

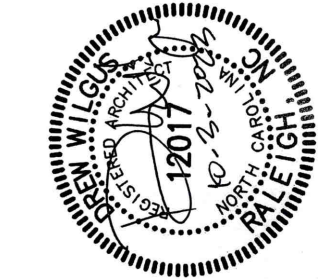
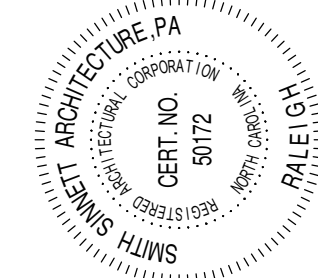
ROANOKE RAPIDS SCHOOL DISTRICT

CHALONER MIDDLE SCHOOL HVAC REPLACEMENT

2100 Virginia Ave, Roanoke Rapids, NC 27870



T 919 781 8582
F 919 781 3979
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
info@smithsinnett.com



CONSTRUCTION DOCUMENTS

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ROANOKE RAPIDS SCHOOL DISTRICT

CHALONER MIDDLE SCHOOL HVAC REPLACEMENT

2100 Virginia Ave, Roanoke Rapids, NC 27870

DESIGN PROFESSIONALS

OWNER:

ROANOKE RAPIDS GRADED SCHOOL DISTRICT
536 HAMILTON ROAD
ROANOKE RAPIDS, NC , 27870
252.519.7100 (P)
252.519.7195 (F)
POC: Robbie Clements
clements.r.co@rrgsd.org

MECHANICAL AND ELECTRICAL:

PDC ENGINEERS
3101 POPLARWOOD COURT, SUITE 320
RALEIGH, NC 27604
919.790.9989 (P)
POC: Steve Campbell, PE
steve@pdcengineers.com

ARCHITECTURE:

SMITH SINNETT ARCHITECTURE
4600 LAKE BOONE TRAIL, SUIT 205
RALEIGH NC, 27607
POC: Ed Gordon
egordon@smithsinnett.com

BID ALTERNATES

VICINITY MAP

BIRDS EYE

INDEX OF DRAWINGS

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A2-01 EXTERIOR ELEVATION, WALL SECTION, & DETAILS

MECHANICAL

M0-01 LEAD SHEET

M100 MECHANICAL DEMOLITION PLAN

M101 DUCTWORK AND PIPING PLAN

M303 ENLARGED PLANS

M501 DETAILS

M502 UL DETAILS

M701 MECHANICAL SCHEDULES

ELECTRICAL

E001 LEAD SHEET

E100 DEMOLITION PLAN

E101 POWER PLAN

E401 RISER

E402 PANEL SCHEDULES

E501 DETAILS

E502 DETAILS

ABBREVIATIONS

@ AB ACC ACT ACOUS ACW ADJ AE AFF AFL AHU ALB ALT ALUM ANOD ANSI ATEN AWP

AT AREA DRAIN

ACC ACCENT COLOR

ACT ACOUSTICAL CEILING TILE

ACOUS ACOUSTIC

ACW ACOUSTICAL WALL PANELS

ADJ ADJUSTABLE

AE APPROVED EQUAL

AFF ABOVE FINISH FLOOR

AFL ATHLETIC FLOORING

AHU AIR HANDLING UNIT

ALB ALUMINUM BASE

ALT ALUMINUM TILE

ALUM ALUMINUM

ANOD ANODIZED

ANSI AMERICAN NATIONAL STANDARDS INSTITUTE

ATEN ATTENUATION

AWP ACRYLIC WALL PANELS

BBT BIOBASED TILE

BF BLOCK FILL

BFC BROOMED FINISHED CONCRETE

BL BLINDS

BLDG BUILDING

BLKG BLOCKING

BOT BOTTOM

BFG BULLET PROOF GLASS

CBW CATCH BASIN

CEM CEMENTIOUS SIDING

CF CORK FLOORING

CFOI CONTRACTOR FURNISHED, CONTRACTOR INSTALLED

CFT CERAMIC FLOOR TILE

CS CURVED CEILING GRID

CI CAST IRON

C# CURB INLET

CJ CONTROL JOINT

CLG CEILING

CL CENTERLINE

CMU CONCRETE MASONRY UNIT

CO CLEAN OUT

COL COLUMN

CONC CONCRETE

CONSTR CONSTRUCTION

CONTR CONTRACTOR

CORR CORRUGATED

CPT CARPET

CPTT CARPET TILE

CTB CERAMIC TILE BASE

CRC COLD ROLLED CHANNEL

CRF CORK RUBBER FLOORING

CS COUNTERSUNK

CWT CERAMIC WALL TILE

DET DETAIL

DEPT DRY FOG PAINT

DIA DIAMETER

DISP DISPENSER

DN DOWN

DP DEEP

DR DOOR

DS DOWNSPOUT

E/W EACH WAY

EDG EDGE BANDING

EES EMERGENCY EYE WASH AND SHOWER

EFT EPOXY FLOOR COATING

EIFS EXTERIOR INSULATION FINISH SYSTEM

EN ENAMEL

EPT HIGH PERFORMANCE EPOXY PAINT

EQ EQUAL

EST EXISTING

EXT EXTERIOR

EXP EXPOSED CEILING

EWC ELECTRIC WATER COOLER

FC FIRECODE

FD FLOOR DRAIN

FEB FIRE EXTINGUISHER BRACKET

FEC FIRE EXTINGUISHER CABINET

FF FINISH FLOOR

FH FIRE HYDRANT

FLU FLOURESCENT

FOF FACE OF FRAME

FOW FACE OF MASONRY

FTG FACE OF WALL

FTG FOOTING

GC GENERAL CONTRACTOR

GCT GRANITE COUNTERTOP

GAG GAGE

GALV GALVANIZED

GEN GENERATOR

GFT GRANITE FLOOR TILE

GL GLASS

GMT GLASS MOSAIC TILE

GT GROUT

GYP GYPSUM BOARD

HC HOLLOW CORE

HB HOSE BIB

HC HANDICAPP

HDWD HARDWOOD

HM HOLLOW METAL

HORZ HORIZONTAL

HR HOUR

ICF INFECTION CONTROL FLOORING

ID INSIDE DIAMETER

INST INSTALLATION

INSUL INSULATION

INT INTERIOR

INV INVERT

JB JOIST BEARING

JB# JUNCTION BOX

JT JOINT

L LONG

LFT UNOLEUM FLOOR TILE

LP LIGHT POLE

LST UNOLEUM SHEET FLOORING

LVT LUXURY VINYL TILE

MATL MATERIAL

MAX MAXIMUM

MC METAL CANOPY

MCT METAL CEILING TILE

MB MASONRY - BRICK

MECH MECHANICAL

MFR MANUFACTURER

MFT MARBLE FLOOR TILE

MIN MINIMUM

MO MASONRY OPENING

MTB MARBLE TILE BASE

MTD MOUNTED

MTL METAL

MMW METAL WALK-OFF MAT

MWT MARBLE WALL TILE

NIC NOT IN CONTRACT

NOM NORMAL

OC ON CENTER

OD OUTSIDE DIAMETER

OFOI OWNER FURNISHED, OWNER INSTALLED

OFCI OWNER FURNISHED, CONTRACTOR INSTALLED

OPP OPPOSITE

OZ OUNCE

P-LAM PLASTIC LAMINATE

P-LAM WD PLASTIC LAMINATE WOOD DOORS

PC POLISHED CONCRETE

PERF PERFORATED

PFT PORCELAIN FLOOR TILE

PVI POST INDICATOR VALVE

PL PLATE

PLYWD PLYWOOD

PNT PAINT

PP POWER POLE

PR PAIR

PTB PORCELAIN TILE BASE

PTD PAINTED

PTP PLASTIC TOILET PARTITIONS

PWC PORCELAIN WALL TILE

PVC POLYVINYL CHLORIDE

QS QUARTZ SURFACE

QT QUARRY TILE

QZT QUARTZ TILE

R RADIUS

R&S ROD AND SHELF

RB RUBBER BASE

RBT RUBBER TILE

RCP REINFORCED CONCRETE

RD ROOF DRAIN

ROL ROOF DRAIN LEADER

RECEPT RECEPTACLE

RECYF RECYCLED FLOORING

REQD REQUIRED

RES RESILIENT

RM RUBBER MAT

ROW RIGHT OF WAY

RSF RESINOUS FLOORING

RTF RESILIENT TILE FLOORING

SAT SPRAYED ACOUSTICAL TREATMENT

SC SEALED CONCRETE

SCH SCHEDULE

SCW SOLID CORE WOOD

SDT STATIC DISSIPATIVE TILE

SF SQUARE FEET

SIM SIMILAR

SLS SOLID SURFACE

SP SPACES

SQ SQUARE

SS STAINLESS STEEL

SSC STAINED SEALED CONCRETE

SRT SLIP RESISTANT TILE

ST ST&R

ST&R STAIR TREADS AND RISERS

STD STANDARD

SUSP SUSPENDED

T&G TERRA COTTA TONGUE AND GROOVE

TCA TILE COUNCIL OF AMERICA

TELE TELEPHONE

TEMP TEMPERED

TEXT TEXTURED

TFT TERRAZZO FLOOR TILE

TOC TOP OF CURB

TOS TOP OF STEEL

TP TELEPHONE POLE

TVB TELEVISION MOUNTING BRACKET

TYP TYPICAL

UL UNDERWRITERS LABORATORY

UL UTILITY/LIGHTS

UON UNLESS OTHERWISE NOTED

VACT VINYL ACOUSTICAL TILE

VB VAPOR BARRIER

VCT VINYL COMPOSITION TILE

VERT VERTICAL

VIF VERIFY IN FIELD

VVC VINYL WALL COVERING

WV WITH

WC WATER CLOSET

WD WOOD

WF WOOD FLOORING

WWF WELDED WIRE FABRIC

WWM WELDED WIRE MESH

SYMBOL LEGEND

DRAWING NO. 1

DRAWING NAME View Name

SCALE 1/8" = 1'-0"

SHEET NO. 2

SECTION MARK A2-03

DOOR MARK Door 105

EGRESS LOAD 180M/150A

EGRESS WIDTH 36"

REQUIRED WIDTH 30"

ANTICIPATED EGRESS LOAD

DETAIL NO. 2

CALLOUT DETAIL A2-03

SHEET NO. 2

EXTERIOR ELEVATION MARK A2-03

SHEET NO. 2

INTERIOR ELEVATION MARK A2-03

ELEVATION VALUE 15' - 4"

REFERENCE DESCRIPTION AFF

CONTROL / ELEVATION MARK

Room name 101A

ROOM NAME/NUMBER

DOOR MARK

WINDOW MARK

CASEWORK MARK

EQUIPMENT MARK

WALL MARK

ACCESSORIES MARK

DEMO MARK

CEILING TYPE / HEIGHT

REVISION AREA / NUMBER

NORTH ARROW

SHEET NUMBERING LEGEND

SECTION

0 DEMOLITION / GENERAL

1 PLANS

2 EXTERIOR ELEVATIONS

3 BUILDING / WALL SECTIONS

4 ELARGED PLANS, CASEWORK, INTERIOR ELEVATIONS & RELATED DETAILS

5 DETAILS

6 WINDOW & DOOR SCHEDULES

7 FINISH PLAN & SCHEDULES

8 VERTICAL CIRCULATION

9 BID ALTERNATES

DISCIPLINE

G GENERAL

C CIVIL

L LANDSCAPE

S STRUCTURAL

A ARCHITECTURAL

Q EQUIPMENT

P PLUMBING

M MECHANICAL

E ELECTRICAL

FP FIRE PROTECTION

X MISCELLANEOUS

PAGE NUMBER

A1-01

C:\Users\dwj\Documents\202020-Chaloner Middle HVAC - R22_dwj\as@smithsinnett.com.rvt
10/30/2023 1:57:48 PM

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2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)

(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: Chaloner Middle HVAC Replacement

Address: 2100 Virginia Ave, Roanoke Rapids, NC
Owner/Authorized Agent: Robbie Clements Phone # 252.519.7100 E-Mail clementsr.co@rsgd.org
Owned By: -RRGSD City/County RR Private State
Code Enforcement Jurisdiction: City Roanoke Rapids County State

CONTACT: ED GORDON, SMITH SINNETT, PA

DESIGNER FIRM NAME LICENSE# TELEPHONE# E-MAIL
Architectural SMITH SINNETT ARCHITECTURE DREW WILGUS 12017 (919) 781.8582 dwlgus@smithsinnett.com
Civil N/A
Electrical PROGRESSIVE DESIGN COLABORATIVE STEVE CAMPBELL 025020 (919) 790.9989 scampbell@pdcengineers.com
Fire Alarm
Plumbing
Mechanical PROGRESSIVE DESIGN COLABORATIVE STEVE CAMPBELL 025020 (919) 790.9989 scampbell@pdcengineers.com
Sprinkler-Standpipe
Structural
Retaining Walls >5' High
Other
("Other" should include firms and individuals such as truss, precast, pre-engineered, interior designers, etc.)

2018 NC BUILDING CODE: New Building Addition Renovation
☐ 1st Time Interior Completions ☐ Shell/Core* ☐ Phased Construction*

*Contact the local inspection jurisdiction for possibiltional procedures and requirements.

2018 NC EXISTING BUILDING CODE: Prescriptive Alteration Level I Historic Property
(check all that apply) Repair Alteration Level II Change of Use
☐ Chapter 14 Alteration Level III

CONSTRUCTED: (date) 1977 CURRENT OCCUPANCY(S) (Ch.3): EDUCATION
RENOVATED: (date) N/A PROPOSED OCCUPANCY(S) (Ch.3): EDUCATION
RISK CATEGORY (Table 1604.5): Current: 137 Proposed: 137

BASIC BUILDING DATA
Construction Type: I-A I-B II-A II-B III-A III-B IV V-A V-B
Sprinklers: No Partial NFPA 13 NFPA 13R NFPA 13D
Standpipes: No Class I II III Wet Dry
Primary Fire District: No Yes
Special Inspections Required: Yes No
If special inspections are required, contact the local inspection jurisdiction for additional procedures and requirements.

2018 NC Administrative Code and Policies

Gross Building Area Table

FLOOR	EXISTING (SQ FT)	RENOVATION/	EW(SQ FT)	SUB-TOTAL
3 rd Floor	--	--	--	--
2 nd Floor	--	--	--	--
Mezzanine	--	--	--	--
1 st Floor	--	--	--	--
Basement	--	--	--	--
TOTAL	--	--	--	--

ALLOWABLE AREA

Primary Occupancy Classification(s):
Assembly ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5
Business ☐ B-1 ☐ B-2 ☐ B-3 ☐ B-4 ☐ B-5
Educational ☐ E-1 ☐ E-2 ☐ E-3 ☐ E-4 ☐ E-5
Factory ☐ F-1 ☐ F-2 ☐ F-3 ☐ F-4 ☐ F-5
Hazardous ☐ H-1 ☐ H-2 ☐ H-3 ☐ H-4 ☐ H-5 ☐ H-6
Institutional ☐ I-1 ☐ I-2 ☐ I-3 ☐ I-4 ☐ I-5
Mercantile ☐ M-1 ☐ M-2 ☐ M-3 ☐ M-4 ☐ M-5
Residential ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4 ☐ R-5
Storage ☐ S-1 ☐ S-2 ☐ S-3 ☐ S-4 ☐ S-5
Parking Garage ☐ Open ☐ Enclosed ☐ Repair Garage
Utility and Miscellaneous ☐

Accessory Occupancy Classification(s): --
Incidental Uses (Table 509): --
Special Uses (Chapter 4 - List Code Sections): --
Special Provisions: (Chapter 5 - List Code Sections): --
Mixed Occupancy: No Yes Separation: -- Hr. Exception: --
☐ Non-Separated Use (508.3)
☐ Separated Use (508.4) - See below for area calculations for each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

Actual Area of Occupancy A Allowable Area of Occupancy B
+ + = ≤1

..... + = ≤1.00

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2.4 AREA	(C) AREA FOR FRONTAGE PER STORY OR UNLIMITED	(D) ALLOWABLE AREA PER STORY

1 Frontage area increases from Section 506.2.4 for compartment thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = _____ (F)
b. Total Building Perimeter = _____ (P)
c. Ratio (F/P) = _____ (F/P)
d. W = Minimum width of public way = _____ (W)
e. Percent of frontage increase $I_f = 100[(F/P - 0.25) \times W/30] = \text{_____} (\%)$
2 Unlimited area is permitted under conditions of Section 5.07.
3 Maximum Building Height = total number of stories in the building x E (maximum 3 stories (506.2.))
4 The maximum area of open parking garages must comply with Table 406.5.4. The maximum area of air traffic control towers must comply with Table 412.3.1.
5 Frontage increase is based on the unsprinklered area value in Table 506.2.

2018 NC Administrative Code and Policies

ALLOWABLE HEIGHT

Building Height in Feet (Table 504.3)

Building Height in Stories (Table 504.4)

1 Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING PROVIDED (W -)	REQ'D REDUCTION	DETAIL # AND SHEET #	DESIGN# FOR RATED ASSEMBLY	DESIGN # FOR RATED PENETRATION	DESIGN # FOR RATED JOINTS
Structural Frame, including columns, girders, trusses							
Bearing Walls							
Exterior							
North							
East							
West							
South							
Interior							
Nonbearing Walls and Partitions							
Exterior walls							
North							
East							
West							
South							
Interior walls and partitions							
Floor Construction Including supporting beams and joists							
Floor Ceiling Assembly							
Columns Supporting Floors							
Roof Construction, including supporting beams and joists							
Roof Ceiling Assembly							
Columns Supporting Roof							
Shaft Enclosures - Exit							
Shaft Enclosures - Other							
Corridor Separation							
Occupancy/Fire Barrier Separation							
Party/Fire Wall Separation							
Smoke Barrier Separation							
Smoke Partition							
Tenant/Dwelling Unit/ Sleeping Unit Separation							
Incidental Use Separation							

* Indicate section number permitting reduction

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE (%)	ACTUAL SHOWN ON PLANS (%)

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting: No Yes (-)
Exit Signs: No Yes
Fire Alarm: No Yes
Smoke Detection Systems: No Yes Partial (-)
Carbon Monoxide Detection: No Yes (-)

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: (-)

☐ Fire and/or smoke rated wall locations (Chapter 7)
☐ Assumed and real property line locations (if not on the site plan)
☐ Exterior wall opening area with respect to distance to assumed property lines (705.8)
☐ Occupancy Use for each area as it relates to occupant load calculation (Table 504.1.2)
☐ Occupant loads for each area
☐ Exit access travel distances (1017)
☐ Common path of travel distances (Tables 1006.2.1 & 1006.3.2)
☐ Dead end lengths (1020.4)
☐ Clear exit widths for each exit door
☐ Maximum calculated occupant load capacity and exit door can accommodate based on egress width (1005.3)
☐ Actual occupant load for each exit door
☐ A separate schematic plan indicating where fire-rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation
☐ Location of doors with panic hardware (1010.1.10)
☐ Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)
☐ Location of doors with electromagnetic egress locks (1010.1.10)
☐ Location of doors equipped with hold-open devices
☐ Location of emergency escape windows (1030)
☐ The square footage of each fire area (202)
☐ The square footage of each smoke compartment for Occupancy Classification I-2 (407.5)
☐ Note any code exceptions or table notes that may have been utilized regarding the items above

Section/Table/Note	Title

2018 NC Administrative Code and Policies

ACCESSIBLE DWELLING UNITS (SECTION 1107)

TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED

ACCESSIBLE PARKING (SECTION 1106)

LOT OR PARKING AREA	TOTAL ACCESSIBLE PARKING SPACES REQUIRED	PROVIDED	# OF ACCESSIBLE SPACES PROVIDED			TOTAL # ACCESSIBLE PROVIDED
			REGULAR WITH 5' ACCESS AISLE	132' ACCESS AISLE	8' ACCESS AISLE	
TOTAL						

PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)

USE	EXIST'G NEW REQ'D	WATER/CLOSETS	URINALS	LAVATORIES			SHOWERS/ TUBS	DRINKING FOUNTAINS	
				MALE	FEMALE	UNISEX		REGULAR	ACCESSIBLE
SPACE									

SPECIAL APPROVAL

Special approval: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, etc., describe below)

2018 NC Administrative Code and Policies

ENERGY REQUIREMENTS:

ENERGY SUMMARY

The following data shall be considered minimum and any special attribute required to meet the energy code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.
Existing building envelope complies with code: ☐ (If checked the remainder of this section is not applicable.)
Exempt Building: ☐ Provide code or statutory reference:

Climate Zone: 3A 4A 5A
Method of Compliance:
Energy Code ☐ Performance ☐ Prescriptive
ASHRAE 90.1 ☐ Performance ☐ Prescriptive
Other ☐ Performance (specify source) _____

THERMAL ENVELOPE (Prescriptive method only)

Roof/ceiling Assembly (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____
Skylights in each assembly:
U-Value of skylight: _____
total square footage of skylights in each assembly: _____
Exterior Walls (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____
Openings (windows or doors with glazing)
U-Value of assembly: _____
Solar heat gain coefficient: _____
Projection factor: _____
Door R-Values: _____
Walls below grade (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of total assembly: _____
Floors over unconditioned space (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of total assembly: _____
Floors slab on grade
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____
Horizontal/vertical requirement: _____
Slab heated: _____

2018 NC Administrative Code and Policies

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
STRUCTURAL DESIGN
(PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)

DESIGN LOADS:

Importance Factors: Wind (Iw) _____
Snow (Is) _____
Seismic (Ie) _____
Live Loads: Roof _____ psf
Mezzanine _____ psf
Floor _____ psf
Ground Snow Load: _____ psf
Wind Load: Basic Wind Speed _____ mph (ASCE-7)
Exposure Category _____
SEISMIC DESIGN CATEGORY: A B C D
Provide the following Seismic Design Parameters:
Risk Category (Tables 1604.5) I II III IV
Spectral Response Accelerations: %g S₁ _____ %g
Site Classification (ASCE 7) A B C D E F
Data Source: Field Test Presumptive Historical Data
Basic structural system (check one)
☐ Bearing Wall ☐ Dual w/Special Moment Frame
☐ Building Frame ☐ Dual w/Intermediate R/C or Special Steel
☐ Moment Frame ☐ Inverted Pendulum
Analysis Procedure: Simplified Equivalent Lateral Force Dynamic
Architectural, Mechanical, Components anchored? Yes No
LATERAL DESIGN CONTROL: Earthquake Wind
SOIL BEARING CAPACITIES:
Field Test (provide copy of test report) _____ psf
Presumptive Bearing capacity _____ psf
Pile size, type, and capacity _____

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
MECHANICAL DESIGN
(PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)
MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone
Winter dry bulb: _____
Summer dry bulb: _____
Interior design conditions
Winter dry bulb: _____
Summer dry bulb: _____
Relative humidity: _____
Building heating load: _____
Building cooling load: _____
Mechanical Space Conditioning System
Unitary
Description of unit: _____
Heating efficiency: _____
Cooling efficiency: _____
Size category of unit: _____
Boiler
Size category If oversized, state reason: _____
Chiller
Size category If oversized, state reason: _____
List equipment efficiencies: _____

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
ELECTRICAL DESIGN
(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)
ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance:
Energy Code: Prescriptive Performance
ASHRAE 90.1: Prescriptive Performance
Lighting schedule (each fixture type)
Lamp type required in fixture _____
Number of lamps in fixture _____
Ballast type required in fixture _____
Number of ballasts in fixture _____
Total wattage per fixture _____
Total interior wattage specified vs. allowed (whole building or space by space) _____
Total exterior wattage specified vs. allowed _____
Additional Efficiency Package Options
(When using the 2018 NCECC; not required for ASHRAE 90.1)
☐ C406.2 More Efficient HVAC Equipment Performance
☐ C406.3 Reduced Lighting Power Density
☐ C406.4 Enhanced Digital Lighting Controls
☐ C406.5 On-Site Renewable Energy
☐ C406.6 Dedicated Outdoor Air System
☐ C406.7 Reduced Energy Use in Service Water Heating

2018 NC Administrative Code and Policies

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Raleigh, NC 27607
info@smithsinnett.com

CONSTRUCTION DOCUMENTS

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Smith Sinnett Architecture, P.A. 2023

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ROANOKE RAPIDS SCHOOL DISTRICT
CHALONER MIDDLE SCHOOL HVAC REPLACEMENT
2100 Virginia Ave, Roanoke Rapids, NC 27870

ID	DATE	DESCRIPTION
----	------	-------------

DRAWN BY: RS/AC
CHECKED BY: DW
BUILDING CODE SUMMARY

2023020 2 OCTOBER 2023

G0-02

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10/3/2020 1:57:40 PM

2
G0-03

UL-P225
12" = 1'-0"

BXUV,P225

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submittal and have been investigated by UL for compliance with applicable requirements. The published information cannot address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of the resistance assemblies are advised to consult the general Guide Information for each product category and each group of assemblies. The Guide Information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

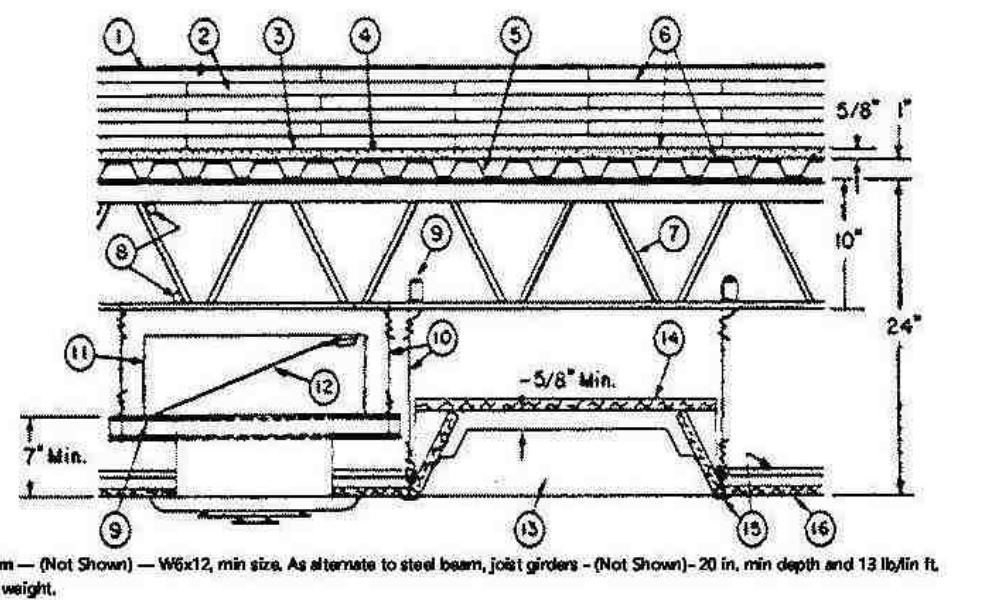
BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

See General Information for Fire Resistance Ratings - ANSI/UL 263 Certified for United States
See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada
See Criteria and Allowable Variations

Design No. P225

Restrained Assembly Ratings — 1 and 1-1/2 Hr.
(See Items 2, 20, 11, 12, 15 and 16)
Unrestrained Assembly Ratings — 1 and 1-1/2 Hr.
(See Items 2, 20, 11, 12, 15 and 16)
Unrestrained Beam Ratings — 1 and 1-1/2 Hr.
(See Items 2, 20, 11, 12, 15 and 16)
This design was evaluated using a load design method other than the Limit States Design Method (e.g., Working Stress Design Method). For jurisdictions employing the Limit States Design Method, such as Canada, a load restriction factor shall be used — See Guide BXUV or BXUV7.

* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



Roof — (Not Shown) — W6x12, min size. As alternate to steel beam, joist girders — (Not Shown) — 20 in. min depth and 13 flt/in flt, min weight.

1. Roof Covering* — Consisting of hot mopped or cold asphalt composition materials compatible with insulation(s) described herein which provide Class A, B or C Combustion.

See Roofing Materials and Systems Directory/ Roof Covering Materials (RTV).

1A. In lieu of Item 1, roof covering consisting of single-ply Roofing Membrane* — That is either ballasted, adhered or mechanically attached as permitted under the respective manufacturer's Classification.

See Fire Resistance Directory - Roofing Membranes (C-10).

1B. Metal Roof Deck Panels* — (Not Shown) — In addition to or in lieu of Item 1, the roof covering may consist of a mechanically fastened metal roof deck panel assembly.

See Fire Resistance Directory - Metal Roof Deck Panels (C716).

2. Mineral and Fiber Boards* — 2-4 by 48 in. min size, max size 48 by 96 in., to be applied in one or more layers. Boards to be installed perpendicular to gypsum wallboard facing with end joints staggered 2 ft in adjacent rows. When applied in more than one layer, each layer of board to be offset in both directions from layer below a min of 1/2 in. in order to tie all joints. Min thickness 1 in. (No limit on max overall thickness).

When only one layer is used it may be bonded to gypsum wallboard or laid loose. When two or more layers are used the insulation may be fastened to steel roof deck through wallboard with mechanical fasteners (Item 6) and/or bonded to wallboard or vapor barrier and/or bonded to additional layers of insulation with adhesive (Item 6) or hot asphalt (Item 6). Adhesive may be omitted from between components secured together by mechanical fasteners.

6AS — GYFPM® Perla rigid mineral fiber boards

20B. Mineral Wool — Rigid mineral fiber boards.

20C. Mineral Wool — Non-rigid mineral fiber boards.

20D. Mineral Wool — Non-rigid mineral fiber boards.

20E. Mineral Wool — Non-rigid mineral fiber boards.

20F. Mineral Wool — Non-rigid mineral fiber boards.

20G. Mineral Wool — Non-rigid mineral fiber boards.

20H. Mineral Wool — Non-rigid mineral fiber boards.

20I. Mineral Wool — Non-rigid mineral fiber boards.

20J. Mineral Wool — Non-rigid mineral fiber boards.

20K. Mineral Wool — Non-rigid mineral fiber boards.

20L. Mineral Wool — Non-rigid mineral fiber boards.

20M. Mineral Wool — Non-rigid mineral fiber boards.

20N. Mineral Wool — Non-rigid mineral fiber boards.

20O. Mineral Wool — Non-rigid mineral fiber boards.

20P. Mineral Wool — Non-rigid mineral fiber boards.

20Q. Mineral Wool — Non-rigid mineral fiber boards.

20R. Mineral Wool — Non-rigid mineral fiber boards.

20S. Mineral Wool — Non-rigid mineral fiber boards.

20T. Mineral Wool — Non-rigid mineral fiber boards.

20U. Mineral Wool — Non-rigid mineral fiber boards.

20V. Mineral Wool — Non-rigid mineral fiber boards.

20W. Mineral Wool — Non-rigid mineral fiber boards.

20X. Mineral Wool — Non-rigid mineral fiber boards.

20Y. Mineral Wool — Non-rigid mineral fiber boards.

20Z. Mineral Wool — Non-rigid mineral fiber boards.

20AA. Mineral Wool — Non-rigid mineral fiber boards.

20AB. Mineral Wool — Non-rigid mineral fiber boards.

20AC. Mineral Wool — Non-rigid mineral fiber boards.

20AD. Mineral Wool — Non-rigid mineral fiber boards.

20AE. Mineral Wool — Non-rigid mineral fiber boards.

20AF. Mineral Wool — Non-rigid mineral fiber boards.

20AG. Mineral Wool — Non-rigid mineral fiber boards.

20AH. Mineral Wool — Non-rigid mineral fiber boards.

20AI. Mineral Wool — Non-rigid mineral fiber boards.

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20AK. Mineral Wool — Non-rigid mineral fiber boards.

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20AQ. Mineral Wool — Non-rigid mineral fiber boards.

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20AS. Mineral Wool — Non-rigid mineral fiber boards.

20AT. Mineral Wool — Non-rigid mineral fiber boards.

20AU. Mineral Wool — Non-rigid mineral fiber boards.

20AV. Mineral Wool — Non-rigid mineral fiber boards.

20AW. Mineral Wool — Non-rigid mineral fiber boards.

20AX. Mineral Wool — Non-rigid mineral fiber boards.

20AY. Mineral Wool — Non-rigid mineral fiber boards.

20AZ. Mineral Wool — Non-rigid mineral fiber boards.

20BA. Mineral Wool — Non-rigid mineral fiber boards.

20BB. Mineral Wool — Non-rigid mineral fiber boards.

20BC. Mineral Wool — Non-rigid mineral fiber boards.

20BD. Mineral Wool — Non-rigid mineral fiber boards.

20BE. Mineral Wool — Non-rigid mineral fiber boards.

20BF. Mineral Wool — Non-rigid mineral fiber boards.

20BG. Mineral Wool — Non-rigid mineral fiber boards.

20BH. Mineral Wool — Non-rigid mineral fiber boards.

20BI. Mineral Wool — Non-rigid mineral fiber boards.

20BJ. Mineral Wool — Non-rigid mineral fiber boards.

20BK. Mineral Wool — Non-rigid mineral fiber boards.

20BL. Mineral Wool — Non-rigid mineral fiber boards.

20BM. Mineral Wool — Non-rigid mineral fiber boards.

20BN. Mineral Wool — Non-rigid mineral fiber boards.

20BO. Mineral Wool — Non-rigid mineral fiber boards.

20BP. Mineral Wool — Non-rigid mineral fiber boards.

20BQ. Mineral Wool — Non-rigid mineral fiber boards.

20BR. Mineral Wool — Non-rigid mineral fiber boards.

20BS. Mineral Wool — Non-rigid mineral fiber boards.

20BT. Mineral Wool — Non-rigid mineral fiber boards.

20BU. Mineral Wool — Non-rigid mineral fiber boards.

20BV. Mineral Wool — Non-rigid mineral fiber boards.

20BW. Mineral Wool — Non-rigid mineral fiber boards.

20BX. Mineral Wool — Non-rigid mineral fiber boards.

20BY. Mineral Wool — Non-rigid mineral fiber boards.

20BZ. Mineral Wool — Non-rigid mineral fiber boards.

20CA. Mineral Wool — Non-rigid mineral fiber boards.

20CB. Mineral Wool — Non-rigid mineral fiber boards.

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20CD. Mineral Wool — Non-rigid mineral fiber boards.

20CE. Mineral Wool — Non-rigid mineral fiber boards.

20CF. Mineral Wool — Non-rigid mineral fiber boards.

20CG. Mineral Wool — Non-rigid mineral fiber boards.

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20CM. Mineral Wool — Non-rigid mineral fiber boards.

20CN. Mineral Wool — Non-rigid mineral fiber boards.

20CO. Mineral Wool — Non-rigid mineral fiber boards.

20CP. Mineral Wool — Non-rigid mineral fiber boards.

20CQ. Mineral Wool — Non-rigid mineral fiber boards.

20CR. Mineral Wool — Non-rigid mineral fiber boards.

20CS. Mineral Wool — Non-rigid mineral fiber boards.

20CT. Mineral Wool — Non-rigid mineral fiber boards.

20CU. Mineral Wool — Non-rigid mineral fiber boards.

20CV. Mineral Wool — Non-rigid mineral fiber boards.

20CW. Mineral Wool — Non-rigid mineral fiber boards.

20CX. Mineral Wool — Non-rigid mineral fiber boards.

20CY. Mineral Wool — Non-rigid mineral fiber boards.

20CZ. Mineral Wool — Non-rigid mineral fiber boards.

20DA. Mineral Wool — Non-rigid mineral fiber boards.

20DB. Mineral Wool — Non-rigid mineral fiber boards.

20DC. Mineral Wool — Non-rigid mineral fiber boards.

20DD. Mineral Wool — Non-rigid mineral fiber boards.

20DE. Mineral Wool — Non-rigid mineral fiber boards.

20DF. Mineral Wool — Non-rigid mineral fiber boards.

20DG. Mineral Wool — Non-rigid mineral fiber boards.

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20DO. Mineral Wool — Non-rigid mineral fiber boards.

20DP. Mineral Wool — Non-rigid mineral fiber boards.

20DQ. Mineral Wool — Non-rigid mineral fiber boards.

20DR. Mineral Wool — Non-rigid mineral fiber boards.

20DS. Mineral Wool — Non-rigid mineral fiber boards.

20DT. Mineral Wool — Non-rigid mineral fiber boards.

20DU. Mineral Wool — Non-rigid mineral fiber boards.

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20DX. Mineral Wool — Non-rigid mineral fiber boards.

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20EK. Mineral Wool — Non-rigid mineral fiber boards.

20EL. Mineral Wool — Non-rigid mineral fiber boards.

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20EP. Mineral Wool — Non-rigid mineral fiber boards.

20EQ. Mineral Wool — Non-rigid mineral fiber boards.

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20EX. Mineral Wool — Non-rigid mineral fiber boards.

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20FA. Mineral Wool — Non-rigid mineral fiber boards.

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20FR. Mineral Wool — Non-rigid mineral fiber boards.

20FS. Mineral Wool — Non-rigid mineral fiber boards.

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20FY. Mineral Wool — Non-rigid mineral fiber boards.

20FZ. Mineral Wool — Non-rigid mineral fiber boards.

20GA. Mineral Wool — Non-rigid mineral fiber boards.

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20GK. Mineral Wool — Non-rigid mineral fiber boards.

20GL. Mineral Wool — Non-rigid mineral fiber boards.

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20GO. Mineral Wool — Non-rigid mineral fiber boards.

20GP. Mineral Wool — Non-rigid mineral fiber boards.

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20GR. Mineral Wool — Non-rigid mineral fiber boards.

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20GT. Mineral Wool — Non-rigid mineral fiber boards.

20GU. Mineral Wool — Non-rigid mineral fiber boards.

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20GW. Mineral Wool — Non-rigid mineral fiber boards.

20GX. Mineral Wool — Non-rigid mineral fiber boards.

20GY. Mineral Wool — Non-rigid mineral fiber boards.

20GZ. Mineral Wool — Non-rigid mineral fiber boards.

20HA. Mineral Wool — Non-rigid mineral fiber boards.

20HB. Mineral Wool — Non-rigid mineral fiber boards.

20HC. Mineral Wool — Non-rigid mineral fiber boards.

20HD. Mineral Wool — Non-rigid mineral fiber boards.

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20HH. Mineral Wool — Non-rigid mineral fiber boards.

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20HJ. Mineral Wool — Non-rigid mineral fiber boards.

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20HR. Mineral Wool — Non-rigid mineral fiber boards.

20HS. Mineral Wool — Non-rigid mineral fiber boards.

20HT. Mineral Wool — Non-rigid mineral fiber boards.

20HU. Mineral Wool — Non-rigid mineral fiber boards.

20HV. Mineral Wool — Non-rigid mineral fiber boards.

20HW. Mineral Wool — Non-rigid mineral fiber boards.

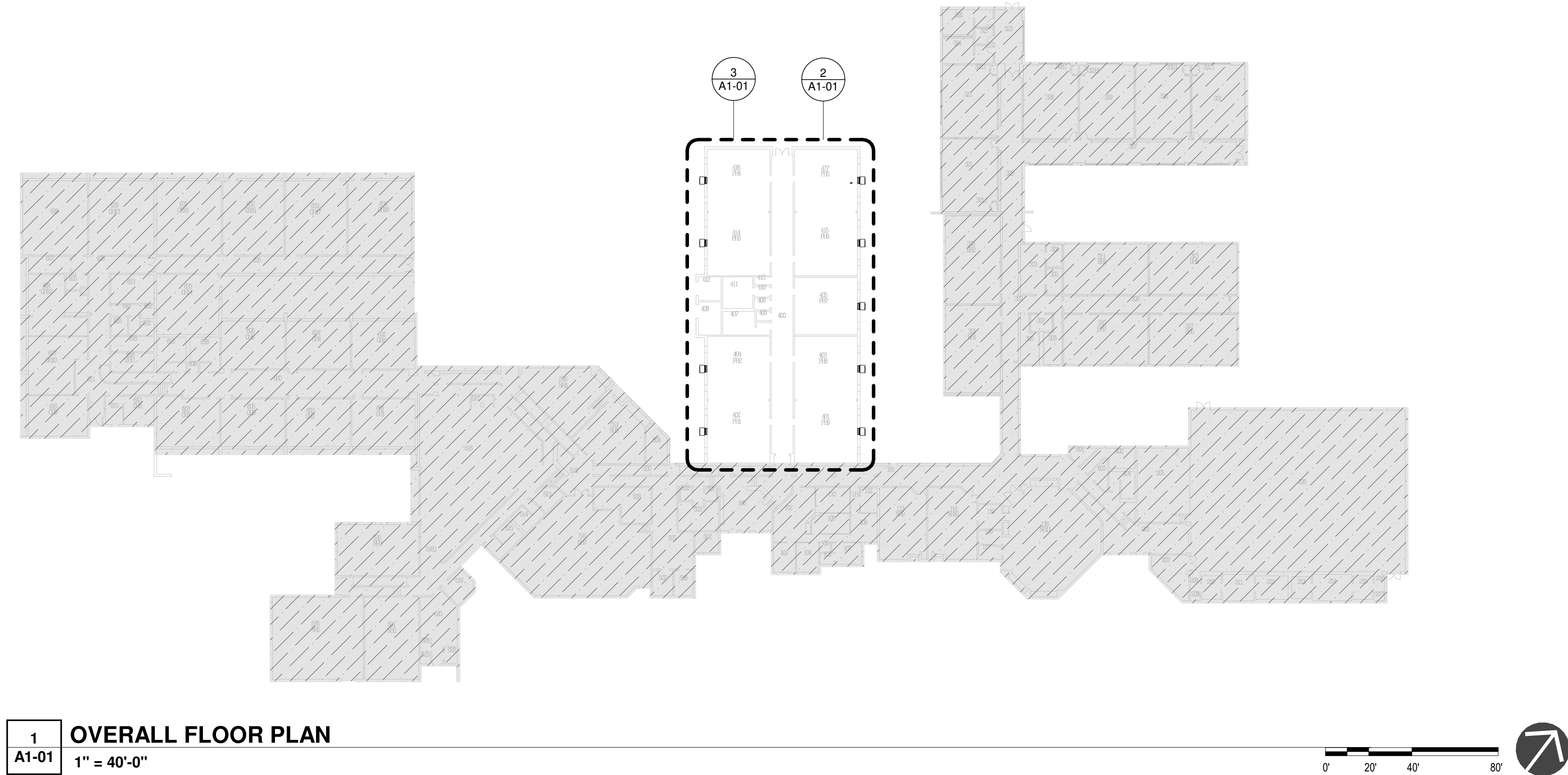
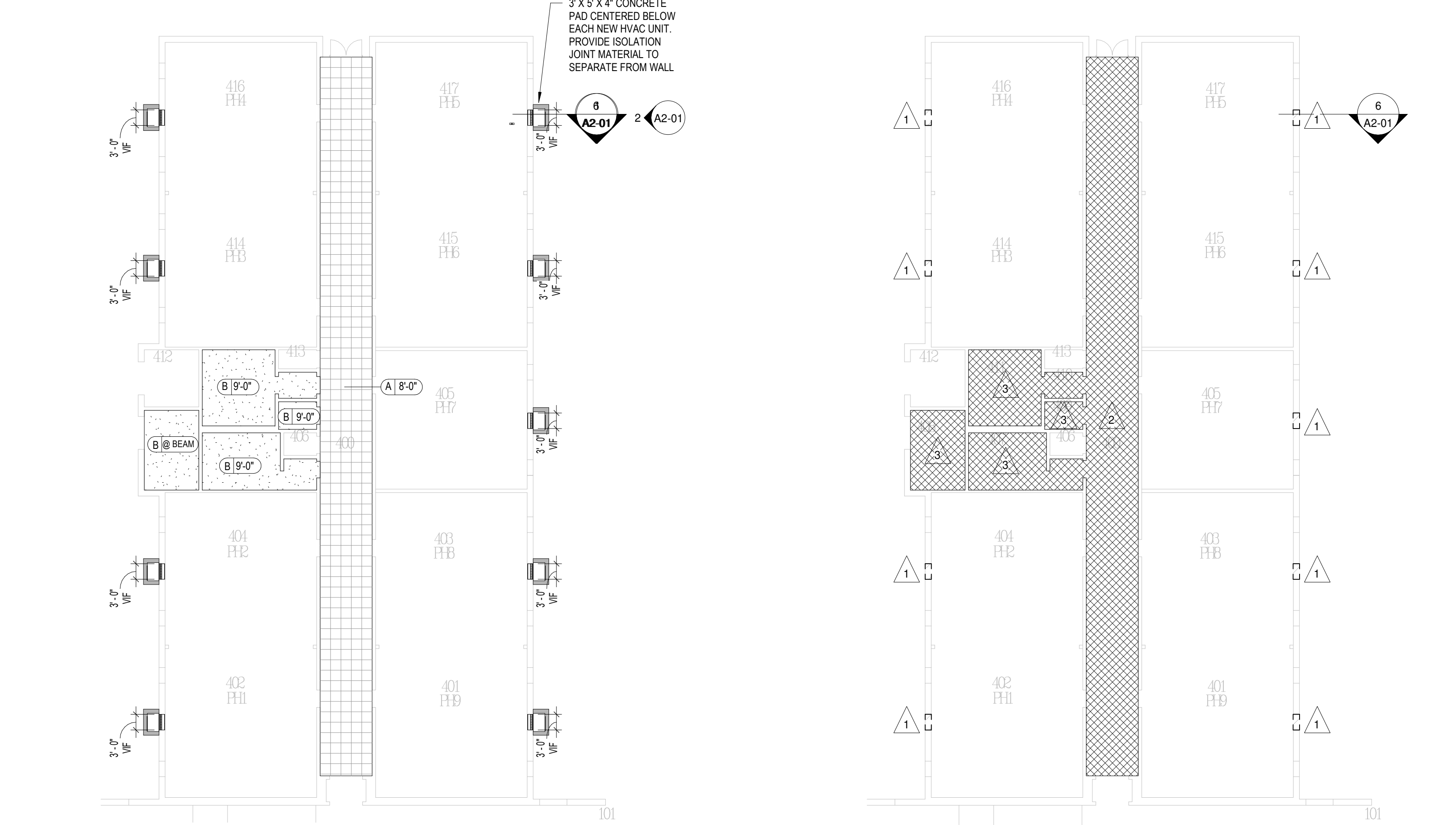
20HX. Mineral Wool — Non-rigid mineral fiber boards.








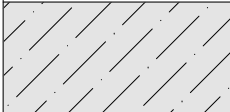
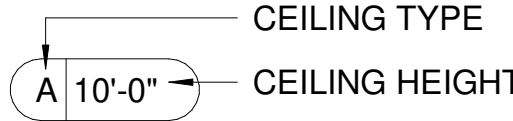
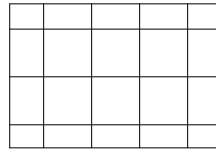
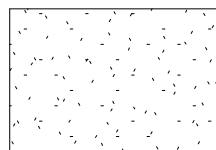

20HY. Mineral Wool — Non-rigid mineral fiber boards.

20HZ. Mineral Wool — Non-rigid mineral fiber boards.

20IA. Mineral Wool — Non-rigid mineral fiber boards.

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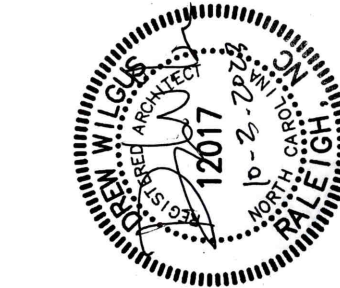
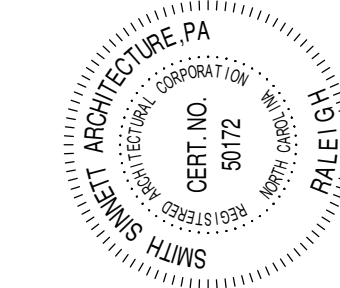


DEMOLITION LEGEND:			
SYMBOL		DESCRIPTION	
		NOTE THE PRESENCE OF ASBESTOS CONTAINING ITEMS. REFER TO ASBESTOS REMOVAL DESIGN & SPECIFICATIONS FOR REMOVAL INSTRUCTIONS.	
			DEMOLITION KEYED NOTE
			EXISTING TO REMAIN
			EXISTING TO BE REMOVED DURING DEMOLITION
DEMOLITION SPECIFIC AREA NOTES:		GENERAL DEMOLITION NOTES:	
	REMOVE EXISTING WINDOW, GLAZING, BLINDS, FRAME AND ITS ASSOCIATED PARTS IN ITS ENTIRETY. EXISTING WINDOWS CONTAIN AGGREGATE ASBESTOS PANEL (SEE 4/A1-01). REFER TO ASBESTOS REMOVAL DESIGN AND SPECIFICATIONS FOR INSTRUCTIONS ON THE ASBESTOS WINDOW GLAZING AND FRAME CAULK. WINDOW OPENING SHALL BE SECURED WITH EITHER A WEATHER PROOF TEMPORARY PARTITION OR THE PERMANENT FRAME AND GLAZING. ALL MASONRY TO REMAIN.		
	REMOVE EXISTING LAY-IN CEILING TILE, GRID, HANGERS AND ASSOCIATED PARTS IN ITS ENTIRETY. PREP AREA TO RECEIVE NEW CEILING. ALL LIGHTS AND LIFE SAFETY DEVICES, SECURITY FIXTURES, ETC. TO REMAIN - PROTECT IN PLACE OR REMOVE AND REINSTALL AS NEEDED.		
	REMOVE EXISTING GYP CEILING, FRAMING, HANGERS AND ASSOCIATED PARTS IN ITS ENTIRETY. PREP AREA TO RECEIVE NEW CEILING. FIXTURES TO REMAIN		
GENERAL LEGEND:			
SYMBOL		DESCRIPTION	
		NO WORK IN THIS AREA. EXISTING CONDITIONS TO REMAIN	
NOTE:			
ALL DIMENSIONS ARE TO BE VERIFIED IN FIELD			
REFLECTED CEILING LEGEND AND NOTES			
			
SYMBOL	TYPE	DESCRIPTION	
	A	ACT-1, 2x2 CEILING TILE, WHITE FINISH - 1HR RATED, REFER TO UL -P225	
	B	GYPSUM WALLBOARD CEILING SYSTEM - 1HR RATED, REFER TO UL-P510	
<div>1. REFER TO PLUMBING, MECHANICAL, AND ELECTRICAL DRAWINGS FOR COMPLETE SCOPE OF CEILING PENETRATIONS AND FIJTURES.</div> <div>2. REFER TO PROJECT SPECIFICATIONS FOR COMPLETE DESCRIPTION OF CEILING MATERIAL</div>			
			
<div>1. ALL CONDITIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR WHERE DEMOLITION IS TO OCCUR. THE CONTRACTOR SHALL NOTIFY ARCHITECT OF ANY INCONSISTANCIES IN WRITING PRIOR TO STARTING ANY WORK.</div> <div>2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR WEEKLY AND/OR DAILY REMOVAL AND PROPER DISPOSAL OF ALL DEBRIS ACCUMULATED DURING DEMOLITION AND CONSTRUCTION.</div> <div>3. REMOVAL OF HAZARDOUS MATERIAL AND DEBRIS SHALL BE AS FOLLOWS:<div>A. ALL HAZARDOUS SHALL BE REMOVED BY THE CONTRACTOR PRIOR TO PROJECT COMPLETION. CONTRACTOR SHALL FOLLOW ALL THE REQUIREMENTS TO LEGALLY DISPOSE OF ALL HAZARDOUS MATERIALS.</div><div>B. THE CONTRACTOR IS REQUIRED TO PERFORM ABATEMENT AND REMEDIATION ACTIVITIES INSIDE NEGATIVEAIR PRESSURIZED ENCLOSURES.</div><div>C. ABATEMENT OF ALL HAZARDOUS MATERIALS SHALL OCCUR PRIOR TO BUILDING DEMOLITION. BOTH ACTIVITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE PROJECT SHALL BE PHASED SUCH THAT DEMOLITION CAN FOLLOW ABATEMENT IN THE FIRST AREA OF THE BUILDING WHILE ABATEMENT IS OCCURRING IN THE NEXT AREA OF THE BUILDING.</div>ASBESTOS - REFER TO ASBESTOS REMOVAL DESIGN AND SPECIFICATIONS</div> <div>4. ANY FLOOR, CEILING, WALL OR OTHER MATERIALS INCLUDING FINISHES IN AREAS TO REMAIN ARE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT. ANY MATERIALS DAMAGED DURING CONSTRUCTION OR DEMOLITION, SHALL BE RETURNED TO THEIR ORIGINAL STATE, OR IMPROVED AS INDICATED BY THE OWNER OR ARCHITECT, OR REPLACED WITH A NEW MATERIAL TO MATCH ADJACENT MATERIALS, TYPICAL.</div> <div>5. CONTRACTOR SHALL PATCH AND REPAIR ALL EXISTING SURFACES TO REMAIN AND MATERIALS EXPOSED TO VIEW WHERE OTHER ITEMS OR MATERIALS HAVE BEEN REMOVED.</div> <div>6. REFER TO PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL AND COMPLETE SCOPE OF DEMOLITION THAT MAY OR MAY NOT BE NOTED ON THE ARCHITECTURAL DEMOLITION PLAN AND NOTES.</div> <div>7. CONTRACTOR SHALL REMOVE ALL WALL MOUNTED FIXTURES OR ITEMS UNLESS OTHERWISE NOTED. ALL WALLS SHALL BE REPAIRED, AND VOIDS FILLED AFTER FIXTURE REMOVAL. ALL FINISHES SHALL MATCH ADJACENT SURFACES. REMOVE ALL FOREIGN MATTER, SHELVING, LOOSE DEBRIS INCLUDING TAPE, ADHESIVE, NAILS, SCREWS, ETC. FROM WALLS. SCRAPE, WIRE BRUSH, AND SAND SMOOTH. WASH ALL PAINTED SURFACES TO REMOVE ANY FILM OR RESIDUE". PREPARE SURFACES TO PROVIDE A MAXIMUM DEGREE OF NEW PAINT ADHESION. PATCH AND REPAIR ALL VOIDS IN PREPARATION FOR NEW FINISHES. CONTRACTOR RESPONSIBLE FOR PAINT COMPATABILITY AND APPROPRIATE PREP TO ACHAEVE DURABLE ADHESION.</div> <div>8. ALL FIXTURES, WALLS AND PORTIONS OF WALLS SHOWN AS DASHED LINES OR LABELED SHALL BE DEMOLISHED UNLESS ELEMENTS REMOVED OR REPLACED. CONTRACTOR SHALL PROVIDE ADEQUATE SHORING AND BRACING AND IS RESPONSIBLE FOR ANY FAILURE DUE TO LACK OF PROPER BRACING.</div> <div>9. DURING THE BIDDING PROCESS, CONTRACTORS SHALL TAKE NOTE OF EXISTING PLUMBING MECHANICAL, AND ELECTRICAL ITEMS IN AREAS TO BE RENOVATED. ITEMS INCLUDE BUT ARE NOT LIMITED TO WIRES, CONDUITS, PIPES, THERMOSTATS, FIRE ALARM DEVICES, PANEL CANS, ETC. THESE HAVE BEEN IDENTIFIED IN THE DEMOLITION DRAWINGS FOR ARCHITECTURE, PLUMBING, MECHANICAL, AND/OR ELECTRICAL. FOR ITEMS NOT SHOWN, CONTRACTOR SHALL WORK WITH THE ARCHITECT AND OWNER TO DETERMINE IF THE ITEM IS STILL IN USE ITEMS WHICH ARE NOTED TO BE REMOVED AND STORED FOR LATER REINSTALLATION SHALL BE TAGGED AND LISTED ON AN ITEMIZED LIST GIVEN TO THE OWNER AND ARCHITECT.</div> <div>10. THE GENERAL CONTRACTOR SHALL COORDINATE THE DEMOLITION OF THE EXISTING BUILDING AREAS WITH THE ARCHITECT AND OWNER. THE CONTRACTOR SHALL COORDINATE AFTER HOURS WORK AND OBTAIN WRITTEN OWNER PERMISSION FOR NIGHT AND WEEKEND WORK.</div> <div>11. CONTRACTOR SHALL ENSURE WATER-TIGHT INTEGRITY OF THE TEMPORARY ENCLOSURE SYSTEMS AND MAINTAIN THEM THROUGH THE ENTIRETY OF CONSTRUCTION TO PREVENT THE INTRUSION OF WATER AND THE ELEMENTS INTO THE BUILDING.</div> <div>12. ALL EXISTING FIRE EXTINGUISHER AND BRACKETS SHALL REMAIN AND BE INSTALLED IN THEIR CURRENT LOCATION UNLESS SHOWN ON THE PLANS TO RELOCATE.</div> <div>13. CONTRACTOR SHALL PATCH AND FILL IN ANY VOIDS LEFT FROM THE DEMOLITION OF ANY PLUMBING, MECHANICAL, OR ELECTRICAL ITEMS. REFER TO PLUMBING, MECHANICAL, AND ELECTRICAL DRAWINGS FOR COMPLETE SCOPE OF DEMOLITION.</div>			



4
A1-01
EXISTING WINDOW TO BE REMOVED
12" = 1'-0"

T 919 781 8502
F 919 781 3979
4600 Lake Boone Trail
Suite 205
Raleigh, NC 27607
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Smith Sinnett Architecture, P.A. 2023

CONSTRUCTION DOCUMENTS

ROANOKE RAPIDS SCHOOL DISTRICT

CHALONER MIDDLE SCHOOL HVAC REPLACEMENT

2100 Virginia Ave, Roanoke Rapids, NC 27870

ID	DATE	DESCRIPTION

DRAWN BY: RS/AC
CHECKED BY: DW

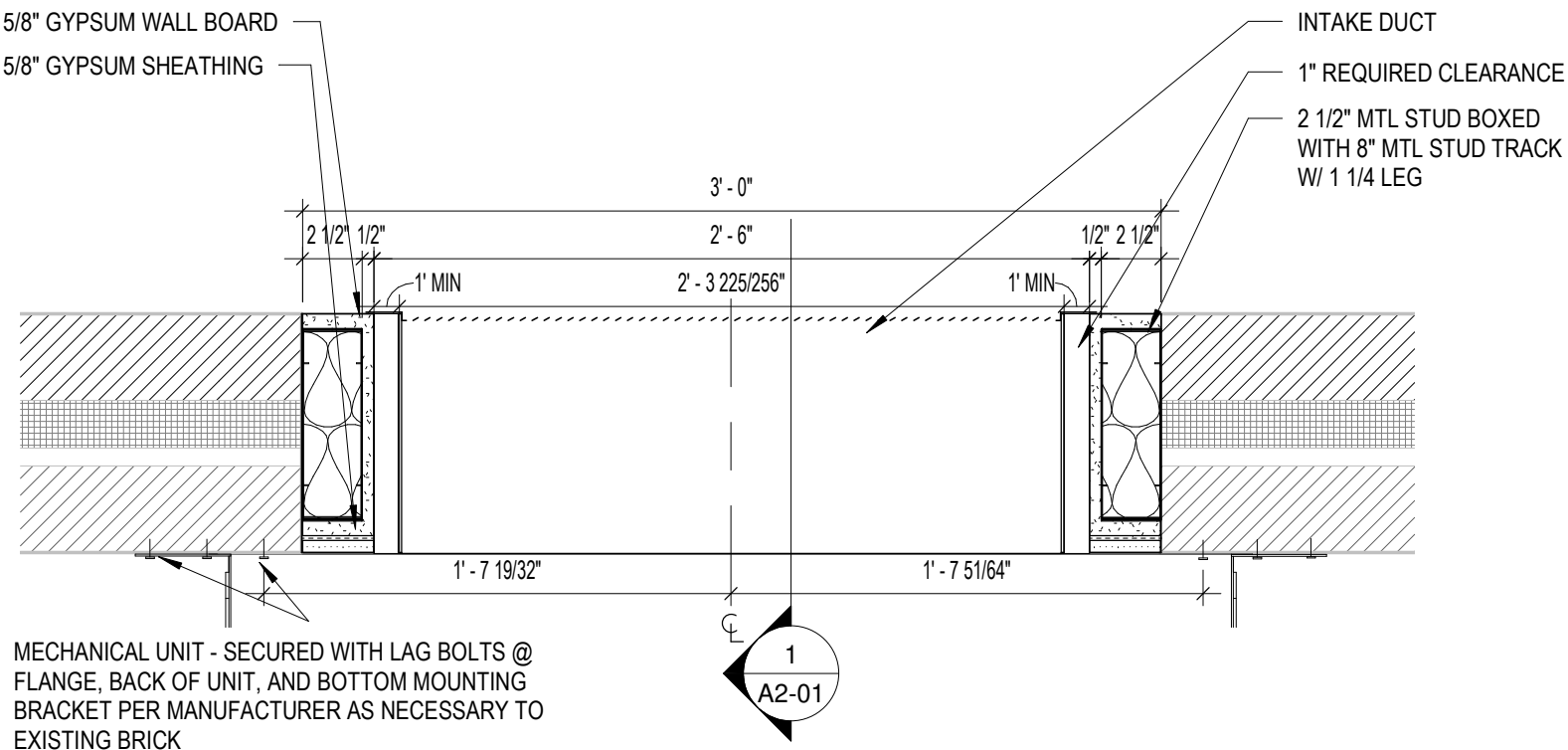
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PLANS

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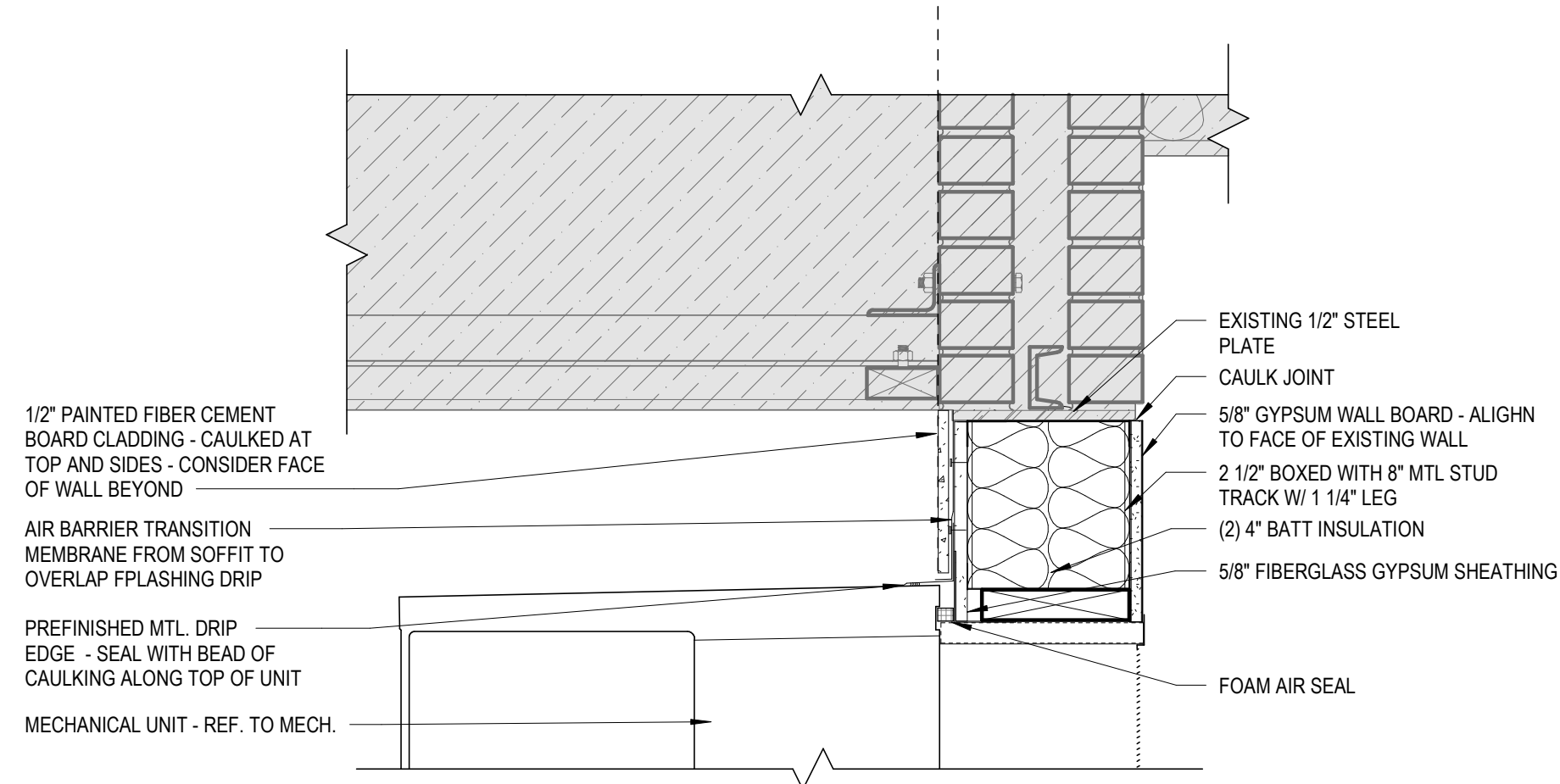
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A1-01

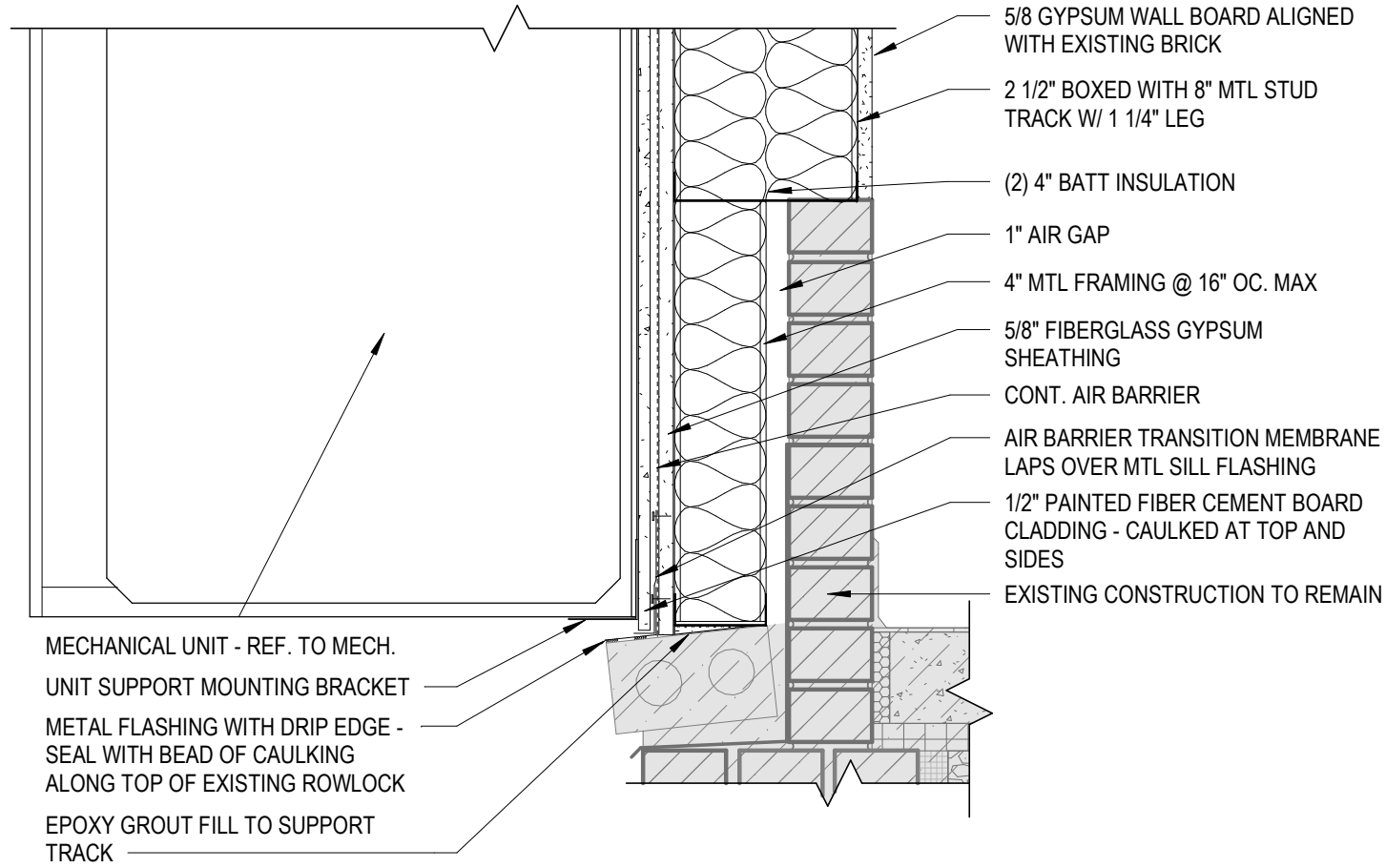
GENERAL LEGEND:		DEMOLITION SPECIFIC AREA NOTES:		
SYMBOL	DESCRIPTION	<div>1</div>	REMOVE EXISTING WINDOW, GLAZING, BLUNDS, FRAME AND ITS ASSOCIATED PARTS IN ITS ENTIRETY. EXISTING WINDOWS CONTAIN AGGREGATE ASBESTOS PANEL (SEE 4/A1-01). REFER TO ASBESTOS REMOVAL DESIGN AND SPECIFICATIONS FOR INSTRUCTIONS ON THE ASBESTOS WINDOW GLAZING AND FRAME CAULK. WINDOW OPENING SHALL BE SECURED WITH EITHER A WEATHER PROOF TEMPORARY PARTITION OR THE PERMANENT FRAME AND GLAZING. ALL MASONRY TO REMAIN.	
	NO WORK IN THIS AREA. EXISTING CONDITIONS TO REMAIN		<div>2</div>	REMOVE EXISTING LAY-IN CEILING TILE, GRID, HANGERS AND ASSOCIATED PARTS IN ITS ENTIRETY. PREP AREA TO RECEIVE NEW CEILING. ALL LIGHTS AND LIFE SAFETY DEVICES, SECURITY FIXTURES, ETC. TO REMAIN - PROTECT IN PLACE OR REMOVE AND REINSTALL AS NEEDED.
NOTE:			<div>3</div>	REMOVE EXISTING GYP CEILING, FRAMING, HANGERS AND ASSOCIATED PARTS IN ITS ENTIRETY. PREP AREA TO RECEIVE NEW CEILING. FIXTURES TO REMAIN
ALL DIMENSIONS ARE TO BE VERIFIED IN FIELD				
DEMOLITION LEGEND:				
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	
	NOTE THE PRESENCE OF ASBESTOS CONTAINING ITEMS. REFER TO ASBESTOS REMOVAL DESIGN & SPECIFICATIONS FOR REMOVAL INSTRUCTIONS.	<div>#</div>	DEMOLITION KEYED NOTE	
		—————	EXISTING TO REMAIN	
		-----	EXISTING TO BE REMOVED DURING DEMOLITION	



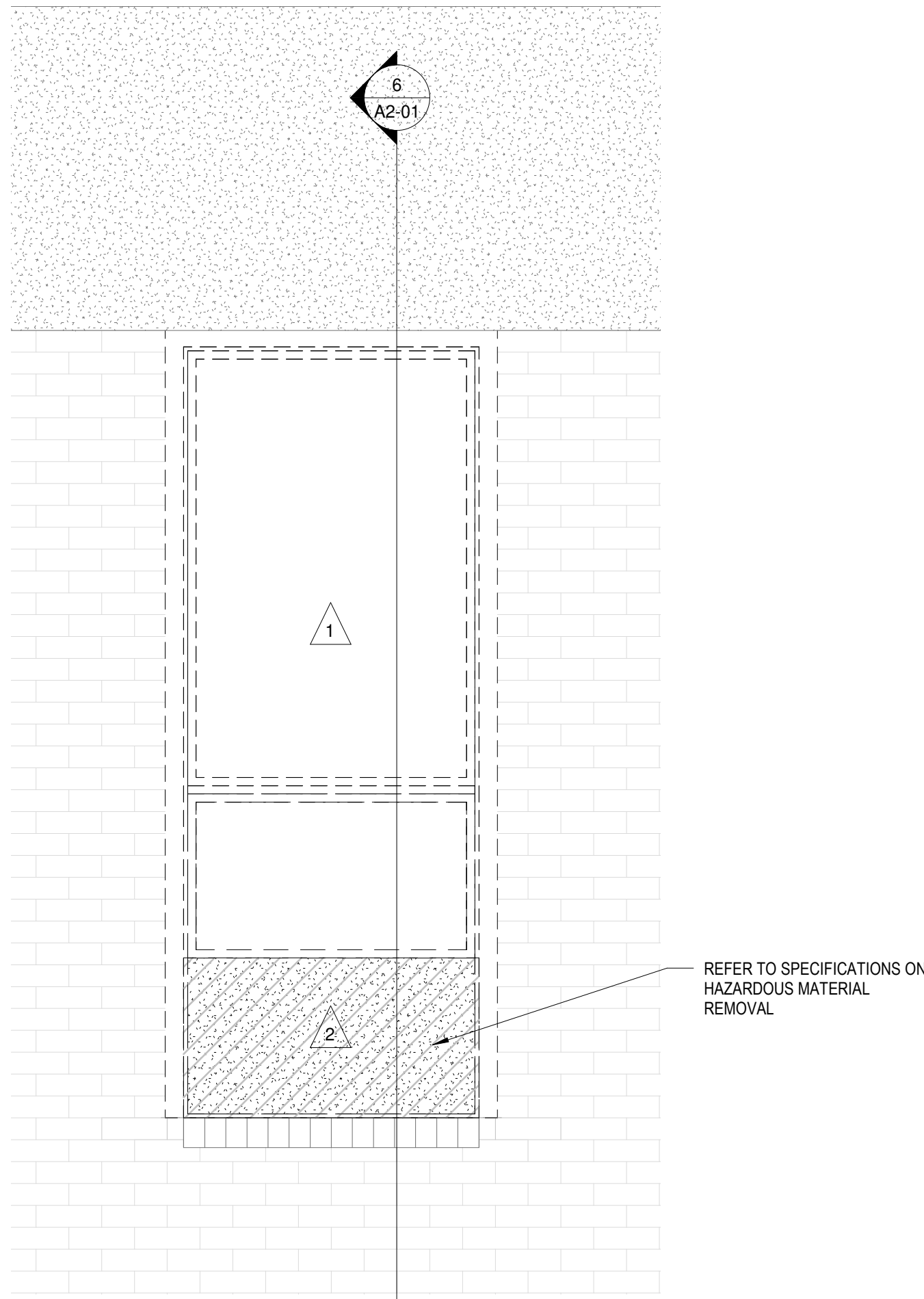
7
A2-01
JAMB DETAIL
1 1/2" = 1'-0"



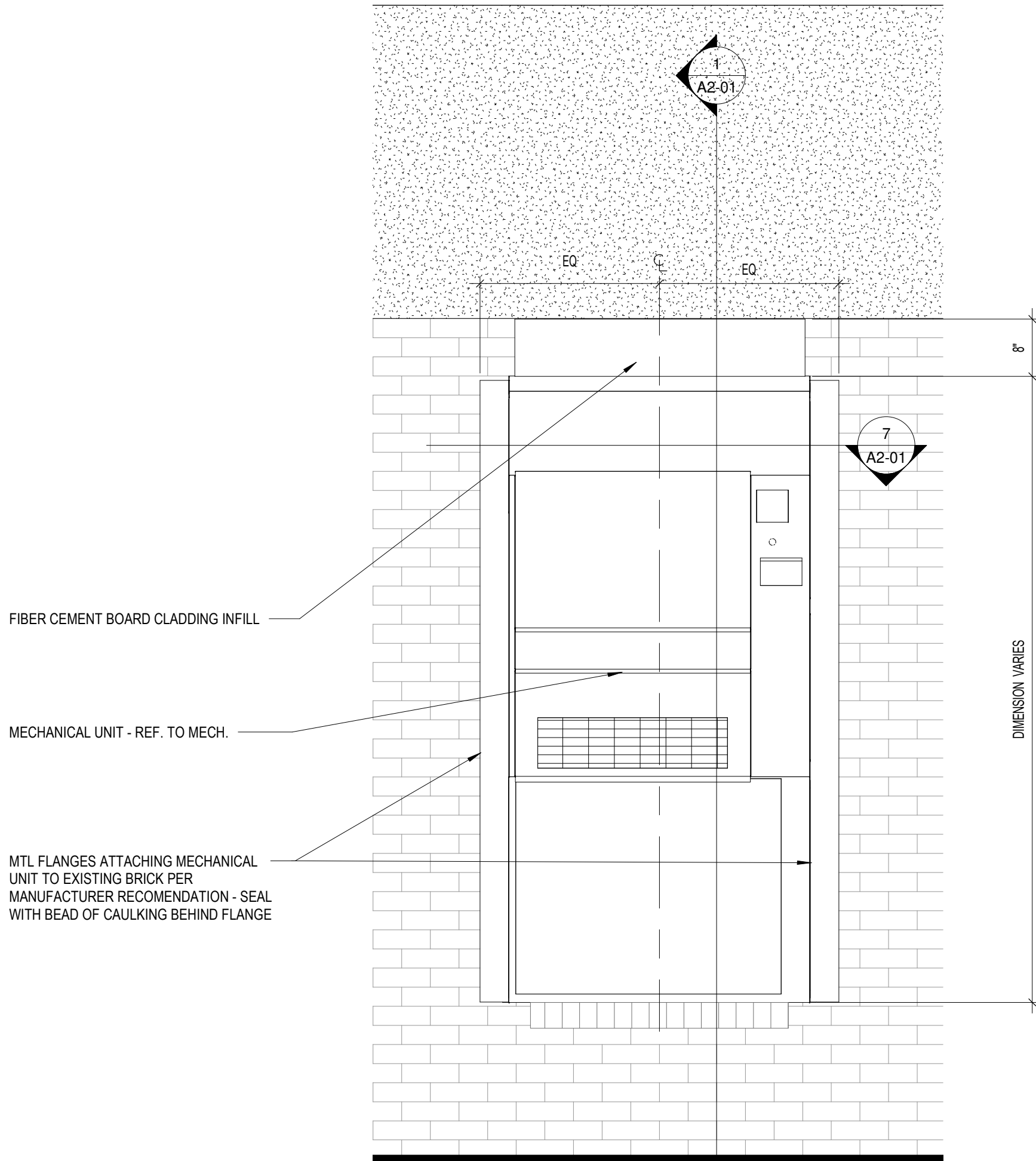
4
A2-01
TOP OF MECHANICAL UNIT @ NEW WALL DETAIL
1 1/2" = 1'-0"



3
A2-01
BOTTOM OF MECHANICAL UNIT @ NEW WALL DETAIL
1 1/2" = 1'-0"

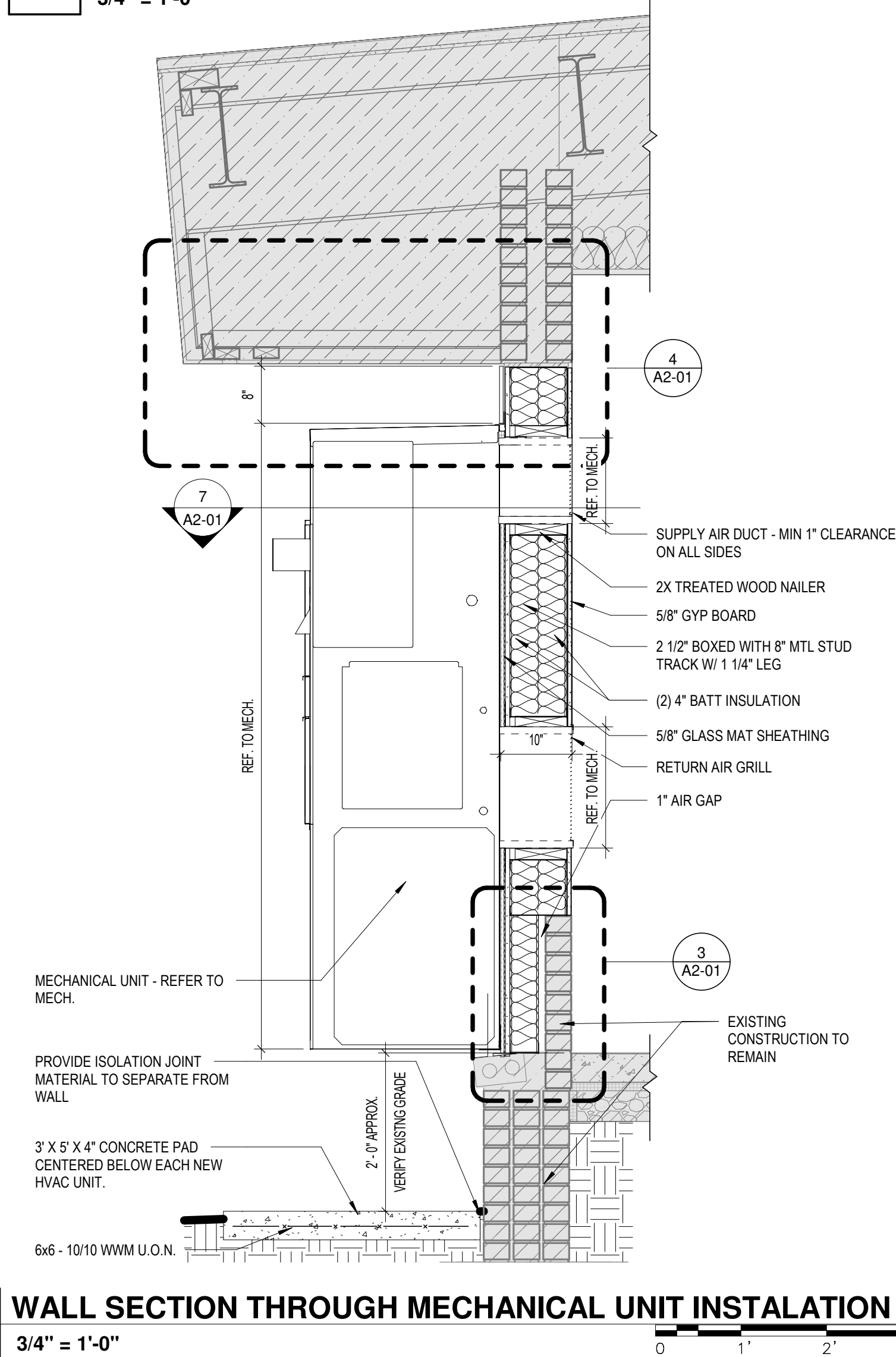


5
A2-01
ELEVATION - DEMO
3/4" = 1'-0"



2
A2-01
MECHANICAL UNIT ELEVATION
3/4" = 1'-0"

6
A2-01
WALL SECTION - DEMO
3/4" = 1'-0"



1
A2-01
WALL SECTION THROUGH MECHANICAL UNIT INSTALATION
3/4" = 1'-0"

ID	DATE	DESCRIPTION

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ABBREVIATIONS

MECHANICAL ABBREVIATIONS			MECHANICAL ABBREVIATIONS		
ACCU	AIR COOLED CONDENSING UNIT	HZ	HERTZ		
ACU	AIR CONDITIONING UNIT				
AD	ACCESS DOOR	IF	INJECTION FAN		
AF	AIR FILTER	IN	INCHES		
AFF	ABOVE FINISHED FLOOR	INSUL	INSULATION		
AHU	AIR HANDLING UNIT	ISDL	ISOLATION		
ALUM	ALUMINUM				
AMP	AMPERE	KE	KITCHEN EXHAUST		
AP	ACCESS PANEL	KW	KILOWATT		
ARCH	ARCHITECTURAL				
AVG	AVERAGE	LAT	LEAVING AIR TEMPERATURE		
CC	AIR COLLED CONDENSER	LBS	POUNDS		
		LF	LINEAR FEET		
B	BOILER	LLC	LIQUID LEVEL CONTROLLER		
B.I.	BLACK IRON	LWT	LEAVING WATER TEMPERATURE		
BB	BASEBOARD RADIATION				
BDD	BACKDRAFT DAMPER	MAT	MIXED AIR TEMPERATURE		
BHP	BRAKE HORSEPOWER	MAX	MAXIMUM		
BO	BLANK OFF	MIN	MINIMUM		
BTU	BRITISH THERMAL UNIT				
BTUH	BRITISH THERMAL UNITS PER HOUR	N.C.	NORMALLY CLOSED		
		N.O.	NORMALLY OPEN		
CA	COMPRESSED AIR	NC	NOISE CRITERIA		
CAP	CAPACITY	NIC	NOT IN CONTRACT		
CAU	COMPRESSED AIR	NK	NECK		
CC	COOLING COIL	NPSH	NET POSITIVE SUCTION HEAT		
CFM	CUBIC FEET PER MINUTE	NTS	NOT TO SCALE		
CH	CHILLER				
CI	CAST IRON	OA	OUTSIDE AIR		
CL	CENTER LINE	OAI	OUTSIDE AIR INTAKE		
CO	CARBON MONOXIDE	OBD	OPPOSED BLADE DAMPER		
CO	CLEAN OUT	OD	OUTSIDE DAMPER		
CONC	CONCRETE	OV	OUTLET VELOCITY		
CT	COOLI NG TOWER				
CU	CONDENSING UNIT	P	PUMP		
CUH	CABINET UNIT HEATER	PD	PRESSURE DROP		
CV	CONSTANT VOLUME	PH	PHASE		
CY	CYCLE	PRESS	PRESSURE		
		PRV	PRESSURE REDUCING VALVE		
DB	DRY BULB TEMPERATURE	PSIG	POUNDS PER SQUARE INCH		
DEL	DEFLECTION	ΔP	PRESSURE DIFFERENTIAL		
DIFF	DIFFUSER				
DN	DOWN	RA	RETURN AIR		
DWG	DRAWING	REFRIG	REFRIGERANT		
DX	DIRECT EXPANSION	REG	REGISTER		
		RET	RETURN		
EA	EACH	RF	RELIEF / RETURN FAN		
EAT	ENTERING AIR TEMPERATURE	RH	RELATIVE HUMIDITY		
EF	EXHAUST FAN	RM	ROOM		
EFF	EFFICIENCY	RO	REVERSE OSMOSIS		
EHC	ELECTRIC HEAT COIL	RPM	REVOLUTIONS PER MINUTE		
ESP	EXTERNAL STATIC PRESSURE	RTU	ROOFTOP UNIT		
ET	EXPANSION TANK				
EUH	ELECTRIC UNIT HEATER	SA	SUPPLY AIR		
EWT	ENTERING WATER TEMPERATURE	SD	SMOKE DAMPER		
EXH	EXHAUST	SF	SUPPLY FAN		
		SM	SHEET METAL		
F.D.	FLOOR DRAIN	SP	STATIC PRESSURE		
FA	FREE AREA	SQ. FT.	SQUARE FEET		
FCU	FAN COIL UNIT	SS	STAINLESS STEEL		
FD	FIRE DAMPER	ST	SOUND TRAP		
FLEX	FLEXIBLE				
FM	FLOW METER	T	TANK		
FP	FAN POWERED BOX	TC	TEMPERATURE CONTROL		
FPM	FEET PER MINUTE	TE	TOILET EXHAUST		
FT	FEET	TG	TRANSFER GRILLE		
FT2	SQUARE FEET	TSP	TOTAL STATIC PRESSURE		
FT3	CUBIC FEET	TYP	TYPICAL		
°F	DEGREES FARENHEIT	ΔT	TEMPERATURE DIFFERENTIAL		
GA	GAUGE	UH	UNIT HEATER		
GC	GENERAL CONTRACTOR				
GE	GENERAL EXHAUST	V	VOLTAGE		
GPM	GALLONS PER MINUTE	VAV	VARIABLE AIR VOLUME		
GR	GRILLE	VD	VOLUME DAMPER		
		VEL	VELOCITY		
°H	ENTHAPLY DIFFERENCE	VFD	VARIABLE FREQUENCY DRIVE		
HC	HEATING COIL	VIB	VIBRATION		
HORIZ	HORIZONTAL				
HP	HORSEPOWER	W	WATT		
HR	HOUR	WB	WET BULB TEMPERATURE		
HU	HUMIDIFIER	WC	WATER COLUMN		
HVAC	HEATING VENTILATION & AIR CONDITIONING	WMS	WIRE MESH SCREEN		
HX	HEAT EXCHANGER	WP	WORKING PRESSURE		

SHEET INDEX - MECHANICAL				
Sheet Number	Sheet Name		Current Revision	Current Revision Date
M001	LEAD SHEET			
M100	MECHANICAL DEMOLITION PLAN			
M101	DUCTWORK AND PIPING PLAN			
M303	ENLARGED PLANS			
M501	DETAILS			
M502	UL DETAILS			
M701	MECHANICAL SCHEDULES			

GENERAL NOTES

- THE CONTRACT DOCUMENTS ARE COMPLIMENTARY AND WHAT IS REQUIRED BY ONE SHALL BE AS BINDING AS IF REQUIRED BY ALL. IN THE CASE OF A CONFLICT, DISAGREEMENT, OR AMBIGUITY, PROVIDE THE BETTER QUALITY. IN THE CASE OF A CONFLICT, DISAGREEMENT, OR AMBIGUITY, PROVIDE THE GREATER QUANTITY OF WORK.
- COORDINATE ALL WORK WITH THAT OF THE OTHER DISCIPLINES PRIOR TO THE INSTALLATION OF ANY PIPING, DUCTWORK, OR EQUIPMENT.
- PERFORM A COMPLETE REVIEW OF THE CONTRACT DOCUMENTS PRIOR TO INSTALLATION OF THE MECHANICAL SYSTEMS AND REVIEW ANY CONFLICTS WITH THE ENGINEER.
- DURING THE CONSTRUCTION PROCESS, PROTECT ALL EQUIPMENT, DEVICES, DUCTWORK, PIPING, AND APPURTENANCES FROM DIRT, DEBRIS, AND RAIN. STORE IN A COVERED LOCATION OFF OF THE FLOOR AND ABOVE STANDING WATER. ITEMS FOUND LYING IN STANDING WATER ON THE JOB SITE WILL NOT BE ACCEPTED FOR INSTALLATION.
- ENSURE THAT ITEMS TO BE FURNISHED OR PROVIDED WILL FIT IN THE SPACE AVAILABLE. MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS, INCLUDING THOSE FOR CONNECTIONS, AND PROVIDE SUCH SIZES AND SHAPES OF EQUIPMENT THAT ARE THE TRUE INTENT AND MEANING OF THE CONTRACT DOCUMENTS. PROVIDE THE ENGINEER WITH SCALED COORDINATION DRAWINGS OF ALL MECHANICAL SPACES AND ABOVE CEILING INSTALLATIONS.
- LOCATE ALL EQUIPMENT TO PROVIDE MAXIMUM SPACE FOR MAINTENANCE AND SERVICE.
- PROVIDE ALL ELECTRICAL AND CONTROL CONNECTIONS TO THE EQUIPMENT PROVIDED. REFER TO THE ELECTRICAL DRAWINGS FOR CONNECTIONS OF JUNCTION BOXES, DISCONNECTS, CIRCUIT BREAKERS (PANELBOARDS), TYPE, SIZE, AND NUMBER OF CONDUCTORS AND CONDUITS TO EQUIPMENT SHALL BE EQUIVALENT TO THE CONDUCTORS AND CONDUITS PROVIDED BY DIVISION 26. IN CASE OF MECHANICAL EQUIPMENT CONNECTION TO A CIRCUIT BREAKER, THE NUMBER AND SIZE OF THE CONDUCTORS AND CONDUITS SHALL CONFORM TO THE LATEST NATIONAL ELECTRICAL CODE REGULATIONS. ALL MOTOR STARTERS, SWITCHES, CONTROL DEVICES, ETC., PROVIDED BY DIVISION 23 SHALL BE RECESSED IN THE WALLS, EXCEPT WHEN THESE ITEMS ARE LOCATED IN MECHANICAL SPACES. PROVIDE A NAMEPLATE FOR ALL EQUIPMENT, SWITCHES, CONTROL DEVICES, ETC. REFER TO THE GENERAL PROVISIONS SECTION OF THE DIVISION 23 SPECIFICATIONS.
- PROVIDE ALL SUPPORT DEVICES NECESSARY FOR THE WORK. COORDINATE ALL LOCATIONS WITH OTHER DISCIPLINES PRIOR TO INSTALLATION.
- REFER TO THE ARCHITECTURAL DRAWINGS FOR FLOOR PLAN DIMENSIONS AND ELEVATIONS. DO NOT SCALE THESE DRAWINGS.
- PROVIDE ALL PENETRATIONS PERTAINING TO THE WORK THROUGH THE ROOF, WALLS, AND FLOORS. PROVIDE THE WATERPROOFING AROUND THE OPENINGS.
- FIRE SEAL ALL FLOOR AND FIRE WALL PIPE AND CONDUIT PENETRATIONS WITH A UL APPROVED METHOD.
- PROVIDE ALL CUTTING AND PATCHING OF FLOORS AND WALLS FOR THE WORK UNLESS OTHERWISE INDICATED.
- ALL WALL AND FLOOR PENETRATIONS SHALL BE SEALED. SEAL ALL RATED FLOOR AND WALL PENETRATIONS WITH A UL APPROVED METHOD. FOR NON-RATE WALLS AND FLOORS, THE ANNULAR SPACE SHALL BE PACKED WITH MINERAL WOOL, OR ANOTHER SUITABLE NON-COMBUSTIBLE MATERIAL, AND CAULKED AIR RIGHT.
- CONDENSATE DRAINS SHALL BE A MINIMUM OF 1"Ø COPPER, INSULATED WITH A 25/50 RATED CLOSED CELL RUBBER TUBING HAVING A NOMINAL WALL THICKNESS OF 1". PROVIDE A P-TRAP WITH VENT AND CLEANOUT PLUG AT THE UNIT. ALL CONDENSATE LINES SHALL BE ROUTED TO A FLOOR DRAIN OR AS INDICATED ON THE DRAWINGS.
- DUCT DIMENSIONS SHOWN ARE INSIDE CLEAR UNLESS OTHERWISE INDICATED.
- PROVIDE FLEXIBLE DUCT CONNECTORS AT SUPPLY, RETURN, AND EXHAUST DUCTWORK CONNECTIONS TO ALL AIR HANDLING UNITS AND FANS.
- PROVIDE SHEET METAL COLLAR AT ALL LOCATIONS WHERE DUCTS PENETRATE WALLS. COLLARS SHALL BE OF A GAGE EQUIVALENT TO THE DUCTWORK.
- PROVIDE FIRE DAMPERS AT DUCT PENETRATIONS THROUGH THE FIRE RATED PARTITIONS, BARRIERS, AND WALLS AS INDICATED ON THE DRAWINGS. INSTALL PER MANUFACTURER'S INSTRUCTIONS. PENETRATIONS THROUGH FIRE RATED WALLS OF 3 HOURS OR MORE SHALL BE PROTECTED BY A LISTED FIRE DOOR, SATISFACTORY FOR CLASS A OPENINGS, ON BOTH SIDES OF THE WALL.
- ALL ACCESS DOORS IN THE DUCTWORK SHALL BE LOCATED TO EASILY ACCESS FIRE DAMPERS. COORDINATE CEILING ACCESS PANEL LOCATIONS WITH ALL OTHER DISCIPLINES. ALL ACCESS DOORS IN DUCTWORK FOR FIRE DAMPERS, DUCT-MOUNTED COILS, CONTROL DAMPERS, HUMIDIFIERS, DUCT SMOKE DETECTORS, AND OTHER DEVICES SHALL CONFORM TO THE FOLLOWING SCHEDULE:

DUCT WIDTH	ACCESS DOOR SIZE
UP TO 17" WIDE	16"x12" (OR AS LARGE AS POSSIBLE)
18" TO 22"	16"x16"
22" AND LARGER	18"x18"
- PROVIDE BALANCING DAMPERS IN ALL LOW PRESSURE DUCTS FOR SYSTEM BALANCING.
- PROVIDE ADJUSTABLE CONTROL DEFLECTION DEVICES AT ALL BRANCH DUCT TAKE-OFFS.
- ALL ELBOWS IN DUCTWORK SHALL BE 1-1/2W RADIUS ELBOWS, UNLESS INDICATED OTHERWISE. WHERE RECTANGULAR ELBOWS ARE INDICATED, INSTALL DOUBLE WIDTH TURNING VANES.
- INSTALL THERMOSTATS, SENSORS, AND OTHER CONTROLS 48" ABOVE FINISHED FLOOR OR AS INDICATED ON THE DRAWINGS. COORDINATE WITH OTHER DISCIPLINES TO ALIGN EXACTLY WITH ADJACENT DEVICES SUCH AS LIGHT SWITCHES AND CONTROLS.
- PROVIDE ALL THERMOSTATS, SENSORS, CONTROLS, WIRING, AND CONDUIT.
- WHERE DUCTWORK CONNECTS TO EXTERIOR LOUVERS, PRIME AND PAINT DUCTWORK BLACK TO PREVENT DUCTWORK FROM BEING VISIBLE THROUGH THE LOUVER.
- ALL DUCT LAYOUT AND LOCATIONS INDICATED ARE DIAGRAMMATIC. VISIT THE SITE, BECOME FAMILIAR WITH THE EXISTING CONDITIONS, AND COORDINATE THE DUCT LAYOUT WITH ALL DISCIPLINES PRIOR TO INSTALLATION.
- SUPPORT ALL DUCTWORK, PIPING, EQUIPMENT, AND APPURTENANCES FROM THE BUILDING STRUCTURE AND NOT THE ROOF DECK.
- ALL HANGER RODS SHALL BE CUT TO WITHIN 1" OF THE BOTTOM NUT. IN MECHANICAL ROOMS, ALL HANGERS OR OTHER EQUIPMENT BELOW 7'-4" SHALL BE WRAPPED WITH FOAM INSULATION FOR PERSONNEL PROTECTION.
- EQUIPMENT SHALL MEET OR EXCEED ALL REQUIREMENTS IN THE 2013 VERSION OF ASHRAE STANDARD 90.1 AND THE INTERNATIONAL ENERGY CONSERVATION CODE WITH NORTH CAROLINA AMENDMENTS.
- ALL PIPING SHALL BE PERMANENTLY IDENTIFIED BY CONTENT, FUNCTION, AND DIRECTION OF FLOW (I.E., HOT WATER SUPPLY →). ALL IDENTIFICATION MARKERS SHALL BE PERMANENTLY STENCILED ON THE PIPING IN A LEGIBLE MANNER AT NO GREATER DISTANCE THAN 10'-0" ON CENTER, WHERE COLOR CODED PVC INSULATION JACKETING IS NOT SPECIFIED, ALL PIPING IN MECHANICAL ROOMS AND FINISHED AREAS ARE TO BE PAINTED AS FOLLOWS:

REFRIGERANT	GREEN WITH BLACK BACKGROUND AND YELLOW LETTERS
GAS PIPING	PAINT YELLOW
- ALL UNDERGROUND LINES OUTSIDE THE BUILDING FOOTPRINT SHALL HAVE WARNING TAPE INSTALLED IN THE BACKFILL BETWEEN 6" AND 24" BELOW FINISHED GRADE DIRECTLY OVER THE PIPING.
- METALLIC LINES SHALL BE IDENTIFIED WITH DURABLE PRINTED PLASTIC WARNING TAPE, MINIMUM 3" WIDE, WITH LETTERING TO IDENTIFY BURIED LINE BELOW.
- NON-METALLIC PIPES, OTHER THAN GAS LINES, SHALL BE IDENTIFIED BY DETECTABLE WARNING TAPE, MINIMUM 2" WIDE, WITH LETTERING TO IDENTIFY BURIED LINE BELOW.
- DO NOT INSTALL PIPING OR DUCTWORK OVER ANY ELECTRICAL PANEL OR SWITCHGEAR.
- ZIP TIES WILL NOT BE PERMITTED FOR USE AS CABLE SUPPORTS. WHERE NOT REQUIRED TO BE INSTALLED IN RACEWAY BY THE SPECIFICATION, PROVIDE J-HOOK SUPPORTS AND BRIDLE RINGS. CABLE SHALL BE INDEPENDENTLY SUPPORTED AND SHALL NOT BE SUPPORTED OF THE WORK OF OTHER TRADES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL CONNECTIONS TO ALL GAS FIRED EQUIPMENT, ALONG WITH NECESSARY PIPING, REGULATORS, APPURTENANCES, LABELING, ETC., FOR A COMPLETE AND OPERATIONAL SYSTEM.
- WHERE PIPING CONTAINING GAS IS TO BE REMOVED, OBSERVE PROCEDURE OF NCGFC 406.7.1, NFPA 54 7.2.7 AND 8.3.1 AND NFPA 58(P5) - DISCONNECT THE GAS PIPING FROM THE GAS SOURCE, VENT TO THE OUTDOORS, AND THOROUGHLY PURGE WITH AIR, WATER, OR INERT GAS BEFORE CUTTING OR WELDING
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD LOCATE ALL UNDERGROUND UTILITIES, STORM DRAIN, ETC., WHICH MAY OR MAY NOT BE INDICATED ON THE PLANS, AND TO AVOID CONFLICT OF THE INSTALLATION WITH SAME.
- EACH ABOVE GROUND SECTION OF GAS PIPING SHALL BE ELECTRICALLY BONDED PER NC FUEL GAS CODE SECTION 310.

SYMBOL LEGEND

SYMBOL	DESCRIPTION
	FLEXIBLE DUCT
	SUPPLY DUCT
	RETURN DUCT
	EXHAUST DUCT
	OUTSIDE AIR INTAKE
	BALANCING DAMPER
	SUPPLY GRILLE
	RETURN GRILLE
	EXHAUST GRILLE
	TEMPERATURE SENSOR. LABEL INDICATES UNIT CONTROLLED.
	REFRIGERANT PIPING
	CONDENSATE PIPING
	HOT WATER SUPPLY
	HOT WATER RETURN
	MEDIUM PRESSURE NATURAL GAS
	LOW PRESSURE NATURAL GAS
	DUCT SMOKE DETECTOR
	MOTORIZED DAMPER, PARALLEL BLADE FOR SHUT-OFF, OPPOSED BLADE FOR MODULATING, 24V ACTUATOR.
	MANUAL BALANCING DAMPER, OPPOSED BLADE, DOUBLE FLANGED. PROVIDE FACTORY SLEEVE, AND MANUAL HAND QUADRANT WITH INSULATION EXTENSION. AIR PERFORMANCE TESTED IN ACCORDANCE WITH AMCA. LEAKAGE CLASS 1, 8 CFM/SF AT 4 in w.g.
	FIRE DAMPER. 1.5 HOUR FOR 1 HR AND 2HR CONSTRUCTION. 3 HOUR FOR 3 HR CONSTRUCTION. TYPE B WITH BLADES OUT OF AIR STREAM. UL 555 LISTED. PROVIDE FACTORY SLEEVE. PROVIDE MULTI-SECTION ASSEMBLY AS REQUIRED FOR DUCT DIMENSIONS. PROVIDE THIN-LINE MODEL OR OUT OF WALL MODEL WHERE APPROPRIATE.

MECHANICAL SUMMARY MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT		
CODE	2018 NC ENERGY CODE: ASHRAE 90.1-2013:	PREScriptive <input checked="" type="checkbox"/> X _____ PERFORMANCE _____
ADDITIONAL PRESCRIPTIVE COMPLIANCE:		
<input checked="" type="checkbox"/> X	506.2.1 MORE EFFICIENT MECHANICAL EQUIPMENT	
_____	506.2.2 REDUCED LIGHTING POWER DENSITY	
_____	506.2.3 ENERGY RECOVERY VENTILATION SYSTEMS	
_____	506.2.4 HIGHER EFFICIENCY SERVICE WATER HEATING	
_____	506.2.5 ON-SITE SUPPLY OF RENEWABLE ENERGY	
_____	506.2.6 AUTOMATIC DAYLIGHTING CONTROLS	
THERMAL ZONE: 4A		
WINTER DRY BULB:	20.0 DEGREES F	
SUMMER DRY BULB:	94.6 DEGREES F	
SUMMER WET BULB:	74.3 DEGREES F	
SUMMER HR/MCDB:	129.5 / 81.2 DEGREES F	
INTERIOR DESIGN CONDITIONS		
WINTER DRY BULB:	70 DEGREES F	
SUMMER DRY BULB:	75 DEGREES F	
RELATIVE HUMIDITY:	55 %	
BUILDING HEATING LOAD: 244.8 MBH		
BUILDING COOLING LOAD: 37.2 TONS		
MECHANICAL SPACING CONDITIONING SYSTEM		
UNITARY	DESCRIPTION OF UNIT:	REFER TO SCHEDULE ON DRAWINGS
	HEATING EFFICIENCY:	REFER TO SCHEDULE ON DRAWINGS
	COOLING EFFICIENCY:	REFER TO SCHEDULE ON DRAWINGS
	SIZE CATEGORY OF UNIT:	REFER TO SCHEDULE ON DRAWINGS
BOILER:	TOTAL BOILER OUTPUT. IF OVERSIZED, STATE REASON.	N/A
CHILLER:	TOTAL CHILLER CAPACITY. IF OVERSIZED, STATE REASON.	N/A
REFER TO EQUIPMENT SCHEDULES FOR UNIT EFFICIENCIES.		
DESIGNER STATEMENT: TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT REQUIREMENTS OF THE NORTH CAROLINA STATE ENERGY CODE		

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NORTH CAROLINA

PROFESSIONAL

SEAL

025020

ENGINEER

W. CAMPBELL

10/02/2023

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Roanoke Rapids City Schools

Chaloner MS HVAC Upgrades

2100 Virginia Ave
Roanoke Rapids, NC 27870

ID	DATE	DESCRIPTION

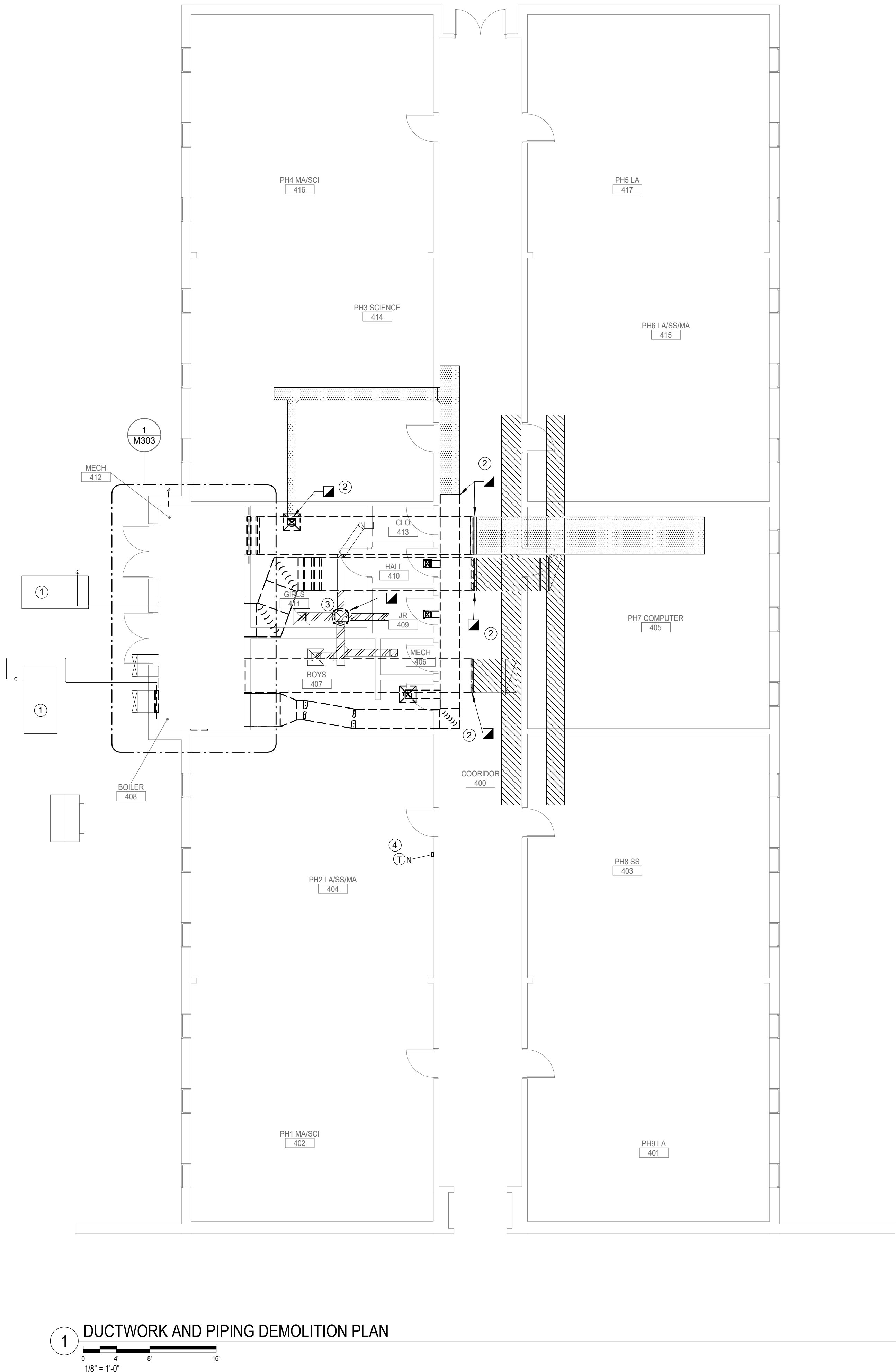
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LEAD SHEET

M001

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1 DUCTWORK AND PIPING DEMOLITION PLAN

KEYNOTES:

1. DISCONNECT EXISTING CONDENSING UNIT FROM EXISTING ELECTRICAL CONNECTIONS AND ABANDON IN PLACE.
2. DISCONNECT DUCTWORK AT POINT INDICATED AND REMOVE BACK TO AHU. CAP END OF DUCT.
3. DISCONNECT AND REMOVE EXISTING ROOF EXHAUST FAN. CURB TO REMAIN.
4. DISCONNECT AND REMOVE EXISTING THERMOSTAT.

GENERAL NOTES:

- A. WHERE EXISTING EQUIPMENT, DUCT, AND PIPING IS BEING REMOVED, REMOVE ALL EXISTING HANGERS, RODS, AND SUPPORTING HARDWARE.
- B. PATCH AND PAINT ALL SURFACES AND FINISHES IMPACTED BY THE WORK.
- C. REMOVE ALL EXISTING CONDENSATE PIPING.

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PROJECT #21035



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Roanoke Rapids City Schools
Chaloner MS HVAC Upgrades

2100 Virginia Ave
Roanoke Rapids, NC 27870

ID	DATE	DESCRIPTION

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MECHANICAL
DEMOLITION PLAN

M100

THIS DRAWING IS FORMATTED TO
BE PRINTED ON A 24" X 36" SHEET

2100 Virginia Ave

DRAWN BY:	JAV
CHECKED BY:	SWC

M101



1. PROVIDE NEW ROOF EXHAUST FAN AND CURB ADAPTER ON EXISTING CURB.
2. PROVIDE CEILING CASSETTE UNIT IN EXISTING CEILING. PROVIDE CEILING TRIM PIECES FROM MANUFACTURER AS REQUIRED.
3. RUN GAS PIPING TIGHT TO WALL, BELOW BOTTOM OF UNITS.
4. RUN GAS PIPING UP HIGH, TIGHT TO WALL.
5. CONNECT TO EXISTING 5 PSI NATURAL GAS LINE.
6. PROVIDE WIRE COVER FOR THERMOSTAT PROTECTION.

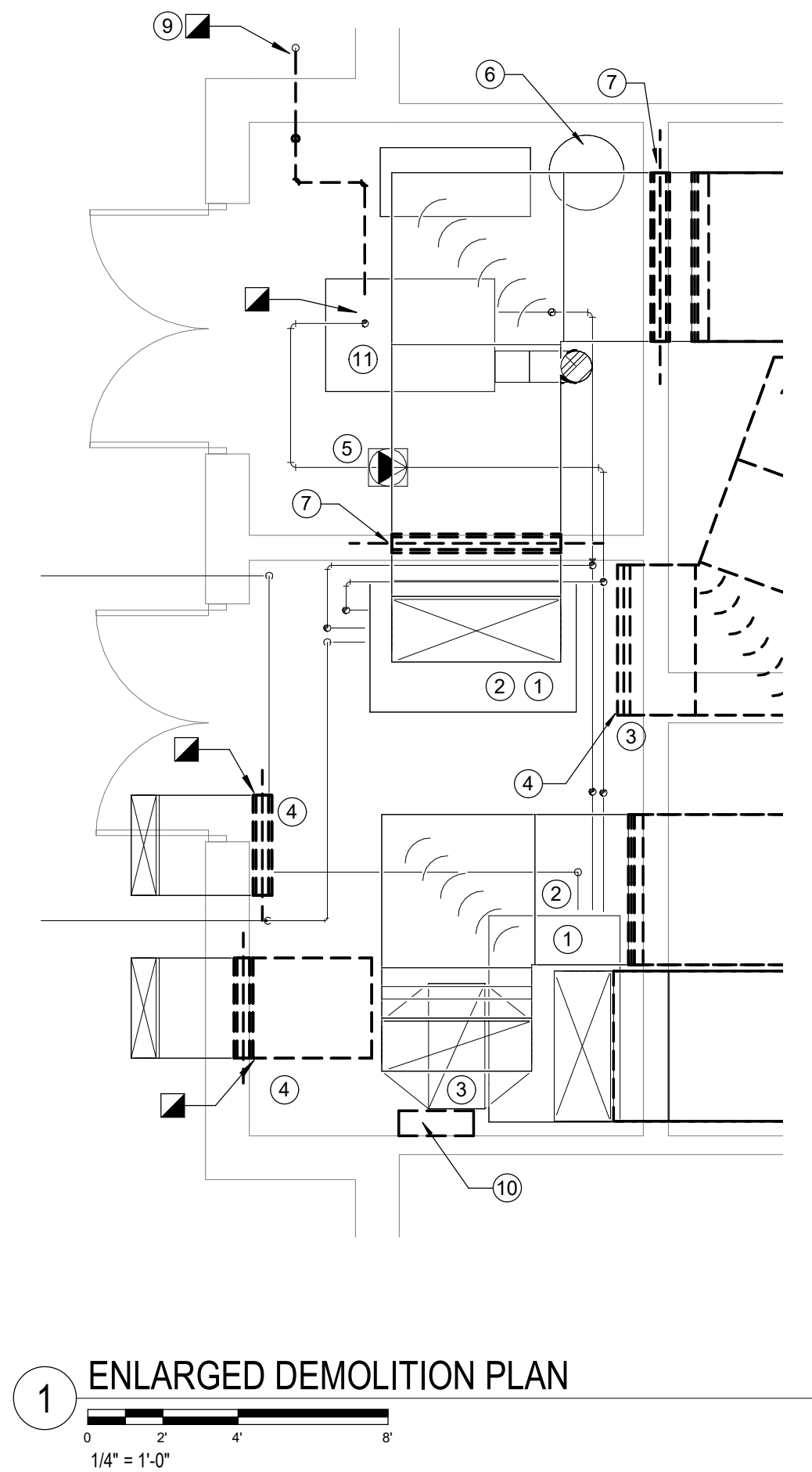
- A. SLEEVE ALL PIPING PENETRATIONS THROUGH WALLS.
- B. ALL THERMOSTATS FOR VPACs ARE COMBINATION TEMPERATURE/HUMIDITY SENSORS.

EXISTING BOILER REMOVED	-2,009 MBH
BARDS ADDED	+ 675 MBH
TOTAL NET LOAD CHANGE	-1,334 MBH

FOR TOTAL DEVELOPED LENGTH OF 1200 FT

1-1/2" WILL CARRY 2,900 CFH
1-1/4" WILL CARRY 1,930 CFH
1" WILL CARRY 941 CFH
3/4" WILL CARRY 500 CFH

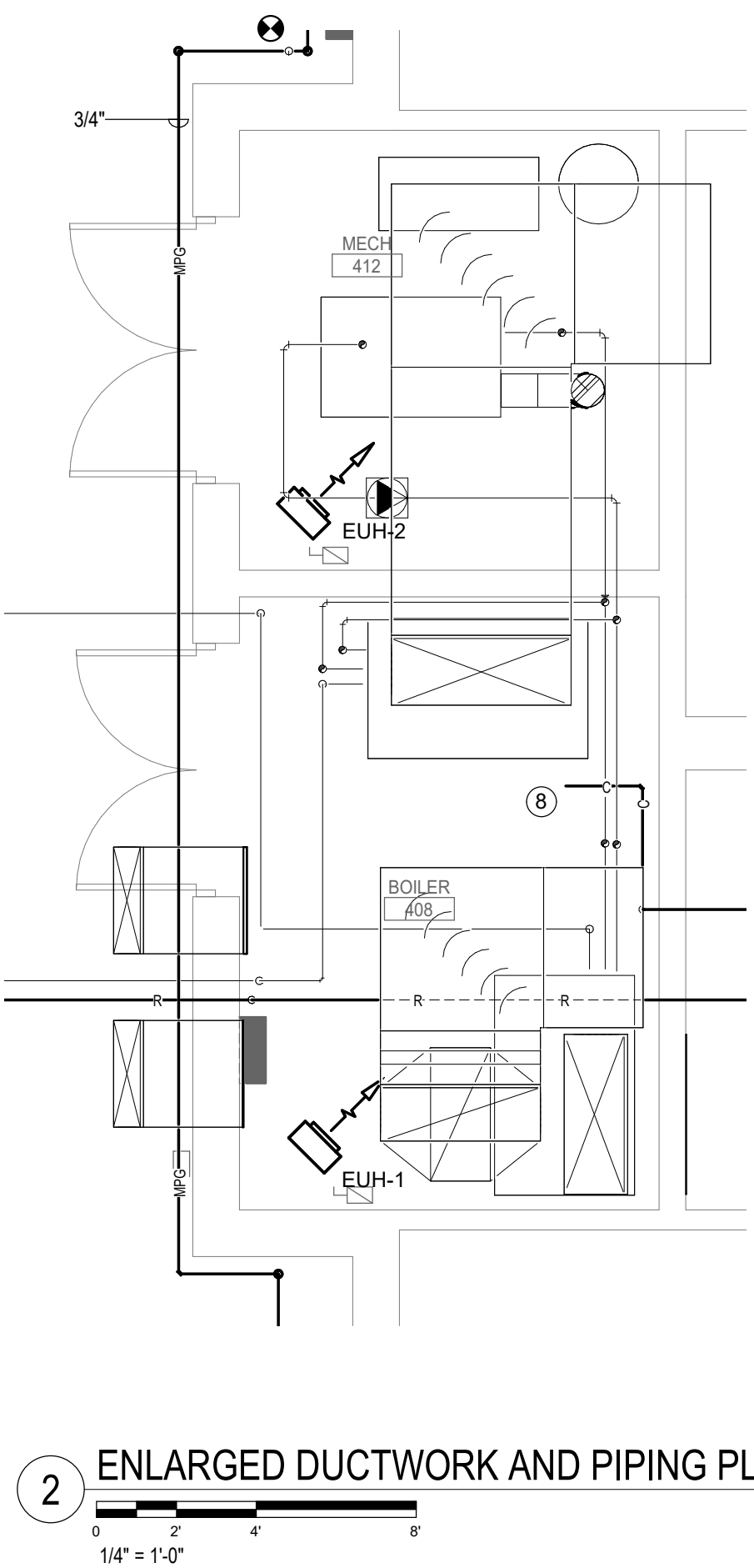
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1 ENLARGED DEMOLITION PLAN
0 2 4 8
1/4" = 1'-0"

KEYNOTES:

1. DISCONNECT EXISTING AHU FROM ELECTRICAL CONNECTIONS AND ABANDON UNIT IN PLACE.
2. REMOVE ALL EXISTING CONDENSATE PIPING.
3. DISCONNECT EXISTING DUCT SMOKE DETECTOR IN RETURN DUCT AND REMOVE. COORDINATE WITH FIRE ALARM CONTRACTOR.
4. DEMO AIR DUCT BACK TO WALL AND CAP. REMOVE EXISTING FIRE DAMPER.
5. DISCONNECT EXISTING BOILER PUMP FROM ELECTRICAL CONNECTIONS AND ABANDON IN PLACE.
6. EXISTING WATER HEATER TO REMAIN.
7. REMOVE EXISTING FIRE DAMPER. REFER TO ARCHITECTURAL DRAWINGS FOR PATCHING WALL OPENING.
8. TERMINATE CONDENSATE AT FLOOR DRAIN.
9. DISCONNECT NATURAL GAS FROM BOILER AND REMOVE PIPING BACK TO BUILDING EXTERIOR.
10. DISCONNECT AND REMOVE EXISTING CONTROLS. REMOVE ENCLOSURE.
11. EXISTING BOILER TO REMAIN. DISCONNECT ALL POWER, CONTROLS, AND FUEL SOURCE AND ABANDON IN PLACE.



2 ENLARGED DUCTWORK AND PIPING PLAN
0 2 4 8
1/4" = 1'-0"

GENERAL NOTES:

- A. WHERE EXISTING EQUIPMENT, DUCT, AND PIPING IS BEING REMOVED, REMOVE ALL EXISTING HANGERS, RODS, AND SUPPORTING HARDWARE.
- B. PATCH AND PAINT ALL SURFACES AND FINISHES IMPACTED BY THE WORK.
- C. REMOVE ALL EXISTING CONDENSATE PIPING IN MECHANICAL ROOMS.

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PROJECT #21035

10/02/2023
NORTH CAROLINA
PROFESSIONAL
SEAL
025020
ENGINEER
J. W. CAMPBELL

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Smith Sinnett Architecture, P.A. 2023
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Roanoke Rapids City Schools
Chaloner MS HVAC Upgrades

2100 Virginia Ave
Roanoke Rapids, NC 27870

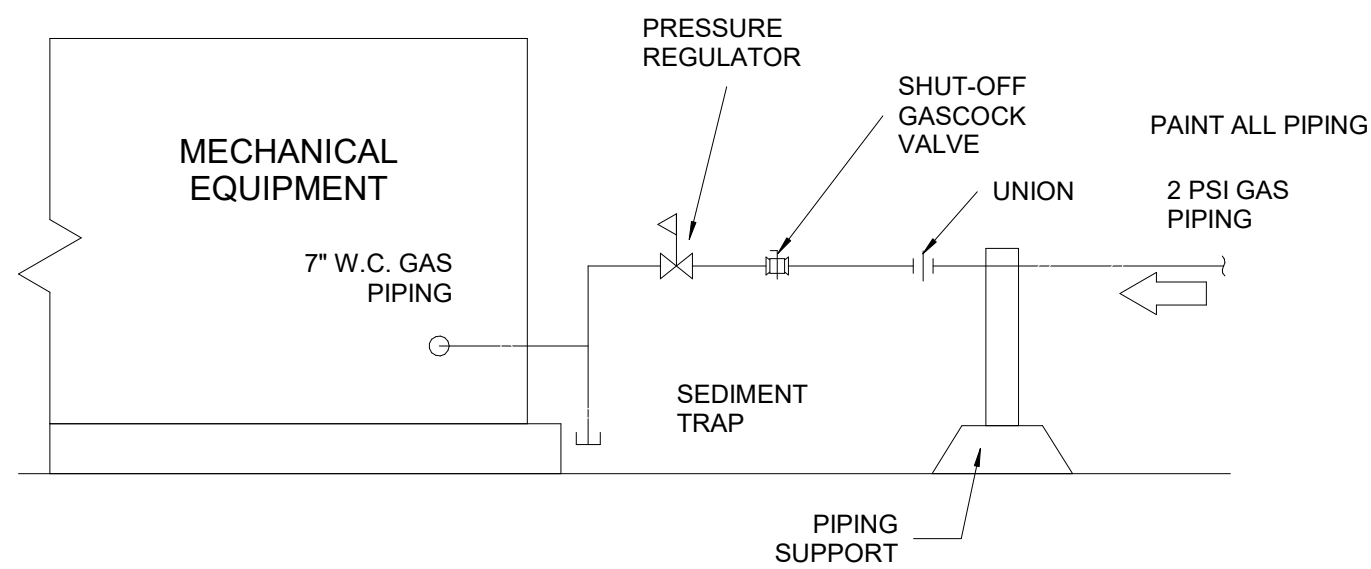
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DRAWN BY: JAV
CHECKED BY: SWC

ENLARGED PLANS

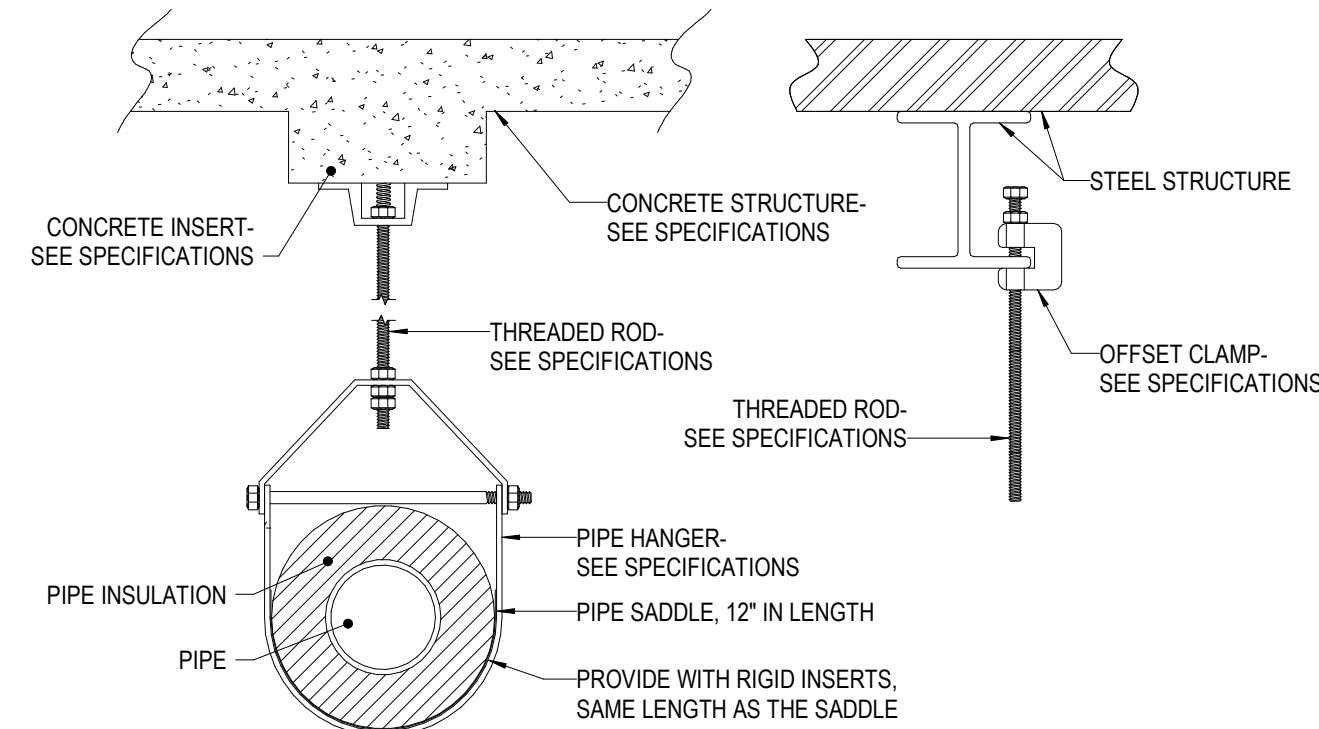
M303

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10/2/2023 2:22:58 PM



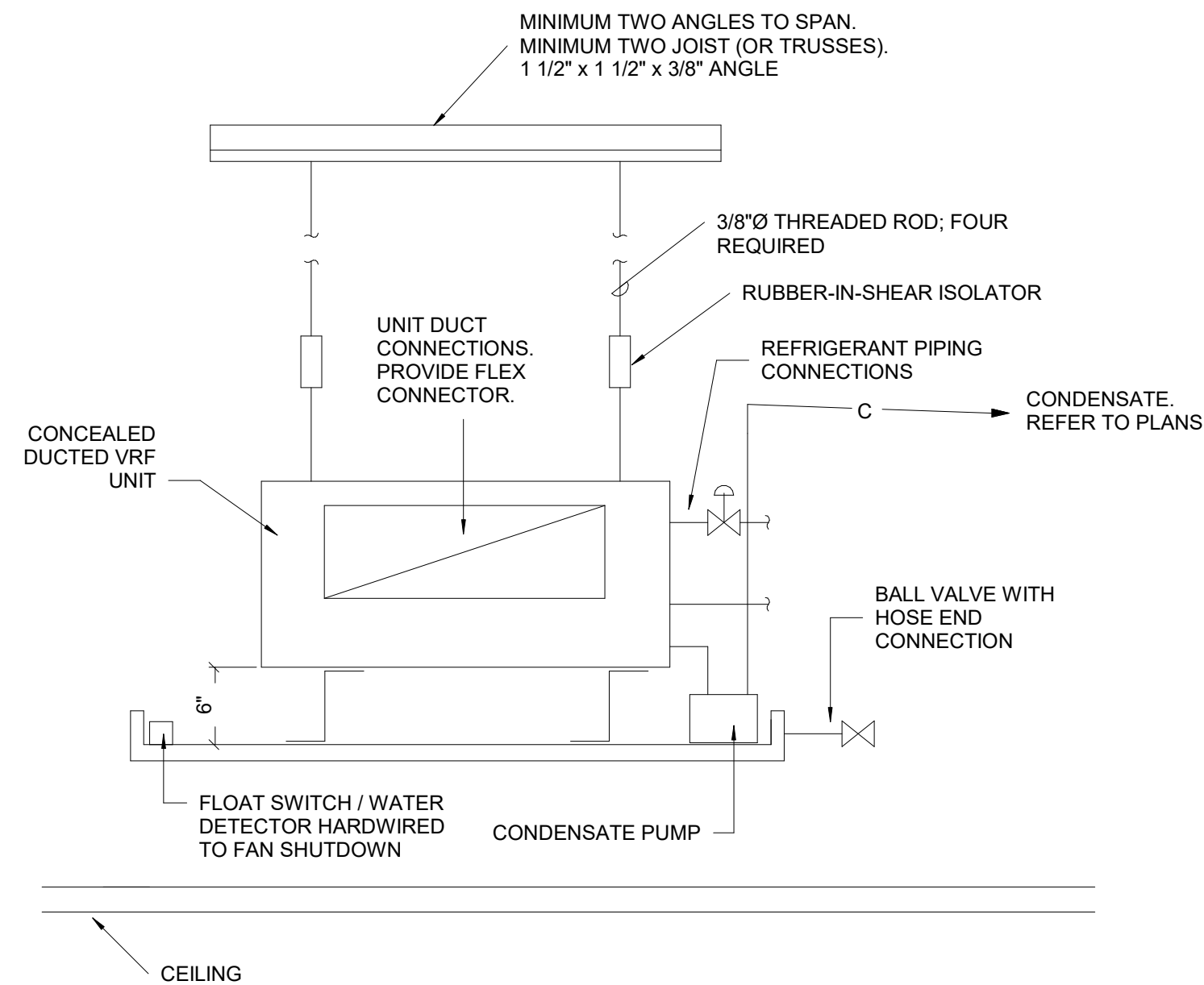
7 M - DETAIL - TYPICAL GAS CONNECTION

NOT TO SCALE



8 HANGERS

NOT TO SCALE

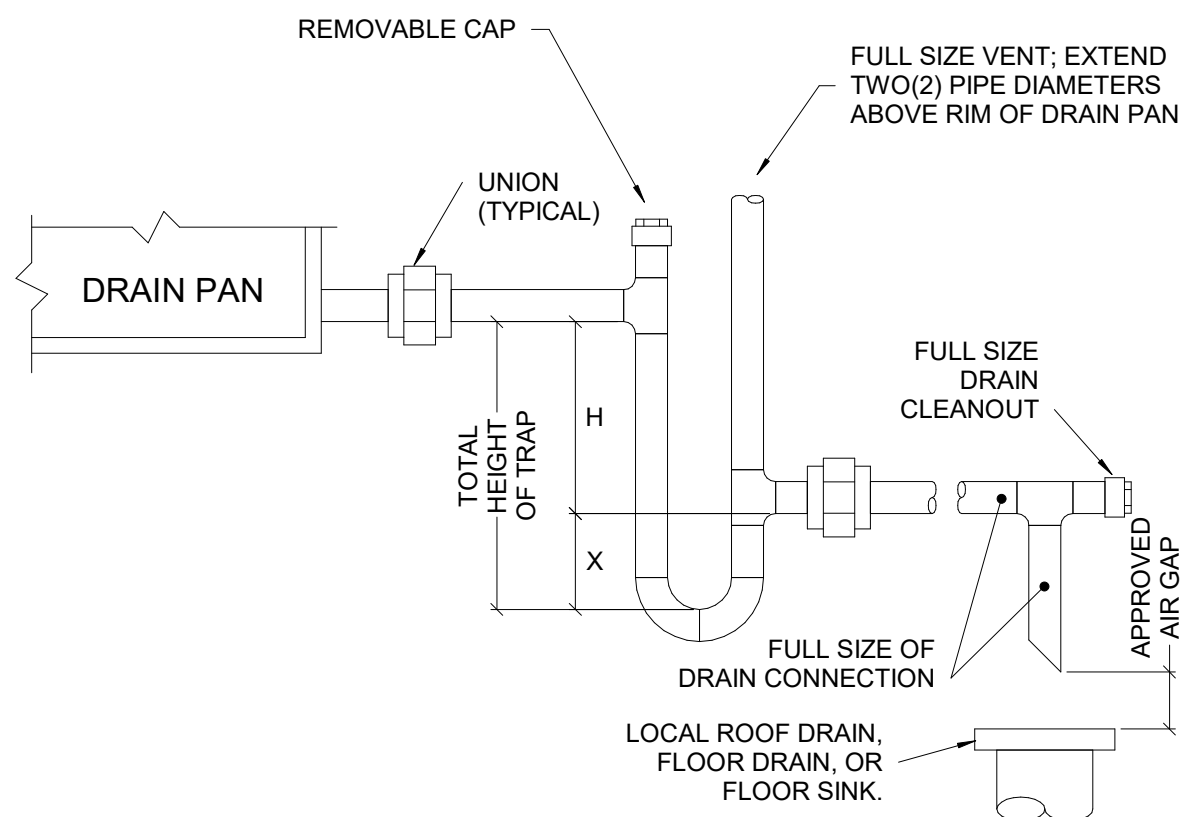


NOTES:

- 2" DEEP GALVANIZED DRAIN PAN. PROVIDE DRAIN WITH BALL VALVE AND HOSE END CONNECTION

9 DETAIL - VRF CONCEALED DUCTED UNIT

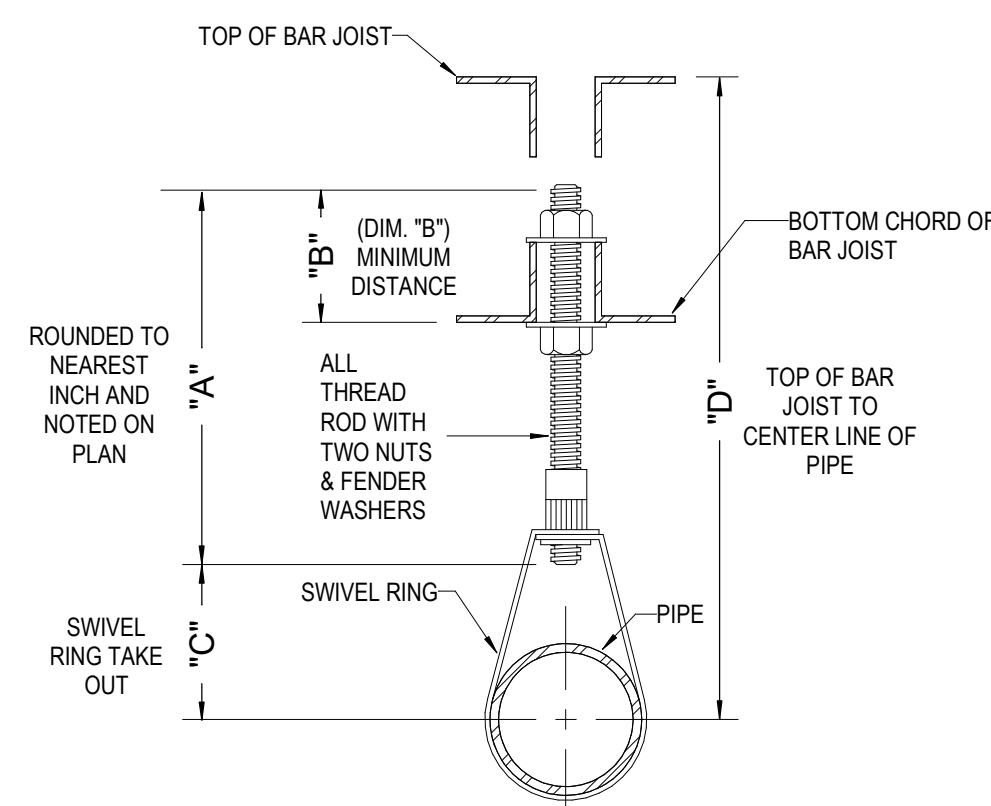
NOT TO SCALE



BLOW THROUGH	DRAW THROUGH
X = MINIMUM 1" PLUS CASING STATIC PRESSURE	X = 1/2 "H"
H = MINIMUM 1"	H = MINIMUM 1" PLUS CASING STATIC PRESSURE

4 DETAIL - CONDENSATE DRAIN DETAIL

NOT TO SCALE



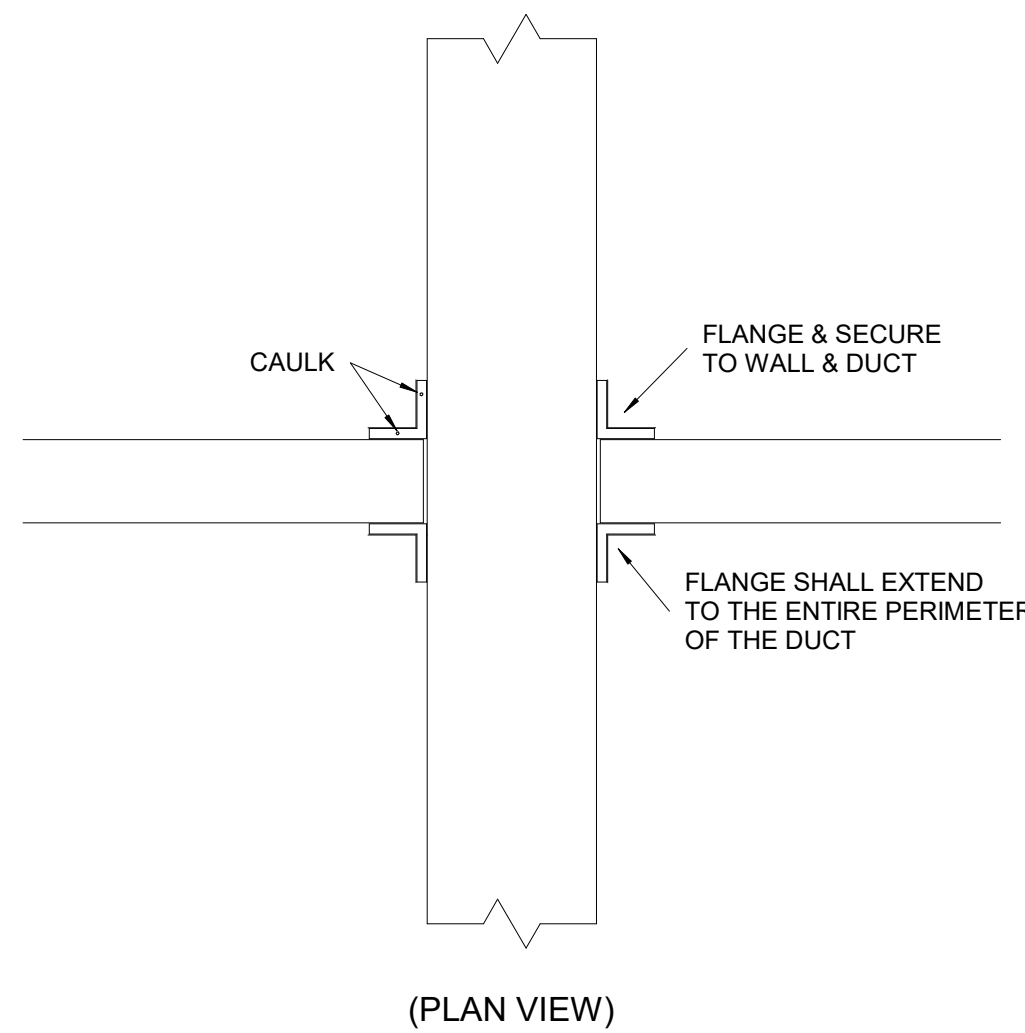
NOTE ON PLAN: HANGER NUMBER AND "A" DIMENSION

PIPE SIZE	ROD SIZE	'B' DIM.	MIN 'C' DIM.	MAX 'C' DIM.
3/4"	3/8"	SIZE OF ANGLE IRON ON BOTTOM CHORD OF BAR JOIST PLUS 1-1/2"	1/2"	1-5/8"
1"			5/8"	1-3/4"
1-1/4"			13/16"	1-7/8"
1-1/2"			15/16"	2"
2"			1-3/16"	2-3/8"
2-1/2"			1-7/16"	2-3/4"
3"			1-3/4"	3-1/4"
3-1/2"			2"	3-5/8"
4"	1/2"		2-1/4"	3-7/8"
5"			2-3/4"	4-3/4"
6"			3-5/16"	5-1/2"
8"			4-5/16"	6-3/4"

BAR JOIST HANGER WITH NUTS AND WASHERS

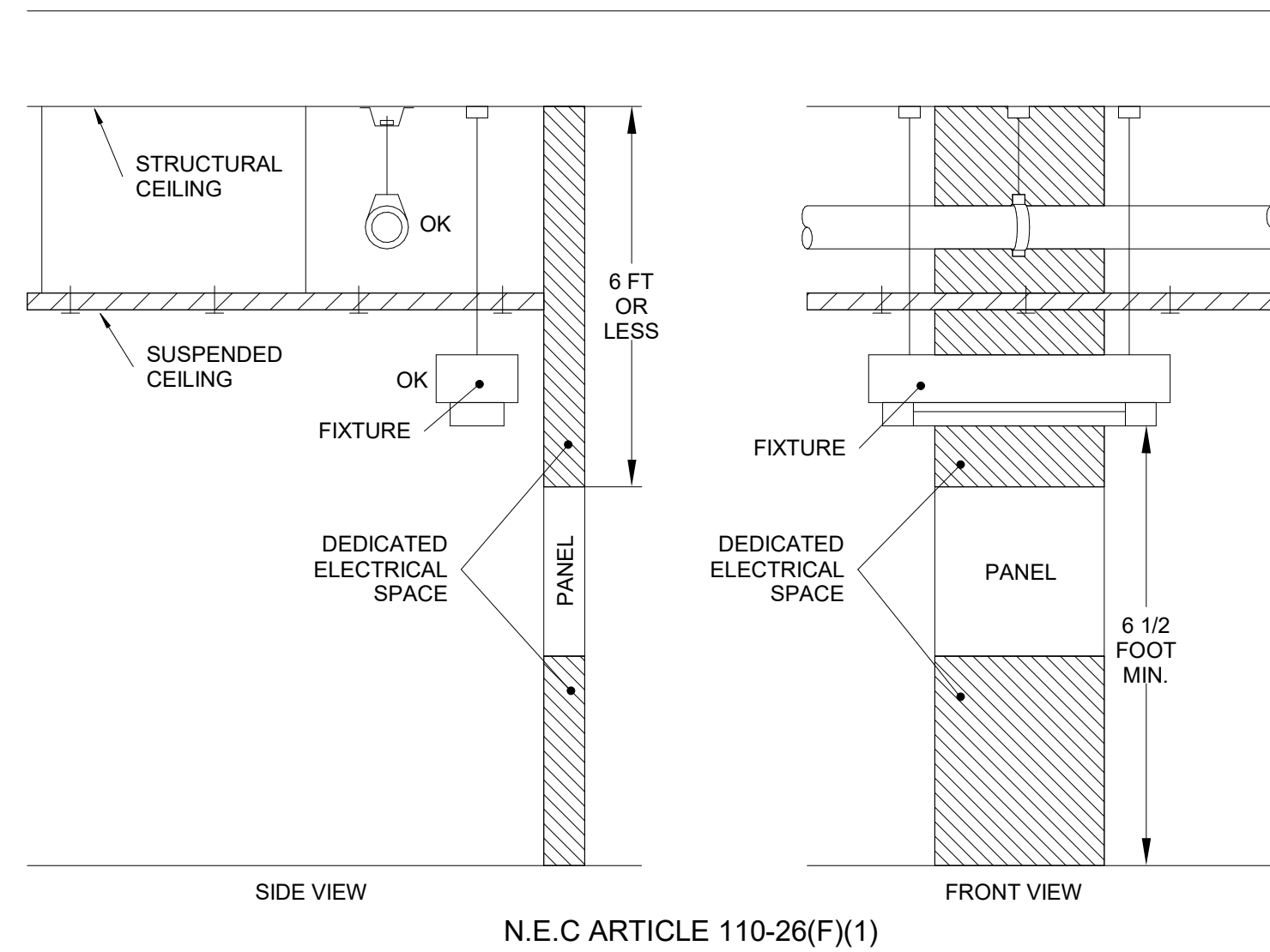
5 HANGERS

NOT TO SCALE



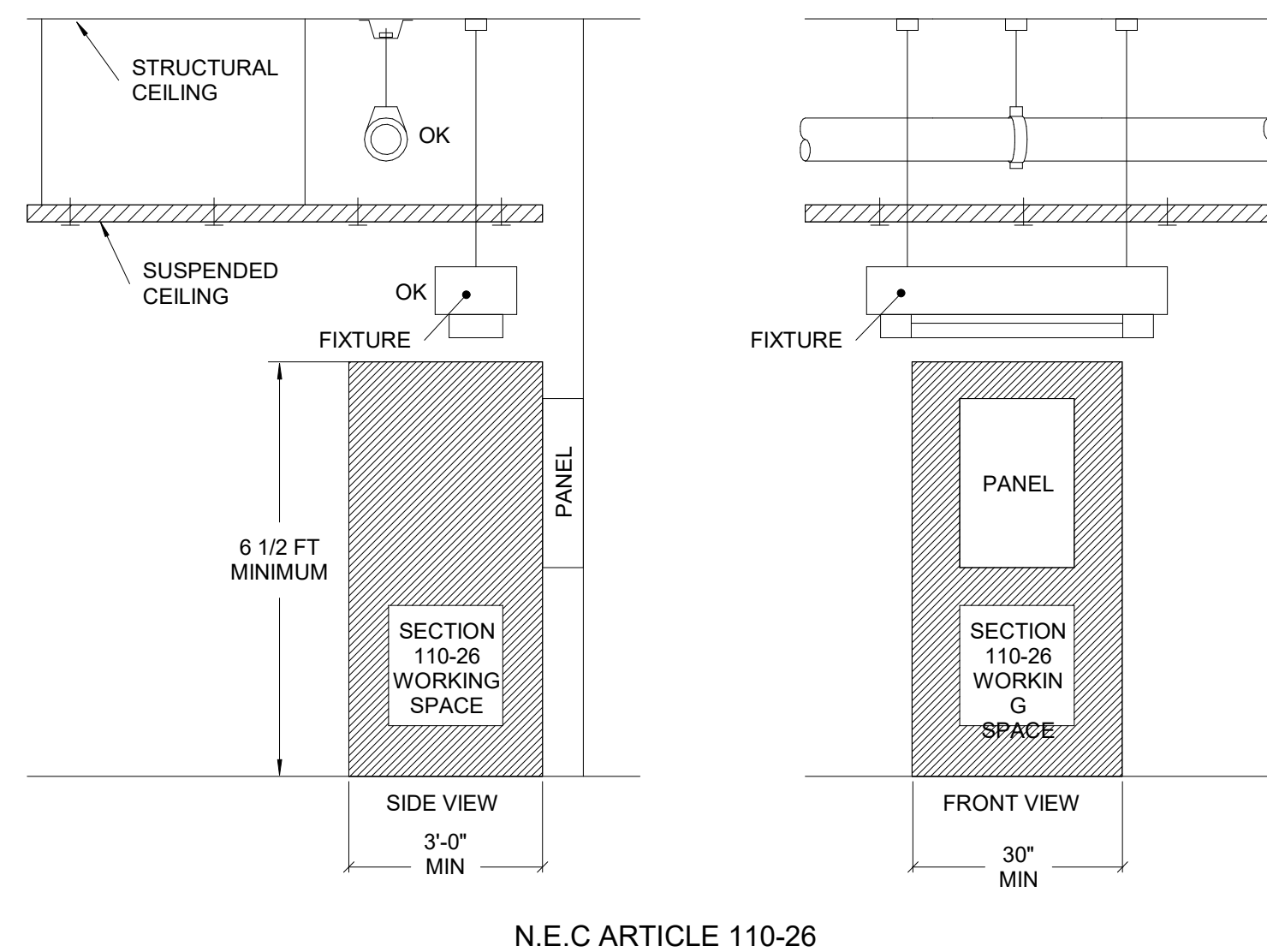
6 DETAIL - NON-RATED DUCT PENETRATION

NOT TO SCALE



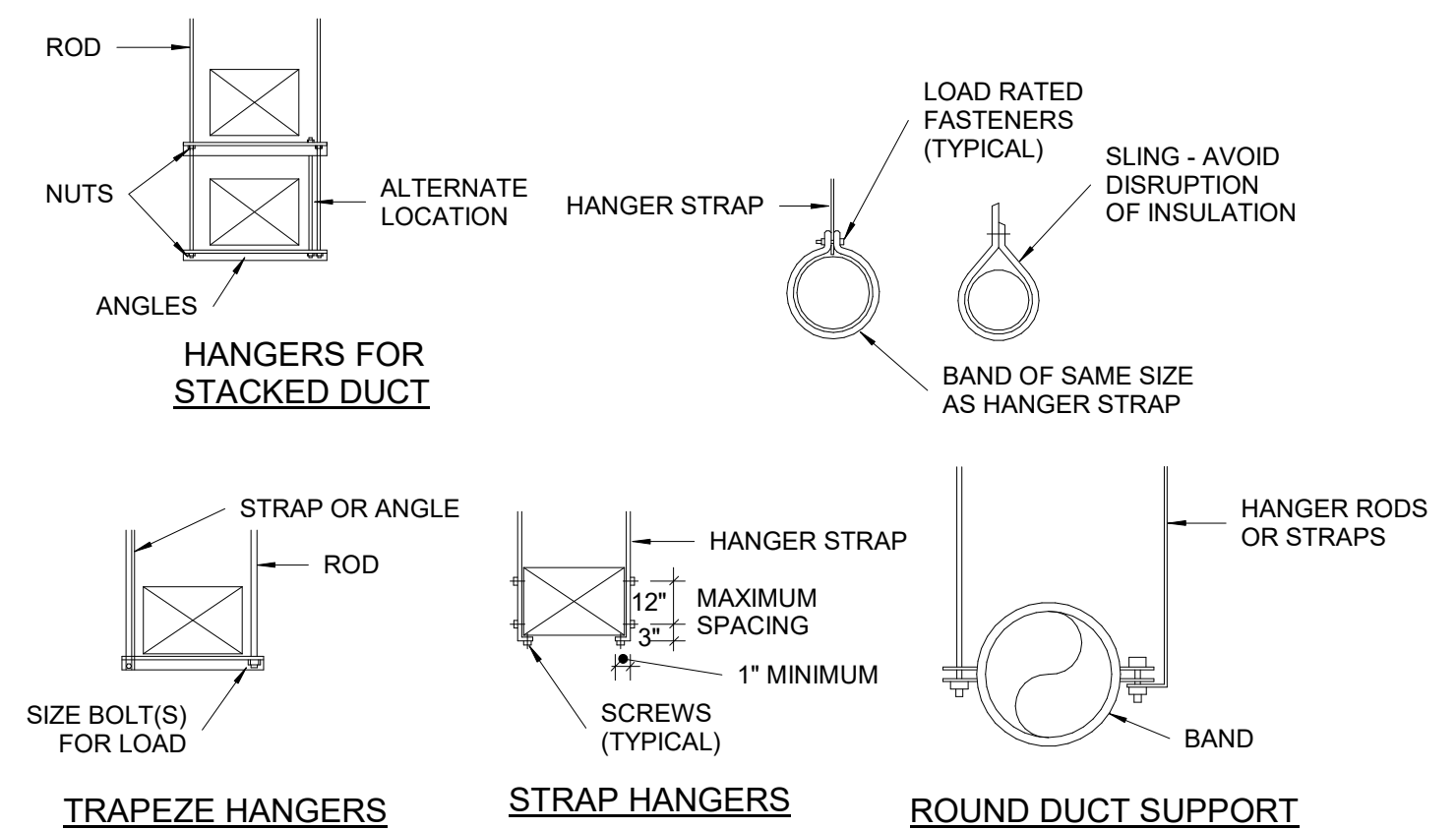
1 DETAIL - DEDICATED SPACE FOR ELECTRICAL EQUIPMENT

NOT TO SCALE



2 DETAIL - WORKING CLEARANCE FOR ELECTRICAL EQUIPMENT

NOT TO SCALE



TRAPEZE HANGERS

STRAP HANGERS

ROUND DUCT SUPPORT

NOTES:

- REINFORCEMENT MAY BE USED FOR ATTACHMENT IF IT QUALIFIES FOR BOTH DUTIES.
- DO NOT EXCEED LOAD RATINGS FOR METHOD USED. FROM SMACNA DUCT STANDARDS

3 DETAIL - TYPICAL DUCT HANGERS

NOT TO SCALE

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PROFESSIONAL
ENGINEER
W. CAMPBELL

10/02/2023

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Chaloner MS HVAC Upgrades

2100 Virginia Ave
Roanoke Rapids, NC 27870

ID	DATE	DESCRIPTION

DRAWN BY: JAV
CHECKED BY: SWC

DETAILS

M501

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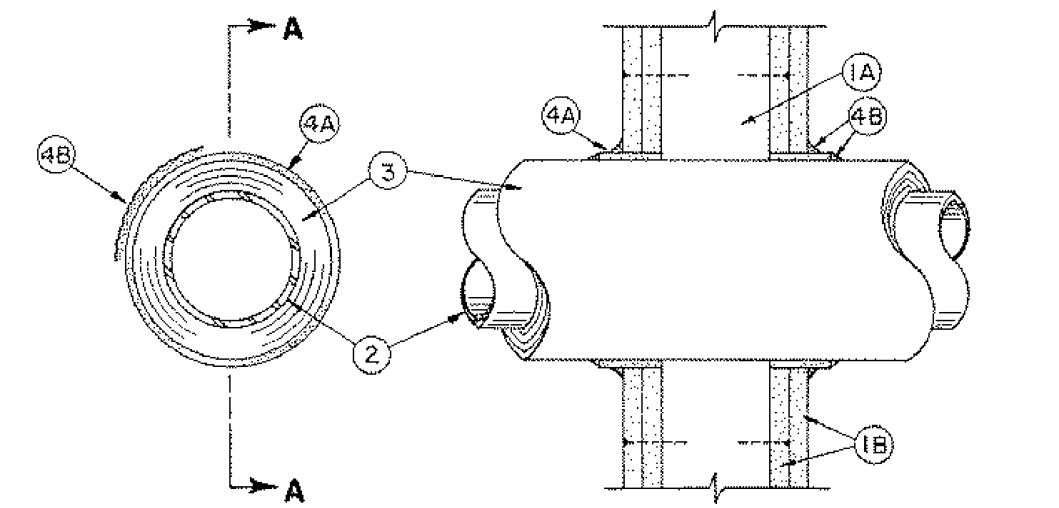
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System No. C-AJ-5001
March 05, 2007
F Ratings — 1-1/2, 2 and 3 Hr (See Item 4)
T Ratings — 0, 1/2, 3/4 and 1 Hr (See Items 1A and 4)
L Rating At Ambient — 2 CFM/sq ft
L Rating At 400 F — less than 1 CFM/sq ft
L Rating At 400 F — less than 1 CFM/sq ft



1. **Wall Assembly** — The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300, U400 or U400 Series Wall or Partition Design in the UL Fire Resistance Directory and shall include the following construction features:

A. **Studs** — Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC with nom 2 by 4 in. (51 by 102 mm) lumber end plates and cross braces. Steel studs to be min 3-5/8 in. (92 mm) wide by 1-3/8 in. (35 mm) deep channels spaced max 24 in. (610 mm) OC.

B. **Gypsum Board*** — Nom 5/8 in. (16 mm) thick, 4 ft (122 cm) wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual design in the UL Fire Resistance Directory. Max diam of opening is 14-1/2 (368mm) in for wood stud walls and 18 in. (457 mm) for steel stud walls.

The hourly F Rating of the firestop system is 1 hr when installed in a 1 hr fire rated wall and 2 hr when installed in a 2 hr fire rated wall.

2. **Through Penetrants** — One metallic pipe or tubing to be centered within the firestop system. Pipe or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes or tubing may be used:

A. **Steel Pipe** — Nom 12 in. (305 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. **Copper Tubing** — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.

C. **Copper Pipe** — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.

3. **Pipe Covering*** — Nom 1 or 2 in. (25 or 51 mm) thick hollow cylindrical heavy density (min 3.5 pcf or 56 kg/m³) glass fiber units jacketed on the outside with an all service jacket. Longitudinal joints sealed with metal fasteners or factory-applied self-sealing lap tape. Transverse joints sealed with metal fasteners or with butt strip tape supplied with the product. When nom 1 in. (25 mm) thick pipe covering is used, the annular space between the pipe covering and the circular cutout in the gypsum wallboard layers on each side of the wall shall be min 1/4 in. (6 mm) to max 3/8 in. (10 mm) when nom 2 in. (51 mm) thick pipe covering is used, the annular space between the pipe covering and the circular cutout in the gypsum board layers on each side of the wall shall be min 1/2 in. (13 mm) to max 3/4 in. (19 mm).

See **Pipe and Equipment Covering Materials** (BRGU) category in Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.

The hourly T Rating of the firestop system is 3/4 hr when nom 1 in. (25 mm) thick pipe covering is used. The hourly T Rating of the firestop system is 1 hr and 1-1/2 hr when nom 2 in. (52 mm) thick pipe covering is used with 1 hr and 2 hr fire rated walls, respectively.

4. **Firestop System** — Installed symmetrically on both sides of wall assembly. The details of the firestop system shall be as follows:

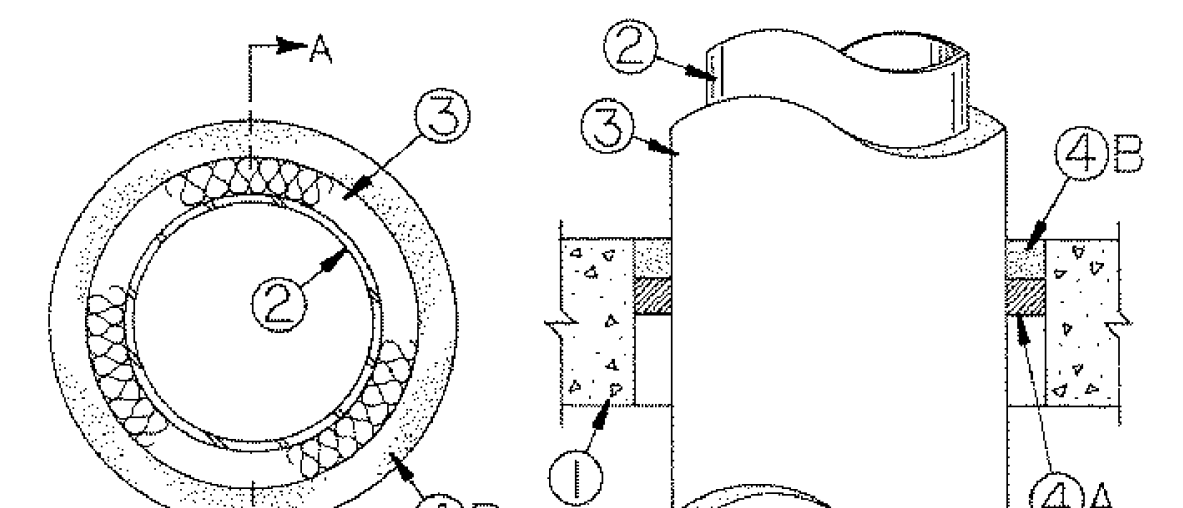
A. **Fill, Void or Cavity Materials*** — **Wrap Strip** — Nom 1/4 in. (6 mm) thick intumescent elastomeric material faced on one side with aluminum foil, supplied in 2 in. (51 mm) wide strips. Nom 2 in. (51 mm) wide strip tightly wrapped around pipe covering (foil side out) with seam butted. Wrap strip layer securely bound with steel wire or aluminum foil tape and slid into annular space approx 3-1/4 in. (82 mm) such that approx 3/4 in. (19 mm) of the wrap strip width protrudes from the wall surface. One layer of wrap strip is required when nom 1 in. (25 mm) thick pipe covering is used. Two layers of wrap strip are required when nom 2 in. (51 mm) thick pipe covering is used.

3M COMPANY — FS-195+

B. **Fill, Void or Cavity Materials*** — **Caulk or Sealant** — Min 1/4 in. (6 mm) diam continuous bead applied to the wrap strip/wall interface and to the exposed edge of the wrap strip layer approx 3/4 in. (19 mm) from the wall surface.

3M COMPANY — CP 25WB+, IC 19WB+, FireDam 150+ caulk or FB-3000 WT sealant

System No. W-L-1001
June 15, 2005
F Ratings — 1, 2, 3 and 4 Hr (See Items 2 and 3)
T Ratings — 0, 1, 2, 3, and 4 Hr (See Item 3)
L Rating At Ambient — less than 1 CFM/sq ft
L Rating At 400 F — less than 1 CFM/sq ft
L Rating At 400 F — less than 1 CFM/sq ft



1. **Floor or Wall Assembly** — Min 2-1/2 in. (64 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks***. Max diam of opening is 18 in. (457 mm)

See **Concrete Blocks** (CAZT) category in the Fire Resistance Directory for names of manufacturers.

1A. **Steel Sleeve** — (Optional, not shown) — Nom 10 in. (254 mm) (or smaller) Schedule 10 (or heavier) steel sleeve cast or grouted into floor or wall assembly. Sleeve may extend a max of 2 in. (51 mm) above top of floor or beyond either surface of wall. As an alternate, nom 10 in. (254 mm) diam (or smaller) sleeve fabricated from nom 0.019 in. (0.48 mm) thick galv steel cast or grouted into floor or wall assembly flush with floor or wall surfaces. **T Rating is 0 hr when sleeve is used.**

2. **Through Penetrant** — Nom 4 in. (102 mm) diam (or smaller) Type L (or heavier) copper pipe, nom 12 in. (305 mm) diam (or smaller) pressure pipe or nom 12 in. (305 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe centered in the opening and rigidly supported on both sides of the floor or wall assembly.

3. **Pipe Covering*** — Nom 1/2 to 2 in. (13 to 51 mm) thick hollow cylindrical heavy density (min 3.5 pcf or 56 kg/m³) glass fiber units jacketed on the outside with an all service jacket. Longitudinal joints sealed with metal fasteners or factory-applied self-sealing lap tape. Transverse joints secured with metal fasteners or with butt strip tape supplied with the product.

See **Pipe and Equipment Covering — Materials*** (BRGU) category in Building Materials Directory for names of manufacturers. Any pipe covering material meeting the above specifications and bearing the UL Classification Marking with a Flame Spread Index of 25 or less and a Smoke Developed Index of 50 or less may be used.

4. **Firestop System** — The details of the firestop system shall be as follows:

A. **Packing Material** — Min 1 in. (25 mm) thickness of firmly packed mineral wool batt insulation used as a permanent form. Packing material to be recessed from top surface of floor or sleeve or from both surfaces of wall as required to accommodate the required thickness of caulk fill material (Item B).

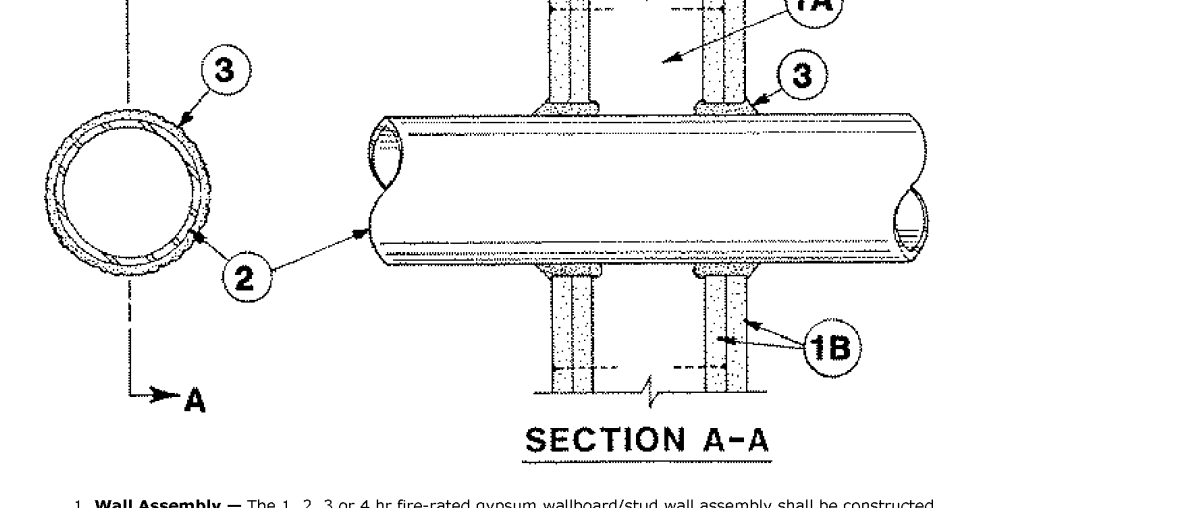
B. **Fill, Void or Cavity Material*** — **Caulk or Sealant** — Applied to fill the annular space flush with the top surface of the floor or sleeve or flush with both surfaces of wall. When nom pipe covering thickness is 2 in. (51 mm), min thickness of caulk fill material is 2 in. (51 mm). When nom pipe covering thickness is 1-1/2 in. (38 mm) or less, min thickness of caulk fill material is 1 in. (25 mm). The hourly F and T Ratings of the firestop system are dependent upon the thickness of the floor or wall, the size of pipe, the thickness of pipe covering material and the size of the annular space (between the pipe covering material and the edge of the circular through opening), as shown in the following table:

Min Floor or Wall Thkns, In. (mm)	Max Pipe Diam, In. (mm)	Nom Pipe Covering Thkns, In. (mm)	Annular Space, In. (mm)	F Rating Hr	T Rating Hr
2-1/2 (64)	4 (102)	1 or 1-1/2 (25 or 38)	1/2 to 2-3/8 (13 to 60)	2	1
4-1/2 (114)	4 (102)	2 (51)	1/4 to 3-5/8 (6 to 92)	2	1-1/2
2-1/2 (64)	12 (305)	1 (25)	1/2 to 1-1/2 (13 to 38)	2	1/2
4-1/2 (114)	12 (305)	1 (25)	1/2 to 2-3/8 (13 to 60)	3	1
2-1/2 (64)	12 (305)	1/2 (13)	1/2 to 2-3/8 (13 to 60)	2	0

3M COMPANY — CP 25WB+ or FB-3000 WT

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Last Updated on 2007-03-05

System No. W-L-1001
June 15, 2005
F Ratings — 1, 2, 3 and 4 Hr (See Items 2 and 3)
T Ratings — 0, 1, 2, 3, and 4 Hr (See Item 3)
L Rating At Ambient — less than 1 CFM/sq ft
L Rating At 400 F — less than 1 CFM/sq ft
L Rating At 400 F — less than 1 CFM/sq ft



1. **Wall Assembly** — The 1, 2, 3 or 4 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300 or U400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. **Studs** — Wall Framing may consist of either wood studs (max 2 hr fire rated assemblies) or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC with nom 2 by 4 in. (51 by 102 mm) lumber end plates and cross braces. Steel studs to be min 3-5/8 in. (92 mm) wide by 1-3/8 in. (35 mm) deep channels spaced max 24 in. (610 mm) OC.

B. **Gypsum Board*** — Nom 1/2 or 5/8 in. (13 or 16 mm) thick, 4 ft (122 cm) wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 26 in. (660 mm).

2. **Through Penetrant** — One metallic pipe, conduit or tubing installed either concentrically or eccentrically within the firestop system. The annular space between pipe, conduit or tubing and periphery of opening shall be min of 0 in. (0 mm). (point contact) to max 2 in. (51 mm) Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

A. **Steel Pipe** — Nom 24 in. (610 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. **Iron Pipe** — Nom 24 in. (610 mm) diam (or smaller) service weight (or heavier) cast iron soil pipe, nom 12 in (305 mm) diam (or smaller) or Class 50 (or heavier) ductile iron pressure pipe.

C. **Conduit** — Nom 6 in. (152 mm) diam (or smaller) steel conduit or nom 4 in (102 mm) diam (or smaller) steel electrical metallic tubing.

D. **Copper Tubing** — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.

E. **Copper Pipe** — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.

F. **Through Penetrating Product*** — Flexible Metal Piping The following types of steel flexible metal gas piping may be used:

1. Nom 2 in. (51 mm) diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

OMEGA FLEX INC

2. Nom 1 in. (25 mm) diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

GASTITE, DIV OF TITFLEX

3. Nom 1 in. (25 mm) diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

WARD MFG L L C

3. **Fill, Void or Cavity Material*** — **Caulk or Sealant** — Min 5/8, 1-1/4, 1-7/8 and 2-1/2 in. (16, 32, 48 and 64 mm) thickness of caulk for 1, 2, 3 and 4 hr rated assemblies, respectively, applied within annulus, flush with both surfaces of wall. Min 1/4 in. (6 mm) diam bead of caulk applied to gypsum board/penetrant interface at point contact location on both side of wall. The hourly F Rating of the firestop system is dependent upon the hourly fire rating of the wall assembly in which it is installed, as shown in the following table. The hourly T rating of the firestop system is dependent upon the type or size of the pipe or conduit and the hourly fire rating of the wall assembly in which it is installed, as tabulated below:

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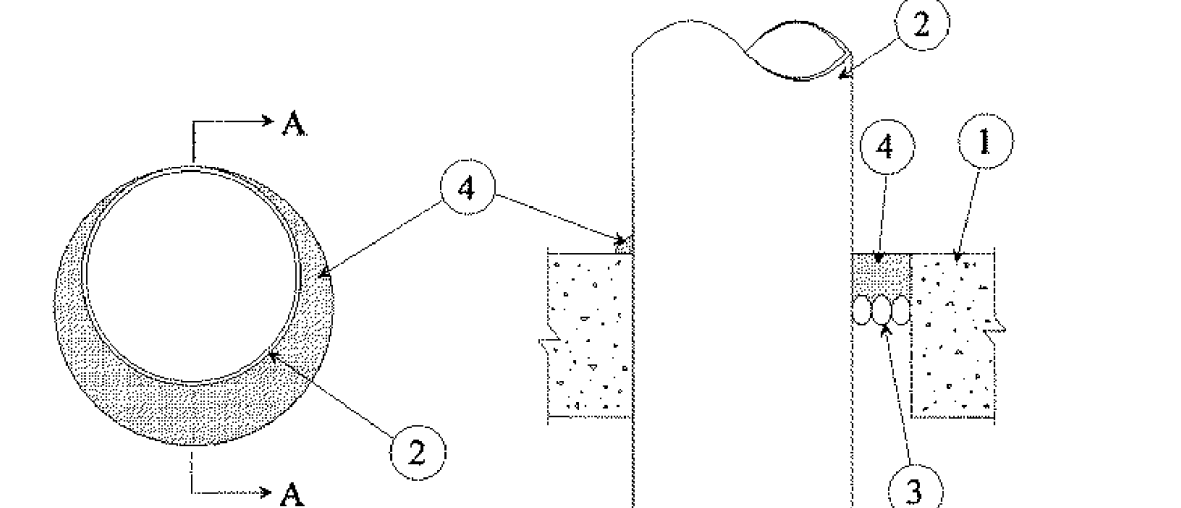
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System No. C-AJ-1044
March 15, 2007
F Ratings — 2, 3, and 4 Hr (See Items 2A and 4)
T Rating — 0 Hr
L Rating At Ambient — 2 CFM/sq ft
L Rating At 400 F — less than 1 CFM/sq ft
W Rating — Class I (See Item 4)



1. **Floor or Wall Assembly** — Lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) concrete. Except as noted in table under Item 4, min thickness of solid concrete floor or wall assembly is 4-1/2 in. (114 mm). Floor may also be constructed of any min 6 in.(152 mm) thick UL Classified hollow core **Precast Concrete Units***. When floor is constructed of hollow core precast concrete units, packing material (Item 3) and caulk fill material (Item 4) to be installed symmetrically on both sides of floor, flush with floor surface. Wall assembly may also be constructed of any UL Classified **Concrete Blocks***. Max diam of opening in solid lightweight or normal weight concrete floor is 22 in. (561 mm). Max diam of opening in floor constructed of hollow-core precast concrete units is 7 in. (178 mm)

See **Concrete Blocks** (CAZT) and **Precast Concrete Units** (CFTV) categories in the Fire Resistance Directory for names of manufacturers.

1A. **Steel Sleeve** — (Optional, Not Shown) — Nom 16 in. (406 mm) diam (or smaller) Schedule 10 (or heavier) steel sleeve cast or grouted into floor or wall assembly. Sleeve may extend a max of 2 in. (51 mm) above top of floor or beyond either surface of wall. As an alternate, nom 16 in. (406 mm) diam (or smaller) nom 0.028 (0.71 mm) thick galvanized sheet steel sleeve cast or grouted into floor or wall assembly flush with floor or wall surfaces.

2. **Through Penetrants** — One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. Max annular space between pipe, conduit or tubing and edge of through opening or sleeve is dependent on the parameters shown in Item 4. Min annular space between pipe or conduit and edge of through opening is 0 in. (point contact). Max annular space to be as shown in the table in Item 4. Pipe, conduit or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

A. **Steel Pipe** — Nom 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. **Iron Pipe** — Nom 30 in. (762 mm) diam (or smaller) cast or ductile iron pipe.

C. **Conduit** — Nom 6 in. (152 mm) diam (or smaller) rigid steel conduit.

D. **Conduit** — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing.

E. **Copper Tubing** — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tube.

F. **Copper Pipe** — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.

3. **Packing Material** — Polyethylene backed red nom 1 in. (25 mm) thickness of tightly-packed mineral wool batt or glass fiber insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall as required to accommodate the required thickness of caulk fill material (Item 4).

3A. **Forming Material*** — As an alternate to the packing material in Item 3, nom 4 in. (102 mm) wide strips of min 1/2 in (13 mm) thick compressible mat to be stacked to a thickness greater than the width of the annular space and compression-fitted, edge-first, to fill the annular space to a min 4 in. (102 mm) depth. As an option, the strips of min 1/2 in. (13mm) thick compressible mat may be fitted in half, lengthwise, and stacked to a thickness greater than the width of the annular space and compression-fitted, edge-first, to fill the annular space to a min 2 in. (51 mm) depth. Top of forming material to be recessed from top surface of floor or from both surfaces of wall as necessary to accommodate the required thickness of caulk fill material.

3M COMPANY — Fire Barrier Packing Material

4. **Fill, Void or Cavity Material*** — **Caulk, Sealant** — Applied to fill the annular space flush with top surface of floor. In wall assemblies, required caulk thickness to be installed symmetrically on both sides of wall, flush with wall surface. At point contact location between penetrant and sleeve or between penetrant and concrete, a min 1/4 in. (6 mm) diam bead of caulk shall be applied at top surface of floor and at both surfaces of wall. The hourly F Ratings and the min required caulk thicknesses are dependent upon a number of parameters, as shown in the following table:

Min Floor or Wall Thkns In.	Nom Pipe or Conduit Diam In.	Max Annular Space In.	Min Caulk Thkns In.	F Rating Hr
2-1/2 (64)	1/2-12 (13-305)	1-3/8 (35)	1/2 (13)	2
2-1/2 (64)	1/2-12 (13-305)	3-1/4 (83)	1 (25)	2
4-1/2 (114)	1/2-6 (13-152)	1-3/8 (35)	1/4 (6) (a)	2
4-1/2 (114)	1/2-12 (13-305)	1-1/4 (32)	1/2 (13)	3
4-1/2 (114)	1/2-20 (13-508)	2 (51)	1 (25)	3
4-1/2 (114)	1/2-20 (13-508)	2 (51)	1 (25)	3
4-1/2 (114)	1/2-12 (13-305)	3-1/4 (83)	1 (25)	3
4-1/2 (114)	22-30 (558-762)	2 (51)	2 (51)	3
5-1/2 (140)	1/2-6 (13-152)	1-3/8 (35)	1 (25) (b)	4

(a)Min 2 in (51 mm) thickness of mineral wool batt insulation or forming material (Item 3A) required in annular space.

(b)Min 1 in. (25 mm) thickness of mineral wool batt insulation required in annular space on both sides of floor or wall assembly. Min 1 in.(25 mm) thickness of caulk to be installed flush with each surface of floor or wall assembly.

3M COMPANY — CP 25WB+ or FB-3000 WT.

(Note - W Rating applies only when FB-3000 WT is used.)

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ELECTRIC UNIT HEATER SCHEDULE														FAN SCHEDULE																																		
MARK	MODEL	CAPACITY (MBH)	KW	EAT (°F)	LAT (°F)	FAN DATA				ELECTRICAL		MOUNTING HEIGHT	REMARKS	MARK	MANUFACTURER	MODEL	CFM	ESP	HP/BHP	RPM	MAX RPM	SONES	ELECTRICAL		WEIGHT	REMARKS																						
						TYPE	CFM	THROW	HP	V	PH			V	PH	EF-1	GREENHECK	G-120-VG	1075	0.71	0.50/0.21	1307	1400	10.2			115	1	50	1,2,3																		
EUH-1	HF1B5103N	11.2	3.3	55	81	PROP	400	12'	-	240	3	9'	1,2,3																																			
EUH-2	HF1B5103N	11.2	3.3	55	81	PROP	400	12'	-	240	3	9'	1,2,3																																			
<div>GENERAL NOTES:</div> <div>A. UNITS BASED ON MARKEL 5100 AND 3420 SERIES.</div> <div>B. EQUIVALENTS: REZNOR, BERKO, INDEECO</div> <div>C. WHERE A REMOTE WALL MOUNTED THERMOSTAT IS INDICATED, PROVIDE 24V THERMOSTAT AND CONTROL TRANSFORMER.</div> <div>REMARKS:</div> <div>1. PROVIDE HANGING BRACKET.</div> <div>2. PROVIDE FACTORY MOUNTED DISCONNECT SWITCH.</div> <div>3. PROVIDE LINE VOLTAGE THERMOSTAT.</div>														<div>GENERAL NOTES:</div> <div>A. PROVIDE DUCT TRANSITIONS FOR ALL FANS</div> <div>B. EXTERIOR FAN HOUSINGS SHALL BE CONSTRUCTED OF ALUMINUM. INTERIOR FAN HOUSINGS SHALL BE GALVANIZED STEEL</div> <div>C. ALL FANS SHALL BE U.L. LISTED</div> <div>D. PROVIDE WITH UNIT MOUNTED DISCONNECT</div> <div>E. EXTERNALLY OR INTERNALLY MOUNTED DISCONNECT SWITCH FURNISHED BY DIVISION 23 AND INSTALLED BY DIVISION 26</div> <div>F. EXTERNALLY MOUNTED STARTER FURNISHED BY DIVISION 23 INSTALLED BY THE DIVISION 26</div> <div>G. ALL FANS SHALL BE CERTIFIED IN ACCORDANCE WITH AMCA</div> <div>H. PROVIDE ALL FANS WITH SPEED CONTROLLERS. MOUNT AT ACCESSIBLE LOCATION ABOVE CEILING.</div> <div>I. EQUIVALENTS BY TWIN CITY, PENN. OR AS LISTED IN THE SPECIFICATIONS</div> <div>REMARKS:</div> <div>1. FAN SHALL BE CONTROLLED BY DDC SYSTEM.</div> <div>2. PROVIDE DISCONNECT SWITCH, NEMA 1, TOGGLE, MOUNTED AND WIRED</div> <div>3. PROVIDE CURB ADAPTER TO REUSE EXISTING CURB</div>																																		
AIR DISTRIBUTION SCHEDULE																																																
MARK	MANUFACTURER	MODEL	PURPOSE	MIN CFM	MAX CFM	FACE SIZE	INLET SIZE	REMARKS																																								
AA	PRICE	ASCD A	SUPPLY	25	100	12x12	6	1,2,3																																								
B	PRICE	ASCD A	SUPPLY	25	100	24x24	8	1,2,3																																								
R	PRICE	APDDR	RETURN	800	1300	24x24	14x14	1,2,4																																								
<div>GENERAL NOTES:</div> <div>A. BASIS OF DESIGN IS PRICE. EQUIVALENTS BY TITUS, KRUEGER, TUTTLE AND BAILEY, NAILOR, OR AS LISTED IN SPECIFICATIONS</div> <div>B. PROVIDE VOLUME DAMPERS AT TAKE-OFF FOR EACH GRILLE</div> <div>C. ALL AIR DISTRIBUTION DEVICES SHALL BE ALUMINUM</div> <div>D. THE PRICE MODELS SCHEDULED HERE ARE BASIS OF DESIGN, INCLUDING GENERATED NOISE. PROPOSED SUBSTITUTIONS WILL BE JUDGED BY THOSE CRITERIA ALSO</div> <div>E. WHERE LOCATED IN HARD CEILINGS, PROVIDE ALUMINUM MOUNT FRAME/PLASTER FRAME FOR HARD CEILING THAT ALLOWS DIFFUSER/GRILLE WITH FLEX CONNECTION TO BE LIFTED OUT OF FRAME TO ACCESS CEILING SPACE. TYPICAL OF ALL HARD CEILING LOCATIONS. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN</div> <div>REMARKS:</div> <div>1. PROVIDE WITH OFF-WHITE ENAMEL FINISH</div> <div>2. PROVIDE WITH TRIM TO MATCH CEILING TYPE. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR CEILINGS</div> <div>3. PROVIDE DIFFUSER/GRILLE WITH ROUND NECK OR PROVIDE SQUARE TO ROUND TRANSITION</div> <div>4. ALL CEILING MOUNTED RETURN GRILLES SHALL BE FULL FACED. NO LAY-IN PANELS ALLOWED</div>																																																
VRF INDOOR UNIT SCHEDULE																																																
MARK	MANUFACTURER	MODEL	STYLE	CFM	TOTAL COOLING (MBH)	SENSIBLE (MBH)	HEATING (MBH)	MCA	MOP	V	PH	REMARKS																																				
IU-1	SAMSUNG	AC036BNHDCH/AA	DUCTED	1000	36.0	25.8	40.1	2	15	230	1																																					
<div>GENERAL NOTES (VRF INDOOR UNITS):</div> <div>A. PROVIDE CONDENSATE PUMP FOR EACH INDOOR UNIT AND POWERED OFF SAME TERMINALS.</div> <div>B. UNITS TO BE TESTED PER AHRI 1230. MECHANICAL CONTRACTOR SHALL PROVIDE ALL REQUIRED DUCT TRANSITIONS FROM DUCTED UNIT FAN OUTLETS.</div> <div>C. PROVIDE AUXILIARY DRAIN PAN WITH FLOAT SWITCH UNDER ALL DUCTED UNITS.</div> <div>D. CAPACITY RATINGS ARE AT INDOOR 64°F-WB/75°F-DB AND OUTDOOR 95°F, AND 68°F INDOOR AND 17°F OUTDOOR. CAPACITIES INCLUDE EFFECTS OF LINE LENGTHS AND CONNECTED DIVERSITY. RATINGS ASSUME SIMULTANEOUS HEATING AND COOLING OPERATION.</div> <div>E. COORDINATE LOCATION OF UNITS WITH ELECTRICAL TRADE TO AVOID CONFLICTS WITH LIGHTS AND OTHER DEVICES.</div> <div>F. SELECTIONS BASED ON SAMSUNG EQUIPMENT. EQUIVALENTS BY DAIKIN, CARRIER, OR AS LISTED IN THE SPECIFICATION.</div> <div>G. THE MECHANICAL CONTRACTOR SHALL SUBMIT A CERTIFICATION OF TRAINING AND QUALIFICATIONS FOR INSTALLATION OF THE VRF SYSTEM BY THE VRF EQUIPMENT MANUFACTURER.</div> <div>H. PROVIDE WIRED CONTROLLER WITH LCD SCREEN AND SET POINT ADJUSTMENT.</div> <div>I. COORDINATE REQUIREMENT FOR SHIELDED CABLE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.</div>																																																
VRF OUTDOOR HEAT PUMP UNIT SCHEDULE																																																
MARK	MANUFACTURER	MODEL NUMBER	TOTAL COOLING (MBH)	HEATING CAPACITY (MBH)	COMPRESSOR/ RLA	FAN/FLA	ELECTRICAL DATA				V/PH	WEIGHT	REMARKS																																			
							MODULE 1	EFFICIENCY																																								
VRF-1	SAMSUNG	AC036BXADCH/AA	36.0	40.0			1/14.7	2/1.25	25	35			19.0	8.4	230/1	190																																
<div>GENERAL NOTES:</div> <div>A. SELECTIONS BASED ON SAMSUNG EQUIPMENT. EQUALS BY DAIKIN, CARRIER, OR AS LISTED IN THE SPECIFICATION.</div> <div>B. PROVIDE ALL REQUIRED ACCESSORIES FOR A COMPLETE WORKING SYSTEM.</div> <div>C. UNITS TO BE RATED AND CERTIFIED IN ACCORDANCE WITH AHRI 1230.</div> <div>D. CAPACITY RATINGS ARE AT INDOOR 64°F-WB/75°F-DB AND OUTDOOR 95°F, AND 68°F INDOOR AND 17°F OUTDOOR. CAPACITIES INCLUDE EFFECTS OF LINE LENGTHS AND CONNECTED DIVERSITY. PROVIDE OUTDOOR TWINNING KITS AS REQUIRED.</div> <div>E. PROVIDE CENTRAL CONTROLLER WITH LCD SCREEN AND BACNET INTERFACE FOR EACH.</div> <div>F. PROVIDE HALL GUARD KITS FOR OUTDOOR UNITS.</div> <div>G. REFRIGERANT CHARGE LISTED IN THE FACTORY CHARGE PLUS THAT ESTIMATED FOR THE DISTRIBUTION PIPING CONNECTED. PROVIDE REFRIGERANT CHARGE FOR WHOLE SYSTEM WITH SUBMITTALS/SHOP DRAWINGS TO SHOW COMPLIANCE WITH MAXIMUM SYSTEM CHARGES LISTED BELOW.</div>																																																
VERTICAL PACKAGE AC UNIT SCHEDULE																																																
DEM	MFG	MODEL	OUTSIDE AIR (CFM)	SUPPLY FAN				COOLING COIL					COMPRESSOR	GAS HEATING			HOT GAS REHEAT			ENERGY RECOVERY VENTILATOR							ELECTRICAL			REMARKS																		
				CFM	ESP IN. WG	QTY	HP	EER	EDB (°F)	EWB (°F)	LDB (°F)	LWB (°F)	TOTAL (MBH)	SENSIBLE (MBH)	QTY	RLA	INPUT (MBH)	EDB (°F)	LDB (°F)	OUTPUT (MBH)	SENSIBLE (MBH)	LATENT (MBH)	SUM DB	SUM WB	WIN DB	CFM	HR SENSIBLE (MBH)	HR LATENT (MBH)	HR WINTER (MBH)								EFF. WIN/SUM	V	PH	MCA	MFS							
VPAC-1	BARD	W42G4DBXC RNXXXH	450	1300	0.3	1	0.75	11.0	80.0	67.0	58.8	57.9	43.7	34.1	1	16.0	75.0	60.0	103.8	61.5	1.9	17.5	75	62	70	450	5.83	1.58	22.4	77/60	230	3	23.4	30														
VPAC-2	BARD	W42G4DBXC RNXXXH	450	1300	0.3	1	0.75	11.0	80.0	67.0	58.8	57.9	43.7	34.1	1	16.0	75.0	60.0	103.8	61.5	1.9	17.5	75	62	70	450	5.83	1.58	22.4	77/60	230	3	23.4	30														
VPAC-3	BARD	W42G4DBXC RNXXXH	450	1300	0.3	1	0.75	11.0	80.0	67.0	58.8	57.9	43.7	34.1	1	16.0	75.0	60.0	103.8	61.5	1.9	17.5	75	62	70	450	5.83	1.58	22.4	77/60	230	3	23.4	30														
VPAC-4	BARD	W42G4DBXC RNXXXH	450	1300	0.3	1	0.75	11.0	80.0	67.0	58.8	57.9	43.7	34.1	1	16.0	75.0	60.0	103.8	61.5	1.9	17.5	75	62	70	450	5.83	1.58	22.4	77/60	230	3	23.4	30														
VPAC-5	BARD	W42G4DBXC RNXXXH	450	1300	0.3	1	0.75	11.0	80.0	67.0	58.8	57.9	43.7	34.1	1	16.0	75.0	60.0	103.8	61.5	1.9	17.5	75	62	70	450	5.83	1.58	22.4	77/60	230	3	23.4	30														
VPAC-6	BARD	W42G4DBXC RNXXXH	450	1300	0.3	1	0.75	11.0	80.0	67.0	58.8	57.9	43.7	34.1	1	16.0	75.0	60.0	103.8	61.5	1.9	17.5	75	62	70	450	5.83	1.58	22.4	77/60	230	3	23.4	30														
VPAC-7	BARD	W42G4DBXC RNXXXH	450	1300	0.3	1	0.75	11.0	80.0	67.0	58.8	57.9	43.7	34.1	1	16.0	75.0	60.0	103.8	61.5	1.9	17.5	75	62	70	450	5.83	1.58	22.4	77/60	230	3	23.4	30														
VPAC-8	BARD	W42G4DBXC RNXXXH	450	1300	0.3	1	0.75	11.0	80.0	67.0	58.8	57.9	43.7	34.1	1	16.0	75.0	60.0	103.8	61.5	1.9	17.5	75	62	70	450	5.83	1.58	22.4	77/60	230	3	23.4	30														
VPAC-9	BARD	W42G4DBXC RNXXXH	450	1300	0.3	1	0.75	11.0	80.0	67.0	58.8	57.9	43.7	34.1	1	16.0	75.0	60.0	103.8	61.5	1.9	17.5	75	62	70	450	5.83	1.58	22.4	77/60	230	3	23.4	30														
<div>GENERAL NOTES:</div> <div>A. BASIS OF DESIGN IS BARD. MARVAIR AND MODINE WOULD BE ACCEPTABLE MANUFACTURERS IF THEY CAN MEET THE SPECIFICATIONS AND PROJECT REQUIREMENTS.</div> <div>B. UNITS SHALL BE EXTERIOR MOUNTED WITH THROUGH THE WALL DIFFUSER AND RETURN GRILLE. MANUFACTURER SHALL PROVIDE THE GRILLES.</div> <div>C. PROVIDE ACTIVE DEHUMIDIFICATION WITH HOT GAS REHEAT</div> <div>D. PROVIDE ENERGY RECOVERY VENTILATOR OPTION</div> <div>E. PERFORMANCE DATA BASED ON 95°F/75°F OUTSIDE AIR AND 75°F/62°F RETURN AIR IN SUMMER AND 10°F OUTSIDE AIR AND 70°F RETURN AIR IN WINTER.</div> <div>F. PROVIDE 2 INCH MERV 13 FILTERS</div> <div>G. PROVIDE GAS HEAT</div> <div>H. PROVIDE COMBINATION PROGRAMMABLE TEMPERATURE/HUMIDITY SENSOR WITH BACNET INTERFACE.</div> <div>I. PROVIDE LOW AMBIENT CONTROL AND COMPRESSOR SAFETIES</div> <div>J. PROVIDE EC FAN MOTOR</div> <div>K. PROVIDE FACTORY CIRCUIT BREAKER DISCONNECT</div> <div>L. UNITS SHALL BE AHRI 380 CERTIFIED</div> <div>M. UNITS SHALL BE UL OR ETL LISTED</div> <div>N. UNITS SHALL USE R-410A</div> <div>O. OWNER TO SELECT COLOR FROM STANDARD RANGE</div> <div>P. PROVIDE FACTORY STARTUP</div> <div>Q. CONTRACTOR SHALL PROVIDE FINAL GAS REGULATOR AT EACH UNIT. MAINS PRESSURE IS 5 PSI.</div>																																																

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NORTH CAROLINA
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ENGINEER
SEAL
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JAMES W. CAMPBELL

10/02/2023

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Smith Sinnett Architecture, P.A. 2023

THIS DRAWING IS FORMATED TO BE PRINTED ON A 34" X 36" SHEET

Roanoke Rapids City Schools
Chaloner MS HVAC Upgrades

2100 Virginia Ave
Roanoke Rapids, NC 27870

ID	DATE	DESCRIPTION

DRAWN BY: JAV
CHECKED BY: SWC

MECHANICAL
SCHEDULES

M701

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DEMOLITION NOTES	
1.	NOTIFY THE OWNER, IN WRITING, AT LEAST 7 DAYS IN ADVANCE OF ALL REQUIRED SHUTDOWNS ELECTRICAL UTILITIES. UPON WRITTEN RECEIPT OF APPROVAL FROM OWNER, SHUTDOWNS SHALL BE PERFORMED AS DIRECTED BY THE OWNER AND SHALL BE CONDUCTED AT NO ADDITIONAL CONTRACT COST. AT THE COMPLETION OF EACH SHUT DOWN, ALL SERVICES SHALL BE RESTORED SO THAT NORMAL OPERATION OF ALL UTILITIES CAN RESUME.
2.	WHEN WORKING IN AND AROUND THE EXISTING BUILDING, EXTREME CARE SHALL BE EXERCISED IN REGARDS TO PROTECTION OF THE EXISTING STRUCTURE, MECHANICAL AND ELECTRICAL SERVICES WHICH WILL REMAIN. REPAIR, REPLACE OR RESTORE TO THE SATISFACTION OF THE OWNER/ARCHITECT/ENGINEER ALL EXISTING WORK DAMAGED IN THE PERFORMANCE OF DEMOLITION AND/OR NEW WORK.
3.	ALL EXISTING WIRING, EQUIPMENT, CONDUITS AND MATERIALS NOT REQUIRED FOR RE-USE OR RE-INSTALLATION (SHOWN OR OTHERWISE) SHALL BE REMOVED. ALL EXISTING MATERIALS AND EQUIPMENT WHICH ARE REMOVED AND DESIRED BY THE OWNER, OR ARE INDICATED TO REMAIN AS THE PROPERTY OF THE OWNER, SHALL BE DELIVERED TO THE OWNER ON THE PREMISES BY THE CONTRACTOR WHERE DIRECTED BY THE ARCHITECT. ALL OTHER MATERIALS AND EQUIPMENT WHICH ARE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED BY THE CONTRACTOR FROM THE PREMISES.
4.	EXISTING CONDITIONS (PRESENCE AND LOCATION OF PANELBOARDS, LIGHTING FIXTURES, RECEPTACLES, EQUIPMENT, MATERIALS AND CIRCUITING) INDICATED ARE BASED ON INFORMATION OBTAINED FROM AVAILABLE RECORD DRAWINGS AND FIELD SURVEYS AND ARE NOT WARRANTED TO BE COMPLETE OR CORRECT. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF ALL CONDUITS, EQUIPMENT AND MATERIALS IN THE FIELD PRIOR TO STARTING ALL WORK.
5.	EXISTING EQUIPMENT SIZES NOTED ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY AND ARE NOT WARRANTED TO BE CORRECT. CONTRACTOR SHALL VERIFY ALL SIZES IN THE FIELD IF EQUIPMENT IS IN PROJECT SCOPE.
6.	WHEN EXISTING MECHANICAL AND ELECTRICAL WORK IS REMOVED, ALL CONDUITS, WIRING AND MATERIALS SHALL BE REMOVED TO A POINT BELOW FINISHED FLOORS OR BEHIND FINISHED WALLS AND CAPPED. SUCH POINTS SHALL BE FAR ENOUGH BEHIND FINISHED SURFACES TO ALLOW FOR THE INSTALLATION OF THE NORMAL THICKNESS OF FINISHED MATERIAL.
7.	EXISTING MECHANICAL AND ELECTRICAL EQUIPMENT, CONDUIT, WIRING, DEVICES, AND MATERIALS AFFECTED BY DEMOLITION OR NEW WORK INSTALLATION AND REQUIRED TO REMAIN IN SERVICE SHALL BE REINSTALLED OR SUPPORTED AS REQUIRED IN ACCORDANCE WITH NEW WORK SPECIFICATIONS. ALL WORK SHALL BE COMPLETED TO THE SATISFACTION OF THE OWNER.
8.	IN GENERAL, ON DEMOLITION DRAWINGS, ALL EQUIPMENT AND MATERIALS SHOWN "LIGHT" ARE EXISTING TO REMAIN AND ALL EQUIPMENT AND MATERIALS SHOWN AS "HEAVY AND DASHED" ARE EXISTING TO BE DEMOLISHED.
9.	ENSURE THAT ALL ELECTRICAL WORK IS DONE DE-ENERGIZED. SPECIFICALLY WHERE ELECTRICAL EQUIPMENT IS OPENED EXPOSING LIVE PARTS, BREAKERS ARE REMOVED OR INSTALLED OR WHERE ELECTRICAL CONNECTIONS ARE MODIFIED. ALL POWER AT THE PANEL OR ENCLOSURE SHALL BE DE-ENERGIZED AT ITS SOURCE, PRIOR TO WORK BEING DONE.
10.	ALL TESTING, TROUBLESHOOTING AND VERIFICATION OF DEENERGIZATION IS TO BE DONE IN ACCORDANCE WITH NFPA 70E INCLUDING ESTABLISHING, ISOLATING IF REQUIRED, SHOCK PROTECTIVE AND ARC FLASH PROTECTIVE APPROACH BOUNDARIES AND WEARING PERSONAL PROTECTIVE EQUIPMENT APPROPRIATE FOR THE HAZARD.
11.	PRIOR TO THE REMOVAL OF A CIRCUIT FROM A PANELBOARD, THE CONTRACTOR SHALL VERIFY THAT NO EXISTING LOADS REMAIN ON THAT CIRCUIT. IF UNEXPECTED LOADS REMAIN ON THE CIRCUIT, NOTIFY EOR FOR DIRECTIONS TO PROCEED. ONCE CIRCUITS HAVE BEEN VERIFIED TO BE UNDER NO LOAD, BREAKERS IN THE CORRESPONDING PANELBOARD SHALL BE FLIPPED TO THE "OFF" POSITION AND MARKED AS SPARE AND READY FOR FUTURE WORK. ALL CONDUIT AND WIRING SHALL BE REMOVED BACK TO SOURCE.
12.	UPDATE PANEL SCHEDULES TO REFLECT NEW AND CHANGED LOAD. ALL PANEL SCHEDULES SHALL BE COMPUTER GENERATED.
13.	EXISTING FIRE ALARM SYSTEM SHALL BE MAINTAINED AND OPERABLE DURING DEMOLITION. CONTRACTOR SHALL TEMP EXISTING DEVICES TO ALLOW DEMOLITION OF EXISTING CONDUIT AND WIRING.

GENERAL NOTES	
1.	THE ELECTRICAL CONTRACTOR SHALL COORDINATE ANY AND ALL WORK WITH OTHER TRADES INVOLVED IN THE PROJECT, PRIOR TO THE INSTALLATION OF HIS EQUIPMENT SO AS TO AVOID CONFLICTS DURING CONSTRUCTION AND ALLOW FOR OPTIMUM MAINTENANCE AND WORKING SPACE.
2.	ALL LIGHT FIXTURES SHALL BE SUPPORTED INDEPENDENTLY OF THE SUSPENDED CEILING SYSTEM. REFER TO THE SPECIFICATIONS FOR MORE DETAILED INFORMATION.
3.	USE OF THE CONDUIT SYSTEM FOR EQUIPMENT GROUNDING SHALL NOT BE ACCEPTABLE. A SEPARATE GREEN GROUND WIRE SHALL RUN WITH THE CIRCUIT CONDUCTORS IN EACH CIRCUIT.
4.	ALL FUSES, DISCONNECT SWITCHES, AND BREAKER SIZES SHOWN FOR MECHANICAL EQUIPMENT SHALL BE VERIFIED BEFORE THE PURCHASE OR INSTALLATION OF SAID EQUIPMENT, WITH THE EQUIPMENT SUPPLIER AND MECHANICAL CONTRACTOR.
5.	ALL WORK AND MATERIAL SHALL BE PROVIDED IN ACCORDANCE WITH STATE, LOCAL AND NATIONAL CODES AND ORDINANCES.
6.	THE NEW FIRE ALARM EQUIPMENT SHOWN SHALL BE PROVIDED IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS. PROVIDE ALL WIRING AS REQUIRED FOR A COMPLETE SYSTEM.
7.	THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL CEILING TYPES AND FINISHES BEFORE PURCHASE OF ANY LIGHT FIXTURES SO THAT THE PROPER TRIM WILL BE PROVIDED FOR THE CEILING TO BE INSTALLED. ANY DIFFERENCES SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
8.	EACH CONTRACTOR SHALL PROVIDE HIS OWN SUPPORT OF ALL DEVICES AND EQUIPMENT PROVIDED BY HIM AND SHALL SUPPORT SUCH EQUIPMENT PER APPROVED GOVERNING CODES OR PER APPROVAL OF THE ENGINEER. UNACCEPTABLE WORKMANSHIP OR MATERIALS SHALL BE REPLACED AT THE REQUEST OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
9.	ALL JUNCTION BOXES AND CONDUIT RUNS (WITH OR WITHOUT WIRES) SHALL BE COLOR CODED WITH PAINT, IN ACCORDANCE WITH ELECTRICAL GENERAL PROVISIONS.
10.	ALL WIRE AND CONDUIT SIZES ARE BASED ON 75°C THHN OR THWN WIRE UNLESS OTHERWISE NOTED.
11.	THE LOCATION OF ALL WALL MOUNTED DEVICES, INCLUDING MOUNTING HEIGHTS, SHALL BE FIELD VERIFIED WITH THE ARCHITECT PRIOR TO INSTALLATION.
12.	WHERE MULTIPLE SWITCHES ARE SHOWN IN THE SAME LOCATION THEY SHALL BE GANGED TOGETHER IN ONE MULTIPLE GANG BOX WITH MATCHING COVER AND PARTITION (IF REQUIRED). THE ELECTRICAL CONTRACTOR SHALL LOOK AT BOTH POWER AND LIGHTING PLAN TO DETERMINE WHICH SWITCH IS APPLICABLE.
13.	WHERE ELECTRICAL EQUIPMENT PENETRATES EXTERIOR WALLS OR THE ROOF, THEY SHALL BE PROPERLY SEALED WITH METHODS APPROVED BY THE ENGINEER. SUBMIT DETAIL OF PROPOSED SEALING METHODS.
14.	THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL CHAIN HUNG FIXTURES LOCATED IN MECHANICAL OR OTHER SPACES WITH OTHER TRADES, SO AS NOT TO CONFLICT WITH OTHER EQUIPMENT.
15.	WHERE CONDUIT OR OUTLET BOXES CANNOT BE INSTALLED IN EXISTING WALLS FOR NEW DEVICES, THEN PROVIDE AND INSTALL SURFACE MOUNTED WIREMOLD RACEWAYS. CONFIRM ALL WIREMOLD WITH ARCHITECT PRIOR TO INSTALLATION.
16.	OUTLET BOXES ON OPPOSITE SIDES OF THE FIRE RESISTANT WALL OR SHAFT ENCLOSURE RATED TWO HOURS OR LESS SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24" AS REQUIRED BY NCSBC VOL. 1 PARAGRAPH 705.4.3.
17.	ELECTRICAL CONTRACTOR SHALL PROVIDE ALL ACCESS PANELS AS REQUIRED FOR ELECTRICAL CODE COMPLIANCE AND TO ACCESS ANY INSTALLATION THAT WILL REQUIRE FUTURE MAINTENANCE. THESE DOORS SHALL BE 20" X 20". EACH ROOM WITH A DRYWALL CEILING SHALL HAVE A MINIMUM OF ONE ACCESS DOOR PROVIDED BY THE ELECTRICAL CONTRACTOR. THE DRYWALL SUBCONTRACTOR WILL PROVIDE THE REQUIRED FRAMED OPENING AND INSTALL THE ACCESS DOORS.
18.	CONDUCTORS FOR BRANCH CIRCUITS SHALL BE SIZED TO PREVENT VOLTAGE DROP EXCEEDING 3% AT THE FARTHEST OUTLET OF POWER, HEATING AND LIGHTING LOADS, OR ANY COMBINATION OF SUCH LOADS. THE MAXIMUM TOTAL VOLTAGE DROP ON BOTH FEEDERS AND BRANCH CIRCUITS TO THE FARTHEST OUTLET SHALL NOT EXCEED 5%. A. WHERE THE CONDUCTOR LENGTH FROM THE PANEL TO THE FIRST OUTLET ON A 120V CIRCUIT EXCEED 50'-0" THE BRANCH CIRCUIT CONDUCTORS FROM THE PANEL TO THE FIRST OUTLET SHALL NOT BE SMALLER THAN #10AWG. INCREASE THE BRANCH CIRCUIT CONDUCTOR SIZE AN ADDITIONAL WIRE SIZE FOR EACH ADDITIONAL 125' FOR THE ENTIRE CIRCUIT. THE GROUND CONDUCTOR SIZE SHALL BE INCREASED PROPORTIONALLY TO THE INCREASED PHASE CONDUCTORS AS PER NEC 2011 250.122(B). B. WHERE THE CONDUCTOR LENGTH FROM THE PANEL TO THE FIRST OUTLET ON A 277V CIRCUIT EXCEEDS 125'-0", THE BRANCH CIRCUIT CONDUCTORS FROM THE PANEL TO THE FIRST OUTLET SHALL NOT BE SMALLER THAN #10 AWG. CONDUCTOR SIZE OF REMAINING BRANCH CIRCUIT SHALL INCREASE AS NEEDED TO MEET ABOVE VOLTAGE DROP LIMITATIONS. THE GROUND CONDUCTOR SIZE SHALL BE INCREASED PROPORTIONALLY TO THE INCREASED PHASE CONDUCTORS AS PER NEC 2017 250.122(B).
19.	ELECTRICAL CONTRACTOR SHALL VISIT SITE PRIOR TO BID. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL ELECTRICAL WORK (IE RELOCATING/MOVING CONDUITS/WIRING, LIGHT FIXTURES, ETC.) TO ACCOMMODATE THE REPLACEMENT OF MECHANICAL EQUIPMENT AND PIPING. CLOSE COORDINATION WITH MECHANICAL CONTRACTOR IS REQUIRED.

ABBREVIATION	DEFINITION
A	AMPS, AMPERE, AMPERAGE
AC	AC OR COUNTER
A/C	ALTERNATING CURRENT
ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AI	AMPERE INTERRUPTING CURRENT
AL	ALUMINUM
ANSI	AMERICAN NATIONAL STANDARD INSTITUTE
ATSC	AUTOMATIC TRANSFER SWITCH CONTROL
ATS	AUTOMATIC TRANSFER SWITCH
AV	AUDIO/VISUAL
AWG	AMERICAN WIRE GAUGE
BAS	BUILDING AUTOMATION SYSTEM
BFC	BELOW FINISHED CEILING
C	CONDUIT
CB	CIRCUIT BREAKER
CB	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CT	CURRENT TRANSFORMER
CU	COOPER
D	DIMMING OR DIMMER
DB	DISTRIBUTION BOARD
DC	DIRECT CURRENT
DL	DAY-LIGHTING
DISC	DISCONNECT SWITCH
E	EMERGENCY
ECB	ENCLOSED CIRCUIT BREAKER
EW	ELECTRIC WATER COOLER
EX	EXISTING
FUT	FUTURE
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FATC	FIRE ALARM TERMINAL CABINET
FDR	FEEDER
GAA	GENERATOR ALARM ANNUNCIATOR
GAP	GENERATOR ALARM PANEL
GEN	GENERATOR
GEC	GROUNDING ELECTRODE CONDUCTOR
GFI	GROUND FAULT INTERRUPTER
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFEP	GROUND FAULT EQUIPMENT PROTECTION
GFP	GROUND FAULT PROTECTION
GND	GROUND
GRS	GALVANIZED RIGID STEEL
HH	HAND HOLE
HOA	HAND-OFF AUTOMATIC
HP	HORSEPOWER
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
IG	ISOLATED GROUND
KCMIL	THOUSAND CIRCULAR MILS
KV	KILOVOLT
KVA	KILOVOLT AMPS
KW	KILOWATT
KWH	KILOWATT HOURS
LC	LIGHTING CONTACTOR
LS	LOUD SPEAKER
LSIG	LONG TIME, SHORT TIME, INSTANTANEOUS AND GROUND FAULT PROTECTION
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MIN	MINIMUM
MH	MAN HOLE
MLO	MAIN LUGS ONLY
MTS	MANUAL TRANSFER SWITCH
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
N or NEUT	NEUTRAL
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
O/H	OVER HEAD
P	POLE
PA	PUBLIC ADDRESS
PB	PULL BOX
PC	PHOTOCELL
PH	PHASE POTENTIAL TRANSFORMER
PT	POTENTIAL TRANSFORMER
RC	RECEPTACLE CONTACTOR
RSC	RIGID STEEL CONDUIT
SEC	SECURITY
SPD	SURGE PROTECTIVE DEVICE
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TC	TIME CLOCK
TEMP	TEMPORARY
TGB	TECHNOLOGY GROUND BAR
TGMB	TECHNOLOGY MAIN GROUND BAR
TTB	TELEPHONE TERMINAL BOARD
TV	TELEVISION
TYP.	TYPICAL
U/C	UNDER COUNTER
U/G	UNDERGROUND
UGE	UNDERGROUND ELECTRIC
UL	UNDERWRITERS' LABORATORIES
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTABLE POWER SUPPLY
V	VOLTS, VOLTAGE
VFD	VARIABLE FREQUENCY DRIVE
WG	WIRE GUARD
WP	WEATHERPROOF
XFER	TRANSFER
XFMR	TRANSFORMER

ABBREVIATIONS

SYMBOL	DESCRIPTION	REMARKS
	LUMINAIRE - LETTER DESIGNATES TYPE	
	SINGLE POLE TOGGLE SWITCH - 48" ABOVE FINISHED FLOOR TO TOP OF OUTLET, UNLESS OTHERWISE NOTED.	
	DUPLEX GROUNDING TYPE RECEPTACLE - AT 16" ABOVE FINISHED FLOOR TO BOTTOM OF OUTLET, UNLESS OTHERWISE NOTED	HUBBELL 5362-X WITH 97101 COVER
	DUPLEX RECEPTACLE - GROUND FAULT INTERRUPTION TYPE - INSTALL AT 16" ABOVE FINISHED FLOOR TO BOTTOM OF OUTLET, UNLESS OTHERWISE NOTED.	HUBBELL GF-5362-X WITH STAINLESS STEEL S26 WALLPLATE
	WEATHERPROOF DUPLEX GROUNDING TYPE RECEPTACLE - +16" ABOVE GRADE TO BOTTOM OF OUTLET BOX, UNLESS OTHERWISE NOTED.	HUBBELL GF-5362-X WITH TAYMAC HEAVY DUTY IN-USE COVER
	FIRE ALARM DUCT SMOKE DETECTOR AND SAMPLING TUBE	
	120/208 VOLT PANELBOARD WITH NEUTRAL AND GROUND BUS ACCESSORIES.	
	277/480 VOLT PANELBOARD WITH NEUTRAL, AND GROUND BUS ACCESSORIES.	
	SURGE PROTECTIVE DEVICE	
	DRY TYPE STEP DOWN TRANSFORMER 480-120/208 3 PHASE.	
	DISCONNECT SWITCH, HEAVY DUTY	
	WIRING AND CONDUIT INSTALLED CONCEALED IN WALL SPACE OR ABOVE FINISHED CEILING	
	UNSWITCHED WIRING AND CONDUIT LEG ON LIGHTING PLANS. UNDER FLOOR WIRING AND CONDUIT ON POWER PLANS. UNDER GROUND WIRING AND CONDUIT ON SITE PLANS.	
	HOME RUN CIRCUIT TO PANELBOARD	

ELECTRICAL ENERGY FORM

ELECTRICAL SYSTEM AND EQUIPMENT

METHOD OF COMPLIANCE:

ENERGY CODE: PRESCRIPTIVE X PERFORMANCE
ASHRAE 90.1: PRESCRIPTIVE PERFORMANCE

LIGHTING SCHEDULE

Lamp type required in fixture - See Fixture Schedule.
Number of lamps in fixture - See Fixture Schedule.
Ballast type used in the fixture - See Specifications.
Number of ballasts in fixture - See Specifications.
Total wattage per fixture - Varies - See Fixture Schedule
Total interior wattage specified versus allowed: 23646 watts versus 28588 watts (whole building)
Total exterior wattage specified versus allowed: 2056 watts versus 7793 watts

ADDITIONAL PRESCRIPTIVE COMPLIANCE

 X 406.2 More Efficient HVAC Performance
 X 406.3 Reduced Lighting Power Density
 406.4 Enhanced Lighting Controls
 406.5 On-Site Supply of Renewable Energy
 406.6 Provision of Dedicated Outdoor HVAC Air System
 406.7 High Efficiency Service Water Heating

DESIGNER STATEMENT:

To the best of my knowledge and belief, the design of this building complies with the electrical system and equipment requirements of the 2018 North Carolina State Building Code, Energy Conservation Code.

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919-790-9969

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10/02/2023

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Roanoke Rapids City Schools
Chaloner MS HVAC Upgrades

2100 Virginia Ave
Roanoke Rapids, NC 27870

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DRAWN BY: TWB
CHECKED BY: JTB

LEAD SHEET

E001

SHEET INDEX - ELECTRICAL			
Sheet Number	Sheet Name	Current Revision	Current Revision Date
E001	LEAD SHEET		
E100	DEMOLITION PLAN		
E101	POWER PLAN		
E401	RISER		
E402	PANEL SCHEDULES		
E501	DETAILS		
E502	DETAILS		

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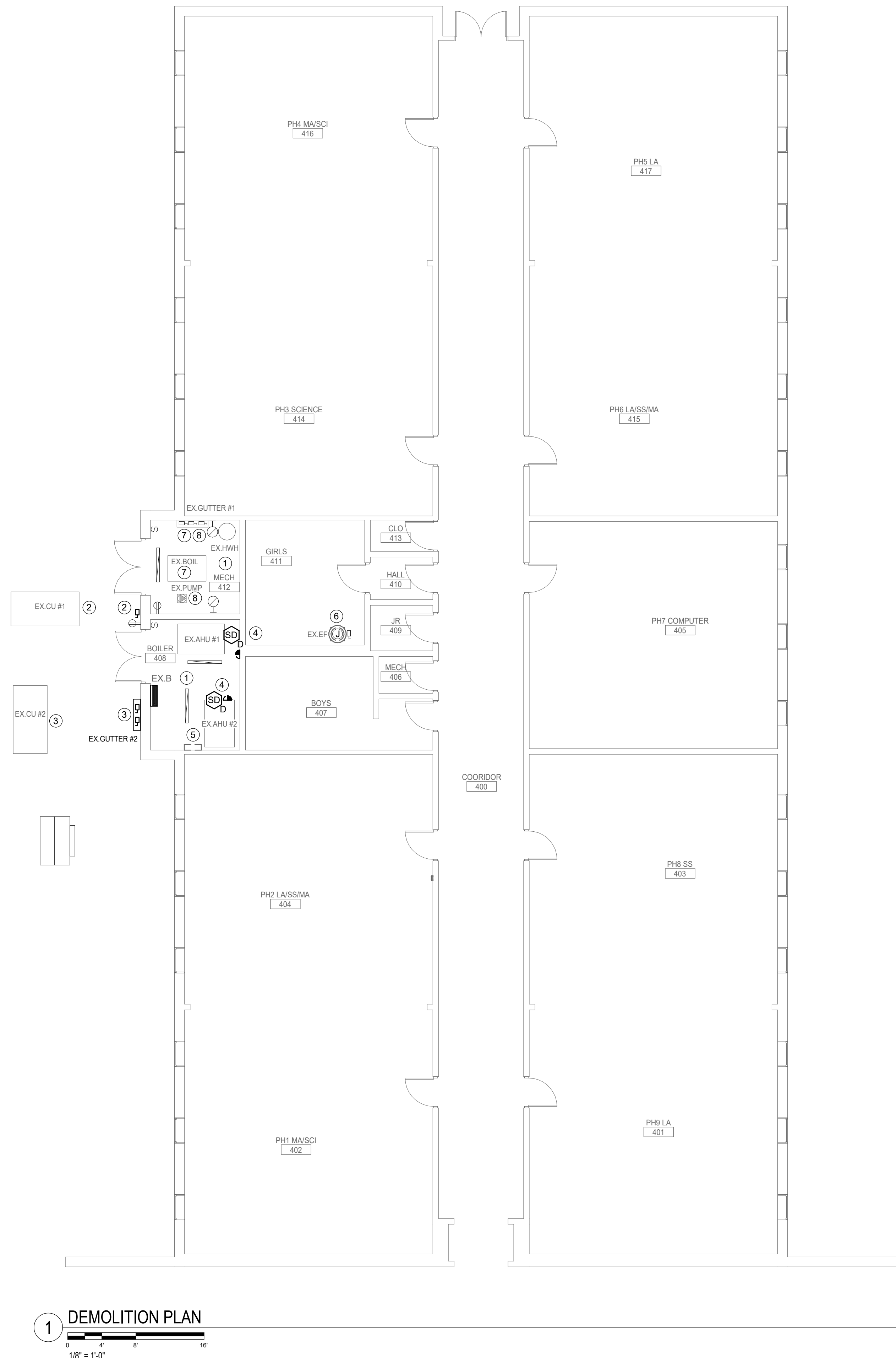
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DRAWN BY:	TWE
CHECKED BY:	JTB

DEMOLITION PLAN

E100



GENERAL NOTES

- A. REFER TO ELECTRICAL LEAD SHEET E001 FOR SYMBOLS, ABBREVIATIONS AND NOTES.
- B. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ANY AND ALL WORK WITH OWNER, PRIOR TO INSTALLATION OF THE NEW EQUIPMENT, SO TO AVOID CONFLICTS DURING CONSTRUCTION AND TO ALLOW FOR OPTIMUM MAINTENANCE AND WORKING SPACE.
- C. CONDUIT/WIRE ROUTING SHOWN IS FOR INFORMATIONAL PURPOSES ONLY, FOR THE CLARIFICATION OF SCOPE. EXACT EXISTING ROUTING OR NEW INSTALLATION SHALL BE FIELD VERIFIED.
- D. REFER TO RISER FOR ALL CONDUIT/WIRE SIZES.

KEY NOTES

1. EXISTING LIGHTING FIXTURES, LIGHTING SWITCHES, ELECTRICAL DEVICES AND EQUIPMENT SHOWN ARE TO REMAIN UNLESS OTHERWISE NOTED.
2. DISCONNECT AND REMOVE BRANCH CIRCUIT AT OUTDOOR SPLIT SYSTEM CONDENSING UNIT AND INDOOR FAN UNIT #1 ORIGINATING FROM EX PANEL "B". DISCONNECT AND REMOVE SAFETY SWITCHES, AND CONDUIT/WIRE. SEAL ALL PENETRATIONS. UPDATE SCHEDULE TO REFLECT BRANCH CIRCUIT AS A SPARE.
3. DISCONNECT AND REMOVE BRANCH CIRCUIT AT OUTDOOR SPLIT SYSTEM CONDENSING UNIT AND INDOOR FAN UNIT #2 ORIGINATING FROM EX PANEL "B". DISCONNECT AND REMOVE DISCONNECT SWITCHES, AND CONDUIT/WIRE. REMOVE WIREWAY. SEAL ALL PENETRATIONS. UPDATE SCHEDULE TO REFLECT BRANCH CIRCUIT AS A SPARE.
4. DISCONNECT AND REMOVE DUCT MOUNTED DUCT MOUNTED SMOKE DETECTOR. DISCONNECT AND REMOVE DETECTOR AND TEST SWITCH AND CONDUIT/WIRE. SEAL ALL PENETRATIONS. UPDATE FIRE ALARM SYSTEM TO REFLECT INITIATING CIRCUIT AS A SPARE.
5. DISCONNECT AND REMOVE BRANCH CIRCUIT TO BMS CONTROLS, ORIGINATING FROM EX PANEL "A". DISCONNECT AND REMOVE CONDUIT/WIRE. SEAL ALL PENETRATIONS. UPDATE SCHEDULE TO REFLECT BRANCH CIRCUIT AS A SPARE.
6. DISCONNECT AND MAKE SAFE EXHAUST FAN BRANCH CIRCUIT ORIGINATING FROM EXISTING PANEL "B". FOR RECONNECTION TO NEW EXHAUST FAN.
7. DISCONNECT BOILER BURNER MOTOR BRANCH CIRCUIT ORIGINATING FROM SAFETY SWITCH AND GUTTER, ORIGINATING FROM EXISTING PANEL "B". REMOVE WIRING FROM WITHIN CONDUIT. ABANDON CONDUIT IN PLACE.
8. DISCONNECT BOILER CIRCULATOR PUMP BRANCH CIRCUIT ORIGINATING FROM SAFETY SWITCH AND GUTTER, ORIGINATING FROM EXISTING PANEL "B". REMOVE WIRING FROM WITHIN CONDUIT. ABANDON CONDUIT IN PLACE.

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Roanoke Rapids City Schools
Chaloner MS HVAC Upgrades

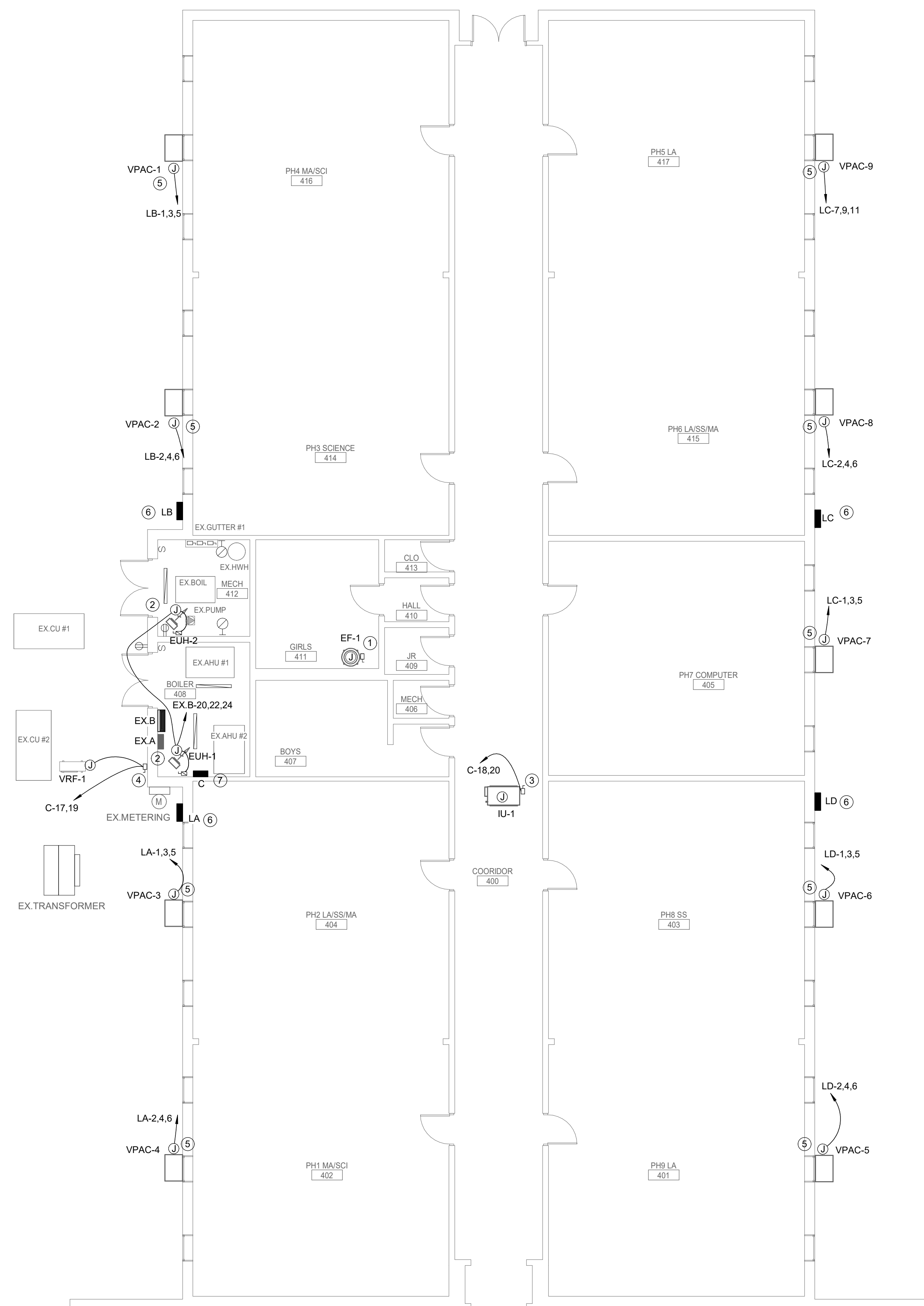
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DRAWN BY:	TW
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POWER PLAN

E101



GENERAL NOTES

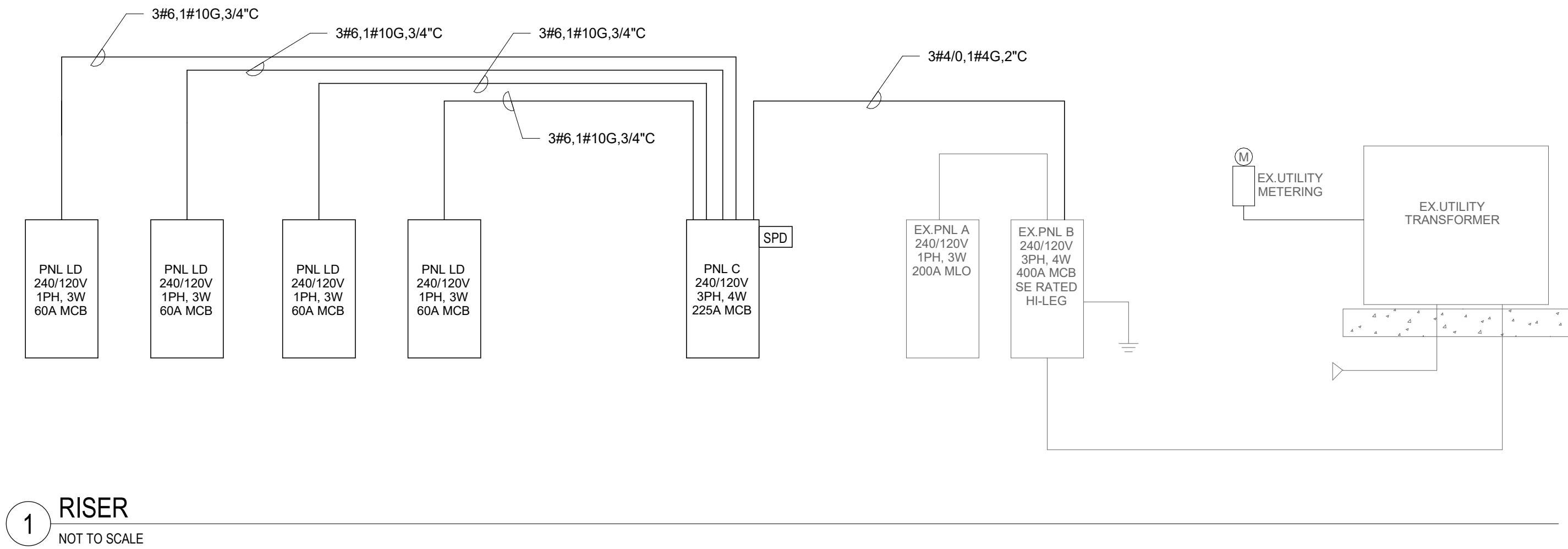
- A. REFER TO ELECTRICAL LEAD SHEET E001 FOR SYMBOLS, ABBREVIATIONS AND NOTES.
- B. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ANY AND ALL WORK WITH OWNER, PRIOR TO INSTALLATION OF THE NEW EQUIPMENT, SO TO AVOID CONFLICTS DURING CONSTRUCTION AND TO ALLOW FOR OPTIMUM MAINTENANCE AND WORKING SPACE.
- C. CONDUIT/WIRE ROUTING SHOWN IS FOR INFORMATIONAL PURPOSES ONLY, FOR THE CLARIFICATION OF SCOPE. EXACT EXISTING ROUTING OR NEW INSTALLATION SHALL BE FIELD VERIFIED.
- D. REFER TO RISER FOR ALL CONDUIT/WIRE SIZES.

KEY NOTES

1. CONNECT NEW EF-1 TO EXISTING BRANCH CIRCUIT CONDUIT/WIRE, ORIGINATING FROM EXISTING PANEL "A". SEE PANEL SCHEDULE.
2. PROVIDE 240V, 30-AMP, FUSED, SAFETY SWITCHES AND BRANCH CIRCUIT CONDUIT/WIRE AND CONNECT TO PANEL NOTED FOR NEW ELECTRIC UNIT HEATER POWER. SEE PANEL SCHEDULE.
3. PROVIDE 240V, 30-AMP, NON-FUSED, SAFETY SWITCHES AND BRANCH CIRCUIT CONDUIT/WIRE AND CONNECT TO PANEL NOTED FOR NEW INDOOR UNIT DUCTLESS SPLIT SYSTEM POWER. SEE PANEL SCHEDULE.
4. PROVIDE 240V, 30-AMP, NON-FUSED, SAFETY SWITCHES AND BRANCH CIRCUIT CONDUIT/WIRE AND CONNECT TO PANEL FOR NEW OUTDOOR UNIT DUCTLESS SPLIT SYSTEM POWER. SEE PANEL SCHEDULE.
5. PROVIDE 240V BRANCH CIRCUIT CONDUIT/WIRE AND CONNECT TO PANEL FOR NEW CLASSROOM VPAC SYSTEM POWER. SEE PANEL SCHEDULE.
6. PROVIDE NEW NEMA 3R, 240V VPAC POWER PANEL. SEE PANEL SCHEDULE.
7. PROVIDE NEW 240V HVAC POWER PANEL. SEE PANEL SCHEDULE.

1 POWER PLAN

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ELECTRIC SERVICE LOAD SUMMARY			
	CONNECTED KVA	TOTAL DIVERSITY	DEMAND KVA
HVAC	XX	x1.0	XX
RECEPTACLE	XX	(10 + X*0.5)	XX
LIGHTING	XX	x1.0	XX
MOTOR	XX	x1.0	XX
OTHER	XX	x1.0	XX
KITCHEN	XX	x0.65	XX
	113 KVA		XXX KVA
	$I = \frac{113 \times 1000}{240 \times \sqrt{3}} = 271 \text{ AMPS}$		

ID	DATE	DESCRIPTION

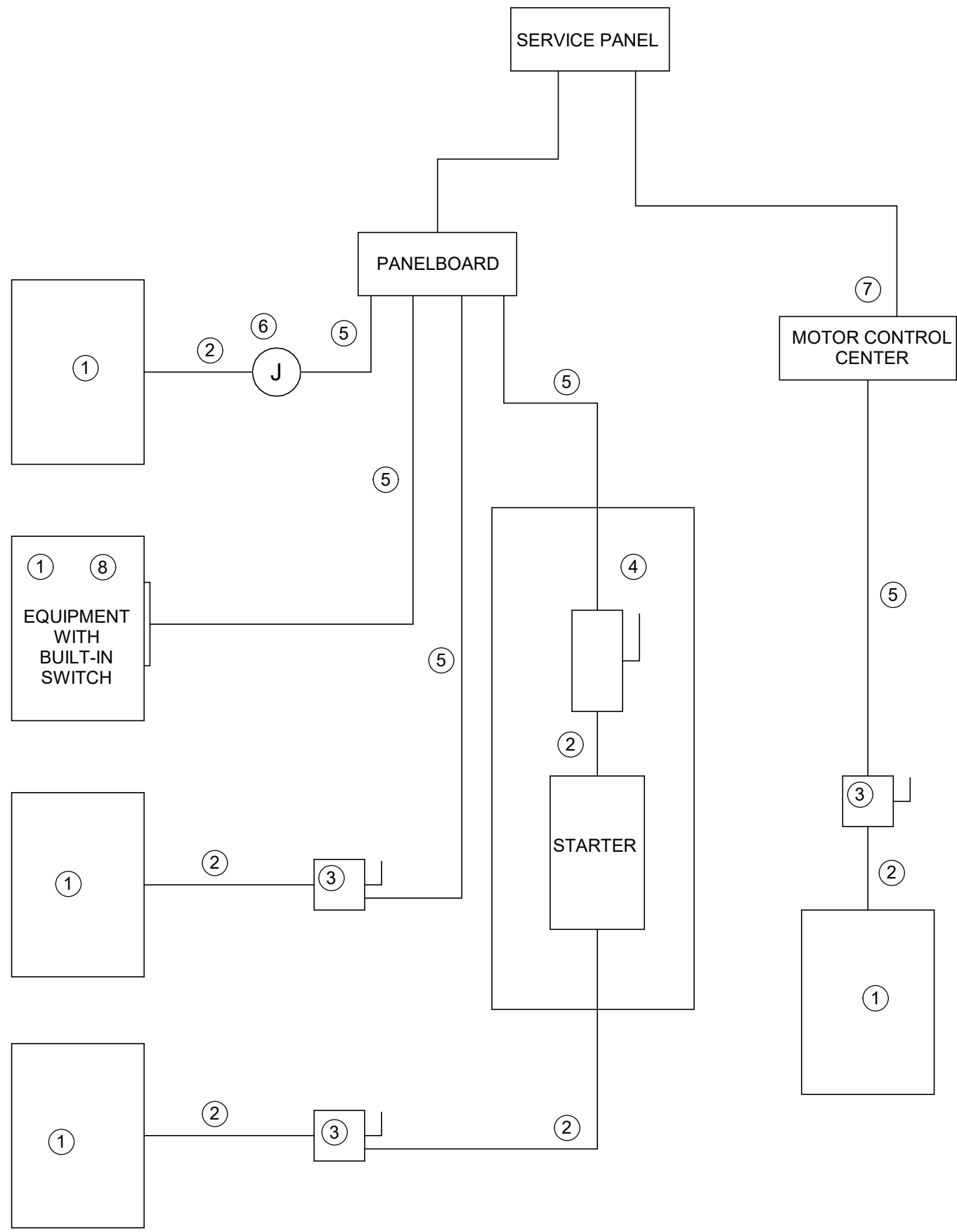
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PANEL EX.A															
LOCATION: MECH RM			MAINS: MLO			AMPS: 200 A									
MOUNT: SURFACE			VOLTS/PHAS.: 120/240 1PH			FED FROM: PANEL B									
NEMA: TYPE 1			WIRE: 3												
AIC:															
CKT	LOAD TYPE	LOAD DESCRIPTION	CONDUIT/WIRE SIZE	POLES	AMPS	PHASE A	PHASE B		AMPS	POLES	CONDUIT/WIRE SIZE	LOAD DESCRIPTION	LOAD TYPE	CKT	
1	--	EX. EWC	--	1	20 A	0 kVA	0 kVA			20 A	1	--	EX.LTS	--	2
3	--	EX.LTS	--	1	20 A			0 kVA	0 kVA	20 A	1	--	EX.LTS	--	4
5	--	EX.LTS	--	1	20 A	0 kVA	0 kVA			20 A	1	--	EX.LTS	--	6
7	--	EX.LTS	--	1	20 A			0 kVA	0 kVA	20 A	1	--	EX.LTS	--	8
9	--	EX.LTS	--	1	20 A	0 kVA	0 kVA			20 A	1	--	EX.LTS	--	10
11	--	EX.LTS	--	1	20 A			0 kVA	0 kVA	20 A	1	--	EX.LTS	--	12
13	--	EX.LTS	--	1	20 A	0 kVA	0 kVA			20 A	1	--	EX.LTS	--	14
15	--	EX.LTS	--	1	20 A			0 kVA	0 kVA	20 A	1	--	EX.LTS	--	16
17	--	EX.LTS	--	1	20 A	0 kVA	0 kVA			20 A	1	--	EX.LTS	--	18
19	--	EX.LTS	--	1	20 A			0 kVA	0 kVA	20 A	1	--	EX.LTS	--	20
21	--	EX.LTS	--	1	20 A	0 kVA	0 kVA			20 A	1	--	SPARE	--	22
23	--	SPARE	--	1	20 A			0 kVA	0 kVA	20 A	1	--	EF-1 (NOTE #2)	--	24
25	--	EX.RECS	--	1	20 A	0 kVA	0 kVA			20 A	1	--	EX.LTS	--	26
27	--	EX.RECS	--	1	20 A			0 kVA	0 kVA	20 A	1	--	EX.LTS	--	28
29	--	EX.RECS	--	1	20 A	0 kVA	0 kVA			20 A	1	--	EX.LTS	--	30
31	--	EX.RECS	--	1	20 A			0 kVA	0 kVA	20 A	1	--	EX.LTS	--	32
33	--	SPARE	--	1	20 A	0 kVA	0 kVA			20 A	1	--	EX.EWC	--	34
35	--	EX. EWC	--	1	20 A			0 kVA	0 kVA	20 A	1	--	EX.EWC	--	36
37	--	SPARE	--	1	20 A	0 kVA	0 kVA			20 A	1	--	SPARE	--	38
39	--		--					0 kVA	0 kVA						
41	--	SPARE	--	2	40 A	0 kVA	0 kVA			30 A	2	--	SPARE	--	42
TOTAL LOAD:						0 kVA									
NEW LOAD CLASSIFICATION			CONNECTED LOAD		DEMAND FACTOR		DEMAND LOAD		PANEL TOTALS						
(H)HVAC			0 kVA		0.00%		0 kVA				TOTAL CONNECTED LOAD		0 kVA		
(R)RECEPTACLE			0 kVA		0.00%		0 kVA				TOTAL CONNECTED AMPS		0 A		
(L)LIGHTING			0 kVA		0.00%		0 kVA				TOTAL DEMAND LOAD		0 kVA		
(M)MOTOR			0 kVA		0.00%		0 kVA				TOTAL DEMAND AMPS		0 A		
(O)OTHER			0 kVA		0.00%		0 kVA								
(K)KITCHEN			0 kVA		0.00%		0 kVA								
NOTES:															
1. PANEL IS A GENERAL ELECTRIC, TYPE NLAB.															
2. RECONNECT NEW EQUIPMENT TO EXISTING BRANCH CIRCUIT.															
3. PANEL ORIGINATES FROM A 3-PHASE HI LEG, PHASE B. PHASE BE NOTED IS ACTUAL PHASE C.															
4.															
5.															

PANEL EX.B														
LOCATION: MECH RM			MAINS: MCB			AMPS: 400 A			FED FROM: UTILITY SERVICE					
MOUNT: SURFACE			VOLTS/PHAS... 120/240 3PH											
NEMA: TYPE 1			WIRE: 4											
AIC: UNKNOWN														
CKT	LOAD TYPE	LOAD DESCRIPTION	CONDUIT/WIRE SIZE	POLES	AMP S	PHASE A	PHASE B	PHASE C	AMP S	POLES	CONDUIT/WIRE SIZE	LOAD DESCRIPTION	LOAD TYPE	CKT
1						0 kVA							--	2
3							0 kVA		400 A	3	--	EX.MAIN	--	4
5								0 kVA					--	6
7						0 kVA	0 kVA		200 A	3	--		--	8
9	--	EX. PANEL "A"	--	3	200 A		0 kVA	0 kVA	200 A	3	--	SPARE (NOTE #4)	--	10
11								0 kVA	0 kVA				--	12
13						0 kVA	0 kVA						--	14
15	--	SPARE (NOTE #4)	--	3	20 A		0 kVA	0 kVA	30 A	3	--	SPARE (NOTE #4)	--	16
17								0 kVA	0 kVA				--	18
19						32 kVA	2 kVA						--	20
21	(H)	PANEL C	SEE RISER	3	200 A		29 kVA	2 kVA	20 A	3	3#12,1#12,3/4"C	EUH-1 & EUH-2 (NOTE #3)	(H)	22
23								32 kVA	2 kVA				--	24
25	--	SPACE	--	2	--	--	0 kVA		60 A	2	--	SPARE (NOTE #4)	--	26
27							--	0 kVA					--	28
TOTAL LOAD:						35 kVA	31 kVA	35 kVA						
NEW LOAD CLASSIFICATION			CONNECTED LOAD			DEMAND FACTOR			DEMAND LOAD					
(H)HVAC			101 kVA			100.00%			101 kVA			PANEL TOTALS		
(R)RECEPTACLE			0 kVA			0.00%			0 kVA			TOTAL CONNECTED LOAD: 101 kVA		
(L)LIGHTING			0 kVA			0.00%			0 kVA			TOTAL CONNECTED AMPS: 242 A		
(M)MOTOR			0 kVA			0.00%			0 kVA			TOTAL DEMAND LOAD: 101 kVA		
(O)OTHER			0 kVA			0.00%			0 kVA			TOTAL DEMAND AMPS: 242 A		
(K)KITCHEN			0 kVA			0.00%			0 kVA					
NOTES:														
1. PANEL IS A GENERAL ELECTRIC, TYPE CCB.														
2. PANEL IS A 3-PHASE H LEG, PHASE B.														
3. REMOVE EXISTING SPARE AND PROVIDE NEW CIRCUIT BREAKER TO SPACE(S) AS SHOWN. CHARACTERISTICS SHALL MATCH FOR TYPE AND AIC RATING.														
4. CIRCUIT BREAKER SHALL BE LABELED SPARE AFTER REMOVAL OF DEVICES OR EQUIPMENT.														
5.														

PANEL C															
LOCATION: MECH ROOM			MAINS: MLO			AMPS: 200 A			FED FROM: EX.PANEL B						
MOUNT: SURFACE			VOLTS/PHASE: 120/240 3PH												
NEMA: TYPE 1			WIRE: 4												
AIC: 42,000															
CKT	LOAD TYPE	LOAD DESCRIPTION	CONDUIT/WIRE SIZE	POLES	AMP S	PHASE A	PHASE B	PHASE C	AMP S	POLES	CONDUIT/WIRE SIZE	LOAD DESCRIPTION	LOAD TYPE	CKT	
1						6.5 kVA	6.5 kVA							2	
3	(H)	PANEL LA	SEE RISER	3	60 A		6.5 kVA	6.5 kVA				PANEL LB	(H)	4	
5								6.5 kVA	6.5 kVA					6	
7						9.7 kVA	6.5 kVA							8	
9	(H)	PANEL LC	SEE RISER	3	60 A		9.7 kVA	6.5 kVA				PANEL LD	(H)	10	
11								9.7 kVA	6.5 kVA					12	
13	--	SPACE	--	1	--	--	--		--	1	--	SPACE	--	14	
15	--	SPACE	--	1	--	--	--		--	1	--	SPACE	--	16	
17	(H)	VRF-1	2#8,1#10,1"C	2	35 A			3 kVA	0.2 kVA	15 A	2	2#12,1#12G,3/4"C	IU-1	(H)	18
19	--	SPACE	--	1	--	3 kVA	0.2 kVA	--	--	--	1	--	SPACE	--	20
21	--	SPACE	--	1	--			--	--	--	1	--	SPACE	--	22
23	--	SPACE	--	1	--			--	--	--	1	--	SPACE	--	24
TOTAL LOAD:						32.43 kVA		29.19 kVA		32.43 kVA					
LOAD CLASSIFICATION			CONNECTED LOAD			DEMAND FACTOR			DEMAND LOAD						
(H)HVAC			94 kVA			100.00%			94 kVA			PANEL TOTALS			
(R)RECEPTACLE			0 kVA			0.00%			0 kVA			TOTAL CONNECTED AMPS			94 kVA
(L)LIGHTING			0 kVA			0.00%			0 kVA			TOTAL CONNECTED AMPS			226 A
(M)MOTOR			0 kVA			0.00%			0 kVA			TOTAL DEMAND LOAD			94 kVA
(O)OTHER			0 kVA			0.00%			0 kVA			TOTAL DEMAND AMPS			226 A
(K)KITCHEN			0 kVA			0.00%			0 kVA						
NOTES:															
1. PROVIDE DOOR WITH LOCK AND HINGED TRIM.															
2. PROVIDE COPPER GROUND AND NEUTRAL BUS.															
3. PANEL IS A 3-PHASE W/ LEG. PHASE B.															
4.															
5.															

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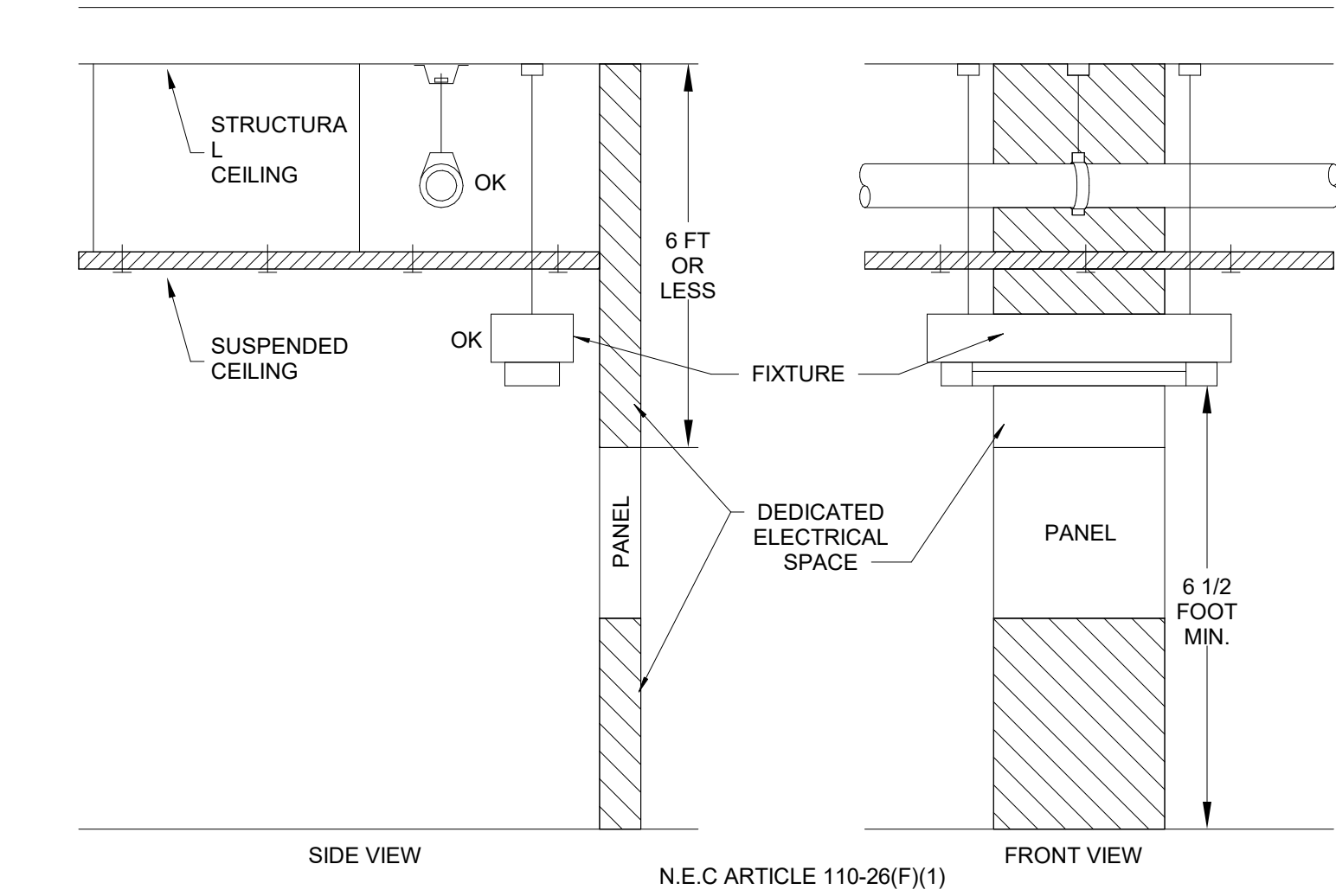
GENERAL NOTES:

- A. IN A SINGLE PRIME CONTRACT IT IS THE RESPONSIBILITY OF THE PRIME CONTRACTOR TO COORDINATE BETWEEN THE ELECTRICAL AND OTHER TRADES.
- B. IN ALL CASES, THE EQUIPMENT CONTRACTOR SHALL MAKE THE FINAL CONNECTIONS, START UP, AND TEST AND COMMISSION THE EQUIPMENT.

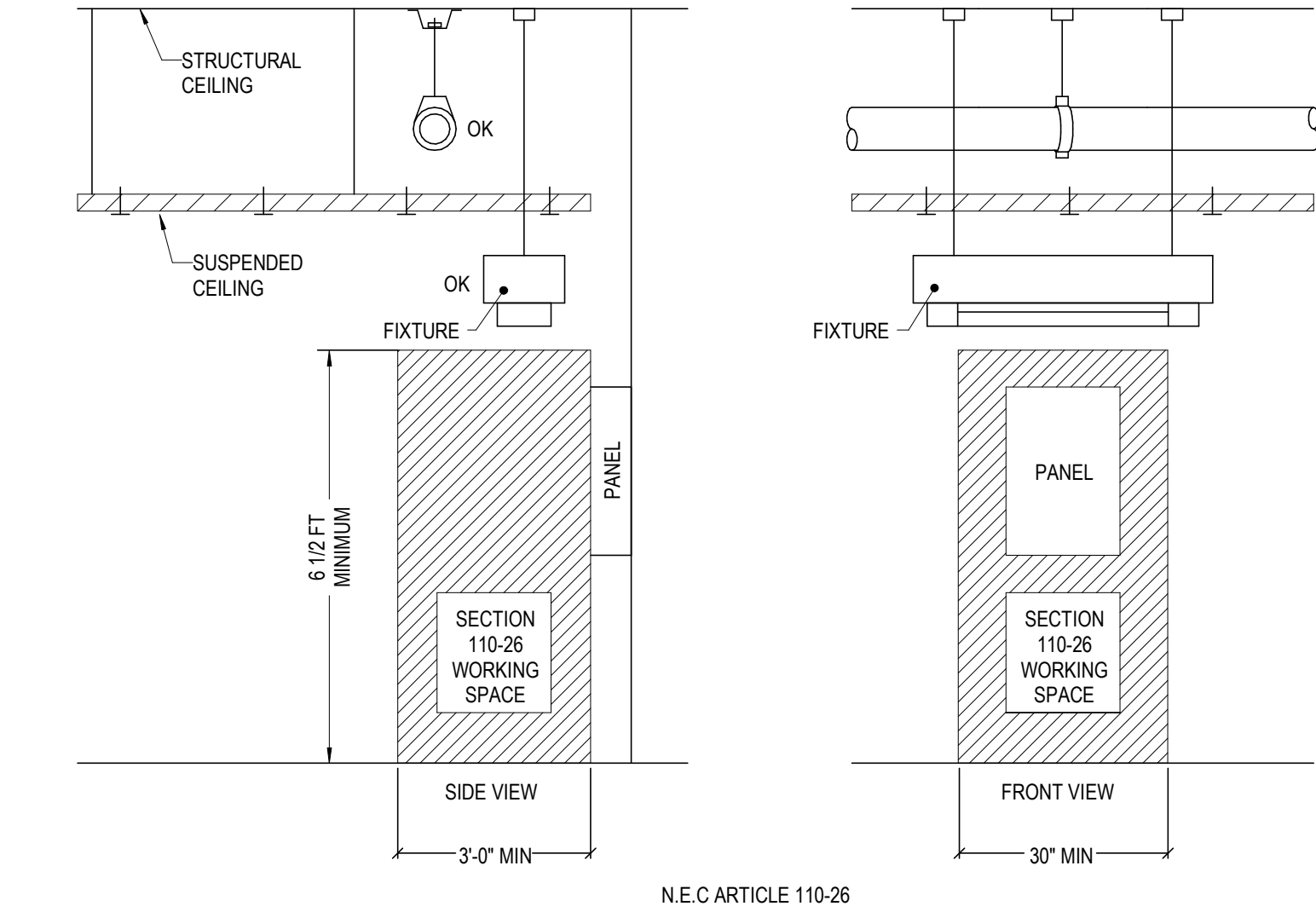
KEYNOTES:

- EQUIPMENT OF TRADES OTHER THAN ELECTRICAL.
- CONDUIT AND WIRING BY HVAC, PLUMBING CONTRACTOR OR TRADES.
- IF AN ADDITIONAL DISCONNECT IS REQUIRED BY NEC, IT SHALL BE PROVIDED AND INSTALLED BY THE EQUIPMENT CONTRACTOR.
- A COMBINATION STARTER OR VFD MAY BE USED IN LIEU OF A SEPERATE DISCONNECT SWITCH AND STARTER, PROVIDE ADJACENT TO EQUIPMENT. THIS SHALL BE PROVIDED AND INSTALLED BY THE EQUIPMENT CONTRACTOR. (VFDs SHALL BE PROVIDED BY CONTROLS CONTRACTOR FOR NON-PACKAGED EQUIPMENT).
- FEEDER CIRCUIT WIRING AND CONDUIT PROVIDED IN ELECTRICAL WORK. REFER TO PANELBOARD SCHEDULES FOR WIRE AND BREAKER SIZES.
- JUNCTION BOX MAY BE INDICATED ON THE ELECTRICAL DRAWINGS FOR SOME EQUIPMENT. IF NO STARTER OR DISCONNECT IS FURNISHED BY THE EQUIPMENT MANUFACTURER, A JUNCTION BOX SHALL BE INSTALLED ADJACENT TO THE EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL PROVIDE LINE SIDE WIRING TO THE JUNCTION BOX. LOAD SIDE WIRING SHALL BE PROVIDED BY MECHANICAL CONTRACTOR OR OTHER TRADES.
- FOR PROJECTS UTILIZING A MOTOR CONTROL CENTER (MCC), THE STARTER, CIRCUIT BREAKER, OR VFD IN THE MCC ARE PROVIDED BY THE ELECTRICAL CONTRACTOR.
- IF THE EQUIPMENT IS NOT PROVIDED WITH A BUILT-IN DISCONNECT SWITCH, THE ELECTRICAL CONTRACTOR SHALL PROVIDE A DISCONNECT SWITCH.

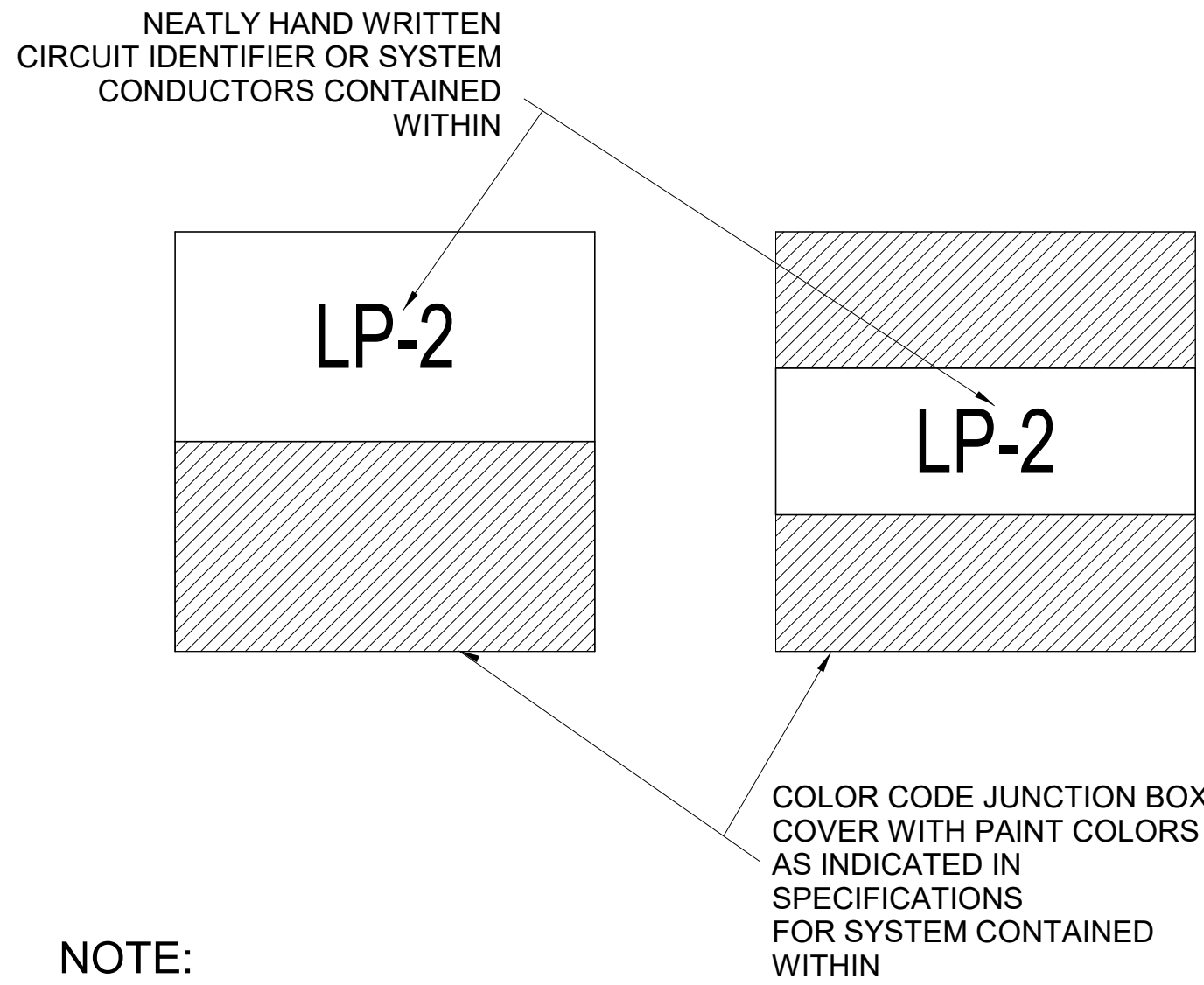
10 ELECTRICAL EQUIPMENT CONNECTIONS
NOT TO SCALE



8 DEDICATED SPACE FOR ELECTRICAL EQUIPMENT
NOT TO SCALE



7 WORKING CLEARANCE FOR ELECTRICAL EQUIPMENT
NOT TO SCALE

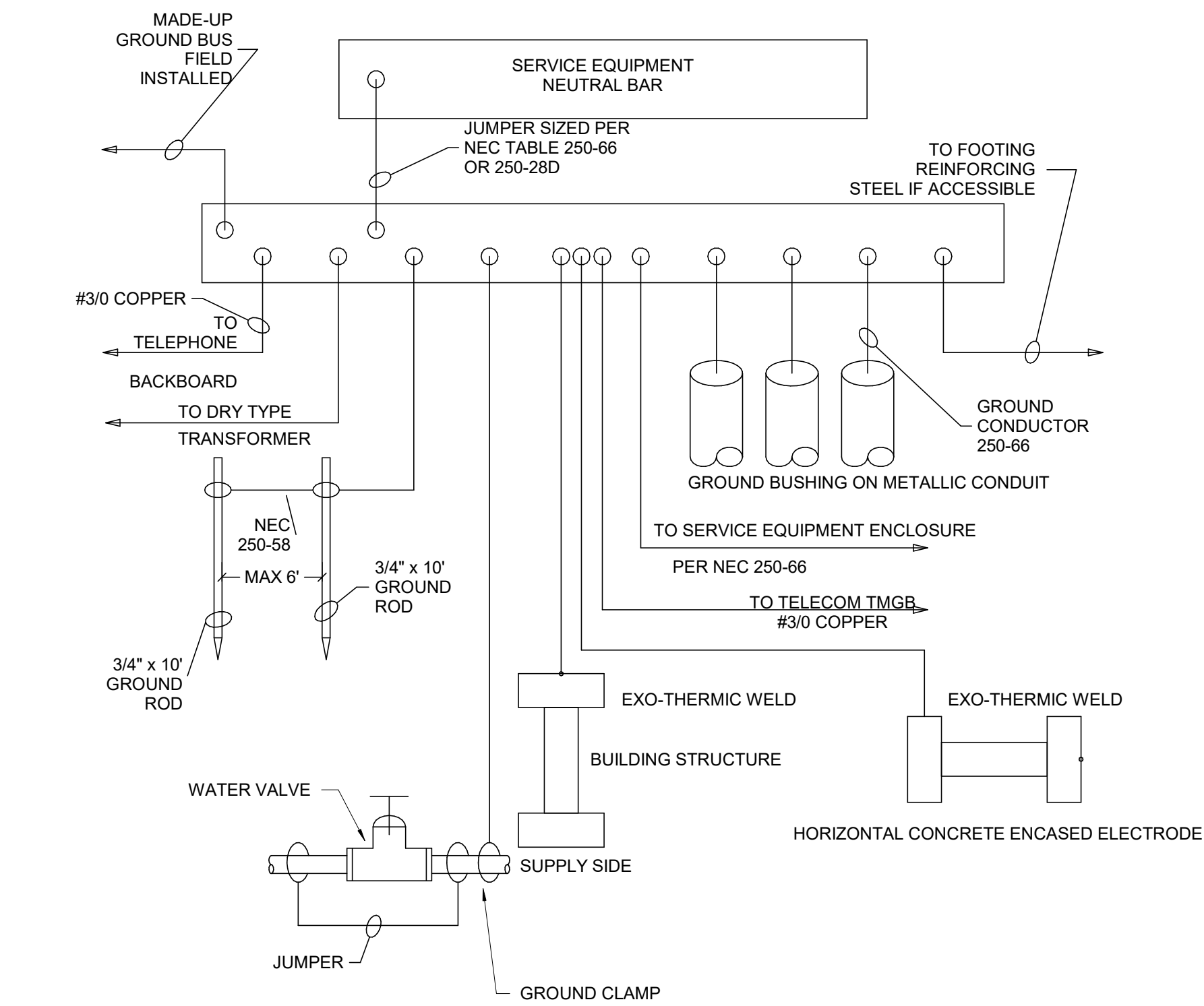


NOTE:

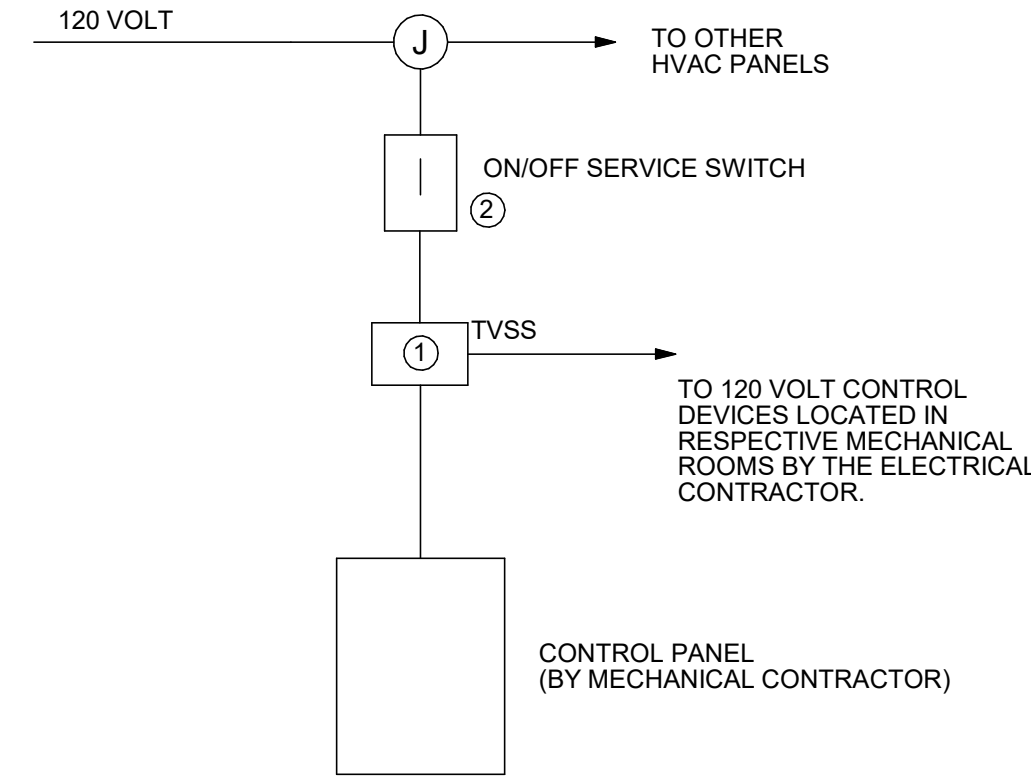
CONTRACTOR SHALL IDENTIFY JUNCTION BOX COVERS WITH ONE OF THE TWO METHODS SHOW ABOVE, BUT NOT BOTH. ALL JUNCTION BOX COVERS SHALL BE CONSISTENTLY IDENTIFIED ACROSS THE ENTIRE PROJECT.

JUNCTION BOX LABELING

1 JUNCTION BOX LABELING
0 8 16 32
1/8" = 1'-0"



5 SERVICE EQUIPMENT GROUNDING
NOT TO SCALE



DETAIL KEYED NOTES:

- TRANSIENT VOLTAGE SURGE SUPPRESSOR, PROVIDED AND BY THE MECHANICAL CONTROLS CONTRACTOR.
- SINGLE POLE TOGGLE SWITCH WITH HUBBELL #96061 COVER TO BE USED AS ON/OFF SERVICE SWITCH FOR CONTROLS. LABEL COVER "MECHANICAL CONTROLS".

3 DETAIL - CONTROLS SURGE PROTECTION
NOT TO SCALE

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10/02/2023

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Smith Sinnett Architecture, P.A. 2023

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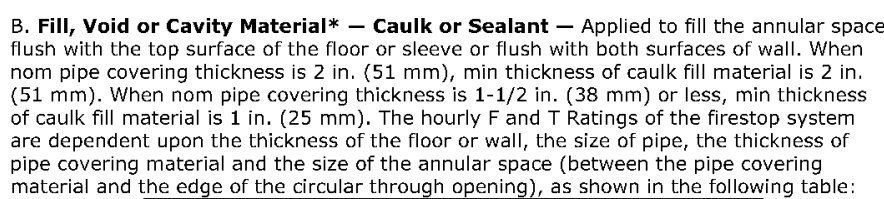
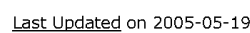
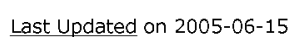
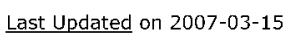
Roanoke Rapids City Schools
Chaloner MS HVAC Upgrades

2100 Virginia Ave
Roanoke Rapids, NC 27870

ID	DATE	DESCRIPTION

DRAWN BY: TWB
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DETAILS



3M COMPANY — CP 25WB+ or FB-3000 WT

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