
RN	RISER NIPPLE
SB	SPLASH BLOCK
SIN	SPRINKLER IDENTIFICATION NUMBER
SW	SIDEWALL SPRINKLER
TB	THRUST BLOCK
TS	TAMPER SWITCH
TYP	TYPICAL
UG	UNDERGROUND
UPR	UPRIGHT SPRINKLER

PIPING LEGEND

FP	FIRE PROTECTION MAIN
FP	FIRE PROTECTION MAIN UNDERGROUND
WS	WET PIPE SPRINKLER PIPING
DS	DRY PIPE SPRINKLER PIPING
PA	PREACTION SPRINKLER PIPING
D	DRAIN PIPING
FTH	FIRE PUMP TEST HEADER PIPING
BTH	BACKFLOW TEST HEADER PIPING
FDC	FIRE DEPARTMENT CONNECTION PIPING
	PIPE ELEVATION CHANGE
	CAP ON END OF PIPE
	PIPE BREAK
	DIRECTION OF FLOW INDICATION
48"x18" S/A	OBSTRUCTION FROM DUCTWORK 48" AND GREATER

DEMOLITION / RELOCATION LEGEND

E	EXISTING SPRINKLER EQUIPMENT, DEVICE AND/OR SYSTEM TO REMAIN
X	EXISTING SPRINKLER EQUIPMENT, DEVICE AND/OR SYSTEM TO BE SELECTIVELY DEMOLISHED
XT	EXISTING SPRINKLER EQUIPMENT AND/OR DEVICE TO BE REMOVED AND TURNED OVER TO OWNER FOR RE-USE
XR	EXISTING SPRINKLER EQUIPMENT AND/OR DEVICE TO BE REMOVED, STORED AND RE-LOCATED.
XL	EXISTING SPRINKLER EQUIPMENT AND/OR DEVICE INDICATED IN NEW LOCATION

DEMOLITION / RELOCATION NOTES

PHASE LABELS SHOWN ABOVE ARE APPLIED IN SELECT AREAS AND MAY NOT ALWAYS BE PRESENT. REFER TO LINETYPE AND LINEWEIGHT TO DETERMINE EXISTING CONDITIONS AND DEMOLISHED EQUIPMENT.

SYMBOLS

	AVA	AUTOMATIC AIR VENT
	MAV	MANUAL AIR VENT
	BFV	BUTTERFLY VALVE, NORMALLY OPEN
	BFVNC	BUTTERFLY VALVE, NORMALLY CLOSED
B	BTH	BACKFLOW TEST HEADER
	CV	CHECK VALVE
D	DO	DRAIN OUTLET
	DV	DRAIN VALVE
T	FDC	FIRE DEPARTMENT CONNECTION
	FDV	FIRE DEPARTMENT VALVE
	FDVC	FIRE DEPARTMENT VALVE CABINET
FM	FM	FLOW METER
	FSW	FLOW SWITCH
F	FTH	FIRE PUMP TEST HEADER
	GV	GATE VALVE, NORMALLY OPEN
	GVNC	GATE VALVE, NORMALLY CLOSED
ITC	ITC	INSPECTOR'S TEST CONNECTION
N2	N2	NITROGEN GENERATOR
N2P	N2P	NITROGEN PURGE VALVE
	PG	PRESSURE GAUGE
	PIV	POST INDICATOR VALVE
P	PS	PRESSURE SWITCH
WPIV	WPIV	WALL POST INDICATOR VALVE
	OS&Y	OS&Y GATE VALVE
DS	DSR	DRY SYSTEM RISER
PA	PAR	PREACTION RISER
WS	WSR	WET SYSTEM RISER
	ZCV	ZONE CONTROL VALVE ASSEMBLY
DCVA	BP	BACKFLOW PREVENTER ASSEMBLY

DRAWING NOTES

A	HYDRAULIC NODE
1	DEMOLITION NOTE
1	NEW WORK NOTE
	CONNECT TO EXISTING
	CAP EXISTING
	LIMIT OF DEMOLITION
1	DRAWING REVISION DESIGNATION
	REVISION CLOUD
	ELECTRICAL / SENSITIVE AREA. REFER TO GENERAL NOTE
	HYDRAULIC AREA BOUNDARY

WATER SUPPLY

DATE OF TEST	07/27/2022
LOCATION	MAIN DRAIN TEST TAG
STATIC PRESSURE	45 PSI
RESIDUAL PRESSURE / FLOW	40 PSI
SOURCE	NOREL SERVICE TAG
FOR REFERENCE ONLY. AREA IS NOT ANTICIPATED TO BE HYDRAULICALLY MOST DEMANDING AREA.	

DEMOLITION NOTES

1. CONTRACTOR SHALL VISIT SITE AND IDENTIFY EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT WORK OF THIS SECTION. NO COMPENSATION WILL BE GRANTED FOR ADDITIONAL WORK CAUSED BY UNFAMILIARITY WITH SITE CONDITIONS THAT ARE VISIBLE OR READILY CONSTRUED BY EXPERIENCED OBSERVERS.
2. PRIOR TO COMMENCING WORK OF THIS SECTION, EXAMINE SITE AND CONDITIONS UNDER WHICH WORK WILL BE PERFORMED. DETERMINE EXACT LOCATIONS OF EXISTING EQUIPMENT, PIPING AND CONTROLS. REPORT TO ARCHITECT, IN WRITING, ANY CONDITIONS THAT MIGHT ADVERSELY AFFECT WORK. COMMENCEMENT OF WORK SHALL BE CONSTRUED AS COMPLETE ACCEPTANCE OF EXISTING CONDITIONS AND PREPARATORY WORK.
3. ABANDONING OF SPRINKLERS, VALVES, PIPING OR EQUIPMENT IN PLACE SHALL NOT BE ALLOWED. COMPLETE REMOVAL REQUIRED UNLESS EXPLICITLY NOTED OTHERWISE.
4. PIPING TO BE REMOVED: REMOVE PORTION OF PIPING INDICATED TO BE REMOVED AND CAP REMAINING PIPING.
5. SPRINKLER WORK SHALL BE PLANNED AND EXECUTED IN MANNER SUCH THAT IMPAIRMENTS ARE MINIMIZED. ALL IMPAIRMENTS SHALL BE MANAGED IN ACCORDANCE WITH NFPA 25 REQUIREMENTS. UNDER NO CIRCUMSTANCES WILL IT BE ACCEPTABLE TO IMPAIR SPRINKLERS FOR AN EXTENDED DURATION WITHOUT WRITTEN APPROVAL FROM THE AHJ. SPRINKLER IMPAIRMENTS IN A MULTI-STORY BUILDING SHALL BE LIMITED TO A SINGLE FLOOR.
6. SPRINKLERS TO BE REMOVED: WHERE AN AREA WILL BE WITHOUT SPRINKLER PROTECTION FOR MORE THAN FOUR HOURS A FIRE WATCH SHALL BE PLACED INTO EFFECT UNTIL PROTECTION HAS BEEN RESTORED. ALL SPRINKLER HEADS MARKED FOR DEMOLITION SHALL BE COMPLETELY REMOVED.
7. EQUIPMENT TO BE REMOVED: DISCONNECT AND REMOVE EQUIPMENT. WHERE THE SYSTEM WILL BE EFFECTED FOR MORE THAN FOUR HOURS PROVIDE A TEMPORARY SYSTEM CAPABLE OF PROVIDING FOR THE EXISTING SYSTEM BEING REMOVED. COMPLETELY REMOVE ALL UNUSED EQUIPMENT CONNECTED TO DEMOLISHED EQUIPMENT.
8. COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES AS TO REMOVAL AND DISPOSAL OF EQUIPMENT REMOVED FROM THE SITE.
9. COMPLY WITH GOVERNING EPA NOTIFICATION REGULATIONS BEFORE BEGINNING SELECTIVE DEMOLITION.
10. COMPLY WITH HAULING AND DISPOSAL REGULATIONS OF AUTHORITIES HAVING JURISDICTION.
11. COMPLY WITH ANSI A10.6 (SAFETY REQUIREMENTS FOR DEMOLITION OPERATIONS) AND NFPA 241 (STANDARD FOR SAFEGUARDING CONSTRUCTION, ALTERATION AND DEMOLITION OPERATIONS)
12. PERMITS: GIVE ALL REQUIRED NOTICES, FILE ALL REQUIRED PLANS AND SPECIFICATIONS RELATING TO THE WORK OF THIS SECTION WITH THE PROPER AUTHORITIES AND PAY FOR ANY REQUIRED PERMITS.
13. ALL EQUIPMENT AND SYSTEMS TO BE REMOVED OR DEMOLISHED UNDER THIS SECTION AND NOT DESIRED BY OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL REMOVE ALL SUCH EQUIPMENT FROM THE SITE PROMPTLY AFTER DETACHMENT FROM BUILDING STRUCTURE.
14. STORAGE OR SALE OF REMOVED ITEMS OR MATERIALS ON-SITE IS NOT PERMITTED.
15. IT IS UNKNOWN WHETHER HAZARDOUS MATERIALS WILL BE ENCOUNTERED IN THE WORK. IF MATERIALS SUSPECTED OF CONTAINING HAZARDOUS MATERIALS ARE ENCOUNTERED, DO NOT DISTURB; IMMEDIATELY NOTIFY ARCHITECT AND OWNER IN WRITING.
16. EXISTING PIPING SHOWN ON DRAWINGS DOES NOT INDICATE FULL EXTENT OF PIPING DEMOLITION. FIELD VERIFICATIONS REQUIRED.
17. SPRINKLERS EXISTING TO REMAIN: SPRINKLERS SHALL BE PROTECTED DURING DEMOLITION. SPRINKLERS DAMAGED DURING DEMOLITION SHALL BE REPLACED WITH NEW SPRINKLERS MATCHING THE SAME VISUAL AND PERFORMANCE CHARACTERISTICS (COLOR, STYLE, RTI, K-FACTOR, ETC) AT NO COST TO OWNER. MANUFACTURER SHALL BE APPROVED BY OWNER AND ENGINEER PRIOR TO INSTALLATION.
18. CONTRACTOR SHALL PRODUCE AND SUBMIT TO ALL APPLICABLE AUTHORITIES HAVING JURISDICTION ALL SPRINKLER IMPAIRMENT PLANS REQUIRED BY STATE AND LOCAL JURISDICTIONS AND INSURANCE REQUIREMENTS. TEMPORARY SPRINKLER PROTECTION SHALL BE PROVIDED, AS REQUIRED.

DRAWING LIST

SHEET NUMBER	SHEET NAME
FP000	FIRE PROTECTION LEGEND
FP301	FIRE PROTECTION LEVEL 1 PLAN
FP900	FIRE PROTECTION DETAILS

F_Sprinkler Schedule

DESCRIPTION	MANUFACTURER	SIN	K-FACTOR	TEMP RATING	NPT	COVERAGE	RESPONSE TYPE	ESCUTCHEON FINISH	SPRINKLER FINISH	COMMENTS
PENDENT	RELIABLE	RA1414	5.6	200 °F	1/2"	STANDARD	UL QR & FM QR	WHITE	WHITE	

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TOWN OF DEDHAM

MIDDLE SCHOOL Dedham

DEDHAM MIDDLE SCHOOL
70 WHITING AVENUE
DEDHAM, MA 02026

SAFETY VESTIBULE PROJECT

PROJECT STATUS:	BID SET ADDENDUM #2
DATE:	03/21/2023
PROJECT NO:	220205.01
DRAWN BY:	MT
CHECKED BY:	PH
REVISIONS:	

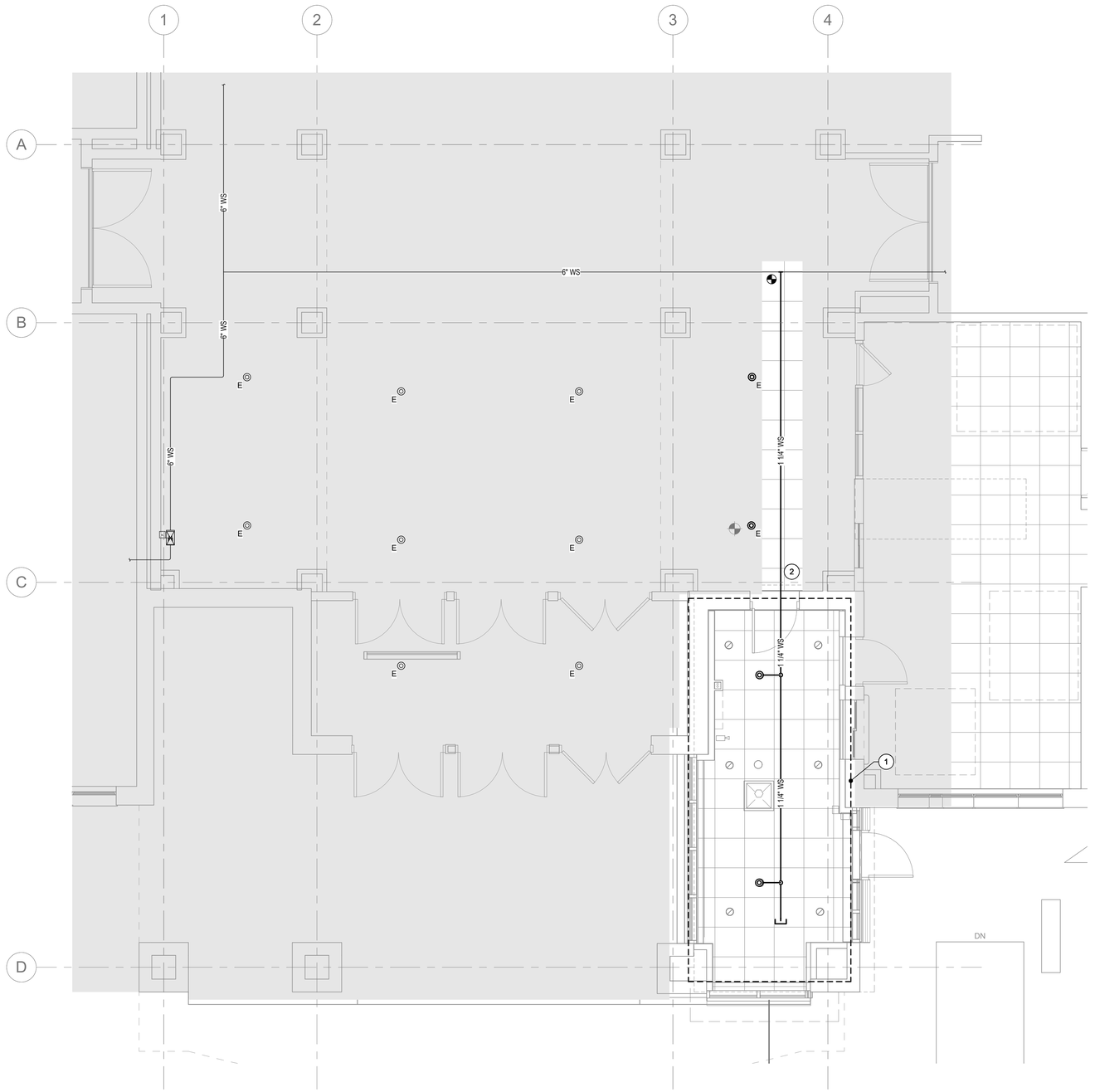
DRAWING TITLE:

FIRE PROTECTION LEGEND

DRAWING NO.:

FP000

KEYNOTES	
1	PROVIDE NEW NFPA 13 COMPLIANT SPRINKLER COVERAGE TO NEW SAFETY VESTIBULE. CONNECT NEW BRANCH PIPING TO MAIN LOCATED WITHIN THE LOBBY. ALL BRANCH PIPING TO BE SHOWN ON SHOP DRAWINGS.
2	NEW BRANCH PIPING TO BE CONNECTED TO CLOSEST EXISTING MAIN OF SUFFICIENT HYDRAULIC SIZE. ALL PIPING TO BE SHOWN ON TIER-2 SHOP DRAWING.



1 FP301 FIRE PROTECTION LEVEL 1 PLAN
1/4" = 1'-0"
0 2' 4' 8'

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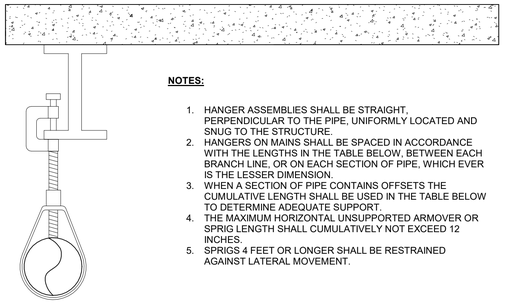
FIRE PROTECTION LEVEL 1 PLAN

DRAWING NO.:

FP301



EXAMPLE OF PIPE HANGING FROM STRUCTURE WITH A C - CLAMP WITH ADJUSTABLE SWIVEL RING - ROD TIGHT TO PIPE

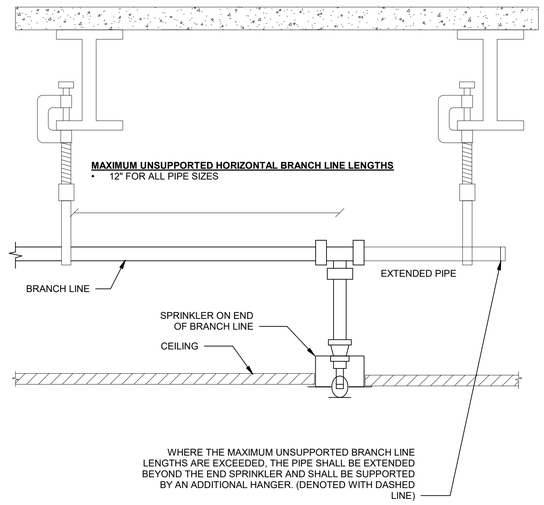
NOTES:

1. HANGER ASSEMBLIES SHALL BE STRAIGHT, PERPENDICULAR TO THE PIPE, UNIFORMLY LOCATED AND SNUG TO THE STRUCTURE.
2. HANGERS ON MAINS SHALL BE SPACED IN ACCORDANCE WITH THE LENGTHS IN THE TABLE BELOW, BETWEEN EACH BRANCH LINE, OR ON EACH SECTION OF PIPE, WHICH EVER IS THE LESSER DIMENSION.
3. WHEN A SECTION OF PIPE CONTAINS OFFSETS THE CUMULATIVE LENGTH SHALL BE USED IN THE TABLE BELOW TO DETERMINE ADEQUATE SUPPORT.
4. THE MAXIMUM HORIZONTAL UNSUPPORTED ARMOVER OR SPRIG LENGTH SHALL CUMULATIVELY NOT EXCEED 12 INCHES.
5. SPRIGS 4 FEET OR LONGER SHALL BE RESTRAINED AGAINST LATERAL MOVEMENT.

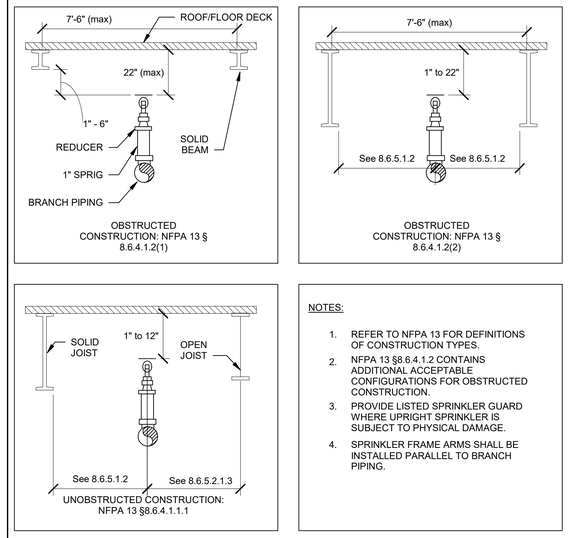
MAXIMUM DISTANCE BETWEEN HANGERS

PIPE TYPE	NOMINAL PIPE SIZE (IN.)							
	1"	1.25"	1.5"	2"	2.5"	3"	4"	6"	8"
STEEL PIPE EXCEPT THREADED LIGHTWALL	12'	12'	15'	15'	15'	15'	15'	15'	15'

1 **TYPICAL METHODS OF SECURING HANGER RODS TO STRUCTURE STEEL** SCALE: NTS



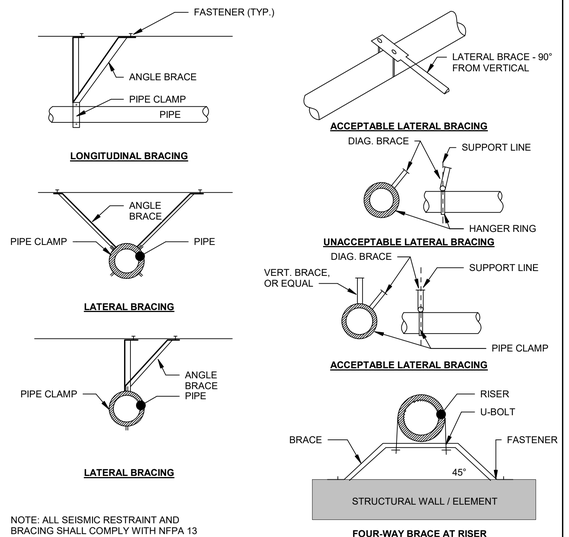
2 **TYPICAL METHODS OF SECURING HANGER RODS TO STRUCTURE STEEL** SCALE: NTS



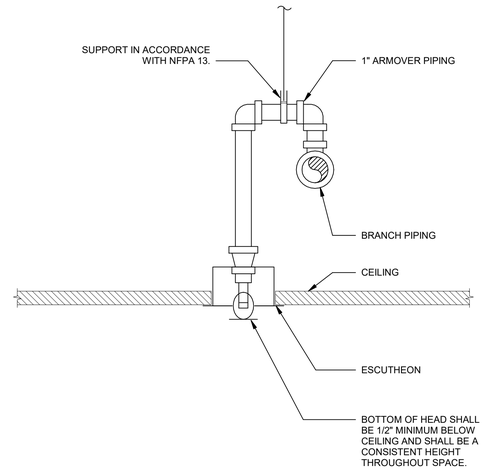
NOTES:

1. REFER TO NFPA 13 FOR DEFINITIONS OF CONSTRUCTION TYPES.
2. NFPA 13 §8.6.4.1.2 CONTAINS ADDITIONAL ACCEPTABLE CONFIGURATIONS FOR OBSTRUCTED CONSTRUCTION.
3. PROVIDE LISTED SPRINKLER GUARD WHERE UPRIGHT SPRINKLER IS SUBJECT TO PHYSICAL DAMAGE.
4. SPRINKLER FRAME ARMS SHALL BE INSTALLED PARALLEL TO BRANCH PIPING.

3 **UPRIGHT SPRINKLER PIPING DETAIL** SCALE: NTS



4 **SEISMIC BRACING** SCALE: NTS



5 **RECESSED PENDENT** SCALE: NTS

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SAFETY VESTIBULE PROJECT

PROJECT STATUS:

BID SET
ADDENDUM #2

DATE:	03/21/2023
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CHECKED BY:	PH

REVISIONS:

DRAWING TITLE:

FIRE PROTECTION DETAILS

DRAWING NO.:

FP900

EMERGENCY RESPONDER RADIO COVERAGE

1. EXISTING BUILDING. A BIDRECTIONAL AMPLIFIER IS NOT REQUIRED.

CLOSEOUT / TESTING REQUIREMENTS

1. SYSTEM ACCEPTANCE TESTING SHALL BE PERFORMED IN ACCORDANCE WITH NFPA 72, CHAPTER 14. AT MINIMUM, TESTING SHALL INCLUDE:
   A. 100% TEST OF NEW DEVICES.
   B. 20% TEST OF EXISTING DEVICES (IF APPLICABLE).
2. COMPLETION DOCUMENTATION: ALL NEW SYSTEMS AND ADDITIONS OR ALTERATIONS TO EXISTING SYSTEMS SHALL INCLUDE THE DOCUMENTATION DISCUSSED WITHIN THIS SECTION.
3. NOTIFY THE ENGINEER, IN WRITING, OF DATE AND TIME OF SYSTEM ACCEPTANCE TESTING, SO HE OR SHE (OR A DESIGNEE) MAY ATTEND AT THEIR SOLE DISCRETION. NOTIFICATION SHOULD OCCUR FIVE (5) BUSINESS DAYS PRIOR TO TEST. IF THE ENGINEER IS NOT NOTIFIED, THE TEST MAY NEED TO BE PERFORMED AGAIN AT NO ADDITIONAL COST TO THE OWNER.
4. AN OWNER'S MANUAL AND MANUFACTURER'S PUBLISHED INSTRUCTIONS COVERING ALL SYSTEM EQUIPMENT. THIS MANUAL SHALL BE PROVIDED TO THE ENGINEER FOR REVIEW NOT LESS THAN TEN (10) WORKING DAYS PRIOR TO ANTICIPATED FINAL ENGINEER SIGNOFF.
5. RECORD (AS-BUILT) DRAWINGS. THESE DRAWINGS SHALL BE PROVIDED TO THE ENGINEER FOR REVIEW NOT LESS THAN FIVE (5) WORKING DAYS PRIOR TO ANTICIPATED FINAL ENGINEER SIGNOFF.
6. A COMPLETED RECORD OF COMPLETION FORM. THIS FORM SHALL BE PROVIDED TO THE ENGINEER FOR REVIEW NOT LESS THAN THREE (3) WORKING DAYS PRIOR TO ANTICIPATED FINAL ENGINEER SIGNOFF.
7. FOR SOFTWARE BASED SYSTEMS, A RECORD COPY OF THE SITE-SPECIFIC SOFTWARE SHALL BE PROVIDED TO THE OWNER'S SERVICE PROVIDER.
8. CONTRACTOR CERTIFICATE OF COMPLIANCE. CONTRACTOR SHALL SUBMIT A LETTER ON COMPANY LETTERHEAD AND SIGNED BY AN AUTHORIZED INDIVIDUAL THAT STATES TO THE CONTRACTOR'S BEST KNOWLEDGE THE INSTALLATION OF THE SYSTEM WAS INSTALLED IN ACCORDANCE WITH APPLICABLE CODES AND STANDARDS. THIS MANUAL SHALL BE PROVIDED TO THE ENGINEER FOR REVIEW NOT LESS THAN THREE (3) WORKING DAYS PRIOR TO ANTICIPATED FINAL ENGINEER SIGNOFF.
9. WRITTEN CERTIFICATION OF COMPLETION OF ALL PUNCH LIST ITEMS. THIS SHALL BE PROVIDED TO THE ENGINEER FOR REVIEW NOT LESS THAN FIVE (5) WORKING DAYS PRIOR TO ANTICIPATED FINAL ENGINEER SIGNOFF.
10. THE FOLLOWING DOCUMENTS SHALL BE STORED IN AN APPROVED FIRE ALARM CABINET AT THE MAIN FIRE ALARM CONTROL UNIT, OR OTHER APPROVED LOCATION:
    A. COPY OF RECORD OF COMPLETION.
    B. COPY OF RECORD DRAWINGS.
    C. COPY OF FIRE PROTECTION NARRATIVE

POWER SUPPLY REQUIREMENTS

1. PRIMARY POWER SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR TO EACH FIRE ALARM CONTROL UNIT, NOTIFICATION APPLIANCE CIRCUIT POWER EXTENDERS, AND SUPERVISING STATION TRANSMITTING EQUIPMENT. POWER SHALL BE PROVIDED VIA A DEDICATED 120V CIRCUIT WITH A RED-LOCKABLE BREAKER. THE FIRE ALARM AND ELECTRICAL CONTRACTOR SHALL COORDINATE THE REQUIRED NUMBER AND LOCATION OF NOTIFICATION APPLIANCE CIRCUIT POWER EXTENDERS AND OTHER EQUIPMENT REQUIRING 120V AC POWER.
2. SECONDARY POWER SHALL BE PROVIDED BY VIA STORAGE BATTERIES DEDICATED TO THE SYSTEM. THE CONTRACTOR SHALL PROVIDE BATTERY CALCULATIONS SHOWING THAT THE END CONDITION OF THE SYSTEM MEETS THE FOLLOWING CRITERIA:
   A. BATTERY CALCULATIONS SHALL INCLUDE A 20% SAFETY MARGIN TO ACCOUNT FOR FUTURE SYSTEM EXPANSION.
   B. BATTERIES SHALL BE CAPABLE OF OPERATING THE SYSTEM UNDER QUIESCENT LOAD FOR A MINIMUM OF 24 HOURS AND, AT THE END OF THAT PERIOD, SHALL BE CAPABLE OF OPERATING THE SYSTEM DURING A FIRE OR OTHER EMERGENCY FOR A PERIOD OF 5 MINUTES. IF ANY AHJ HAS MORE STRICT REQUIREMENTS, THOSE REQUIREMENTS SHALL APPLY.
   C. THE BATTERY CALCULATIONS MUST INCLUDE ALL LOADS INCLUDING ANY LOADS CONNECTED TO AUXILIARY POWER CIRCUITS.
3. COORDINATION OF REQUIRED SMOKE DETECTION COVERAGE. A PHOTOELECTRIC SMOKE DETECTOR SHALL BE PROVIDED WITHIN 5 FEET OF ALL FIRE ALARM CONTROL UNITS, NOTIFICATION APPLIANCE CIRCUIT POWER EXTENDERS, SUPERVISING STATION TRANSMITTING EQUIPMENT, AND EMERGENCY RESPONDER RADIO COMMUNICATION SYSTEMS, WHETHER INDICATED ON PLANS OR NOT.

REQUIRED SUBMITTALS

1. PRODUCT DATA: A COMPREHENSIVE SUBMITTAL OF ALL PRODUCT DATA REQUIRED FOR A COMPLETE FIRE ALARM SYSTEM SHALL BE PROVIDED INCLUDING CUT SHEETS WITH ALL APPLICABLE OPTIONS SELECTED FOR DEVICES, APPLIANCES, AND PANELS.
2. WORKING PLANS / SHOP DRAWINGS: SUBMIT COMPLETE, FULLY COORDINATED WORKING PLANS / SHOP DRAWINGS CONTAINING INFORMATION REQUIRED BY THE APPLICABLE EDITION OF NFPA 72. THESE DRAWING SHALL CONTAIN:
   A. BATTERY CALCULATIONS TO CONFIRM THAT THE DESIGN CRITERIA IS MET. THE CONTRACTOR IS RESPONSIBLE FOR TRACING AND ANALYZING ALL EXISTING DEVICES, AS REQUIRED TO SUBMIT COMPLETE AND ACCURATE BATTERY CALCULATIONS.
   B. SEQUENCE OF OPERATIONS.
   C. VOLTAGE DROP CALCULATIONS.
   D. FLOOR PLANS INCLUDING LOCATION OF ALL DEVICES, APPLIANCES, AND PANELS.
   E. FULL SYSTEM RISER DIAGRAM FOR NEW COMPONENTS AND ALL CONNECTIONS TO EXISTING SYSTEM.
3. SHOP DRAWINGS SHALL BE DEVELOPED UNDER THE RESPONSIBLE CHARGE OF A NICET LEVEL III OR IV TECHNICIAN OR A PROFESSIONAL ENGINEER AND SHALL BEAR THE NAME, LICENSE NUMBER, AND EXPIRATION DATE OF THE INSTALLING CONTRACTOR.
4. SHOP DRAWINGS SHALL BE APPROVED BY THE ENGINEER PRIOR TO SUBMISSION TO THE AHJ.
5. AFTER INCORPORATION OF ENGINEER COMMENTS, THE APPROVED SHOP DRAWING SHALL BE SUBMITTED TO THE AHJ FOR APPROVAL.
6. ALL REQUIRED TESTING AND CLOSEOUT DOCUMENTS. REFER TO CLOSEOUT / TESTING REQUIREMENTS.

DEMOLITION NOTES

1. CONTRACTOR SHALL VISIT SITE AND IDENTIFY EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT WORK OF THIS SECTION. NO COMPENSATION WILL BE GRANTED FOR ADDITIONAL WORK CAUSED BY UNFAMILIARITY WITH SITE CONDITIONS THAT ARE VISIBLE OR READILY CONSTRUED BY EXPERIENCED OBSERVERS.
2. WORK MAY BE REQUIRED OUTSIDE OF THE PROJECT'S AREA OF RENOVATION. CONTRACTOR SHALL NOT ASSUME THAT AREA OF RENOVATION IS CONSIDERED THE SCOPE OF WORK AREA.
3. PRIOR TO COMMENCING WORK OF THIS SECTION, EXAMINE SITE AND CONDITIONS UNDER WHICH WORK WILL BE PERFORMED. DETERMINE EXACT LOCATIONS OF EXISTING EQUIPMENT, PIPING AND CONTROLS. REPORT TO ARCHITECT, IN WRITING, ANY CONDITIONS THAT MIGHT ADVERSELY AFFECT WORK. COMMENCEMENT OF WORK SHALL BE CONSTRUED AS COMPLETE ACCEPTANCE OF EXISTING CONDITIONS AND PREPARATORY WORK.
4. ABANDONING FIRE ALARM DEVICES, RACEWAY, CONDUCTORS, OR EQUIPMENT IN PLACE SHALL NOT BE ALLOWED. COMPLETE REMOVAL REQUIRED UNLESS EXPLICITLY NOTED OTHERWISE.
5. FIRE ALARM WORK SHALL BE PLANNED AND EXECUTED IN MANNER SUCH THAT IMPAIRMENTS ARE MINIMIZED. ALL IMPAIRMENTS SHALL BE MANAGED IN ACCORDANCE WITH NFPA 72 REQUIREMENTS. UNDER NO CIRCUMSTANCES WILL IT BE ACCEPTABLE TO IMPAIR BOTH THE SPRINKLER AND FIRE ALARM SYSTEMS SIMULTANEOUSLY. THE CONTRACTOR SHALL DEVELOP, SUBMIT FOR APPROVAL TO THE AHJ, AND IMPLEMENT FIRE ALARM IMPAIRMENT PLANS IN ACCORDANCE WITH APPLICABLE CODES AND STANDARDS, INCLUDING THE BUILDING CODE, FIRE CODE, AND NFPA 241. FIRE WATCH AND TEMPORARY FIRE ALARM SHALL BE PROVIDED AS REQUIRED.
6. COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES AS TO REMOVAL AND DISPOSAL OF EQUIPMENT REMOVED FROM THE SITE.
7. COMPLY WITH GOVERNING EPA NOTIFICATION REGULATIONS BEFORE BEGINNING SELECTIVE DEMOLITION.
8. COMPLY WITH HAULING AND DISPOSAL REGULATIONS OF AUTHORITIES HAVING JURISDICTION.
9. COMPLY WITH ANSI A10.6 (SAFETY REQUIREMENTS FOR DEMOLITION OPERATIONS) AND NFPA 241 (STANDARD FOR SAFEGUARDING CONSTRUCTION, ALTERATION AND DEMOLITION OPERATIONS)
10. PERMITS: GIVE ALL REQUIRED NOTICES, FILE ALL REQUIRED PLANS AND SPECIFICATIONS RELATING TO THE WORK OF THIS SECTION WITH THE PROPER AUTHORITIES AND PAY FOR ANY REQUIRED PERMITS.
11. ALL EQUIPMENT AND SYSTEMS TO BE REMOVED OR DEMOLISHED UNDER THIS SECTION AND NOT DESIRED BY OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL REMOVE ALL SUCH EQUIPMENT FROM THE SITE PROMPTLY AFTER DETACHMENT FROM BUILDING STRUCTURE.
12. STORAGE OR SALE OF REMOVED ITEMS OR MATERIALS ON-SITE IS NOT PERMITTED.
13. IT IS UNKNOWN WHETHER HAZARDOUS MATERIALS WILL BE ENCOUNTERED IN THE WORK. IF MATERIALS SUSPECTED OF CONTAINING HAZARDOUS MATERIALS ARE ENCOUNTERED, DO NOT DISTURB; IMMEDIATELY NOTIFY ARCHITECT AND OWNER IN WRITING.
14. DRAWINGS DO NOT SHOW THE FULL EXTENT OF FIRE ALARM DEMOLITION REQUIRED. FIELD VERIFICATIONS REQUIRED.
15. FIRE ALARM DEVICES THAT ARE EXISTING TO REMAIN SHALL BE PROTECTED DURING DEMOLITION. DEVICES DAMAGED DURING DEMOLITION SHALL BE REPLACED WITH NEW DEVICES MATCHING THE SAME VISUAL AND PERFORMANCE CHARACTERISTICS AT NO COST TO OWNER. MANUFACTURER SHALL BE APPROVED BY OWNER AND ENGINEER PRIOR TO INSTALLATION.

GENERAL NOTES

1. REFER TO THE PROJECT SPECIFICATIONS, FIRE ALARM MATRIX, AND FIRE PROTECTION NARRATIVE (AS APPLICABLE) FOR ADDITIONAL INFORMATION REGARDING DESIGN INTENT AND PRODUCT REQUIREMENTS.
2. ALL WORK SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES AND REGULATIONS. IN THE EVENT OF CONFLICT BETWEEN OR AMONG SPECIFIED REQUIREMENTS AND PERTINENT CODES OR REGULATIONS, MORE STRINGENT REQUIREMENTS SHALL GOVERN.
3. CONTRACTOR SHALL CONFORM TO ALL REQUIREMENTS OF THE APPROVED CONSTRUCTION FIRE SAFETY PLAN, INCLUDING NFPA 241 REQUIREMENTS. THIS MAY REQUIRE FIRE WATCH AND / OR TEMPORARY FIRE ALARM SYSTEMS.
4. CONTRACTOR SHALL PROGRAM, TEST AND CERTIFY FIRE ALARM SYSTEM UPON COMPLETION OF WORK.
5. SYSTEM MANUFACTURER SHALL PROVIDE INSTALLATION WIRING DIAGRAM OF THE FIRE ALARM SYSTEM, AND VERIFICATION CERTIFICATE OF SYSTEM OPERATING PRIOR TO FINAL ACCEPTANCE.
6. ALL FIELD WIRING AND EQUIPMENT SHALL BE AS REQUIRED PER MANUFACTURERS WIRING DIAGRAMS.
7. ALL FIRE ALARM CONTROL UNITS SHALL BE PROVIDED WITH ADEQUATE WORKING CLEARANCE IN ACCORDANCE WITH NFPA 70. PANEL MOUNTING HEIGHT SHALL BE IN ACCORDANCE WITH NFPA 72, WHICH REQUIRES THAT ALL OPERATOR CONTROLS ARE BETWEEN THIRTY-SIX (36) AND SEVENTY-TWO (72) INCHES ABOVE THE FINISHED FLOOR.
8. THE FIRE ALARM RISER DIAGRAM IS NOT INTENDED TO SHOW THE REQUIRED QUANTITY OF DEVICES BUT RATHER THE OVERALL INSTALLATION AND WIRING REQUIREMENTS.
9. ALL SYSTEM COMPONENTS SHALL BE UL LISTED AND FM APPROVED. ALL COMPONENTS SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE CODES AND STANDARDS, MANUFACTURER INSTRUCTIONS, AND LISTING REQUIREMENTS.
10. FOR NETWORKED SYSTEMS, EACH DISTRIBUTED FIRE ALARM CONTROL UNIT SHALL INCLUDE ALL REQUIRED COMPONENTS TO FUNCTION AS A STANDALONE CONTROL UNIT IN THE EVENT OF A NETWORK COMMUNICATION FAILURE. THESE COMPONENTS SHALL INCLUDE, BUT NOT BE LIMITED TO, AMPLIFIERS, POWER SUPPLIES, ETC..
11. REFER TO SPECIFICATIONS, MANUFACTURER CUTSHEETS, AND UL LISTING / FM APPROVALS FOR CONDUCTOR SIZE (ACCOUNTING FOR VOLTAGE DROP) AND CIRCUIT LOADING REQUIREMENTS.
12. CEILING MOUNTED SMOKE DETECTORS SHALL NOT BE LOCATED CLOSER THAN 3 FT. FROM AIR SUPPLY.
13. PROVIDE A REMOTE INDICATOR / TEST STATION FOR ALL DUCT MOUNTED SMOKE DETECTORS AND ANY OTHER DEVICE THAT IS NOT READILY ACCESSIBLE (I.E., WITHIN A LOCKED ROOM)

COORDINATION WITH OTHER TRADES

1. ALL WORK SHALL BE FULLY COORDINATED WITH ALL OTHER TRADES.
2. ELECTRICAL CONTRACTOR SHALL PROVIDE 120VAC ELECTRICAL POWER TO ALL FIRE ALARM SYSTEM COMPONENTS REQUIRING POWER.
3. REFER TO FIRE PROTECTION DRAWINGS AND SPECIFICATIONS FOR EXACT QUANTITY AND LOCATION OF FIRE PROTECTION DEVICES (FLOW / TAMPER / PRESSURE SWITCHES, DEDICATED CONTROL UNITS FOR CLEAN AGENT AND / OR PREACTION RELEASE, ETC.).
4. REFER TO HVAC DRAWINGS AND SPECIFICATIONS FOR EXACT QUANTITIES AND LOCATIONS OF ALL REQUIRED INTERCONNECTS WITH THE FIRE ALARM SYSTEM. REFER TO SEQUENCE OF OPERATIONS FOR ADDITIONAL DETAILS.

WIRING

1. PATHWAY SURVIVABILITY SHALL BE LEVEL 1.
2. FIRE ALARM WIRING DESIGNATED TO BE SURVIVABILITY LEVEL 0 SHALL BE POWER LIMITED / PLENUM RATED FIRE ALARM CABLE (TYPE FPLR) OR METAL CLAD (TYPE MC) SPECIFICALLY LISTED FOR USE WITH FIRE ALARM SYSTEMS.
3. ALL FIRE ALARM WIRING DESIGNATED TO BE LEVEL 1 OR HIGHER SHALL BE IN METALLIC CONDUIT.
4. PATHWAY CLASS DESIGNATIONS SHALL BE AS FOLLOWS. REFERENCE FIRE ALARM RISER AND DETAILS FOR ADDITIONAL INFORMATION.
   A. NOTIFICATION APPLIANCE CIRCUITS: CLASS A
   B. SIGNALING LINE CIRCUITS: CLASS A
   C. NETWORKING (FACP, ANNUNCIATORS, ETC.): CLASS A
5. CLASS A AND X CIRCUITS UTILIZING PHYSICAL CONDUCTORS SHALL BE INSTALLED SUCH THAT THE OUTGOING AND RETURN CONDUCTORS EXITING OR RETURNING TO A CONTROL UNIT ARE ROUTED SEPARATELY. THE MINIMUM SEPARATION DISTANCE BETWEEN VERTICAL CABLES IS TWELVE (12) INCHES AND THE MINIMUM HORIZONTAL SEPARATION DISTANCE IS FORTY-EIGHT (48) INCHES.
6. EMERGENCY CONTROL FUNCTION INTERFACE DEVICES SHALL BE LOCATED WITHIN THREE (3) FEET OF THE COMPONENT CONTROLLING THE EMERGENCY CONTROL FUNCTION. THE INSTALLATION WIRING BETWEEN THE FIRE ALARM CONTROL UNIT AND THE EMERGENCY CONTROL FUNCTION INTERFACE DEVICE SHALL BE OF A PATHWAY CLASSIFICATION AS SPECIFIED ON THE FIRE ALARM RISER.
7. A SINGLE FAULT ON A SIGNALING LINE CIRCUIT PATHWAY CONNECTED TO ADDRESSABLE DEVICES SHALL NOT CAUSE THE LOSS OF MORE THAN 25 ADDRESSABLE DEVICES. FAULT ISOLATION MODULES SHALL BE PROVIDED AT MINIMUM BETWEEN EVERY 25 ADDRESSABLE DEVICES.
8. ALL TERMINATIONS SHALL BE MADE ON TERMINAL BLOCKS OR TERMINALS THAT ARE AN INTEGRAL PART OF THE DEVICE / APPLIANCE. SPLICING OF CABLES IS PROHIBITED.
9. COVER PLATES FOR ALL JUNCTION BOXES SHALL BE PAINTED RED. LABEL CIRCUITS IN ACCORDANCE WITH SPECIFICATIONS.

DRAWING NOTES

- DEMOLITION NOTE
- NEW WORK NOTE
- DRAWING REVISION DESIGNATION
- REVISION CLOUD

VISUAL AND SOUND ALARMS

WALL	CLG	
yyW	yyW	SPEAKER ONLY
yyW xxcd	yyW xxcd	SPEAKER / STROBE
		HORN ONLY
xxcd	xxcd	HORN / STROBE
xxcd	xxcd	VISUAL ONLY

DEVICE INDICATOR "xxcd" ABOVE COMMUNICATES NUMERICAL CANDELA RATING

DEVICE INDICATOR "yyW" ABOVE COMMUNICATES SPEAKER WATTAGE

- DIRECTIONAL SPEAKER
- EXTERIOR BEACON
- ALARM BELL

GENERAL SYMBOLS

- K — FIRE DEPARTMENT KEY BOX
- SEC — SECURITY PANEL
- GEN — GENERATOR CONTROLLER
- ELEV — ELEVATOR CONTROLLER
- AIM — ADDRESSABLE INPUT MODULE
- AOM — ADDRESSABLE OUTPUT MODULE
- ISO — ISOLATION MODULE
- AZM — ADDRESSABLE ZONE INTERFACE MODULE
- ELR — END OF LINE RESISTOR
- MD — MAINTENANCE DISCONNECT
- DH — DOOR HOLDER
- DC — DOOR CLOSER
- C — AREA OF REFUGE STATION
- RIL — REMOTE INDICATOR LIGHT
- RTS — REMOTE TEST STATION
- X — FIRE ALARM WALL BOX
  TYPE DESIGNATOR (LETTER BELOW REPLACES "X" IN SYMBOL)
  "M" - MASTER BOX
  "R" - RADIO BOX
  "C" - CELLULAR COMMUNICATOR

DRAWING LIST

SHEET NUMBER	SHEET NAME
FA000	FIRE ALARM LEGEND
FA321	FIRE ALARM LEVEL 1 PLAN
FA901	FIRE ALARM RISER DIAGRAM AND DETAILS

EQUIPMENT

DEVICE INDICATOR LETTERS "XXXX" COMMUNICATES EQUIPMENT TYPE

XXXX — EQUIPMENT DESIGNATOR
"FACU" - FIRE ALARM CONTROL UNIT
"FATC" - FIRE ALARM TRANSPONDER CABINET
"MIC" - VOICE EVACUATION MICROPHONE
"RMIC" - REMOTE VOICE EVACUATION MICROPHONE
"FPC" - FIRE PUMP CONTROLLER
"AOR" - AREA OF REFUGE COMMUNICATION PANEL
"AMP" - AMPLIFIER
"FAA" - FIRE ALARM ANNUNCIATOR
"GFAA" - GRAPHIC FIRE ALARM ANNUNCIATOR
"BDA" - BI-DIRECTIONAL AMPLIFIER
"NAC" - NOTIFICATION APPLIANCE CIRCUIT POWER EXT
"FSCP" - FIREFIGHTER SMOKE CONTROL PANEL
"PRNI" - FIRE ALARM PRINTER
"PC" - COMPUTER FIRE ALARM WORKSTATION

MANUAL INITIATING DEVICES

DEVICE INDICATOR LETTER "X" COMMUNICATES PULL STATION TYPE

X — PULL STATION TYPE DESIGNATOR
"F" - MANUAL PULL STATION
"A" - ABORT SWITCH
"C" - CLEAN AGENT PULL STATION
"P" - PREACTION PULL STATION
"D" - DELUGE PULL STATION

FIRE PROTECTION SYSTEM INTERFACE DEVICES

FLOW SWITCH INDICATOR LETTER "X" COMMUNICATES SWITCH TYPE

X — SWITCH TYPE DESIGNATOR
"FS" - FLOW SWITCH
"PS" - HIGH/LOW PRESSURE SWITCH
"VS" - VALVE SUPERVISORY SWITCH
"LS" - LEVEL SWITCH

DAMPERS

SFD — FIRE SMOKE DAMPER

SD — SMOKE DAMPER

SENSORS AND DETECTORS

TEMPERATURE SENSOR

X — TEMPERATURE SENSOR TYPE DESIGNATOR
"HT" - HIGH TEMPERATURE SENSOR
"LT" - LOW TEMPERATURE SENSOR

GAS DETECTOR

XX — GAS DETECTOR TYPE DESIGNATOR
"CO" - CARBON MONOXIDE
"H" - HYDROGEN
"O2" - LOW OXYGEN
"CH4" - METHANE

HEAT DETECTOR

X — OPTIONAL TYPE DESIGNATOR
<BLANK> - NO OPTION
"ER" - ELEVATOR RECALL (PRIMARY FLOOR)

X — HEAT DETECTOR TYPE DESIGNATOR
"BLANK" - COMBINATION TYPE
"L" - LINEAR
"R" - RATE OF RISE
"F" - FIXED TEMPERATURE

SMOKE DETECTORS

CLG / WALL — OPTIONAL TYPE DESIGNATOR
"BLANK" - NO OPTION
"ER" - ELEVATOR RECALL (PRIMARY FLOOR)
"I" - ELEVATOR RECALL (ALTERNATE FLOOR)
"SB" - SOUNDER BASE

CLG / WALL — DETECTOR TYPE DESIGNATOR
"A" - ASPIRATING
"AR" - ASPIRATING RETURN PORT
"AS" - ASPIRATING SAMPLING PORT
"AT" - ASPIRATING TEST PORT
"H" - HIGH SENSITIVITY SPOT DETECTOR
"S" - SINGLE STATION
"M" - MULTICRITERIA

- ASPIRATING SMOKE DETECTOR

GENERAL DETECTORS

BEAM DETECTOR

X — BEAM DETECTOR TYPE DESIGNATOR
"T" - TRANSMITTER
"R" - RECEIVER

- FLAME DETECTOR
- D — SMOKE DETECTOR (DUCT MOUNTED)

DEMOLITION / RELOCATION LEGEND

- E — EXISTING FIRE ALARM EQUIPMENT, DEVICE AND/OR SYSTEM TO REMAIN
- X — EXISTING FIRE ALARM EQUIPMENT, DEVICE AND/OR SYSTEM TO BE SELECTIVELY DEMOLISHED
- XT — EXISTING FIRE ALARM EQUIPMENT AND/OR DEVICE TO BE REMOVED AND TURNED OVER TO OWNER FOR RE-USE
- XR — EXISTING FIRE ALARM EQUIPMENT AND/OR DEVICE TO BE REMOVED, STORED AND RE-LOCATED.
- XL — EXISTING FIRE ALARM EQUIPMENT AND/OR DEVICE INDICATED IN NEW LOCATION

DEMOLITION / RELOCATION NOTES

PHASE LABELS SHOWN ABOVE ARE APPLIED IN SELECT AREAS AND MAY NOT ALWAYS BE PRESENT. REFER TO LINETYPE AND LINEWEIGHT TO DETERMINE EXISTING CONDITIONS AND DEMOLISHED EQUIPMENT.

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TOWN OF DEDHAM
MIDDLE SCHOOL Dedham

DEDHAM MIDDLE SCHOOL
70 WHITING AVENUE
DEDHAM, MA 02026

SAFETY VESTIBULE PROJECT

PROJECT STATUS:

BID SET
ADDENDUM #2

DATE:	03/21/2023
PROJECT NO:	220205.01
DRAWN BY:	MT
CHECKED BY:	PH

REVISIONS:

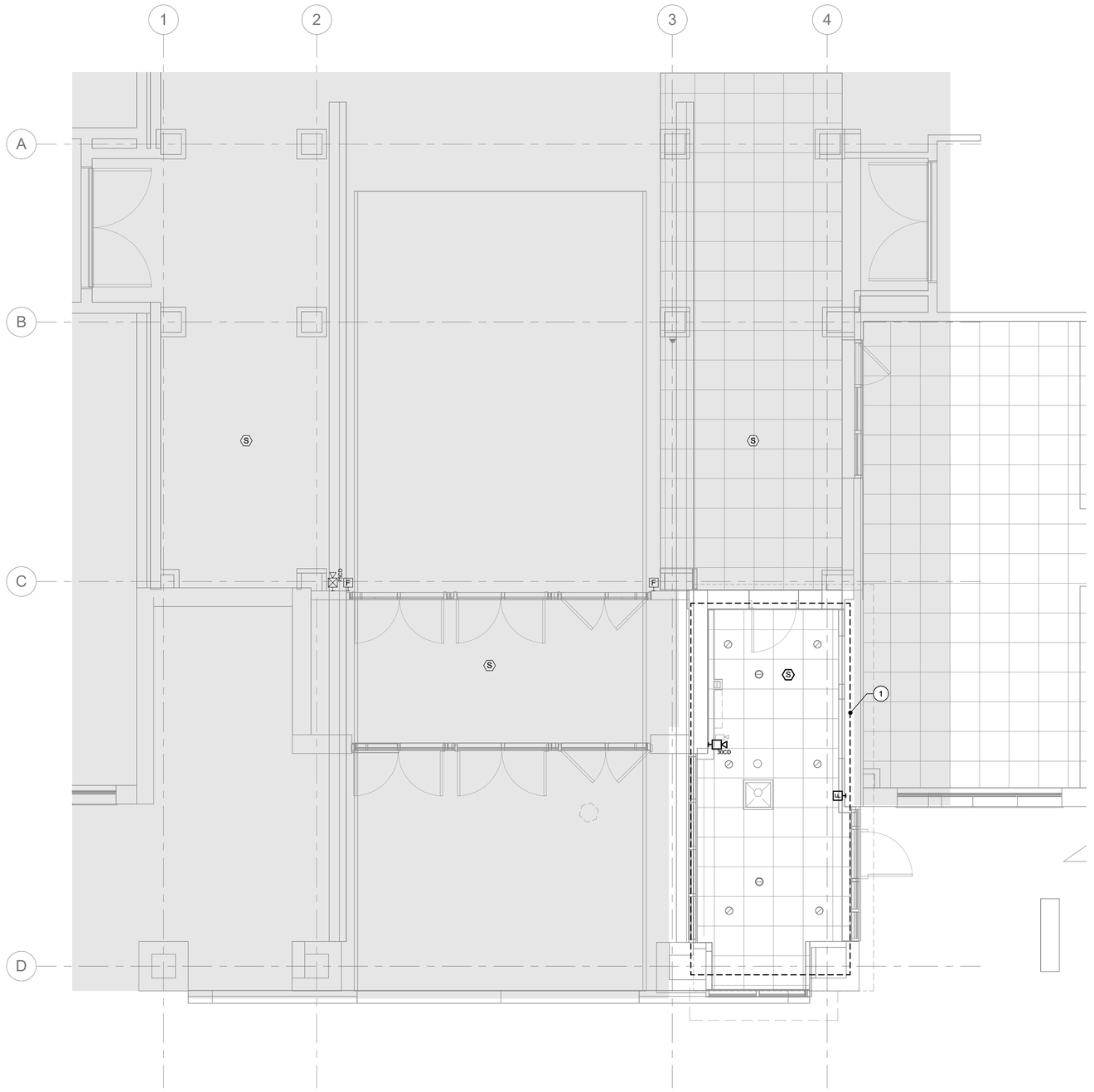
DRAWING TITLE:

FIRE ALARM LEGEND

DRAWING NO.:

FA000

KEYNOTES	
1	PROVIDE NEW SAFETY VESTIBULE WITH NFPA 72 COMPLIANT HORN/STROBE, NEW SMOKE DETECTION, AND NEW PULL STATION WHERE INDICATED.UTILIZE THE EXISTING CIRCUIT WITHIN ITS CAPACITY TO SERVE THE NEW NOTIFICATION APPLIANCE AND INITIATION DEVICES. CONTRACTOR SHALL PROVIDE ALL CONDUIT, WIRING, AND ANCILLARY EQUIPMENT NECESSARY TO MAINTAIN A FULLY FUNCTIONAL SYSTEM. CONTRACTOR SHALL PROVIDE VOLTAGE DROP CALCULATIONS TO DETERMINE IF AN ADDITIONAL NAC BOOSTER PANEL IS NECESSARY.



1 FA321 ELECTRICAL FIRE ALARM 1ST FLOOR PLAN
1/4" = 1'-0"
0 2' 4' 8'

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TOWN OF DEDHAM

MIDDLE SCHOOL Dedham

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SAFETY VESTIBULE PROJECT

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PROJECT NO:	220205.01
DRAWN BY:	MT
CHECKED BY:	PH

REVISIONS:

DRAWING TITLE:

FIRE ALARM
LEVEL 1 PLAN

DRAWING NO.:

FA321

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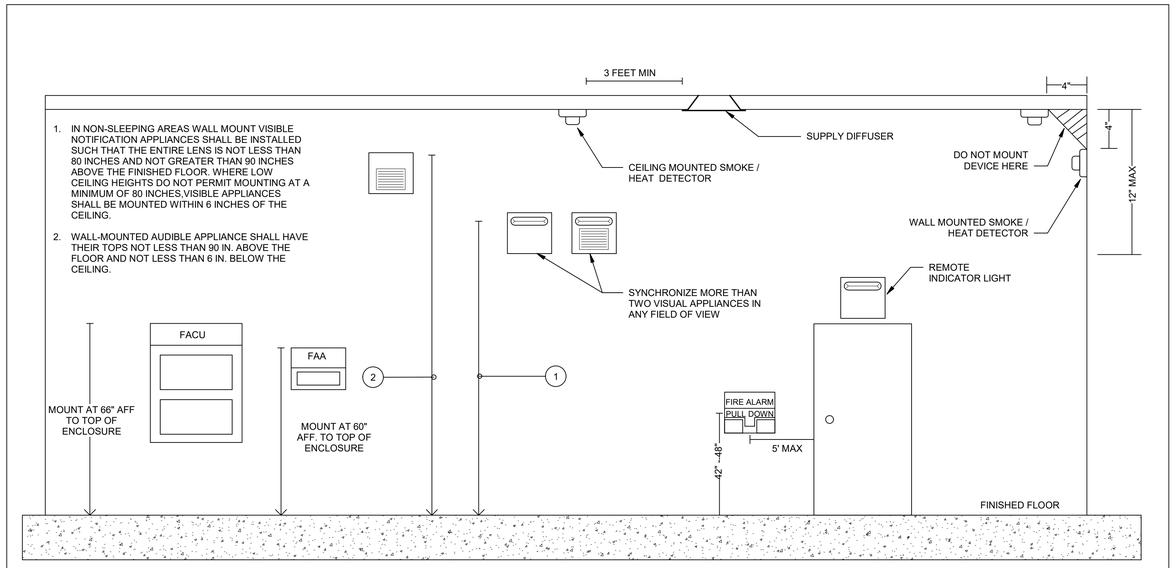
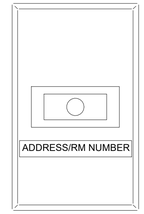


1 FIRE ALARM DEVICE MOUNTING ELEVATIONS

SCALE: NTS



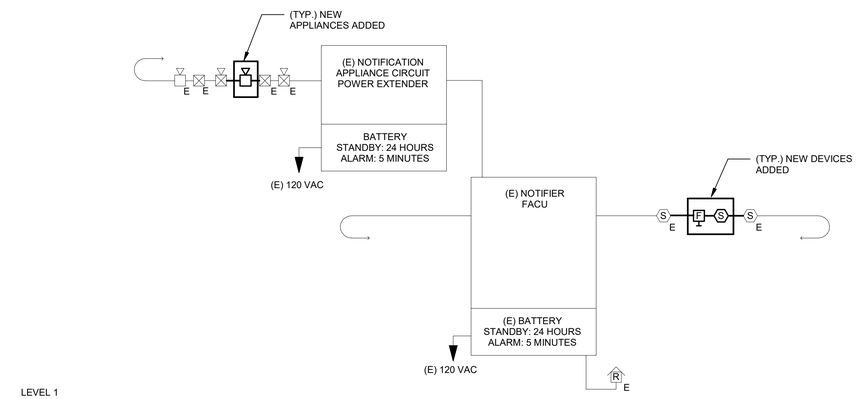
- SINGLE LED LIGHT REMOTE ALARM INDICATOR
- RTS — REMOTE TEST STATION
- S — SMOKE DETECTOR
- F — SPEAKER/STROBE

1. AT A MINIMUM, ELECTRICAL CONTRACTOR SHALL PROVIDE CLEAR PLASTIC TYPED LABELS WITH BLACK LETTERING MADE WITH PTOUCH MACHINE TO INDICATE ADDRESS OF SMOKE DETECTOR WITHIN ENCLOSED ROOM OR ROOM NUMBER OR IF SYSTEMS IS ZONED. SAME TYPE OF LABELING SYSTEM SHALL BE APPLIED TO DEVICES LISTED ABOVE.

2 TYPICAL FIRE ALARM DEVICE LABELING DETAIL

SCALE: NTS

NOTES:
1. FIRE ALARM SYSTEM IS WIRED IN A CLASS A CONFIGURATION.
2. DESIGN INTENT IS TO INSTALL NEW NOTIFICATION APPLIANCES TO THE EXISTING NAC SERVING THE RENOVATION AREA.
3. NEW HORN / STROBE NOTIFICATION APPLIANCES SHALL MATCH THE EXISTING PATTERN FOR THE BUILDING.
4. CONTRACTOR TO PERFORM VOLTAGE DROP CIRCUIT LOADING AND BATTERY CALCULATIONS TO DETERMINE IF THE BATTERY NEEDS TO BE UPSIZED OR IF ANOTHER NAC BOOSTER IS NEEDED. TRACING OF CIRCUIT OR FIELD MEASUREMENTS ARE REQUIRED.
5. NO CHANGES TO BUILDING SEQUENCE OF OPERATIONS. NEW INITIATING DEVICES RESULT IN ALARM CONDITION AND GENERAL ALARM EVACUATION.



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SAFETY VESTIBULE PROJECT

PROJECT STATUS:

BID SET
ADDENDUM #2

DATE:	03/21/2023
PROJECT NO:	220205.01
DRAWN BY:	MT
CHECKED BY:	PH

REVISIONS:

DRAWING TITLE:

FIRE ALARM RISER DIAGRAM AND DETAILS

DRAWING NO.:

FA901

DUCTWORK LEGEND

DUCTWORK SYMBOL DESCRIPTION

12"x8"	RECTANGULAR DUCTWORK - HEIGHT x WIDTH (IN.)
12"Ø	ROUND DUCTWORK - DIMENSION IS DUCT DIAMETER (IN.)
(E) 12"x8"	EXISTING DUCTWORK TO REMAIN
(X) 12"x8"	EXISTING DUCTWORK TO BE DEMOLISHED

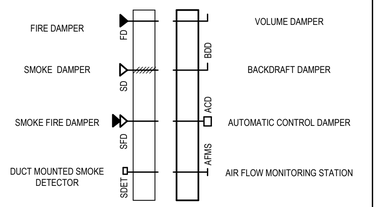
DUCT RISE / DROP LEGEND

RECTANGULAR DUCT		ROUND DUCT
	SUPPLY DUCTWORK UP	
	SUPPLY DUCTWORK DOWN	
	RETURN DUCTWORK UP	
	RETURN DUCTWORK DOWN	
	EXHAUST DUCTWORK UP	
	EXHAUST DUCTWORK DOWN	

DUCT FITTINGS AND OPTIONS LEGEND

- BEAM PENETRATION BY DUCTWORK
- CAPPED DUCTWORK
- ACOUSTICALLY LINED DUCTWORK
- FLEXIBLE CONNECTION
- RECTANGULAR TRANSITION
- RECTANGULAR TO ROUND DUCTWORK TRANSITION
- MITERED ELBOW WITH TURNING VANES
- 1/2" WIRE MESH SCREEN (ON OPEN END DUCT)

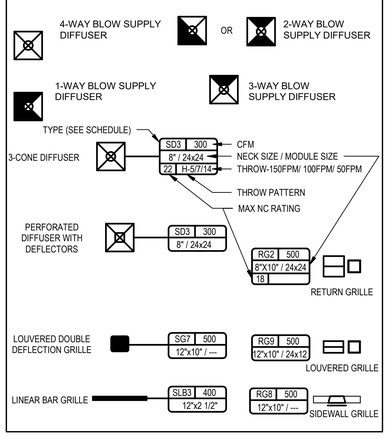
DUCT ACCESSORY LEGEND



AIRFLOW SYMBOL LEGEND

- SUPPLY AIR
- RETURN OR EXHAUST AIR
- UNDERCUT DOORWAY (BY G.C.)
- DOOR LOUVER (BY G.C.)

GRILLE, REGISTER, & DIFFUSER TAG LEGEND



DRAWING NOTES

ACCU-1	EQUIPMENT TAG
1	REVISION NOTE
1	DEMOLITION WORK NOTE
1	NEW WORK NOTE
1	NEW WORK NOTE
	CONNECT TO EXISTING
	CAP EXISTING
	LIMIT OF DEMOLITION
	ELECTRICAL AREA - THE AREA INDICATED IS AN ELECTRICAL ZONE. DUCTWORK, PIPING, AND SYSTEMS SHALL NOT RUN THROUGH THIS ZONE. EXCEPTION:PIPES, DUCTS, AND EQUIPMENT DEDICATED TO SERVE THE ZONE ARE ALLOWED. COORDINATE WITH ELECTRICAL CONTRACTOR AND COMPLY WITH ALL CODE CLEARANCE REQUIREMENTS.

CONTROL LEGEND

CO	CO SENSOR
CO2	CO2 SENSOR
NO2	NO2 SENSOR
SP1	STATIC PRESSURE SENSOR
DPS	DIFFERENTIAL PRESSURE SENSOR
RPM	ROOM PRESSURE MONITOR
T	HEAT/COOL THERMOSTAT
TR	REVERSE ACTING THERMOSTAT
$	SWITCH CONTROLLER
C	TIME CLOCK CONTROLLER
HS	HUMIDITY SENSOR
H	HUMIDISTAT
THS	HUMIDITY AND TEMPERATURE SENSOR
TS	TEMPERATURE SENSOR
RDO	REMOTE DAMPER OPERATOR
FMS	FACILITY MANAGEMENT PANEL
FM	FLOW METER
ECP	ENVIRONMETAL CONTROL PANEL
	CONTROL LINE

DEMOLITION GENERAL NOTES

1. CONTRACTOR SHALL VISIT SITE AND IDENTIFY EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT WORK OF THIS SECTION. NO COMPENSATION WILL BE GRANTED FOR ADDITIONAL WORK CAUSED BY UNFAMILIARITY WITH SITE CONDITIONS THAT ARE VISIBLE OR READILY CONSTRUED BY EXPERIENCED OBSERVERS.
2. PRIOR TO COMMENCING WORK OF THIS SECTION, EXAMINE SITE AND CONDITIONS UNDER WHICH WORK WILL BE PERFORMED. DETERMINE EXACT LOCATIONS OF EXISTING EQUIPMENT, PIPING AND CONTROLS. REPORT TO OWNER ANY CONDITIONS THAT MIGHT ADVERSELY AFFECT WORK. COMMENCEMENT OF WORK SHALL BE CONSTRUED AS COMPLETE ACCEPTANCE OF EXISTING CONDITIONS AND PREPARATORY WORK.
3. ABANDONING OF DUCTWORK, PIPING OR EQUIPMENT IN PLACE SHALL NOT BE ALLOWED. COMPLETE REMOVAL REQUIRED UNLESS NOTED OTHERWISE.
4. PIPING TO BE REMOVED: REMOVE PORTION OF PIPING INDICATED TO BE REMOVED AND CAP REMAINING PIPING WITH SAME OR COMPATIBLE PIPING MATERIAL.
5. DUCTS TO BE REMOVED: REMOVE PORTION OF DUCTS INDICATED TO BE REMOVED AND CAP REMAINING DUCTS WITH SAME OR COMPATIBLE DUCTWORK MATERIAL.
6. EQUIPMENT TO BE REMOVED: DISCONNECT AND CAP SERVICES AND REMOVE EQUIPMENT.
7. EQUIPMENT TO BE REMOVED AND SALVAGED: DISCONNECT AND CAP SERVICES AND REMOVE EQUIPMENT AND DELIVER TO OWNER.
8. COMPLY WITH ALL STATE AND LOCAL CODES AS TO REMOVAL AND DISPOSAL OF EQUIPMENT REMOVED FROM THE SITE.
9. COMPLY WITH GOVERNING EPA NOTIFICATION REGULATIONS BEFORE BEGINNING SELECTIVE DEMOLITION.
10. REMOVE PREVIOUSLY ABANDONED WORK IN THE WAY OF EXISTING CONSTRUCTION, OR AS NOTED.
11. COMPLY WITH HAULING AND DISPOSAL REGULATIONS OF AUTHORITIES HAVING JURISDICTION.
12. COMPLY WITH ANSI A10.6 (SAFETY REQUIREMENTS FOR DEMOLITION OPERATIONS) AND NFPA 241 (STANDARD FOR SAFEGUARDING CONSTRUCTION, ALTERATION AND DEMOLITION OPERATIONS).
13. PERMITS: GIVE ALL REQUIRED NOTICES, FILE ALL REQUIRED PLANS AND SPECIFICATIONS RELATING TO THE WORK OF THIS SECTION WITH THE PROPER AUTHORITIES AND PAY FOR ANY REQUIRED PERMITS.
14. ALL EQUIPMENT AND SYSTEMS TO BE DEMOLISHED UNDER THIS SECTION AND NOT DESIRED BY OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL REMOVE ALL SUCH EQUIPMENT FROM THE SITE PROMPTLY AFTER DETACHMENT FROM BUILDING STRUCTURE.
15. STORAGE OR SALE OF REMOVED ITEMS OR MATERIALS ON-SITE IS NOT PERMITTED.
16. IT IS UNKNOWN WHETHER HAZARDOUS MATERIALS WILL BE ENCOUNTERED IN THE WORK. IF MATERIALS SUSPECTED OF CONTAINING HAZARDOUS MATERIALS ARE ENCOUNTERED, DO NOT DISTURB; IMMEDIATELY NOTIFY ARCHITECT AND OWNER.
17. EXISTING PIPING SHOWN ON DRAWINGS DOES NOT INDICATE FULL EXTENT OF PIPING DEMOLITION. FIELD VERIFICATIONS REQUIRED.

VALVE LEGEND

VALVE LEGEND

	IS	ISOLATION VALVE REFER TO DETAILS AND SPEC.
	GV	GATE VALVE
	GLV	GLOBE VALVE
	BV	BALL VALVE
	BFV	BUTTERFLY VALVE
	DV	DRAIN VALVE
	SCV	SWING CHECK VALVE
	LCV	LIFT CHECK VALVE
	BC	BALANCE COCK
	BV	BALANCE VALVE
	PRV	PRESSURE REDUCING VALVE
	RV	RELIEF VALVE
	SC	CONTROL VALVE
		PILOT OPERATED PRESSURE REDUCING VALVE
	PLS	PIPE LINE STRAINER
	BKS	BASKET STRAINER
	CRD	CONCENTRIC REDUCER (ENLARGER)
	ERD	ECCENTRIC REDUCER (ENLARGER)
	TRM	THERMOMETER
	PG	PRESSURE GAUGE
	FS	FLOW SWITCH
	AAV	AUTOMATIC AIR VENT
	MAV	MANUAL AIR VENT
	TT	THERMOSTATIC STEAM TRAP
	F&TT	FLOAT & THERMOSTATIC STEAM TRAP
	BT	BUCKET STEAM TRAP
	PT	PRESSURE/TEMPERATURE PLUG

PIPE FITTING LEGEND

		UNION
	FLG	FLANGE
	EC	EXPANSION COMPENSATOR
	PFC	PIPE FLEXIBLE CONNECTION
	AN	PIPE ANCHOR
	GD	PIPE GUIDE
		PIPE CAP
		STRAINER WITH DRAIN VALVE AND CAP

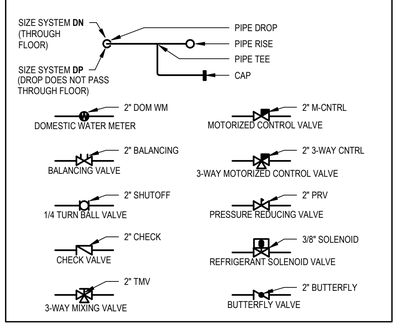
DEMOLITION / RELOCATION LEGEND

E	EXISTING MECHANICAL EQUIPMENT, DEVICE AND/OR SYSTEM TO REMAIN
X	EXISTING MECHANICAL EQUIPMENT, DEVICE AND/OR SYSTEM TO BE SELECTIVELY DEMOLISHED
XT	EXISTING MECHANICAL EQUIPMENT AND/OR DEVICE TO BE REMOVED AND TURNED OVER TO OWNER FOR RE-USE
XR	EXISTING MECHANICAL EQUIPMENT AND/OR DEVICE TO BE REMOVED, STORED AND RE-LOCATED.
XL	EXISTING MECHANICAL EQUIPMENT AND/OR DEVICE INDICATED IN NEW LOCATION

DEMOLITION / RELOCATION NOTES

PHASE LABELS SHOWN ABOVE ARE APPLIED IN SELECT AREAS AND MAY NOT ALWAYS BE PRESENT. REFER TO LINETYPE AND LINEWEIGHT TO DETERMINE EXISTING CONDITIONS AND DEMOLISHED EQUIPMENT.

PIPE SYMBOL LEGEND



ABBREVIATIONS

AAV	AUTOMATIC AIR VENT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AP	ACCESS PANEL
ARCH.	ARCHITECT
AS	AIR SEPARATOR
ATC	AUTOMATIC TEMPERATURE CONTROL
BOD	BOTTOM OF DUCT
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
C	CLOSED
CAP	CAPACITY
CC	COOLING COIL
CFM	CUBIC FEET PER MINUTE
CO	CLEAN OUT
CONN.	CONNECT
CONTR	CONTRACTOR
CP	CONTROL PANEL
CT	CURRENT TRANSFORMER
CV	CONTROL VALVE
DB	DRY BULB TEMPERATURE (°F)
DDC	DIRECT DIGITAL CONTROL
DIA.	DIAMETER
DN	DOWN
DR	DRAIN
DWG	DRAWING
EA	EACH
EAT	ENTERING AIR TEMPERATURE
EC	ELECTRICAL CONTRACTOR
EL	EXPANSION LOOP
ESP	EXTERNAL STATIC PRESSURE
ETR	EXISTING TO REMAIN
EWT	ENTERING WATER TEMPERATURE
EX	EXISTING
FMS	FACILITY MANAGEMENT SYSTEM
FA	FREE AREA
FAI	FRESH AIR INTAKE
FLA	FULL LOAD AMPS
FLD	FLOOR DRAIN
FPC	FIRE PROTECTION CONTRACTOR
FPI	FINS PER INCH
FPM	FEET PER MINUTE
FT	FEET
GAL	GALLONS
GC	GENERAL CONTRACTOR
GE	GENERAL EXHAUST
GPM	GALLONS PER MINUTE
HC	HEATING COIL
HP	HORSE POWER
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
IN	INCHES
ID	INSIDE DIAMETER
KW	KILOWATTS
LAT	LEAVING AIR TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MBH	THOUSANDS OF BRITISH THERMAL UNITS PER HOUR
MEC	MECHANICAL CONTRACTOR
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAT	OUTSIDE AIR TEMPERATURE
OD	OUTSIDE DIAMETER
OED	OPEN ENDED DUCT
PC	PLUMBING CONTRACTOR
PD	PRESSURE DROP
PSI	POUNDS PER SQUARE INCH
RA	RETURN AIR
RM	ROOM
SA	SUPPLY AIR
SAT	SUPPLY AIR TEMPERATURE
SF	SQUARE FEET
SP	STATIC PRESSURE
SPD	SPEED
SS	STAINLESS STEEL
SST	SATURATED SUCTION TEMPERATURE
TA	TRANSFER AIR
TD	TRANSFER AIR DUCT
TE	TOILET EXHAUST
TSTAT	THERMOSTAT
TYP	TYPICAL
UC	UNDERCUT DOOR
VAV	VARIABLE AIR VOLUME
WB	WET BULB TEMPERATURE (°F)

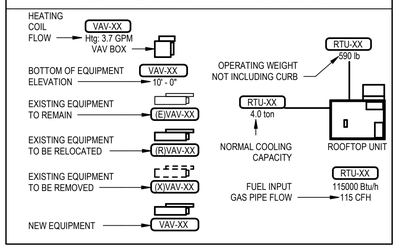
EQUIPMENT TAGS

RG	RETURN GRILLE
SD	SUPPLY DIFFUSER
UH	UNIT HEATER
VAV	VARIABLE AIR VOLUME BOX

PIPING LEGEND

HWS	HWS	HOT WATER SUPPLY
HWR	HWR	HOT WATER RETURN
	(E)	EXISTING PIPING TO REMAIN
	(X)	PIPING TO BE REMOVED
		PIPE OFF BOTTOM
		PIPE OFF TOP
		RUN-OUT OFF TOP
		RUN-OUT OFF BOTTOM
		BRANCH CONNECTION (DIRECTION TO BE FIELD DETERMINED)
		PIPE UP
		PIPE DOWN
		DIRECTION OF FLOW
		PIPE BREAK
S=.01 S=.02		DRAIN PIPE SLOPE AND FLOW DIRECTION S=.01: 1/8" PER FOOT S=.02: 1/4" PER FOOT
	C.O.	CLEAN OUT

MECHANICAL EQUIPMENT TAG LEGEND



GENERAL NOTES

1. MECHANICAL WORK IS INDICATED DIAGRAMMATIC. EXACT LOCATIONS OF ALL COMPONENTS ARE TO BE DETERMINED IN THE FIELD (SPACING SUBJECT TO ARCHITECT'S REVIEW AND APPROVAL) TO AVOID CONFLICT WITH OTHER TRADES AND EXISTING SITE CONDITIONS.
2. THE CONTRACTOR SHALL VISIT AND CAREFULLY EXAMINE THE SITE TO IDENTIFY EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE WORK OF THIS SECTION. REPORT IN WRITING TO THE ARCHITECT CONDITIONS WHICH MIGHT ADVERSELY AFFECT WORK. NO EXTRA PAYMENT WILL BE PROVIDED FOR ADDITIONAL WORK CAUSED BY UNFAMILIARITY WITH SITE CONDITIONS THAT ARE VISIBLE OR READILY CONSTRUED BY AN EXPERIENCED OBSERVER.
3. WORK REQUIRING INTERRUPTION OF BUILDING SERVICES SHALL BE CAREFULLY REVIEWED AND COORDINATED WITH THE OWNER TO MINIMIZE FREQUENCY AND DURATION OF SERVICE INTERRUPTIONS.
4. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION OF CEILING GRID, DIFFUSERS, AND GRILLES.
5. ALL INSTALLATIONS SHALL PERMIT AND PROVIDE ACCESSIBILITY FOR SERVICE AND REPLACEMENT OF ALL NEW EQUIPMENT AND EXISTING EQUIPMENT IMPACTED BY THIS WORK.
6. COORDINATE ALL OPENINGS IN FLOORS WITH STRUCTURAL DRAWINGS AND GENERAL CONTRACTOR.
7. COORDINATE ALL ROOF OPENINGS WITH ARCHITECT AND STRUCTURAL ENGINEER.
8. REFER TO STRUCTURAL FRAMING PLANS FOR EXACT LOCATION OF ALL ROOF MOUNTED EQUIPMENT.
9. ALL MECHANICAL EQUIPMENT, PIPING, AND DUCTWORK SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF GOVERNING LOCAL, STATE, AND FEDERAL SEISMIC CODES. PARTICULAR ATTENTION SHALL BE MADE TO VIBRATION ISOLATION, ANCHORING, AND BALANCING REQUIREMENTS.
10. PROVIDE SMOKE DETECTORS AND SMOKE DAMPERS WHERE SHOWN ON THE MECHANICAL DRAWINGS. COORDINATE THE QUANTITY AND EXACT LOCATION WITH ACTUAL SHEET METAL SHOP DRAWINGS, TO BE PRODUCED BY MECHANICAL CONTRACTOR, AND APPROVED BY ENGINEER. PROVIDE SMOKE DETECTORS AND SMOKE DAMPERS IN BOTH SUPPLY AND RETURN DUCTS ON ALL AIR HANGLERS AS SHOWN IN MECHANICAL DRAWINGS.
11. ALL DUCTWORK SHALL BE INSTALLED IN ACCORDANCE WITH CODES AND STANDARDS SET FORTH IN NFPA, SMACNA, AND ASHRAE FOR LOW PRESSURE DUCTWORK SYSTEMS.
12. ALL EXPOSED DUCTWORK SHALL BE PAINTED TO MATCH CEILING. REFER TO ARCHITECTURAL DRAWINGS.
13. PROVIDE MANUAL VOLUME DAMPERS AT ALL BRANCH DUCTS FOR AIR BALANCING.
14. ALL DUCTS, PIPES, AND EQUIPMENT SHALL BE INDEPENDENTLY SUPPORTED FROM THE BUILDING STRUCTURE WITH PROPER ALLOWANCES FOR CONTRACTION, EXPANSION, AND VIBRATION ELIMINATION.
15. PROVIDE 12"x10" ACCESS PANELS AT ALL BASEBOARD CONTROL VALVES. COORDINATE EXACT LOCATIONS WITH GENERAL CONTRACTOR.
16. PROVIDE COPPER 3/4" RUN-OUTS TO HOT WATER REHEAT COILS, CABINET HEATERS AND UNIT HEATERS UNLESS NOTED OTHERWISE.
17. PROVIDE SWING JOINTS AT ALL BRANCH CONNECTIONS TO HYDRONIC EQUIPMENT.
18. ROOM THERMOSTATS SHALL BE MOUNTED 4'-0" ABOVE FINISHED FLOOR UNLESS OTHERWISE SHOWN OR DIRECTED. COORDINATE LOCATIONS WITH ARCHITECTURAL WALL PROTECTIONS.
19. REFER TO SPECIFICATIONS FOR TYPE OF VALVE TO BE USED. VALVES ARE SHOWN ON PLANS FOR PLACEMENT ONLY.
20. ALL DUCT DIMENSIONS SHOWN ARE INSIDE CLEAR FREE AREA REQUIRED.
21. ALL DIFFUSER, REGISTER, AND GRILLE SIZES INDICATED ON FLOOR PLANS ARE NECK SIZE REQUIRED.
22. ALL PIPING IS TO BE SLOPED A MINIMUM OF 1/4" PER HUNDRED FEET IN THE DIRECTION OF DRAINAGE.
23. NOT ALL SYMBOLS OR ABBREVIATIONS ARE USED ON THIS PROJECT.
24. COORDINATE ENTIRE INSTALLATION WITH THE WORK OF ALL OTHER TRADES PRIOR TO ANY FABRICATION OR INSTALLATIONS.
25. PERFORM DUCT LEAK TESTING IN ACCORDANCE WITH THE SPECIFICATIONS AND SMACNA GUIDELINES OF ALL DUCTWORK EXCEPT CLASS 2 AND CLASS 3 THROUGHOUT THE PROJECT SCOPE. REFER TO INSTALLATION OF DUCTWORK SECTION OF THE DIVISION 23 00 00 SPECIFICATIONS.

DRAWING LIST

SHEET NUMBER	SHEET NAME
H000	HVAC LEGEND
H121	HVAC LEVEL 1 DUCT & PIPING DEMOLITION PLAN
H321	HVAC LEVEL 1 DUCT & PIPING PLAN
H700	HVAC SCHEDULES
H900	HVAC DETAILS

D2 ARCHITECTS
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TOWN OF DEDHAM

MIDDLE SCHOOL Dedham

DEDHAM MIDDLE SCHOOL
70 WHITING AVENUE
DEDHAM, MA 02026

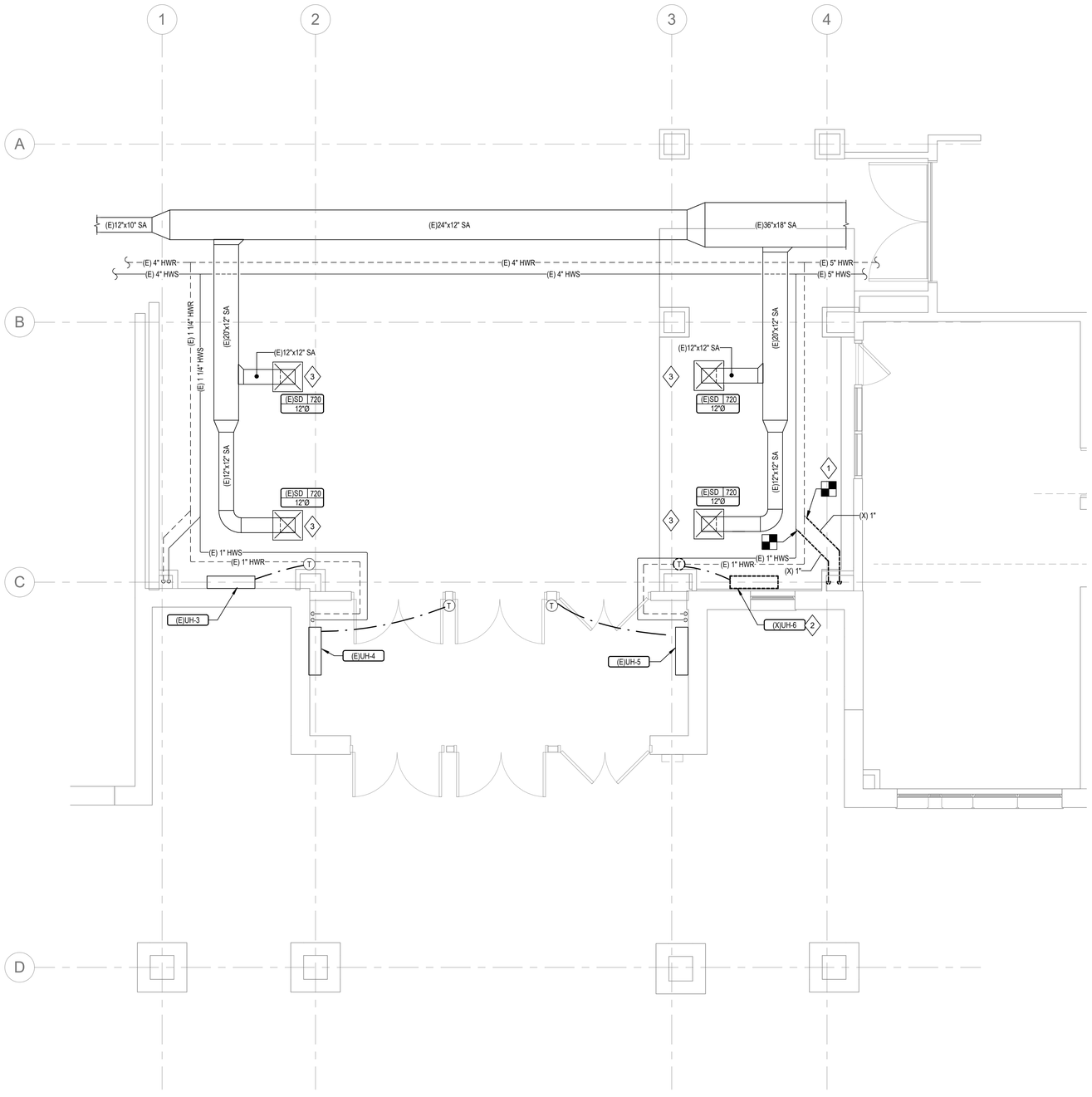
SAFETY VESTIBULE PROJECT

PROJECT STATUS:	BID SET ADDENDUM #2
DATE:	03/21/2023
PROJECT NO:	220205.01
DRAWN BY:	KB
CHECKED BY:	PH
REVISIONS:	

DRAWING TITLE: HVAC LEGEND

DRAWING NO.: H000

KEYNOTES	
1	DEMOLISH EXISITNG HWS/HWR PIPNG BACK TO EXISTING 1" TAPS.
2	DEMOLISH AND REMOVE EXISTING CABINET UNIT HEATER UH-6 AND ASSOCIATED PIPING AND THERMOSTAT. NEW UH AND THERMOSTAT TO BE PROVIDED IN NEW CONSTRUCTION PHASE.
3	PRIOR TO CONSTRUCTION, TAB CONTRACTOR SHALL OBTAIN AIRFLOW MEASUREMENT AT THE INDICATED AIR TERMINAL. REPORT FINDINGS BACK TO OWNER AND ENGINEER FOR REVIEW.



1 H121 HVAC LEVEL 1 DUCT & PIPING DEMOLITION PLAN
1/4" = 1'-0"
0 2' 4' 8'

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HVAC LEVEL 1 DUCT & PIPING DEMOLITION PLAN

DRAWING NO.:

H121

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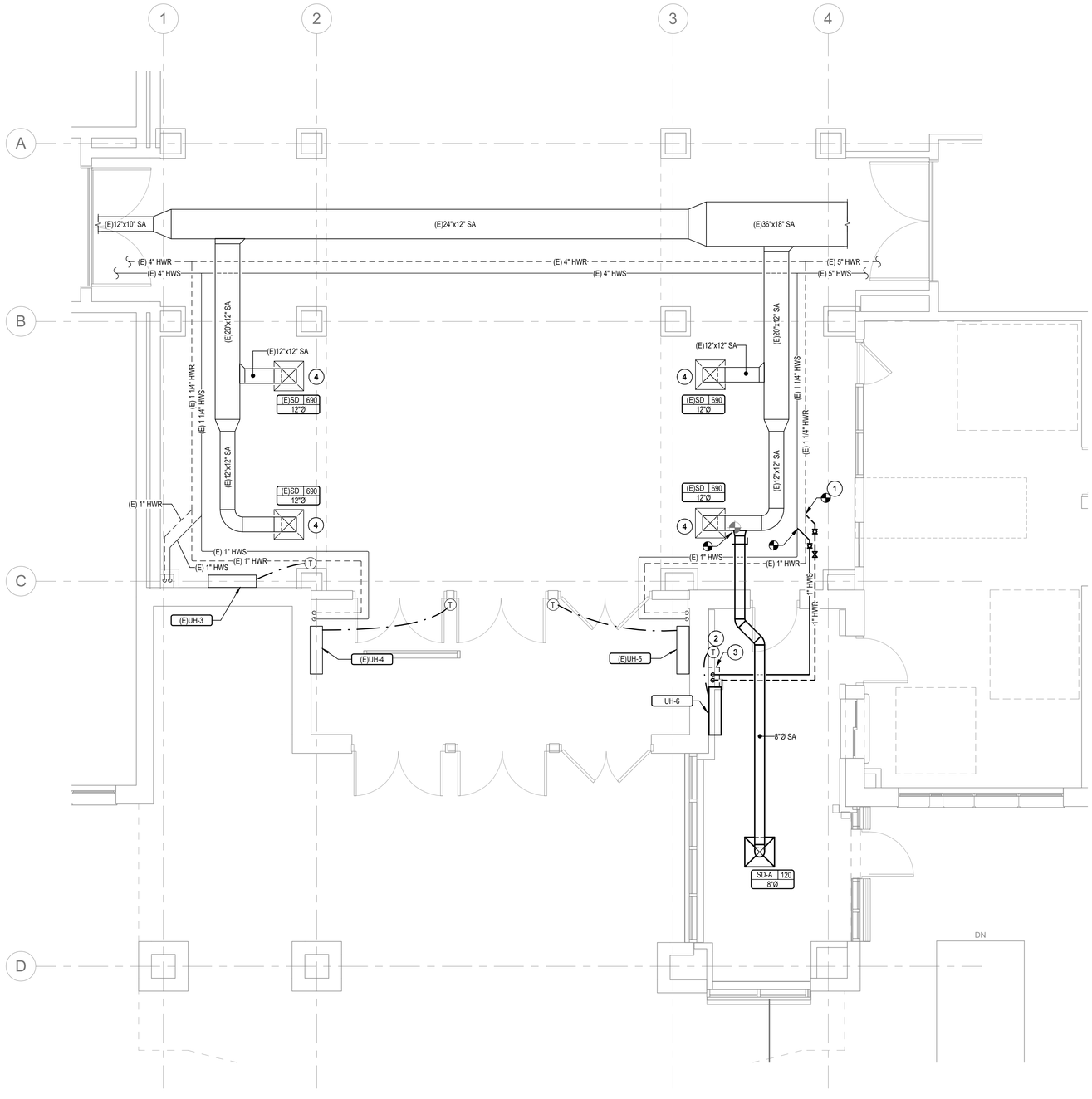
KEYNOTES	
1	CONNECT NEW HWS/HWR PIPE TO EXISTING 1" TAPS.
2	NEW UH CONTROLS SHALL BE TIED INTO EXISTING BMS.
3	ROUTE NEW HWS / HWR PIPING IN NEW ARCHITECTURAL ENCLOSURE, COORDINATE NEW ENCLOSURE DESIGN WITH ARCHITECT.
4	REBALANCE EXISTING AIR TERMINAL TO INDICATED AIRFLOW.



1 / H321 HVAC LEVEL 1 DUCT & PIPING PLAN
1/4" = 1'-0"
0 2' 4' 8'

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TOWN OF DEDHAM

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CHECKED BY:	PH
REVISIONS:	

DRAWING TITLE:

HVAC LEVEL 1 DUCT & PIPING PLAN

DRAWING NO.:

H321

3/21/2023 11:58:21 AM
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CABINET UNIT HEATER SCHEDULE

NOTES:
1. PROVIDE WITH DISCONNECT.
2. PROVIDE WITH EC MOTOR.
3. TOP DISCHARGE, BOTTOM RETURN.
4. REFER TO PROJECT SPECIFICATIONS FOR ALL REQUIRED OPTIONS AND ACCESSORIES.

		FAN	COIL							MOTOR	ELECTRICAL DATA					BASIS OF DESIGN	
						WATER/GLYCOL											
TAG	TYPE	CFM LOW / MED / HIGH	TYPE/FLUID	SENS MBH HIGH SPEED FAN	EDB (°F)	EWT (°F)	LWT (°F)	GPM	MAX WPD (FT)	MOTOR HP	VOLTS	PH	Hz	FLA	NOTES	MFR	MODEL
UH-6	PEDESTAL STYLE	330 / 265 / 195	100% WATER	19,196	60	180	160	1.9	0.3	0.25	115	1	60	0.37	1-4	MODINE	C-003

REGISTER, GRILLE AND DIFFUSER SCHEDULE

NOTES:
1. COORDINATE FINISH WITH ARCHITECTUAL DOCUMENTS.
2. COORDINATE MOUNTING STYLE WITH ARCHITECTURAL DOCUMENTS.
3. REFER TO DRAWINGS FOR QUANTITIES.
4. REFER TO DRAWINGS FOR NECK SIZES, DISCHARGE ORIENTATIONS, AND AIRFLOW.
5. REFER TO PROJECT SPECIFICATIONS FOR ALL ADDITIONAL REQUIRED OPTIONS AND ACCESSORIES.

							BASIS OF DESIGN		
TAG	SYSTEM	TYPE	MOUNTING	FACE TYPE	MATERIAL	FINISH	MFR	MODEL	NOTES
SD-A	SUPPLY	DIFFUSER	CEILING	24"x24" SQUARE	ALUMINUM	WHITE ENAMEL	TITUS	TMS-AA	1-5

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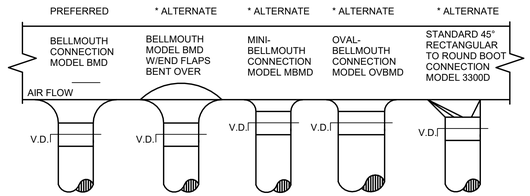
CHECKED BY:	PH

REVISIONS:

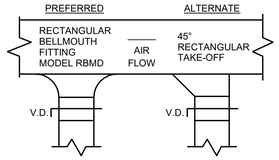
DRAWING TITLE:
HVAC SCHEDULES

DRAWING NO.:
H700



ROUND BRANCH DUCT TAKE-OFFS

* ALTERNATE ROUND FITTINGS TO BE USED WHEN DUCT HEIGHT DOES NOT PERMIT THE USE OF THE FULL SIZE BELLMOUTH



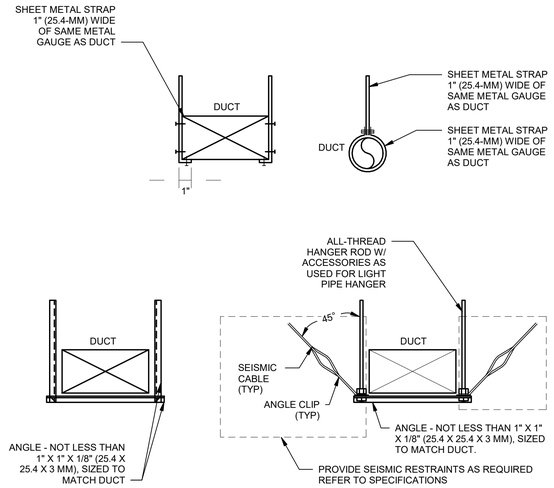
RECTANGULAR BRANCH DUCT TAKE-OFF

NOTES:

1. TO MATCH DUCT & HOLE SIZE RELATIVE TO DUCT HEIGHT, REFER TO FITTING MANUFACTURER'S RECOMMENDATION.
2. ALL ROUND AND RECTANGULAR BELLMOUTH FITTINGS SHALL BE INCLUDED WITH THE FOLLOWING STANDARD FEATURES;
   A. NEOPRENE GASKET TO MINIMIZE AIR LEAKAGE.
   B. PRE-DRILLED HOLES FOR QUICK MOUNTING.
   C. CONSTRUCTED OF HEAVY DUTY GALVANIZED STEEL.
   D. 26 GAUGE GALV. LOCKING INDICATING QUADRANT VOLUME DAMPER W/ TIGHT FITTING GASKETING TO MINIMIZE LEAKAGE AT DAMPER PIVOT POINTS.

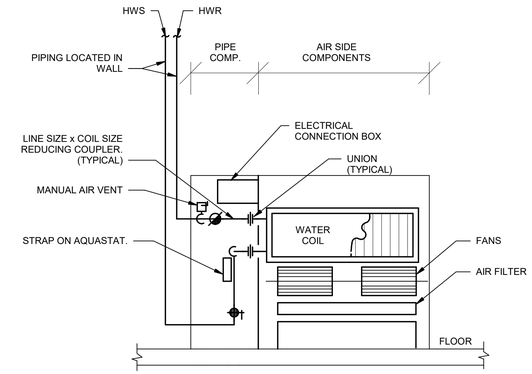
3 BRANCH TAKE-OFFS

SCALE: NTS



2 SHEETMETAL DUCT HANGERS

SCALE: NTS



NOTES

1. FLOOR UNIT INDICATED, WALL UNIT SIMILAR WITH BOTTOM OF UNIT 4" ABOVE FINISHED FLOOR. (EXCEPT AS NOTED)
2. FASTEN TO WALL AT MOUNTING LUGS.
3. REFER TO TERMINAL HOT WATER COIL PIPING SCHEMATIC FOR ARRANGEMENT.

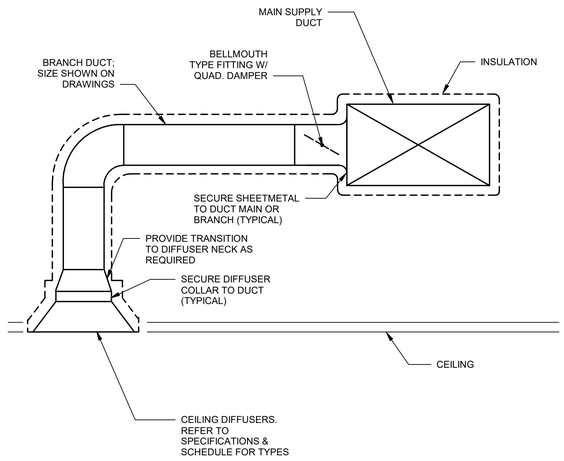
1 CABINET UNIT HEATER

SCALE: NTS

2" & LESS ALL PIPING

6 2" & LESS PIPING HANGER

SCALE: NTS



5 INSTALLATION AT CEILING SUPPLY DIFFUSERS (TYPE 1)

SCALE: NTS

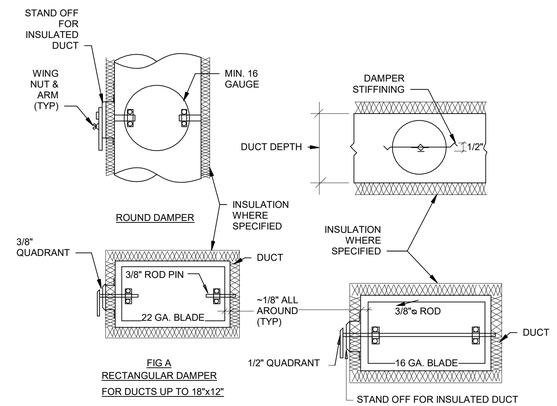
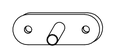


FIG A
RECTANGULAR DAMPER
FOR DUCTS UP TO 18"x12"



INSIDE END BEARING

OUTSIDE END BEARING

FIG B
RECTANGULAR DAMPER
FOR DUCTS 19"X12" TO 30"X12"

4 SINGLE BLADE VOLUME DAMPER

SCALE: NTS

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SAFETY VESTIBULE PROJECT

PROJECT STATUS:

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ADDENDUM #2

DATE:	03/21/2023
PROJECT NO:	220205.01
DRAWN BY:	KB
CHECKED BY:	PH

REVISIONS:

DRAWING TITLE:

HVAC DETAILS

DRAWING NO.:

H900

SECURITY SYSTEMS LEGEND

MCCTV	CLOSED CIRCUIT TELEVISION MONITOR JUNCTION BOX
CR	CARD READER OUTLET BOX
EL	ELECTRO-MAGNETIC DOOR LOCK CONNECTION/ LOCATION
ES	ELECTRIC DOOR STRIKE CONNECTION/ LOCATION
EB	DURESS BUTTON LOCATION
DS	DOOR SWITCH/ CONTACT CONNECTION/ LOCATION
DR	DOOR RELEASE PUSHBUTTON LOCATION
KP	KEY PAD LOCATION
MD	MOTION DETECTOR LOCATION
CCTV	CCTV CAMERA
GB	GLASS BREAK DETECTOR CONNECTION/LOCATION
WC	WINDOW CONTACTS CONNECTION/ LOCATION
IC	SECURITY INTERCOM LOCATION

NOTE:
ALL DOOR CONTROL LOCATIONS SHALL BE COORDINATED WITH FACILITY REPRESENTATIVE PRIOR TO INSTALLATION.

TYPICAL SECURITY DEVICE NOTE:
MINIMUM REQUIREMENTS FOR EACH DEVICE SHALL BE A BACKBOX AND 3/4"C (EMPTY WITH PULLSTRING) RUN CONCEALED IN WALL INTO CEILING SPACE ABOVE AND TERMINATING ABOVE ACCESSIBLE CEILING. TERMINATE WITH BELL END BUSHING. REFER TO FLOOR PLANS AND DETAILS FOR ADDITIONAL REQUIREMENTS. COORDINATE EXACT REQUIREMENTS WITH SECURITY AND HARDWARE VENDORS.

WIRING LEGEND

	J-HOOK CABLE MANAGEMENT TYPICALLY MOUNTED 6" ABOVE FINISHED CEILING
	LADDER STYLE CABLE TRAY (WITH FITTING)
	CHANNEL STYLE CABLE TRAY (WITH FITTING)
	FITTING CONDUIT TURNING UP
	CONDUIT TURNING DOWN
	CONDUIT STUBBED 6" ABOVE ACCESSIBLE CEILING AT 90° ANGLE WITH BUSHED END
	FLEXIBLE RACEWAY
PP123 / 5	HOMERUN TO PANELBOARD "PP123"; BRANCH CIRCUIT No. 5; NO SLASH LINES INDICATE 2#12 & 1#12G., 3/4"C. UNLESS OTHERWISE NOTED: MINIMUM SIZE CONDUCTOR #12 AWG/ MINIMUM SIZE CONDUIT 3/4"C.

WIRING METHODS

REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION

NOTE: SIZE AND INSTALL BRANCH CIRCUIT CONDUCTORS FOR A MAXIMUM BRANCH CIRCUIT VOLTAGE DROP OF 3% FROM PANELBOARDS. TOTAL VOLTAGE DROP FROM SERVICE ENTRY TO LAST DEVICE ON THE CIRCUIT TO NOT EXCEED 5%. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS AND OPTIONS.

NORMAL SYSTEM FEEDERS	THHN/THWN/XHHW CONDUCTORS IN EMT
EMERGENCY SYSTEM FEEDERS	MI CABLE
EQUIPMENT SYSTEM FEEDERS	THHN/THWN/XHHW CONDUCTORS IN EMT
NORMAL BRANCH CIRCUITS	THHN/THWN/XHHW CONDUCTORS IN EMT OR HOSPITAL GRADE AC CABLE
EMERGENCY SYSTEM (LIFE SAFETY AND CRITICAL) BRANCH CIRCUITS	THHN/THWN/XHHW CONDUCTORS IN EMT
NURSE CALL SYSTEM WIRING	CONDUCTORS IN EMT
TELEDATA WIRING	CAT6 WIRING IN EMT (REFER TO COMMUNICATIONS LEGEND FOR ADDITIONAL INFORMATION)

POWER LEGEND

PANEL TAGS

"BUILDING NUMBER" #-XXX##

- "CR" - CRITICAL
- "LS" - LIFE SAFETY
- "EQ" - EQUIPMENT BRANCH
- "E" - EMERGENCY
- "LX" - LEGAL STANDBY
- "OX" - OPTIONAL STANDBY
- "S" - SWITCHBOARD
- "D" - DISTRIBUTION PANEL
- "L" - LIGHTING
- "M" - MECHANICAL
- "K" - KITCHEN PANEL
- "P" - POWER
- FLOOR
- SEQUENTIAL PANEL NUMBER PER FLOOR

NOTE: PANEL NAMES MAY NOT USE ALL TAG LANGUAGE.

PANEL MOUNTING SYMBOL DESCRIPTION

- FLUSH MOUNTED PANELBOARD
- SURFACE MOUNTED PANELBOARD

PANEL HATCH SYMBOL DESCRIPTION

- 240/ 208/ 120V PANELBOARD
- 600/ 480/ 277V PANELBOARD
- 240/ 208/ 120V DISTRIBUTION BOARD
- 600/ 480/ 277V DISTRIBUTION BOARD

POWER SYMBOLS	POWER SYMBOL DESCRIPTION
	DISCONNECT SWITCH - NEMA 1 ENCLOSURE - UNFUSED DISCONNECT SWITCH - NEMA 1 ENCLOSURE - FUSED 30A/3P UNLESS OTHERWISE NOTED
60AS 3P 40AF	60AS - DENOTES SWITCH AMPERAGE RATING 3P - DENOTES 3-POLE 40AF - DENOTES FUSE AMPERAGE RATING
$M	MANUAL MOTOR STARTER - INTEGRAL THERMAL PROTECTION
VFD	VARIABLE FREQUENCY DRIVE
T#	DRY TYPE TRANSFORMER # - SIZE, REFER TO TRANSFORMER SCHEDULE

MECHANICAL EQUIPMENT COORDINATION

ELECTRICAL CONTRACTOR SHALL REFER TO THE MECHANICAL, PLUMBING, AND FIRE PROTECTION DRAWINGS AND SPECIFICATIONS FOR LOCATIONS AND QUANTITIES OF EQUIPMENT RELEASED TO EACH TRADE.

- $M VFD — PROVIDED BY ELECTRICAL CONTRACTOR
- $M VFD — PROVIDED BY MECHANICAL CONTRACTOR

DEVICE LEGEND

RECEPTACLE TAGS

X # — OPTIONAL TYPE DESIGNATOR

- "BLANK" - RECEPTACLE WITH NO OPTION
- "GFI" - GROUND FAULT INTERRUPTER
- "C" - MOUNTED 8" ABOVE WORK SURFACE OR COUNTERTOP
- "REF" - MOUNTED AT 48" FOR FULL HEIGHT REFRIGERATOR
- "UC" - MOUNTED AT 18" UNDER CABINET
- "WP" - WEATHERPROOF TYPE: NEMA 3R MINIMUM
- "WR" - WEATHER RESISTANT DEVICE AND COVER
- "TP" - TAMPER PROOF
- "USB" - COMBINATION USB DEVICE
- "CP" - RECEPTACLE MOUNTED IN CEILING FOR PROJECTOR
- "PT" - 2 HOUR FIRE RATED POKE-THROUGH
- "TV" - MOUNTED HIGH ON WALL FOR TELEVISION.
- "H" - MOUNTED HIGH ON WALL
- "HS" - HALF SWITCHED

- PANELBOARD BRANCH CIRCUIT NUMBER

REC SYMBOLS WALL	CLG	FLR	RECEPTACLE SYMBOL DESCRIPTION
			DUPLEX RECEPTACLE
			DOUBLE DUPLEX RECEPTACLE
			SINGLE RECEPTACLE
			DUPLEX RECEPTACLE, ON GENERATOR
			DOUBLE DUPLEX RECEPTACLE, ON GENERATOR
			SINGLE RECEPTACLE, ON GENERATOR
			HOSPITAL GRADE, DUPLEX RECEPTACLE
			HOSPITAL GRADE, DOUBLE DUPLEX RECEPTACLE
			HOSPITAL GRADE, DUPLEX RECEPTACLE, ON GENERATOR
			HOSPITAL GRADE, DOUBLE DUPLEX RECEPTACLE, ON GENERATOR
S1	S1	S1	SPECIAL PURPOSE RECEPTACLE NEMA TYPE AS INDICATED ON THE PLANS

RECEPTACLE NOTES

1. ALL RECEPTACLES ARE MOUNTED 18" AFF UNLESS OTHERWISE NOTED.
2. COORDINATE MOUNTING HEIGHTS WITH THE ARCHITECT PRIOR TO INSTALLATION.
3. ALL RECEPTACLES SHALL BE NEMA 5-20R UNLESS OTHERWISE NOTED.
4. ALL RECEPTACLES WITHIN PATIENT ACCESSIBLE AREAS SHALL BE TAMPERPROOF TYPE DEVICES.
5. PROVIDE ALL RECEPTACLES WITHIN 6'-0" OF A SINK WITH GFCI PROTECTION.
6. PROVIDE TAMPERPROOF RECEPTACLES IN ALL CHILD CARE FACILITIES, PRESCHOOLS AND EDUCATION FACILITIES, DORMITORY UNITS, AND WITHIN BUSINESS OFFICES / CORRIDORS / WAITING ROOMS ETC. WITHIN CLINICS / MEDICAL OFFICES / OUTPATIENT FACILITIES.

JUNCTION BOX TAGS

DEVICE INDICATOR LETTER "X" COMMUNICATES CONNECTION TYPE

JX — OPTIONAL TYPE DESIGNATOR

- "BLANK" - JUNCTION BOX WITH NO OPTION
- "ADO" - AUTOMATIC DOOR OPERATOR
- "ATC" - AUTOMATIC TEMPERATURE CONTROLS
- "B" - JUNCTION BOX WITH BLANK COVER
- "CCTV" - CLOSED CIRCUIT SECURITY CAMERA
- "ELF" - ELECTRONIC FAUCET OR FLUSH VALVE
- "EM" - EMERGENCY POWER CIRCUIT AS INDICATED
- "EWC" - ELECTRIC WATER COOLER
- "NM" - NORMAL POWER CIRCUIT AS INDICATED
- "PS" - MOTORIZED PROJECTION SCREEN
- "SEC" - SECURITY DEVICES
- "T/D" - TEL/DATA WIRING
- "USB" - COMBINATION USB DEVICE

WALL	CLG	FLR	JUNCTION BOX SYMBOL DESCRIPTION
J	J	J	JUNCTION BOX

DEVICE SYMBOLS	DEVICE SYMBOL DESCRIPTION
	TRIPLE CHANNEL, SURFACE MOUNTED, ALUMINUM RACEWAY, DUAL COVER WIREMOLD #AL7450 SERIES OR APPROVED EQUAL. RACEWAY TO BE MOUNTED 6" ABOVE WORK SURFACE OR AS DIRECTED BY OWNER/ARCHITECT. PRE-WIRED, WITH DUPLEX NEMA 5-20R RECEPTACLES FOR NORMAL POWER, (RED RECEPTACLES FOR EMERGENCY), AND VOICE/DATA PROVISION LOCATIONS. NORMAL POWER DEVICES 24" ON CENTER, EMERGENCY POWER DEVICES 48" ON CENTER, AND TELE/DATA LOCATIONS 48" ON CENTER, UNLESS OTHERWISE NOTED.
ECB	ENCLOSED CIRCUIT BREAKER - NEMA 1 ENCLOSURE
PB	PULL BOX
ADO	PUSHBUTTON - REFER TO ARCHITECT'S DOOR HARDWARE SCHEDULE FOR EXACT REQUIREMENTS "ADO" - AUTOMATIC DOOR OPENER "EPO" - EMERGENCY PUSH OFF

LIGHTING LEGEND

LIGHTING TAGS

- "LP" - LIGHTING PENDENT
- "LD" - LIGHTING DOWNLIGHT
- "LS" - LIGHTING SURFACE MOUNTED
- "LR" - LIGHTING RECESSED
- "SL" - SITE LIGHTING
- "NL" - NIGHT LIGHT

1,2,3 ETC. - NUMERAL TYPE DESIGNATOR

OPTIONAL TYPE DESIGNATOR
"BLANK" - NORMAL POWER
"E" - PROVIDED WITH EMERGENCY BATTERY

XX#X — PANELBOARD BRANCH CIRCUIT NUMBER

x — LOWERCASE LETTER DENOTES LOCAL SWITCH

REFER TO LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION PERTAINING TO EACH FIXTURE TYPE LISTED ON PLAN DRAWINGS

LIGHTING SYMBOLS	LIGHTING SYMBOL DESCRIPTION
LR1	SURFACE OR RECESSED MOUNTED LIGHTING FIXTURE
LR1	RECESSED LINEAR WALL WASH
LS1	STRIP LIGHTING FIXTURE
LS1	COMMERCIAL STRIP LIGHTING FIXTURE
LS1	WALL MOUNTED LIGHTING FIXTURE
LS1	TRACK MOUNTED LIGHTING FIXTURE
	REMOTE EMERGENCY LIGHTING, SINGLE HEAD MOUNT 7'-6" AFF
	REMOTE EMERGENCY LIGHTING, DUAL HEAD MOUNT 7'-6" AFF
	EMERGENCY BATTERY UNIT, MOUNT 7'-6" AFF; NO. OF EMERGENCY LIGHTING HEADS AS INDICATED.
SL1	SITE LIGHTING FIXTURE
SL2	STRIP LIGHTING BOLLARD
WALL / CLG: 1a / LD1 1a	CIRCULAR LIGHT FIXTURE
	EXIT SIGN - SHADED AREA INDICATES LOCATION AND QUANTITY OF FACES; DIRECTIONAL ARROWS AS INDICATED

LIGHT FIXTURE CONNECTED TO:

NORMAL BRANCH CIRCUITRY	EMERGENCY BRANCH CIRCUITRY
CRITICAL BRANCH CIRCUITRY	LIFE SAFETY BRANCH CIRCUITRY
LEGALLY REQUIRED STANDBY	OPTIONAL STANDBY BRANCH CIRCUITRY

SWITCHES LEGEND

DEVICE INDICATOR LETTER "X" EQUALS DESIGNATION BELOW
WALL MOUNTED SWITCHES TO BE AT 48" AFF UNO

$ X a

- "EMPTY" - SINGLE POLE SWITCH
- "2" - TWO POLE, SINGLE THROW SWITCH
- "3" - 3-WAY, SINGLE POLE, DOUBLE THROW
- "4" - 4-WAY, DOUBLE POLE, DOUBLE THROW
- "D" - DIMMER SWITCH, SINGLE POLE
- "LV" - LOW VOLTAGE
- "MS" - MASTER STATION OVERRIDE
- "WP" - WEATHERPROOF
- "OS" - OCCUPANCY SENSOR - WALL MOUNTED, INTEGRAL DUAL TECHNOLOGY, SINGLE POLE SWITCH
- "a" - SMALL CASE LETTER DENOTES LIGHT FIXTURE CONTROL

OS — OCCUPANCY SENSOR - WALL MOUNTED, INTEGRAL DUAL TECHNOLOGY, DUAL RELAY SWITCH.

OS — OCCUPANCY SENSOR - CEILING MOUNTED, INTEGRAL DUAL TECHNOLOGY, DUAL RELAY SWITCH.

VS — VACANCY SENSOR - WALL MOUNTED, INTEGRAL DUAL TECHNOLOGY.

VS — VACANCY SENSOR - CEILING MOUNTED, INTEGRAL DUAL TECHNOLOGY.

PC — PHOTOCELL - CEILING MOUNTED

PC — PHOTOCELL - WALL MOUNTED

FOR CEILING MOUNTED OCCUPANCY SENSORS:
PROVIDE THE APPROPRIATE QUANTITY OF POWER SUPPLIES FOR SINGLE AND MULTIPLE LEVEL SWITCHING. REFER TO FLOOR PLANS FOR SWITCHING LAYOUTS TO DETERMINE EXACT QUANTITY OF POWER SUPPLIES

ONE LINE DIAGRAM LEGEND

- CR43A1 — PANELBOARD "CR43A1"
- TRANSFER SWITCH
  - "ATS" = AUTOMATIC TRANSFER SWITCH
  - "MTS" = MANUAL TRANSFER SWITCH
- ATS BP 4P LS
  - "BP" = BYPASS ISOLATION SWITCH
  - "LS" = LIFE SAFETY BRANCH
  - "CR" = CRITICAL BRANCH
  - "EQ" = EQUIPMENT BRANCH
  - "ELEV" = ELEVATOR BRANCH
  - "X-RAY" = X-RAY EQUIPMENT BRANCH
  - "EM" = EMERGENCY
  - "LR" = LEGALLY REQUIRED
  - "OS" = OPTIONAL STANDBY
  - "3P" = NUMBER OF POLES; 3 POLE
  - "4P" = NUMBER OF POLES; 4 POLE
- GROUND CONNECTION
- SPD — SURGE PROTECTIVE DEVICE
- 100AF 60AT 3P — CIRCUIT BREAKER DRAW OUT
  100AF - DENOTES CIRCUIT BREAKER FRAME
  60AT - DENOTES CIRCUIT BREAKER TRIP
- 100AF 60AT 3P — CIRCUIT BREAKER FIXED
  100AF - DENOTES CIRCUIT BREAKER FRAME
  60AT - DENOTES CIRCUIT BREAKER TRIP
- TRANSFORMER
  - BOX REPRESENTS PAD MOUNTED
- CT — CURRENT TRANSFORMER
- POTENTIAL TRANSFORMER
- DISCONNECT SWITCH FUSED / LOW VOLTAGE FUSIBLE SWITCH
- DISCONNECT SWITCH UNFUSED
- MEDIUM VOLTAGE FUSIBLE SWITCH
- FUSE
- K — KIRK KEY INTERLOCK
- V — VOLTMETER
- ST — SHUNT TRIP DEVICE

RECEPTACLE NOTES

1. REFER TO DEMOLITION / RELOCATION LEGEND FOR LINETYPE AND LINEWEIGHT TO DETERMINE EXISTING CONDITIONS AND DEMOLISHED EQUIPMENT.

DRAWING LIST

SHEET NUMBER	SHEET NAME
E000	ELECTRICAL LEGEND
E001	ELECTRICAL NOTES AND ABBREVIATIONS
E101	ELECTRICAL LEVEL 1 LIGHTING DEMOLITION PLAN
E111	ELECTRICAL LEVEL 1 POWER DEMOLITION PLAN
E301	ELECTRICAL LEVEL 1 LIGHTING PLAN
E311	ELECTRICAL LEVEL 1 POWER PLAN
E700	ELECTRICAL SCHEDULES

THIS IS A STANDARD SYMBOL LIST. ALL DEVICE SYMBOLS AND ABBREVIATIONS MAY NOT NECESSARILY APPEAR ON THE DESIGN PLANS OR DETAIL SHEETS. ONLY THOSE SYMBOLS INDICATED ON THE DESIGN PLANS ARE USED AND OTHERS SHOULD BE DISREGARDED.

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TOWN OF DEDHAM

MIDDLE SCHOOL Dedham

DEDHAM MIDDLE SCHOOL
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SAFETY VESTIBULE PROJECT

PROJECT STATUS:

BID SET
ADDENDUM #2

DATE:	03/21/2023
PROJECT NO:	220205.01
DRAWN BY:	SH
CHECKED BY:	PH

REVISIONS:

DRAWING TITLE:

ELECTRICAL LEGEND

DRAWING NO.:

E000

DEMOLITION GENERAL NOTES

1. THE ELECTRICAL DEMOLITION PLANS INDICATE THE GENERAL INTENT AND ARE NOT INTENDED TO SHOW ALL COMPONENTS AND ITEMS TO BE REMOVED OR RETAINED. THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMISSION OF THEIR BID TO BECOME FAMILIAR WITH THE ACTUAL WORKING CONDITIONS AND EXTENT OF WORK. DISCONNECT AND MAKE SAFE DEVICES AND EQUIPMENT LOCATED ON WALLS AND/OR CEILINGS DESIGNATED TO BE REMOVED. THE ELECTRICAL CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE OF ANY UNANTICIPATED OR HIDDEN CONDITIONS ENCOUNTERED DURING DEMOLITION.
2. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ALL SYSTEMS OR BUILDING COMPONENTS DAMAGED DURING THE EXECUTION OF THE WORK. DAMAGE SHALL INCLUDE, BUT NOT BE LIMITED TO, THE DESTRUCTION OR DISPOSAL OF ITEMS INTENDED TO REMAIN OR BE SALVAGED.
3. TRACE AND LABEL ALL EXISTING BRANCH CIRCUITS AND FEEDERS WITHIN OR ASSOCIATED WITH THE AREA OF DEMOLITION SCOPE PRIOR TO DE-ENERGIZING AND DISCONNECTION. TRACE AND LABEL ALL CIRCUITS WITHIN PANELBOARDS IDENTIFIED FOR REMOVAL TO ENSURE THAT NO AREA OUTSIDE THE DEMOLITION SCOPE LIMIT IS AFFECTED.
4. IDENTIFY ALL BRANCH CIRCUITS, FEEDERS AND SYSTEM COMPONENTS WHICH ARE TO REMAIN WITHIN THE AREA OF DEMOLITION SCOPE. THERE SHALL BE NO INTERRUPTION OF SERVICE TO ANY AREA OUTSIDE THE SCOPE LIMITS WITHOUT APPROVAL FROM THE OWNER'S REPRESENTATIVE. LEAVE EXISTING EQUIPMENT TO REMAIN IN A CODE COMPLIANT CONDITION.
5. DE-ENERGIZE AND REMOVE ALL CONDUCTORS AND RACEWAYS TO THEIR POINTS OF ORIGIN WITHIN THE AREA OF DEMOLITION SCOPE. DO NOT ABANDON IN PLACE ITEMS IDENTIFIED FOR DEMOLITION RACEWAYS THAT ENTER MASONRY WALLS AND FLOORS SHALL BE CUT FLUSH AT THE SURFACE FOR PATCHING BY OTHERS. DE-ENERGIZE AND LABEL ALL CIRCUIT BREAKERS ASSOCIATED WITH THE DEMOLITION AS SPARE.
6. TEMPORARILY SUPPORT ALL ITEMS TO REMAIN THAT ARE AFFECTED BY THE DEMOLITION OF BUILDING STRUCTURAL COMPONENTS (WALLS, CEILINGS, ETC.). PERMANENTLY SUPPORT AND INSTALL TEMPORARILY SUPPORTED ITEMS WHEN FINALIZED STRUCTURES ARE IN PLACE.
7. LEGALLY DISPOSE OF ALL REMOVED ITEMS UNLESS IDENTIFIED FOR REUSE. THE OWNER'S REPRESENTATIVE SHALL INSPECT ALL RETAINED ITEMS PRIOR TO PLACEMENT IN THE IDENTIFIED STORAGE LOCATION BY THE ELECTRICAL CONTRACTOR.
8. INCLUDE IN THIS CONTRACT ALL DEMOLITION SCOPE ASSOCIATED WITH LOW VOLTAGE SYSTEMS INCLUDING BUT NOT LIMITED TO TELEPHONE, DATA, SECURITY, PAGING, CCTV, ETC..
9. RECYCLE, BY A FACILITY APPROVED BY THE OWNER'S REPRESENTATIVE, REMOVED FLUORESCENT AND HID LAMPS AND BATTERIES. PREPARE A UNIFORM HAZARDOUS WASTE MANIFEST FOR ALL DISPOSALS AND RETURN WITH ALL APPLICABLE SIGN-OFFS PRIOR TO APPLICATION FOR FINAL PAYMENT.
10. VERIFY ALL BALLASTS IN LIGHTING FIXTURES TO BE DISPOSED OF ARE PCB FREE. CONSIDER ALL BALLASTS MANUFACTURED PRIOR TO 1979 AND NOT LABELED AS PCB FREE TO CONTAIN PCBs. PROVIDE WRITTEN REPRESENTATION TO THE OWNER'S REPRESENTATIVE THAT CONFIRMS PCB FREE WASTE. WHERE PCB FREE WASTE CANNOT BE VERIFIED, BALLASTS SHALL BE RECYCLED BY A FACILITY APPROVED BY THE OWNER'S REPRESENTATIVE, WITH PCB COMPONENTS ELIMINATED BY A HIGH TEMPERATURE INCINERATION. PREPARE A UNIFORM HAZARDOUS WASTE MANIFEST FOR ALL DISPOSALS AND RETURN WITH ALL APPLICABLE SIGNOFFS PRIOR TO APPLICATION FOR FINAL PAYMENT. ALL HANDLING SHALL CONFORM TO EPA REQUIREMENTS.
11. WORK MAY BE REQUIRED OUTSIDE OF THE PROJECT'S AREA OF RENOVATION. CONTRACTOR SHALL NOT ASSUME THAT AREA OF RENOVATION IS CONSIDERED THE SCOPE OF WORK AREA.

DEMOLITION / RELOCATION LEGEND

E	EXISTING ELECTRICAL EQUIPMENT, DEVICE AND/OR FIXTURE TO REMAIN
X	EXISTING ELECTRICAL EQUIPMENT, DEVICE AND/OR FIXTURE TO BE SELECTIVELY DEMOLISHED
XT	EXISTING ELECTRICAL EQUIPMENT DEVICE AND/OR FIXTURE TO BE REMOVED AND TURNED OVER TO OWNER FOR RE-USE
XR	EXISTING ELECTRICAL EQUIPMENT, DEVICE AND/OR FIXTURE TO BE REMOVED, STORED AND RE-LOCATED.
XL	EXISTING ELECTRICAL EQUIPMENT, DEVICE AND/OR FIXTURE INDICATED IN NEW LOCATION
XN	EXISTING ELECTRICAL DEVICE AND COVER PLATE ONLY SHALL BE REMOVED AND REPLACED WITH NEW; MAINTAIN EXISTING BOX, RACEWAY AND WIRING.

DEMOLITION / RELOCATION NOTES

PHASE LABELS SHOWN ABOVE ARE APPLIED IN SELECT AREAS AND MAY NOT ALWAYS BE PRESENT. REFER TO LINETYPE AND LINEWEIGHT TO DETERMINE EXISTING CONDITIONS AND DEMOLISHED EQUIPMENT.

PROJECT GENERAL NOTES

1. FURNISH LABOR, MATERIALS, TOOLS, AND OTHER EQUIPMENT REQUIRED TO INSTALL THE WORK SHOWN AND SPECIFIED. FURNISH AND INSTALL ITEMS NECESSARY FOR A COMPLETE ELECTRICAL SYSTEM. MATERIALS SHALL BE NEW AND BEAR THE REGISTERED UL MARK. WORK SHALL CONFORM WITH THE NATIONAL FIRE PROTECTION ASSOCIATION STANDARD 70 (NEC), AND APPLICABLE FEDERAL, STATE AND LOCAL CODES. SECURE PERMITS AND PAY THE FEES REQUIRED TO CARRY OUT THE WORK. FURNISH COPIES OF CERTIFICATES AND PERMITS TO THE ARCHITECT.
2. THE DRAWINGS AND SPECIFICATIONS INDICATE THE INTENT OF THE DESIGN AND ARE CONSIDERED AS DIAGRAMMATIC ONLY. DETERMINE EXACT LOCATIONS FOR OUTLETS AND EQUIPMENT ON SITE AS WORK PROGRESSES. CHECK AND VERIFY DIMENSIONS AND CONDITIONS ON SITE. DOCUMENT FINAL WORK ON AS-BUILT RECORD DRAWINGS. CIRCUIT NUMBERS ARE FOR DESCRIPTIVE PURPOSES ONLY. EXACT NUMBERS TO BE DETERMIINED IN THE FIELD AND NOTED ON THE CONTRACTOR AS BUILTS.
3. COORDINATE AND MAINTAIN THE CLEARANCES REQUIRED BY APPLICABLE FEDERAL, STATE AND LOCAL CODES FOR ALL PIPING, CONDUITS AND EQUIPMENT OF ALL TRADES.
4. CONDUIT RUNS CROSSING EXPANSION JOINTS SHALL HAVE EXPANSION OR EXPANSION DEFLECTION TYPE FITTINGS AS REQUIRED. VERIFY EXISTING JOINTS BY FIELD MEASUREMENTS.
5. RUN RACEWAYS AND CABLES CONCEALED IN FINISHED SPACES UNLESS OTHERWISE NOTED.
6. PROVIDE PANELBOARDS AND SWITCHBOARDS WITH DEDICATED SPACE EXTENDING FROM THE FLOOR TO THE STRUCTURAL CEILING WITH A WIDTH AND DEPTH OF THE EQUIPMENT, INCLUDING ANY ADDITIONAL SPACE DESCRIBED IN THE NEC. NO PIPING, DUCTS OR EQUIPMENT FOREIGN TO THE ELECTRICAL EQUIPMENT OR ARCHITECTURAL APPURTENANCES SHALL BE PERMITTED TO BE INSTALLED IN, ENTER OR PASS THROUGH SUCH SPACE.
7. MOUNT WIRING DEVICES IN ACCORDANCE WITH THE LATEST REQUIREMENTS OF THE ARCHITECTURAL BARRIERS BOARD.
8. MOUNT PANELBOARD SO THAT THE DISTANCE FROM THE TOP CIRCUIT BREAKER OPERATING HANDLE TO THE FLOOR SHALL NOT EXCEED 6'-6".
9. CONNECT EXIT SIGNS, FIXTURES DESIGNATED AS NIGHT LIGHTS, AND EMERGENCY BATTERY UNITS TO AN UNSWITCHED, CONSTANT "ON" SOURCE AS INDICATED. FIXTURES SHOWN TO INCLUDE EMERGENCY BALLAST / DRIVER TO INCLUDE CONSTANT "ON" SOURCE.
10. ALL BRANCH CIRCUITS (LIGHTING AND POWER) SHALL HAVE A DEDICATED NEUTRAL CONDUCTOR. COMMON NEUTRALS WILL NOT BE ALLOWED.
11. RECEPTACLES, SWITCHES, LIGHTING FIXTURES, ETC. INDICATE QUANTITY, EXACT LOCATIONS AND HEIGHT OF DEVICES SHALL BE DETERMINED IN THE FIELD AND COORDINATED WITH ARCHITECTURAL DRAWINGS.
12. OUTDOOR ELECTRICAL EQUIPMENT SHALL BE NEMA 3R TYPE, UNLESS OTHERWISE NOTED.
13. VERIFY ALL DOORSWINGS BEFORE INSTALLING SWITCH BOXES.
14. FOR EXACT LOCATION OF LIGHTING FIXTURES SEE REFLECTED CEILING PLAN DRAWINGS. FOR MOUNTING HEIGHT OF UNDER-COUNTER LIGHTING FIXTURES AND OTHER TASK LIGHTING, REFER TO ARCHITECTURAL ELEVATION DRAWINGS.
15. COORDINATE THE EXACT LOCATION OF LIGHTING FIXTURES IN MECHANICAL AND STORAGE AREAS WITH OTHER TRADES.
16. FOR EXACT LOCATION OF MECHANICAL EQUIPMENT (AC UNITS, FANS, PUMPS, ETC.) REFER TO RESPECTIVE TRADES DRAWINGS. FOR ELECTRICAL INFORMATION, REFER TO ELECTRICAL PANELBOARD SCHEDULES AND TRADE SCHEDULES
17. FURNISH GROUNDING/ BONDING BUSHINGS ONTO ALL CONDUIT ENTERING/LEAVING BOXES.
18. ALL GROUND CONDUCTORS SHALL BE GREEN, ISOLATED GROUND CONDUCTORS SHALL BE GREEN/ YELLOW STRIPED, AND NEUTRAL CONDUCTORS SHALL BE WHITE.
19. WHERE PANELS ARE INDICATED TO BE RELOCATED, TRACE OUT EACH CIRCUIT TO DETERMINE WHAT CIRCUITS FEED AREAS OUTSIDE THE SCOPE OF WORK. RE-ROUTE CIRCUITS WHICH MUST BE MAINTAINED TO THE NEW PANEL LOCATION BY PROVIDING AN ADEQUATELY SIZED PULL BOX AND SPLICING AND EXTENDING THE CONDUCTORS.
20. UNLESS NOTED OTHERWISE, ALL DATA AND TELEPHONE CABLING IS BY OTHERS. ELECTRICAL DRAWINGS PROVIDE RACEWAY SYSTEMS ONLY AND INDICATE TEL/DATA OUTLET CONFIGURATIONS FOR REFERENCE ONLY.
21. CURRENT CARRYING MATERIAL USED SHALL BE COPPER, INCLUDING PANELBOARD BUS MATERIALS AND TRANSFORMER WINDINGS.

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ABBREVIATIONS

A	AMPERES
ACT	ACOUSTICAL CEILING TILE
AF	AMPERE FRAME
AFCI	ARC-FAULT CIRCUIT INTERRUPTER
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERE INTERRUPTING CAPACITY
AL	ARC-FAULT CIRCUIT INTERRUPTER
ANN	ABOVE FINISHED FLOOR
ANSI	ABOVE FINISHED GRADE
ARCH	ARCHITECTURE
AT	AMPERE TRIP
ATC	AUTOMATIC TEMPERATURE CONTROL
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
BOND	BONDING JUMPER
BR	BRANCH
C	CONDUIT - RACEWAY
CAT	CATALOG
CB	CIRCUIT BREAKER
CD	CANDELA
CKT	CIRCUIT
CMS	CABLE MANAGEMENT SYSTEM
CLG	CEILING
COL	COLUMN
CMU	CONCRETE MASONRY UNIT
CT	CURRENT TRANSFORMER OR CABLE TRAY
CU	COPPER
CWS	CONDUIT WALL SEAL
DETD	DUAL ELEMENT TIME DELAY
DIA	DIAMETER
DP	DISTRIBUTION PANEL
DWG	DRAWING
EA	EACH
EC	ELECTRICAL CONTRACTOR
EGC	EQUIPMENT GROUND CONTRACTOR
ELEC	ELECTRICAL
ELEV	ELEVATOR
EM	EMERGENCY
EMS	ENERGY MANAGEMENT SYSTEM
EMT	ELECTRICAL METALLIC TUBING
EO	ELECTRICALLY OPERATED
EPA	ENVIRONMENTAL PROTECTION AGENCY
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EXP	EXPLOSION PROOF
FA	FIRE ALARM
FAA	FIRE ALARM ANNUNCIATOR
FLOUR	FLOURESCENT
FMS	FACILITIES MANAGEMENT SYSTEM
FT	FEET
FU	FUSE
G	GROUND
GA	GAUGE
GC	GENERAL CONTRACTOR
GEN	GENERATOR
GF	GROUND FAULT
GFI	GROUND FAULT INTERRUPTER
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
GWB	GYPSUM WALL BOARD
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTO
HP	HORSE POWER
HR	HOUR
HTR	HEATER
HVAC	HEATING, VENTILATION & AIR CONDITIONING
HZ	HERTZ
IC	INTERRUPTING CAPACITY
INC	INCANDESCENT
IMC	INTERMEDIATE METAL CONDUIT
JB	JUNCTION BOX
KAIC	THOUSAND AMPERES INTERRUPTING CAPACITY
KCMIL	THOUSAND CIRCULAR MILS
KEC	KITCHEN EQUIPMENT CONTRACTOR
KV	KILOVOLTS
kVA	KILOVOLT AMPERES
kVAR	KILOVOLT AMPERES REACTIVE
kW	KILOWATTS
kWH	KILOWATTS HOURS
LTG	LIGHTING
MAX	MAXIMUM
MC	METAL CLAD CABLE
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MCSW	MOLDED CASE SWITCH
MDP	MAIN DISTRIBUTION PANEL
MECH	MECHANICAL
MEP	MECHANICAL/ELECTRICAL/PLUMBING
MIN	MINIMUM
MISC	MISCELLANEOUS
MTD	MOUNTED
MTG	MOUNTING
MV	MEDIUM VOLTAGE
MLO	MAIN LUGS ONLY
N	NEUTRAL (GROUNDED CONDUCTOR)
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRAL MANUFACTURERS ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OCPD	OVER CURRENT PROTECTION DEVICE
PH	PHASE
PNL	PANEL
PNLBD	PANEL BOARD
POS	PROVIDE UNDER OTHER SECTIONS
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE RACEWAY
PWR	POWER
RGS	GALVANIZED RIGID STEEL CONDUIT
RMC	RIGID METAL CONDUIT
RNC	RIGID NON-METAL CONDUIT
RSC	RIGID STEEL CONDUIT
SATS	STANDBY AUTOMATIC TRANSFER SWITCH
SE	SERVICE ENTRANCE
SP	SPARE
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCH GEAR
TEL	TELEPHONE
TL	TWIST LOCK
TP	TWISTED PAIR
TRANS	TRANSFORMER
TSP	TWISTED SHIELDED PAIR
V	VOLT
W/	WITH
W	WIRE
WP	WEATHERPROOF
Δ	DELTA
Y	WYE

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TOWN OF DEDHAM

MIDDLE SCHOOL Dedham

DEDHAM MIDDLE SCHOOL
70 WHITING AVENUE
DEDHAM, MA 02026

SAFETY VESTIBULE PROJECT

PROJECT STATUS:

BID SET
ADDENDUM #2

DATE:	03/21/2023
PROJECT NO:	220205.01
DRAWN BY:	SH
CHECKED BY:	PH

REVISIONS:

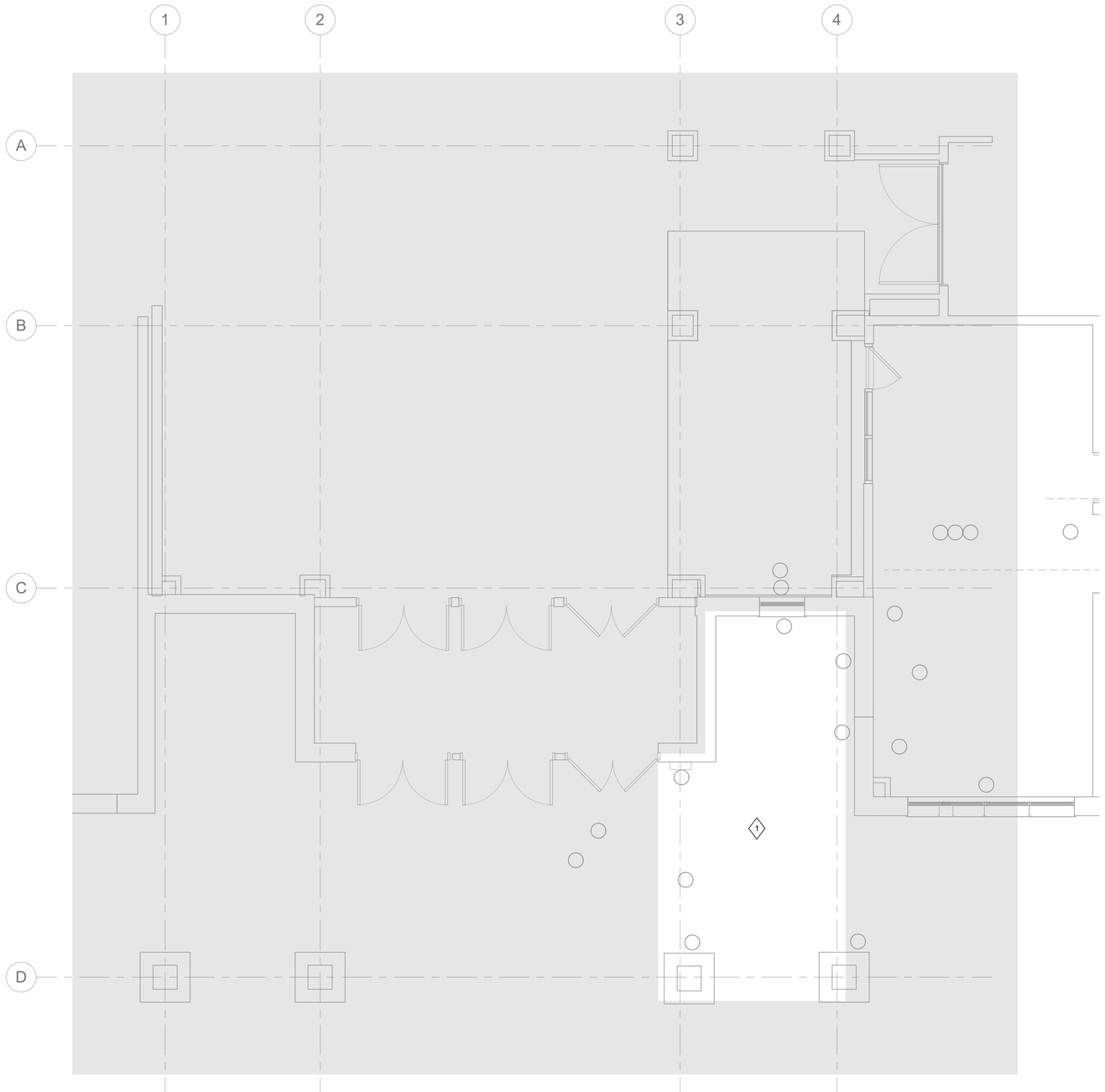
DRAWING TITLE:

ELECTRICAL NOTES AND ABBREVIATIONS

DRAWING NO.:

E001

KEYNOTES	
1	ALL EXISTING LIGHT FIXTURES AND DEVICES, ASSOCIATED WIRING AND RACEWAYS SHALL BE REMOVED BACK TO ITS POINT OF ORIGIN. ASSOCIATED CIRCUIT BREAKER SHALL BE MAINTAINED FOR RE-USE UNLESS OTHERWISE NOTED.



1 / E101 ELECTRICAL LEVEL 1 LIGHTING DEMOLITION PLAN
1/4" = 1'-0"
0 2' 4' 8'

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SAFETY VESTIBULE PROJECT

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DRAWING TITLE:
ELECTRICAL LEVEL 1 LIGHTING DEMOLITION PLAN

DRAWING NO.:
E101

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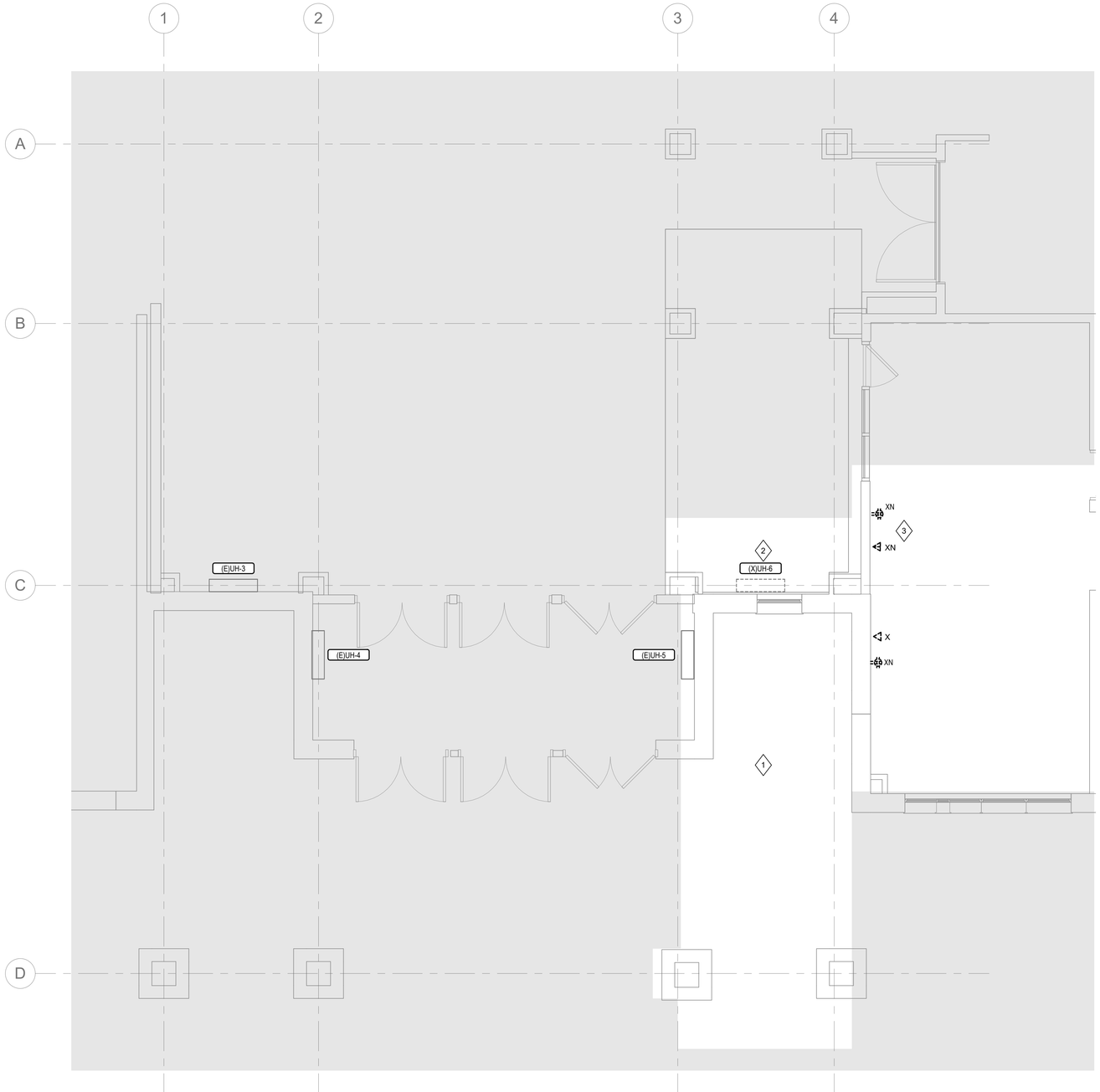
KEYNOTES	
1	ALL EXISTING POWER AND DATA FIXTURES AND DEVICES, ASSOCIATED WIRING AND RACEWAYS SHALL BE REMOVED BACK TO ITS POINT OF ORIGIN. ASSOCIATED CIRCUIT BREAKER SHALL BE MAINTAINED FOR RE-USE UNLESS OTHERWISE NOTED.
2	EXISTING UNIT HEATER TO BE DEMOLISHED BY OTHERS. DISCONNECT AND MAKE SAFE FOR REMOVAL. REMOVE EXISTING CONDUIT AND WIRE BACK TO THE PANEL.
3	RELOCATE EXISTING RECEPTACLES AND DATA OUTLETS SERVING EXISTING ADMIN DESK TO LOCATOIN OF NEW ADMIN DESK.



1 E111 ELECTRICAL LEVEL 1 POWER DEMOLITION PLAN
1/4" = 1'-0"
0 2' 4' 8'

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DRAWING TITLE:
ELECTRICAL LEVEL 1 POWER DEMOLITION PLAN

DRAWING NO.:
E111

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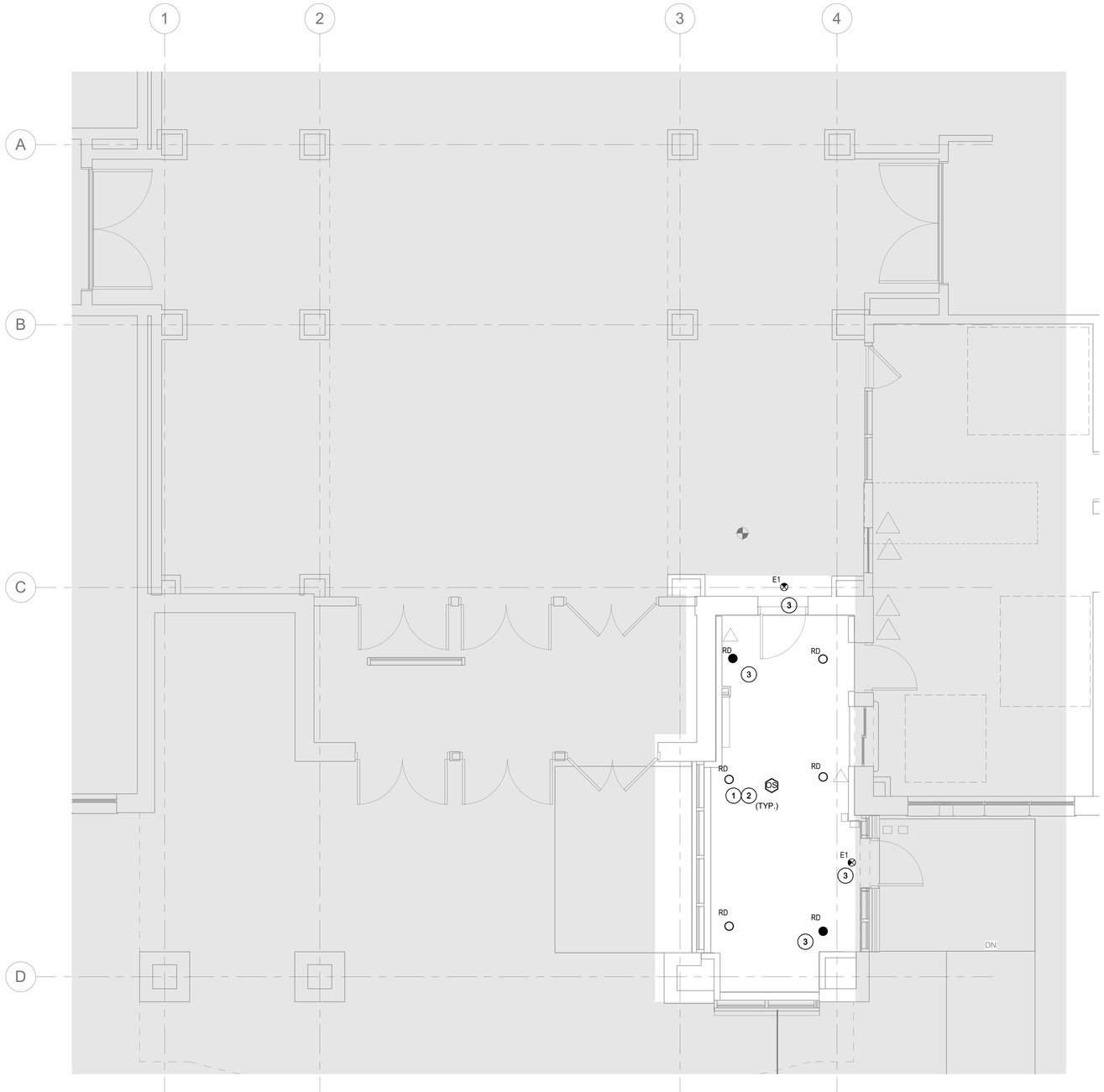
KEYNOTES	
1	EXTEND AND CONNECT TO EXISTING LOCAL NORMAL BRANCH LIGHTING CIRCUIT SERVING THE AREA.
2	EXTEND AND CONNECT TO EXISTING LOCAL LIGHTING CONTROLS SERVING THIS COORDOR.
3	EXTEND AND CONNECT TO EXISTING LOCAL LIFE SAFETY BRANCH LIGHTING CIRCUIT SERVING THE AREA.



1 E301 ELECTRICAL LEVEL 1 LIGHTING PLAN
1/4" = 1'-0"
0 2' 4' 8'

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DRAWN BY:	SH
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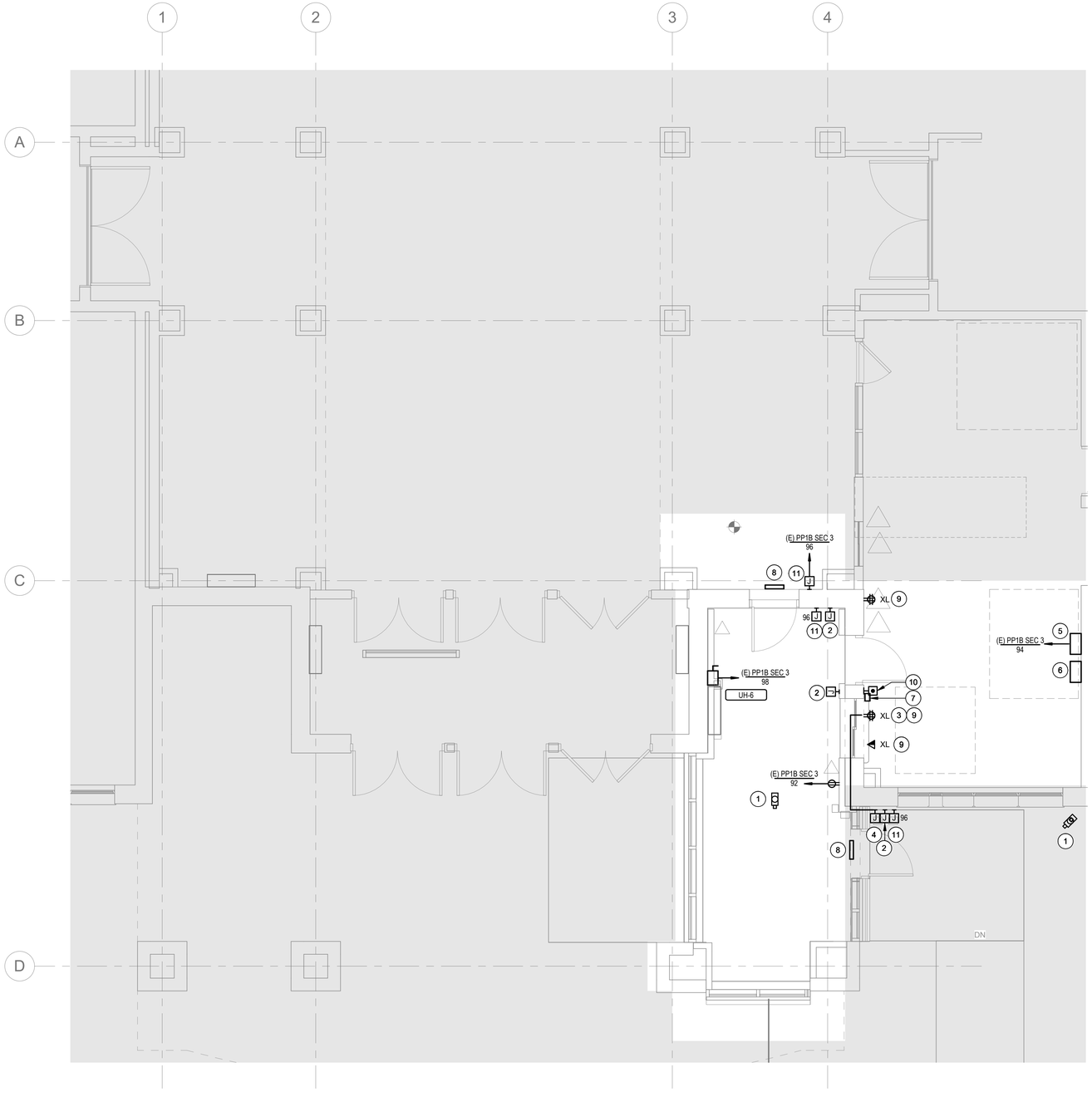
REVISIONS:

DRAWING TITLE:

ELECTRICAL
LEVEL 1
LIGHTING PLAN

DRAWING NO.:

E301



1 E311 ELECTRICAL POWER 1ST FLOOR PLAN
1/4" = 1'-0"

KEYNOTES	
1	SECURITY CAMERA BY OTHERS. PROVIDE JUNCTION BOX AND CAT6 CABLE BACK TO ACCESS CONTROL PANEL. PRIOR TO ROUGH-IN COORDINATE EXACT LOCATION WITH SECURITY CONTRACTOR. REFER TO SECURITY DRAWINGS FOR EXACT REQUIREMENTS.
2	CARD READER BY OTHERS. PROVIDE JUNCTION BOX AND COMPOSITE PLENUM CONTROL ACCESS CABLE BACK TO ACCESS CONTROL PANEL. PRIOR TO ROUGH-IN COORDINATE EXACT LOCATION WITH SECURITY CONTRACTOR. REFER TO SECURITY DRAWINGS FOR EXACT REQUIREMENTS.
3	POWER FOR MASTER STATION TO BE FED FROM RELOCATED DUPLEX OUTLET. REFER TO SECURITY DRAWINGS FOR EXACT REQUIREMENTS.
4	VIDEO DOOR STATION BY OTHERS. PROVIDE JUNCTION BOX AND COMPOSITE PLENUM CONTROL ACCESS CABLE BACK TO MASTER STATION. PRIOR TO ROUGH-IN COORDINATE EXACT LOCATION WITH SECURITY CONTRACTOR. REFER TO SECURITY DRAWINGS FOR EXACT REQUIREMENTS.
5	PROVIDE 120V POWER TO FEED ALTRONIX POWER SUPPLY BY OTHERS. REFER TO SECURITY DRAWINGS FOR EXACT REQUIREMENTS.
6	ACCESS CONTROL PANEL BY OTHERS.
7	DOOR RELEASE PUSH BUTTON BY OTHERS. PROVIDE COMPOSITE PLENUM CONTROL ACCESS CABLE BACK TO ACCESS CONTROL PANEL. PRIOR TO ROUGH-IN COORDINATE EXACT LOCATION WITH SECURITY CONTRACTOR. REFER TO SECURITY DRAWINGS FOR EXACT REQUIREMENTS.
8	REQUEST TO EXIT STATION BY OTHERS. PROVIDE COMPOSITE PLENUM CONTROL ACCESS CABLE BACK TO ACCESS CONTROL PANEL. PRIOR TO ROUGH-IN COORDINATE EXACT LOCATION WITH SECURITY CONTRACTOR. REFER TO SECURITY DRAWINGS FOR EXACT REQUIREMENTS.
9	PROVIDE NEW CONDUIT AND WIRE TO INTERCEPT AND EXTEND EXISTING BRANCH CIRCUIT MAINTAINED THROUGH DEMOLITION TO NEW DEVICE LOCATION. NEW CONDUIT AND WIRE SHALL MATCH EXISTING IN ALL RESPECTS. REFER TO ARCHITECTURAL PLANS FOR FINAL LOCATIONS.
10	LOCKDOWN BUTTON BY OTHERS. PRIOR TO ROUGH-IN COORDINATE EXACT LOCATION WITH SECURITY CONTRACTOR. REFER TO SECURITY DRAWINGS FOR EXACT REQUIREMENTS.
11	HANDICAP DOOR OPENER BY OTHERS. PRIOR TO ROUGH-IN COORDINATE EXACT LOCATION WITH SECURITY CONTRACTOR. REFER TO SECURITY DRAWINGS FOR EXACT REQUIREMENTS.

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SAFETY VESTIBULE PROJECT

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REVISIONS:

DRAWING TITLE:

ELECTRICAL
LEVEL 1 POWER
PLAN

DRAWING NO.:

E311

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER	MODEL	COLOR TEMP	LUMENS	MOUNTING	WATTS	VOLTS	BALLAST/DRIVER	NOTE
E1	CEILING EXIT LIGHT, AC ONLY	LITHONIA	EXRG	---	--	CEILING	1 W	MVOLT	---	1
RD	RECESSED DOWNLIGHT, WHITE, MATTE DIFFUSE	LITHONIA	LDN6	3500K	3000lm	RECESSED	35 W	MVOLT	0-10 VDC DIMMABLE LED DRIVER	

LIGHTING FIXTURE SCHEDULE NOTES:

THE BASIS OF DESIGN FOR LIGHTING FIXTURES WILL BE AS INDICATED ON THESE DOCUMENTS. IDENTIFY ANY SUBSTITUTIONS AND / OR ALTERNATE MANUFACTURERS IN CONTRACTOR'S BID FOR THE PROJECT. ALL PROPOSED SUBSTITUTIONS TO BE ACCOMPANIED WITH A FULL SUBMITTAL. THE ARCHITECT, OWNER, AND ENGINEER MUST PROVIDE APPROVAL FOR THE SUBSTITUTIONS FOR EQUIVALENT PERFORMANCE AND AESTHETIC APPEARANCE PRIOR TO THE SUBSTITUTIONS BEING ACCEPTED. DEMONSTRATE EQUIVALENT FIXTURE PERFORMANCE THROUGH LIGHTING PERFORMANCE CALCULATIONS IF REQUESTED AS WELL AS INCLUDING ABILITY TO MEET UTILITY COMPANY INCENTIVE PROGRAMS.

(NOTES LF1 THROUGH LF10 ARE GENERAL NOTES AND APPLY TO ALL LIGHT FIXTURES).

LF1. FINAL MOUNTING HEIGHT AND LOCATION AS DIRECTED BY ARCHITECT.

LF2. COORDINATE TASK LIGHT FIXTURE INSTALLATION WITH CASEWORK AS DETAILED ON ARCHITECTURAL DRAWINGS.

LF3. MODEL NUMBERS INDICATED ARE FOR REFERENCE ONLY. CONTRACTOR IS RESPONSIBLE FOR FINAL FIXTURE COODINATION AND INSTALLATION. REFER TO SPECIFICATIONS.

LF4. COORDINATE EXACT FIXTURE MOUNTING REQUIREMENTS, LAMPING AND ADDITIONAL INFORMATION WITH ARCHITECT AND LIGHTING DESIGNER PRIOR TO INSTALLATION AND ORDERING.

LF5. RECESSED FIXTURES LOCATED WITHIN INSULATED CEILINGS OR WALLS TO BE "IC" RATED.

LF6. FINAL FINISH/COLOR OF FIXTURE TO BE APPROVED IN WRITING BY ARCHITECT.

LF7. COORDINATE LIGHTING FIXTURE INSTALLATION AND TRIM KIT WITH CEILING TYPE INDICATED ON ARCHITECTURAL DRAWINGS.

TYPICAL PANELBOARD NOTES

1. PROVIDE SUB-FEED LUGS FOR MULTI-SECTION PANELS.
2. FURNISH ALL PANELBOARDS FULLY POPULATED WITH BRANCH CIRCUIT BREAKERS, THAT IS, ALL SPACES SHALL HAVE A 20AMP, 1 POLE CIRCUIT BREAKER INSTALLED.
3. PANEL FACE PLATES SHALL BE ATTACHED TO BACK BOX WITH FULL-LENGTH PIANO HINGE AND PROVIDED WITH LOCKING DOOR IN DOOR. PANELBOARDS CONTAINING MAIN SERVICE DISCONNECT MUST BE LISTED FOR THE USE.
4. SERIES RATED INTERRUPTING CAPACITY IS NOT ALLOWED.
5. ALL CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE AND HACR RATED.
6. NEW CIRCUIT BREAKERS TO BE INSTALLED IN EXISTING PANELBOARDS SHALL MATCH EXISTING PANELBOARD IN ALL RESPECTS INCLUDING SHORT CIRCUIT RATING (kAIC).
7. BOLD CIRCUITS INDICATE NEW CIRCUIT WITHIN EXISTING PANELBOARD.

Branch Panel: (E) PP1B SEC 3

Location:
Supply From: (E) PP1B SEC 3
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 208Y/120
Phases: 3
Wires: 4

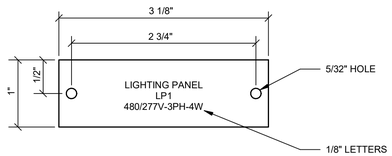
A.I.C. Rating: 10,000 AMPS SYMMETRICAL
Mains Type: MAIN CB
Mains Rating: 400 A
MCB Rating: 400 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
85	STAGE 127	20 A	1	0.00...	0.00...					1	20 A	VESTIBULE 127B	86
87	STAGE 127	20 A	1			0.00...	0.00...			1	20 A	STAGE 127, AUD 118	88
89	AUDITORIUM 118	20 A	1					0.00...	0.00...	1	20 A	STAGE 127	90
91	AUDITORIUM 118	20 A	1	0.00...	0.18...					1	20 A	**RCPT VESTIBULE**	92
93	MEDIA OFFICE 120C	20 A	1			0.00...	0.00...			1	20 A	**ALTRONIX POWER SUPPLY**	94
95	MEDIA OFFICE 120C	20 A	1					0.00...	0.00...	1	20 A	**HANDICAP ACCESS**	96
97	MEDIA OFFICE 120C	20 A	1	0.00...	0.00...					1	20 A	**UH-6**	98
99	MEDIA OFFICE 120C	20 A	1			0.00...	0.00...			1	20 A	SPARE	100
101	MEDIA CONFERENCE 120A	20 A	1					0.00...	0.00...	1	20 A	SPARE	102
103	DIST LEARN LAB 117	20 A	1	0.00...	0.00...					1	20 A	AUDITORIUM ROOF	104
105	DIST LEARN LAB 117	20 A	1			0.00...	0.00...			1	20 A	AUDITORIUM ROOF	106
107	AUDITORIUM 118	20 A	1					0.00...	0.00...	1	20 A	DIST LEARN LAB 117	108
109	DIST LEARN LAB 117	20 A	1	0.00...	0.00...					1	20 A	DIST LEARN LAB 117	110
111	DIST LEARN LAB 117	20 A	1			0.00...	0.00...			1	20 A	DIST LEARN LAB 117	112
113	SPACE	--	1					--	0.00...	1	20 A	DIST LEARN LAB 117	114
115	CAFE CLOCK	20 A	1	0.00...	0.00...					1	20 A	DIST LEARN LAB 117	116
117	DIST LEARN LAB 117	20 A	1			0.00...	0.00...			1	20 A	DIST LEARN LAB 117	118
119	DIST LEARN LAB 117	20 A	1					0.00...	0.00...	1	20 A	DIST LEARN LAB 117	120
121	DIST LEARN LAB 117	20 A	1	0.00...	0.00...					1	20 A	DIST LEARN LAB 117	122
123	DIST LEARN LAB 117	20 A	1			0.00...	0.00...			1	20 A	DIST LEARN LAB 117	124
125	SPACE	--	1					--	0.00...	1	20 A	DIST LEARN LAB 117	126
			Total Load:	0.18 kVA		0.00 kVA		0.00 kVA					
			Total Amps:	2 A		0 A		0 A					

Legend:

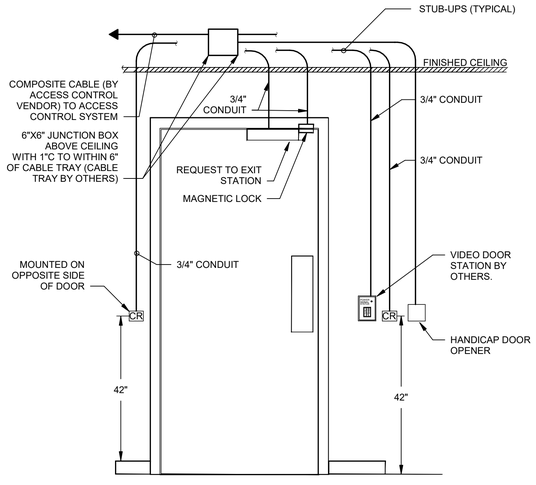
Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	0.00 kVA	0.00%	0.00 kVA		
Power	0.00 kVA	0.00%	0.00 kVA	**Total Conn. Load:**	0.18 kVA
Receptacles	0.18 kVA	100.00%	0.18 kVA	**Total Est. Demand:**	0.18 kVA
				Total Conn.:	0 A
				Total Est. Demand:	0 A



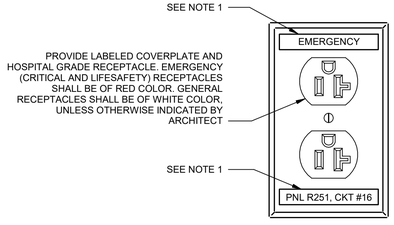
NOTES:

1. NAMEPLATE TO BE CONSTRUCTED OF 1/16" THICK WHITE SURFACE WITH LETTER ENGRAVED INTO BLACK LAMINATIONS.
2. ALL NAMEPLATES SHALL BE SECURED BY MACHINE SCREWS.
3. NO NAMEPLATES SHALL BE PASTED ON.

1 TYPICAL NAMEPLATE DETAIL SCALE: NTS



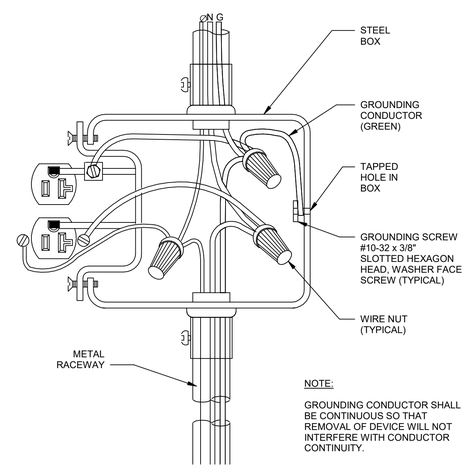
4 DOOR SECURITY DETAIL SCALE: NTS



NOTES:

1. AT A MINIMUM, ELECTRICAL CONTRACTOR SHALL PROVIDE TYPED LABELS WITH PTOUCH MACHINE TO INDICATE PANEL NAME AND CIRCUIT NUMBER. PROVIDE 'EMERGENCY' TYPED LABEL FOR CIRCUITS CONNECTED TO EMERGENCY PANELS. COORDINATE EXACT NAMING WITH FACILITY PERSONNEL. IF FACILITY STANDARD IS ENGRAVED COVERPLATES, THE ELECTRICAL CONTRACTOR SHALL PROVIDE ENGRAVED COVERPLATES TO MATCH FACILITY REQUIREMENTS.

3 TYPICAL RECEPTACLE LABELING DETAIL SCALE: NTS



NOTE:

GROUNDING CONDUCTOR SHALL BE CONTINUOUS SO THAT REMOVAL OF DEVICE WILL NOT INTERFERE WITH CONDUCTOR CONTINUITY.

2 TYPICAL DEVICE WIRING DETAIL SCALE: NTS

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ELECTRICAL SCHEDULES

DRAWING NO.:

E700