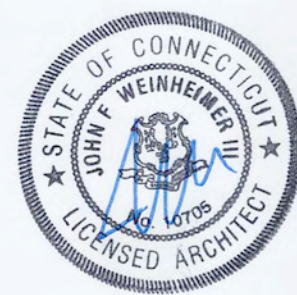


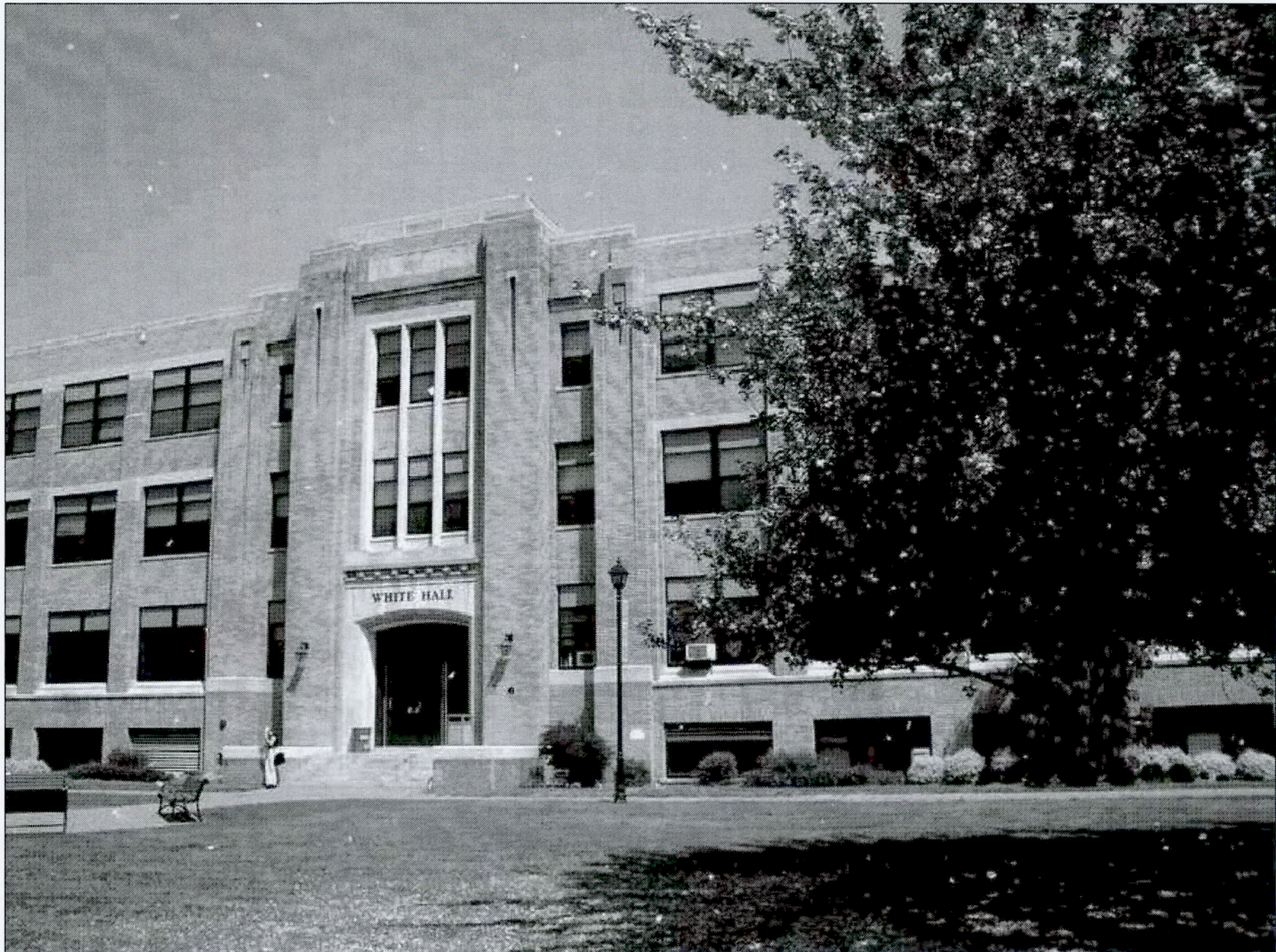
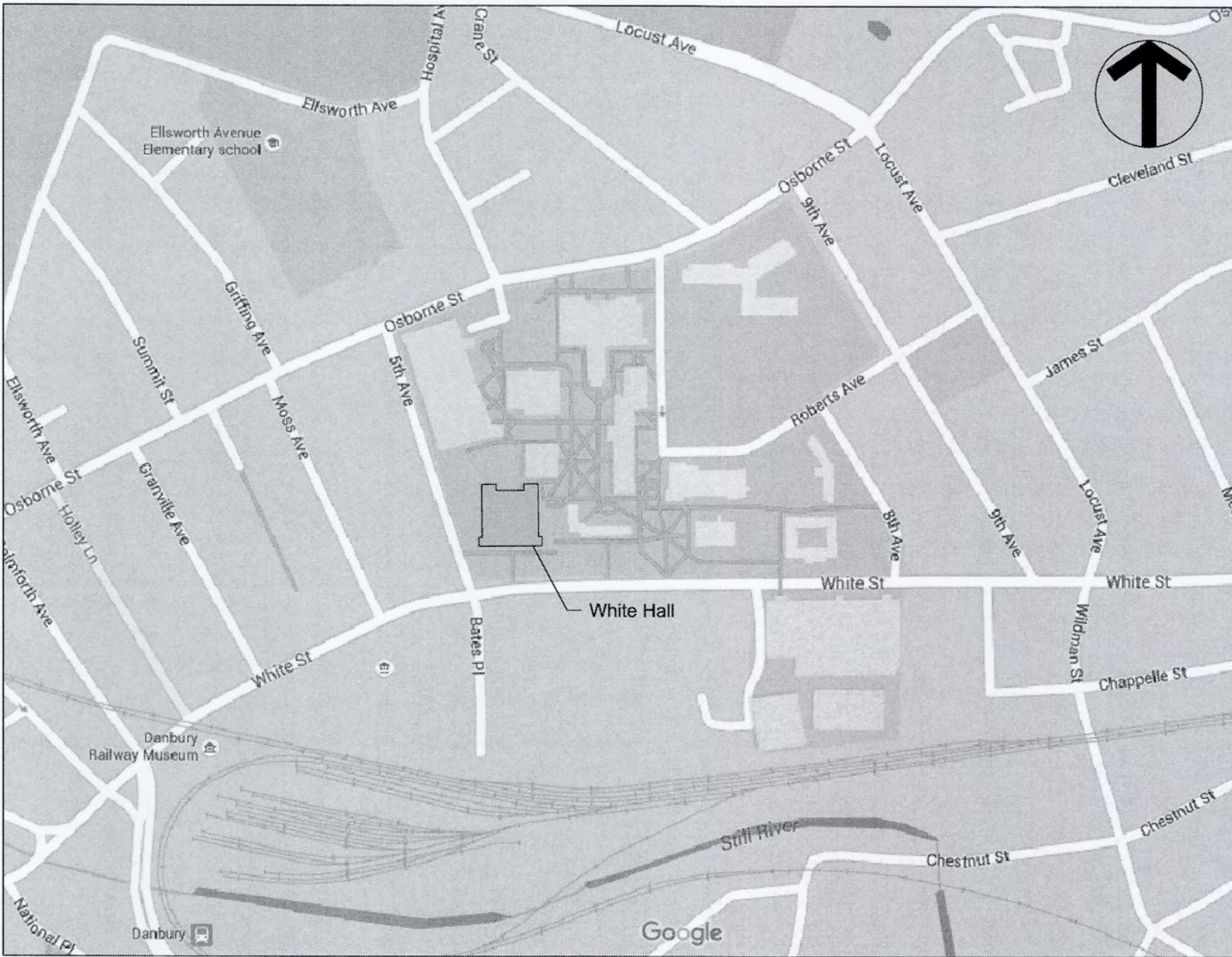
Western Connecticut State University

Nursing Sim Lab

White Hall
181 White Street, Danbury, CT
23 September 2016 - Project No. 2016.035



LOCATION PLAN




LIST OF DRAWINGS

Sheet	Title	Revision	Status
T-1	Title Sheet	△	Issued 9/23/2016
T-2	Code and Egress Plan	△	Issued 9/23/2016
T-3	Specifications	△	Issued 9/23/2016
T-4	Specifications	△	Issued 9/23/2016
D101	Demolition Plan	△	Issued 9/23/2016
D201	Reflected Ceiling Demolition Plan	△	Issued 9/23/2016
A101	Construction Plan	△	Issued 9/23/2016
A201	Reflected Ceiling Plan	△	Issued 9/23/2016
A300	Details and Schedules	△	Issued 9/23/2016
A500	Finish Plan	△	Issued 9/23/2016
MD-101	Mechanical Demolition Floor Plan	△	Issued 9/23/2016
M-101	Mechanical Floor Plan	△	Issued 9/23/2016
M-102	Mechanical Roof Plan	△	Issued 9/23/2016
M-401	Mechanical Symbols, Abbreviations, Legend	△	Issued 9/23/2016
M-402	Mechanical Details	△	Issued 9/23/2016
M-601	Mechanical Schedules	△	Issued 9/23/2016
M-602	Mechanical Specifications	△	Issued 9/23/2016
E-001	Electrical Legend, Symbols, Notes	△	Issued 9/23/2016
E-101	Electrical Floor Plan	△	Issued 9/23/2016
E-400	Electrical Details, Riser and Schedules	△	Issued 9/23/2016
E-600	Electrical Specifications	△	Issued 9/23/2016



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ARCHITECT




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MEP ENGINEER

Western Connecticut State University

Nursing Sim Lab - White Hall
181 White Street, Danbury, CT
23 SEPTEMBER 2016 - Project No. 2016.035



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CODE INFORMATION

Western Connecticut State University
White Hall
181 White Street
Danbury, CT

Governing Codes: Connecticut State Building Code (2003 IBC with 2005 CT Supplement and subsequent Amendments), 2003 International Existing Building Code (IEBC), 2005 State Fire Safety Code, ICC/ANSI A117.1-2003.

Code Review based on 2003 IEBC Work Area Compliance Method (Chapters 4-12) per IEBC 101.5.2.

USE GROUPS	Existing Occupancy (Non-Separated Mixed Uses),		A, B
	First Floor Area (A, B).....		33,450 SF
	Second Floor Area (A, B).....		33,450 SF
	Third Floor Area (A, B).....		33,450 SF
	Fourth Floor Area (A, B).....		33,450 SF
	Proposed Occupancy (Non-Separated Mixed Uses),		A, B
	First Floor Area (A, B).....		33,450 SF
	Second Floor Area (A, B).....		33,450 SF
	Third Floor Area (A, B).....		33,450 SF
	Fourth Floor Area (A, B).....		33,450 SF

Type of Construction.....IIB Noncombustible/Unprotected

Year Constructed.....1927

IEBC CHAPTER 3, CLASSIFICATION OF WORK

305.1 - Level 2 Alteration.

CHAPTERS	CHAPTER 5 - Level 1 Alterations	
	Interior Finishes (503.1).....	Complies
	Carpeting (503.2).....	Complies
	Materials and Methods (503.3).....	Complies
	Fire Protection (504).....	Maintained
	Means of Egress (505).....	Maintained
CHAPTER 6	Accessibility (506).....	Complies
	Structural (507).....	Complies

CHAPTER 6	CHAPTER 6 - Level 2 Alterations	
	Vertical Openings (603.2).....	Complies
	Automatic Sprinklers (604.2).....	Not Req'd
	Means of Egress (605).....	Complies
	Accessibility (606).....	Complies
	Structural (607).....	Complies
	Electrical (608).....	Complies
	Mechanical (609).....	Complies
	Plumbing (610).....	Complies

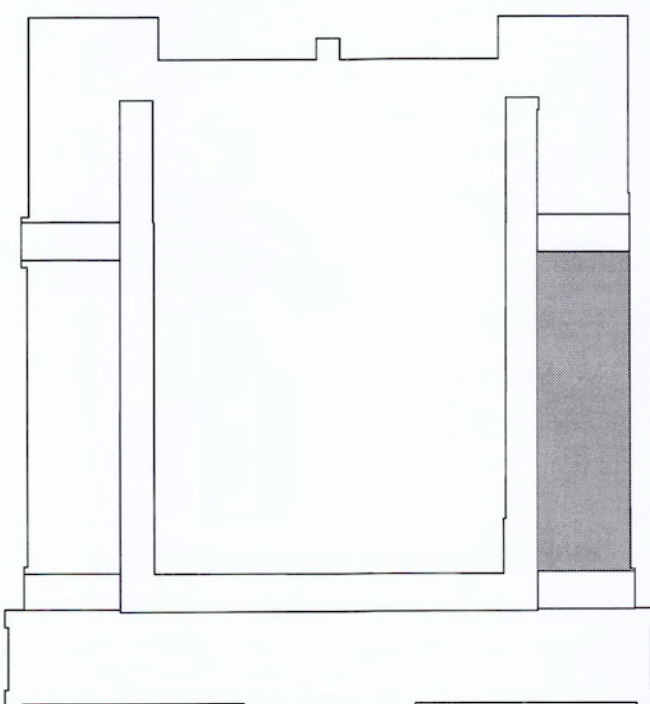
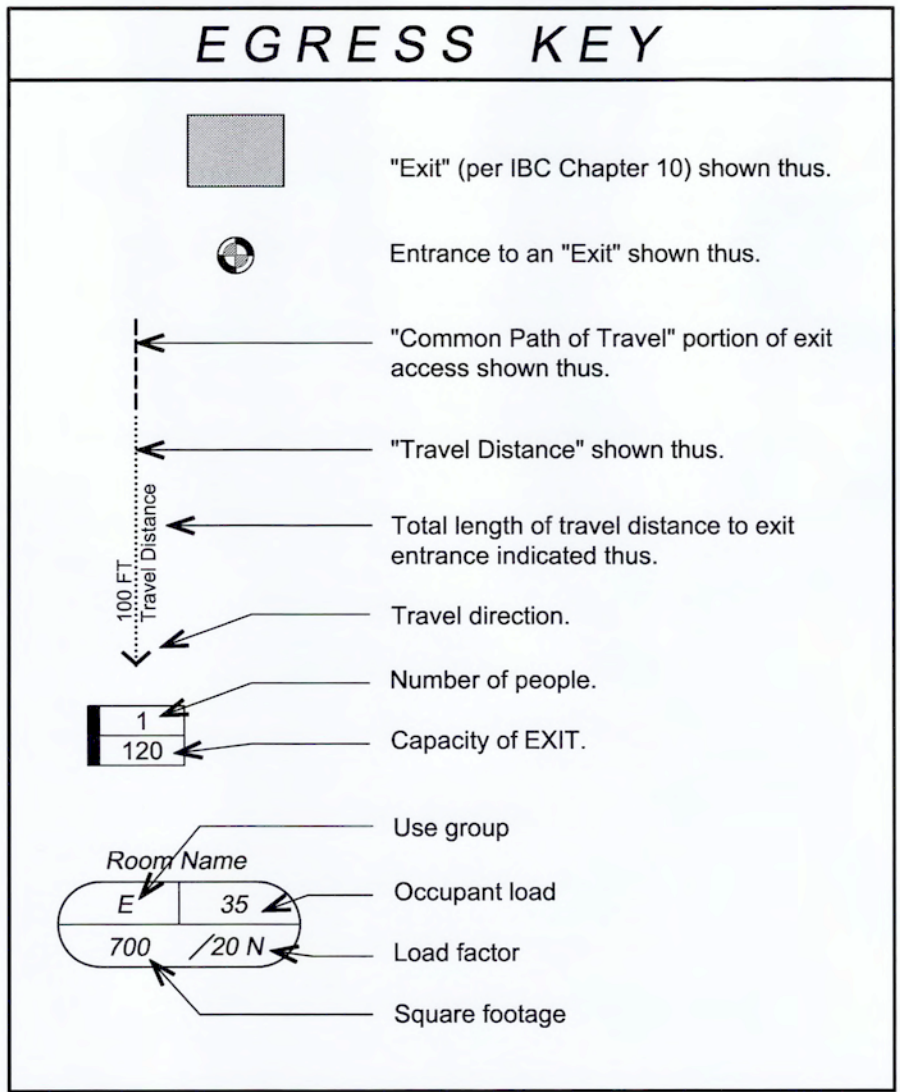
INTERIOR FINISH REQUIREMENTS

All interior finishes shall comply with CT Fire Rating requirements and ASTM E84 as follows:

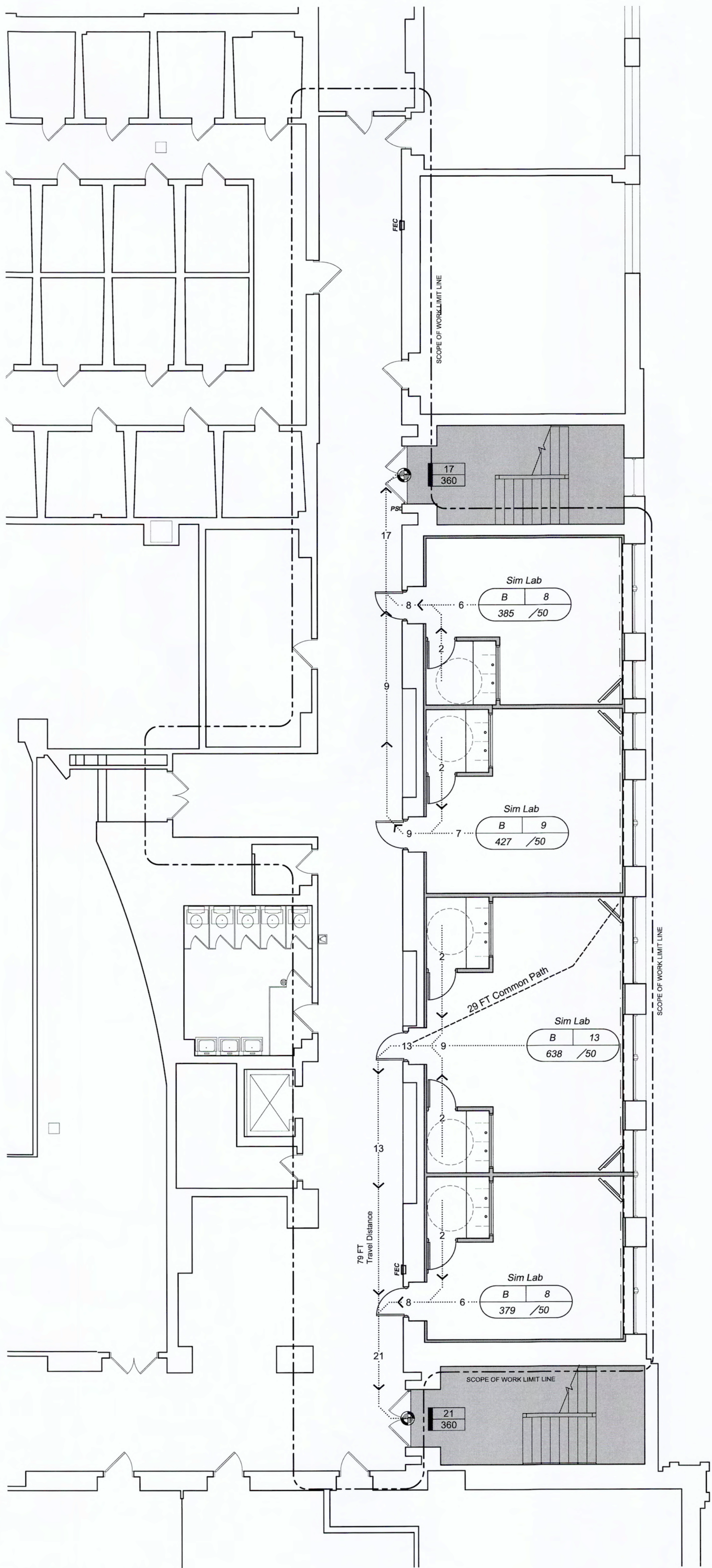
- Wall Coverings and Ceiling Tile
 - Required Exits and Passageways: Class A, Flamespread 0-25, Smoke Development 0-450
 - Exit Access Corridors: Class B, Flamespread 26-75, Smoke Development 0-450
 - Rooms or Enclosed Spaces: Class C, Flamespread 76-200, Smoke Development 0-450
- Floor Finishes
 - Required Exits and Passageways: NFPA 253, Class II, Average Critical Radiant Flux Greater Than or Equal to 0.22 Watts per Square Centimeter.
 - Exit Access Corridors: NFPA 253, Class II, Average Critical Radiant Flux Greater Than or Equal to 0.22 Watts per Square Centimeter.
 - Rooms or Enclosed Spaces: Pass DOC-FF-1 "Pill Test" (CPSC CFR Part 1630).

FIRE RESISTANCE RATING OF STRUCTURAL ELEMENTS

- Ratings From IBC Table 601 for Construction Type 2B
- Structural Frame, Including columns, girders, trusses: 0 Hours
 - Bearing Walls, Exterior, Separation > 30 FT: 0 Hours
 - Interior: 0 Hours
 - Non-Bearing Walls, Exterior: 0 Hours
 - Interior: 0 Hours
 - Floor Construction, Including supporting beams and joists: 0 Hours
 - Roof Construction, Including supporting beams and joists: 0 Hours



KEY PLAN



EGRESS PLAN

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

1



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CODE AND EGRESS
PLAN

Project Number:	Issue Date:
2016.035	23 SEPT 2016
Scale:	CAD File:
1/8" = 1'-0"	16035_T-2
Drawn By:	Checked By:
TMS	EAL

Revisions:



SPECIFICATIONS:

02075 - CUTTING AND PATCHING

- A Employ skilled and experienced installer to perform cutting and patching.
- B Submit written request in advance of cutting or altering elements which affects structural integrity of element, integrity of weather-exposed or moisture-resistant elements, efficiency, maintenance, or safety of element, visual qualities of sight exposed elements or work by Owner by Owner's Vendor(s).
- C Execute cutting, fitting, and patching to complete Work, and to fit parts together, to integrate with other Work, to uncover Work, to install or correct ill-timed Work, to remove and replace defective and non-conforming Work, to remove samples of installed Work for testing and to provide openings in elements of Work for penetrations of mechanical and electrical Work.
- D Execute work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
- E Cut masonry and concrete materials using masonry saw or core drill.
- F Restore Work with new Products in accordance with requirements of Contract Documents or to match existing adjacent products.
- G Fit Work tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- H Maintain integrity of wall, ceiling, or floor construction; completely seal voids.
- I Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for an assembly, refinish entire unit. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections. Where a change of plane of 1/4 inch or more occurs, request instructions from Architect.
- J Where new Work abuts or aligns with existing, provide a smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.
- K When finished surfaces are cut so that a smooth transition with new Work is not possible, terminate existing surface along a straight line at a natural line of division and submit recommendation to Architect for review.
- L Identify any hazardous substance or condition exposed during the Work to the Architect for decision or remedy.
- M Provide X-Ray or Sono-graphic testing of all slab areas to be demolished and or core bored prior to initiating demolition activities. If diagnostic results indicate presence of structural steel, utilities or other cast-in-slab encumbrances to demolition, immediately notify Project Manager and Architect for direction.

06114 - BLOCKING

- A GENERAL
- The contractor shall coordinate locations of concealed blocking with all other trades. Blocking shall be provided as called out in the drawings AND as necessary to securely fasten any wall mounted items.
 - Blocking shall be securely fastened to framing members using galvanized nails or screws.
 - At all existing walls which are scheduled to receive new wall mounted items, the contractor shall open up wall cavities as necessary (and patch as described in Section 02072 Demolition) to install new blocking in any condition where an existing stud cannot be utilized.
 - Toggle and expansion type anchors are NOT a substitute for providing blocking and will NOT be accepted.
- B MATERIALS
- Acceptable materials shall include Hoover Treated Wood Products "Pyro-Guard" 1/2" minimum thick plywood or SPIB graded, SYP No. 2 kiln dried dimension framing lumber, nominal dimensions as called for in the drawings or as necessary and fire retardant treated to meet ASTM E-84, D5201, or approved equivalent.

06200 - FINISH CARPENTRY AND CASEWORK

- A GENERAL
- The Millwork sub-contractor shall visit the site prior to beginning any work to verify site conditions, confirm locations of millwork, and to take accurate field notes and dimensions adequate for preparing shop drawings.
 - The Millwork sub-contractor shall prepare shop drawings for the Architect's review and approval showing plans, elevations and sections through all custom millwork items. The shop drawings shall indicate materials, finishes and all required hardware.
- B MATERIALS
- Panel cores for laminate surfaces shall be Georgia Pacific UltraStock MR+FREE MDF or equal moisture resistant, medium density fiberboard conforming to CARB Phase 2 requirements for formaldehyde emissions.
 - Hardboard shall be AWI Custom Grade, 1/4" thick pressed wood fiber with resin binder (hardboard approved for cabinet backs only)
 - Plastic laminate shall be 0.048 inch thick Type HGS general purpose horizontal grade high pressure plastic laminate. Provide 0.020 Type BKL laminated backing sheet on opposite (non-exposed) sides of all laminated constructions.
 - FS MMM-A-130 contact adhesive as recommended by laminate manufacturer.
 - PS-20 plain sawn poplar cleats.
 - Acceptable standing and running trim materials shall be AWI Custom, Grade II, poplar or maple shaped to profiles indicated on the Drawings or to match existing.
- C FABRICATION/INSTALLATION
- Fabrication shall be completed to applicable AWI Standards.
 - All custom architectural casework, including countertops, shall be constructed and installed in accordance with AWI Quality Standards, Section 400, standard for Custom Grade cabinetry.
 - Edgebanding shall be laminate to match face laminate, thermoset overlay is not acceptable
 - Coordinate locations of required in wall blocking with other trades, refer to Section 06114 for further information.
 - Field drill holes for grommets or other miscellaneous items, coordinating all locations with Architect and Owner.
 - Seal all field or shop cut edges with clear 100% silicone caulk.

08100 - STANDARD STEEL DOORS AND FRAMES

- A SUBMITTALS
- Submit door shop drawings indicating opening criteria, elevations, sizes, type, swing, and any special requirements.
 - Submit frame shop drawings indicating layout, finish and reinforcement locations.
 - Submit product data showing frame anchor types, door core material, door and frame reinforcement locations, construction type and installation instructions.

B PRODUCTS

- Frames: Steelcraft F16 Series, ANSI A250.8, 16ga. cold rolled Galvannealed steel frames, shop primed with baked zinc chromate primer in accordance with ANSI A250.10, profiles as indicated in the Drawings.
- C FABRICATION/INSTALLATION
- Fabricate frames as knock-down (KD) unit, with hardware reinforcement plates welded in place and push-in style silencers installed on strike side of door.
 - Coordinate door and frame preparation with Section 08710 - Door Hardware.
 - Install doors and frames in accordance with ANSI/SDI-100 and Door Hardware Institute recommendations.

08201 - ARCHITECTURAL FLUSH WOOD DOORS

- A GENERAL
- Section includes architectural flush wood doors.
 - Coordinate all work with Sections 08100, 08710 and 09900.
 - Substitutions considered in accordance with Section 01600.
- B SUBMITTALS
- Submit shop drawings indicating door opening criteria, elevations, sizes, type, swing, and special requirements.
 - Submit product data indicating door core material, reinforcement locations and construction type.
- C MATERIALS
- Semi-transparent finish quality, Flush Wood Doors: 1-3/4" thick, AWI Section 1300 Type PC-7, 7 ply particle board core doors with Custom Grade Type I, 3-ply, plain sliced, book matched white birch veneer facing and hardwood rail and stiles.
- D VISION PANELS
- Provide vision panels as shown in the drawings.
 - Clear glazing shall be ANSI Z97.1, 1/4" thick clear glass constructed of laminated or tempered panels.
- E FINISH
- Semi-transparent finished (stained) doors shall be factory finished to comply with AWI 1500 Standard, Custom Grade Transparent Finish System No. 5, catalyzed polyurethane finish, color to be wine.
- F MANUFACTURER
- Semi-transparent Finish Flush Doors: Marshfield Signature Series(non-rated flush) and Mohawk MFD3/4-7 (fire rated flush), or approved equivalent.

08710 - DOOR HARDWARE

- A PRODUCTS
- Cylinder sets shall be Corbin Russwin CL3390/5-NZD-24DC-M92-626, heavy duty bored locksets.
 - Hinges shall be McKinney HW Hinge TA3786 4.5x4.5 626H/D 4 1/2", 5 knuckle standard weight, full mortise, full ball bearing hinges.
 - Electrified hinges shall be McKinney TA3786 4.5x4.5 QC8 26D.
 - Closers shall be Corbin Russwin DC6200 M54.
 - Card readers shall be Sensormatic RM Series, Indala RM2-PI, mounted on the strike side of the door. Mounting location shall be 48" from the floor to the top of the reader and 12" from the frame of the door.
 - Concealed door position switches shall be GE Interlogix/Sentrol 1076 Series 1" diameter, installed on top of frame 4" on center from the strike side of the frame.
 - Break Glass devices to be supplied by the University. Back box (single gang) and wire to be supplied by others. Break Glass shall be mounted on the strike side of the door 48" from the floor to the top of the unit, and within 12" from the door frame.
 - Local audible device shall be ATW PC300, installed on wall above the door 90" to the top of the box and/or at least 4' below finished ceiling height.
 - Silencers shall be Stanley SP57-5480 push-in style rubber silencers.
 - Kick plates shall be Rockwood K1062 10 inch high stainless steel kick plates full width of door.
- B SUBMITTALS
- Submit hardware schedule indicating locations, function, finish, options and mounting requirements for each specified type of hardware. Include all pertinent electrical characteristics and connection requirements.
- C SCHEDULE
- Refer to Drawings for Hardware Schedule

09260 - GYPSUM WALLBOARD SYSTEMS

- A MATERIALS
- Low to Medium Height (14 FT) non-load bearing interior studs and tracks shall be GA-216, GA-2600, 20 gauge (33mils), galvanized sheet steel, "C" shape profile (studs), with knurled faces in widths as indicated in the drawings. Maximum height for standard 398CSN20 (362S137-33) studs is 14 FT.
 - High Height (up to 19 FT) non-load bearing interior studs and tracks shall be 18 gauge (45 mils), galvanized sheet steel, 398CSJ18 (362S250-45) with knurled faces in widths as indicated in the drawings.
 - Fasteners shall be ANSI/ASTM C1102 bugle-head Type "S" screws in lengths to suit application.
 - Fire rated interior gypsum wallboard shall be 5/8" thick, ASTM C36/C 1396 Type FSW or FSW-G core, UL-rated, square cut with tapered edges.
 - Standard (non-rated) interior gypsum wallboard shall be same as fire rated gypsum board.
 - Moisture resistant (MR) gypsum wallboard shall be Sheetrock Brand "Mold Tough" Firecode Core 5/8" Type X ASTM C630/C 1396 Gypsum Panels with ASTM E136 noncombustible gypsum core or approved equal. MR panels shall be used throughout all bathrooms and laundry areas and behind all kitchen cabinets and/or sinks.
 - Acoustic insulation shall be 2 inch minimum thick, unfaced, friction fit type, ASTM C665 pre-formed mineral wool insulation bearing a UL-label.
 - Acoustic sealant shall be non-hardening, non-skinning type for use in conjunction with gypsum board panels.
 - Edge trim, control joints and corner beads shall be USG zinc accessories as required unless specifically noted to be vinyl.
 - Joint materials shall be ASTM C475, GA-201, GA-216 reinforcing tape, joint compound, adhesive and water.

11. Refer to drawings for other accessories.

B INSTALLATION

- GWB installation shall be in accordance with GA-201, GA-216, GA-600 and manufacturer's recommendations, over studs at 16 inch O.C. (unless specifically noted otherwise).
- Install control joints as noted in the drawings. Where locations are not given, do not extend GWB faces more than 20 FT without a control joint and coordinate location of joint with Architect in the field.
- Refer to Drawings for indications of partitions extending to finish ceilings only and for partitions extending through ceilings to structure above. Maintain clearance under structural members to avoid deflection transfer to studs.
- Coordinate blocking installation and locations with Section 06114.
- Exposed edges and joints shall be taped, filled and sanded smooth to receive finish treatment.
- Feather tape and joint coats to achieve 1/16 inch maximum camber and install GWB to achieve maximum variation from true flatness of less than 1/8 inch in 10 feet in any direction.
- Finish gypsum panels in accordance with ASTM C840 and GA-214 as follows: Level 0 - Not used, Level 1 - Ceiling plenums and concealed space, Level 2 - Not used, Level 3 - Not used, Level 4 - Standard minimum finish level throughout project, Level 5 - Not used.

09511 - SUSPENDED ACOUSTICAL CEILINGS

- A GENERAL
- Conform to ASTM C635 - Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings, ASTM C636 - Recommended Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels and Ceilings and Interior Systems Contractors Association (CISCA) - Acoustical Ceilings: Use and Practice Manual.
 - Suspension system to rigidly secure acoustical ceiling system including integral mechanical and electrical components with maximum deflection of 1/360.
- B SUBMITTALS
- Provide data on metal grid system components and acoustical units, and 6x6 sample of ceiling tile.
 - Submit Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention, and interface connections to existing portions of ceiling suspension grid to remain.
- C PRODUCTS
- Suspension system shall be Armstrong "Prelude white, 15/16" inch or equivalent ASTM C635, intermediate duty exposed tee system.
 - Ceiling pads shall be Armstrong "Cortega" white, UL Class A, 24" x 24" x 5/8" thick, ASTM Type III, Form 1, Pattern EIK, wet-formed mineral fiber ceiling panel with square edges and a NRC range of 0.55 and a CAC rating of 33.
- D INSTALLATION
- Install suspension system in accordance with manufacturer's instructions and as supplemented in this section.
 - Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
 - Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers to span the extra distance.
 - Do not support components or fixtures on main runners or cross runners. Support fixture loads by means of hanger wires connected directly to fixture and structural components independently.
 - Do not eccentrically load system, or produce rotation of runners.
 - Install edge molding at intersection of ceiling and vertical surfaces, using longest practical lengths. Miter corners. Provide edge moldings at junctions with other interruptions.
 - Install panels in accordance with manufacturer's instructions in both new and existing grid areas, after above ceiling work is complete.
 - Fit panels in place, free from damaged edges or other defects detrimental to appearance and function, and install panels level, in uniform plane, and free from twist, warp and dents. Cut panels to fit irregular grid and perimeter edge trim.
 - Maximum variation from flat and level surface shall be no greater than 1/8 inch in 10 feet. Maximum variation from plumb of grid members caused by eccentric loads shall be 2 degrees.

09651 - VINYL WALL BASE

- A SUBMITTALS
- Submit 2 inch long section of each resilient base scheduled and manufacturer's instructions indicating required surface preparation, and installation procedures, materials and conditions.
- B MATERIALS
- Vinyl wall base shall be FF SS-W-40, vinyl, 4 inch high, 1/8 inch thick solid colored cove base.
 - Provide pre-manufactured end stops, external corners, and pre-molded edge transition strips to match base.
 - Manufacturer, colors and styles shall be as scheduled. Substitutes considered in accordance with Section 09600.
- C INSTALLATION
- Coordinate installation of base with all other wall finishes. Base shall not be installed until wall covering and painting has been completed.
 - Install vinyl base and all accessories as instructed by manufacturer, directly over clean finish surfaces in sound condition using manufacturer's recommended adhesive for each specific application.
 - Maintain 18 inches minimum between joints, no joint shall be within 2 inches of an outside corner.
 - Miter internal corners, use pre-molded units at end conditions and outside corners. Field fabricated outside corners are not acceptable.

09652 - LUXURY VINYL FLOORING

- A MANUFACTURERS
- Approved manufacturer shall be Teknoflor Forestscapes Series #3112, Rosewood.
- B PRODUCTS
- Product shall meet or exceed ASTM 1700 Class 3, Type B and Federal Specification SS-T-312b, Type III Vinyl.
 - Minimum thickness: 0.100", minimum wear layer thickness: 0.020".
 - Products shall be ASTM E-684 Class 1 rated

- Product shall meet or exceed HUD/FHA requirements.
 - Construction shall be plank and tile format with micro bevel edges.
 - Styles and sizes shall be as selected by Owner.
 - Adhesive shall be as recommended by the manufacturer for the appropriate floor substrate and installation conditions.
- C INSTALLATION
- Sub-floor shall be hard, smooth, clean, dry and free from defects. Sub-flooring shall be prepared as directed by manufacturer. DO NOT install flooring over residual or cut-back asphalt-type adhesive. Perform manufacturer's recommended bond tests as necessary.
 - Test floors for moisture content by use of the in Situ Probe R/H test method (ASTM F 2170). Moisture conditions shall not exceed 80% RH.
 - Patching and leveling of the sub floor and underlayment shall be accomplished using a non-shrinking water resistant portland cement patching compound. Sweep or vacuum surfaces thoroughly prior to installation.
 - Handle and store product as directed by manufacturer prior to installation. All materials must stabilize to constant indoor temperatures (66-79 Degree F) for a minimum period of 48 hours prior to beginning the work.
 - Installation shall be in strict accordance with Manufacturer's published technical manuals and shall not occur until all other trades have completed their work.
 - Maintain constant indoor temperature (66-79 Degree F) for 48 hours after installation and protect finished work from foot traffic for 24 hours after installation.
- D SUBMITTALS
- Submit manufacturer's installation manual and two samples of each style and color specified.

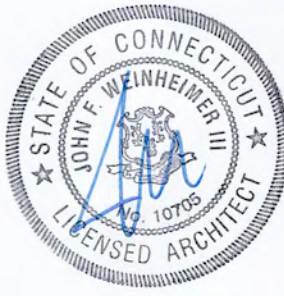
09686 - CARPET

- A SUBMITTALS
- Submit 12" x 12" minimum sample of all carpets scheduled, test reports by an approved independent testing lab verifying smoke and flame spread ratings, and manufacturer's instructions indicating required surface preparation, and installation procedures and conditions.
- B MATERIALS
- Carpeting and pad as scheduled
 - Sub floor filler as recommended by carpet manufacturer.
 - Adhesive compatible with carpet and as recommended by manufacturer, base as scheduled.
 - Provide appropriate Johnsonite or equal colored rubber material transitions and other accessories as necessary to complete the installation and as scheduled.
- C INSTALLATION
- Stabilize carpeting and all materials to project environment by storing on-site for a minimum of 24 hours prior to installation. Room temperature shall be 65 degrees F minimum for 48 hours prior to installation and 24 hours following installation. Relative humidity for the same period shall not exceed 65 percent.
 - Verify subfloor meets carpet manufacturer's specifications for installation including moisture content, cleanliness, flatness and level of defects. Prepare and repair subfloor as necessary to receive carpet. Vacuum prior to beginning installation.
 - For carpet tile installation, install carpet as directed by manufacturer. Install all tiles in pattern direction as directed by the Architect. Butt all joints tightly. Securely adhere perimeters of all carpeted areas to sub-floor as directed by carpet tile manufacturer. Do not mix dye lots.
 - Locate change of color or patterns at door centerline unless directed otherwise.
 - Install vinyl cove base as specified, refer to Specification Section 09651.

09900 - PAINTING

- A SUBMITTALS
- Submit 10" x 10" samples of all paints on GWB substrate illustrating color, sheen and texture.
 - Submit 10" x 10" samples of all stains illustrating color and sheen on each different substrate specified. Substrates shall match wood species specified for stained finishes.
 - Submit all manufacturer's instructions indicating required surface preparation and conditions required for application and finish types.
- B MATERIALS
- Sherwin Williams, or equivalent, latex enamel paint as called out herein and in the drawings.
 - Sherwin Williams, or equivalent, oil based stain as called out herein and in the drawings.
 - Sherwin Williams, or equivalent, water reducible polyurethane varnish as called out herein and in the drawings.
 - Primers, sealers, cleaning agents and accessory materials shall be as recommended and required by the paint or stain manufacturer.
- C PROCEDURE
- All surfaces shall be finished and prepared as recommended by the paint or stain manufacturer. By beginning the work, the Painting sub-contractor accepts the quality of the substrate being painted.
 - All surfaces to be painted shall receive primer coat and finish coat(s) as scheduled.
- D SCHEDULE
- Drywall Walls: Eggshell finish. 1st coat: Sherwin Williams PrepRite 200 Latex Primer, 2nd coat: Sherwin Williams ProMar 200 Latex Eg-Shel, 3rd coat: Sherwin Williams ProMar 200 Latex Eg-Shel.
 - Drywall Ceilings and Soffits: Flat finish. 1st coat: Sherwin Williams PrepRite 200 Latex Primer, 2nd coat: Sherwin Williams ProMar 200 Latex Flat, 3rd coat: Sherwin Williams ProMar 200 Latex Flat.
 - Metal Surfaces: Semi-gloss finish. 1st coat: Sherwin Williams Pro-Industrial Pro-Cryl Universal Primer B66-310 Series. 2nd coat: Sherwin Williams Metalatex Semi-Gloss Coating (B42 Series). 3rd coat: Sherwin Williams Metalatex Semi-Gloss Coating (B42 Series).

END OF SPECIFICATIONS



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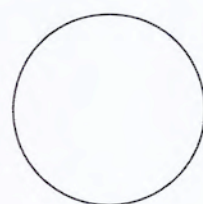
100 Wells Street, Suite 21, Hartford, CT 06103
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Title:

SPECIFICATIONS

Project Number:	Issue Date:
2016.035	23 SEPT 2016
Scale:	CAD File:
N/A	16035_T-4
Drawn By:	Checked By:
DLD	EAL

Revisions:

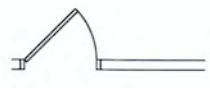

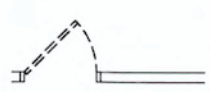


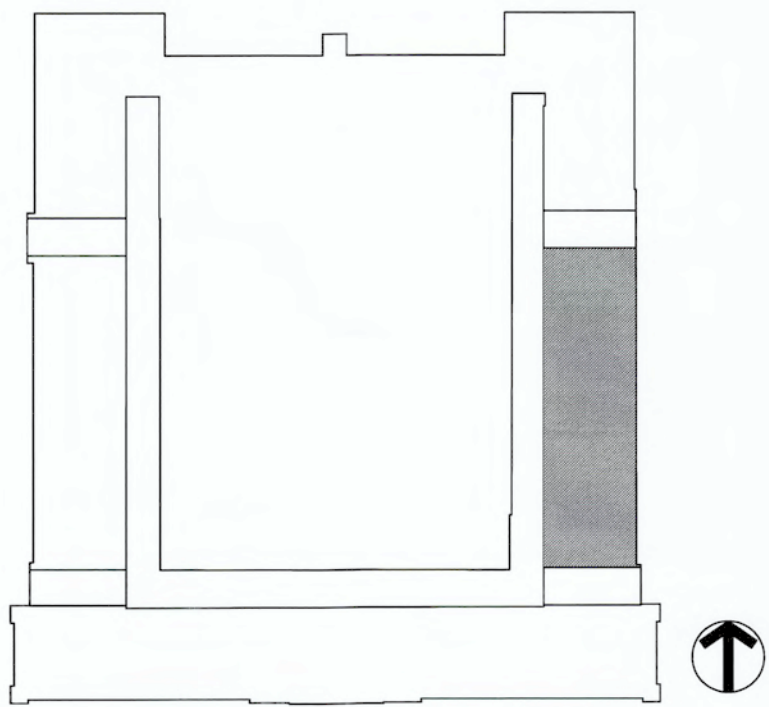
T-4

DEMOLITION NOTES:

Demo 1	Refer to Specifications prior to beginning any work for further information regarding methods and materials.	Demo 6	Fire alarm initiation and signaling devices, emergency fixtures and other similar appurtenances located on walls to be removed shall be disconnected and returned to the Owner. Disconnection of any items shall not compromise the integrity and functionality of devices not being removed.
Demo 2	Numbered Notes refer to this sheet only unless specifically indicated otherwise.	Demo 7	Proceed with Work in an orderly, careful, safe manner. Remove material as Work progresses, leaving area clean at completion of demolition activities. Take particular care to minimize dust and use temporary partitions or poly "Zip Walls" and construction filters on air handling systems to contain dust and debris.
Demo 3	Dashed lines indicate existing construction to be removed or modified. Exercise care during demolition activities to maintain adjacent spaces and construction designated to remain. Take care during selective demolition not to damage or disturb any items to remain.	Demo 8	Owner shall have first right of refusal of all items. All fixtures, casework or other elements indicated to be removed and not specifically called out to be reused or salvaged are to be disposed of as follows: Where Owner requests items to be retained, Contractor shall return those items to a location (on site) designated by the Owner. Other items shall be appropriately disposed of by Contractor in accordance with the General Conditions.
Demo 4	Refer to Mechanical and Electrical Design Specifications for further direction regarding demolition of items covered by those sections. Unless specifically noted otherwise, Contractor shall remove all switches and receptacles located in walls scheduled to be removed or furred out back to nearest accessible junction box or fixture housing, assuring power is maintained to other fixtures or receptacles on the same circuit.	Demo 9	Extreme care must be taken to minimize and contain noise, dust and construction debris. Materials may be stored on site at a location to be determined by the Owner, however materials must not exceed beyond the designated area. All materials and equipment required for the work shall be stored or placed so as not to endanger the general public, the Owner's employees and clients, or the contractors own workers.
Demo 5	Existing finishes to remain unless otherwise noted. Take care to minimize disturbance of existing finishes during demolition activities.		

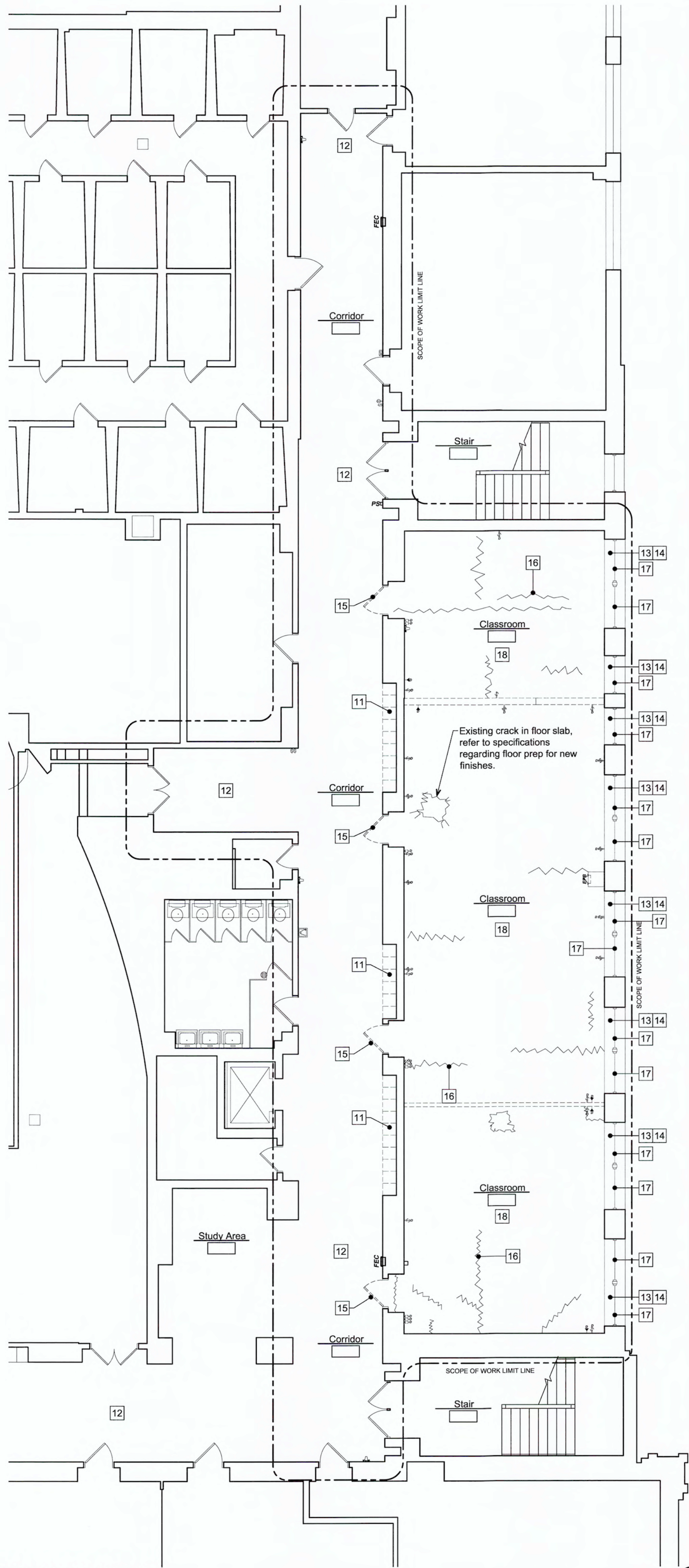
DEMOLITION KEY

-  Existing construction to remain shown thus, typical. Refer to Finish Plans and Notes for any required preparation or repairs.
-  Selective portions of existing construction to be removed or modified shown thus, typical.
-  Existing door and frame to be removed complete shown thus, typical. (Remove existing frames unless noted otherwise.)



KEY PLAN

- Demo 10 The contractor shall provide suitable protection for the general public and their own workers for the duration of the work. Provide and maintain temporary barriers and signage as required to protect people from the demolition areas. No exits shall be blocked, adequate lighting shall be maintained throughout all areas affected by the work, and all existing life safety and security equipment and systems must remain fully operational and accessible. Erect weatherproof enclosures at any exterior openings and provide temporary egress routes as necessary to maintain safety for building occupants.
- Demo 11 ALTERNATE #1: Remove existing lockers and prepare opening to receive new drywall finish and bench.
- Demo 12 Existing vinyl sheet flooring to remain.
- Demo 13 Remove existing wood window sills and discard.
- Demo 14 Existing window treatments to be removed and discarded.
- Demo 15 Remove existing door, frame, and transom complete. Prepare opening to receive new door, frame, and infill.
- Demo 16 Existing cracks in concrete floor slab shown thus. Refer to new floor finish specifications for information regarding preparation of slab prior to installation of new flooring.
- Demo 17 Remove upper pane of window and prepare opening to receive new spandrel panel.
- Demo 18 Remove all existing surface mounted devices and conduit from walls and ceiling scheduled to remain.



DEMOLITION PLAN

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

1



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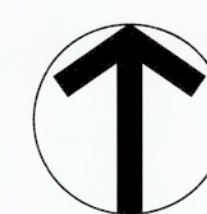
100 Wells Street, Suite 21, Hartford, CT 06103
Tel: 860.293.0093 / Fax: 860.293.0094

Title:
**DEMOLITION
PLAN**

Project Number: 2016.035
Issue Date: 23 SEPT 2016
Scale: 1/8" = 1'-0"
CAD File: 16035_D-101

Drawn By: TMS
Checked By: EAL

Revisions:



D101

CEILING DEMOLITION NOTES:

- Demo 1

Refer to Specifications prior to beginning any work for further information regarding methods and materials.
- Demo 2

Numbered Notes refer to this sheet only unless specifically indicated otherwise.
- Demo 3

Dashed lines indicate existing construction to be removed or modified. Exercise care during demolition activities to maintain adjacent spaces and construction designated to remain. Take care during selective demolition not to damage or disturb any items to remain.
- Demo 4

Refer to Mechanical, Electrical and Fire Protection Design Specifications for further direction regarding demolition of items covered by those sections. Unless specifically noted otherwise, Contractor shall remove all switches and receptacles located in walls scheduled to be removed or furred out back to nearest accessible junction box or fixture housing, assuring power is maintained to other fixtures or receptacles on the same circuit.
- Demo 5

Existing finishes to remain unless otherwise noted. Take care to minimize disturbance of existing finishes during demolition activities.
- Demo 6

Fire alarm initiation and signaling devices, emergency fixtures and other similar appurtenances located on walls to be removed shall be disconnected and returned to the Owner. Disconnection of any items shall not compromise the integrity and functionality of devices not being removed.
- Demo 7

Proceed with Work in an orderly, careful, safe manner. Remove material as Work progresses, leaving area clean at completion of demolition activities. Take particular care to minimize dust and use temporary partitions or poly "Zip Walls" and construction filters on air handling systems to contain dust and debris.
- Demo 8


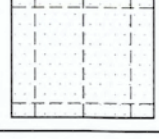
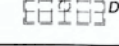
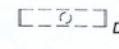


Owner shall have first right of refusal of all items. All fixtures, casework or other elements indicated to be removed and not specifically called out to be reused or salvaged are to be disposed of as follows: Where Owner requests items to be retained, Contractor shall return those items to a location (on site) designated by the Owner. Other items shall be appropriately disposed of by Contractor in accordance with the General Conditions.
- Demo 9

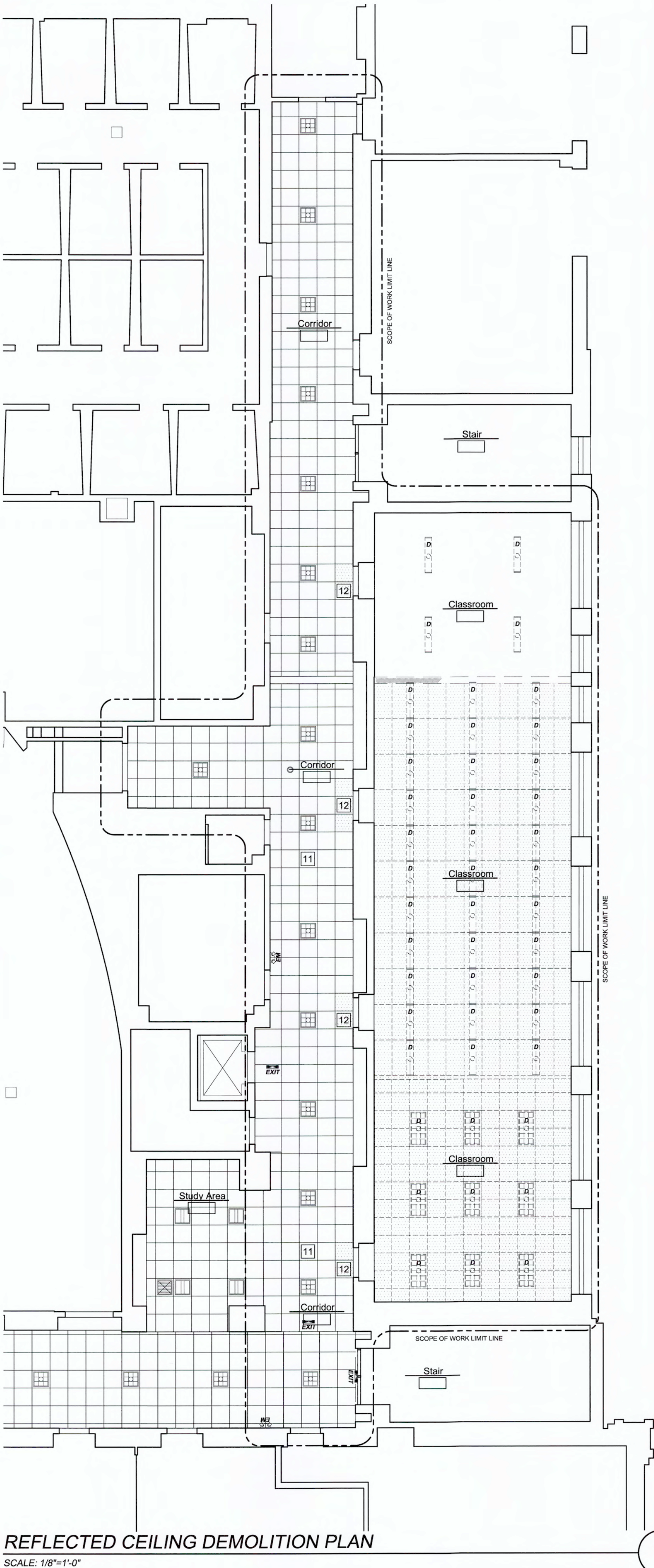
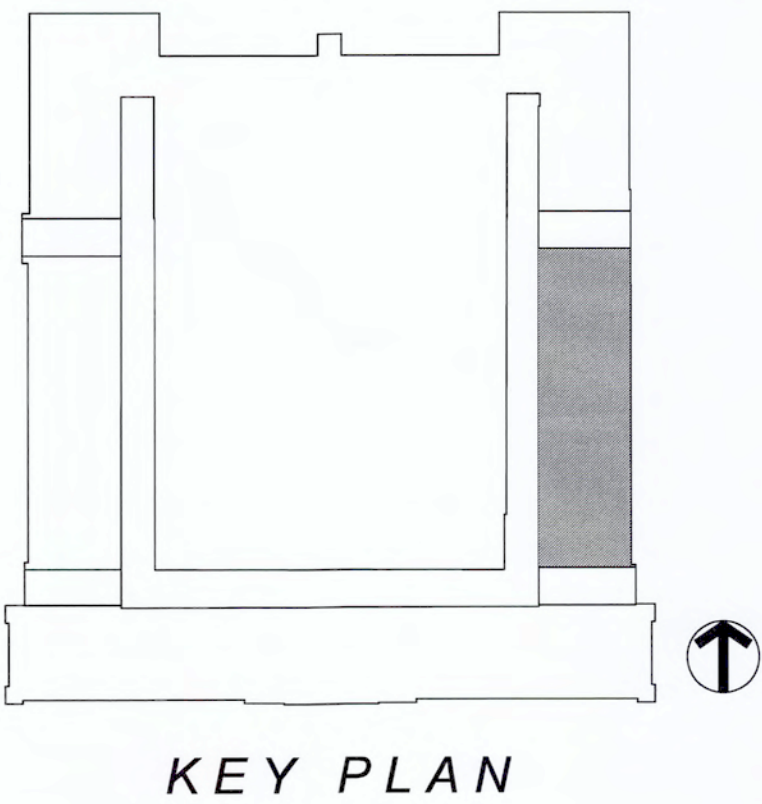
Extreme care must be taken to minimize and contain noise, dust and construction debris. Materials may be stored on site at a location to be determined by the Owner, however materials must not exceed beyond the designated area. All materials and equipment required for the work shall be stored or placed so as not to endanger the general public, the Owner's employees and clients, or the contractors own workers.
- Demo 10


The contractor shall provide suitable protection for the general public and their own workers for the duration of the work. Provide and maintain temporary barriers and signage as required to protect people from the demolition areas. No exits shall be blocked, adequate lighting shall be maintained throughout all areas affected by the work, and all existing life safety and security equipment and systems must remain fully operational and accessible. Erect weatherproof enclosures at any exterior openings and provide temporary egress routes as necessary to maintain safety for building occupants.
- Demo 11


Existing ceiling to remain. Temporarily remove grid and pads as necessary to accommodate new HVAC piping. Refer to Mechanical drawings for further information.
- Demo 12

Remove existing ceiling as necessary to accommodate installation of new door.


CEILING DEMOLITION LEGEND	
SYMBOL	DESCRIPTION
	Existing 2' x 2' acoustical ceiling tiles and grid to be removed.
	Existing 2' x 4' acoustical ceiling tiles and grid to be removed.
	Existing 2' x 4' lighting fixture to be removed.
	Existing 1' x 4' lighting fixture to be removed.
	Existing exit sign to remain.
	Existing emergency lighting to remain.



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Tel: 860.293.0093 / Fax: 860.293.0094

Title:
**REFLECTED CEILING
DEMOLITION
PLAN**

Project Number:
2016.035

Issue Date:
23 SEPT 2016


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

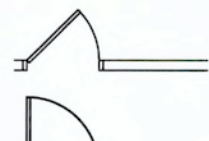


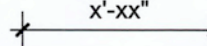

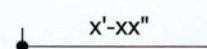


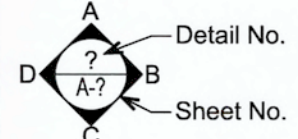

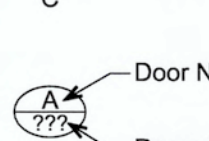


CAD File:
16035_D-201.DWG

Drawn By:
DLD

Checked By:
EAL

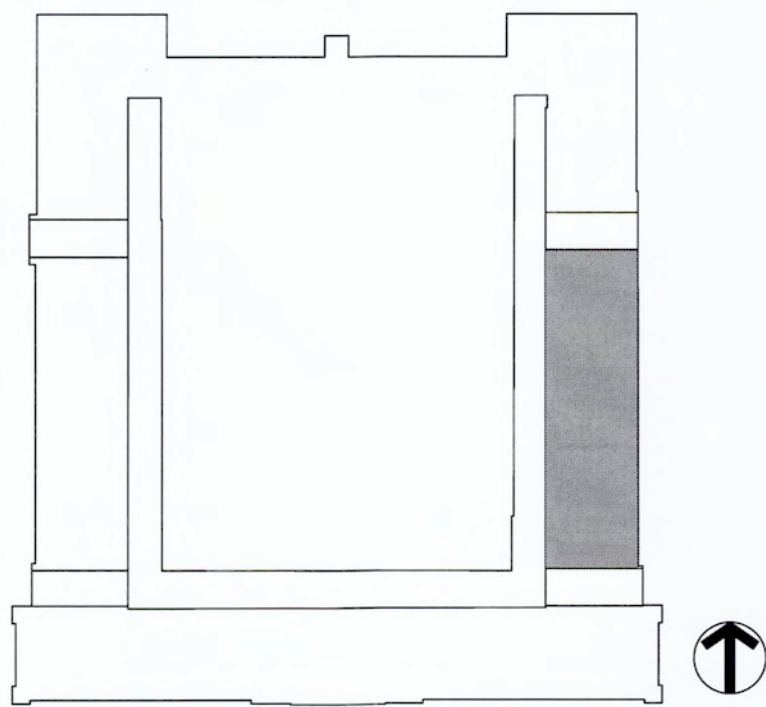
Revisions:

**D201**

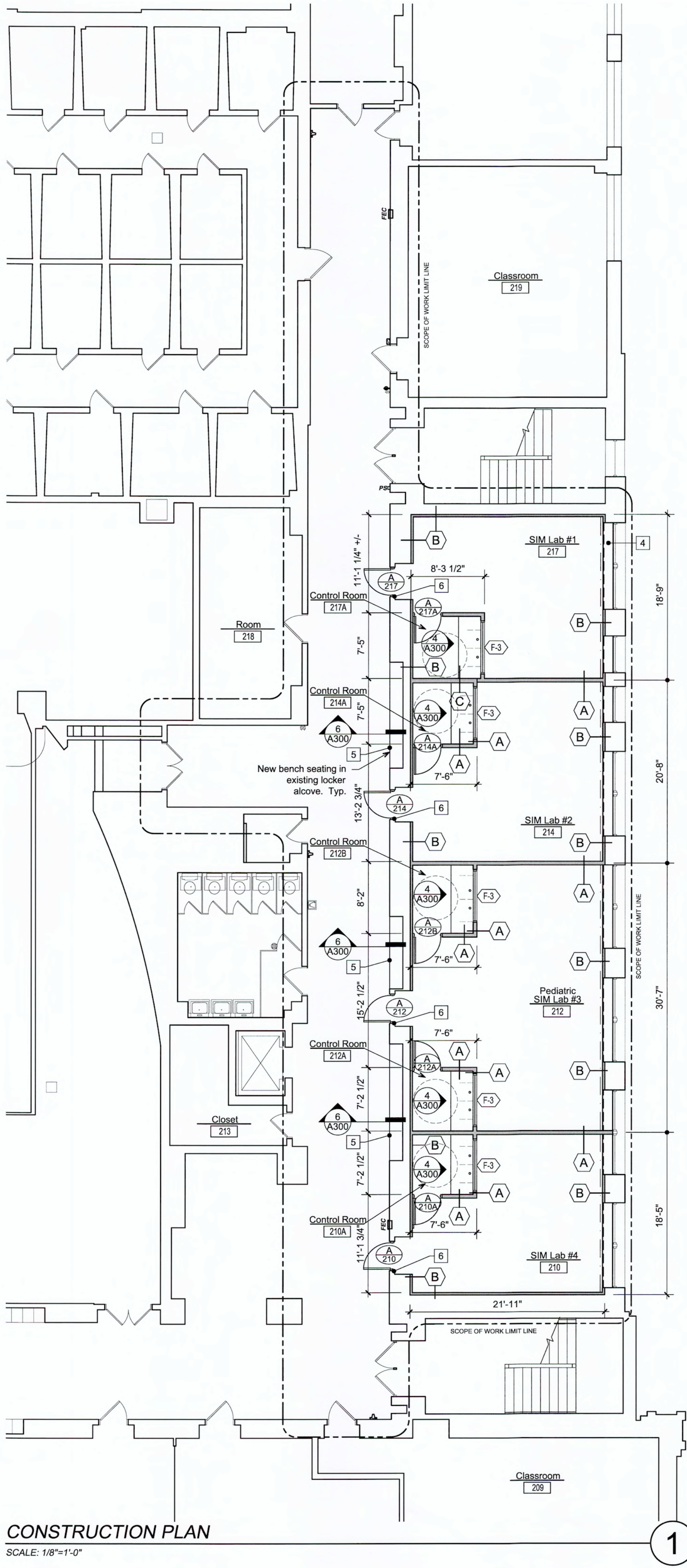
CONSTRUCTION KEY			
	Existing door and frame to remain shown thus, typical.		Wall type indicator
	New door and frame shown thus, typical.		Denotes dimension from face of framing to face of existing finished surface unless specifically noted otherwise.
	Existing partition to remain, patch and repair as necessary to prepare surface for new finishes scheduled.		Denotes dimension between two centerlines.
	New partition construction shown thus, typical.		Electrical switch shown thus.
	Interior Elevation Flag		Designations as follows: 3=Three way, N=New
	Door Opening Tag, refer to Door Schedule for further information		Wall mounted duplex outlet shown thus.
			Wall mounted data outlet shown thus.

CONSTRUCTION NOTES:

- Con 1 Refer to the Specifications for further information regarding methods and materials prior to beginning any work.
- Con 2 Numbered Notes refer to this sheet only unless specifically indicated otherwise.
- Con 3 Patch and repair all walls disturbed by demolition activities.
- Con 4 Walls below window to receive wall type "B" furring and new plastic laminate window sill, see detail B/A300.
- Con 5 ALTERNATE #1: Finish all surfaces of wall niche with 5/8" thick GWB and prepare opening to receive new millwork bench, detail 6/A300.
- Con 6 Infill opening above new door frame with Wall Type A. Substitute acoustical sealant in Wall Type A with fire sealant.

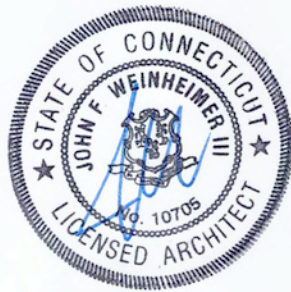


KEY PLAN



CONSTRUCTION PLAN

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



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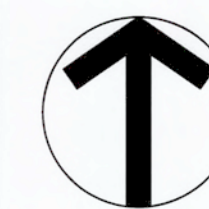
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Title: **CONSTRUCTION
PLAN**

Project Number: 2016.035
Issue Date: 23 SEPT 2016
Scale: 1/8" = 1'-0"
CAD File: 16035_A-101.DWG
Drawn By: TMS
Checked By: EAL

Revisions:

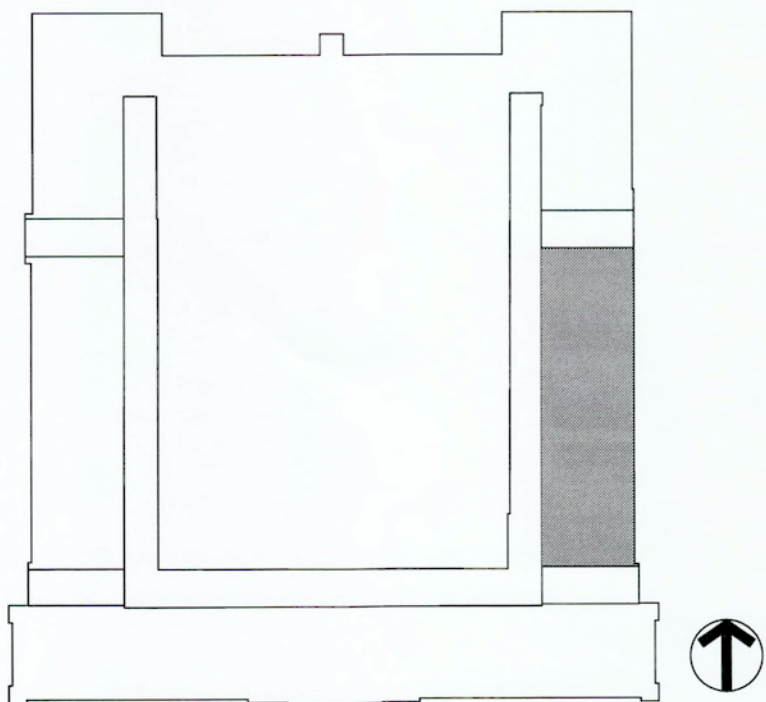


A101

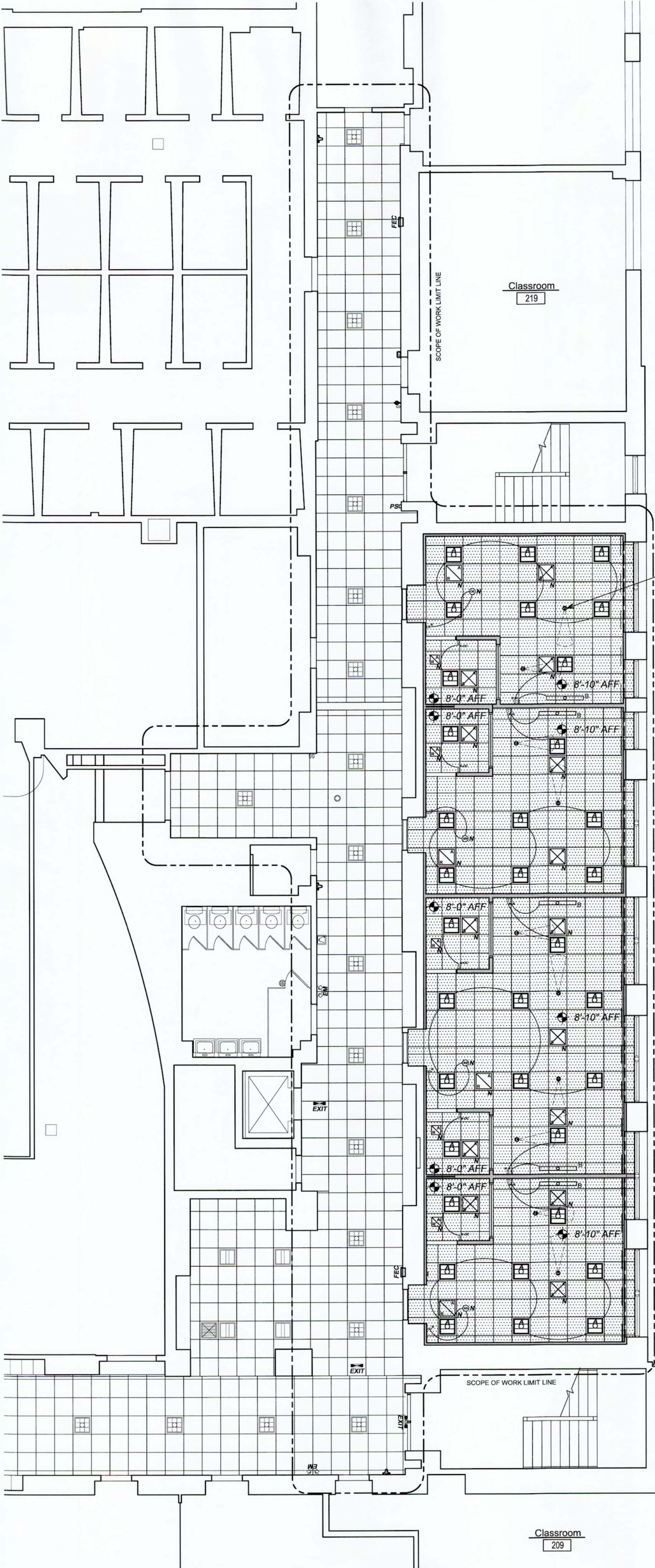
CEILING LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	Existing 2' x 2' acoustical ceiling tiles and grid to remain.		New supply air diffuser.
			New return air diffuser.
	New 2' x 2' acoustical ceiling tiles and grid.		New ceiling mounted motion occupancy sensor.
	2' x 2' LED troffer light fixture, as specified. Provided by owner and installed by general contractor.		Light Fixture circuit.
	New AFX Ideal LED IDB Series; burnished nickel finish; 35-3/4" length. Provided by owner and installed by general contractor.		New light switch shown thus. All devices shall match existing. Designations as follows: 3=three-way, 4= four-way, D=dimmer, F=fan, H=heater, CTA=call-to-aid pull cord switch.
	Existing 2' x 2' light fixture to remain.		
	Existing return air diffuser.		Ceiling mounted duplex receptacle for projector.

REFLECTED CEILING NOTES:

- RCP 1 Refer to the Specifications prior to beginning any work or ordering materials.
- RCP 2 Numbered Notes refer to this sheet only unless specifically indicated otherwise.
- RCP 3 Fixtures and devices shown on this plan are for architectural coordination purposes only. Refer to Mechanical, Electrical and Plumbing Design Build Specifications for further information.



KEY PLAN



Pan and zoom ceiling mounted camera.

REFLECTED CEILING PLAN

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

1



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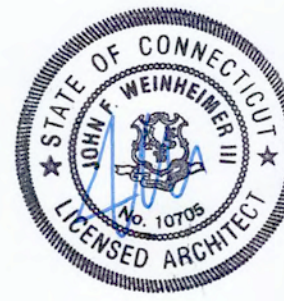
**NURSE SIMULATION
REFLECTED
CEILING PLAN**

Project Number: 2016.035 Issue Date: 23 SEPT 2016
Scale: 1/8" = 1'-0" CAD File: 16035_A-201
Drawn By: TMS Checked By: EAL

Revisions:	



A201



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Title:

**DETAILS AND
SCHEDULES**

Project Number: 2016.035 Issue Date: 23 SEPT 2016
Scale: AS NOTED CAD File: 16035_A-300.DWG
Drawn By: TMS Checked By: EAL

Revisions:

A300

DOOR SCHEDULE																			
DOORS										FRAMES							HARDWARE		
Number	Key	Location	Size	Frame Size	Thick.	Material	Finish	Elev.	Elev.	Material	Finish	Throat	Jamb	Head	Sill	Label	Set	Function	Notes
A/210	●	SIM Lab #4	3'-0" X 7'-0"	3'-4" x 7'-2"	1 3/4"	SCWood	Stain	D-2	F-2	HM	P-4	Verify	2/A300	2/A300	N/A	1HR	A	Entry	
A/210A	●	Control Room	3'-0" X 7'-0"	3'-4" x 7'-2"	1 3/4"	SCWood	Stain	D-1	F-1	HM	P-4	Verify	1/A300	1/A300	N/A		A	Control	
A/212	●	Pediatric SIM Lab #3	3'-0" X 7'-0"	3'-4" x 7'-2"	1 3/4"	SCWood	Stain	D-2	F-2	HM	P-4	Verify	2/A300	2/A300	N/A	1HR	A	Entry	
A/212A	●	Control Room	3'-0" X 7'-0"	3'-4" x 7'-2"	1 3/4"	SCWood	Stain	D-1	F-1	HM	P-4	Verify	1/A300	1/A300	N/A		A	Control	
A/212B	●	Control Room	3'-0" X 7'-0"	3'-4" x 7'-2"	1 3/4"	SCWood	Stain	D-1	F-1	HM	P-4	Verify	1/A300	1/A300	N/A		A	Control	
A/214	●	SIM Lab #2	3'-0" X 7'-0"	3'-4" x 7'-2"	1 3/4"	SCWood	Stain	D-2	F-2	HM	P-4	Verify	2/A300	2/A300	N/A	1HR	A	Entry	
A/214A	●	Control Room	3'-0" X 7'-0"	3'-4" x 7'-2"	1 3/4"	SCWood	Stain	D-1	F-1	HM	P-4	Verify	1/A300	1/A300	N/A		A	Control	
A/217	●	SIM Lab #1	3'-0" X 7'-0"	3'-4" x 7'-2"	1 3/4"	SCWood	Stain	D-2	F-2	HM	P-4	Verify	2/A300	2/A300	N/A	1HR	A	Entry	
A/217A	●	Control Room	3'-0" X 7'-0"	3'-4" x 7'-2"	1 3/4"	SCWood	Stain	D-1	F-1	HM	P-4	Verify	1/A300	1/A300	N/A		A	Control	

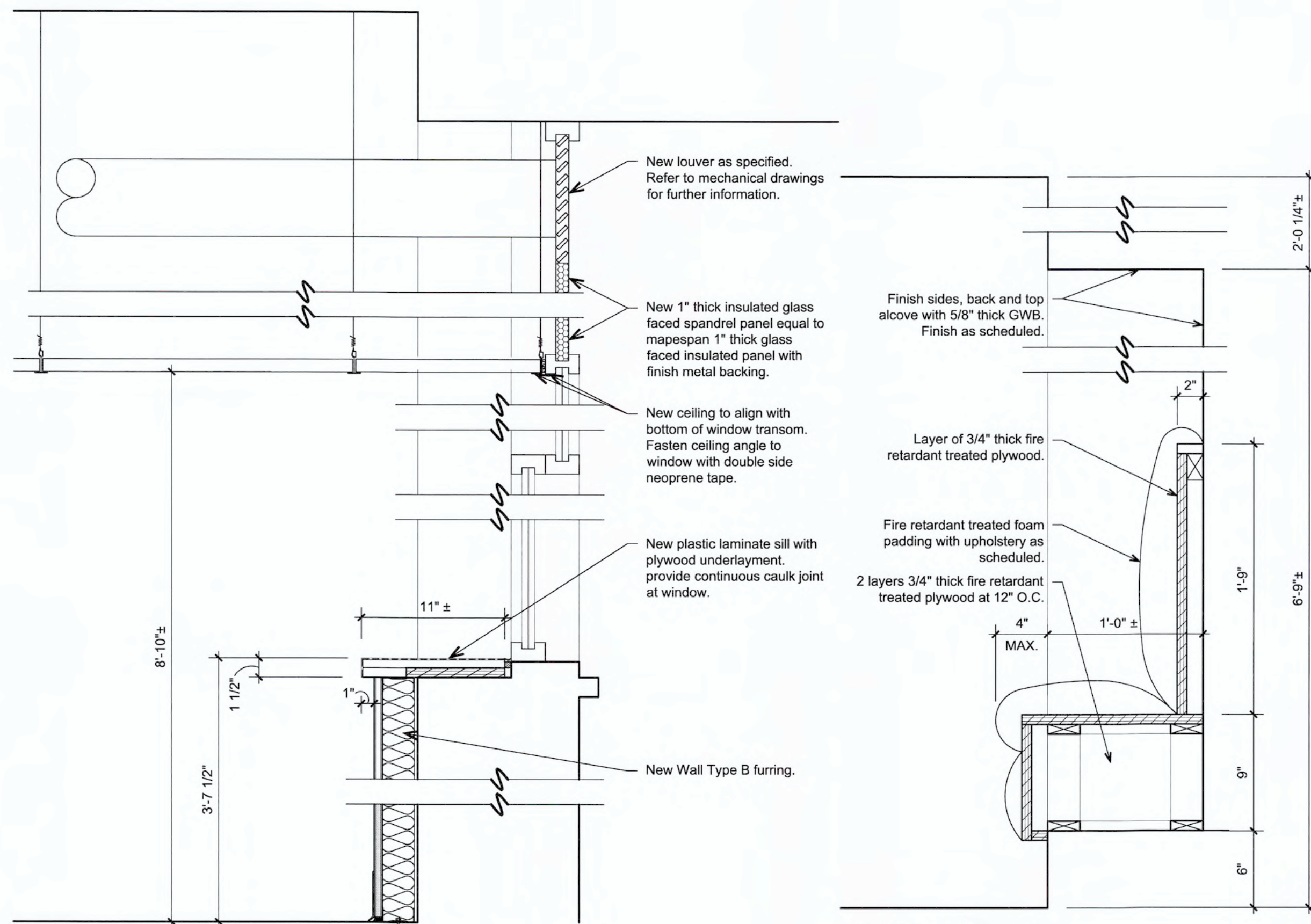
Key Legend: ● New Door and Frame ○ New Door in Existing Frame ○ Existing Door in Existing Frame ○ Relocated Existing Door and Frame

DOOR HARDWARE NOTES:

- Verify dimensions of existing openings prior to preparing submittal or ordering any material. Field verify threshold width and length at each opening in the field. Field verify ALL throat dimensions prior to ordering any material.
- Coordinate all doors, frames and hardware with Specifications and details elsewhere in this set.
- All hardware shall be US 26D Satin Chrome finish unless specifically noted otherwise.
- Coordinate electronic latch retraction, card readers and door holders with electrical design build and fire alarm system in accordance with Specification Sections 16000 and 16700 respectively.

DOOR HARDWARE SETS:

Set A: Cylindrical lockset, overhead ADA compliant closer, one electrified hinge, 2 hinges, card reader, concealed door position switch, break glass device, silencers, local audible device located at one door to be determined by University.

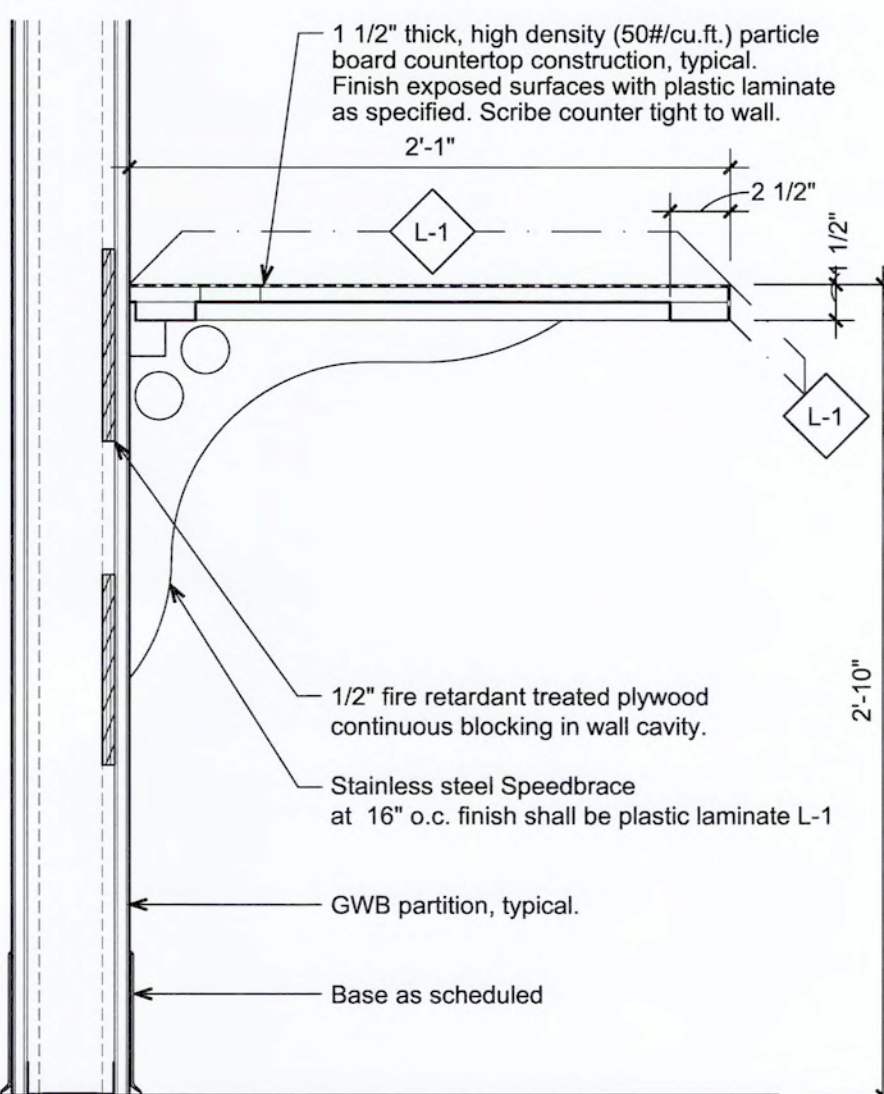


WINDOW SECTION

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

ALTERNATE #1
BENCH DETAIL

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



TYPICAL COUNTER DETAIL

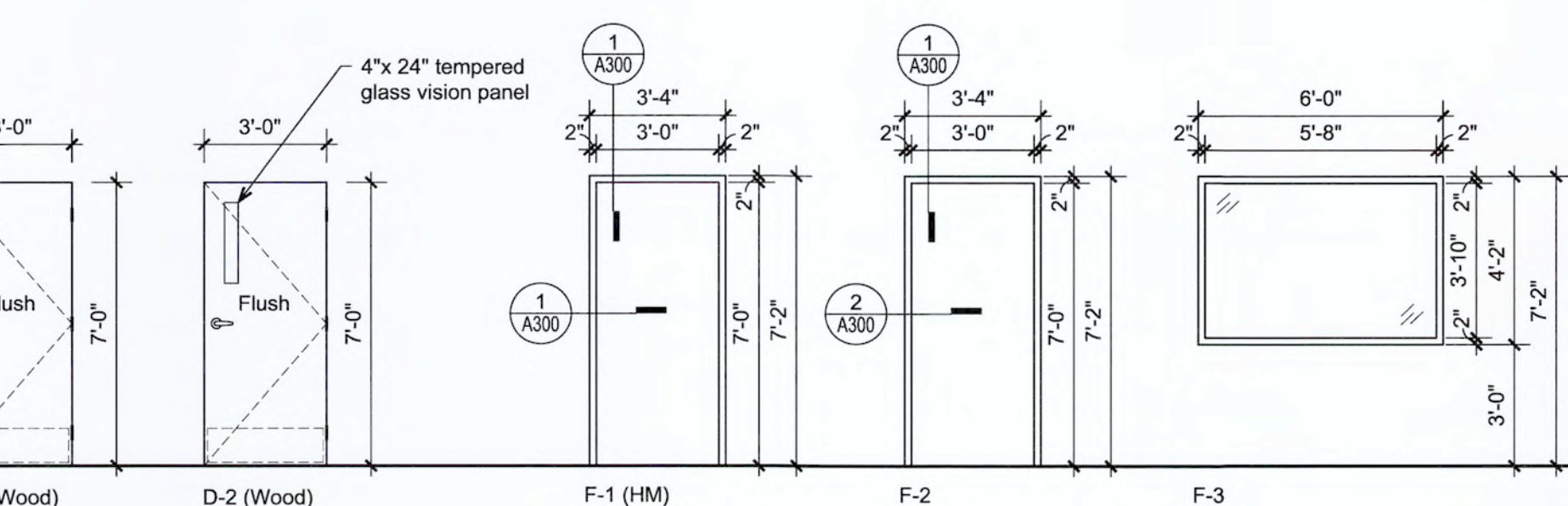
SCALE: 1 1/2"=1'-0"

CONTROL ROOM ELEVATION

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

HM FRAME AT MASONRY

SCALE: 3"=1'-0"

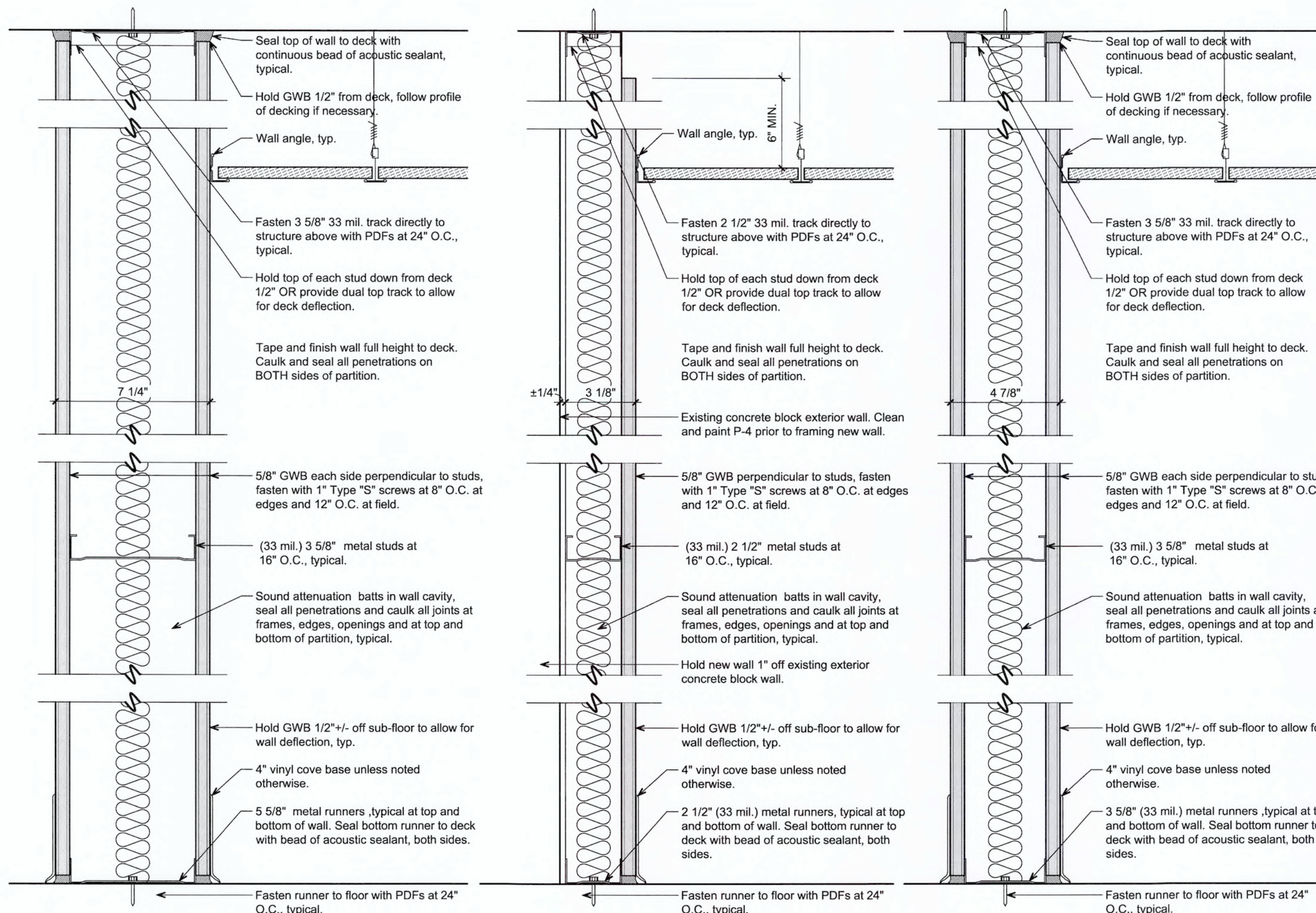


DOOR AND FRAME ELEVATIONS

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

TYP. HM. FRAME DETAIL

SCALE: 3"=1'-0"



NON-RATED PARTITION

SCALE: 3"=1'-0"

NON-RATED PARTITION

SCALE: 3"=1'-0"

NON-RATED PARTITION

SCALE: 3"=1'-0"

NON-RATED PARTITION

SCALE: 3"=1'-0"

TYP. HM. FRAME DETAIL



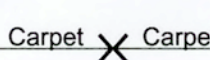

SCALE: 3"=1'-0"

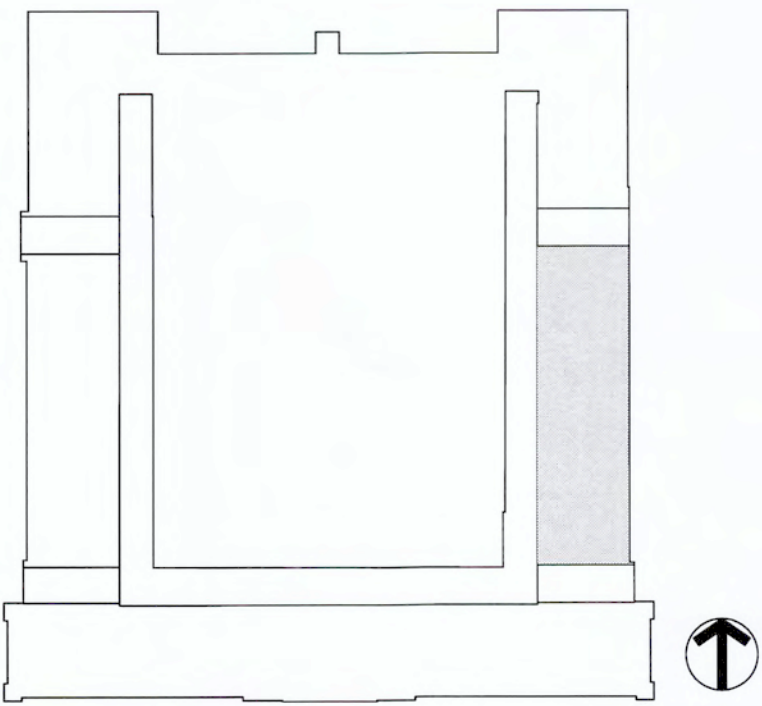
FINISH SCHEDULE					
CODE	ITEM	MANUFACTURER/STYLE/COLOR	DESCRIPTION	FLAME SPREAD CLASSIFICATION	REMARKS
LVT-1	Tile	Teknoflor Forestscapes Series #3112 Rosewood			
C-1	Carpet Tile	Patcraft Connundrum/chess			
B-1	Vinyl Wall Base	Johnsonite #92 Blue Lagoon			
P-1	Field Paint	Pittsburgh Drifting Dune #417-3	Eggshell		Location to be determined
P-2	Accent Paint	Pittsburg Rattan Palm #512-6	Eggshell		Location to be determined
P-3	Accent Paint	Pittsburg Silver Blueberry #448-5	Eggshell		
P-4	Frame Paint	Pratt and Lambert Heron #POR-1290-000-3	Semi-gloss		

FINISH NOTES:

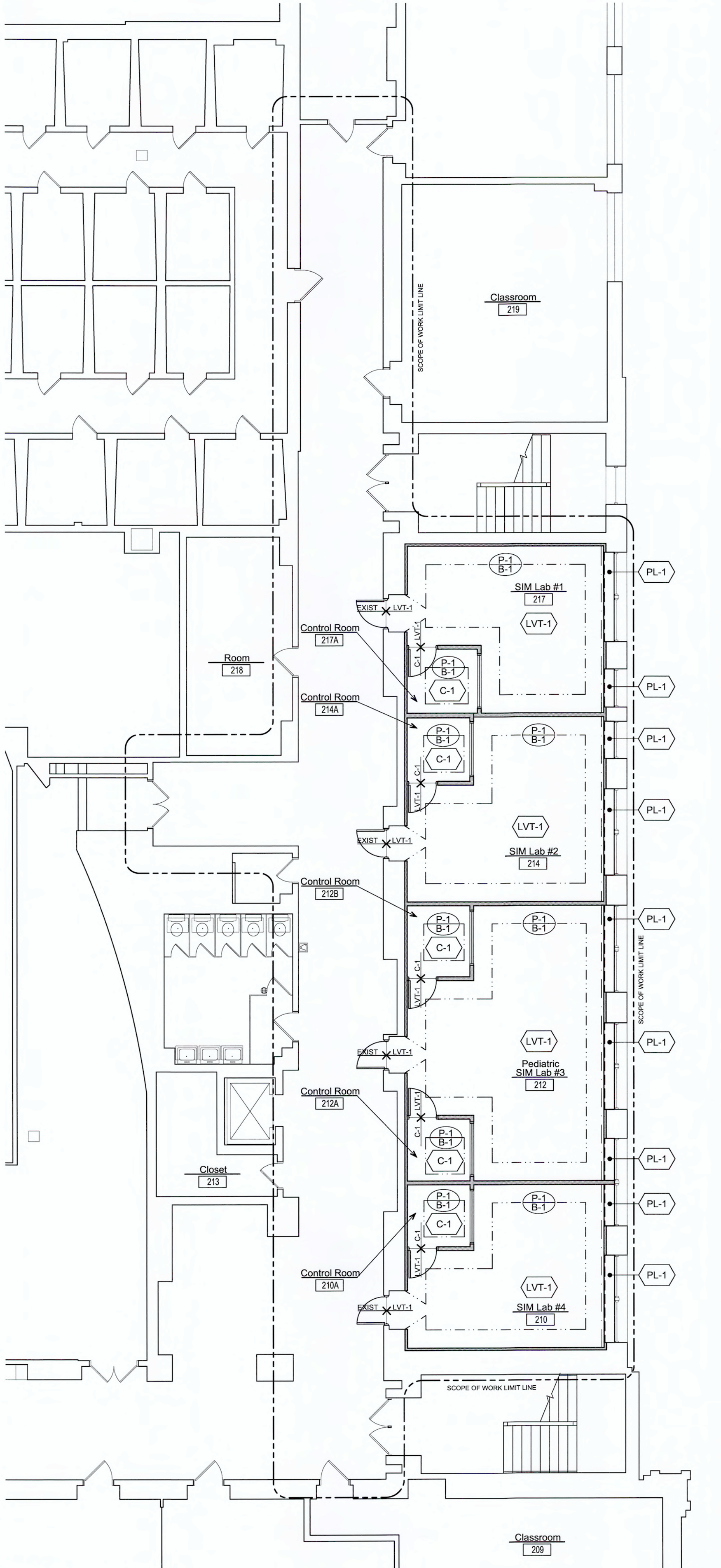
FIN 1	Refer to specifications prior to commencing any work.	FIN 7	All floor and wall surfaces to receive new finishes shall be properly prepared and cleaned in accordance with manufacturer's specifications prior to application of new finish material.
FIN 2	Numbered notes refer to this sheet only unless specifically noted otherwise.	FIN 8	Verify that all floor surfaces to receive new finishes are smooth and flat within a maximum variation of 1/4 inch in ten feet and ready to receive work. Fill minor or local low spots and other defects with suitable filler compatible with finish floor material.
FIN 3	See Finish Schedule for additional information and description of finishes.	FIN 9	Refer to specifications for prefinished door color.
FIN 4	All conditions shall be verified in the field prior to proceeding with any work. Notify Architect of any discrepancies.		
FIN 5	All existing finishes intended to remain shall be protected from damage during construction and shall be cleaned prior to Project Closeout. Finishes damaged during construction shall be replaced or repaired as directed by the Architect with new finishes to match and align with existing.		
FIN 6	DO NOT apply finishes to any wall mounted electrical devices unless specifically noted otherwise. Remove all cover plates and mask off all devices while applying new finishes and reinstall or replace cover plates prior to Project Closeout.		

FINISH KEY

-----	Denotes areas where new finish is required the full height of wall unless otherwise noted.
	Denotes new wall and base finish.
	Denotes new floor finish.
	Denotes floor transition.
	Numbered Note Tag



KEY PLAN



FINISH PLAN

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

1



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FINISH PLAN

Project Number: 2016.035	Issue Date: 23 SEPT 2016
Scale: 1/8" = 1'-0"	CAD File: 16035_A-500.DWG
Drawn By: TMS	Checked By: EAL

Revisions:



A500

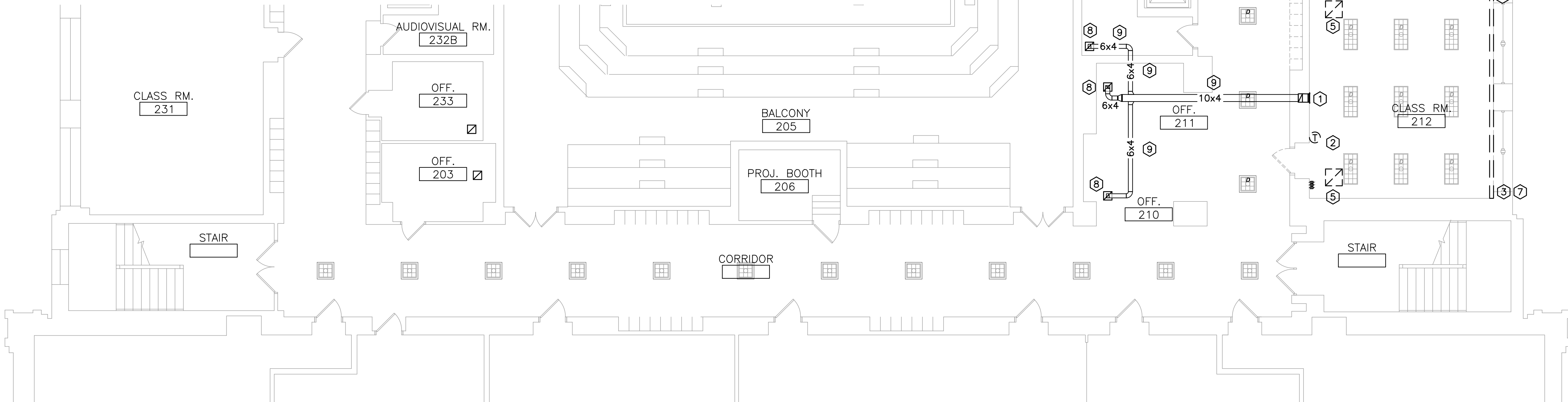
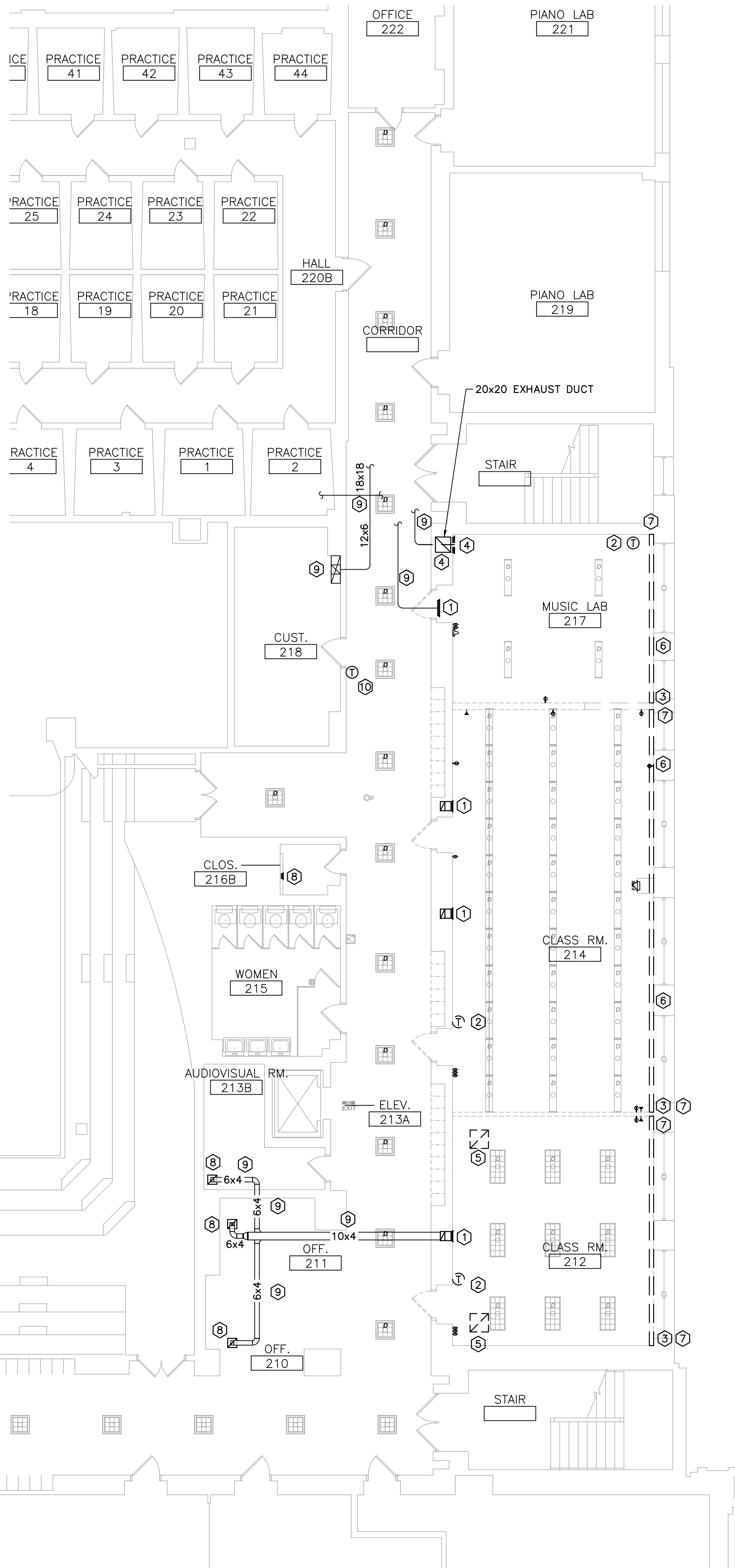


MECHANICAL DEMOLITION GENERAL NOTES

1. COORDINATE DEMOLITION WORK WITH ALL OTHER TRADES.
2. COORDINATION OF CUTTING AND PATCHING OF ROOF DECK, WALLS AND FLOORS FOR MECHANICAL WORK IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.
3. EXISTING MECHANICAL CONDITIONS SHOWN ARE FROM BEST AVAILABLE INFORMATION. CONTRACTOR IS TO VERIFY EXISTING CONDITIONS ON SITE.
4. ITEMS NOT SPECIFICALLY SHOWN OR NOTED, BUT REQUIRED TO BE REMOVED, REPAIRED OR RELOCATED FOR NEW MEP WORK IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR AND IS TO BE INCLUDED IN THE WORK.
5. WHERE MECHANICAL EQUIPMENT AND PIPING ARE REMOVED AND NOT BEING REPLACED OR REINSTALLED, THE REMOVAL SHALL INCLUDE ANY CAPPING OF DUCTWORK, PIPING, BASES, SUPPORTS, HANGERS, ETC.

DEMOLITION KEY NOTES:

- ① REMOVE EXISTING SIDEWALL EXHAUST AIR REGISTER AND DUCT PENETRATION THRU WALL. CAP DUCT AND SEAL AIR TIGHT.
- ② REMOVE EXISTING PNEUMATIC THERMOSTAT AND CONTROL AIR TUBING COMPLETE. CAP TUBING AND SEAL AIR TIGHT. SEE NEW WORK PLANS FOR NEW CONTROL REQUIREMENTS.
- ③ REMOVE EXISTING RADIATION PNEUMATIC CONTROL VALVE AND CONTROL AIR TUBING COMPLETE. CAP TUBING AND SEAL AIR TIGHT. SEE NEW WORK PLANS FOR NEW CONTROL REQUIREMENTS.
- ④ REMOVE EXISTING LOW SIDEWALL EXHAUST GRILLE AND EXHAUST DUCT RISER COMPLETE. CAP DUCT RISER ABOVE CORRIDOR CEILING AND SEAL AIR TIGHT.
- ⑤ REMOVE EXISTING EXHAUST AIR GRILLE COMPLETE AND DISCARD.
- ⑥ REMOVE EXISTING FINNED-TUBE RADIATION COMPLETE. CAP PIPING AT RISERS AND RETAIN FOR REUSE. SEE NEW WORK PLAN FOR NEW RADIATION INSTALLATION.
- ⑦ EXISTING HOT WATER SUPPLY AND RETURN PIPING RISERS TO BE RETAINED FOR REUSE. SEE NEW WORK PLAN FOR NEW RADIATION INSTALLATION.
- ⑧ EXISTING SQUARE FACE SUPPLY OR EXHAUST AIR DIFFUSER TO REMAIN FOR REUSE. NO DEMOLITION WORK ASSOCIATED WITH THIS.
- ⑨ EXISTING SUPPLY, RETURN OR EXHAUST AIR DUCTWORK TO REMAIN FOR REUSE. NO DEMOLITION WORK ASSOCIATED WITH THIS.
- ⑩ EXISTING PNEUMATIC NIGHT THERMOSTAT AND CONTROL AIR TUBING TO REMAIN FOR REUSE. NO DEMOLITION WORK ASSOCIATED WITH THIS.



1 MECHANICAL DEMOLITION FLOOR PLAN
MD-101 1/8" = 1'-0"

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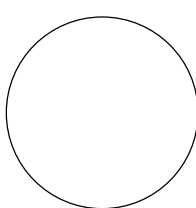
Title:
**MECHANICAL
DEMOLITION
FLOOR PLAN**

Project Number: 2016.035 Issue Date: 23 SEPT 2016

Scale: AS NOTED CAD File:

Drawn By: DMR Checked By: ALO

Revisions:



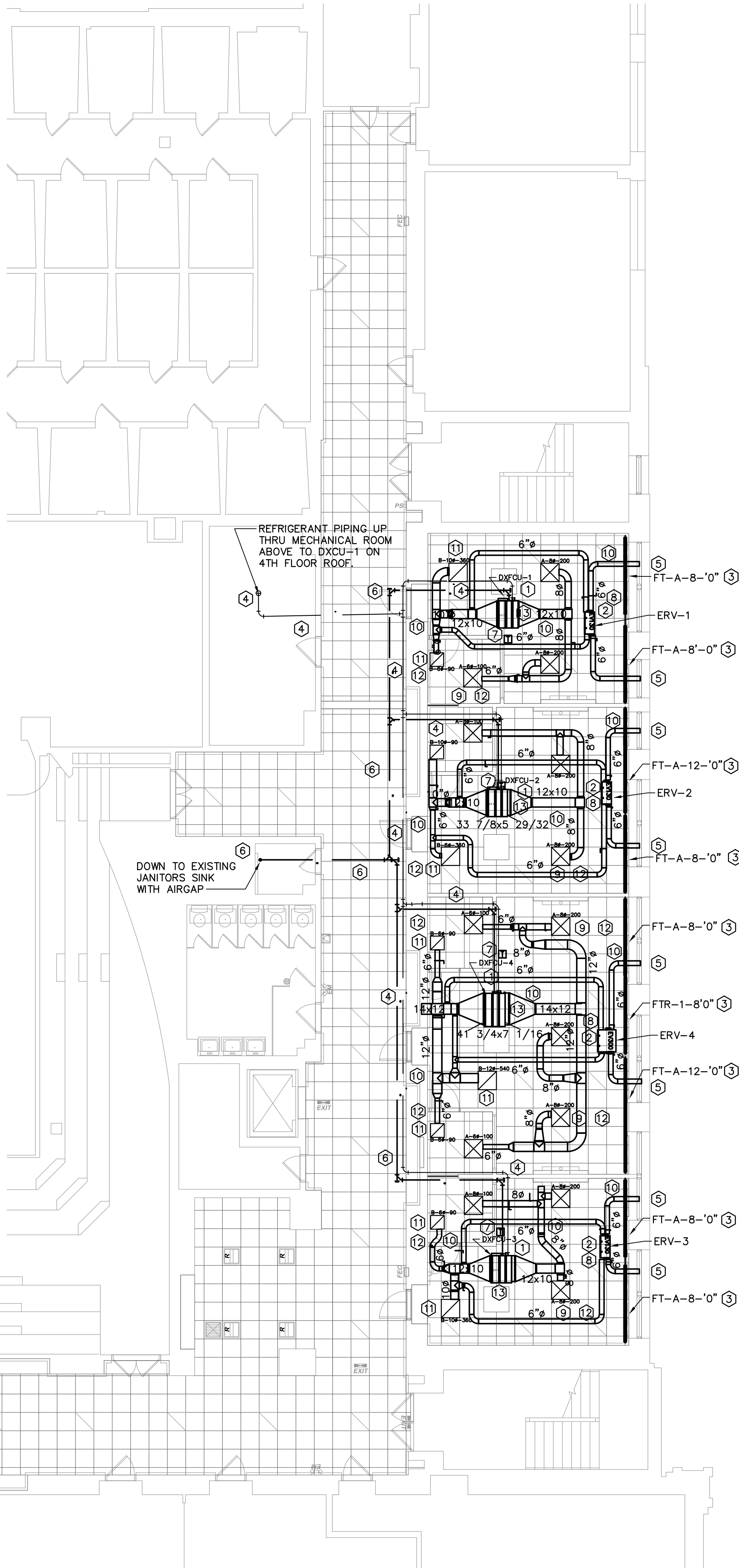
MD-101

MECHANICAL CONSTRUCTION GENERAL NOTES

- 1. COORDINATE DEMOLITION WORK WITH ALL OTHER TRADES.
- 2. COORDINATION OF CUTTING AND PATCHING OF ROOF DECK, WALLS AND FLOORS FOR MECHANICAL WORK IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.
- 3. EXISTING MECHANICAL CONDITIONS SHOWN ARE FROM BEST AVAILABLE INFORMATION. CONTRACTOR IS TO VERIFY EXISTING CONDITIONS ON SITE.
- 4. ITEMS NOT SPECIFICALLY SHOWN OR NOTED, BUT REQUIRED TO BE REMOVED, REPAIRED OR RELOCATED FOR NEW MEP WORK IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR AND IS TO BE INCLUDED IN THE WORK.
- 5. WHERE MECHANICAL EQUIPMENT AND PIPING ARE REMOVED AND NOT BEING REPLACED OR REINSTALLED, THE REMOVAL SHALL INCLUDE ANY CAPPING OF DUCTWORK, PIPING, BASES, SUPPORTS, HANGERS, ETC.
- 6. EXISTING DUCTWORK, RGD'S, PIPING, CONTROLS ETC. SHOWN ARE BASED ON FILED OBSERVATIONS AND ARE TO REMAIN UNLESS SPECIFICALLY INDICATED TO BE REMOVED, RELOCATED OR REPLACED AS INDICATED IN THE SPECIFIC DEMOLITION NOTES.

NEW CONSTRUCTION KEY NOTES:

- ① INSTALL NEW VRF FAN COIL UNIT IN LOCATION SHOWN. SEE SCHEDULE FOR PERFORMANCE AND ACCESSORIES. SEE SPECIFICATION FOR CONSTRUCTION REQUIREMENTS. INSTALL IN ACCORDANCE WITH THE MANUFACTURERS WRITTEN INSTALLATION INSTRUCTIONS.
- ② INSTALL NEW ENERGY RECOVERY VENTILATOR UNIT IN LOCATION SHOWN. SEE SCHEDULE FOR PERFORMANCE AND ACCESSORIES. SEE SPECIFICATION FOR CONSTRUCTION REQUIREMENTS. SEE INSTALLATION DETAIL. INSTALL IN ACCORDANCE WITH THE MANUFACTURERS WRITTEN INSTALLATION INSTRUCTIONS.
- ③ INSTALL NEW FINNED-TUBE RADIATION IN LOCATION SHOWN. SEE SCHEDULE FOR PERFORMANCE AND ACCESSORIES. SEE SPECIFICATION FOR CONSTRUCTION REQUIREMENTS. SEE INSTALLATION DETAIL. INSTALL IN ACCORDANCE WITH THE MANUFACTURERS WRITTEN INSTALLATION INSTRUCTIONS.
- ④ INSTALL NEW REFRIGERANT LIQUID AND VAPOR PIPING FROM VRF FAN COIL UNIT TO VRF CONDENSING UNIT ON ROOF. PIPING SHOWN IN CORRIDOR FOR CLARITY. INSTALL PIPING ABOVE CEILING IN OCCUPIED SPACE. SEE SPECIFICATION FOR PIPING AND INSULATION REQUIREMENTS. SEE INSTALLATION DETAIL FOR PIPE SIZES. INSTALL IN ACCORDANCE WITH THE MANUFACTURERS WRITTEN INSTALLATION INSTRUCTIONS.
- ⑤ CONNECT OUTDOOR AIR OR EXHAUST AIR DUCTWORK TO LOUVER INSTALLED IN SPANDREL PANEL ABOVE EXISTING WINDOW. SEE ARCHITECTURAL PLANS FOR PANEL AND LOUVER DETAILS.
- ⑥ INSTALL NEW CONDENSATE PUMP AND DRAIN PIPING FROM VRF FAN COIL UNIT TO EXISTING UTILITY SINK IN JANITOR'S CLOSET. PIPING SHOWN IN CORRIDOR FOR CLARITY. INSTALL PIPING ABOVE CEILING IN OCCUPIED SPACE. SEE SPECIFICATION FOR PIPING MATERIAL AND INSULATION REQUIREMENTS. SEE INSTALLATION DETAIL. INSTALL IN ACCORDANCE WITH THE MANUFACTURERS WRITTEN INSTALLATION INSTRUCTIONS. PROVIDE CLEANOUT AT ALL CHANGE OF DIRECTION.
- ⑦ INSTALL VRF TEMPERATURE CONTROLLER IN NEW LOCATION AT ELEVATION 4'-0" A.F.F. PROVIDE NEW LOW-VOLTAGE CONTROL WIRING TO FROM CONTROLLER TO VRF FAN COIL UNIT IN ACCORDANCE WITH THE INSTALLATION DETAIL.
- ⑧ INSTALL NEW LOW-VOLTAGE CONTROL WIRING TO FROM VRF CONTROLLER TO ENERGY RECOVERY VENTILATOR (ERV) CONTROL PANEL. PROGRAM VRF CONTROLLER TO RUN ERV DURING OCCUPIED MODE AND REMAIN OFF IN UN-OCCUPIED MODE.
- ⑨ INSTALL NEW SQUARE FACE SUPPLY DIFFUSER IN LOCATION SHOWN. SEE SCHEDULE FOR PERFORMANCE AND ACCESSORIES. SEE SPECIFICATION FOR CONSTRUCTION REQUIREMENTS. PROVIDE NEW HARD/FLEX DUCT RUN-OUT AS SHOWN. SEE INSTALLATION DETAILS. (TYPICAL)
- ⑩ INSTALL NEW LOW-PRESSURE SUPPLY, RETURN OR EXHAUST AIR DUCTWORK AS INDICATED. SEE INSTALLATION DETAILS. SEE SPEC FOR MATERIALS AND INSULATION REQUIREMENTS.(TYPICAL)
- ⑪ INSTALL NEW RETURN AIR REGISTER IN LOCATION SHOWN. PROVIDE NEW HARD/FLEX DUCT RUN-OUT AS SHOWN. SEE INSTALLATION DETAILS. (TYPICAL)
- ⑫ AIR BALANCE NEW SUPPLY AIR DIFFUSER OR RETURN REGISTER TO THE CFM INDICATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIFICATIONS.
- ⑬ AIR BALANCE NEW VRF FAN COIL UNIT OR ENERGY RECOVERY VENTILATOR TO THE CFM INDICATED IN THE EQUIPMENT SCHEDULE IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIFICATIONS.



1 MECHANICAL FLOOR PLAN
M-101 1/8" = 1'-0"



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Title:
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FLOOR
PLAN**

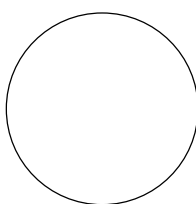
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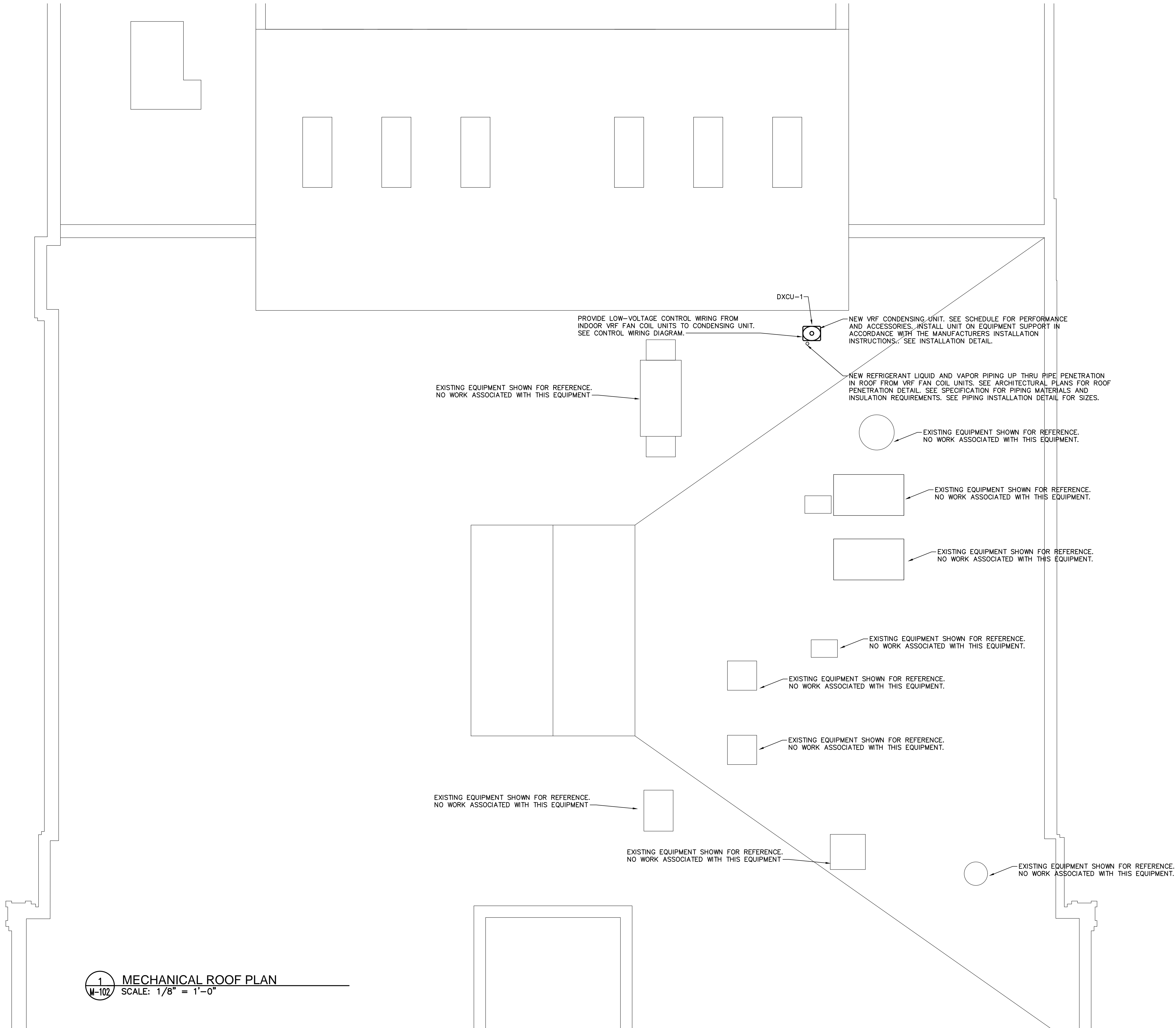
AS NOTED

Drawn By: DMR Checked By: ALO

Revisions:



M-101



1
M-102

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



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**MECHANICAL
ROOF
PLAN**

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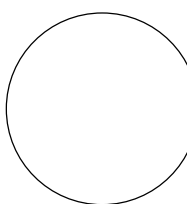
Drawn By:

DMR

Checked By:

ALO

Revisions:



M-102

PIPING ELEMENTS + VALVING			
	GATE VALVE		DIRECTION OF FLOW
	GLOBE VALVE		DIRECTION OF PITCH-RISE OR DROP
	PLUG VALVE		STRAINER
	BUTTERFLY VALVE		STRAINER WITH BLOW OFF VALVE
	BALL VALVE		PIPE RISING UP
	CHECK VALVE		PIPE DROPPING DOWN
	GATE VALVE, ANGLE		TEE OUTLET UP
	GLOBE VALVE, ANGLE		TEE OUTLET DOWN
	COMBINATION BALANCING/ SHUT-OFF VALVE		CONCENTRIC REDUCER
	AUTOMATIC BALANCING VALVE		ECCENTRIC REDUCER
	CIRCUIT SETTING BALANCING VALVE		UNION - SCREWED OR FLANGED
	3 WAY CONTROL VALVE		ANCHOR
	2 WAY CONTROL VALVE		GUIDE
	SOLENOID VALVE		EXPANSION JOINT
	PRESSURE REDUCING VALVE (PRV)		FLOW SWITCH
	TEMPERATURE/PRESSURE RELIEF VALVE		TEMPERATURE TRANSMITTER
	RELIEF SAFETY VALVE		PRESSURE TRANSMITTER OR PRESSURE SWITCH
	GAS COCK		THERMOMETER
	MANUAL AIR VENT		GAUGE WITH GAUGE COCK & SYPHON (STEAM)
	AUTOMATIC AIR VENT (EXTEND DISCHARGE TO DRAIN)		AQUASTAT
	VACUUM BREAKER		STEAM TRAP
	FLOW METER - VENTURI		ELECTRICALLY TRACED PIPING
	DIRECTION OF FLOW		EXPANSION LOOP (WxH)
	DIRECTION OF PITCH-RISE OR DROP		FLEXIBLE CONNECTION

ABBREVIATIONS											
ABV	AUTOMATIC BALANCING VALVE	DWG	DRAWING	FTC	FLOOR TO CENTERLINE	MIN	MINIMUM	RM	ROOM		
AC	AIR CONDITIONING	EA	EACH	FTR	FINNED TUBE RADIATION	MISC	MISCELLANEOUS	RPM	REVOLUTIONS PER MINUTE		
AD	ACCESS DOOR	EAT	ENTERING AIR TEMPERATURE	FTU	FAN TERMINAL UNIT	MTD	MOUNTED	SA	SUPPLY AIR		
AFF	ABOVE FINISHED FLOOR	EF	EXHAUST FAN	FV	FACE VELOCITY	NC	NORMALLY CLOSED	SCH	SCHEDULE		
AHU	AIR HANDLING UNIT	EFF	EFFICIENCY	GA	GAUGE	NIC	NOT IN CONTRACT	SD	SMOKE DAMPER WITH ACCESS DOOR		
AP	ACCESS PANEL	EJ	EXPANSION JOINT	GAL	GALLON	No	NUMBER	SENS	SENSIBLE		
ATC	AUTOMATIC TEMPERATURE CONTROL	EL	ELEVATION	GALV	GALVANIZED	NO	NORMALLY OPEN	SF	SQUARE FEET		
AVG	AVERAGE	ELEC	ELECTRIC	GC	GENERAL CONTRACTOR	NOM	NOMINAL	SH	SENSIBLE HEAT		
AWT	AVERAGE WATER TEMPERATURE	ELEV	ELEVATOR	GPD	GALLONS PER DAY	NTS	NOT TO SCALE	SP	STATIC PRESSURE		
BDD	BACK DRAFT DAMPER	ENT	ENTERING	GPH	GALLONS PER HOUR	OA	OUTSIDE AIR	SPEC	SPECIFICATION		
BFF	BELOW FINISHED FLOOR	EQ	EQUAL	GPM	GALLONS PER MINUTE	OD	OUTSIDE DIMENSION	SQ	SQUARE		
BG	BLAST GATE	EQUIP	EQUIPMENT	H ₂ O	WATER	OC	ON CENTER	SS	STAINLESS STEEL		
BLDG	BUILDING	EQUIV	EQUIVALENT	HB	HOSE BIB	OCC	OCCUPIED	STD	STANDARD		
BOD	BOTTOM OF DUCT	ESP	EXTERNAL STATIC PRESSURE	HWC	HOT WATER COIL	PART	PARTIAL	STL	STEEL		
BSMT	BASEMENT	ET	EXPANSION TANK	HD	HEAD (SEE SCHEDULES)	PD	PRESSURE DROP (SEE SCHEDULE)	STR	STRUCTURAL		
BTU	BRITISH THERMAL UNIT	EUH	ELECTRIC UNIT HEATER	HP	HORSEPOWER	PERF	PERFORATED	SUCT	SUCTION		
CAP	CAPACITY	EWT	ENTERING WATER TEMPERATURE	HPG	HIGH PRESSURE GAS	PH	PHASE	SUP	SUPPLY		
CFM	CUBIC FEET PER MINUTE	EXH	EXHAUST	HR	HOSE BIB	PNEU	PNEUMATIC	SYS	SYSTEM		
CI	CAST IRON	EXIST	EXISTING	HTR	HEATER	POS	POSITIVE	TEMP	TEMPERATURE		
CL	CENTER LINE	EXP	EXPANSION	HX	HEAT EXCHANGER	PRV	PRESSURE REDUCING VALVE	TP	TOTAL PRESSURE		
CLG	CEILING	EXT	EXTERNAL	HZ	HERTZ	PS	PRESSURE SWITCH	TSP	TOTAL STATIC PRESSURE		
C.O.	CLEAN OUT	°F	DEGREES FAHRENHEIT	ID	INTERNAL DIAMETER	PSI	POUNDS PER SQUARE INCH	TT	TEMPERATURE TRANSMITTER		
COL	COLUMN	FA	FREE AREA	IN	INCHES	PSIG	POUNDS PER SQUARE INCH GAUGE	TYP	TYPICAL		
COMP	COMPRESSOR	FC	FAIL CLOSED	INV	INVERT	PVS	POLYVINYL COATED STEEL	UC	UNDERCUT		
CON	CONCENTRIC	FCU	FAN COIL UNIT	KW	KILOWATT	RA	RETURN AIR	UH	UNIT HEATER		
CONC	CONCRETE	FCV	FLOW CONTROL VALVE	L	LENGTH	RAC	RUN ABOVE CEILING	UNOCC	UNOCCUPIED		
COND/CD	CONDENSATE	FD/AD	FIRE DAMPER W/ACCESS DOOR	LAT	LEAVING AIR TEMPERATURE	RAF	RETURN AIR FAN	V	VOLTS		
CONN	CONNECTION	FIN	FINISHED	LB	POUND	RBC	RUN BELOW CEILING	VB	VACUUM BREAKER		
CONT	CONTINUATION	FL	FLOOR	LBS/HR	POUNDS PER HOUR (#/HR)	RBG	RUN BELOW GRADE	VD	VOLUME DAMPER		
CONTR	CONTRACTOR	FLA	FULL LOAD AMPS	LIN	LINEAR	RD	ROOF DRAIN	VEL	VELOCITY		
CU	CONDENSING UNIT	FLR	FLOOR	LPG	LOW PRESSURE GAS	REG	REGISTER	VOLT	VOLTAGE		
CUH	CABINET UNIT HEATER	FM	FLOW METER	LRA	LOCK ROTOR AMPS	REL	RELIEF	W	WIDTH		
DB	DRY BULB	FP	FIRE PROTECTION	LWT	LEAVING WATER TEMPERATURE	RET	RETURN	W/O	WITHOUT		
DEF	DRYER EXHAUST FAN	FPM	FEET PER MINUTE	MBH	THOUSANDS OF BTU PER HOUR	RGD	REGISTERS, GRILLES, & DIFFUSERS	WB	WET BULB		
DIA	DIAMETER	FPS	FEET PER SECOND	MED	MEDIUM	RH	RELATIVE HUMIDITY	WC	WATER COLUMN		
DIAG	DIAGRAM	FS	FLOW SWITCH	MFR/MFGR	MANUFACTURER	RHC	REHEAT COIL	WT	WEIGHT		
DIF	DIFFERENTIAL	FD/SD/AD	COMBINATION FIRE AND SMOKE DAMPER WITH ACCESS DOOR	MIN	MINIMUM	RV	RELIEF VALVE				
DIFF	DIFFUSER	FT	FEET	MISC	MISCELLANEOUS	RLA	RATED LOAD AMPS				
DISCH	DISCHARGE	FTB	FLOOR TO BOTTOM	NC	NORMALLY CLOSED						
DN	DOWN										

DUCTWORK			
	DOUBLE LINE		SINGLE LINE
	EXISTING DUCTWORK TO REMAIN		TYPE-SIZE-CFM
	EXISTING DUCTWORK TO BE REMOVED		CEILING RETURN/EXHAUST GRILLE OR REGISTER
	NEW DUCTWORK		TYPE-SIZE-CFM
	MANUAL VOLUME DAMPER (VD) MOTOR OPERATED DAMPER		SUPPLY AIR GRILLE OR SUPPLY AIR REGISTER
	ACCESS DOOR		TYPE-SIZE-CFM
	RADIUS ELBOW (R=1.5)		RETURN AND/OR EXHAUST AIR GRILLE OR REGISTER
	VANED ELBOW		TYPE-SIZE-CFM
	BRANCH DUCT TAKEOFF WITH EXTRACTOR		FLEXIBLE DUCTWORK
	RISE OR DROP DIRECTION OF AIR FLOW		FIRE DAMPER
	FLEXIBLE CONNECTION (FXC)		SMOKE DAMPER
	DIFFUSER OFF BOTTOM OF DUCT		COMB. FIRE DAMPER/ SMOKE DAMPER
	DIFFUSER WITH FLEXIBLE DUCT CONNECTION		THERMOSTAT
			HUMIDISTAT
			SMOKE DETECTOR
			CONTROL DAMPER - OPPOSED BLADE
			CONTROL DAMPER - PARALLEL BLADE
			BACKDRAFT DAMPER
			HUMIDIFIER

REFERENCE SYMBOLS	
	INDICATES TYPICAL DETAIL NUMBER (APPLIES TO ALL CONTRACT DRAWINGS)
	INDICATES DRAWING ON WHICH DETAIL APPEARS
	INDICATES SECTION NUMBER
	INDICATES DRAWING ON WHICH SECTION APPEARS
	INDICATES REVISION & NUMBER
	TAG INDICATES RETURN ELL OR RETURN DUCTWORK SIZE. SEE PLAN DETAILS AND SCHEDULES.
	CONNECT NEW TO EXISTING
	TERMINATION POINT OF DEMOLITION
	CONNECT TO MANUFACTURER PRE-PIPPED CONNECTION
	POINT OF BEAM PENETRATION
	PRE-PURCHASED EQUIPMENT
	SHEET NOTE NUMBER

CONTROLS LEGEND	
	ANALOG OUTPUT
	ANALOG INPUT
	DIGITAL OUTPUT
	DIGITAL INPUT
	TEMPERATURE SENSOR
	DIFFERENTIAL PRESSURE SENSOR
	FLOW STATION
	MOTORIZED DAMPER
	DUCT MOUNTED SMOKE DETECTOR
	DISCONNECT SWITCH
	FLOW SWITCH
	VARIABLE FREQUENCY DRIVE WITH BYPASS
	HOT WATER SUPPLY
	HOT WATER RETURN
	DUAL TEMPERATURE SUPPLY
	DUAL TEMPERATURE RETURN
	OUTSIDE AIR
	CARBON MONOXIDE GAS SENSOR
	METHANE SENSOR
	NITROGEN DIOXIDE SENSOR
	HAZARDOUS GAS MONITORING PANEL
	DIRECT DIGITAL CONTROLLER
	SWITCH- MOMENTARY PUSHBUTTON MANUAL REMOTE OVERRIDE
	HUMIDITY SENSOR
	AIRFLOW STATION

LINE DESIGNATIONS	
	EXISTING TO REMAIN (SERVICE AS INDICATED)
	COMPRESSED AIR
	BOILER FEEDWATER
	BOILER BLOWDOWN
	CONDENSER WATER SUPPLY
	CONDENSER WATER RETURN
	CHILLED WATER SUPPLY
	CHILLED WATER RETURN
	CONDENSATE DRAIN
	GAS VENT
	HIGH PRESSURE GAS
	HOT WATER SUPPLY
	HOT WATER RETURN
	LOW PRESSURE CONDENSATE
	LOW PRESSURE GAS
	PUMPED CONDENSATE
	REFRIGERANT LIQUID
	REFRIGERANT SUCTION
	REFRIGERANT DISCHARGE
	REFRIGERANT HOT GAS
	VENT PIPING



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SYMBOLS,
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LEGEND**

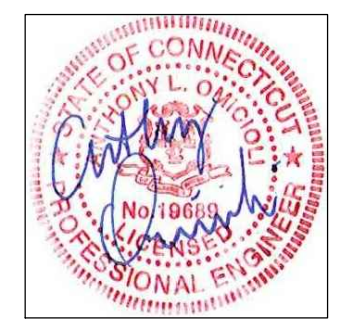
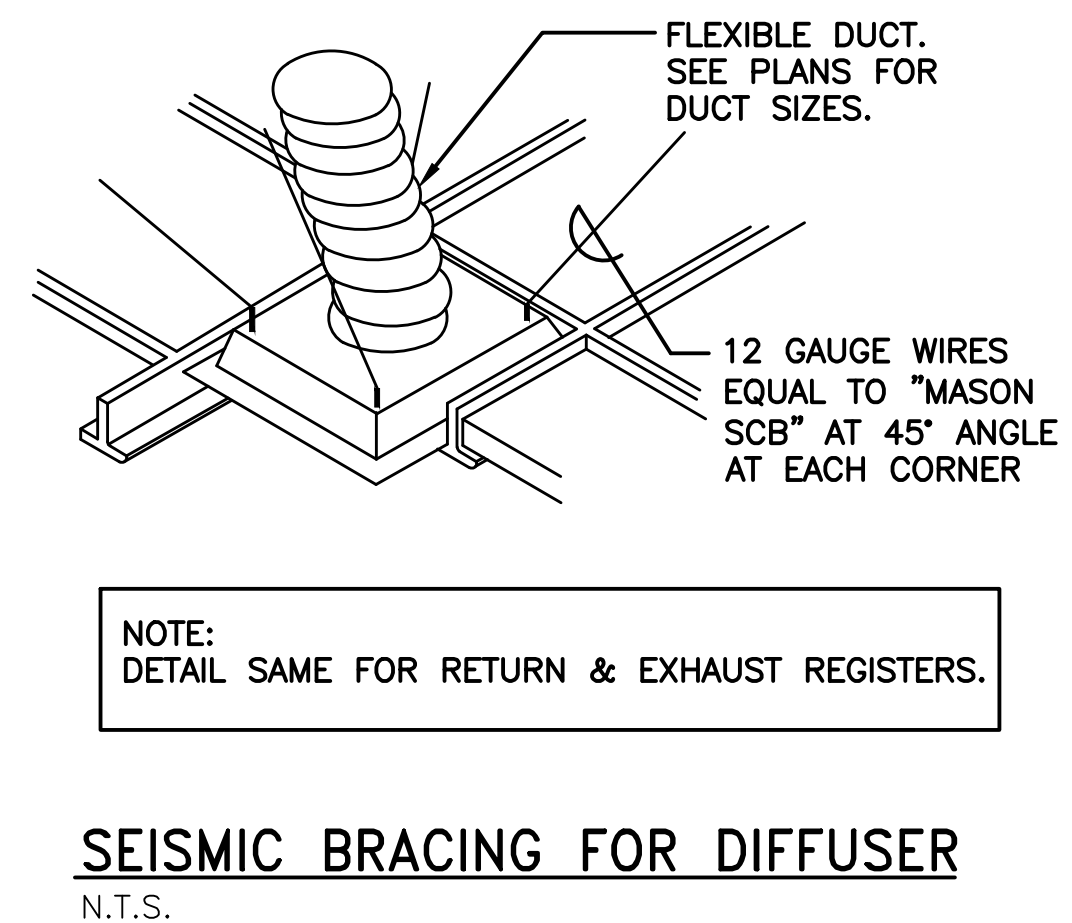
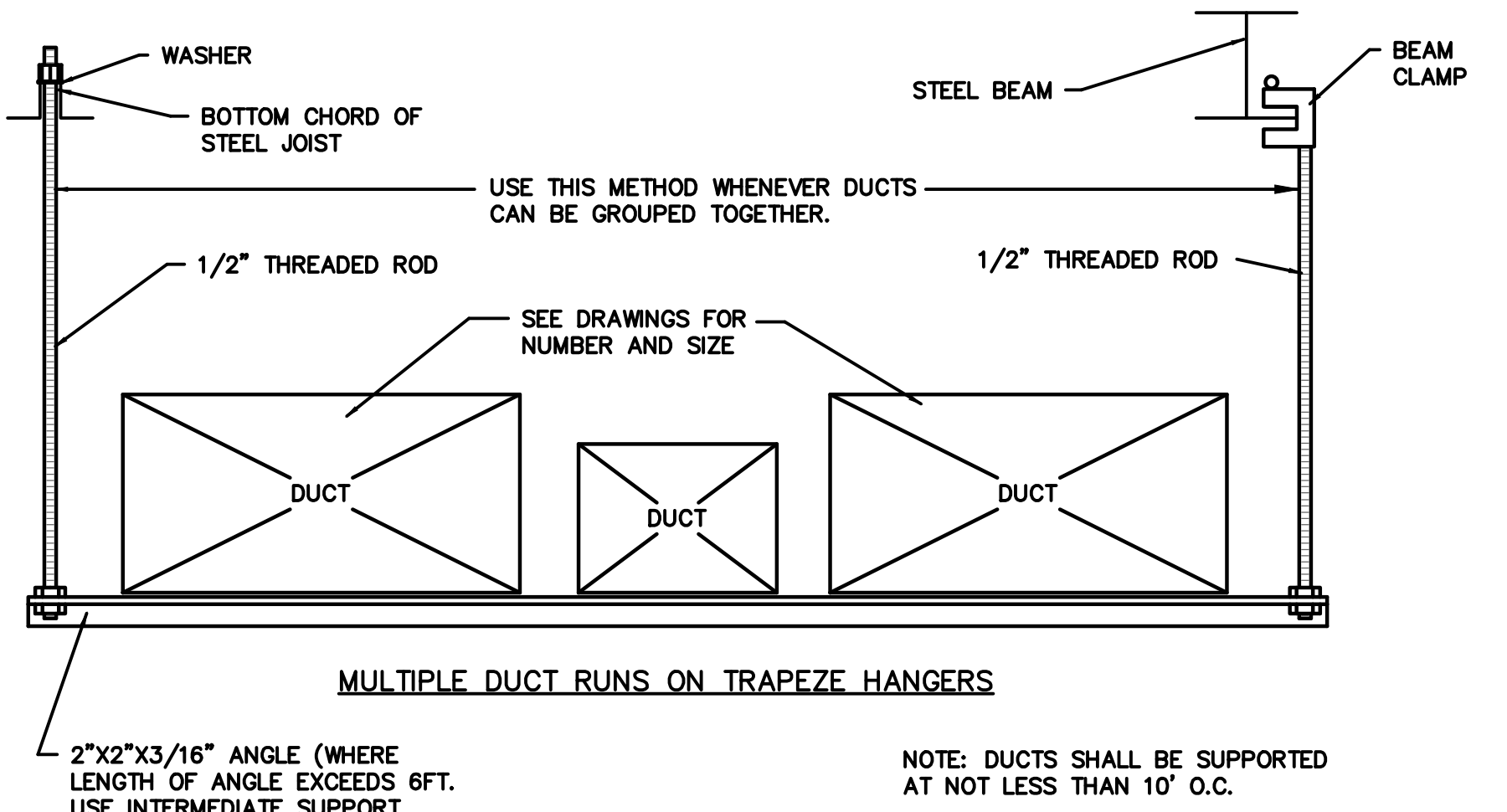
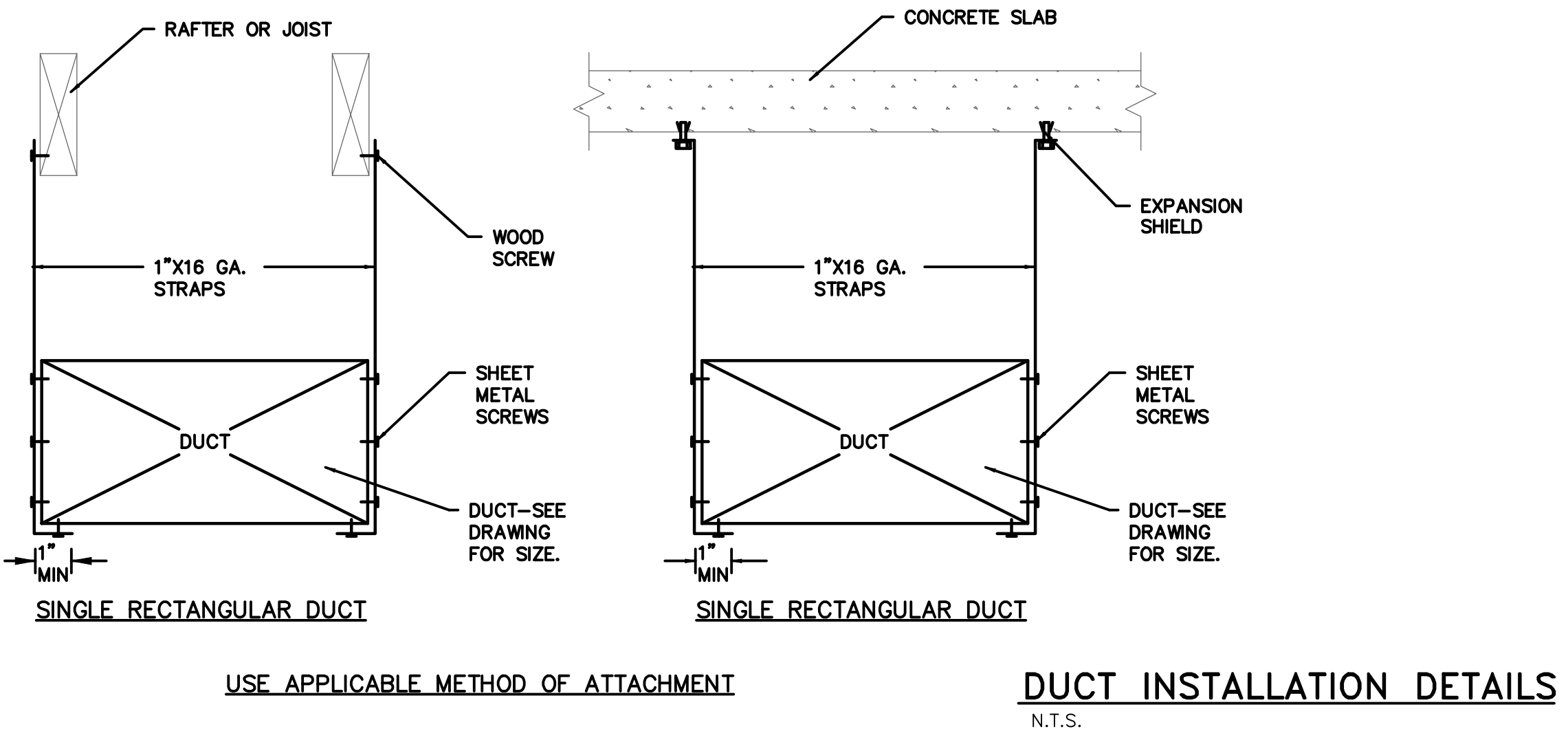
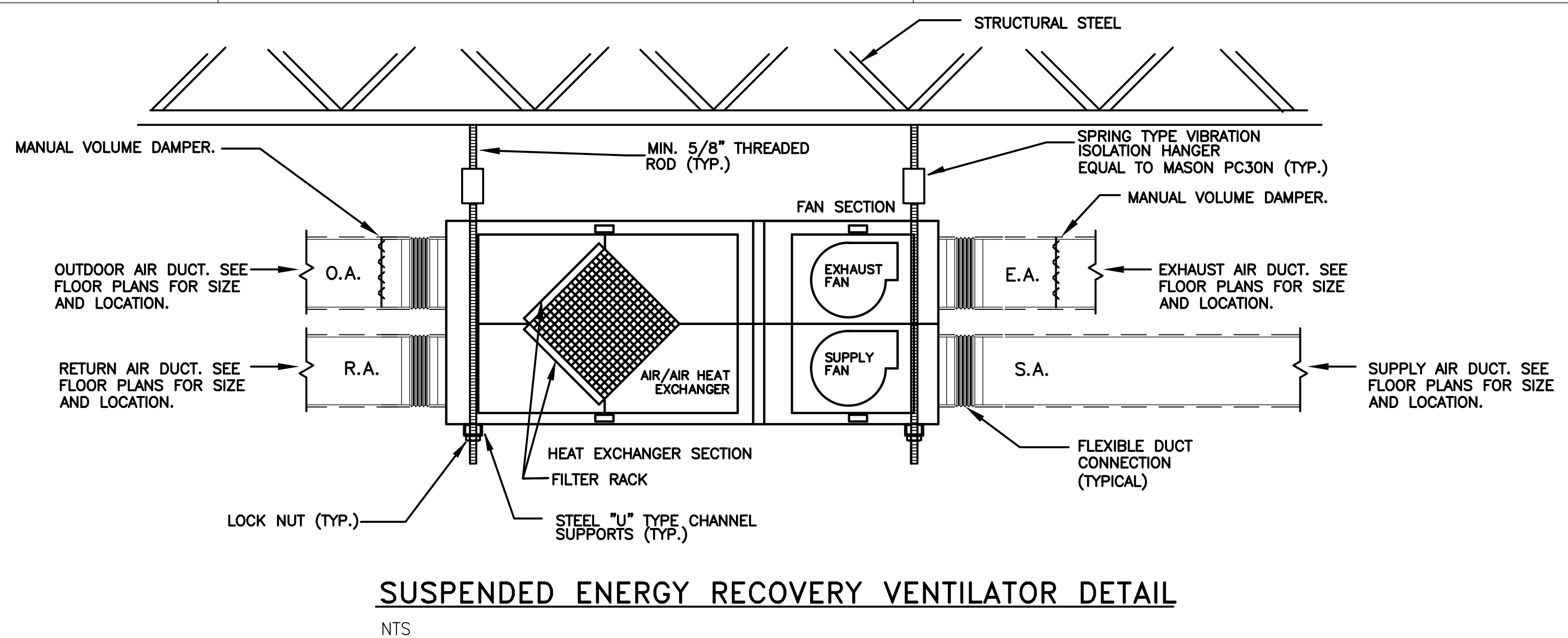
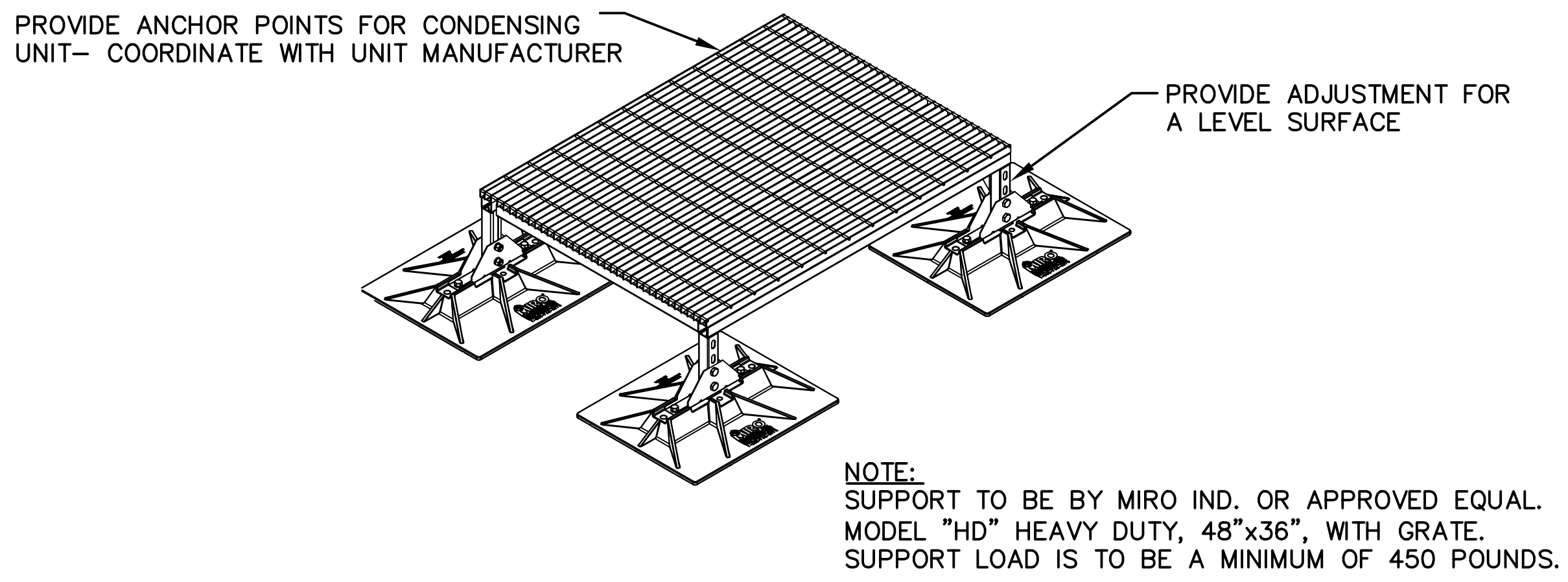
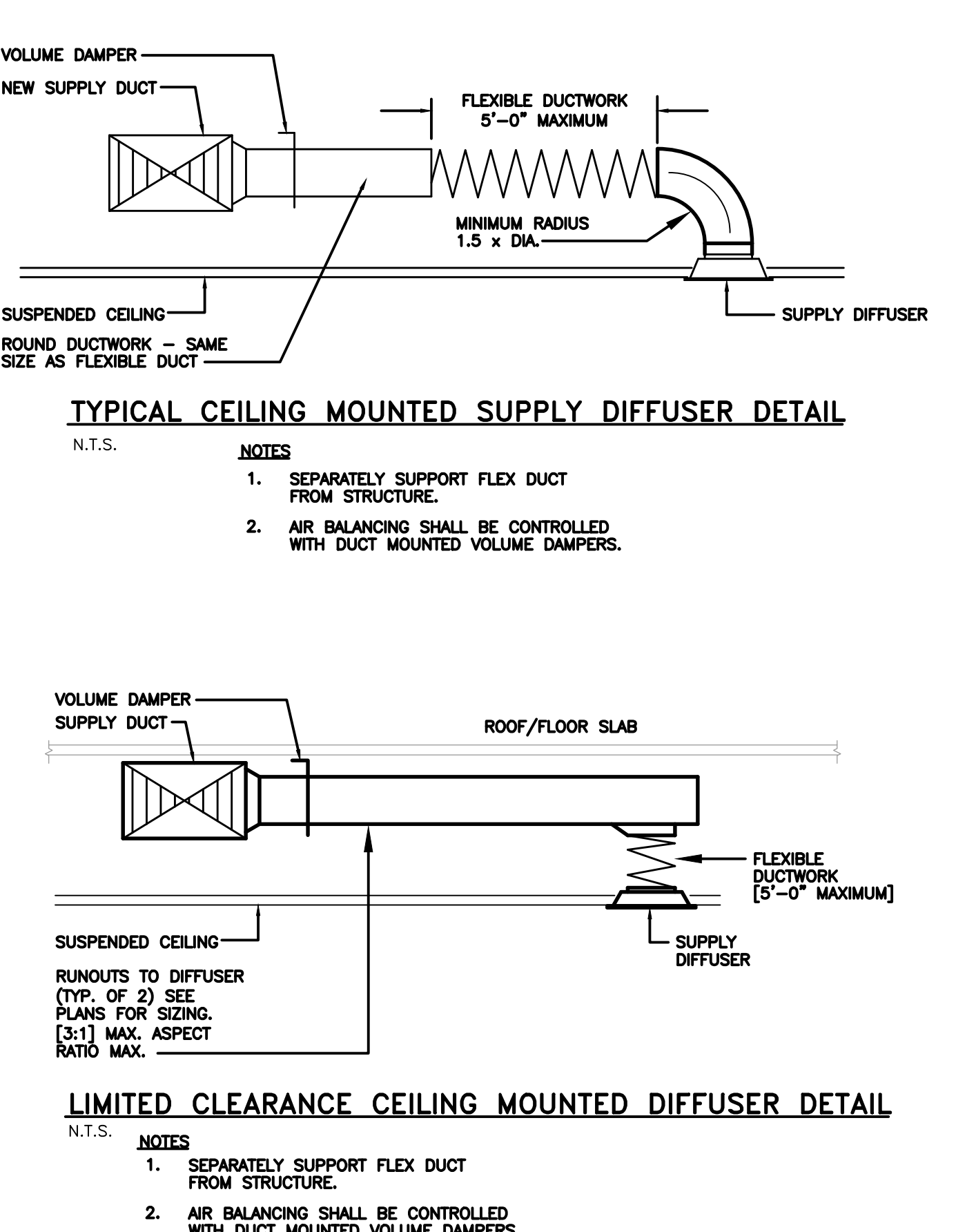
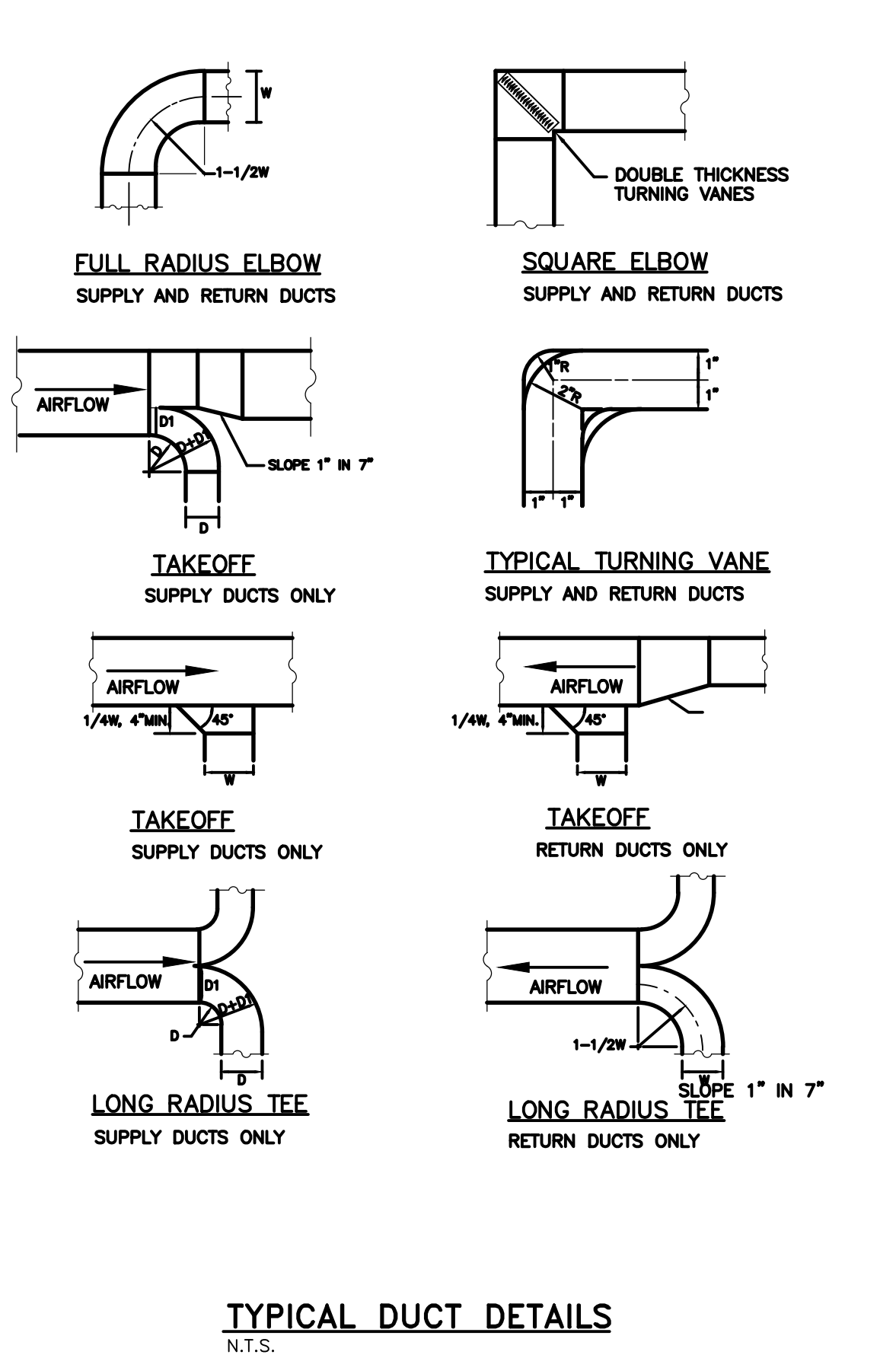
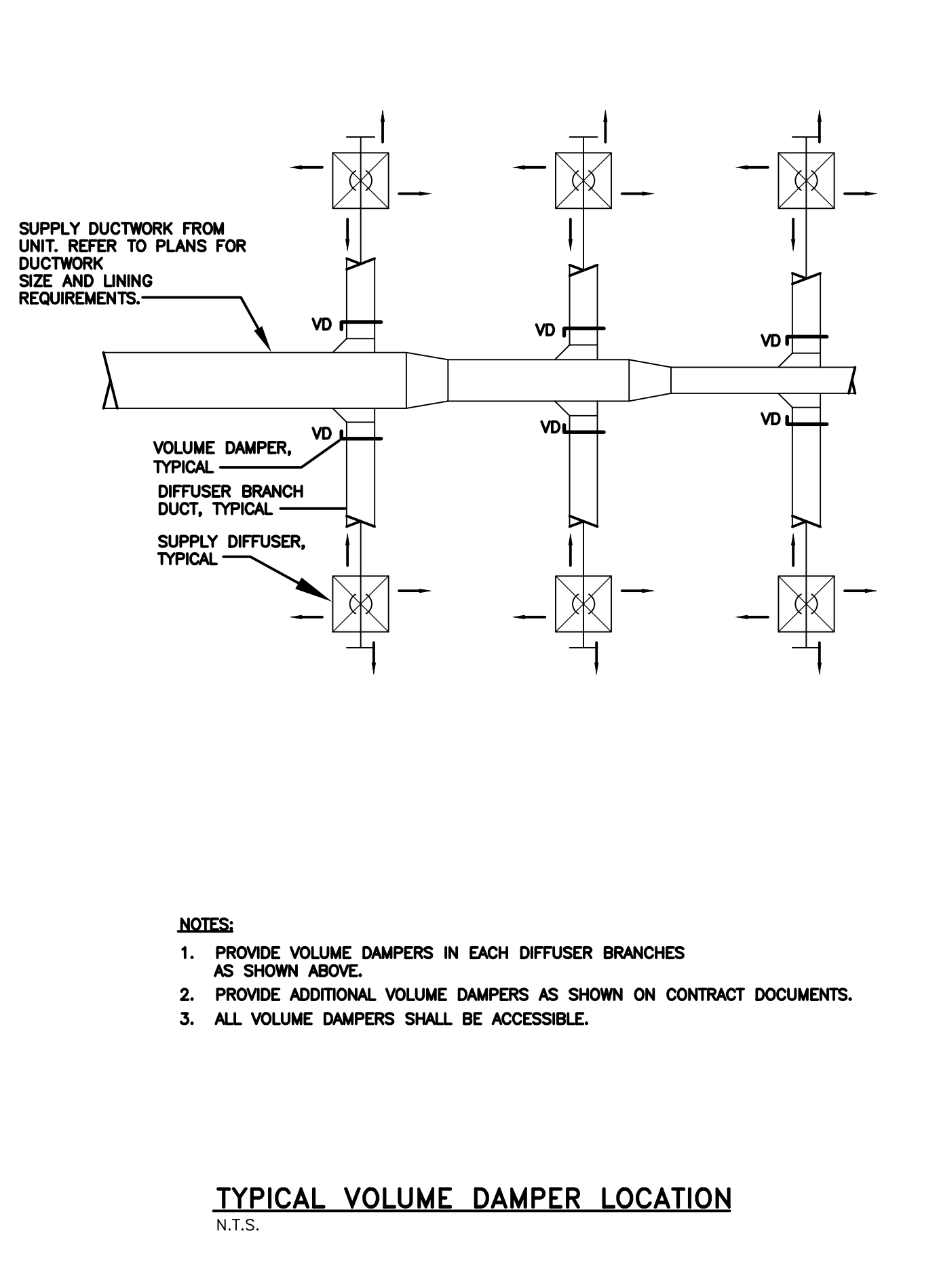
Project Number: 2016.035 Issue Date: 23 SEPT 2016

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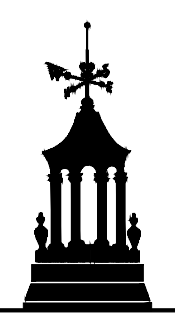
Drawn By: DMR Checked By: ALO

Revisions:	

M-401



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MECHANICAL DETAILS

Project Number: 2016.035
Issue Date: 23 SEPT 2016
Scale: AS NOTED
CAD File:

Drawn By: DMR
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M-402

ENERGY RECOVERY VENTILATOR SCHEDULE

"RENEWAIRE" AS STANDARD
(AMERICAN ALDES, CON-SAV EQUALS)

TAG	MODEL No.	AREA(S) SERVED	WEIGHT (LBS)	DIMENSIONS (IN.) (LxWxH)	SUPPLY FAN CFM	EXT. STATIC [SUPPLY]	EXT. STATIC [EXH]	[EXH] FAN CFM	MOTOR [SUPPLY FAN]						MOTOR [EXHAUST FAN]						UNIT POWER		HEAT EXCHANGER PERFORMANCE														REMARKS				
									FILTERS										SUPPLY AIR				EXHAUST AIR		WINTER			OPERATION			RECOVERY EFFECTIVENESS										
									OUTDOOR AIR	EXHAUST AIR	W	MHP	FLA	VOLTS	PH	Hz	W	MHP	FLA	VOLTS	PH	Hz	MINIMUM CIRCUIT AMPACITY	MAX. OVERLOAD PROTECTION	SUMMER			OPERATION			SUPPLY AIR			EXHAUST AIR				SUMMER		WINTER	
																									E.A.T. DB/WB (°F)	L.A.T. DB/WB (°F)	A.P.D. (°WC)	E.A.T. DB/°RH (°F)	L.A.T. DB/WB (°F)	A.P.D. (°WC)	E.A.T. DB/WB (°F)	L.A.T. DB/WB (°F)	A.P.D. (°WC)	E.A.T. DB/°RH (°F)	L.A.T. (°F)	A.P.D. (°WC)		SENSIBLE (%)	TOTAL (%)	SENSIBLE (%)	TOTAL (%)
ERV-1	Ev130	RM 217/217A	48	33.5x13.25x20	130	0.25	0.25	130	1" MERV 8	1" MERV 8	102	0.1	1.3	120	1	60	102	0.1	1.3	120	1	60	2.80	15.0	86/73	78/68	--	75/52	--	--	8/6	53/45	--	70/49	--	--	73	50	73	66	SEE BELOW
ERV-2	Ev130	RM 214/214A	48	33.5x13.25x20	130	0.25	0.25	130	1" MERV 8	1" MERV 8	102	0.1	1.3	120	1	60	102	0.1	1.3	120	1	60	2.80	15.0	86/73	78/68	--	75/52	--	--	8/6	53/45	--	70/49	--	--	73	50	73	66	SEE BELOW
ERV-3	Ev130	RM 217/217A	48	33.5x13.25x20	130	0.25	0.25	130	1" MERV 8	1" MERV 8	102	0.1	1.3	120	1	60	102	0.1	1.3	120	1	60	2.80	15.0	86/73	78/68	--	75/52	--	--	8/6	53/45	--	70/49	--	--	73	50	73	66	SEE BELOW
ERV-4	Ev300	RM 212/212A/212B	115	33.75x24x20	300	0.25	0.25	300	1" MERV 8	1" MERV 8	315	0.2	3.3	120	1	60	315	0.2	3.3	120	1	60	7.10	15.0	86/73	78/68	--	75/52	--	--	8/6	53/45	--	70/49	--	--	74	51	74	67	SEE BELOW

EV130 NOTES:

- PASSIVE FROST CONTROL SYSTEM.
- PROVIDE FACTORY INSTALLED NON-FUSED DISCONNECT SWITCHES.
- 70 VA, 24V TRANSFORMER/RELAY PACKAGE.
- 2" PLEATED MERV 8 DISPOSABLE FILTERS IN SUPPLY AND EXHAUST AIRSTREAMS.
- 20 GAUGE, G90 GALVANIZED UNIT CASE, WITH LAPPED CORNERS, 1" 4 LB FIBERGLASS BOARD INSULATION.
- PROVIDE WITH BACKDRAFT DAMPER FOR OUTDOOR AND EXHAUST AIR STREAMS.
- FORWARD-CURVED DIRECT DRIVE FANS w/ PERMANENT SPLIT CAPACITOR MOTOR (PSC) FOR EACH AIRSTREAM.
- G-5 HYDROSCOPIC RESIN PLATE HEAT EXCHANGER CORE CONFIGURED FOR CROSS-FLOW AIR PATH.
- ACCESS DOORS FOR BLOWERS, ERV CORE AND FILTERS w/ COMPRESSION SEAL CLOSED-CELL FOAM GASKETS.

EV300 NOTES:

- PASSIVE FROST CONTROL SYSTEM.
- PROVIDE FACTORY INSTALLED NON-FUSED DISCONNECT SWITCHES.
- 70 VA, 24V TRANSFORMER/RELAY PACKAGE.
- 2" PLEATED MERV 8 DISPOSABLE FILTERS IN SUPPLY AND EXHAUST AIRSTREAMS.
- 20 GAUGE, G90 GALVANIZED UNIT CASE, WITH LAPPED CORNERS, 1" 4 LB FIBERGLASS BOARD INSULATION.
- PROVIDE WITH BACKDRAFT DAMPER FOR OUTDOOR AND EXHAUST AIR STREAMS.
- FORWARD-CURVED DIRECT DRIVE FANS w/ PERMANENT SPLIT CAPACITOR MOTOR (PSC) FOR EACH AIRSTREAM.
- G-5 HYDROSCOPIC RESIN PLATE HEAT EXCHANGER CORE CONFIGURED FOR CROSS-FLOW AIR PATH.
- ACCESS DOORS FOR BLOWERS, ERV CORE AND FILTERS w/ COMPRESSION SEAL CLOSED-CELL FOAM GASKETS.

VARIABLE REFRIGERANT FLOW (VRF) AIR CONDITIONING / HEAT PUMP SPLIT SYSTEMS

"MITSUBISHI" AS STANDARD

INDOOR UNIT												OUTDOOR UNIT								OUTDOOR CONDITIONS			
TAG	AREA(S) SERVED	MFGR. MODEL	SYSTEM IEER/COP	EVAPORATOR UNIT			COOLING PERFORMANCE		HEATING PERFORMANCE		NOTES							SUMMER	WINTER				
				FAN CFM	VOLTS	FLA	ENT. DB/WB	TOTAL/SEN	ENT. DB	MBH		NOTES				ENT. DB/WB	ENT. DB/WB (HI/LO)						
DFCU-1	RM 217/217A	PEFY-P18NMSU-ER2	28.1/4.44	530	208/230 1ø	0.00	18.1/12.8 MBH	80/67 F	70	10.5	1, 2, 3, 4, 5, 6												
DFCU-1	RM 214/214A	PEFY-P18NMSU-ER2	28.1/4.44	530	208/230 1ø	0.15	18.1/12.8 MBH	80/67 F	70	10.5	1, 2, 3, 4, 5, 6												
DFCU-3	RM 210/210A	PEFY-P18NMSU-ER2	28.1/4.44	530	208/230 1ø	0.15	18.1/12.8 MBH	80/67 F	70	10.5	1, 2, 3, 4, 5, 6												
DFCU-4	RM 212/212A/212B	PEFY-P30NMAU-E3	28.1/4.44	883	208/230 1ø	0.30	30.1/21.6 MBH	80/67 F	70	17.8	1, 2, 3, 4, 5, 6												
<div>1. NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67 DEG F (DB/WB), OUTDOOR OF 95 DEG F.</div> <div>2. NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70 DEG F (DB), OUTDOOR OF 43 DEG F (WB).</div> <div>3. SEE OUTDOOR UNIT SCHEDULE FOR OUTDOOR AMBIENT CONDITIONS, CONNECTED CAPACITY, AND OTHER</div> <div>4. SEE SCHEMATIC PIPING/CONTROL DIAGRAM FOR INDICATION OF REQUIRED INDOOR UNIT REMOTE CONTROLLERS, CAPACITY INDICATED ON OUTDOOR UNIT SCHEDULE FOR ASSOCIATED SYSTEM. PARTIAL CORRECTED CAPACITY ASSUMES SUFFICIENT DIVERSITY EXISTS SUCH THAT THE CONNECTED CAPACITY DE-RATE DIES NOT APPLY.</div> <div>5. IT IS THE DESIGNERS' RESPONSIBILITY TO ENSURE"DIAMOND SYSTEMBUILDER" IS SET IN THE APPROPRIATE</div> <div>6. IT IS RECOMMENDED TO ALWAYS BASE HEATING CORRECTED CAPACITY ON FULL DEMAND.</div>																							

“AIREDALE” AS STANDARD
(STERLING, RITTLING EQUALS.)

FT-A

AIREDALE TYPE S-18, 18” HIGH 14 ga. SLOPED TOP ENCLOSURE, COPPER-ALUMINUM ELEMENT, CATALOG DESIGNATION 1-1/4”C - 4-1/4”x 4-1/4”-42, ONE TIER ELEMENT, 1-1/4” COPPER TUBE WITH 4-1/4”x 4-1/4” ALUMINUM FINS (42 FINS PER FOOT). FURNISH WITH FULL BACK PLATES, END TRIMS, END ENCLOSURES, INSIDE & OUTSIDE ELBOWS, COLUMN ENCLOSURES, DAMPERS, TAMPER-PROOF OPERATOR ALL NECESSARY MOUNTING HARDWARE, HANGERS, AND SUPPORTS. MOUNTING HEIGHT SHALL BE 22” A.F.F., COORDINATE MOUNTING REQUIREMENTS WITH ARCHITECTURAL CASEWORK. 1,220 BTU/HR PER FOOT @ 170° AVERAGE WATER TEMPERATURE. PERFORMANCE BASED ON WATER.

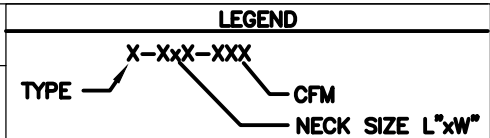
LEGEND	
TYPE	X-XXX-XXX
	CFM
	NECK SIZE L"xW"

UNLESS OTHERWISE NOTED, FURNISH AND INSTALL REGISTERS, GRILLES, AND DIFFUSERS AS MANUFACTURED BY ' KRUEGER ' --- EQUALS BY ' TITUS ' AND ' NALOR '. ALL COLORS AND FINISHES BY ARCHITECT. SEE ARCHITECTURAL DRAWINGS FOR CEILING TYPES AND CONSTRUCTION. SIZE AND THROW AS INDICATED ON DRAWINGS.

A - MODEL SH, SQUARE NECK, STEEL LOUVERED FACE, FIXED DISCHARGE DIFFUSER, 24" X 24" PANEL SIZE, 4-WAY THROW AS STANDARD, OTHER PATTERNS AND CFM SHALL BE AS INDICATED ON DWGS. PROVIDE SQUARE-TO-ROUND ADAPTER. FURNISH WITH OPPOSED BLADE DAMPER WHERE INSTALLED IN SHEETROCK/PLASTER LOCATIONS.

B - MODEL S80 STEEL, RETURN REGISTER, .45" FIXED DEFLECTION, 3/4" BLADE SPACING - BLADES PARALLEL TO THE LONG DIMENSION. FURNISH WITH OPPOSED BLADE DAMPER.

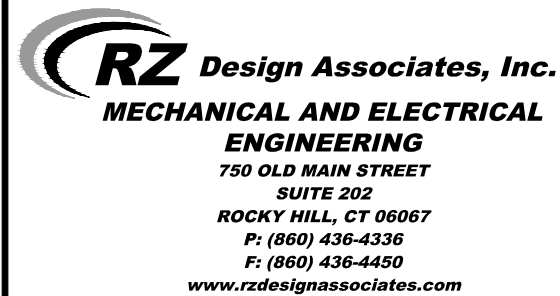
REGISTERS, GRILLES, AND DIFFUSERS



UNLESS OTHERWISE NOTED, FURNISH AND INSTALL REGISTERS, GRILLES, AND DIFFUSERS AS MANUFACTURED BY ' KRUEGER ' — EQUALS BY ' TITUS ' AND ' NAILOR '. ALL COLORS AND FINISHES BY ARCHITECT. SEE ARCHITECTURAL DRAWINGS FOR CEILING TYPES AND CONSTRUCTION. SIZE AND THROW AS INDICATED ON DRAWINGS.

A - MODEL SH, SQUARE NECK, STEEL LOUVERED FACE, FIXED DISCHARGE DIFFUSER, 24" X 24" PANEL SIZE, 4-WAY THROW AS STANDARD, OTHER PATTERNS AND CFM SHALL BE AS INDICATED ON DWGS. PROVIDE SQUARE-TO-ROUND ADAPTER. FURNISH WITH OPPOSED BLADE DAMPER WHERE INSTALLED IN SHEETROCK/PLASTER CEILING LOCATIONS.

B - MODEL S80 STEEL, RETURN REGISTER, 45° FIXED DEFLECTION, 3/4" BLADE SPACING - BLADES PARALLEL TO THE LONG DIMENSION. FURNISH WITH OPPOSED BLADE DAMPER.



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Title:

MECHANICAL SCHEDULES

Project Number

Project Number:	Issue Date:
2016.035	23 SEPT 2016

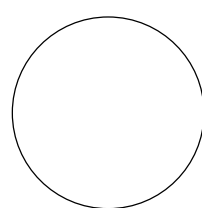
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AS NOTED

Dropout Rate

Drawn By: *DMR* Checked By: *ALO*

Revisions



M-601

GENERAL

1. WHEN A CONFLICT BETWEEN THE DRAWINGS, NOTES AND/OR SPECIFICATIONS OCCUR, THE MORE STRINGENT AND/OR LARGER QUANTITY AND/OR MORE EXPENSIVE SHALL APPLY. THE REQUIREMENTS LISTED WITHIN NOTES OR SPECIFICATIONS SHALL BE REQUIRED, PROVIDED AND INSTALLED WHETHER SPECIFICALLY INDICATED ON THE DRAWINGS OR NOT.
2. IT IS THE INTENTION OF THE SPECIFICATIONS AND DRAWINGS TO PROVIDE FOR FINISHED WORK, TESTED AND READY FOR OPERATION.
3. ITEMS AND SERVICES NOT SHOWN ON DRAWINGS OR SPECIFICATIONS BUT REQUIRED TO RENDER THE WORK COMPLETE AND READY FOR OPERATION, SHALL BE PROVIDED WITHOUT ADDITIONAL COST.
4. WORK OF THIS SECTION SHALL BE GOVERNED BY THE CONTRACT DOCUMENTS. PROVIDE MATERIALS, LABOR, EQUIPMENT AND SERVICES NECESSARY TO FURNISH, DELIVER AND INSTALL ALL WORK AS REQUIRED BY JOB CONDITIONS, WHERE A CONFLICT EXISTS BETWEEN THESE NOTES, THE DRAWINGS AND THE SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.
5. DRAWINGS ARE DIAGRAMMATIC AND INDICATE A GENERAL ARRANGEMENT OF WORK AND ARE NOT TO BE CONSIDERED SUB-CONTRACTOR DOCUMENTS. IT IS THE INTENT OF THESE DOCUMENTS TO INCLUDE THE PROVISION AND AND INSTALLATION OF ALL NECESSARY WORK AND MATERIALS FOR COMPLETE, OPERATIONAL AND CODE COMPLIANT SYSTEMS BY THE CONTRACTOR. GENERAL DESIGN CONCEPTS INDICATED MUST BE FOLLOWED OR BETTERED. THE BID SHALL INCLUDE OFFSETS, ADDITIONAL PIPING, VALVES AND EQUIPMENT AND COMPONENTS AS REQUIRED TO MEET CONSTRUCTION CONDITIONS FOR PROPER OPERATION. DO NOT SCALE DRAWINGS. CONSULT ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR SPACE CONDITIONS AND ADDITIONAL REQUIREMENTS.
6. PERFORM THE WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACTS GENERAL CONDITIONS AND IN COORDINATION WITH ALL OTHER TRADES. ALL WORK SHALL BE DONE IN CONFORMANCE AND PROVISIONS OF ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES AND LAWS.

CODES AND STANDARDS:
2003 INTERNATIONAL BUILDING CODE w/ 2005 CONNECTICUT SUPPLEMENT & 2009 AMENDMENT TO THE 2005 SUPPLEMENT
2003 INTERNATIONAL MECHANICAL CODE
2003 INTERNATIONAL PLUMBING CODE
2005 NATIONAL ELECTRIC CODE (NFPA 70)
2002 NATIONAL FIRE CODE (NFPA 72)
2002 installation of SPRINKLER SYSTEMS (NFPA 13)
2005 CT STATE FIRE CODE WITH 2009 AMENDMENT
2009 INTERNATIONAL ENERGY CONSERVATION CODE (EFFECTIVE 10/07/2011)
IBC 2009 ICC/ANSI A117.1-2003 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES
CONNECTICUT GAS EQUIPMENT AND PIPING CODE
NFPA 31 – INSTALLATION OF OIL BURNING EQUIPMENT – CONNECTICUT 2009 AMENDMENT
7. WORK SHALL INCLUDE ALL INCIDENTALS, LABOR, MATERIALS, EQUIPMENT, APPLIANCES, SERVICES, HOISTING, SCAFFOLDING, SUPPORTS, TOOLS, CONSUMABLE ITEMS, FEES, LICENSES, AND ADMINISTRATIVE TASKS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
8. STORE MATERIALS INSIDE AND PROTECTED FROM DEBRIS, WEATHER AND MOISTURE.
9. THIS CONTRACTOR SHALL PROVIDE AND INSTALL ALL POWER AND CONTROL WIRING REQUIRED FOR ALL EQUIPMENT OPERATION NOT SPECIFICALLY PROVIDED BY OTHERS BUT REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. THIS CONTRACTOR SHALL PROVIDE MOTOR STARTERS FOR INSTALLATION BY OTHERS. COORDINATE REQUIREMENTS.

ALTERATION WORK AND DEMOLITION

1. ALL EQUIPMENT, DUCTWORK, PIPING, CONTROL DEVICES ETC.. TO BE REMOVED, SHALL BE DISPOSED OF, TURNED OVER TO THE OWNER, OR SALVAGED AS DIRECTED BY THE OWNER. EQUIPMENT, DUCTWORK, PIPING, CONTROL DEVICES, ETC.. SHALL NOT BE REMOVED FROM THE PREMISES WITHOUT THE OWNERS APPROVAL.
2. UPON COMPLETION OF REMOVALS AND MODIFICATIONS, ALL DUCTWORK PIPING TO REMAIN SHALL BE PROPERLY PLUGGED, VALVED, CAPPED AND/OR BYPASSED SUCH THAT UPON COMPLETION OF WORK ALL SYSTEMS TO REMAIN, REMAIN OPERATIONAL.
3. NO DEAD ENDS SHALL BE LEFT ON ANY DUCTWORK PIPING SYSTEMS UPON COMPLETION OF WORK.
4. EXISTING EXPOSED PIPING SYSTEMS NOT TO BE REUSED, AND NOT SPECIFICALLY NOTED FOR REMOVAL SHALL BE COMPLETELY REMOVED.
5. ALL SYSTEMS SHALL BE LEFT IN WORKING ORDER TO THE SATISFACTION OF THE OWNER UPON COMPLETION OF ALL NEW WORK.
6. ALL EXISTING EXPOSED, UNNECESSARY DUCTWORK AND PIPING NOT RELATE TO NEW WORK SHALL BE COMPLETELY REMOVED.
7. RE–ROUTE OR REMOVE ALL EXISTING DUCTWORK, PIPING AND SYSTEMS WHERE NECESSARY TO AVOID NEW EQUIPMENT, STRUCTURAL OR MASONRY WORK AS REQUIRED BY THE PROPOSED ALTERATIONS.
8. ANY AND ALL MECHANICAL ITEMS ABANDONED OR REMOVED MUST BE DONE SO AS TO SATISFY CODE AND FACILITY FUNCTION. ALL DUCT/PIPE ETC. FEEDING ABANDONED OR REMOVED EQUIPMENT MUST BE REMOVED BACK TO POINT OF ORIGIN AND CAPPED UNLESS OTHERWISE NOTED. EXISTING FACILITY OR ADJACENT TENANT MEP FUNCTIONS SHALL NOT BE ALTERED OR INTERRUPTED.

TESTING, ADJUSTING AND BALANCING

1. AFTER COMPLETION OF THE WORK, BUT BEFORE SUBSTANTIAL COMPLETION, TEST, ADJUST AND BALANCE ALL AIR AND WATER SYSTEMS IN ACCORDANCE WITH EITHER AABC OR NEBB STANDARDS.
2. TESTING AND BALANCING CONTRACTORS SHALL BE CERTIFIED BY EITHER AABC, NEBB OR TABB.
3. AIR HANDLING SYSTEMS SHALL BE BALANCED TO WITHIN PLUS OR MINUS 5 PERCENT OF DESIGN FOR SUPPLY SYSTEMS AND PLUS OR MINUS 10 PERCENT FOR RETURN AND EXHAUST SYSTEMS.
4. AIR OUTLETS AND INLETS SHALL BE BALANCED TO WITHIN PLUS 10 PERCENT AND MINUS 5 PERCENT OF DESIGN TO SPACE. ADJUST OUTLETS AND INLETS IN SPACE TO WITHIN PLUS OR MINUS 10 PERCENT OF DESIGN.
5. ADJUST HYDRONIC SYSTEMS TO WITHIN PLUS OR MINUS 10 PERCENT OF DESIGN.
6. PERMANENTLY MARK SETTINGS OF VALVES, DAMPERS, AND OTHER ADJUSTMENT DEVICES ALLOWING SETTINGS TO BE RESTORED. SET AND LOCK MEMORY STOPS.
7. SUBMIT FINAL REPORT INDICATING DESIGN VERSUS FINAL PERFORMANCE; NOTABLE CHARACTERISTICS OF THE SYSTEM; DESCRIPTION OF SYSTEMS OPERATION SEQUENCE; TEST CONDITIONS; AND A LIST OF INSTRUMENTS USED. FINAL REPORT SHALL BE SUBMITTED PRIOR TO SUBSTANTIAL COMPLETION OF THE PROJECT.

REGISTERS, GRILLES AND DIFFUSERS

1. REGISTERS, GRILLES AND DIFFUSERS SHALL BE AS SCHEDULED ON THE DRAWINGS. FINISH SHALL BE AS SELECTED BY THE OWNER.
2. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
3. CHECK LOCATIONS OF OUTLETS AND INLETS AND MAKE NECESSARY ADJUSTMENTS IN POSITION TO CONFORM WITH ARCHITECTURAL FEATURES, SYMMETRY AND LIGHTING ARRANGEMENT. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR LOCATIONS OF REGISTERS, GRILLES AND DIFFUSERS.
4. INSTALL DIFFUSERS TO DUCTWORK WITH AIR TIGHT CONNECTION.
5. PROVIDE BALANCING DAMPERS ON DUCT TAKE-OFFS TO DIFFUSERS, GRILLES AND REGISTERS. DESPITE WHETHER DAMPERS ARE SPECIFIED AS PART OF THE DIFFUSER, GRILLE OR REGISTER ASSEMBLY.

COORDINATION DRAWINGS

1. DEVELOP AND SUBMIT COORDINATION DRAWINGS AS OUTLINED.

A. SHEET METAL, PLUMBING AND FIRE PROTECTION SHOP DRAWINGS THAT HAVE BEEN COORDINATED WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW. DRAWINGS MUST BE RETURNED FROM ENGINEER EITHER 'REVIEWED' OR 'FURNISHED AS DIRECTED' PRIOR TO BEING USED AS BASIS FOR COORDINATION DRAWINGS PRIOR TO THE SUBMISSION AND REVIEW OF SHEET METAL SHOP DRAWINGS. THE CONTRACTOR SHALL SUBMIT FOR REVIEW SHEET METAL SHOP STANDARDS. ANY SHEET METAL SHOP DRAWINGS SUBMITTED PRIOR TO THE SUBMISSION OF THE SHOP STANDARDS SHALL BE RETURNED 'NOT REVIEWED'.
- B. AFTER SHEET METAL AND PIPING DRAWINGS HAVE BEEN REVISED PER ENGINEERS COMMENTS, REPRODUCIBLE COPIES SHALL BE SENT TO THE OTHERS TRADES IN THE FOLLOWING SEQUENCE FOR THE INCLUSION OF THERE WORK:
–MECHANICAL SHEET METAL
–PLUMBING CONTRACTOR
–ELECTRICAL WORK
–MECHANICAL PIPING
–SPRINKLER PIPING
2. AFTER ALL TRADES HAVE INCLUDED THEIR WORK ON THE COORDINATION DRAWINGS AND NOTED CONFLICTS, ALL TRADES SHALL MEET TO RESOLVE CONFLICTS AND AGREE TO ACCEPTABLE SOLUTIONS. EACH TRADE SHALL SIGN COORDINATION DRAWINGS. ITEMS NOT SHOWN ON COORDINATION DRAWING IS RESPONSIBILITY OF OMITTING CONTRACTOR AND CONTRACTOR IS SUBJECT TO ADDITIONAL COSTS INCURRED BY OTHER TRADES.
3. THE ARCHITECT AND THE ENGINEER ARE NOT PART OF THE COORDINATION DRAWING PROCESS. THE ENGINEER WILL PROVIDE ASSISTANCE FOR NOTED CONFLICTS ONLY. COORDINATION DRAWINGS ARE NOT TO BE CONSIDERED PIPING OR DUCT SHOP DRAWINGS. THE CONTRACTOR IS REQUIRED TO SUBMIT PIPING AND DUCTWORK SHOP DRAWINGS FOR REVIEW BY THE ENGINEER. PIPING AND DUCTWORK SHOP DRAWINGS SHALL FOLLOW THE DESIGN INTENT OF THE CONTRACT DOCUMENTS.
4. SUBMIT FINAL SIGNED COORDINATION DRAWING TO ENGINEER FOR REVIEW. ENGINEER WILL REVIEW FOR ACCEPTABILITY OF INSTALLATIONS.
5. ANY WORK FABRICATED OR INSTALLED PRIOR TO SIGN OFF BY ALL TRADES SHALL BE REMOVED AND RE-INSTALLED IN CONFORMANCE WITH COORDINATION DRAWINGS.
6. EACH CONTRACTOR (MENTIONED ABOVE) IS RESPONSIBLE FOR THE COORDINATION OF HIS SUB-CONTRACTORS.
7. THE OVERALL COORDINATION OF THE COORDINATION PROCESS IS THE RESPONSIBILITY OF THE CONTRACTOR. THE ENGINEER IS NOT RESPONSIBLE FOR THE COORDINATION PROCESS. THE ENGINEER WILL RESPOND TO QUESTIONS THAT ARISE FROM THE COORDINATION PROCESS. DRAWINGS SUBMITTED WILL BE REVIEWED FOR CLEARLY IDENTIFIED CONFLICTS ONLY. SOLUTIONS TO CONFLICTS WILL NOT BEAR ADDITIONAL COST.

AS-BUILT DRAWINGS

1. PROVIDE A COMPLETE SET OF AS –BUILT DRAWINGS REFLECTING AS INSTALLED CONDITIONS. AS-BUILT DRAWINGS SHALL INDICATE ALL INSTALLED CONDITIONS OF SYSTEMS WITHIN THIS DISCIPLINE. DRAWINGS SHALL BE OF SIMILAR SCALE AS THE CONSTRUCTION DOCUMENTS AND INCLUDE DETAILS AS NECESSARY TO CLEARLY REFLECT THE INSTALLED CONDITION. DRAWINGS SHALL BE BOUND IN A COMPLETE AND CONSECUTIVE SET. SUPPLEMENTAL SKETCHES AND LOOSE PAPERWORK WILL NOT BE ACCEPTABLE AND WILL BE RETURNED FOR REVISION. THE CONTRACTOR SHALL COMPLY WITH THE ENGINEERS COMMENTS TO PRODUCE A CLEAR AND CONCISE SET OF DRAWINGS. DRAWINGS SHALL BE SUBMITTED IN BOTH HARD COPY AND ELECTRONIC (AUTO–CAD VERSION AS REQUIRED BY THE OWNER) VERSION. NUMBER OF COPIES OF EACH AS REQUESTED BY THE OWNER.
2. PROVIDE 'AS-BUILT DRAWINGS' INDICATING IN A NEAT AND ACCURATE MANNER A COMPLETE RECORD OF ALL REVISIONS OF THE ORIGINAL DESIGN OF THE WORK. INDICATE THE FOLLOWING INSTALLED CONDITIONS:
3. INCLUDE ALL CHANGES AND AN ACCURATE RECORD, ON REPRODUCTIONS OF THE CONTRACT DRAWINGS OR APPROPRIATE SHOP DRAWINGS, OF ALL DEVIATIONS, BETWEEN THE WORK SHOWN AND THE WORK INSTALLED.
4. MAINS AND BRANCHES OF PIPING SYSTEMS, WITH VALVES AND CONTROL DEVICES LOCATED AND NUMBERED, CONCEALED UNIONS LOCATED, AND WITH ITEMS REQUIRING MAINTENANCE LOCATED (I.E. TRAPS, STRAINERS, EXPANSION COMPENSATORS, TANKS, ETC.) VALVE LOCATION DIAGRAMS, COMPLETE WITH VALVE TAG CHART.
5. EQUIPMENT LOCATIONS (EXPOSED AND CONCEALED), DIMENSIONED FROM PROMINENT BUILDING LINES.
6. APPROVED SUBSTITUTIONS, CONTRACT MODIFICATIONS, AND ACTUAL EQUIPMENT AND MATERIALS INSTALLED.
7. CONTRACT MODIFICATIONS, ACTUAL EQUIPMENT AND MATERIALS INSTALLED.
8. SUBMIT FOR REVIEW BOUND SETS OF THE REQUIRED DRAWINGS, MANUALS AND OPERATING INSTRUCTIONS.
9. SUBMIT A COMPLETE MAINTENANCE MANUAL OF ALL EQUIPMENT INSTALLED UNDER THIS CONTRACT.

HANGERS AND SUPPORT

1. SEISMIC RESTRAINT: PROVIDE SEISMIC RESTRAINT AND EXPANSION OF ALL MECHANICAL EQUIPMENT AND SYSTEMS IN ACCORDANCE WITH STATE AND FEDERAL BUILDING CODE REQUIREMENTS. SUBMIT SHOP DRAWINGS SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT INDICATING ALL NECESSARY COMPONENT CUTS, PLAN LOCATIONS AND CALCULATIONS FOR A COMPLETE SYSTEM.
2. PROVIDE ALL NECESSARY STRUCTURAL MEMBERS INCLUDING ADDITIONAL STRUCTURAL SUPPORT TO SUPPORT PIPING AND EQUIPMENT. HANGERS AND SUPPORTS SHALL BE OF AN APPROVED DESIGN NECESSARY TO SUPPORT DUCTWORK, PIPING EQUIPMENT AND TO KEEP IN PROPER ALIGNMENT AND PREVENT TRANSMISSION OF INJURIOUS THRUSTS AND VIBRATIONS. IN ALL CASES WHERE HANGERS, BRACKETS, ETC. ARE SUPPORTED FROM CONCRETE CONSTRUCTION, DO NOT WEAKEN CONCRETE OR PENETRATE. WATERPROOFING, ALL HANGERS AND SUPPORTS SHALL BE CAPABLE OF SCREW ADJUSTMENT AFTER PIPING IS ERCTED. HANGERS SUPPORTING PIPING EXPANDING INTO LOOPS, BENDS, AND OFFSETS SHALL BE SECURED TO THE BUILDING STRUCTURE IN SUCH A MANNER THAT HORIZONTAL ADJUSTMENT PERPENDICULAR TO THE RUN OF PIPING SUPPORTED MAY BE MADE TO ACCOMMODATE DISPLACEMENT DUE TO EXPANSION. ALL SUCH HANGERS SHALL BE FINALLY ADJUSTED BOTH IN THE VERTICAL AND HORIZONTAL DIRECTION, AS REQUIRED. HANGERS IN CONTACT WITH COPPER OR BRASS PIPE SHALL BE DIELECTRIC, COMPATIBLE WITH COPPER AND BRASS ALLOY OR PROVIDED WITH FELT SLEEVE.
3. PROVIDE ADDITIONAL SUPPORT FOR DUCTWORK, PIPING AND EQUIPMENT WHEN DECK IS NOT CAPABLE OF SUPPORT.
4. BEAM CLAMPS – HANGERS SUPPORTED FROM STEEL SHALL BE CENTER LOADING BEAM CLAMPS FOR HANGERS SUPPORTING PIPING 2 INCHES FOR 2–1/2 INCHES AND LARGER. I BEAM CLAMPS SHALL BE FORGED STEEL. 'C' CLAMPS ARE NOT TO BE USED.
5. PROVIDE AND INSTALL EXPANSION COMPENSATION FOR ALL PIPING. SUBMIT PLANS, CALCULATIONS AND EQUIPMENT DATA.

DUCTWORK

1. DUCTWORK SHALL BE FABRICATED FROM HOT–DIPPED GALVANIZED STEEL SHEET CONFORMING TO ASTM A653, WITH G60 COATING.
2. CHEMICAL EXHAUST SYSTEMS DUCTWORK SHALL BE FABRICATED FROM STAINLESS STEEL SHEET CONFORMING TO ASTM A 668, 18 GAGE TYPE 304 WITH CONTINUOUSLY EXTERNAL WELDED JOINTS.
3. FABRICATE, SUPPORT, INSTALL AND SEAL IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS – METAL AND FLEXIBLE, AND AS INDICATED. PROVIDE DUCT MATERIAL, GAUGES, REINFORCING AND SEALING FOR OPERATING PRESSURES INDICATED.
4. INSULATED FLEXIBLE DUCTS SHALL BE FABRICATED FROM MULTIPLE LAYERS OF ALUMINUM LAMINATE SUPPORTED BY HELICALLY WOUND SPRING STEEL WIRE WITH FIBERGLASS INSULATION AND POLYETHYLENE VAPOR BARRIER. PRESSURE RATING SHALL BE 10 INCH W.G. POSITIVE AND 1.0 INCH W.G. NEGATIVE.
5. JOINT SEALERS AND SEALANTS SHALL BE NON–HARDENING, WATER, MILDEW AND MOLD RESISTANT. FLAME SPREAD OF 0, SMOKE DEVELOPED OF 0 WHEN TESTED IN ACCORDANCE WITH ASTM E84.
6. CONNECT TERMINAL UNITS TO SUPPLY DUCTS DIRECTLY OR WITH ONE FOOT MAXIMUM LENGTH OF FLEXIBLE DUCT. DO NOT USE FLEXIBLE DUCT TO CHANGE DIRECTION.
7. CONNECT DIFFUSERS OR LIGHT TROFFER BOOTS TO LOW PRESSURE DUCTS DIRECTLY OR WITH FIVE FEET MAXIMUM LENGTH OF FLEXIBLE DUCTS HELD IN PLACE WITH STRAP OR CLAMP.
8. PROVIDE VOLUME DAMPERS IN THE LOCATIONS SHOWN. RUSKIN MODEL MD25 OR MDRS25. EQUALS BY AIR LOUVERS & DAMPERS OR NAILOR INDUSTRIES.
9. PROVIDE FIRE DAMPER WHERE INDICATED. DAMPER TO BE EQUAL TO RUSKIN DIB22 DYNAMIC DAMPER; UL555, NFPA 90A&B LISTED FOR 1.5 HOUR RATING. DAMPER SHALL BE RATED FOR DYNAMIC CLOSURE TO A MINIMUM 2375 FPM AND 4" W.G. STATIC PRESSURE. FURNISH WITH STEEL SLEEVE, RETAINING ANGLES AND 165°F FUSIBLE LINK.

DUCTWORK INSULATION

1. ALL SUPPLY, RETURN AND EXHAUST DUCTWORK IN THE COLD ATTIC SPACE THAT IS NOT INDICATED TO BE ACOUSTICALLY LINED SHALL BE INSULATED WITH R–5, MINIMUM 2 INCHES THICK FLEXIBLE FIBERGLASS DUCT INSULATION ASTM C533 WITH FOIL VAPOR BARRIER. EXTERIOR SUPPLY, RETURN OR EXHAUST DUCTWORK SHALL BE INSULATED WITH R–8, MINIMUM 3 INCHES THICK RIGID BOARD INSULATION, ASTM C612. VAPOR BARRIER SHALL BE MAINTAINED CONTINUOUS. INSULATION SHALL BE TAPED AND FASTENED SO AS TO PRESENT A NEAT AND FINISHED APPEARANCE.
2. EXTERIOR SUPPLY, RETURN OR EXHAUST DUCTWORK EXPOSED TO THE WEATHER SHALL BE COVERED WITH AN ALUMINUM JACKET, ASTM B 209 (ASTM B209M), 0.016 INCH SHEET, INSTALLED WITH DIE SHAPED FITTING COVERS AND 3/8" WIDE ALUMINUM METAL JACKET BANDS. INSTALL JACKET IN ACCORDANCE WITH ASTM B 209 AND THE INSULATION MANUFACTURER'S RECOMMENDATIONS.
3. ACOUSTIC DUCT LINER SHALL BE INSTALLED IN LIEU OF EXTERIOR INSULATION WHERE INDICATED. DUCT LINER SHALL BE 1" RIGID BOARD, ASTM C 1071, FUNGUS AND BACTERIA RESISTANT BY TESTING TO ASTM G21. INSTALL WITH WATER–PROOF, FIRE–RETARDANT ADHESIVE AND GALVANIZED STEEL, SELF–ADHESIVE PAD FASTENERS IN ACCORDANCE WITH THE MANUFACTURERS WRITTEN INSTRUCTIONS.
4. DUCTWORK INSULATION AND ACOUSTIC LINER SHALL BE BY JOHNS MANVILLE CORPORATION, KNAUF FIBERGLASS OR CERTAIN TEED CORPORATION.

HYDRONIC SYSTEMS PIPING:

1. HOT WATER PIPING SHALL BE TYPE L COPPER UP TO AND INCLUDING 2". PIPING 2–1/2" AND ABOVE SHALL BE WELDED SCHEDULE 40 STEEL PIPING. PIPING SHALL BE ASTM A53/A FOR STEEL PIPE, ASTM B88 FOR COPPER AND COMPLY WITH ASME B31.9. STEEL FITTINGS SHALL BE WELDED JOINTS; ASTM A 234/A 234M; WROUGHT STEEL. COPPER JOINTS SHALL BE SOLDER JOINTS: ASME B16.18 CAST BRASS/BRONZE OR ASME B16.22 SOLDER WROUGHT COPPER; SOLDER SHALL BE ASTM B32 LEAD–FREE, HB ALLOY (95–5 TIN–ANTIMONY) OR TIN AND SILVER. BRAZE JOINTS SHALL BE AWS A5.8/A5.8M BCuP COPPER/SILVER ALLOY.
2. ISOLATION VALVES SHALL BE FULL–PORT, BRONZE BODY UP TO 2"; IRON BODY OVER 2", 600 PSI RATED BY NIBCO, MILWAUKEE OR CONBRACO.
3. PIPE INSULATION SHALL BE RIGID FIBERGLASS WITH PVC FITTING COVERS, EQUAL TO JOHNS–MANVILLE, KNAUF OR CERTANTIZED. MINIMUM INSULATION THICKNESS SHALL BE IN ACCORDANCE WITH THE 2009 IECC OR AS OTHERWISE INDICATED.

HYDRONIC SYSTEMS SPECIALTIES:

1. PROVIDE UNIONS FOR PIPE 2 INCHES AND UNDER, FOR COPPER PIPING, 150 PSIG MALLEABLE IRON FOR FERROUS PIPING, BRONZE SOLDER JOINTS, THREADED OR VIC PRO–PRESS.
2. PROVIDE FLANGES FOR PIPE OVER 2 INCHES. FERROUS PIPING–150 PSIG FORGED STEEL, SLIP–ON. COPPER PIPING–BRONZE. GASKETS–1/16 INCH THICK NEOPRENE. USE GROOVED JOINT FLANGE ADAPTERS IN GROOVED PIPING SYSTEM, VICTAULIC STYLE 741.
3. MECHANICAL COUPLINGS: DIMENSIONS AND TESTING IN ACCORDANCE WITH AWWA C606, COMPLY WITH ASTM F1476. MATERIAL–MALLEABLE IRON OR DUCTILE IRON, GALVANIZED.
4. DIELECTRIC CONNECTIONS: UNION OR WATERWAY FITTING WITH WATER IMPERVIOUS ISOLATION BARRIER AND ONE GALVANIZED OR PLATED STEEL END AND ONE COPPER TUBE END, END TYPES TO MATCH PIPE JOINT TYPES USED.
5. THERMOMETERS: EQUAL TO WEKSLER; 9 INCH SCALE; CLEAR LEXAN WINDOW; 3/4" NPT BRASS STEM; 2% ACCURACY PER ASTM E77; CALIBRATION IN DEGREES F, NON–TOXIC LIQUID IN GLASS; CAST ALUMINUM CASE; 360°ADJUSTABLE HORIZONTAL; 180° ADJUSTABLE VERTICAL; PROVIDE WITH BRONZE SEPARABLE SOCKET.
6. PRESSURE GAUGES: EQUAL TO WEKSLER; ASME B40.100 UL STEEL CASE; BRONZE BOURDON TUBE; ROTARY BRASS MOVEMENT; BRASS SOCKET; FRONT CALIBRATION ADJUSTMENT; BLACK SCALE w/ WHITE BACKGROUND; 4–1/2" DIAMETER SIZE; ONE PERCENT MID–SCALE ACCURACY; NPT CONNECTION.

DUCTWORK CLEANING AND SANITIZING

1. ALL DUCTWORK CLEANING AND SANITIZING SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE NADCA–ACR, ASSESSMENT, CLEANING AND RESTORATION OF HVAC SYSTEMS, 2006 EDITION.
2. PROTECT EQUIPMENT WHICH MAY BE HARMED BY EXCESSIVE DIRT WITH FILTERS, OR BYPASS DURING CLEANING. PROVIDE ACCESS IN EXISTING AND NEW DUCTWORK AS REQUIRED FOR CLEANING PURPOSES.
3. CLEAN DUCT SYSTEMS WITH HIGH POWER VACUUM MACHINES. VACUUM DEVICES THAT EXHAUST AIR INSIDE BUILDING, INCLUDING HAND–HELD AND WET VACUUMS: EQUIPPED WITH HEPA FILTRATION WITH 99.97 PERCENT COLLECTION EFFICIENCY FOR MINIMUM 0.3 MICRON SIZE PARTICLES AND DOP TEST NUMBER.
4. COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS.
5. USE CLEANING METHODS RECOMMENDED BY NADCA ACR. DO NOT USE METHODS PROHIBITED BY NADCA ACR, OR THAT WILL DAMAGE HVAC COMPONENTS OR OTHER WORK, OR THAT WILL SIGNIFICANTLY ALTER THE INTEGRITY OF THE SYSTEM.
6. REPAIR OPENINGS CUT IN THE VENTILATION SYSTEMS SO THAT THEY DO NOT SIGNIFICANTLY ALTER THE AIRFLOW OR ADVERSELY IMPACT THE FACILITY'S INDOOR AIR QUALITY. RESEAL OPENINGS IN ACCORDANCE WITH NADCA STANDARD 05.
7. SUBMIT EVIDENCE THAT ALL PORTIONS OF THE SYSTEMS REQUIRED TO BE CLEANED HAVE BEEN CLEANED SATISFACTORILY.
8. DISPOSE OF DEBRIS OFF–SITE IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS.
9. SURFACE TREATMENT – ANTI–MICROBIAL MATERIALS EPA REGISTERED SPECIFICALLY FOR USE ON NON–POROUS HVAC SYSTEM SURFACES. APPLY ANTI–MICROBIAL TREATMENTS AND COATINGS IN STRICT ACCORDANCE WITH THE MANUFACTURER'S WRITTEN RECOMMENDATIONS AND EPA REGISTRATION LISTING.

REFRIGERANT PIPING SYSTEM

1. REFRIGERANT PIPING:

A. REFRIGERANT PIPING SHALL BE ACR TYPE WITH WROUGHT COPPER, SILVER BRASZED FITTINGS. INSTALL IN ACCORDANCE WITH THE MANUFACTURERS INSTALLATION INSTRUCTIONS AND THE REQUIREMENTS OF THE CODES REFERENCED HEREIN.
2. CONDENSATE DRAIN PIPING:

A. ALL CONDENSATE DRAIN PIPING SHALL BE TYPE DWV COPPER WITH WROUGHT COPPER FITTINGS SOLDERED WITH 95–5 WIRE SOLDER. PITCH PIPING MINIMUM 1" PER 10 FT. OF RUN. PROVIDE CLEANOUTS AT CHANGES IN DIRECTION AND PROVIDE 4" DEEP TRAP AT AIR HANDLING EQUIPMENT.
3. PIPING INSULATION:

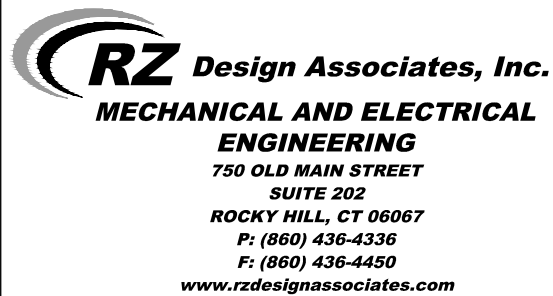
A. ALL CONDENSATE DRAIN PIPING SHALL BE INSULATED WITH JOHNS MANVILLE MICRO–LOK FIBER GLASS INSULATION FINISHED WITH AN ALL SERVICE JACKET. FITTINGS SHALL BE COVERED WITH JOHNS MANVILLE ZESTON 2000 PVC FITTING COVERS.

B. REFRIGERANT LIQUID AND VAPOR PIPING SHALL BE INSULATED WITH ARMAFLEX II, INSUL–TUBE, OR RUBATEX R–180–FS TUBING INSULATION. OUTDOOR SECTION OF INSULATION SHALL BE COATED WITH ULTRAVIOLET AND WEATHER RESISTANT PAINT.

C. INSULATION THICKNESS SHALL MEET THE REQUIREMENTS OF THE INTERNATIONAL ENERGY CONSERVATION CODE REFERENCED HEREIN AND THE MANUFACTURERS RECOMMENDATIONS.
4. PIPING INSTALLATION:

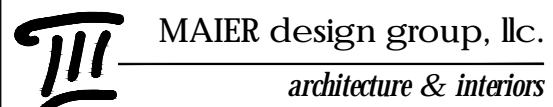
A. INSTALL REFRIGERANT PIPING IN ACCORDANCE WITH THE REQUIREMENTS OF THE INTERNATIONAL MECHANICAL CODE REFERENCED HERE IN, ASHRAE STANDARD 15; SAFETY CODE FOR MECHANICAL REFRIGERATION, CURRENT EDITION AND THE MANUFACTURERS WRITTEN INSTALLATION INSTRUCTIONS.

B. ROUTE PIPING IN AN ORDERLY MANNER, PARALLEL TO BUILDING STRUCTURE, AND MAINTAIN GRADIENT. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS. SLEEVE PIPING PASSING THROUGH PARTITIONS, WALLS AND FLOORS. SLOPE CONDENSATE DRAIN PIPING AS INDICATED HEREIN.



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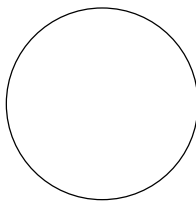


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MECHANICAL
SPECIFICATIONS

Project Number: 2016.035	Issue Date: 23 SEPT 2016
Scale: AS NOTED	CAD File:
Drawn By: DMR	Checked By: ALO

Revisions:



M-602

GENERAL NOTES:

1.

ALL CIRCUITS SHALL BE 2#12,1#12G. IN AN APPROVED RACEWAY SYSTEM. CONNECT TO 20A-1P CIRCUIT BREAKER IN PANEL UNLESS OTHERWISE INDICATED
2.

ALL BRANCH CIRCUITS EXCEEDING 150' IN LENGTH SHALL BE 2#10,1#10G. IN AN APPROVED RACEWAY SYSTEM TO 20A-1P CIRCUIT BREAKER IN PANEL UNLESS OTHERWISE INDICATED.
3.

ALL BRANCH POWER CIRCUITS SHALL BE WITH SEPARATE NEUTRALS. USE OF COMMON NEUTRALS WILL NOT BE ALLOWED.
4.

FURNISH AND INSTALL REMOTE POWER SOURCE TYPE EMERGENCY LIGHTING BATTERY PACKS WITH TEST SWITCHES FOR CODE REQUIRED EMERGENCY LIGHTING PROVISION TO FIXTURE TYPE "08" COMPONENTS SHALL BE INSTALLED ABOVE ACCESSIBLE CEILING, READILY ACCESSIBLE FOR MAINTENANCE, INSPECTION AND TESTING. MINIMUM 90 MINUTE OPERATION OF FIXTURE RATED WATTS. WIRING FROM BATTERY UNITS TO EACH LIGHTING FIXTURE SHALL BE 2#10 + GRND, IN 3/4" CONDUIT. REFER TO LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION.
5.

REFER TO PROJECT ASSOCIATED CONTRACT BID DOCUMENT DRAWINGS INCLUDING BUT NOT LIMITED TO REFLECTED CEILING PLANS, OPERATIONAL EQUIPMENT LAYOUT AND EQUIPMENT SCHEDULES FOR REQUIREMENTS AND ADDITIONAL INFORMATION.
6.

FIELD VERIFY WITH MANUFACTURER'S PROVIDER EXACT ELECTRICAL CHARACTERISTICS AND CONNECTION REQUIREMENTS OF ALL OPERATIONAL EQUIPMENT PRIOR TO MAKING ELECTRICAL POWER CONNECTION. FURNISH AND INSTALL SAFETY DISCONNECT AS REQUIRED BY NEC.

LIGHTING FIXTURE NOTES:

1.

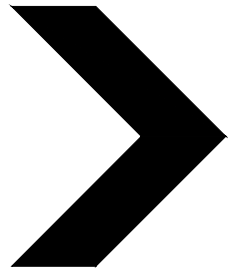
WHERE INDICATED, PROVIDE FIXTURES WITH EMERGENCY BATTERY BALLAST TO OPERATE TWO (2) LAMPS FOR 1 1/2 HOURS UPON LOSS OF NORMAL POWER. WIRE EMERGENCY BATTERY BALLAST AND EXIT LIGHTS TO LINE SIDE OF AREA LIGHTING CIRCUIT TO SENSE LOSS OF NORMAL LIGHT CIRCUIT POWER AND FOR CONTINUOUS TRICKLE CHARGE.
2.

SINGLE FACE, LED EXIT LIGHT. RED LETTERS ON BACKGROUND AS CALLED FOR. WIRE TO LINESIDE OF AREA LIGHT CIRCUIT FOR CONTINUOUS TRICKLE CHARGE
3.

DOUBLE FACE, LED EXIT LIGHT. RED LETTERS ON BACKGROUND AS CALLED FOR. WIRE TO LINESIDE OF AREA LIGHT CIRCUIT FOR CONTINUOUS TRICKLE CHARGE. PROVIDE DIRECTIONAL CHEVRONS AS INDICATED ON PLAN.
4.

DIRECTIONAL CHEVRONS SHALL CONFORM TO NFPA 5-10.4.1.2 AND SHALL BE IDENTIFIABLE AS A DIRECTIONAL INDICATOR AT A MINIMUM OF 40 FT. UNDER ALL SPACE CONDITIONS. REFER TO DETAIL.
5.

ALL FLUORESCENT FIXTURES TO BE PROVIDED WITH ELECTRONIC LAMPS AND BALLASTS. BALLASTS TO BE RATED <10% TOTAL HARMONIC DISTORTION (THD).



EXIT SIGN DIRECTIONAL INDICATOR

6.

ALL FLUORESCENT LAMPS TO BE COLOR TEMPERATURE 3500°K.
7.

PROVIDE ERICO FASTENING PRODUCTS (CADDY) CAT. No. 515 OR 515A LIGHT FIXTURE SUPPORT CLIPS ON ALL RECESSED FLUORESCENT LIGHT FIXTURES. PROVIDE MINIMUM FOUR (4) PER FIXTURE.
8.

SEISMIC RESTRAINTS:
IN ADDITION TO THE REQUIREMENTS OF IBC 2003 SECTION 1621 AND THE NEC SECTION 410-16(c), ALL RECESSED LIGHT FIXTURES SHALL BE PROVIDED WITH SUPPORT WIRES AT A MINIMUM OF FOUR (4) PER FIXTURE AND LOCATED NOT MORE THAN SIX (6") INCHES FROM EACH CORNER, EXTENDED AND ATTACHED TO THE BUILDING STRUCTURE. HANGER WIRES SHALL BE GALVANIZED CARBON STEEL, ASTM A641, SOFT TEMPER, PRE-STRETCHED WITH A YIELD STRESS LOAD OF AT LEAST THREE (3) TIMES DESIGN LOAD BUT NOT LESS THAN 12 GAUGE (0.106"). FOR ROUND FIXTURES OR FIXTURES SMALLER THAN THE CEILING GRID, PROVIDE A MINIMUM OF FOUR (4) WIRES PER FIXTURE AND LOCATE AT EACH CORNER OF THE CEILING GRID IN WHICH THE FIXTURE IS TO BE LOCATED. ADDITIONALLY, WHERE FIXTURES OF SIZES LESS THAN THE CEILING GRID ARE INDICATED TO BE CENTERED IN THE ACOUSTICAL PANEL, SUCH FIXTURES SHALL BE SUPPORTED WITH A MINIMUM OF TWO (2) 3/4" METAL CHANNELS SPANNING AND SECURED TO THE CEILING TEES.
9.

WIRE ALL EMERGENCY AND EXIT LIGHT FIXTURES TO LINE SIDE OF AREA LIGHTING CIRCUIT TO SENSE LOSS OF NORMAL LIGHT CIRCUIT POWER AND FOR CONTINUOUS TRICKLE CHARGE.

POWER NOTES:

1.

ALL RECEPTACLES LOCATED WITHIN 6'-0" OF A WATER SOURCE SHALL BE GFCI TYPE.
2.

ELECTRICAL CONTRACTOR SHALL PROVIDE ALL REQUIRED SLEEVES AND SEALS FOR CONDUITS PENETRATING EXTERIOR WALLS AND FLOOR SLABS.
3.

ALL WIRING SHALL BE IN CONDUIT, UNLESS OTHERWISE INDICATED.
4.

ELECTRICAL CONTRACTOR SHALL COORDINATE ALL LOCATIONS OF MECHANICAL EQUIPMENT WITH DIV. 15 PRIOR TO ROUGHING OR INSTALLING OUTLETS.
5.

ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OWNER, ALL LOCATIONS OF EQUIPMENT BEING FURNISHED BY OWNER PRIOR TO ROUGHING OR INSTALLING OUTLETS.
6.

REFER TO ARCHITECTURAL DRAWINGS FOR ELEVATIONS OF DEVICES PRIOR TO ROUGHING OR INSTALLATION OF OUTLETS.
7.

ELECTRICAL CONTRACTOR SHALL COORDINATE THE LOCATION OF DUCT SMOKE DETECTORS WITH DIV. 15. DUCT SMOKE DETECTORS SHALL BE FURNISHED AND WIRED BY ELECTRICAL CONTRACTOR, INSTALLED BY DIV. 15.
8.

ALL FIRE ALARM WIRING SHALL BE IN CONDUIT.
9.

REFER TO DRAWING E103 FOR ELECTRICAL DETAILS AND SCHEDULES.
10.

ALL SINGLE POLE HOMERUNS SHALL BE 2#12, 1#12G., 3/4"C TO 20A-1P CIRCUIT BREAKER IN PANEL DESIGNATED UNLESS OTHERWISE NOTED.
11.

ALL TWO POLE HOMERUNS SHALL BE 2#12, 1#12G., 3/4"C TO 20A-2P CIRCUIT BREAKER IN PANEL DESIGNATED UNLESS OTHERWISE NOTED.
12.

ALL THREE POLE HOMERUNS SHALL BE 3#12, 1#12G., 3/4"C TO 20A-3P CIRCUIT BREAKER IN PANEL DESIGNATED UNLESS OTHERWISE NOTED.
13.

ALL CONDUITS SHALL BE RUN CONCEALED IN NEW WALL CONSTRUCTION.
14.

ALL RECEPTACLES, FIRE ALARM DEVICES LOCATED AT BUILDING EXTERIOR SHALL BE WEATHERPROOF RATED.
15.

CONDUITS AND/OR WIRING SHALL NOT PENETRATE STAIR ENCLOSURES UNLESS SPECIFICALLY SERVING EQUIPMENT OR DEVICES LOCATED WITHIN STAIR ENCLOSURE.

ELECTRICAL LEGEND	
N O T E : ALL MOUNTING HEIGHTS GIVEN ARE TO CENTERLINE OF DEVICE UNLESS OTHERWISE NOTED.	
SYMBOL	DESCRIPTION
	CEILING MOUNTED LIGHT FIXTURE - SUBLETTER INDICATES TYPE
	RECESSED LIGHT FIXTURE - SUBLETTER INDICATES TYPE
	2' x 4' RECESSED MOUNTED FLUORESCENT LIGHT FIXTURE - SUBLETTER INDICATES TYPE
	CEILING MOUNTED LIGHT FIXTURE - SUB-LETTER INDICATES TYPE
	REMOTE SINGLE HEAD EMERGENCY LIGHT
	WALL MOUNTED 2-HEADED EMERGENCY LIGHT FIXTURE -SUBLETTER INDICATES TYPE
	SINGLE FACE EXIT SIGN WITH BATTERY - WALL/CEILING MOUNTED
	TELEVISION COAX CABLE OUTLET
	CEILING MOUNTED LOW VOLTAGE OCCUPANCY SENSOR
S	SINGLE POLE TOGGLE SWITCH - MOUNT AT 48" A.F.F.
S ₃	THREE WAY TOGGLE SWITCH - MOUNT AT 48" A.F.F.
S _{DM}	DIMMER SWITCH - LUTRON NOVA T SERIES OR EQUAL. VERIFY COMPATIBILITY WITH RESPECTIVE LIGHT FIXTURE
S _{OC}	SINGLE POLE OCCUPANCY SWITCH - MOUNT AT 48" A.F.F. WATTSTOPPER DW-200 OR EQUAL
⊖	GROUNDING DUPLEX RECEPTACLE - MOUNT AT 18" A.F.F. U.N.O.
⊖+48"	GROUNDING DUPLEX RECEPTACLE - MOUNT AT 48" A.F.F.
⊖C	GROUNDING DUPLEX RECEPTACLE - MOUNT AT COUNTER HEIGHT
⊖GFI	GROUNDING DUPLEX RECEPTACLE - GFI TYPE - MOUNT AT 18" A.F.F. U.N.O.- SEE NOTE #1 BELOW
⊖WP	GROUNDING DUPLEX RECEPTACLE - WEATHER PROOF - MOUNT AT 18" A.F.F. U.N.O.
⊖C	SPECIAL PURPOSE RECEPTACLE - MATCH NEMA CONFIGURATION OF EQUIPMENT SERVED - MOUNT AT 18" A.F.F. U.N.O.
⊖	GROUNDING DOUBLE DUPLEX RECEPTACLE - MOUNT AT 18" A.F.F. U.N.O.
⊖C	GROUNDING DOUBLE DUPLEX RECEPTACLE - MOUNT AT COUNTER HEIGHT
⊖	GROUNDING DOUBLE SINGLE RECEPTACLE - MOUNT AT 18" A.F.F. U.N.O.
⊖	GROUNDING DOUBLE DUPLEX RECEPTACLE - MOUNT FLUSH WITH CONCRETE FLOOR
⊖	TELE/COMMUNICATION OUTLET - MOUNT FLUSH WITH CONCRETE FLOOR
⊖	JUNCTION BOX
▶	TELEPHONE/DATA OUTLET WITH BACKBOX, COVER PLATE AND 3/4" EMPTY CONDUIT TO CEILING SPACE - MOUNT AT 18" A.F.F. U.N.O.
⊖	MOTOR
⊖	NON-FUSED DISCONNECT SWITCH
⊖	FUSED DISCONNECT SWITCH
■	SURFACE MOUNTED ELECTRIC PANEL - 120/208V-3ø-4W
[TC]	TIMECLOCK
⊖	FIRE ALARM HORN STROBE
⊖	FIRE ALARM STROBE
⊖	FIRE ALARM REMOTE TEST SWITCH AND TROUBLE ANNUNCIATOR
⊖	SMOKE DUCT DETECTOR
A	AMPERE
A.F.F.	ABOVE FINISHED FLOOR
C/B	CIRCUIT BREAKER
CIR	CIRCUIT
CU	CONDENSING UNIT
DWCP	DOMESTIC WATER CIRCULATING PUMP
EV	EVAPORATOR UNIT
ER	EXISTING TO REMAIN
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
HT	HEAT TRACE
HVAC	HEATING VENTILATING AIR CONDITIONING
LIG	LIGHTING
LV	LOW VOLTAGE
MCB	MAIN CIRCUIT BREAKER
MH	MOUNTING HEIGHT
MLO	MAIN LUG ONLY
NL	NEW LOCATION OF EXISTING
NR	NEW TO REPLACE EXISTING
PE	PRIMARY ELECTRIC SERVICE
RE	REMOVE EXISTING
RL	RELOCATE EXISTING
RPS	REMOTE POWER SUPPLY
RR	RELOCATE EXISTING
RTU	ROOFTOP UNIT
SE	SECONDARY ELECTRIC SERVICE
T	TELEPHONE SERVICE
TP	TRAP PRIMER
TX	TRANSFORMER
U.N.O.	UNLESS NOTED OTHERWISE
WH	WATER HEATER
WP	WEATHER PROOF
	BRANCH CIRCUIT POWER WIRING
	BRANCH CIRCUIT SWITCHING CONTROL WIRING
	BRANCH CIRCUIT FEEDER HOMERUN
	ELECTRICAL GROUND

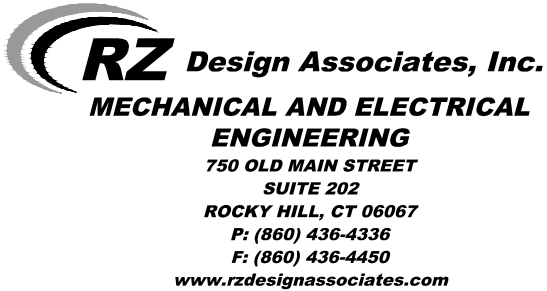
ELECTRICAL LEGEND NOTES:

1.

RECEPTACLES LOCATED WITHIN 5' OF A WATER SOURCE, LOCATED OUTSIDE AND WHERE REQUIRED BY CODE SHALL BE PROVIDED WITH A GFCI TYPE RECEPTACLE WHETHER INDICATED OR NOT. ADDITIONALLY, THOSE EXTERIOR RECEPTACLES SHALL BE PROVIDED WITH LOCKABLE COVERS RATED "WEATHER PROOF" WHILE IN USE" WITH LOCKS THAT ARE ALL KEYED ALIKE.
2.

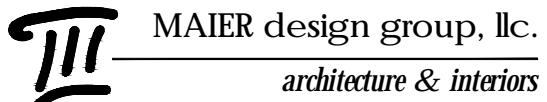
ALL BRANCH CIRCUITS TO BE PROVIDED WITH INDIVIDUAL DEDICATED NEUTRAL. MULTI-CIRCUIT FEEDERS UTILIZING COMMON NEUTRALS WILL NOT BE ACCEPTED.
3.

ALL SYMBOLS MAY NOT BE USED.



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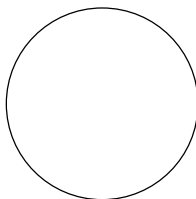


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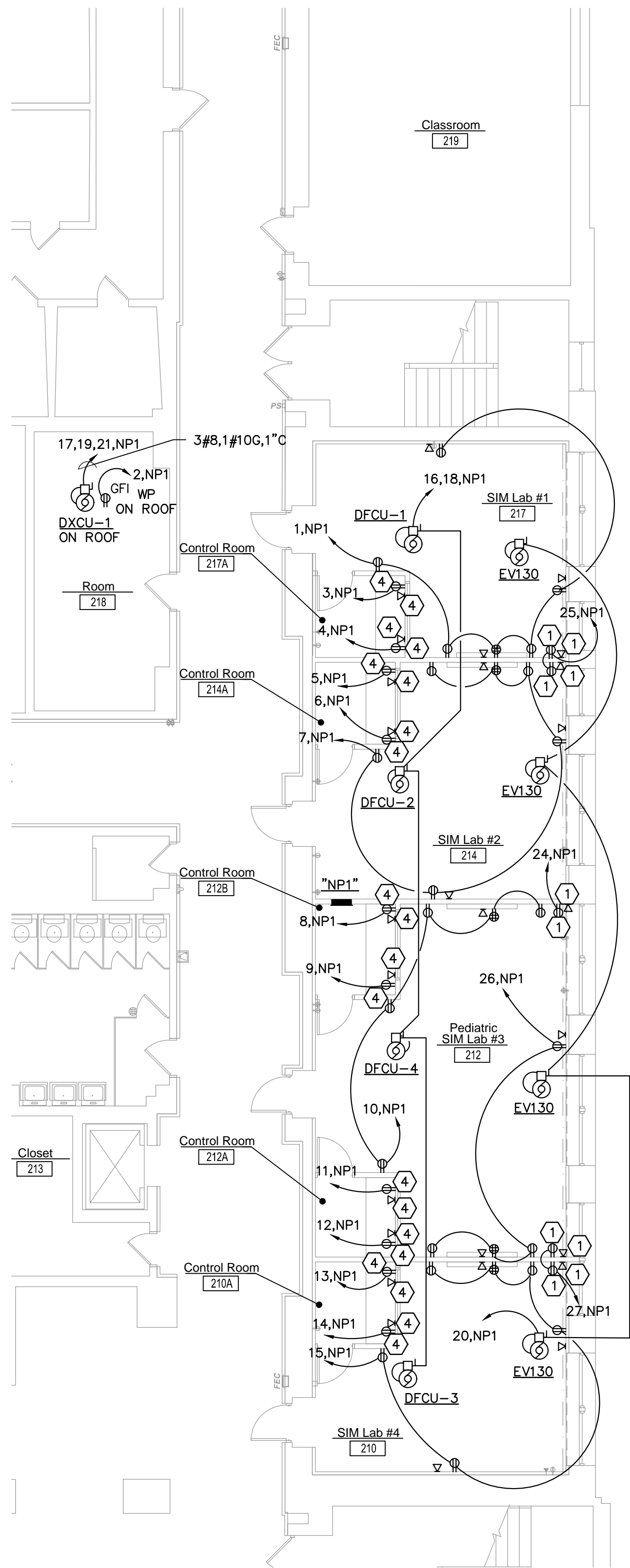
ELECTRICAL
LEGEND, SYMBOLS,
NOTES

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Scale:	CAD File:
AS NOTED	
Drawn By:	Checked By:
LCP	LCP

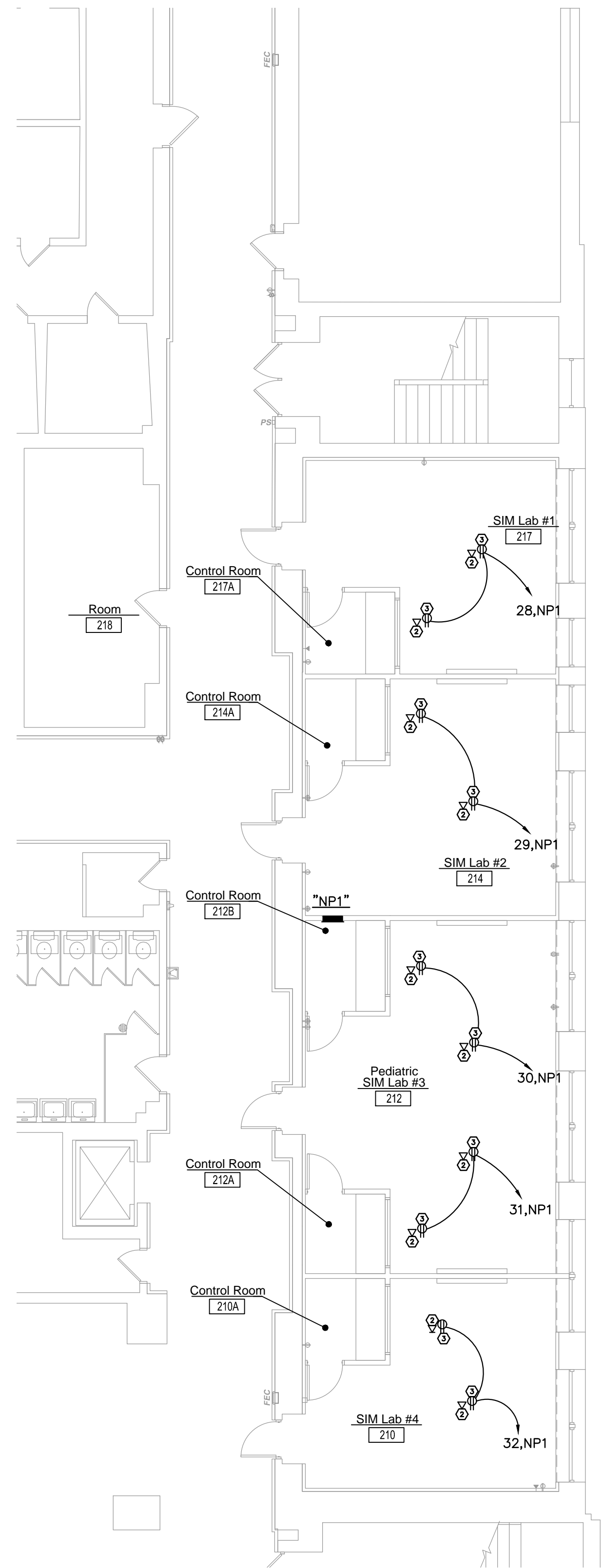
Revisions:	



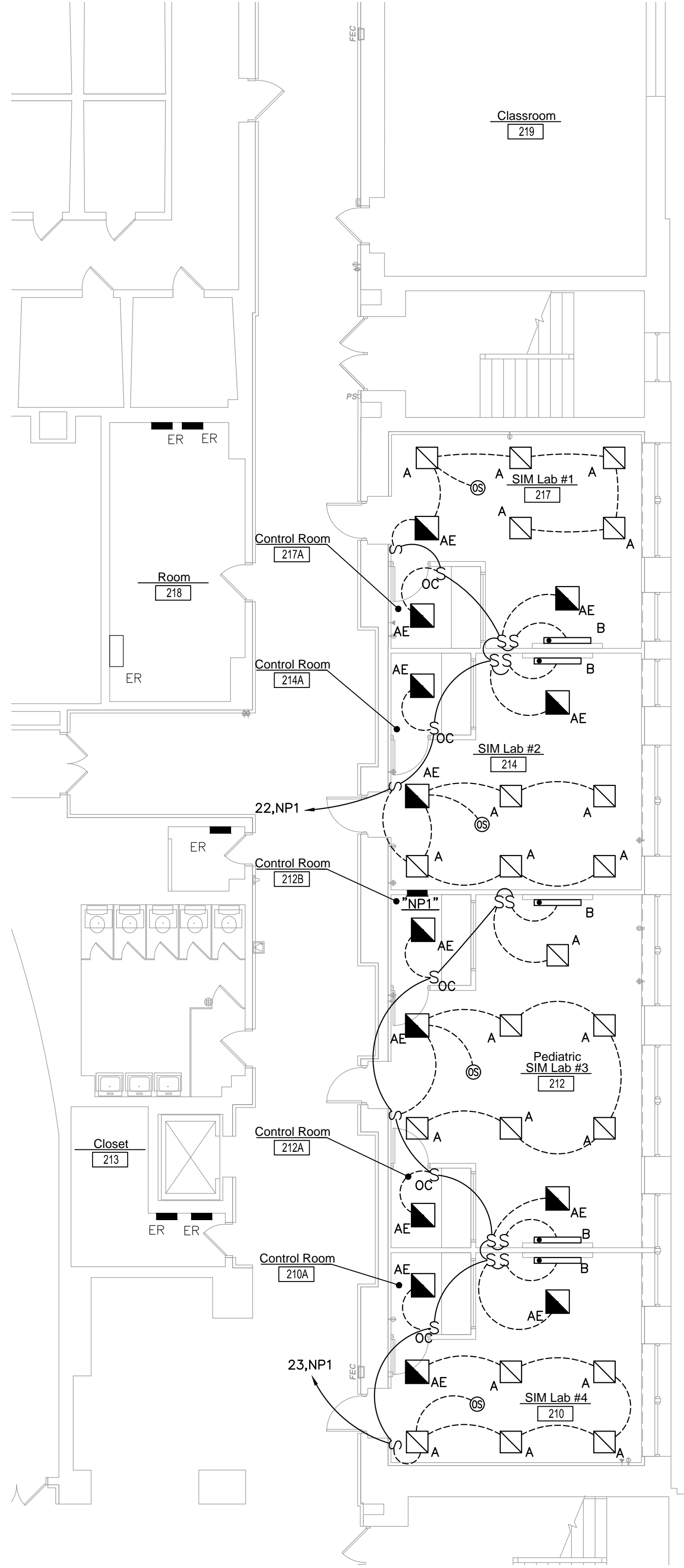
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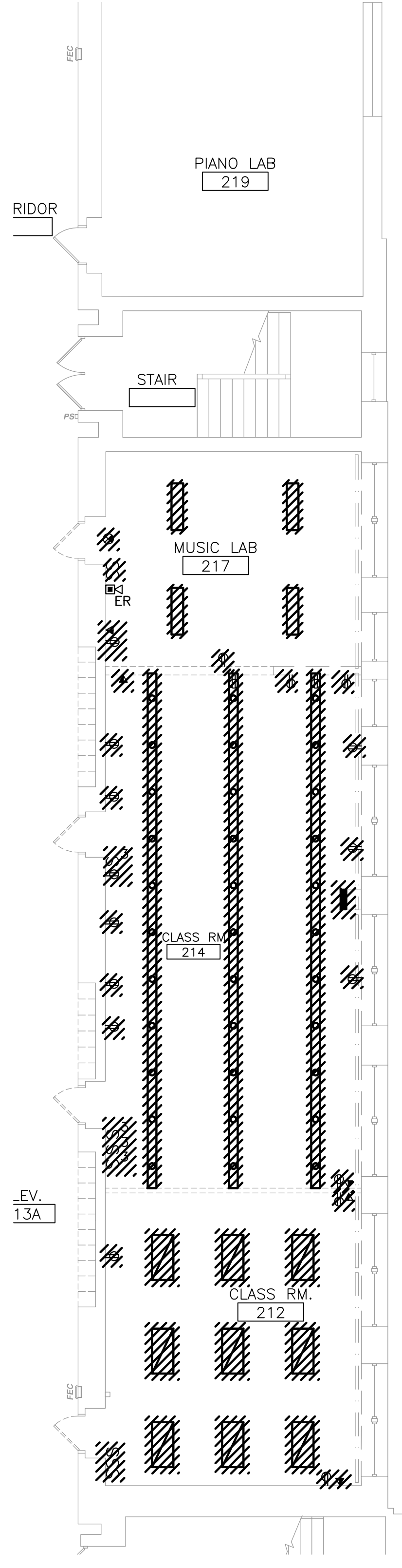
1 ELECTRICAL POWER FLOOR PLAN
E-101 1/8" = 1'-0"



2 ELECTRICAL CEILING MOUNTED POWER FLOOR PLAN
E-101 1/8" = 1'-0"



3 ELECTRICAL LIGHTING FLOOR PLAN
E-101 1/8" = 1'-0"



4 ELECTRICAL DEMOLITION FLOOR PLAN
E-101 1/8" = 1'-0"

GENERAL NOTES:

1. WIRING CONCEALED IN WALLS AND ABOVE ACCESSIBLE CEILINGS CAN BE "MC" TYPE CABLE. ALL CABLES SHALL BE NEATLY RUN AND SECURED TO BUILDING STRUCTURE.
2. ALL HOME-RUNS FROM PANELBOARD TO FIRST JUNCTION SHALL BE CONDUIT WITH TYPE "THHN" CONDUCTORS.
3. PROVIDE (2) 1 1/2" EMPTY CONDUITS WITH PULL STRINGS FROM THE NEW FLUSH MOUNTED PANELBOARD AND TERMINATE ABOVE ACCESSIBLE CEILING IN (2) 12"x12"x6" SCREW COVER JUNCTION BOXES (1-CONDUIT IN EACH JUNCTION BOX). THE JUNCTION BOX SHALL HAVE 1/2", 3/4", 1" AND 1 1/4" KNOCKOUTS ON EACH SIDE FOR FUTURE USE.
4. RECEPTACLES AND DATA OUTLETS IN ALL CONTROL ROOMS SHALL BE MOUNTED BELOW THE COUNTER. THE ARCHITECT WILL PROVIDE GROMMETS IN THE COUNTER TOP.
5. ALL LIGHT FIXTURED SHALL BE FURNISHED BY THE OWNER. THE ELECTRICAL CONTRACTOR SHALL ACCEPT DELIVERY, INSTALL AND TEST ALL LIGHT FIXTURES.

POWER PLANS KEY NOTES:

1. INSTALL POWER AND DATA OUTS 84" ABOVE FINISHED FLOOR
2. MOUNT DATA OUTLET ABOVE THE FINISHED CEILING. COORDINATE EXACT REQUIREMENTS WITH THE IT VENDOR.
3. MOUNT POWER RECEPTACLE FLUSH WITH FINISHED CEILING. COORDINATE EXACT LOCATION WITH THE IT VENDOR.
4. MOUNT BELOW COUNTER. COORDINATE EXACT LOCATION WITH THE ARCHITECT AND THE IT VENDOR



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**ELECTRICAL
FLOOR PLAN**

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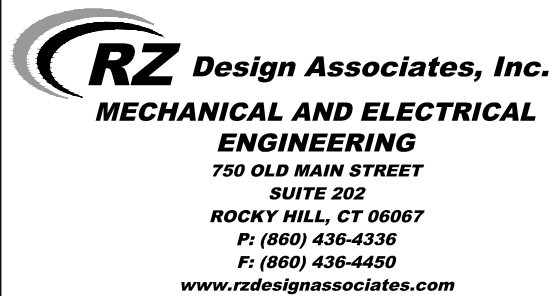
- 27.6. ALL PANELBOARDS SHALL BE DEAD--FRONT SAFETY TYPE AND UL LISTED.
- 27.7. BRANCH CIRCUIT PANELBOARDS FOR 208Y/120 VOLT SERVICES SHALL BE SIMILAR TO CUTLER HAMMER POW-R-LINE TYPE WITH 22,000 AMPERE MINIMUM INTERRUPTING CAPACITY CIRCUIT BREAKERS. REFER TO PANELBOARD SCHEDULES FOR SPECIFIC RATING AND BRANCH CIRCUIT BREAKER REQUIREMENTS.
- 27.8. CABINETS SHALL BE DESIGNED TO PROVIDE WIRING GUTTERS IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE ARTICLE 408.55.
- 27.9. EACH PANELBOARD, AS A COMPLETE UNIT SHALL HAVE A SHORT CIRCUIT RATING. PANELBOARDS SHALL BE MARKED WITH THEIR MAXIMUM SHORT CIRCUIT RATING AT THE SUPPLY VOLTAGE AND SHALL BE UL LISTED.
- 27.10. SPACES SHALL BE PROVIDED WITH ALL REQUIRED BUSSING, SUPPORTS, CONNECTORS, ETC. NECESSARY FOR FUTURE INSTALLATION OF CIRCUIT BREAKERS.
- 27.11. PANELBOARDS SHALL BE LISTED BY UNDERWRITER'S LABORATORIES AND SHALL BEAR THE UL LABEL. PANELBOARDS SHALL BE AS INDICATED ABOVE BY CUTLER HAMMER, SQUARE D, GENERAL ELECTRIC, SIEMENS OF APPROVED EQUAL.
- 27.12. "SERIES RATED" EQUIPMENT AND ALUMINUM BUSSING IS NOT ACCEPTABLE.
- 27.13. ALL PANELBOARDS SHALL BE PROVIDED WITH AN ENGRAVED NAMEPLATE ON THE DOOR INDICATING THE PANELBOARD DESIGNATION, VOLTAGE, RATING OF MAIN CIRCUIT BREAKER OR MAIN LUGS AND SOURCE OF SUPPLY. ENGRAVED PLATE SHALL BE AS CALLED FOR IN THESE SPECIFICATIONS.
- 27.14. ALL PANELBOARDS SHALL BE PROVIDED WITH A TYPED (HAND WRITTEN IS NOT ALLOWED) CIRCUIT DIRECTORY INDICATING THE LOAD FED BY EACH CIRCUIT BREAKER AND ITS LOCATION.
- 27.15. ALL PANELBOARDS SHALL BE PROVIDED WITH FULL SIZE EQUIPMENT GROUND AND NEUTRAL BUSES ON EACH SIDE OF THE ENCLOSURE SO AS TO PROVIDE SEPARATE EQUIPMENT GROUND AND NEUTRAL TERMINATION FOR EACH BRANCH CIRCUIT.
- 27.16. FLUSH MOUNTED PANELBOARDS SHALL BE PROVIDED WITH FIVE (5) EMPTY 1" CONDUITS INSTALLED FROM PANELBOARD AND TERMINATED ABOVE ACCESSIBLE CEILINGS.
28. FIRE ALARM SYSTEM:
- 28.1. THE EXISTING FIRE ALARM CONTROL PANEL SHALL REMAIN.
- 28.2. PROVIDE A NEW NOTIFICATION CIRCUIT EXTENDER PANEL PER THE MANUFACTURERS RECOMMENDATIONS. PROVIDE NEW CONTROL, INDICATION, NOTIFICATION AND MONITORING DEVICES COMPATIBLE WITH THE EXISTING SYSTEM. ALL DEVICES AND INSTALLATIONS SHALL COMPLY WITH AMERICANS WITH DISABILITIES ACT (ADA) GUIDELINES WHERE APPLICABLE.
- 28.3. THE SEQUENCE OF OPERATION IS PART OF THE EXISTING FIRE ALARM SYSTEM ALREADY IN PLACE. THE FOLLOWING IS FOR REFERENCE AND SHOULD BE FOLLOWED WHEN ADDING DEVICES TO THE EXISTING FIRE ALARM SYSTEM. COORDINATE WITH THE MANUFACTURER FOR COMPLIANCE WITH THE FOLLOWING SEQUENCE OF OPERATION WHEN ADDING DEVICES OR MODIFYING THE EXISTING FIRE ALARM SYSTEM IN ANY MANNER. THE OPERATION OF A MANUAL STATION OR ACTIVATION OF ANY AUTOMATIC ALARM INITIATING DEVICE (SYSTEM SMOKE, HEAT, WATER--FLOW) SHALL AUTOMATICALLY:
- 28.3.1. INITIATE THE TRANSMISSION OF THE ALARM TO THE MUNICIPAL FIRE STATION OR APPROVED CENTRAL STATION VIA A LOCAL ENERGY MASTER BOX, MULTI--ZONE MASTER BOX, RADIO MASTER BOX, OR DIGITAL ALARM COMMUNICATOR/TRANSMITTER (DACT).
- 28.3.2. SOUND A CODE 3 TEMPORAL EVACUATION SIGNAL OVER ALL AUDIO CIRCUITS. EXCEPT IN DESIGNATED AREAS OF ASSEMBLY. IN DESIGNED AREAS OF ASSEMBLY (SOUND A PRE-RECORDED VOICE MESSAGE(S) LOCATED AT THE FACP OR REMOTE LOCATION(S) IN ACCORDANCE WITH THE LOCAL REQUIREMENTS.
- 28.3.3. FLASH ALL VISUAL SIGNALS THROUGHOUT THE BUILDING IN A SYNCHRONIZED MANNER.
- 28.3.4. FLASH AN ALARM LED AND SOUND AN AUDIBLE SIGNAL AT THE FACP. UPON ACKNOWLEDGEMENT THE ALARM LED SHALL LIGHT STEADILY AND THE AUDIBLE SHALL SILENCE. SUBSEQUENT ALARMS SHALL RE--INITIATE THIS SEQUENCE.
- 28.3.5. UPON ACTIVATION BY AN ELEVATOR LOBBY SMOKE DETECTOR OR OTHER DESIGNED RECALL DEVICES, RECALL ALL ELEVATORS THAT SERVE THE FLOOR OF THE INITIALIZATION TO THE MAIN EGRESS LEVEL. IF THE ALARM INITIATES ON THE MAIN EGRESS LEVEL, RETURN THE ELEVATOR TO THE ALTERNATE FLOOR AS DIRECTED BY THE LOCAL AUTHORITY HAVING JURISDICTION.
- 28.3.6. VISUALLY INDICATE THE ALARM INITIATING DEVICE TYPE AND LOCATION VIA THE LCD DISPLAY LOCATED AT THE FACP (AND AT ANY REMOTE ANNUNCIATORS) AND (ILLUMINATE THE APPROPRIATE ALARM ZONE LED AT THE REMOTE ANNUNCIATORS).
- 28.3.7. AUTOMATICALLY SHUT DOWN OR CONTROL HVAC EQUIPMENT TO INITIATED SMOKE CONTROL FUNCTIONS AS REQUIRED. MANUAL OVERRIDE CONTROLS AND PROGRAMMABLE RELAY INTERFACE SHALL SERVE AS AN INTERFACE TO THE BUILDING AUTOMATION SYSTEM.
- 28.3.8. OPERATE PRIORITIZED OUTPUTS TO RELEASE ALL MAGNETICALLY HELD SMOKE DOORS AND MAGNETICALLY LOCKED DOORS THROUGHOUT THE BUILDING.
- 28.3.9. ACTIVATE THE EXTERIOR WEATHERPROOF BEACON.
- 28.4. PROGRAMMING:
- 28.4.0.1. THE SYSTEM SHALL BE PROGRAMMED TO INCLUDE THE NEW DEVICES BEING ADDED TO THE SYSTEM AS REQUIRED PER THE CODE AND LOCAL AUTHORITY HAVING JURISDICTION.
- 28.4.1. BATTERIES:
- 28.4.1.1. BATTERIES SHALL HAVE SUFFICIENT CAPACITY TO POWER THE FIRE ALARM SYSTEM FOR NOT LESS THAN SIXTY HOURS PLUS 5 MINUTES OF ALARM UPON A NORMAL AC POWER FAILURE.
- 28.5. INSTALLATION:
- 28.5.1. INSTALLATION SHALL BE IN ACCORDANCE WITH THE NEC, NFPA 72, LOCAL AND STATE CODES AS SHOWN ON THE DRAWINGS AND AS RECOMMENDED BY THE MAJOR EQUIPMENT MANUFACTURER.
- 28.5.2. ALL FIRE DETECTION AND ALARM SYSTEM DEVICES SHALL BE FLUSH MOUNTED WHEN LOCATED IN FINISHED AREAS AND MAY BE SURFACE MOUNTED WHEN LOCATED IN UNFINISHED AREAS.
- 28.5.3. CONDUCTORS SHALL BE MINIMUM #12 AWG GAUGE COPPER TYPE THHN/THWN. CONDUCTOR SIZES SHALL BE INCREASED AS REQUIRED TO MAINTAIN VOLTAGE TO A MINIMUM OF 3%. ALL AC AND DC PORTIONS OF THE SYSTEM SHALL BE INSTALLED IN SEPARATE RACEWAYS.
- 28.6. TEST:
- 28.6.1. PROVIDE THE SERVICE OF A COMPETENT FACTORY TRAINED ENGINEER OR TECHNICIAN AUTHORIZED BY THE MANUFACTURER OF THE FIRE ALARM EQUIPMENT TO TECHNICALLY SUPERVISE AND PARTICIPATE DURING ALL OF THE ADJUSTMENTS AND TESTS FOR THE SYSTEM. ALL TESTING SHALL BE IN ACCORDANCE WITH NFPA 72, CHAPTER 7 AND THE STATE FIRE CODE.
- 28.6.2. THE FINAL TEST SHALL BE OBSERVED BY THE LOCAL AUTHORITY HAVING JURISDICTION.

FIRE STOPPING NOTES:

- FIRE STOPPING SHALL BE PROVIDED BY THIS ELECTRICAL CONTRACTOR FOR ALL FLOOR, CEILING AND FIRE/SMOKE RATED WALL CONDUIT, SLEEVES AND CABLES AS REQUIRED BY PROJECT CONDITION.
- THE CONTRACTOR SHALL PROVIDE A FIRE STOP SYSTEM IN ACCORDANCE WITH STATE AND LOCAL CODES AND COMPRISES OF THE FOLLOWING:
 - THE SYSTEM SHALL CONSIST OF A WATER--BASED SEALANT AND SUITABLE DAMMING MATERIALS, WHERE REQUIRED, AND SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
 - THE SEALANT SHALL BE TWO--STEP INTUMESCENT AND CAPABLE OF EXPANDING UP TO 8--TIMES ITS ORIGINAL VOLUME.
 - THE SEALANT SHALL CONTAIN NO ASBESTOS, NO FIBERGLASS, AND NO SOLVENTS NOR CORROSIVE MINERAL SALTS OF ANY KIND.
 - THE SEALANT SHALL FORM A SURFACE CAPABLE OF BEING SANDED AND PAINTED TO MATCH SURROUNDING SURFACES AND SHALL BE IMPERVIOUS TO WATER WHEN DRY.
 - THE FIRE STOP SYSTEM SHALL BE TESTED TO THE TIME/TEMPERATURE REQUIREMENTS OF ASTM E 119 AND SHALL BE UL 1479 (ASTM E 814) AND CLASSIFIED FOR UP TO 3 HOURS.
 - THE FIRE STOP SYSTEM SHALL BE SPECSEAL SEALANT AS MANUFACTURED BY SPECIFIED TECHNOLOGIES, INC. OR APPROVED EQUAL.
 - SPECIAL CARE SHALL BE TAKEN WITH ELECTRICAL SYSTEMS NOT TO COMPROMISE ANY OF THE BUILDING FLOOR PARTITIONS, FLOORS, WALLS OR MEMBRANES. PROVIDE ALL FIRE STOPPING REQUIREMENTS TO COMPLY WITH THE STATE AND LOCAL BUILDING CODE, THE ELECTRICAL CODE AND THE UL LISTING OF EACH ASSEMBLY. COORDINATE LOCATIONS AND TYPES OF RATED MEMBRANES WITH THE ARCHITECT.

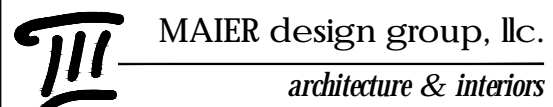
ELECTRICAL SPECIFICATIONS:

- FURNISH LABOR, MATERIALS, EQUIPMENT AND SERVICES NECESSARY FOR THE PROPER AND COMPLETE INSTALLATION OF ALL ELECTRICAL WORK SHOWN ON THE DRAWINGS AND HEREIN SPECIFIED. REFER TO THE TENANT'S LEASE FOR CONSTRUCTION RULES & REGULATIONS, AND TENANT DESIGN CRITERIA MANUAL FOR SPECIFIC REQUIREMENTS. THE TENANT'S LEASE AGREEMENT INFORMATION SHALL SUPERCEDE THESE SPECIFICATION WHERE A CONFLICT OCCURS BETWEEN THE TWO.
- ALL ITEMS NOT SHOWN ON THE DRAWINGS OR CALLED FOR IN THESE SPECIFICATIONS, BUT WHICH ARE NECESSARY TO MAKE A COMPLETE ELECTRICAL INSTALLATION, SHALL BE FURNISHED AND INSTALLED AS PART OF THIS PROJECT.
- ALL ELECTRICAL INSTALLATIONS AND GROUNDING SHALL BE IN STRICT ACCORDANCE WITH THE LATEST REQUIREMENTS OF THE LOCAL, STATE AND NATIONAL CODES, WITH STATE ADOPTED AMENDMENTS.
- OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND INSPECTIONS.
- MATERIALS AND WORKMANSHIP SHALL BE IN THE BEST OF THEIR RESPECTIVE KIND AND IN FULL ACCORDANCE WITH THE MOST MODERN ELECTRICAL CONSTRUCTION STANDARDS. ALL MATERIALS SHALL BE NEW AND FREE OF ANY DEFECTS.
- THE ELECTRICAL CONTRACTOR SHALL CLEAN AT THE END OF EACH DAY. ALL AREAS WORKED IN, EMPTY BOXES, RUBBISH AND OTHER CONSTRUCTION MATERIALS OF NO USE SHALL BE REMOVED FROM THE BUILDING.
- ALL WORK SEQUENCES SHALL BE COORDINATED WITH THE ARCHITECT AND SHALL BE COORDINATED WITH THE LANDLORD, OTHER BUILDING TRADES AND THE ARCHITECTS BUILDING SCHEDULE.
- ALL BRANCH CIRCUITS RATED AT 120 VOLTS, 20 AMPERES EXCEEDING 75 FEET SHALL BE MINIMUM #10 AWG.
- ALL EQUIPMENT AND INSTALLATION OF ELECTRICAL EQUIPMENT SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATED OF FINAL ACCEPTANCE.
- FURNISH AND INSTALL TEMPORARY POWER AS REQUIRED TO OPERATE TOOLS AND LIGHTING. PROVIDE PANELS AND LIGHTING FIXTURES FOR CONSTRUCTION AS NEEDED.
- THE ELECTRICAL CONTRACTOR (EC) SHALL INSPECT THE SITE. PRIOR TO SUBMITTING THEIR BID, AND SHALL INVESTIGATE ALL CONDITIONS UNDER WHICH THIS WORK SHALL BE PERFORMED. FAILURE TO INSPECT EXISTING CONDITIONS OR TO FULLY UNDERSTAND THE SCOPE OF WORK WHICH IS REQUIRED SHALL NOT EXCUSE THE EC FROM HIS OBLIGATION TO SUPPLY AND INSTALL THE WORK IN ACCORDANCE WITH THE SPECIFICATION AND THE DRAWINGS AND UNDER ALL SITE CONDITIONS AS THEY EXIST.
- THE PLANS DEPICT THE LOCATION OF ALL FIXTURES AND EQUIPMENT AND ARE INTENDED TO INDICATE THE GENERAL SCOPE OF WORK, LAYOUT AND QUALITY OF WORKMANSHIP. THEY ARE NOT INTENDED FOR THE PURPOSE OF EXECUTION OF THE WORK, BUT THE CONTRACTOR SHALL UNDERSTAND THAT SUCH DETAILS ARE PART OF THE WORK.
- THE ELECTRICAL CONTRACTOR SHALL CAREFULLY VERIFY ALL MEASUREMENTS AT THE SITE AND DETERMINE THE EXACT LOCATION OF ALL CHASES AND OPENINGS REQUIRED BY THIS WORK AND SHALL PROVIDE ALL SLEEVES, INSERTS, AND HANGERS REQUIRED.
- BRANCH CIRCUITS ADDED TO ANY EXISTING PANELBOARDS SHALL INCLUDE THE CIRCUIT BREAKER DIRECTORY TO BE UPDATED. IF NO DIRECTORY EXISTS THAN ONE SHALL BE PROVIDED INDICATING THE EXISTING AND NEW CIRCUITS. CIRCUIT TRACERS SHALL BE CAPABLE OF TRACING LIVE CIRCUITS SO AS TO MINIMIZE DISTURBING ADJACENT SPACES.
- WIRE AND CABLE FOR ALL BRANCH CIRCUITS SHALL BE TYPE THHN/THWN, INSULATION RATED FOR 600 VOLTS, RATED AT 75°C MINIMUM AND UL LISTED FOR BUILDING WIRE USE. WIRE SHALL BE A MINIMUM OF #12 AWG SOLID. ALL CONDUCTORS SHALL BE COPPER. ALL WIRING SHALL BE CONCEALED AND INSTALLED IN RACEWAY. RACEWAYS SHALL BE EMT WITH STEEL SET SCREW FITTINGS. METAL--CLAD CABLE TYPE MC MAY BE USED IN AREAS APPROVED BY THE LOCAL AUTHORITY HAVING JURISDICTION.
- LIGHTING FIXTURES SHALL BE SUPPORTED INDEPENDENTLY FROM THE STRUCTURE OF THE BUILDING. THE CEILING SHALL NOT BE THE SOLE SUPPORT FOR THE LIGHTING FIXTURES. ALL LIGHTING FIXTURES, ALL LIGHTING FIXTURES SHALL BE PROVIDED WITH LAMPS INSTALLED. ALL BALLASTS SHALL BE HIGH POWER FACTOR, CLASS "A" SOUND RATED WITH FUSING OR THERMAL PROTECTION. NEW LAMPS SHALL HAVE THE SAME TEMPERATURE AS EXISTING LAMPS IN THE SAME AREA.
- OUTLET BOXES SHALL BE GALVANIZED STEEL, OF THE TYPE REQUIRED FOR THE PARTICULAR APPLICATION AND SIZED TO ACCOMMODATE THE NUMBER OF CONDUCTORS TO BE INSTALLED PER CODE.
- SWITCHES SHALL BE EQUAL TO HUBBELL #1221 FOR 20 AMPERE, 1--POLE AND #1223 FOR 20 AMPERE, 3--POLE. RECEPTACLES SHALL BE EQUAL TO HUBBELL #5352 AND GF5352 FOR GFCI TYPE. USE "ISOLATED GROUND" RECEPTACLES IN AREAS AS INDICATED ON THE PLANS. ALL DEVICES SHALL BE PROVIDED WITH MATCHING FACE PLATES. COLOR OF DEVICES AND PLATES SHALL BE SELECTED BY THE ARCHITECT PRIOR TO ORDERING ANY MATERIAL.
- FIRE ALARM SYSTEM WIRING SHALL BE CONCEALED AND INSTALLED IN RACEWAY. RACEWAYS SHALL BE EMT WITH STEEL SET SCREW FITTINGS WITH INSULATED THROAT. FIRE ALARM METAL--CLAD CABLE TYPE MC MAY BE USED IN AREAS WHERE APPROVED BY THE AUTHORITY HAVING JURISDICTION. THE MINIMUM WIRE SIZE FOR FIRE ALARM WIRING SHALL BE #12 AWG. ALL SPLICES SHALL BE MADE ON SCREW TYPE TERMINAL STRIPS. WRENUTS SHALL NOT BE USED. T--TAPPING OF FIRE ALARM WIRING SHALL NOT BE ALLOWED.
- RED PAINTED TERMINAL CABINETS OR BOXES WITH LOCKABLE COVERS SHALL BE PROVIDED AT ALL JUNCTION POINTS FOR FIRE ALARM SYSTEM WIRING.
- ADDITIONAL JUNCTION BOXES BEYOND THOSE SHOWN ON THE DRAWINGS SHALL BE PROVIDED AS NECESSARY FOR ALL ELECTRICAL INSTALLATIONS.
- ALL CUTTING, PATCHING AND FIRE STOPPING FOR ALL ELECTRICAL INSTALLATIONS SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
- PROVIDE CONDUIT SLEEVES FILLED WITH AN APPROVED FORE RESISTANT MATERIAL WHERE FLOOR RATED WALLS, FLOORS OF CEILINGS ARE PENETRATED. APPROVED WATERTIGHT CONDUIT SLEEVES SHALL BE PROVIDED WHERE WALLS ARE PENETRATED EITHER ENTERING OR LEAVING THE BUILDING.
- RECEPTACLES, LIGHT FIXTURES, AND POWER ITEMS BRANCH CIRCUIT WIRING MAY NOT BE SHOWN BUT SHALL BE PROVIDED AS REQUIRED. MINIMUM WIRING SHALL BE 2#12PLUS 1#12 GROUND IN 3/4" CONDUIT. NO MORE THAN THREE PHASES MAY BE COMBINED IN A SINGLE HOMERUN AND EACH PHASE SHALL BE PROVIDED WITH AN INDIVIDUAL NEUTRAL.
- ALL CONDUITS SHALL CONTAIN A GREEN SAFETY GROUND WIRE. BOND ALL PANELS, CABINETS, ENCLOSURES, CONDUITS, ETC... AS REQUIRED PER CODE.
- ALL SUPPORTS AND ANCHORS SHALL BE DESIGNED AND INSTALLED PER REQUIREMENTS FOR THE SEISMIC CLASSIFICATIONS AS OUTLINED IN THE APPLICABLE BUILDING CODE. SITE LOCATION AND PREVAILING ORIENTATION SHALL BE TAKEN INTO ACCOUNT IN THE DESIGN.
- PANELBOARDS:
 - PANELBOARDS SHALL BE PROVIDED AT LOCATIONS INDICATED ON THE DRAWINGS AND IN ACCORDANCE WITH THE PANEL SCHEDULES SHOWN ON THE DRAWINGS.
 - PANELBOARDS SHALL BE CIRCUIT BREAKER TYPE INSTALLED IN CODE GAUGE SHEET STEEL CABINETS. SURFACE OR FLUSH MOUNTED AS INDICATED IN THE CONTRACT DOCUMENTS. PROVIDE NEATLY TYPED DIRECTORY CARDS IN EACH PANELBOARD.
 - BUSSING SHALL BE OF COPPER CAPACITIES AS INDICATED AND SIZED FOR SUCH CAPACITIES IN ACCORDANCE WITH UNDERWRITERS LABORATORY STANDARDS. UNLESS OTHERWISE NOTED, FULL SIZE NEUTRAL BARS SHALL BE INCLUDED. BUS BAR TAPS FOR PANELBOARDS WITH SINGLE POLE BRANCHES SHALL BE ARRANGED FOR SEQUENCE PHASING OF THE BRANCH CIRCUIT DEVICES. BUSSING SHALL BE BRACES THROUGHOUT TO CONFORM TO INDUSTRY STANDARD PRACTICE GOVERNING SHORT CIRCUIT STRESS WITHIN PANELBOARDS. PHASE BUSSING SHALL BE FULL HEIGHT WITHOUT REDUCTION.
 - THE BRANCH CIRCUIT BREAKERS SHALL BE MOLDED CASE, BOLT--ON TYPE, THERMAL--MAGNETIC TRIP, SINGLE, TWO OR THREE POLES SHOWN ON THE CONTRACT DOCUMENTS. ALL MULTIPLE POLE BREAKERS SHALL BE SINGLE HANDLE, COMMON TRIP. WHERE BREAKERS OF LARGER CAPACITY ARE REQUIRED, THEY SHALL HAVE CIRCUIT CHARACTERISTICS AS SHOWN ON THE DRAWINGS AND SHALL BE RATED FOR SWITCHING DUTY WHERE REQUIRED. PROVIDE HANDLE LOCKS FOR EMERGENCY LIGHTING CIRCUITS, FIRE ALARM, SECURITY, OR OTHER SIMILAR FUNCTIONS.
 - PANELBOARDS SHALL HAVE GROUND BUS IN ADDITION TO NEUTRAL BUS GROUNDED TO THE BACK BOX WITH SUFFICIENT SCREWS AND OR LUGS TO ACCOMMODATE BRANCH CIRCUITS AS WELL AS FEEDER GROUND CONDUCTORS.
 - ALL PANELBOARDS SHALL BE DEAD--FRONT SAFETY TYPE AND UL LISTED.



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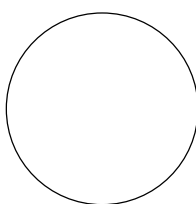
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