

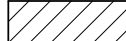
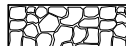
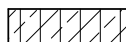
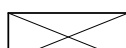
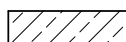
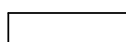
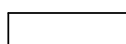
UNIVENT REPLACEMENT AT HAVERSTRAW ELEMENTARY

HAVERSTRAW ELEMENTARY SCHOOL
16 Grant Street
Haverstraw, NY 10927
SED# 50-02-01-06-0-009-018

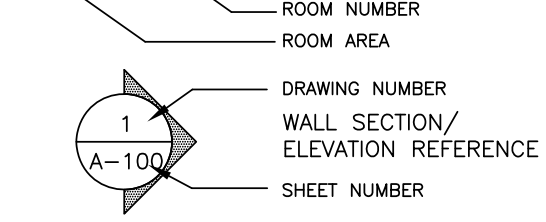
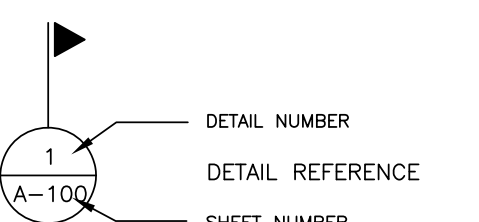
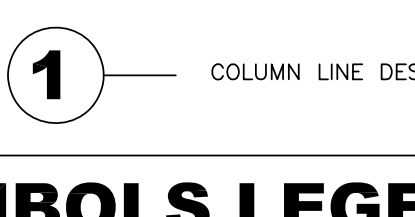
OWNER:
NORTH ROCKLAND
CENTRAL SCHOOL DISTRICT
65 Chapel Street
Garnerville, NY 10923

ARCHITECT:
MICHAEL SHILALE ARCHITECTS, LLP
140 Park Avenue
New City, NY 10956

**PME ENGINEER:
GREENMAN-PEDERSON, INC.
400 Rella Boulevard, Suite 207
Montabello, NY 10901**

	CONCRETE MASONRY UNIT
	BRICK
	RIGID INSULATION
	CONCRETE
	GRAVEL OR STONE
	EARTH
	EIFS
	ASPHALT PAVING
	SAND/MORTAR/GYPSUM BOARD
	STEEL
	ACT
	ROUGH WOOD
	BRONZE
	
	

SYMBOLS LEGEND

-  DOOR NUMBER
-  KEY NOTE
-  PARTITION TYPE
-  REVISION NUMBER
-  WINDOW TYPE
-  MECHANICAL EQUIPMENT
-  EXISTING PARTITION
-  EXISTING PARTITION TO BE REMOVED
-  NEW PARTITION (SEE PARTITION LEGEND A-101)
-  NEW DOOR
-  EXISTING DOOR
-  EXISTING DOOR TO BE REMOVED
-  EXISTING WINDOW
-  NEW WINDOW
- 
 - OFFICE
 - 100 SF
 - ROOM NAME
 - ROOM NAME/NUMBER IDENTIFICATION
 - ROOM NUMBER
 - ROOM AREA
- 
 - 1
 - A-100
 - DRAWING NUMBER
 - WALL SECTION/ELEVATION IDENTIFICATION
 - SHEET NUMBER
- 
 - 1
 - DETAIL NUMBER
 - DETAIL REFERENCE
 - SHEET NUMBER
-  COLUMN LINE DESIGNATION

1. ALL PLAN DIMENSIONS ARE NOMINAL U.O.N. DIMENSIONS TO THE FINISHED FACE OF AN ELEMENT OR WALL WILL BE DESIGNATED WITH AN "F" AS SHOWN.

2. G.C. TO VERIFY ALL DIMENSIONS IN THE FIELD AND IS TO NOTIFY ARCHITECT IF THERE ARE ANY DISCREPANCIES.

GENERAL NOTES

DRAWING No.	DRAWING TITLE	DATE
A-000	COVER SHEET	12-17-21
B-100	CODE ANALYSIS	12-17-21
S-101	ROOF PLAN & GENERAL NOTES	12-17-21
S-102	ROOF PARTIAL PLANS	12-17-21
S-103	SECTIONS & TYPICAL DETAILS	12-17-21
S-104	SECTIONS & TYPICAL DETAILS S-2	12-17-21
D-101	FIRST FLOOR DEMO PLAN	12-17-21
D-102	SECOND FLOOR DEMO PLAN	12-17-21
D-103	THIRD FLOOR DEMO PLAN	12-17-21
D-104	ROOF DEMO PLAN	12-17-21
A-101	PROPOSED FIRST FLOOR PLAN	12-17-21
A-102	PROPOSED SECOND FLOOR PLAN	12-17-21
A-103	PROPOSED THIRD FLOOR PLAN	12-17-21
A-104	PROPOSED ROOF PLAN	12-17-21
A-400	REFLECTED CEILING PLAN	12-17-21
A-500	DETAILS	12-17-21
A-501	UNIT ELEVATIONS	12-17-21
A-501.1	UNIT ELEVATIONS	12-17-21
A-502	DETAILS	12-17-21
A-503	DETAILS	12-17-21
M-001	MECHANICAL NOTES	12-17-21
M-002	MECHANICAL SCHEDULES	12-17-21
M-003	MECHANICAL SCHEDULES 2	12-17-21
M-004	CONTROLS	12-17-21
M-005	VENTILATION SCHEDULE	12-17-21
M-006	UV SCHEDULE	12-17-21
M-061	HVAC DEMO FIRST FLOOR PLAN	12-17-21
M-062	HVAC DEMO SECOND FLOOR PLAN	12-17-21
M-063	HVAC DEMO THIRD FLOOR PLAN	12-17-21
M-101	FIRST FLOOR PLAN MECHANICAL	12-17-21
M-102	SECOND FLOOR PLAN MECHANICAL	12-17-21
M-103	THIRD FLOOR PLAN MECHANICAL	12-17-21
M-104	ROOF PLAN MECHANICAL	12-17-21
M-301	HVAC PIPING - 1ST FLOOR PLAN	12-17-21
M-302	HVAC PIPING - 2ND FLOOR PLAN	12-17-21
M-303	HVAC PIPING - 3RD FLOOR PLAN	12-17-21
M-401	VRF PIPING RISERS	12-17-21
M-501	MECHANICAL DETAILS	12-17-21
M-502	MECHANICAL DETAILS 2	12-17-21
FA-001	FIRE ALARM SYSTEM COVER SHEET	12-17-21
FA-101	THIRD FLOOR PLAN FIRE ALARM	12-17-21
FA-102	ROOF PLAN FIRE ALARM	12-17-21
E-001	ELECTRICAL COVER SHEET	12-17-21
E-060	BASEMENT DEMO PLAN ELECTRICAL	12-17-21
E-061	FIRST FLOOR ELECTRICAL DEMO PLAN	12-17-21
E-062	SECOND FLOOR ELECTRICAL DEMO PLAN	12-17-21
E-063	THIRD FLOOR ELECTRICAL DEMO PLAN	12-17-21
E-100	BASEMENT PLAN ELECTRICAL	12-17-21
E-101	FIRST FLOOR PLAN ELECTRICAL	12-17-21
E-102	SECOND FLOOR PLAN ELECTRICAL	12-17-21
E-103	THIRD FLOOR PLAN ELECTRICAL	12-17-21
E-104	ROOF PLAN ELECTRICAL	12-17-21
E-201	ELECTRICAL SCHEDULES & RISER	12-17-21
E-301	ELECTRICAL DETAILS	12-17-21

LIST OF DRAWINGS

ACT ACQUAUSTICAL CEILING TILE A.F.F. ABOVE FINISH FLOOR ASPH ASPHALT BLK BLOCK BLK'G BLOCKING BUR BUILT UP ROOFING CLG CEILING CONC CONCRETE CONT CONTINUOUS C.J. CONTROL JOINT DN DOWN DIA DIAMETER DWG DRAWING E.F. EACH FACE E.F.F. EXTERIOR INSULATION AND FINISH SYSTEM E.W. EACH WAY E.W.C. ELECTROLIC WATER COOLER EL ELEVATION ELC ELECTRICAL CONTRACTOR EXIST EXISTING EXP EXPANSION EXT'G EXISTING EXTR EXTERIOR FP FIREPROOF FIN. FINISH(ED) GA GAUGE GC GENERAL CONTRACTOR GALV GALVANIZED GLASS GLASS GWB GYPSUM WALL BOARD HM HOLLOW METAL H.P. HIGH POINT HAC HEATING & A/C CONTRACTOR ITR INDIVIDUAL TREATMENT ROOM JT JOINT LAM LAMINATE LAV LAVATORY LP LOW POINT MAX MAXIMUM MFR MANUFACTURER MTL METAL MIN MINIMUM MO MASONRY OPENING N.I.C. NOT IN CONTRACT NO NUMBER OC ON CENTER OPN'G OPENING PBC PLUMBING CONTRACTOR PLAS.LAM. PLASTIC LAMINATE PL PLATE PLY'WOD PLYWOOD RAD RADIUS REF.CLG. REFLECTED CEILING REQ'D REQUIRED RO ROUGH OPENING SIM SIMILAR STL STEEL SUSP.CLG. SUSPENDED CEILING T.O.M. TOP OF MASONRY T.O.S. TOP OF STEEL TYP TYPICAL U.O.N. UNLESS OTHERWISE NOTED V.I.F. VERIFY IN FIELD VCT VINYL COMPOSITE TILE W/ WITH WD WOOD	ALLOWANCE NO. 1: PROVIDE ALLOWANCE TO CLEAN EXISTING MAIN DUCTWORK FOR 20 LINEAR FEET PER UNIT. ALLOWANCE NO. 2: PROVIDE ALLOWANCE TO REPLACE EXISTING SUPPLY AND RETURN PIPING AND INSULATION FOR 20 LINEAR FEET PER UNIT. ALLOWANCE NO. 3: PROVIDE A PROPOSAL FROM A THIRD PARTY HVAC COMMISSIONING AGENT CONTRACTOR IS TO INCLUDE THIS AMOUNT IN THEIR BASE BID. CONTRACTOR WILL ISSUE A CREDIT CHANGE ORDER TO THE OWNER FOR THE COMMISSIONING PROPOSAL AMOUNT. OWNER WILL CONTRACT DIRECTLY WITH THE COMMISSIONING AGENT. ALLOWANCE NO. 4: PROVIDE ALLOWANCE FOR THE RELOCATION OF 40 ELECTRICAL DEVICES THAT REQUIRE RELOCATION DUE TO THE INCREASED SIZE OF THE NEW UNIT VENTILATORS. ALLOWANCE NO. 5: INCLUDE 1,245 LF OF LINE SET ENCLOSURE AS NOTED ON THE DRAWINGS.
ALLOWANCES	
NO ALTERNATES AT THIS TIME.	
ALTERNATES	
UNIT PRICE NO. 1: PROVIDE UNIT PRICE TO INCREASE OR REDUCE BY 10'—0" THE LINE SET COVER. SEE DETAIL 5/A—500. UNIT PRICE NO. 2: PROVIDE UNIT PRICE PER SQUARE FOOT OF VCT REPLACEMENT. UNIT PRICE NO. 3: PROVIDE A UNIT PRICE FOR LF OF WOOD BASE REPLACEMENT. UNIT PRICE NO. 4: PROVIDE A UNIT PRICE FOR 10' OF WIRE MOLD.	
ABBREVIATIONS	UNIT PRICES

Drawing Title COVER SHEET	</	
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2020 EXISTING BUILDING CODE OF NEW YORK STATE

BUILDING CODE SUMMARY

Site	Haverstrw Elementary School	Date:	4/26/2021
Project Name:	Univent Replacement at Haverstraw Elementary	Location	Rockland County
Project Number:	41048	Architect of Record	MSA
Project Address:	16 Grant Street Haverstraw, NY 10927		
APPLICABLE ORDINANCES, CODES & STANDARD			
2020 Existing Building Code of New York State			
2020 Building Code of New York State			
EXISTING BUILDING CODE: CHAPTER 1 SCOPE AND ADMINISTRATION			
SECTION 101 GENERAL			
101.2 Scope	The provisions of this code shall apply to the repair, alteration, change of occupancy, addition to and relocation of existing buildings.		
101.4 Applicability	This code shall apply to the repair, alteration, change of occupancy, addition and relocation of existing buildings, regardless of occupancy, subject to the criteria of Sections 101.4.1 and 101.4.2.		
101..4.2 Buildings Previously Occupied	The legal occupancy of any building existing on the date of adoption of this code shall be permitted to continue without change, except as is specifically covered in this code, the Fire Code of New York State, or the Property Maintenance Code of New York State, or as is deemed necessary by the building official for the general safety and welfare of the occupants and the public.		
EXISTING BUILDING CODE: CHAPTER 2 DEFINITIONS			
SECTION 202 GENERAL DEFINITIONS			
EQUIPMENT OR FIXTURE	Any plumbing, heating, electrical, ventilating, air conditioning, refrigerating, and fire protection equipment, and elevators, dumbwaiters, escalators, boilers, pressure vessels and other mechanical facilities or installations that are related to building services. Equipment or fixture shall not include manufacturing, production, or process equipment, but shall include connections from building service to process equipment.		
EXISTING BUILDING CODE: CHAPTER 3 PROVISIONS FOR ALL COMPLIANCE METHODS			
SECTION 301 ADMINISTRATION			
301.3.2 Work Area Compliance Method	Alterations, additions and changes of occupancy complying with the applicable requirements of Chapters 6 through 12 of this code shall be considered in compliance with the provisions of this code.		
EXISTING BUILDING CODE: CHAPTER 6 CLASSIFICATION OF WORK			
SECTION 601 GENERAL			
601.2 Work Area	The work area, as defined in Chapter 2, shall be identified on the construction documents.		
SECTION 602 ALTERATION - LEVEL 1			
602.1 Scope	Level 1 alterations include the removal and replacement or the covering of existing materials, elements, equipment, or fixtures using new materials, elements, equipment, or fixtures that serve the same purpose.		
602.2 Application	Level 1 alterations shall comply with the provisions of Chapter 7.		
EXISTING BUILDING CODE: CHAPTER 7 ALTERATIONS - LEVEL 1			
SECTION 702 BUILDING ELEMENTS AND MATERIALS			
702.6 Methods and Materials	New work shall comply with the materials and methods requirements in the Building Code of New York State, Energy Conservation Construction Code of New York State, Mechanical Code of New York State, and Plumbing Code of New York State, as applicable, that specify material standards, detail of installation and connection, joints, penetrations, and continuity of any element, component, or system in the building.		
SECTION 703 FIRE PROTECTION			
703.1 General	Alterations shall be done in a manner that maintains the level of fire protection provided		
EXISTING BUILDING CODE: CHAPTER 8 ALTERATIONS LEVEL 2			
SECTION 801 GENERAL			
801.2 Alteration Level 1 Compliance	In addition to the requirements of this chapter, all work shall comply with the requirements of Chapter 7.		
SECTION 802 BUILDING ELEMENTS AND MATERIALS			
801.2 Alteration Level 1 Compliance	In addition to the requirements of this chapter, all work shall comply with the requirements of Chapter 7.		
SECTION 802 BUILDING ELEMENTS AND MATERIALS			
802.6 Fire-Resistance Ratings	Where approved by the code official, buildings where an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 of the International Building Code has been added, and the building is now sprinklered throughout, the required fire resistance ratings of building elements and materials shall be permitted to meet the requirements of the current building code. The building is required to meet the other applicable requirements of the International Building Code.		
SECTION 803 FIRE PROTECTION			
803.1 Scope	The requirements of this section shall be limited to work areas in which Level 2 alterations are being performed, and where specified they shall apply throughout the floor on which the work areas are located or otherwise beyond the work area.		
803.2 Automatic Sprinkler Systems	Automatic sprinkler systems shall be provided in accordance with the requirements of Sections 803.2.1 through 803.2.4. Installation requirements shall be in accordance with the International Building Code.		

EXISTING BUILDING CODE

804.2.2 Group E	In buildings with occupancies in Groups E, work areas that have exits or corridors shared by more than one tenant or that have exits or corridors serving an occupant load greater than 30 shall be provided with automatic sprinkler protection where all of the following conditions occur: 1. The work area is required to be provided with automatic sprinkler protection in accordance with the International Building Code as applicable to new construction; and 2. The work area exceeds 50 percent of the floor area.
SECTION 805	MEANS OF EGRESS
805.1 Scope	The requirements of this section shall be limited to work areas that include exits or corridors shared by more than one tenant within the work area in which Level 2 alterations are being performed, and where specified they shall apply throughout the floor on which the work areas are located or otherwise beyond the work area.
805.3.1 Minimum Number	Every story utilized for human occupancy on which there is a work area that includes exits or corridors shared by more than one tenant within the work area shall be provided with the minimum number of exits based on the occupancy and the occupant load in accordance with the International Building Code. In addition, the exits shall comply with Sections 805.3.1.1 and 805.3.1.2.
SECTION 806	STRUCTURAL
806.2 Existing Structural Elements Carrying Gravity Loads	Any existing gravity load-carrying structural element for which an alteration causes an increase in design dead, live or snow load, including snow drift effects, of more than 5 percent shall be replaced or altered as needed to carry the gravity loads required by the Building Code of New York State for new structures. Any existing gravity load-carrying structural element whose gravity load-carrying capacity is decreased as part of the alteration shall be shown to have the capacity to resist the applicable design dead, live and snow loads, including snow drift effects, required by the Building Code of New York State for new structures.
SECTION 807	ELECTRICAL
807.1 New Installations	Newly installed electrical equipment and wiring relating to work done in any work area shall comply with all applicable requirements of NFPA 70 except as provided for in Section 807.3.
SECTION 808	MECHANICAL
807.1 Altered Existing Systems	In mechanically ventilated spaces, existing mechanical ventilation systems that are altered, reconfigured, or extended shall provide not less than 5 cubic feet per minute (cfm) (0.0024 m3/s) per person of outdoor air and not less than 15 cfm (0.0071 m3/s) of ventilation air per person; or not less than the amount of ventilation air determined by the Indoor Air Quality Procedure of ASHRAE 62.1.

2020 ENERGY CONSERVATION CODE OF NEW YORK STATE

BUILDING CODE SUMMARY

Site	Haverstrw Elementary School	Date:	6/14/2021
Project Name:	Univent Replacement at Haverstraw Elementary	Location	Rockland County
Project Number:	41048	Architect of Record	MSA
Project Address:	16 Grant Street Haverstraw, NY 10927		
APPLICABLE ORDINANCES, CODES & STANDARD			
2020 Existing Building Code of New York State			
2020 Building Code of New York State			
2020 Energy Conservation Code of New York State			
ENERGY CONSERVATION CODE: CHAPTER 4 COMMERCIAL ENERGY EFFICIENCY			
SECTION C402 Building Envelope Requirements			
Table C402.1.3 Building Envelope Requirements - Opaque Assemblies			
	Climate Zone 5A	Walls	Average R-Value
	Mass	Above Grade	R-11.4ci
	Climate Zone 5A	Roofs	Average R-Value
	Wood Framed or Other	Insul entirely above roof deck	R-30ci
SECTION C403 Building Mechanical Systems			
Mechanical systems and equipment serving the building heating, cooling, ventilating or refrigerating needs			
C403.1 General			
C403.1.1 Calculation of Heating and Cooling Loads (Mandatory)	Design loads associated with heating, ventilating and air conditioning of the building shall be determined in accordance with ANSI/ASHRAE/ACCA Standard 183 or by an approved equivalent computational procedure using the design parameters specified in Chapter 3. Heating and cooling loads shall be adjusted to account for load reductions that are achieved where energy recovery systems are utilized in the HVAC system in accordance with the ASHRAE HVAC Systems and Equipment Handbook by an approved equivalent computational procedure.		
ENERGY CONSERVATION CODE: CHAPTER 5 EXISTING BUILDING			
SECTION C503 ALTERATIONS			
C503.1 General	Alterations to any building or structure shall comply with the requirements of the code for new construction. Alterations shall be such that the existing building or structure is no less conforming to the provisions of this code than the existing building or structure was prior to the alteration. Alterations to an existing building, building system or portion thereof shall conform to the provisions of this code as those provisions relate to new construction without requiring the unaltered portions of the existing building or building system to comply with this code. Alterations shall not create an unsafe or hazardous condition or overload existing building systems.		
C503.4 Heating and cooling Systems	New heating, cooling and duct systems that are part of the alteration shall comply with Sections C403.		

ENERGY CODE

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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

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Drawing Title

CODE ANALYSIS

Drawing No.

B-100

UNIVENT REPLACEMENT AT HAVERSTRAW ELEMENTARY

SED # 50-02-01-06-0-009-018

16 Grant Street Haverstraw, NY 10927

COUNTY OF ROCKLAND

GREENMAN PEDERSEN, INC

400 BELLA BOULEVARD

MONTEBELLO, NY 10901

Mechanical & Electrical Engineer:

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1

Structural Engineer:

Drawn by

Checked by

Project No.

Scale

Date

MAL/JC

MS/JC

41048

AS NOTED

08-30-21

GREENMAN PEDERSEN, INC

400 BELLA BOULEVARD

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UNIVENT REPLACEMENT AT HAVERSTRAW ELEMENTARY

SED # 50-02-01-06-0-009-018

16 Grant Street Haverstraw, NY 10927

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MONTEBELLO, NY 10901

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GREENMAN PEDERSEN, INC

400 BELLA BOULEVARD

ALL WORK SHALL BE GOVERNED BY THE TERMS AND CONDITIONS OF THE CONTRACT FOR CONSTRUCTION OF THE STRUCTURES HAVE BEEN DESIGNED IN COMPLIANCE WITH THE REQUIREMENTS OF THE NEW YORK STATE BUILDING CODE, 2000 EDITION. (2018 IBC AS ADOPTED BY NYS).

CONTRACTOR AND SUBCONTRACTOR SHALL BE LICENSED BY NEW YORK STATE WHERE REQUIRED TO PERFORM THE SPECIFIED WORK.

THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, REGULATIONS, AND ORDERS OF ANY PUBLIC AUTHORITY BEARING ON THE PERFORMANCE OF THE WORK INDICATED IN THE CONTRACT DOCUMENTS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL NECESSARY PERMITS, APPROVALS, AS WELL AS THEIR ASSOCIATED FEES, FOR ALL TRADES, EXCEPT WHERE SPECIFIED AND AGREED UPON ELSEWHERE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A TESTING AGENCY AND INSPECTOR FOR ALL CONTROLLED INSPECTION ITEMS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ARRANGING WITH COMMISSIONER FOR HOISTING FACILITIES FOR HANDLING MATERIALS AND REMOVAL OF DEBRIS.

THE CONTRACTOR SHALL VISIT THE SITE TO BECOME FAMILIAR WITH CONDITIONS THEREON AND TO DETERMINE THE EXTENT OF ALL FACILITIES AND SERVICES REQUIRED TO PERFORM THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

THE CONTRACTOR SHALL MAINTAIN ONE COPY OF THE LATEST CONTRACT DOCUMENTS INCLUDING ALL CHANGES AT THE JOB SITE FOR THE USE OF THE ENGINEER AND/OR COMMISSIONER.

THE CONTRACTOR SHALL BE RESPONSIBLE TO THE COMMISSIONER FOR THE ACTS AND OMISSIONS OF ALL HIS/HER EMPLOYEES AND ALL SUBCONTRACTORS, THEIR AGENTS AND EMPLOYEES, AND ALL OTHER PERSONS PERFORMING ANY OF THE WORK FOR THE CONTRACTOR.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE INCURRED ANYWHERE WITHIN THE BOUNDARIES OF THE PROPERTY, AND ANY DAMAGE SHALL BE PROMPTLY REPAIRED TO THE SATISFACTION OF THE COMMISSIONER AT NO COST TO THE STATE OF NEW YORK.

DURING THE COURSE OF THE WORK, THE CONTRACTOR SHALL REGULARLY REMOVE ALL UNUSED MATERIAL, RUBBISH, AND DEBRIS FROM THE PROPERTY AND BROOM CLEAN DAILY. THE SITE AND PREMISES SHALL BE KEPT REASONABLY CLEAN, NEAT AND ORDERLY TO THE SATISFACTION OF THE COMMISSIONER.

THE CONTRACTOR SHALL CONTROL CLEANING OPERATIONS TO PREVENT DIRT OR DUST FROM LEAVING THE JOB SITE AND INFILTRATING AREAS NOT INVOLVED IN THE PROJECT.

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SITE CONDITIONS PRIOR TO SUBMITTING BIDS AND SHALL REPORT ANY DISCREPANCIES AND/OR CONDITIONS WHICH WOULD INTERFERE WITH THE COMPLETION OF THE WORK TO THE ENGINEER. COMMENCEMENT OF THE WORK SHALL SIGNIFY ACCEPTANCE OF ANY AND ALL JOB SITE CONDITIONS.

WHEN "APPROVED EQUAL," "EQUAL TO," OR WHERE OTHER QUALIFYING TERMS ARE USED, SUBSTITUTIONS SHALL BE BASED SOLELY UPON THE REVIEW AND APPROVAL OF THE ENGINEER AND THE COMMISSIONER. THE BURDEN OF PROOF THAT A PRODUCT OR SYSTEM MEETS OR EXCEEDS THAT WHICH WAS SPECIFIED LIES ENTIRELY ON THE CONTRACTOR.

NOTATIONS ON ANY PLAN, ELEVATION, SECTION, OR DETAIL ARE APPLICABLE TO ALL PLANS, ELEVATIONS, SECTIONS, AND DETAILS. IF A CONFLICT ARISES - ENGINEER SHALL BE INFORMED TO CLARIFY.

DO NOT SCALE DRAWINGS. USE DIMENSIONAL NOTATION ONLY.

LARGE SCALE DRAWINGS (I.E. SECTIONS, DETAILS, ETC.) TAKE PRECEDENCE OVER SMALL SCALE DRAWINGS.

WELDING SHALL ONLY BE PERFORMED BY NYS LICENSED WELDERS. CONTRACTOR IS TO SUBMIT WELDERS CERTIFICATION PRIOR TO START OF WORK.

SUBMIT SHOP DRAWINGS.

STEEL CONSTRUCTION SHALL CONFORM TO AISC "MANUAL OF STEEL CONSTRUCTION", 14TH EDITION, AND SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" AS ADOPTED MARCH 18, 2005.

ALL W-SHAPE STRUCTURAL STEEL TO BE ASTM A992, GRADE 50. STRUCTURAL STEEL FOR HOLLOW SECTION TO BE ASTM A500 GRADE B, GRADE 46, ANGLES & MISC. STEEL TO BE ASTM A36.

ALL BOLTED CONNECTIONS SHALL BE MADE USING A325N TYPE BOLTS, MINIMUM TWO (2) OF 5/8"Ø INSTALLED U.N.O. IN ACCORDANCE WITH SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS" APPROVED BY THE RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS OF THE ENGINEERING FOUNDATION, JUNE 30, 2004

ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AWS D1.1 STANDARDS. ELECTRODES MUST MEET E70XX SERIES REQUIREMENTS AND CONFORM TO LATEST EDITION OF AWS A5.1, OR AWS A5.5.

ALL STRUCTURAL STEEL MEMBERS SHALL BE GALVANIZED TO ASTM 123 AND ALL HARDWARES TO ASTM 153.

CONTRACTOR TO PREPARE CONSTRUCTION DOCUMENTS AND ADDITIONAL DRAWINGS WITH SHOP DRAWING LEVEL OF DETAIL SHOWN FOR ALL MEMBERS AND CONNECTIONS.

A. CONTRACTOR SHALL BE RESPONSIBLE TO FIELD VERIFY ALL DIMENSIONS AND TO NOTIFY THE COMMISSIONER OF ANY DISCREPANCIES PRIOR TO FABRICATION: IF NO DISCREPANCIES ARE NOTED, THE CONTRACTOR SHALL ISSUE AN AFFIDAVIT ATTESTING THAT HE HAS VERIFIED ALL THE DIMENSIONS AND TAKES NO EXCEPTIONS.

B. IF DISCREPANCIES ARE NOTED THAN THE CONTRACTOR SHALL NOTIFY THE COMMISSIONER OF THE DISCREPANCY IN WRITING AT WHICH TIME NYS WILL RESOLVE THE DISCREPANCIES AND DOCUMENTS AND IF IN AGREEMENT WITH THE RESOLUTION WILL ISSUE AN AFFIDAVIT ATTESTING THAT HE HAS VERIFIED ALL THE DIMENSIONS AND TAKES NO EXCEPTIONS.

C. CONNECTIONS SHOWN ARE CONSTRUCTIBLE AND SUFFICIENT FOR THE LOADS, HOWEVER, CONTRACTOR MAY USE HIS/HER OWN STANDARD CONNECTION DETAILS, BUT SHALL BE REQUIRED TO SUBMIT THE REVISED CONNECTION DETAILS ALONG WITH SUPPORTING CALCULATIONS SIGNED AND SEALED BY AN ENGINEER, LICENSED IN THE STATE OF NEW YORK FOR APPROVAL OF THE COMMISSIONER.

CONTRACT DRAWINGS ARE NOT CONSIDERED RELEASED FOR CONSTRUCTION. ORDERS FOR MATERIALS MAY BE PLACED ONLY AFTER RECEIPT OF THE AFFIDAVIT OF ACCEPTANCE OR WRITTEN APPROVAL OF THE COMMISSIONER.

THE FOLLOWING ITEMS REQUIRE SUBMITTAL OF SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NEW YORK:

a. CONCRETE DESIGN MIXES.

REPRODUCTION OF CONTRACT DRAWINGS TO BE USED AS SHOP DRAWINGS IS NOT PERMITTED.

THE CONTRACTOR MUST NOTIFY SPECIAL INSPECTION AGENCY PRIOR TO CLOSING THE WORK.
SPECIAL & PROGRESS INSPECTIONS REQUIRED BY THE NEW YORK STATE BUILDING CODE SHALL BE PERFORMED BY A TESTING AGENCY ENGAGED BY OWNER AT THEIR EXPENSE (NOT TO BE PERFORMED BY THE ENGINEER OF RECORD) FOR THE FOLLOWING ITEMS:

1.	LIVE LOAD:	20 PSF
2.	DEAD LOAD:	
	AT 10" CONCRETE JOISTS	74 PSF
	AT 5" CONCRETE SLAB	77 PSF
	UNITS WEIGHT	777 LBS
3.	GROUND SNOW LOAD:	35 PSF
4.	ULTIMATE WIND SPEED:	122 MPH
	WIND DOWNWARD:	10.5 PSF
	WIND UPWARD:	27.5 PSF

[illegible][illegible]

1 ROOF PLANS

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



0 1/2 1

IF THIS BAR DOES NOT
MEASURE 1" THEN DRAWING IS
NOT TO FULL SCALE

3	12-17-21	ISSUED FOR BID
2	11-19-21	SED ADDENDUM 1
1	08-30-21	BIDDING DOCUMENTS
No.	Date	Revisions

Drawn by	YY
Checked by	JGC
Project No.	41048
Scale	AS NOTED
Date	08-30-21

Mechanical & Electrical Engineer:	GREENMAN PEDERSEN, INC 400 BELLA BOULEVARD MONTEBELLO, NY 10001
Structural Engineer:	— — —

UNIVENT REPLACEMENT
AT
HAVERSTRAW
ELEMENTARY
SED# 50-02-01-06-0-009-018

The logo for Michael Shilale Architects, LLP features the letters 'M', 'S', and 'A' in a large, bold, sans-serif font. Each letter is filled with a horizontal gradient, transitioning from a dark grey at the top to a lighter grey at the bottom. The letters are positioned on the left side of the advertisement.

MICHAEL SHILALE ARCHITECTS, LLP.

New City, NY 10956 Tel 845-708-9200
140 Park Avenue
www.shilale.com

Drawing Title

ROOF PLAN
& GENERAL
NOTES

Drawing No.

S-101

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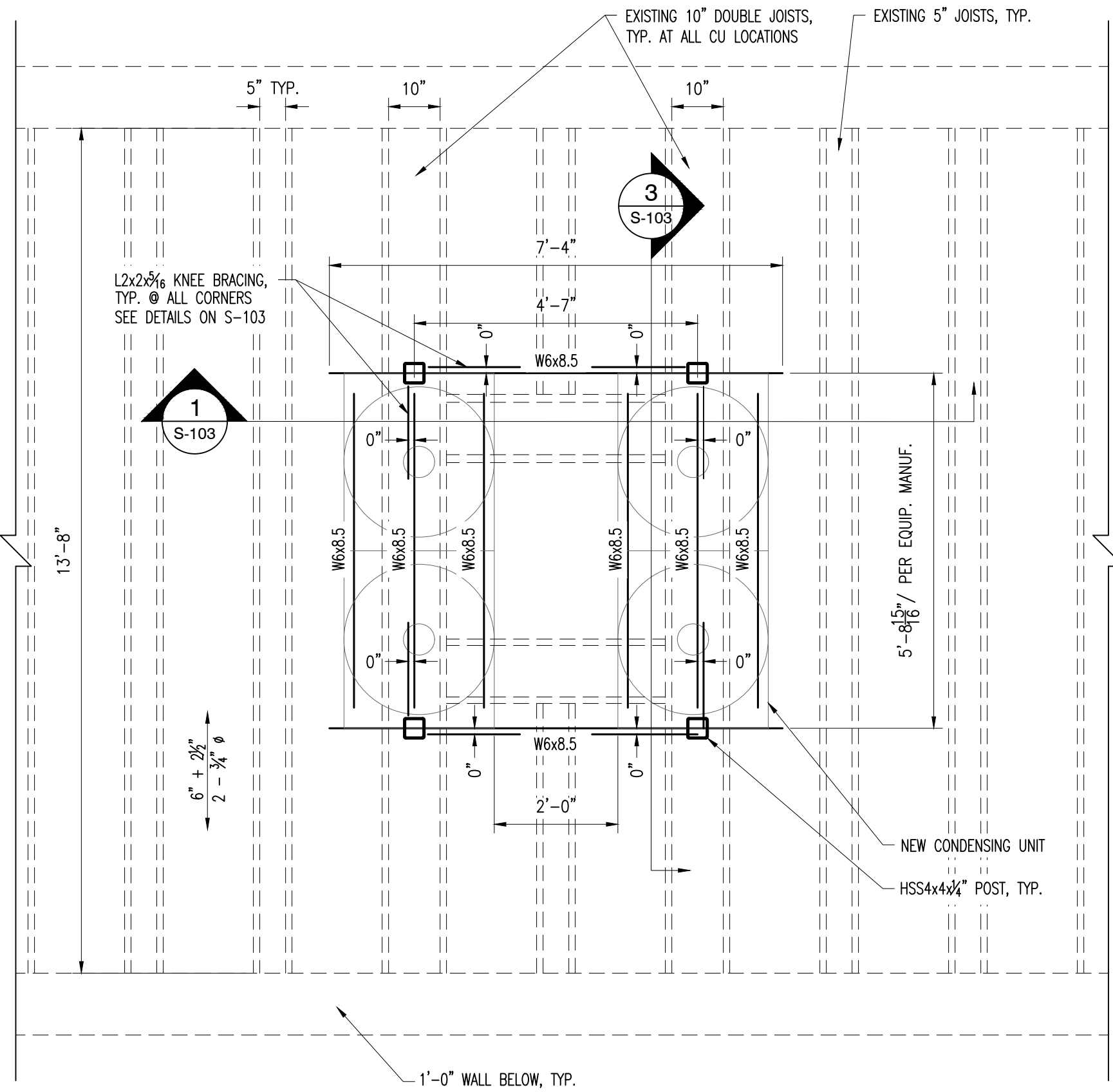
Drawing	Title
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ROOF PLAN & GENERAL NOTES

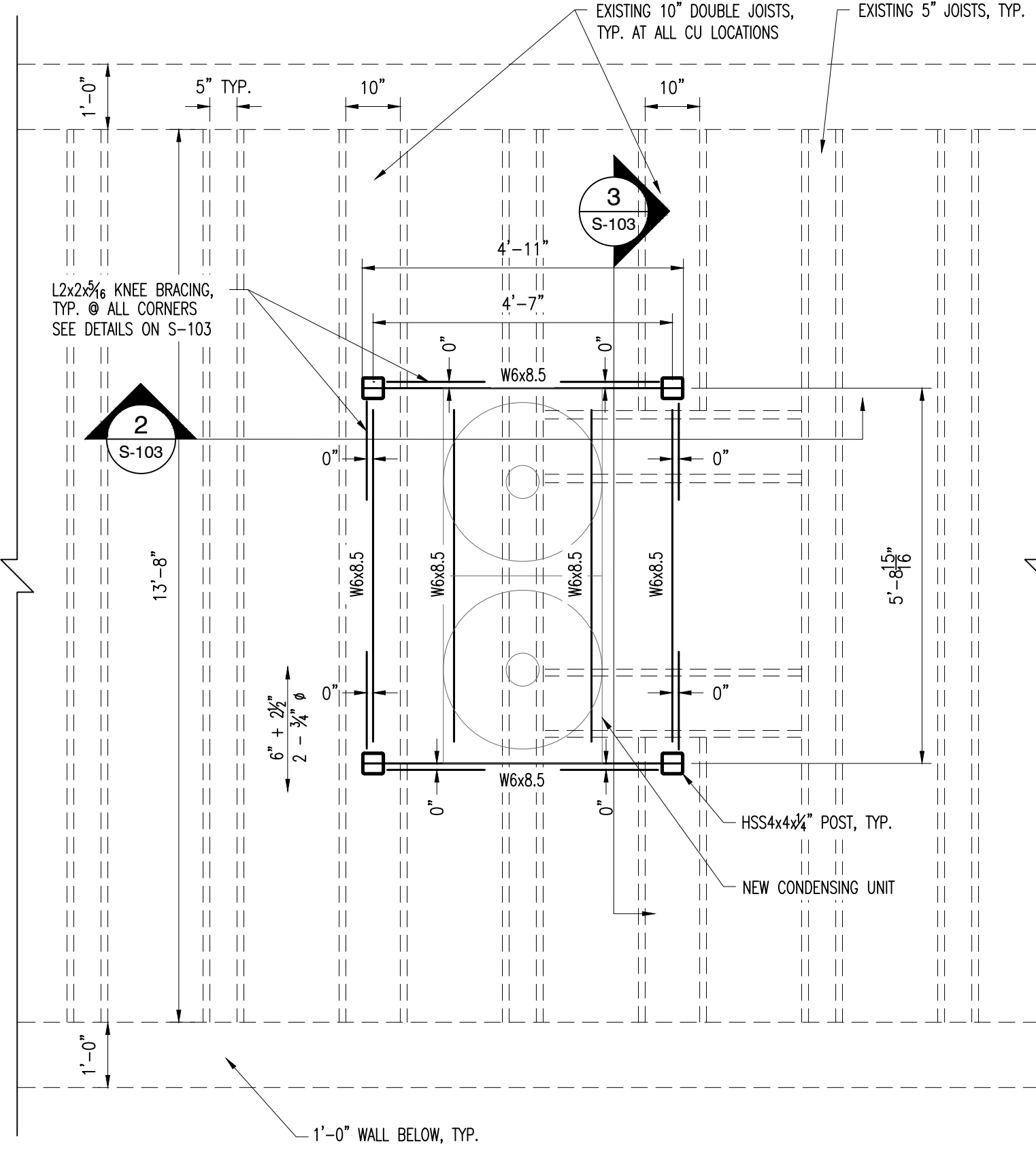
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S-101

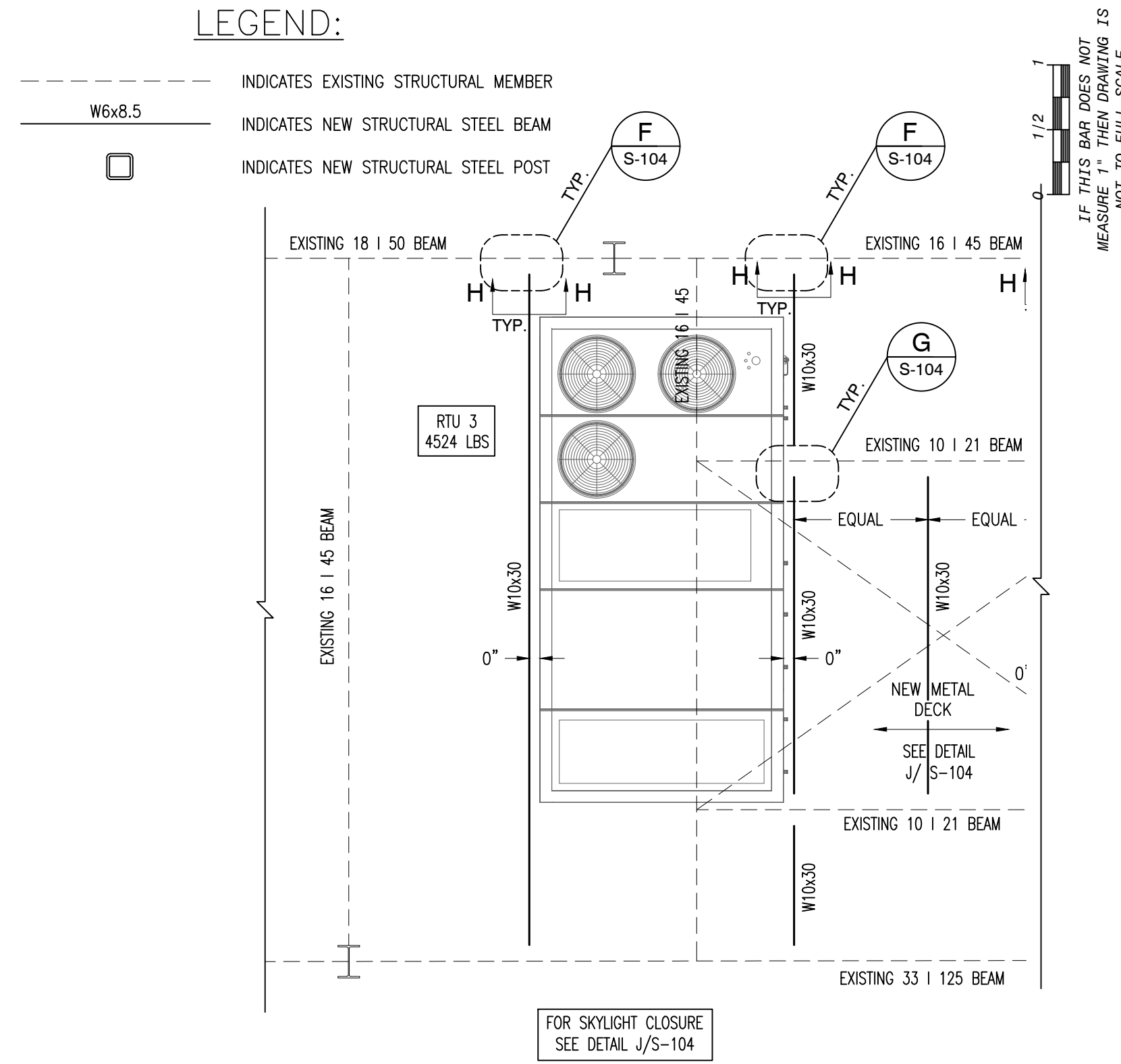




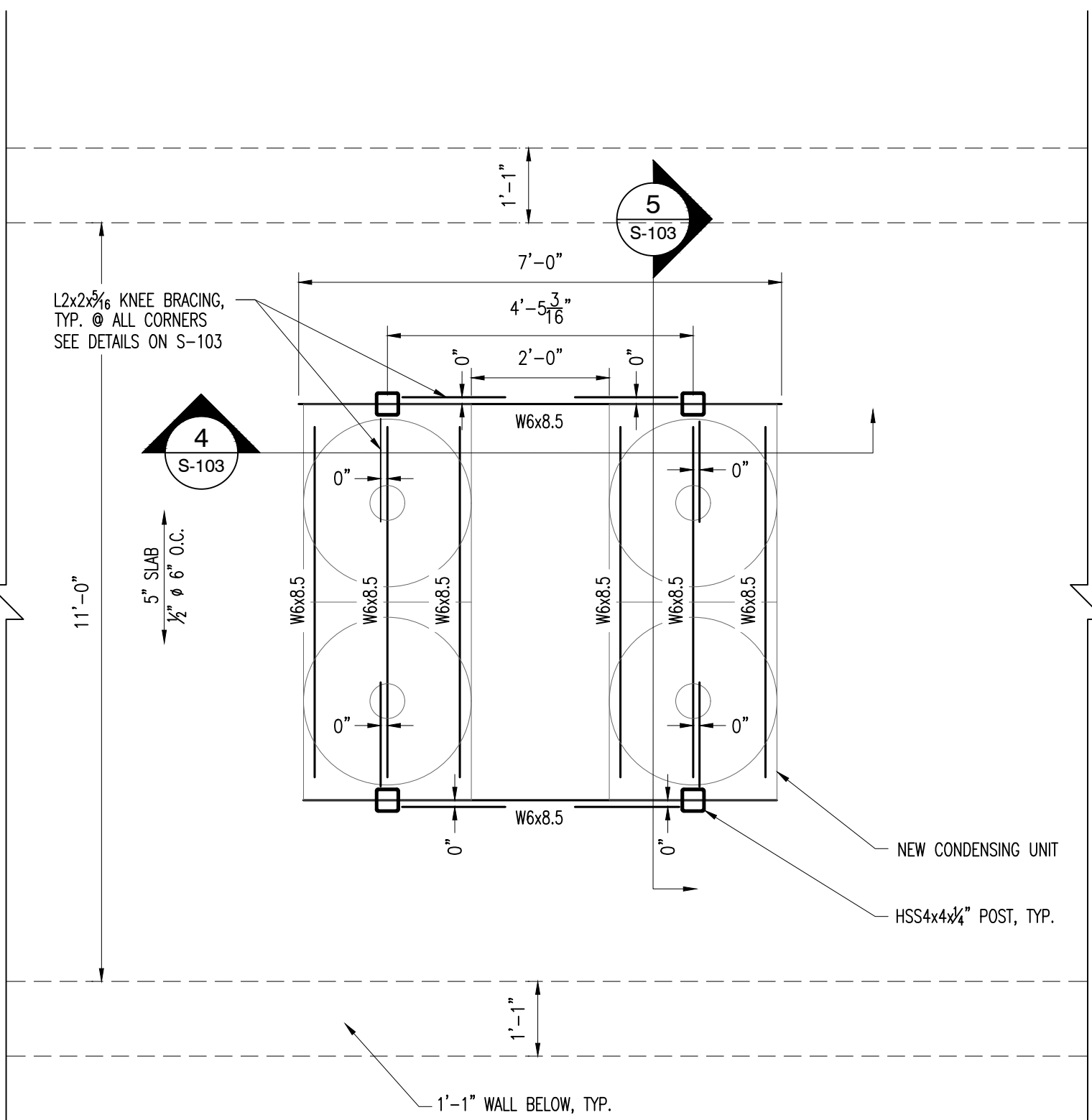
1 DUNNAGE FRAMING PLAN / TWO CU AT CONCRETE JOISTS LOCATIONS
SCALE: 1/2" = 1'-0"



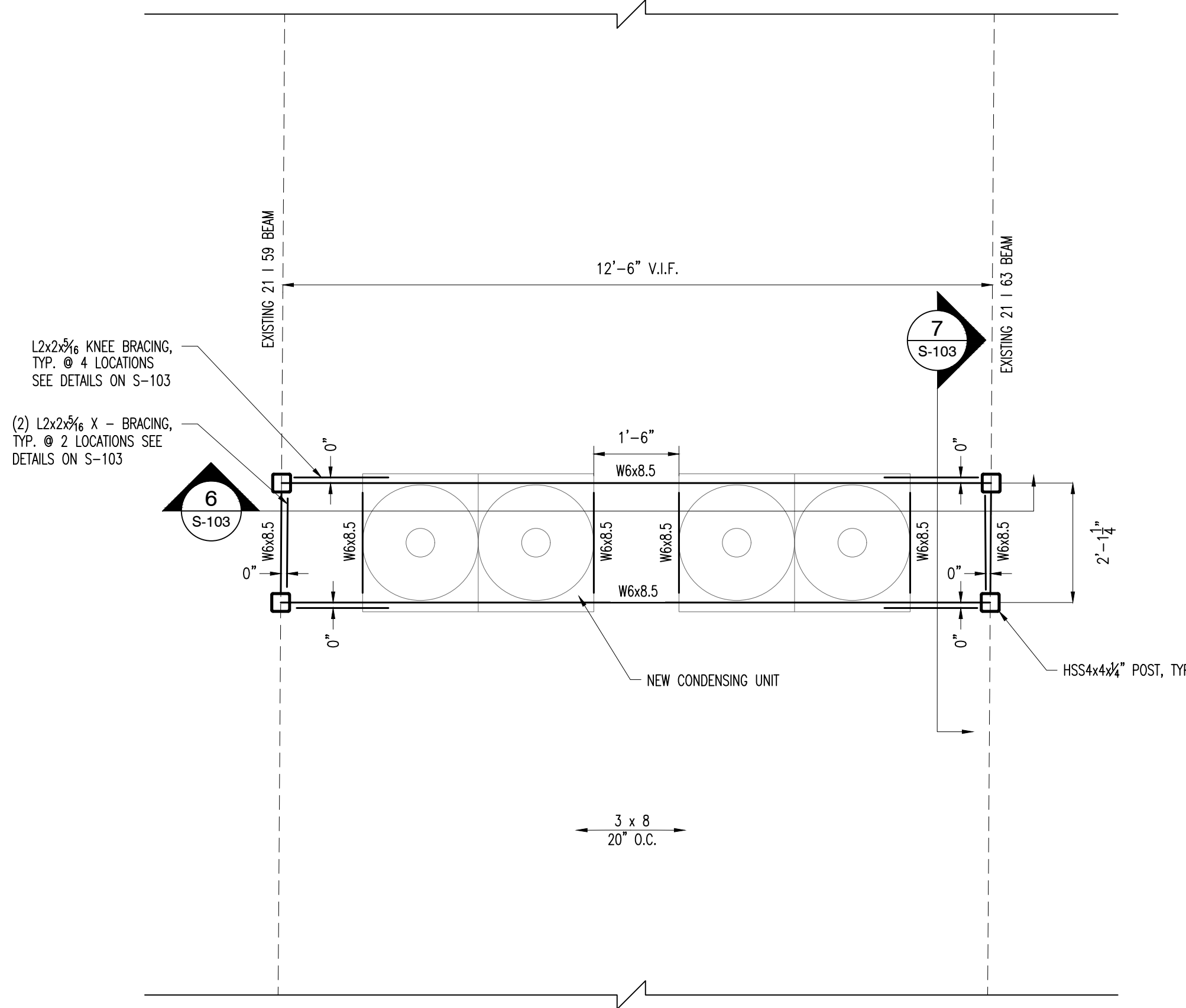
2 DUNNAGE FRAMING PLAN / SINGLE CU AT CONCRETE JOISTS LOCATIONS
SCALE: 1/2" = 1'-0"



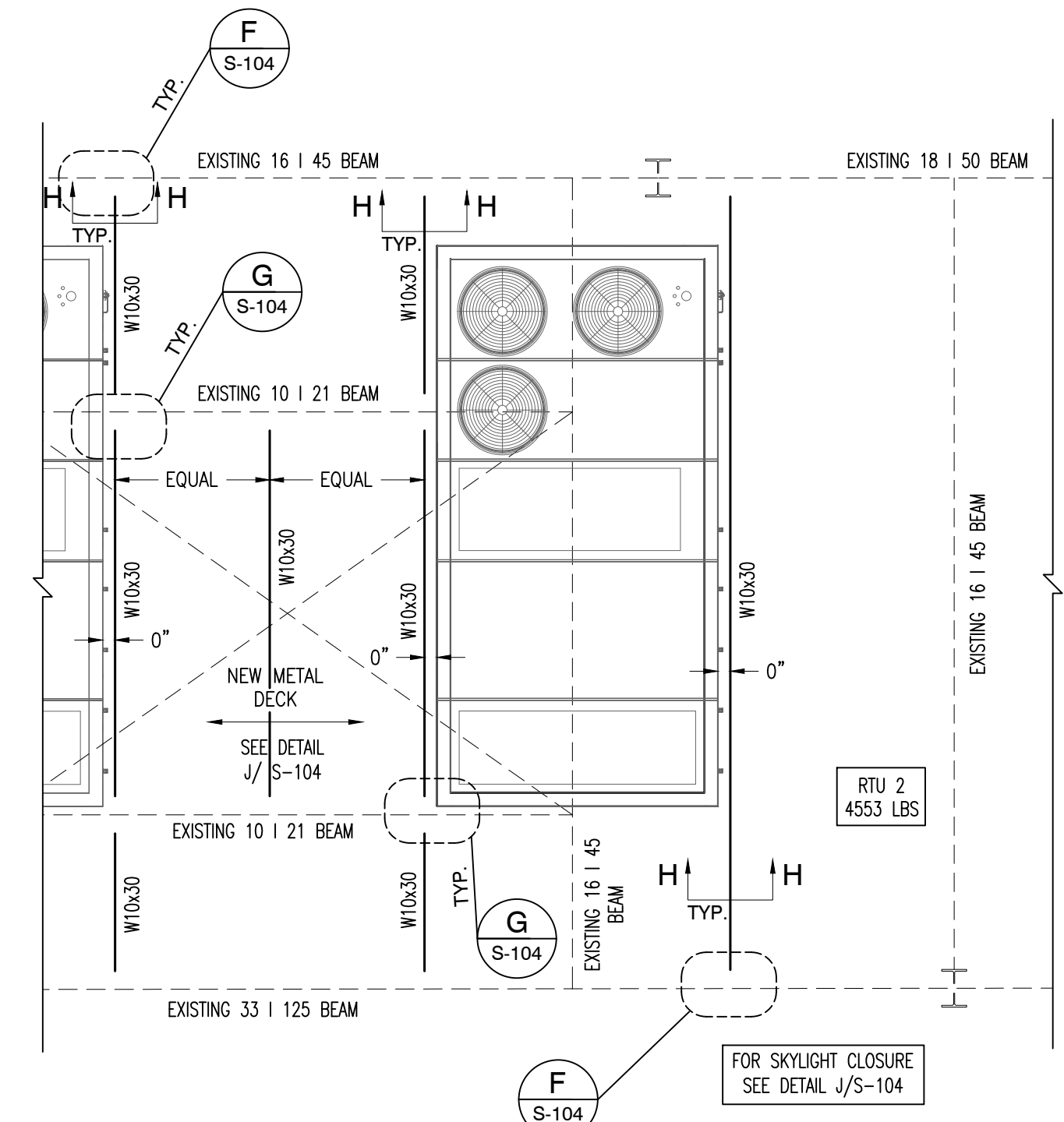
5 PLAN AT RTU 3 AT SKYLIGHT
SCALE: 1/4" = 1'-0"



3 DUNNAGE FRAMING PLAN / TWO CU AT 5" CONCRETE SLAB
SCALE: 1/2" = 1'-0"



4 DUNNAGE FRAMING PLAN / TWO CU AT LOWER ROOF
SCALE: 1/2" = 1'-0"



6 PLAN AT RTU 2 AT SKYLIGHT
SCALE: 1/4" = 1'-0"

LEGEND:

- W6x8.5 INDICATES EXISTING STRUCTURAL MEMBER
- INDICATES NEW STRUCTURAL STEEL BEAM
- INDICATES NEW STRUCTURAL STEEL POST

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

No.	Date	Revisions
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2	11-19-21	SEE ADDENDUM 1
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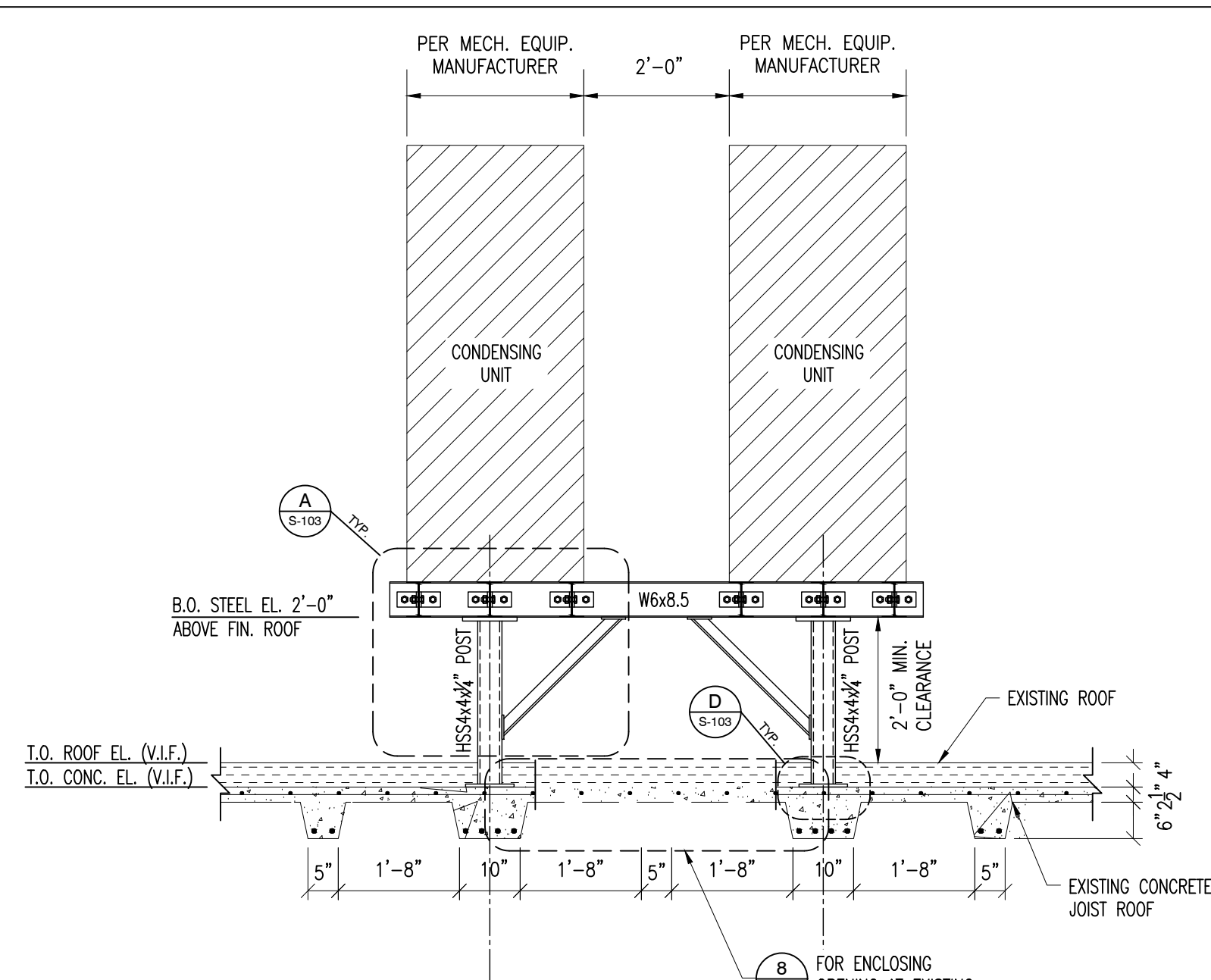
GREENMAN PEDERSEN, INC 400 BELLA BOULEVARD MONTEBELLO, NY 10601	Mechanical Engineer:
UNIVENT REPLACEMENT AT HAVERSTRAW ELEMENTARY SED# 50-02-01-06-0-009-018 18 Grant Street Haverstraw, NY 10627	Structural Engineer:

UNIVENT REPLACEMENT AT HAVERSTRAW ELEMENTARY SED# 50-02-01-06-0-009-018 18 Grant Street Haverstraw, NY 10627	COUNTY OF ROCKLAND
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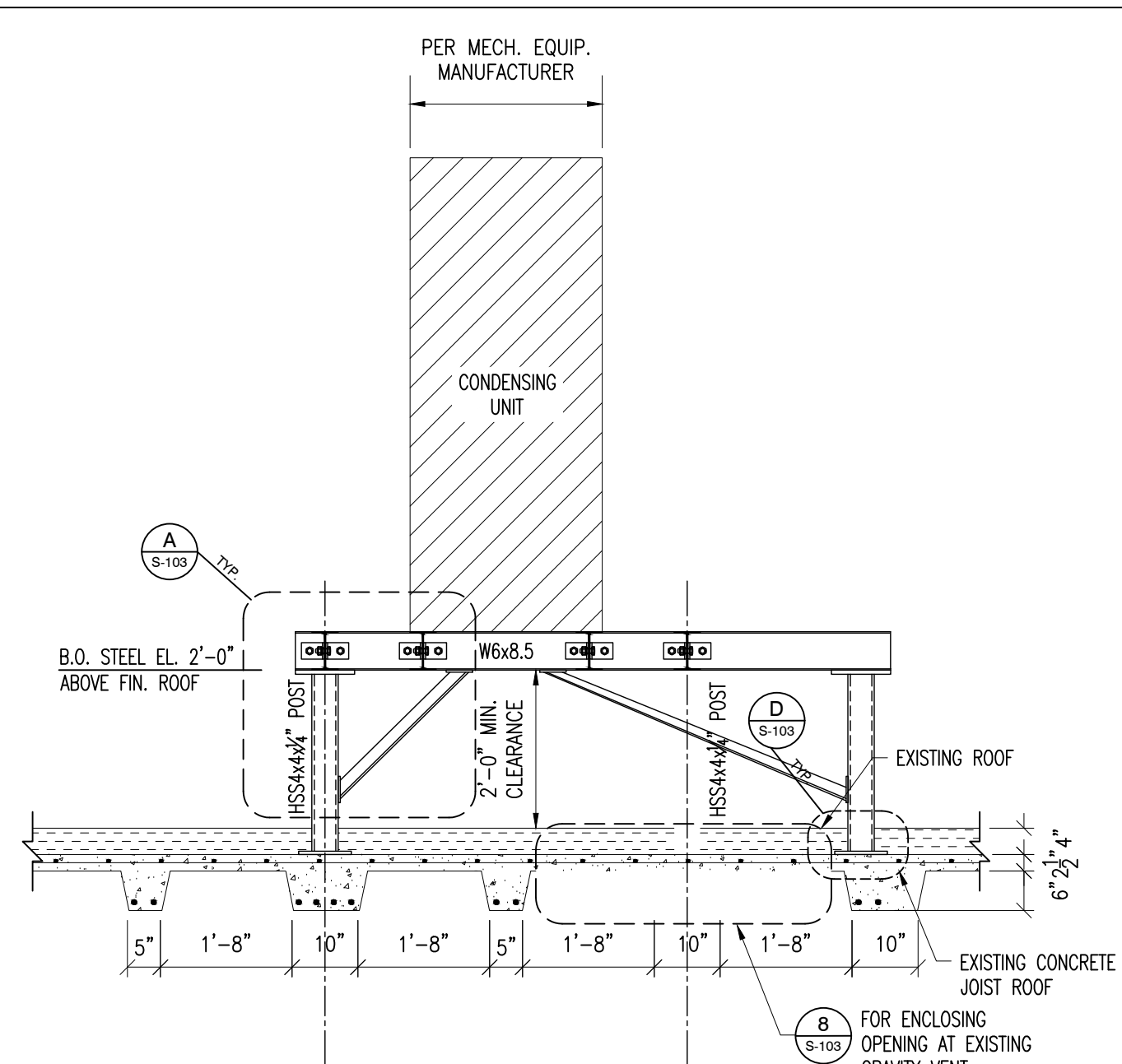
MICHAEL SHILALE ARCHITECTS, L.L.P. New City, NY 10958 140 Park Avenue www.shilale.com	Tel 845-708-9200
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ROOF PARTIAL PLANS	S-102
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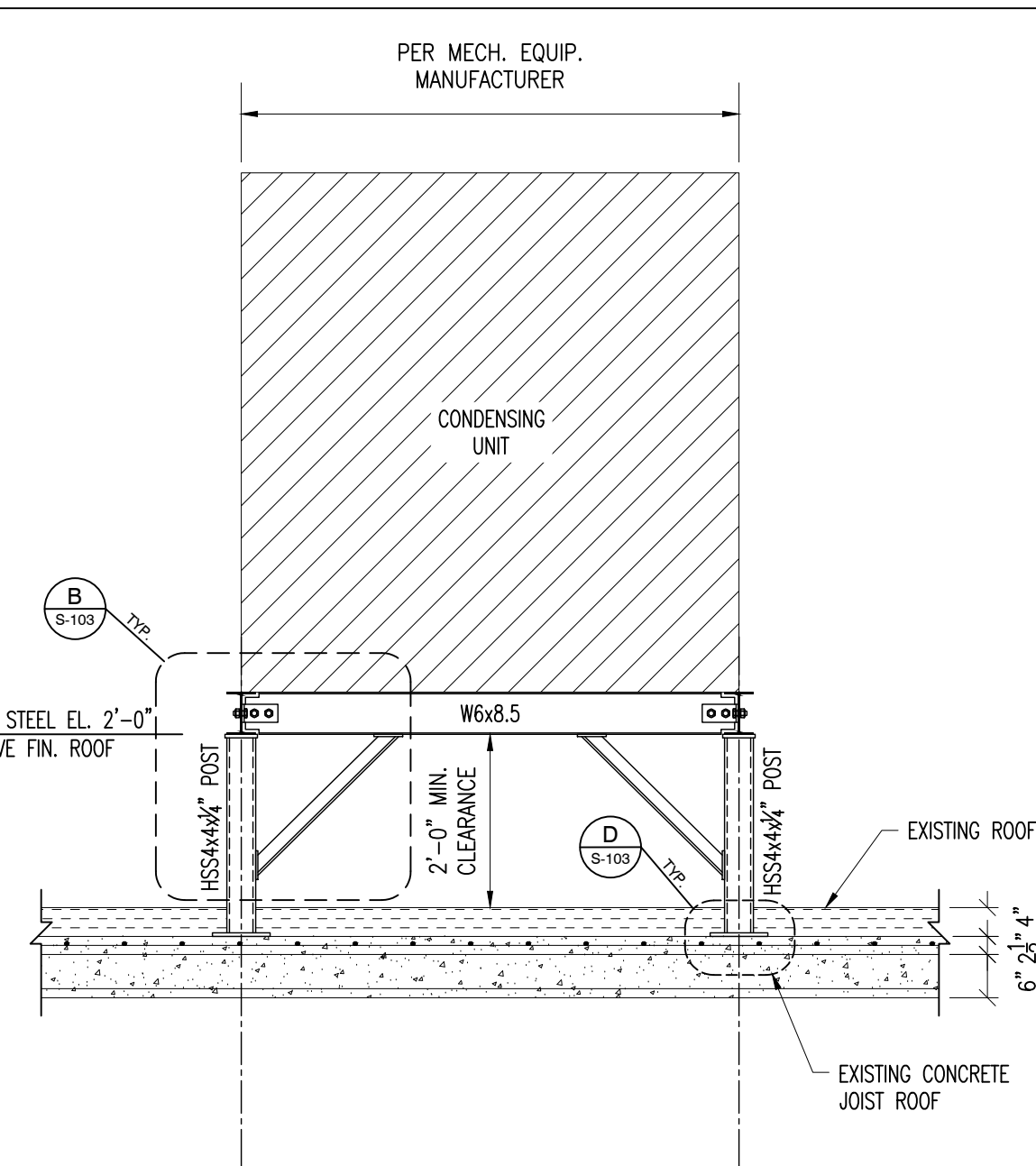
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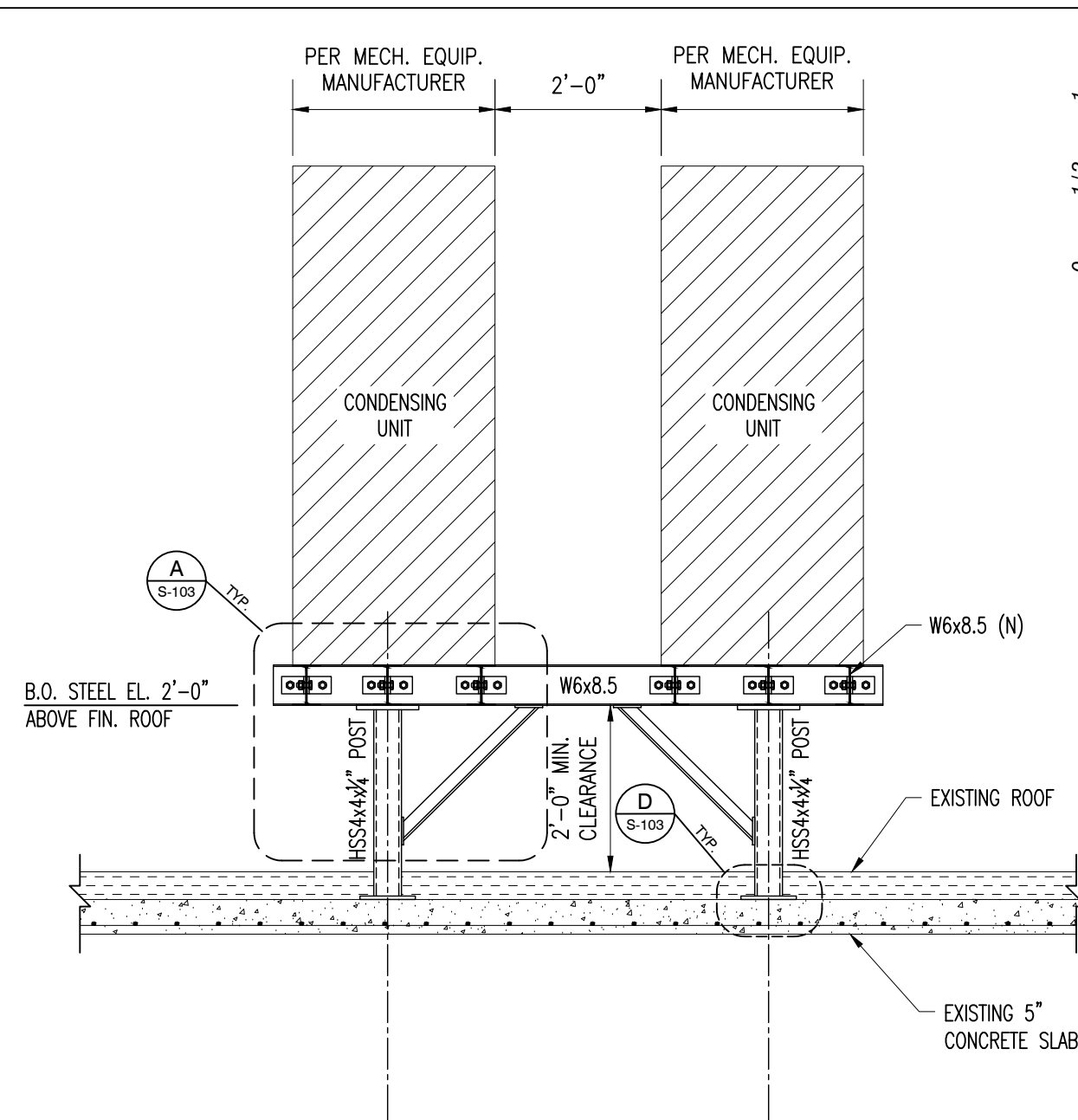
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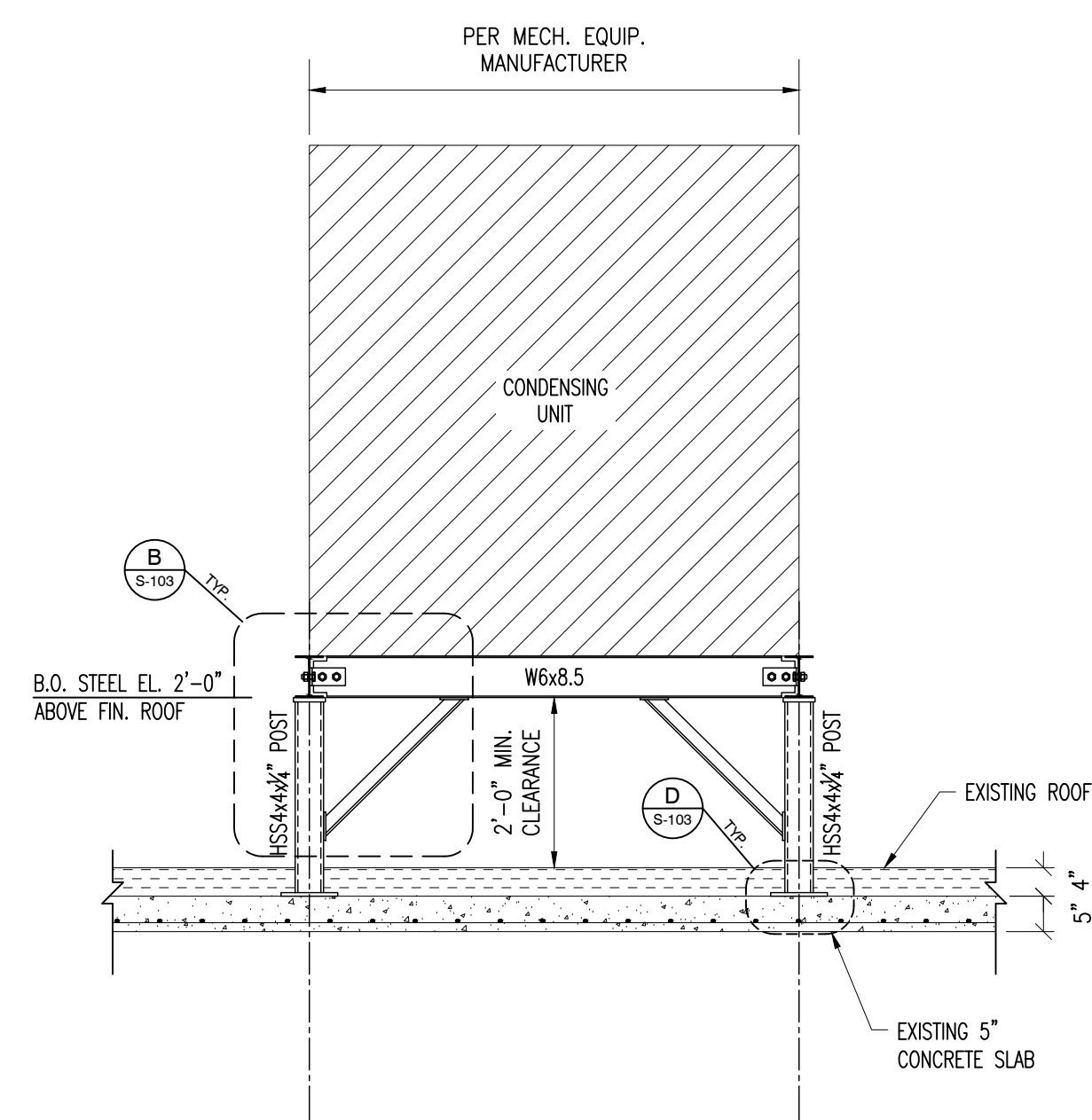
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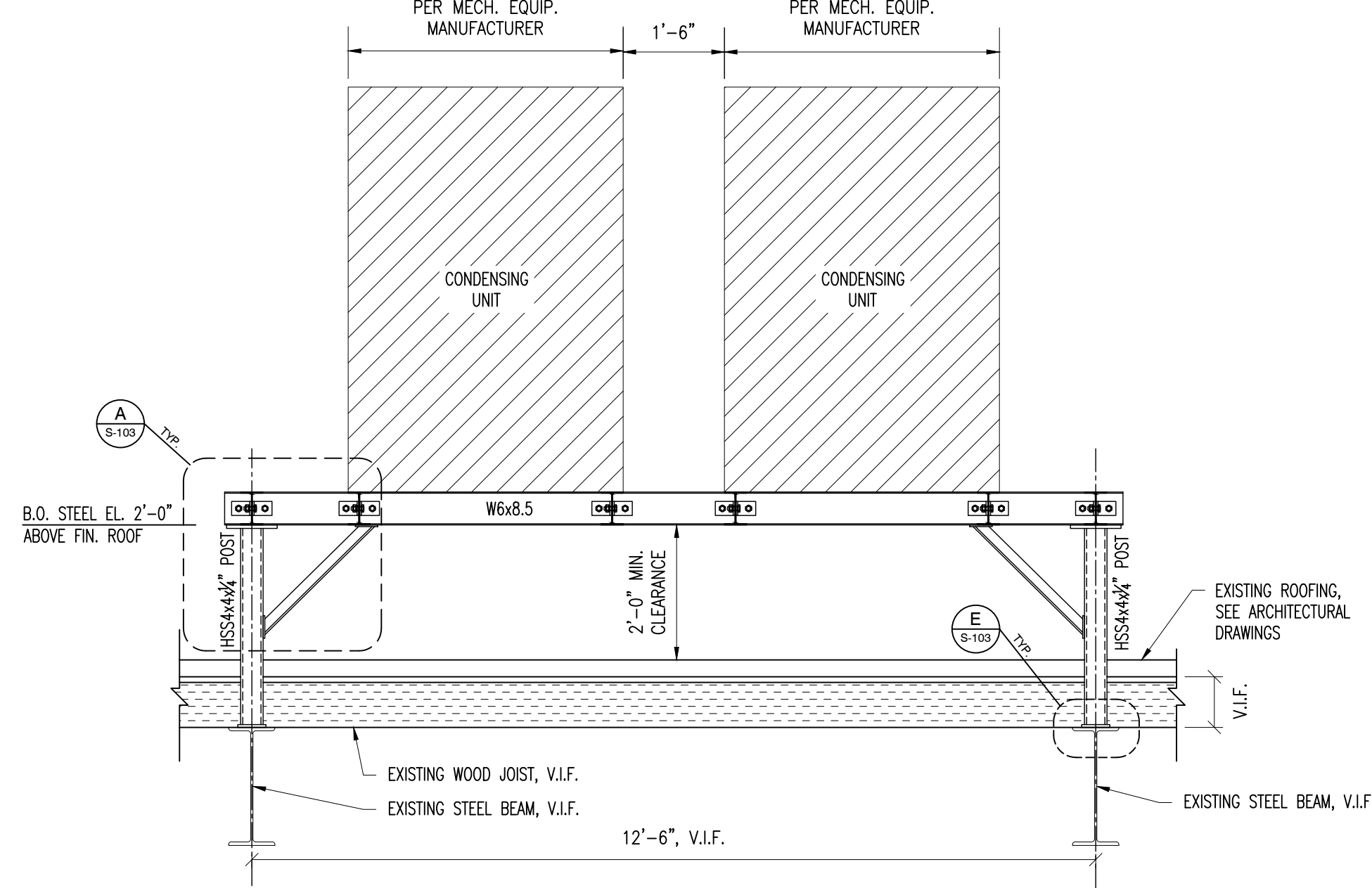
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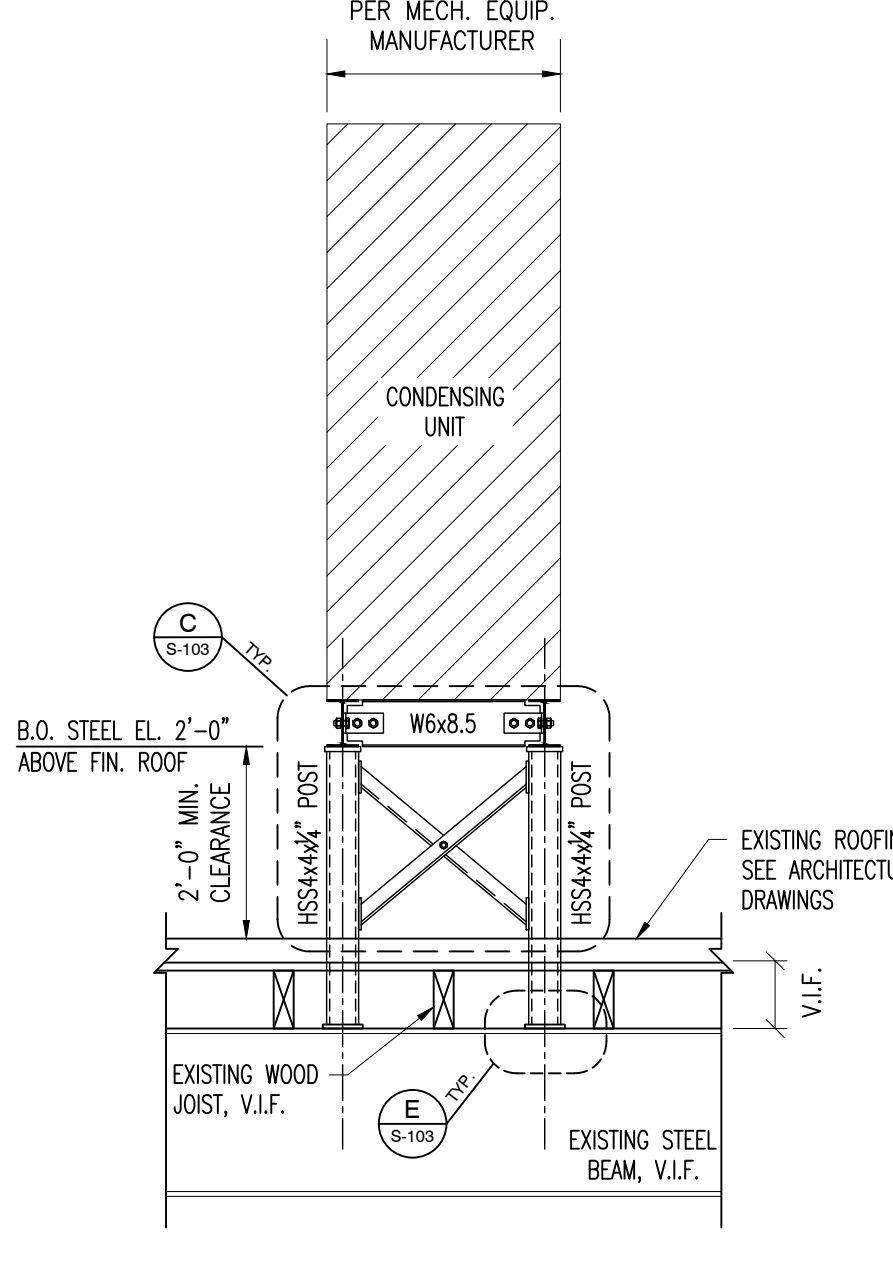
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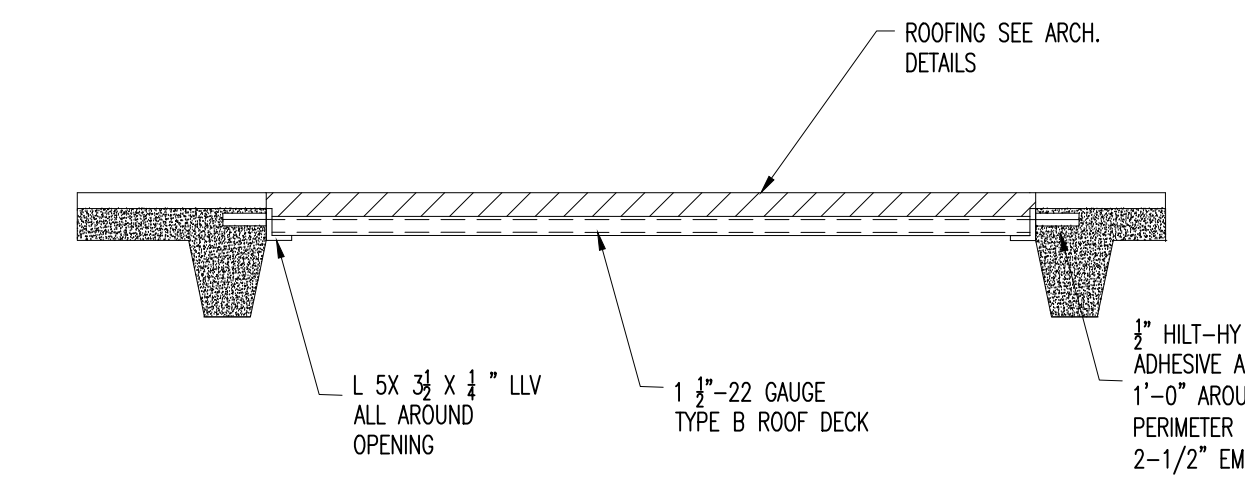
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SCALE: 1/2" = 1'-0"



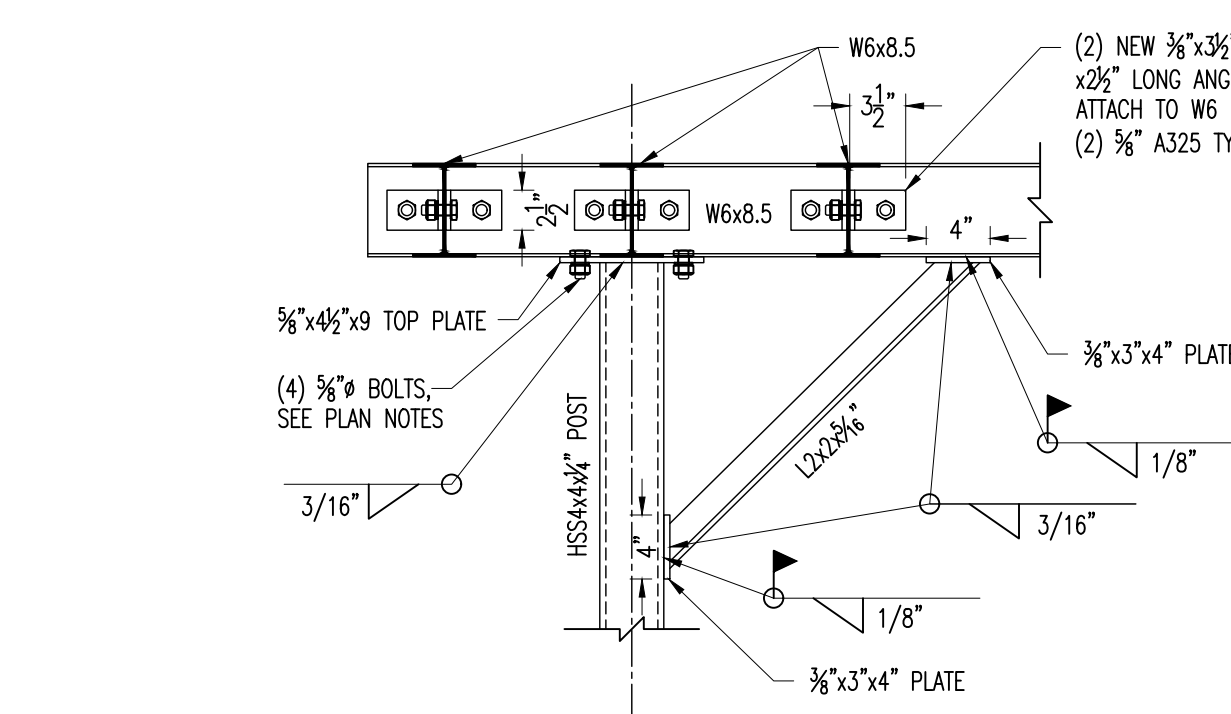
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SCALE: 1/2" = 1'-0"



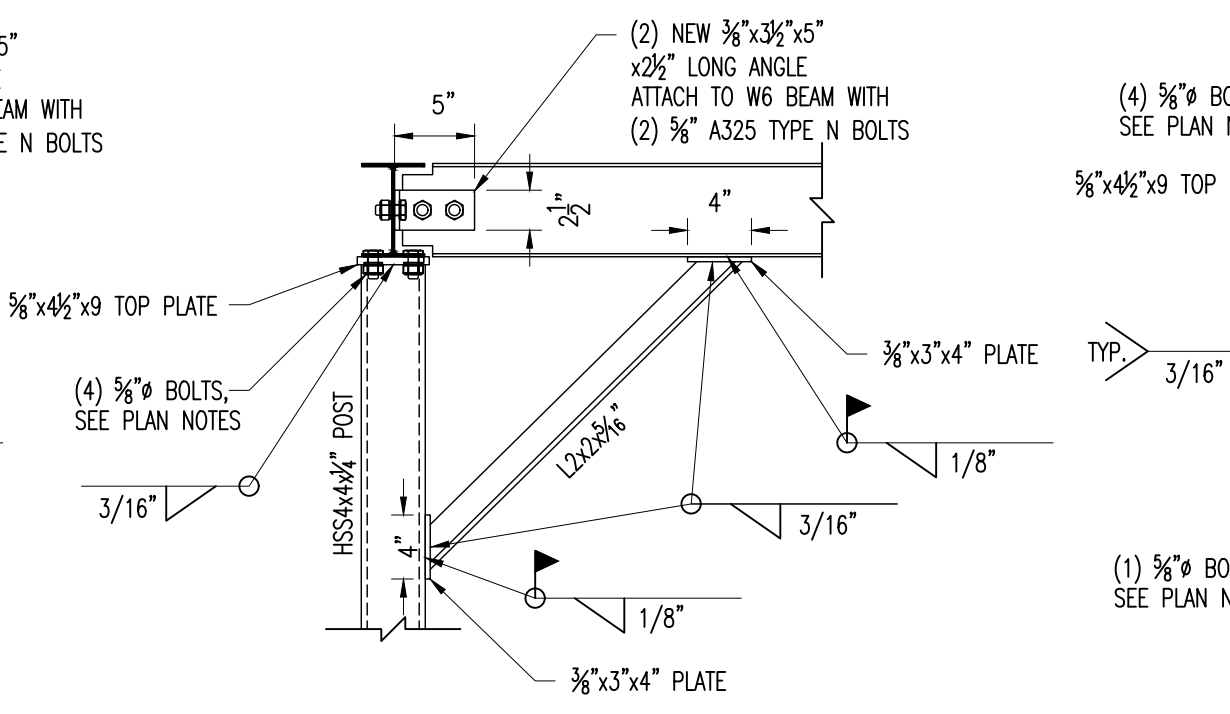
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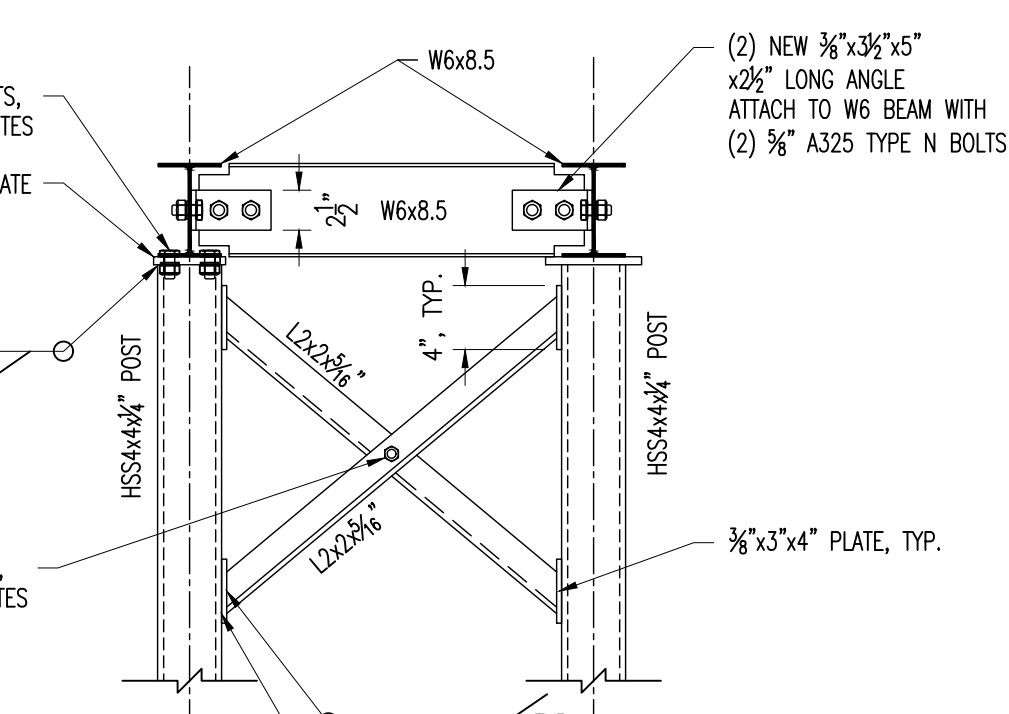
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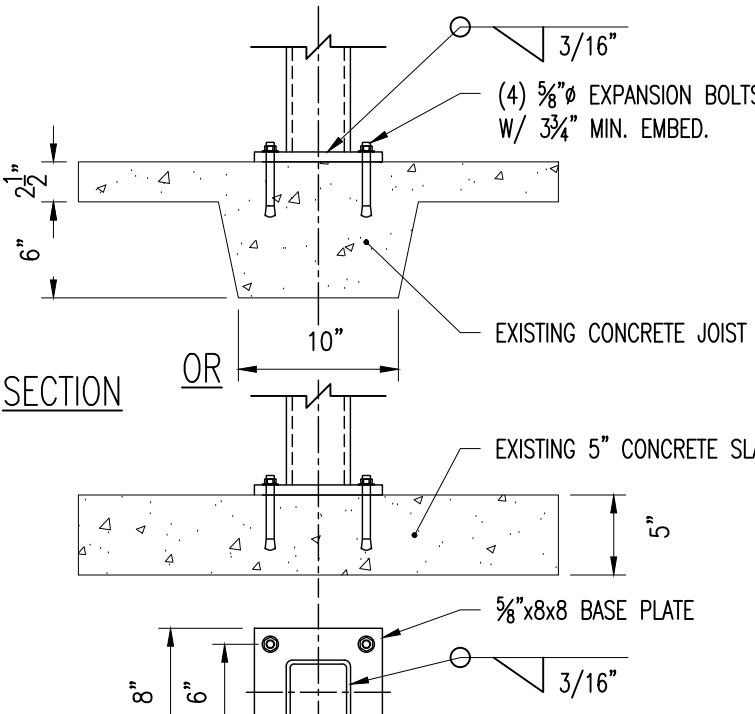
A DETAIL
SCALE: 1" = 1'-0"



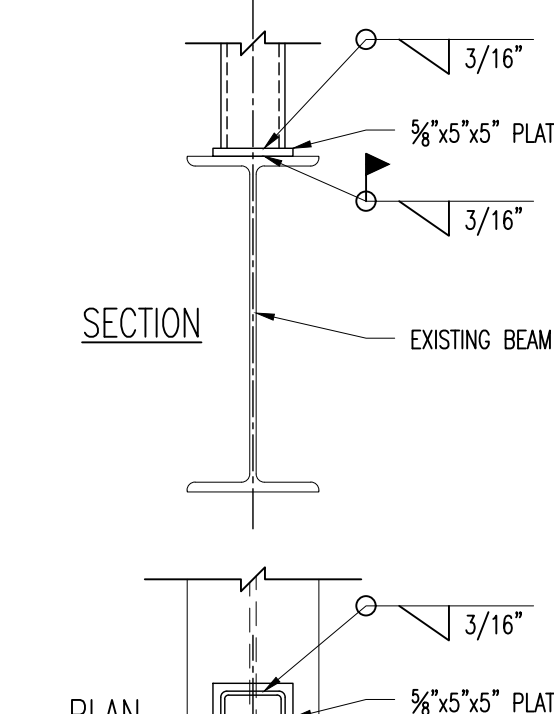
B DETAIL
SCALE: 1" = 1'-0"



C DETAIL
SCALE: 1" = 1'-0"



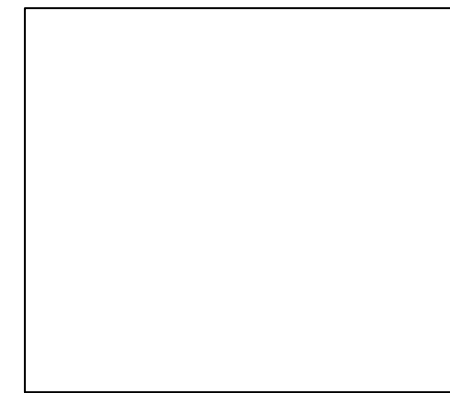
D DETAIL
SCALE: 1" = 1'-0"



E DETAIL
SCALE: 1" = 1'-0"

0 1/2 1
IF THIS BAR DOES NOT
MEASURE 1" THEN DRAWING IS
NOT TO FULL SCALE

No.	Date	Revisions
3	12-17-21	ISSUED FOR BID
2	11-19-21	SED ADDENDUM 1
1	08-30-21	BIDDING DOCUMENTS



Drawn by	YY
Checked by	JCC
Project No.	41048
Scale	AS NOTED
Date	08-30-21

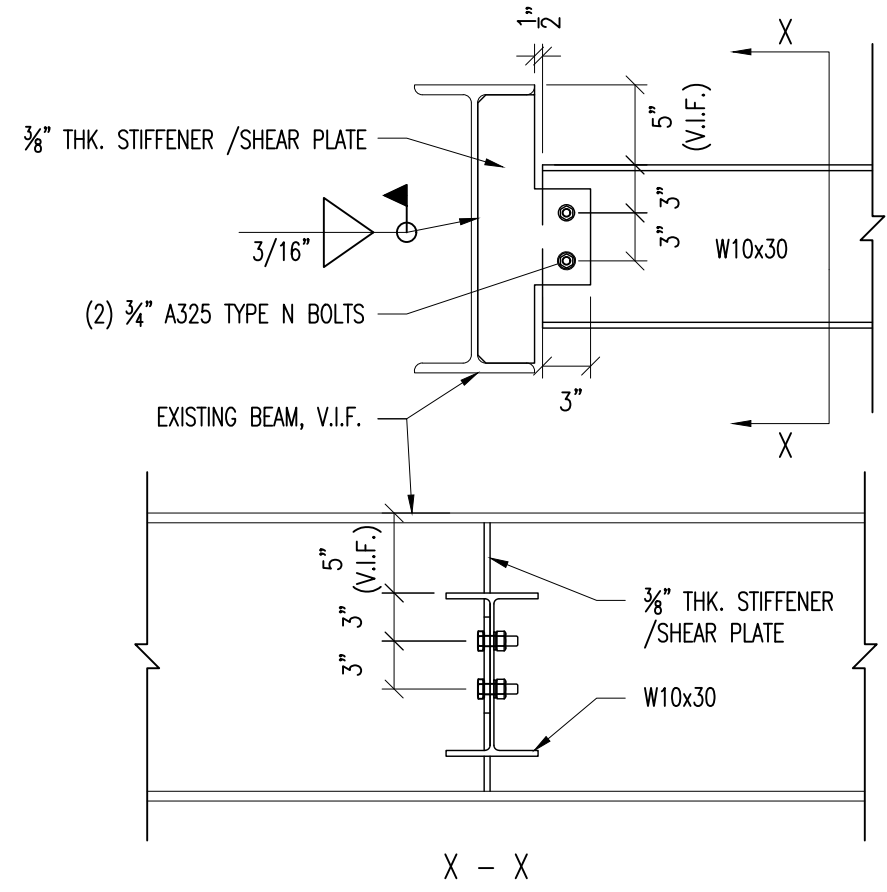
Mechanical Engineer:	GREENMAN PEDERSEN, INC. 400 BELLA BOULEVARD MONTICELLO, NY 10801
Structural Engineer:	

UNIVENT REPLACEMENT
AT
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ELEMENTARY
SED# 50-02-01-06-0-009-018
18 Grant Street
Haverstraw, NY 10627
COUNTY OF ROCKLAND

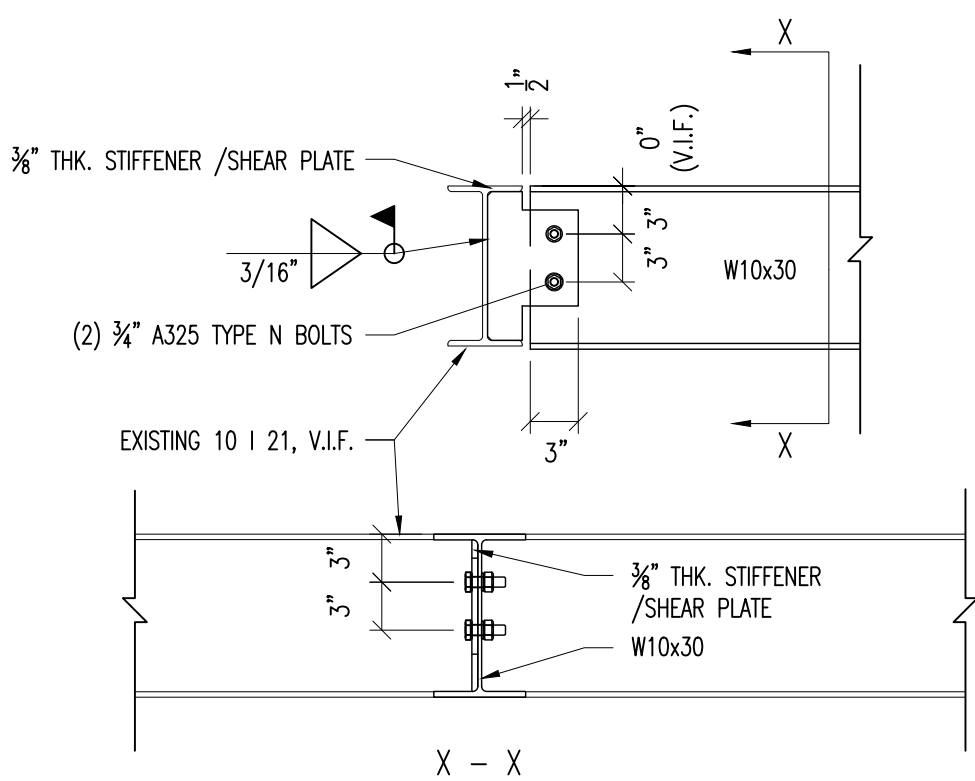
MSA
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New City, NY 10956 Tel 845-708-9200
140 Park Avenue
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**SECTIONS AND
TYPICAL
DETAILS-1**
Drawing No.
S-103

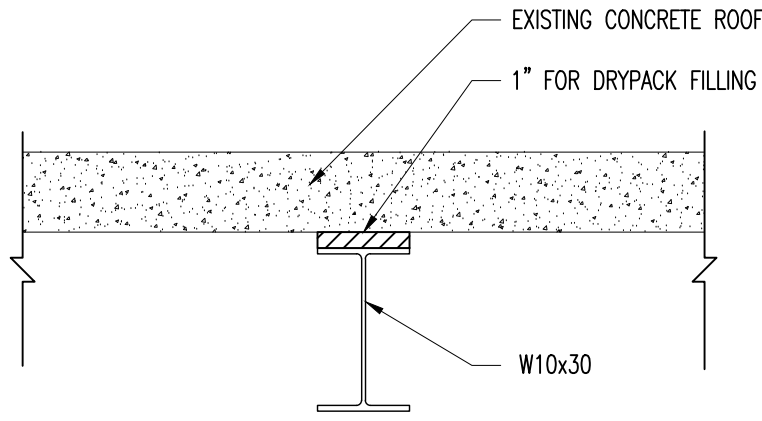
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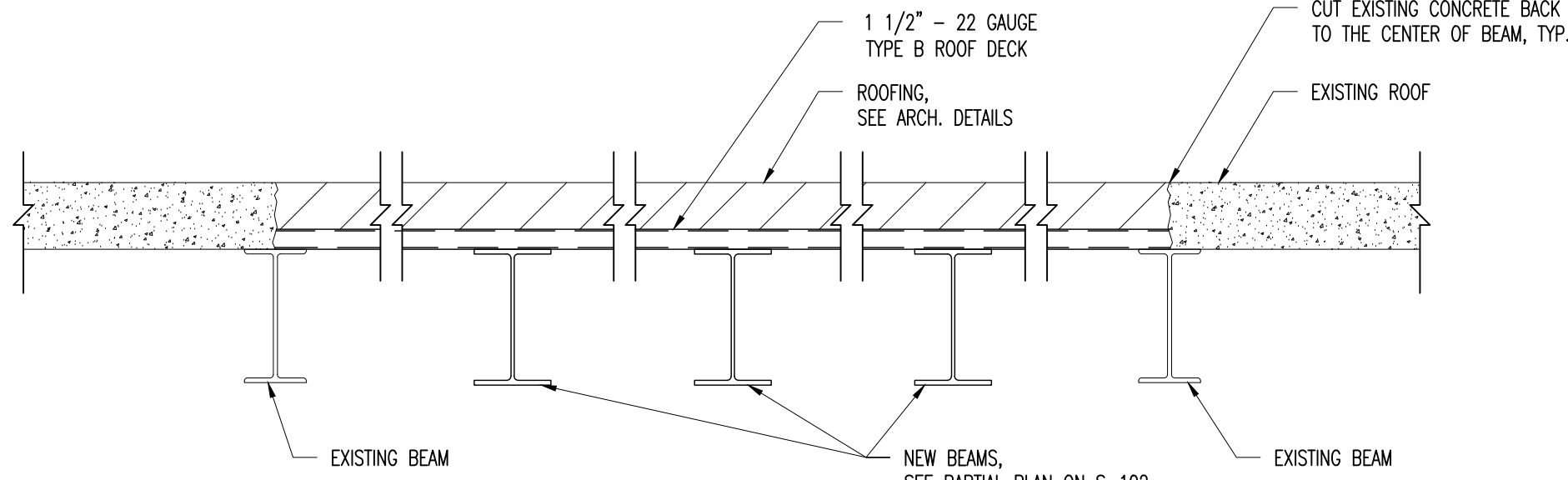
F **DETAIL**
SCALE: 1" = 1'-0"



G **DETAIL**
SCALE: 1" = 1'-0"



H **DETAIL**
SCALE: 1" = 1'-0"



J **DETAIL**
SCALE: 1" = 1'-0"

0 1/2 1
IF THIS BAR DOES NOT
MEASURE 1" THEN DRAWING IS
NOT TO FULL SCALE

Drawing Title
**SECTIONS AND
TYPICAL
DETAILS-2**

Drawing No.
S-104

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Tel 845-708-9200
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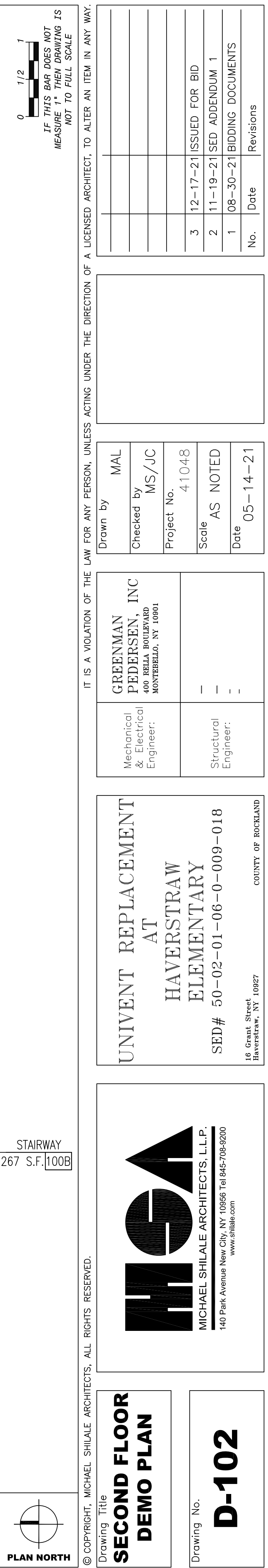
UNIVENT REPLACEMENT
AT
HAVERSTRAW
ELEMENTARY
SED# 50-02-01-06-0-009-018
16 Grant Street
Haverstraw, NY 10627
COUNTY OF ROCKLAND

Mechanical
Engineer:
GREENMAN
PEDERSEN, INC
400 BELLA BOULEVARD
MONTICELLO, NY 10801
Structural
Engineer:
-
-
-

Drawn by YY
Checked by JCC
Project No. 41048
Scale AS NOTED
Date 08-30-21

No.	Date	Revisions
3	12-17-21	ISSUED FOR BID
2	11-19-21	SED ADDENDUM 1
1	08-30-21	BIDDING DOCUMENTS

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	EXISTING THROUGH WALL LOUVER
	SUPPLY REGISTER
	EXISTING UNIT VENT TO BE REPLACED UV-00
	EXISTING FAN COIL UNIT TO BE REPLACED FC-00
	EXISTING UNIT VENT (TO REMAIN)
	EXISTING UNIT VENT (TO BE REMOVED)

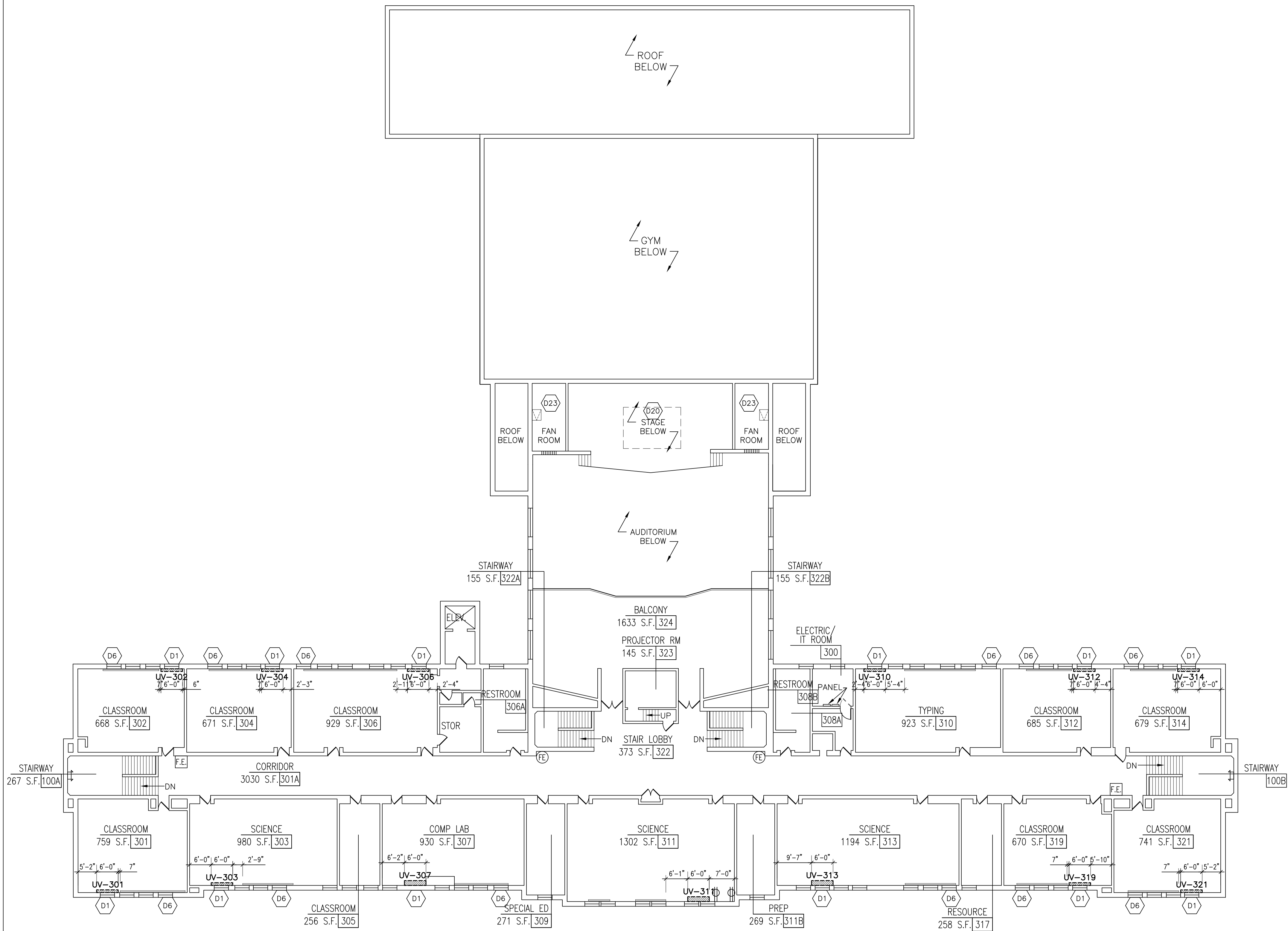
- D1 REMOVE EXISTING UV AND CABINET. PREPARE LOCATION FOR NEW UV.
- D2 REMOVE EXISTING UV. UV IS BUILT INTO EXISTING WALL SYSTEM. SAVE WALL PANELS FOR REUSE.
- D3 REMOVE EXISTING CEILING TILE FOR INSTALLATION OF NEW HVAC UNIT AND DUCTWORK.
- D4 SAW CUT EXISTING PLASTER CEILING FOR INSTALLATION OF HVAC EQUIPMENT.
- D5 EXISTING UV TO BE REMOVED AND REPLACED WITH CEILING MOUNTED UNIT.
- D6 PREPARE EXISTING INSULATED PANEL IN WINDOW FOR GRAVITY VENT.
- D7 REMOVE EXISTING LOUVER. PREPARE LOCATION FOR NEW UV.
- D8 REMOVE EXISTING CEILING TILE FOR INSTALLATION OF NEW LINESETS TO RUN ABOVE TILE.
- D9 SAWCUT EXISTING PLASTER CEILING FOR NEW CEILING MOUNTED HVAC UNIT.
- D20 REMOVE EXISTING SKYLIGHT AND CURB. PREPARE FOR ROOF REPAIR.
- D21 REMOVE EXISTING GRAVITY VENT AND CURB. PREPARE FOR ROOF REPAIR.
- D22 REMOVE EXISTING ROOFING FOR INSTALLATION OF DUNNAGE. CORE DRILL DECK FOR REQUIRED LINESETS AND POWER.
- D23 SAWCUT AND REMOVE EXISTING MASONRY FOR NEW DUCTWORK INTO FAN ROOM. COORDINATE WITH MECHANICAL DRAWINGS.
- D24 REMOVE EXISTING DOORS. SAVE FOR REINSTALLATION.
- D25 REMOVE EXISTING DOOR AND FRAME. SALVAGE LOCKSET FOR REINSTALLATION. (BOILER ROOM DOOR LOCATED IN BASEMENT)
- D26 REMOVE EXISTING CEILING TILE. SAWCUT EXISTING PLASTER CEILING FOR INSTALLATION OF HVAC COMBINER BOX.
- D27 REMOVE EXISTING UNIT VENTILATOR OR CABINET HEATER.

DEMO NOTES

1. CONTRACTOR SHALL BE REQUIRED TO CORE DRILL ALL HOLES IN WALLS, FLOORS AND CEILINGS TO FACILITATE NEW LINESETS, ELECTRICAL CONDUITS AND CONDENSATE LINES.
2. PATCH EXISTING VCT FLOORING AT BASE UNDER UNI-VENT.
3. PATCH EXISTING PLASTER AT ALL UV LOCATIONS.

GENERAL NOTES

NOTE: SEE MEP DRAWINGS
FOR EACH TRADES'S
DEMOLITION.



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3	12-17-21	ISSUED FOR BID	
2	11-19-21	SED ADDENDUM 1	
1	08-30-21	BIDDING DOCUMENTS	
No.	Date	Revisions	

Drawn by	MAL
Checked by	MS/JC
Project No.	41048
Scale	AS NOTED
Date	05-14-21

Mechanical & Electrical Engineer;	GREENMAN PEDERSEN, INC 400 BELLA BOULEVARD MONTEBELLO, NY 10901
Structural Engineer;	— — — —

UNIVENT REPLACEMENT
AT
HAVERSTRAW
ELEMENTARY
SED# 50-02-01-06-0-009-018
16 Grant Street,
Haverstraw, NY 10927
COUNTY OF ROCKLAND



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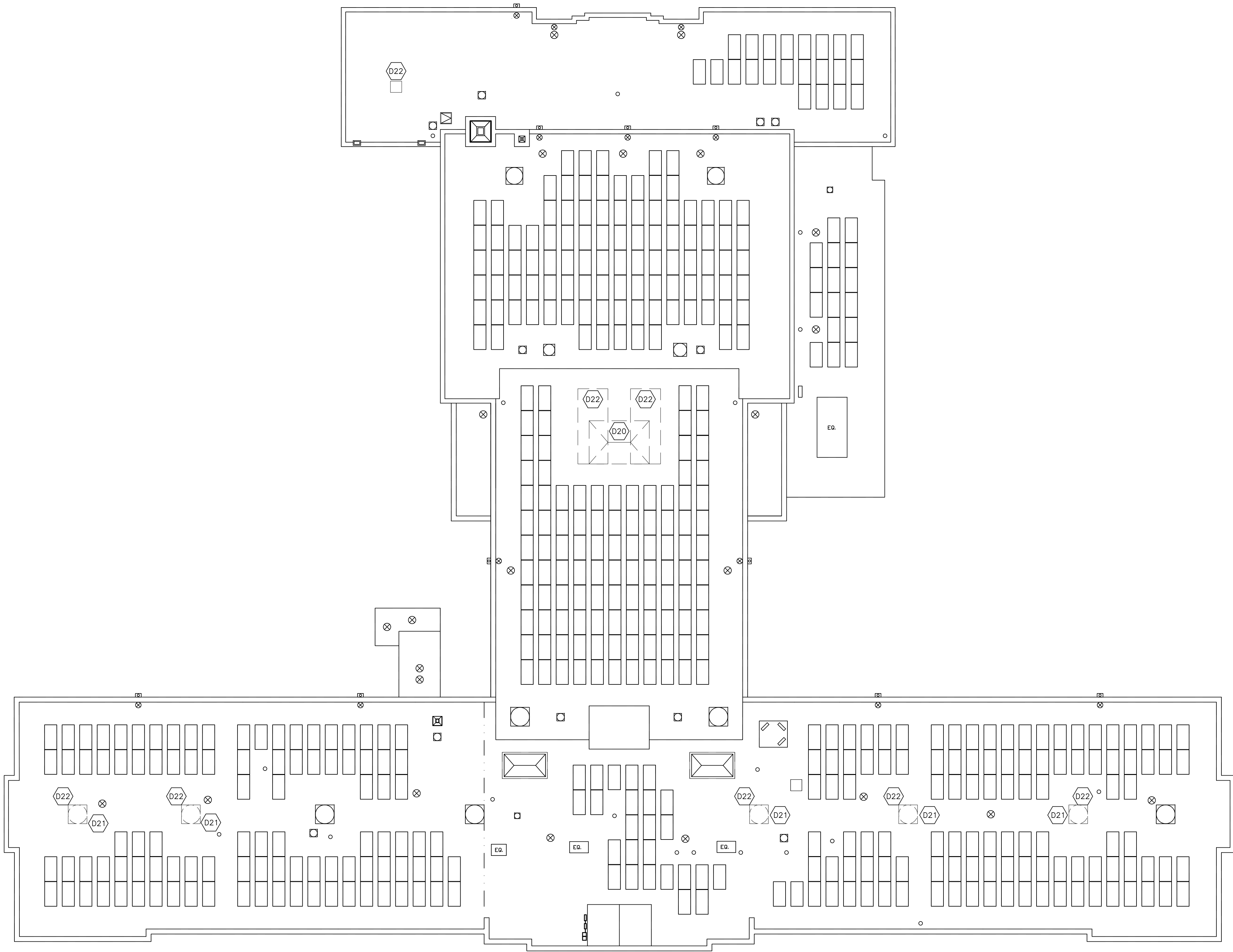
Drawing Title
**THIRD FLOOR
DEMO PLAN**

Drawing No.

D-103

DEMO NOTES	
	1. CONTRACTOR SHALL BE REQUIRED TO CORE DRILL ALL HOLES IN WALLS, FLOORS AND CEILINGS TO FACILITATE NEW LINESETS, ELECTRICAL CONDUITS AND CONDENSATE LINES. 2. PATCH EXISTING VCT FLOORING AT BASE UNDER UNI-VENT. 3. PATCH EXISTING PLASTER AT ALL UV LOCATIONS.
GENERAL NOTES	

NOTE: SEE MEP DRAWINGS
FOR EACH TRADES'S
DEMOLITION.



0 1/2 1

PLAN NORTH

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3	12-17-21	ISSUED FOR BID
2	11-19-21	SED ADDENDUM 1
1	08-30-21	BIDDING DOCUMENTS
No.	Date	Revisions

Mechanical & Electrical Engineer:	GREENMAN PEDERSEN, INC 400 BELLA BOULEVARD MONTEBELLO, NY 10901
Structural Engineer:	— — —

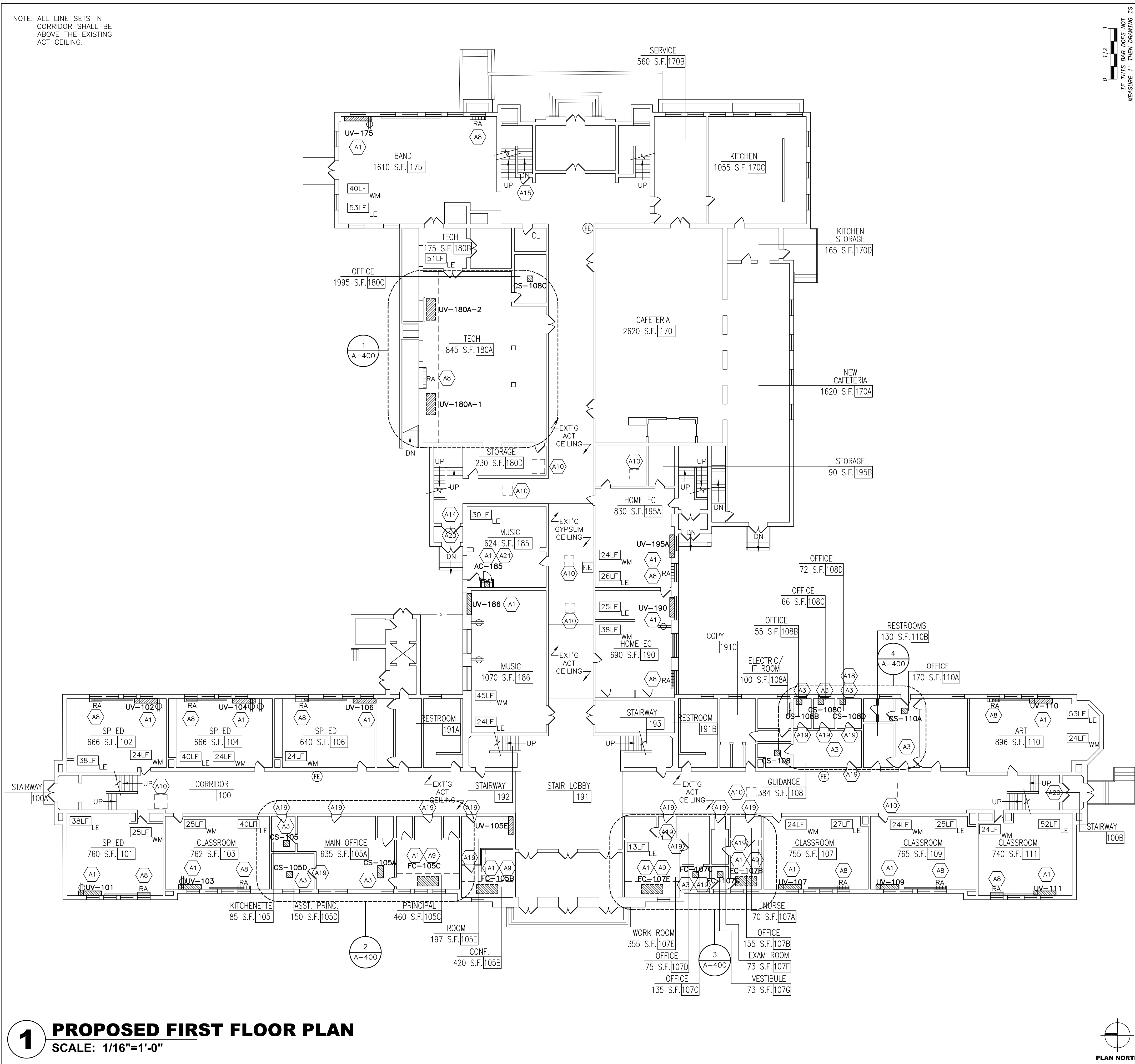
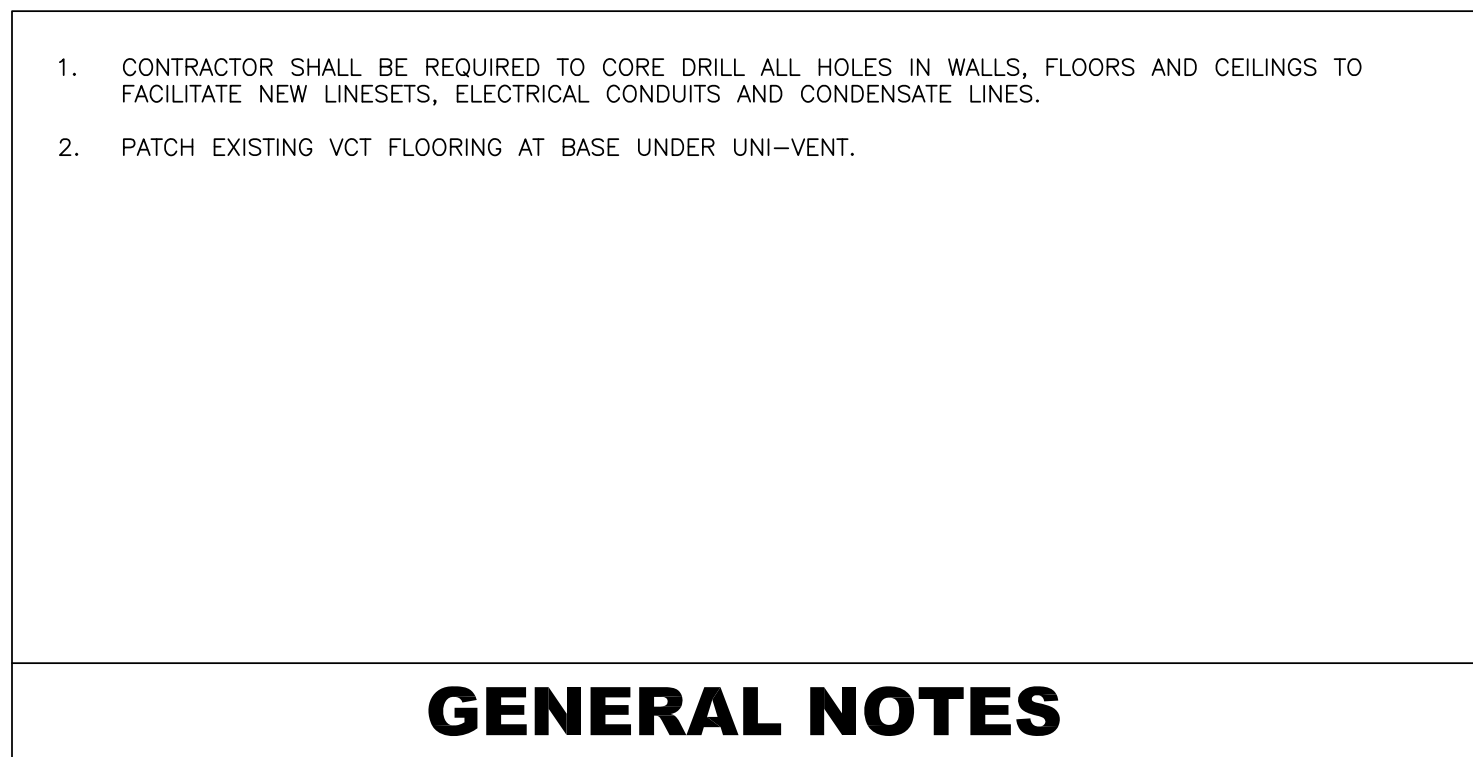
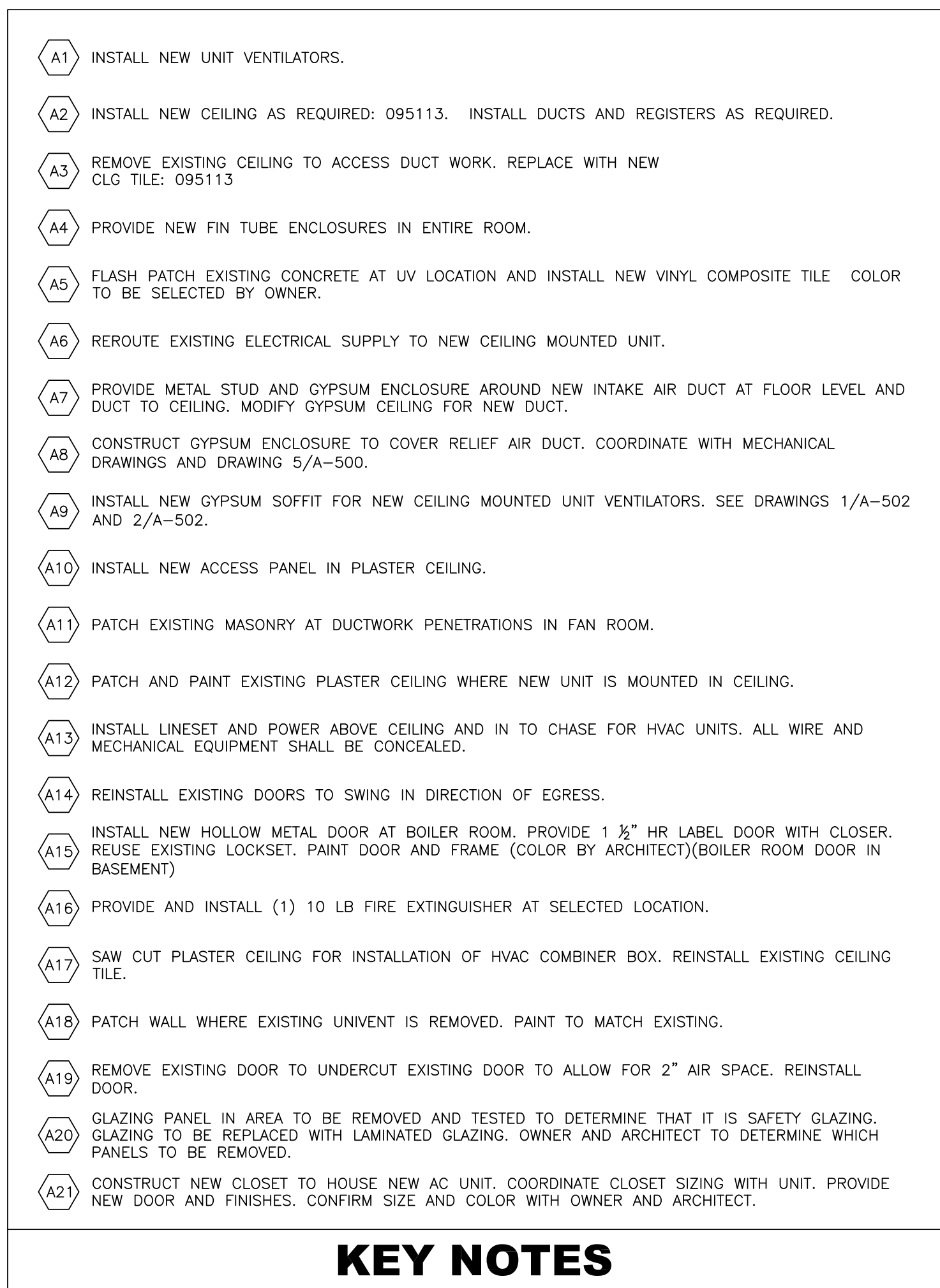
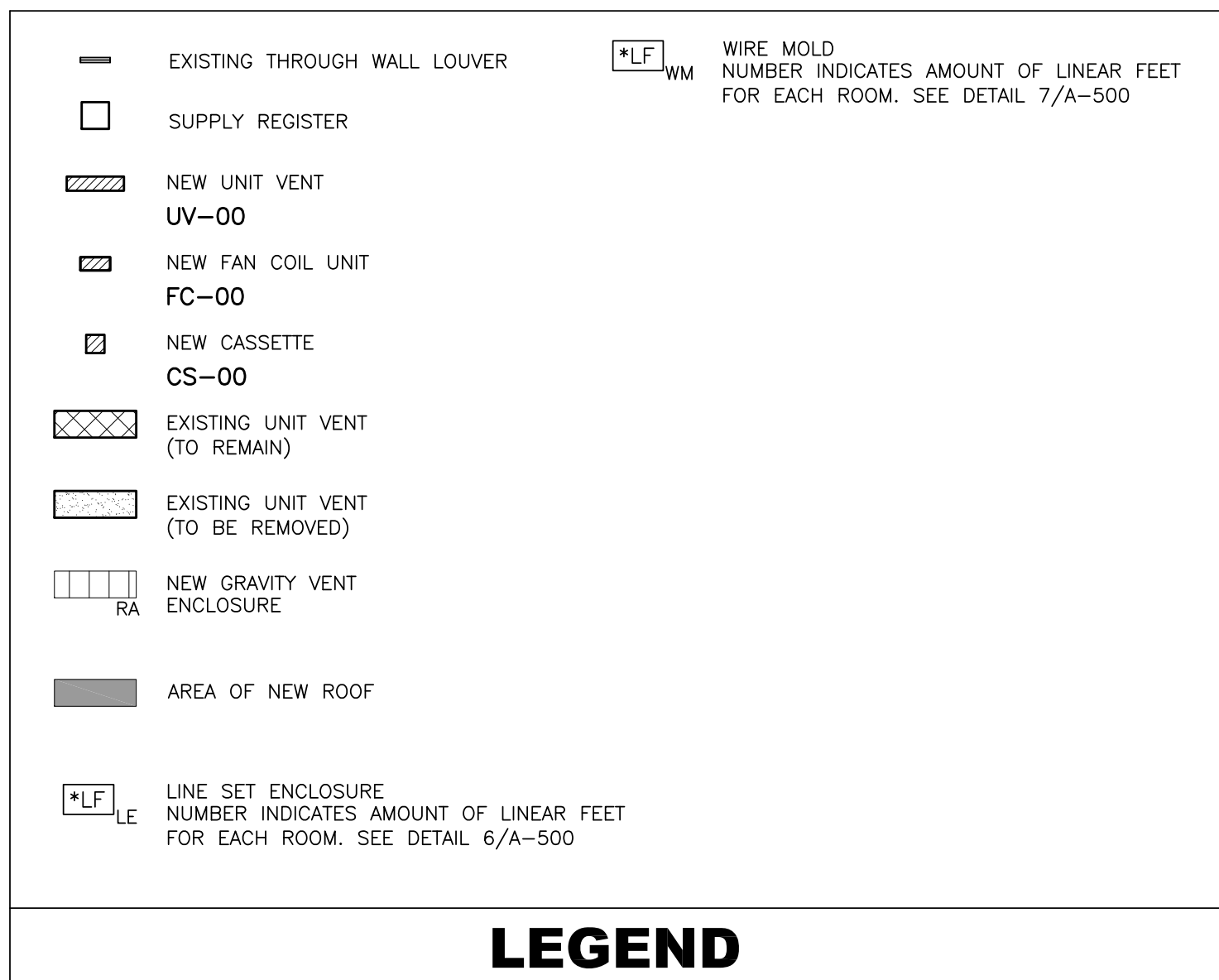
UNIVENT REPLACEMENT
AT
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ELEMENTARY
SED# 50-02-01-06-0-009-018
16 Grant Street
Haverstraw, NY 10927
COUNTY OF ROCKLAND

The logo for Michael Shilale Architects, L.L.P. is a stylized monogram. It features a large, bold letter 'M' on the left, a circular element in the center containing a stylized 'S', and a large, bold letter 'A' on the right. The letters are black with a fine, vertical-line texture.

MICHAEL SHILALE ARCHITECTS, L.L.P.

140 Park Avenue New City, NY 10856 Tel 914-708-9200
www.shilale.com

Drawing Title ROOF DEMO PLAN	Drawing No. D-104
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[illegible]

Drawn by	IMAL
Checked by	MS/JC
Project No.	41048
Scale	AS NOTED
Date	05-14-21

Mechanical & Electrical Engineer:	GREENMAN PEDERSEN, INC. 400 RELLA BOULEVARD MONTEBELLO, NT 10801
Structural Engineer:	— — — —

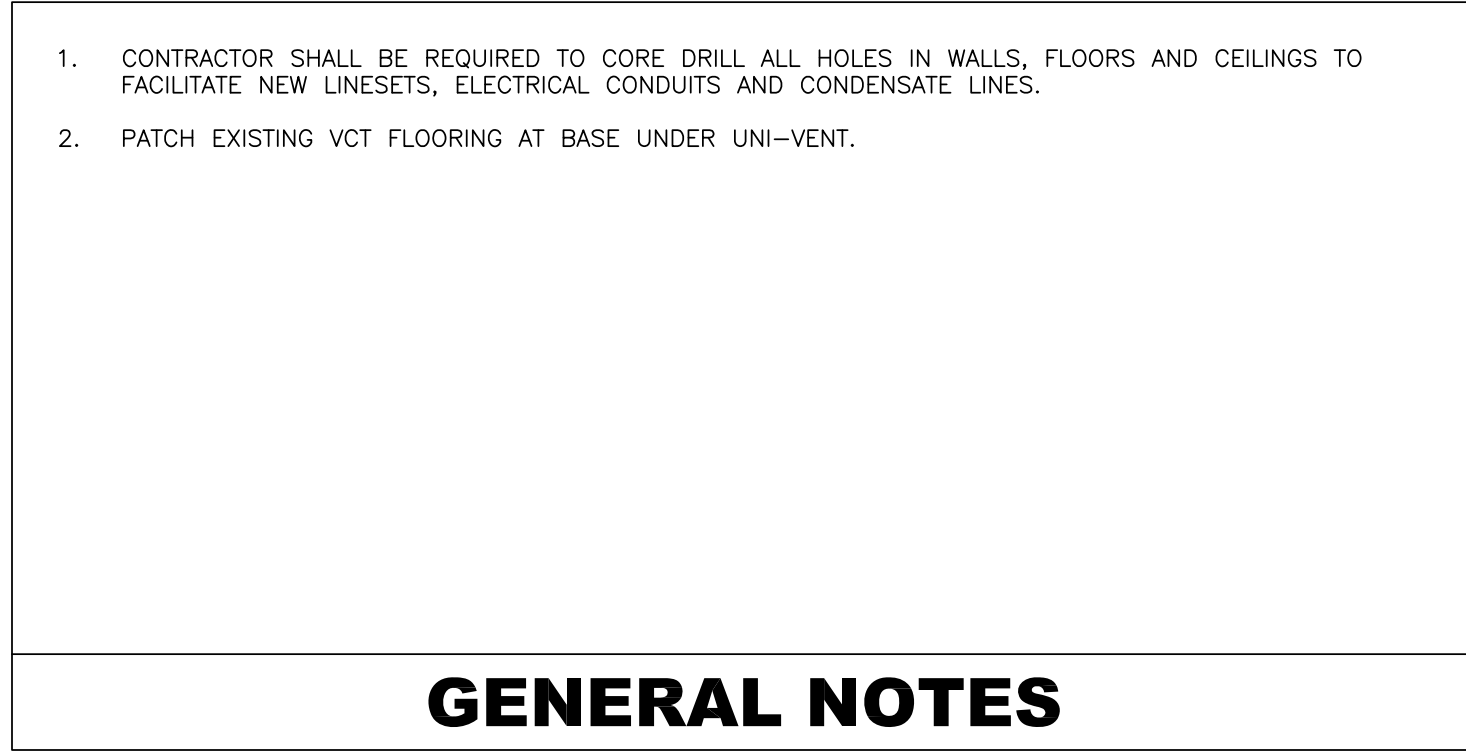
UNIVENT REPLACEMENT
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ELEMENTARY
SED# 50-02-01-06-0-009-018
16 Grant Street
Haverstraw, NY 10927
COUNTY OF ROCKLAND



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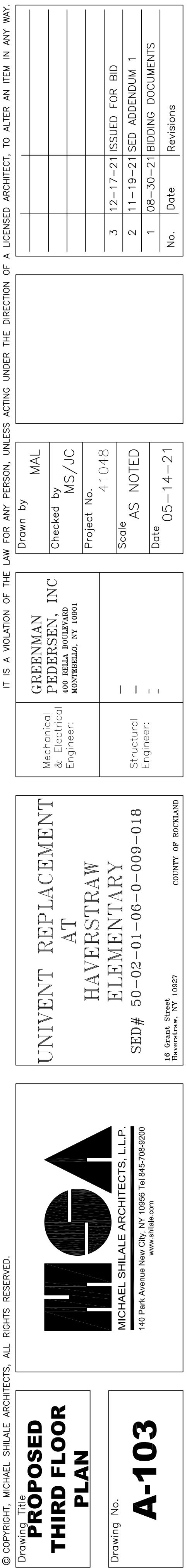
Drawing Title
**PROPOSED
FIRST FLOOR
PLAN**

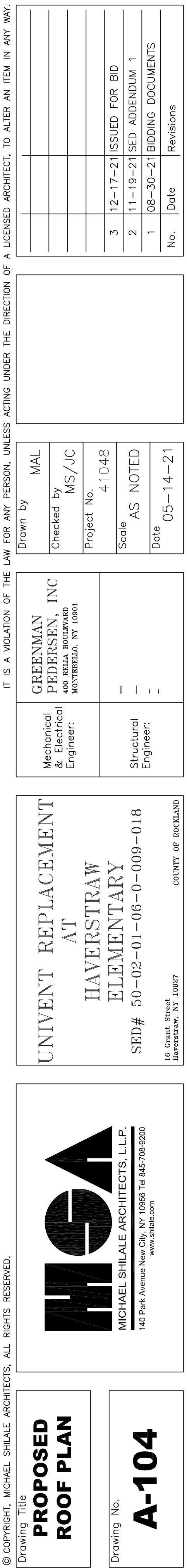
Drawing No.
A-101

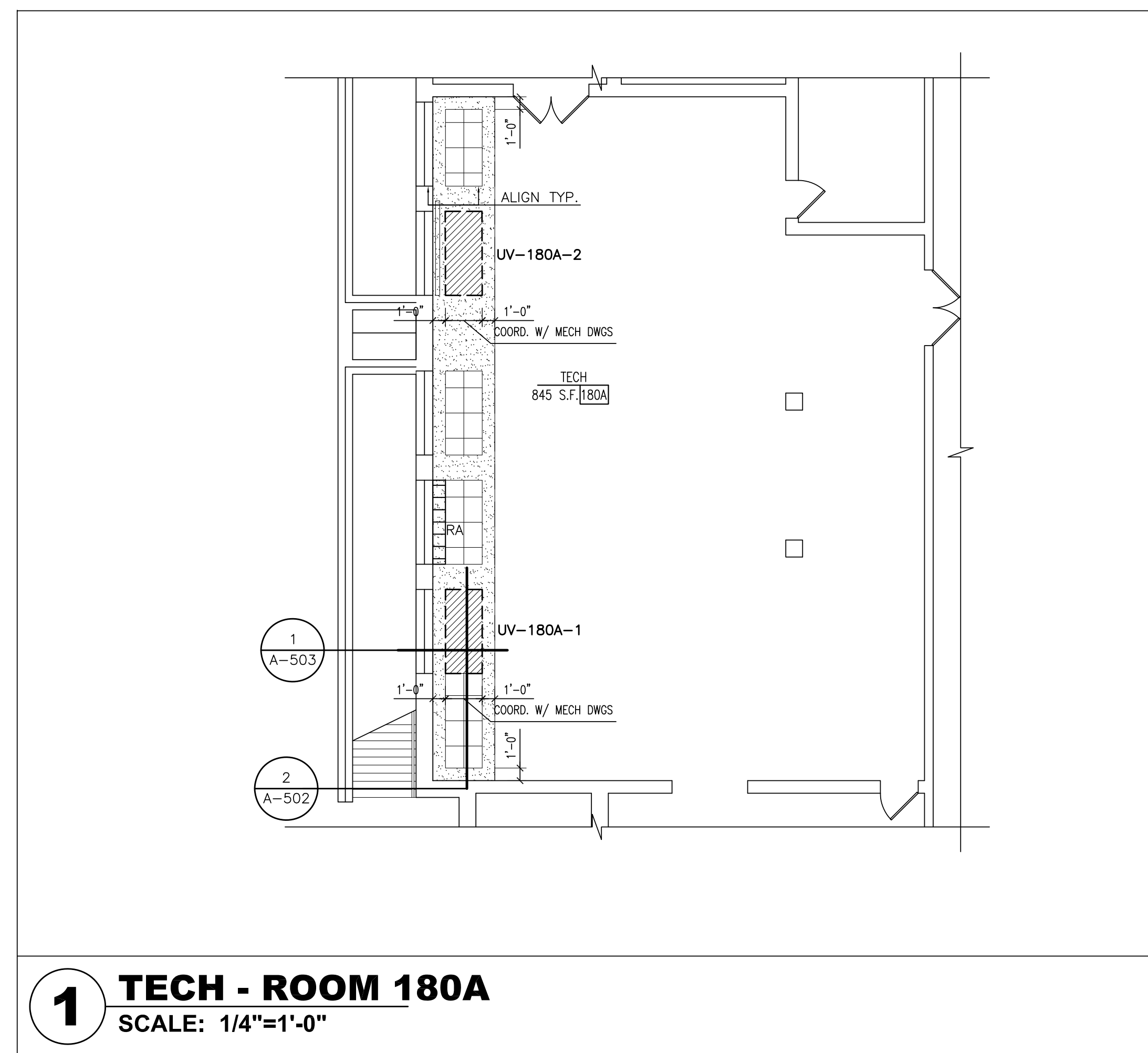
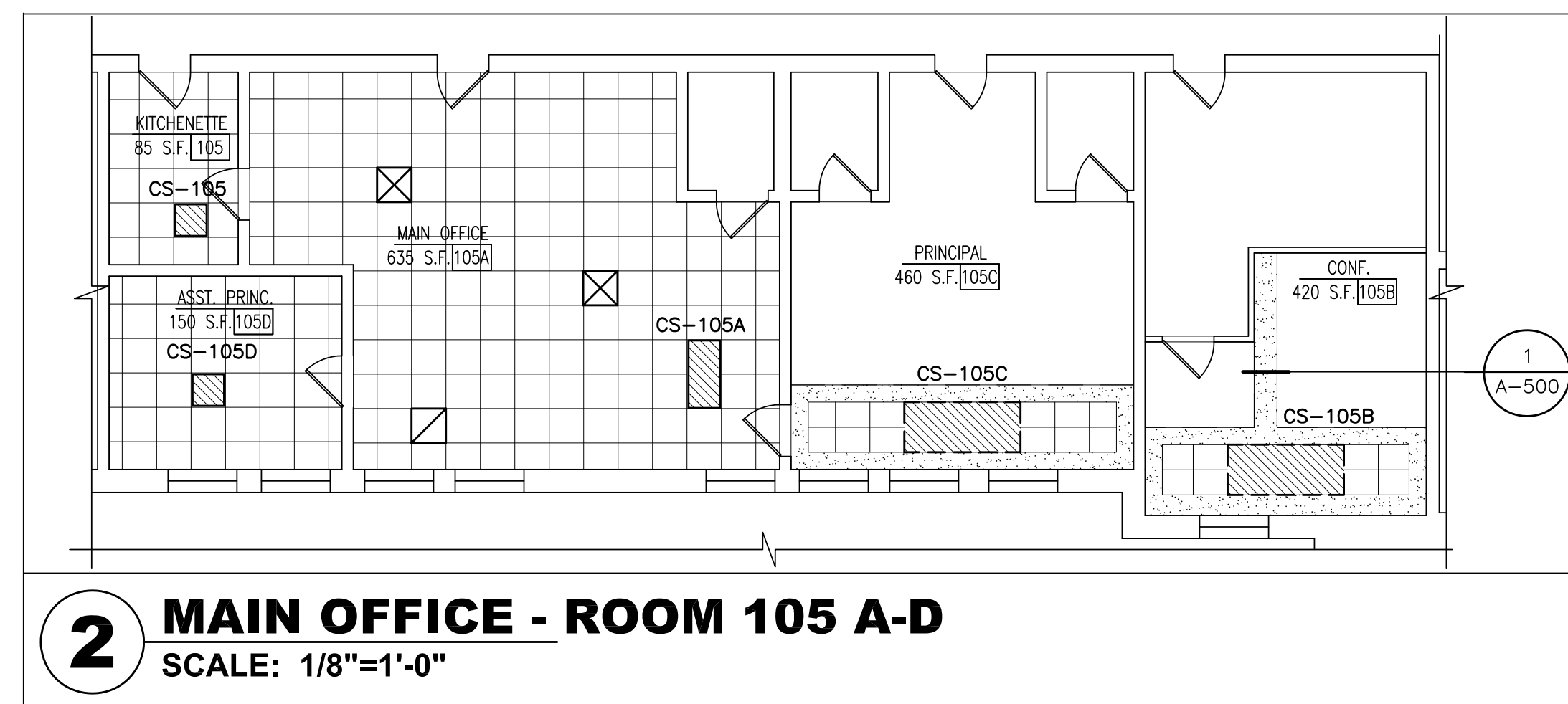
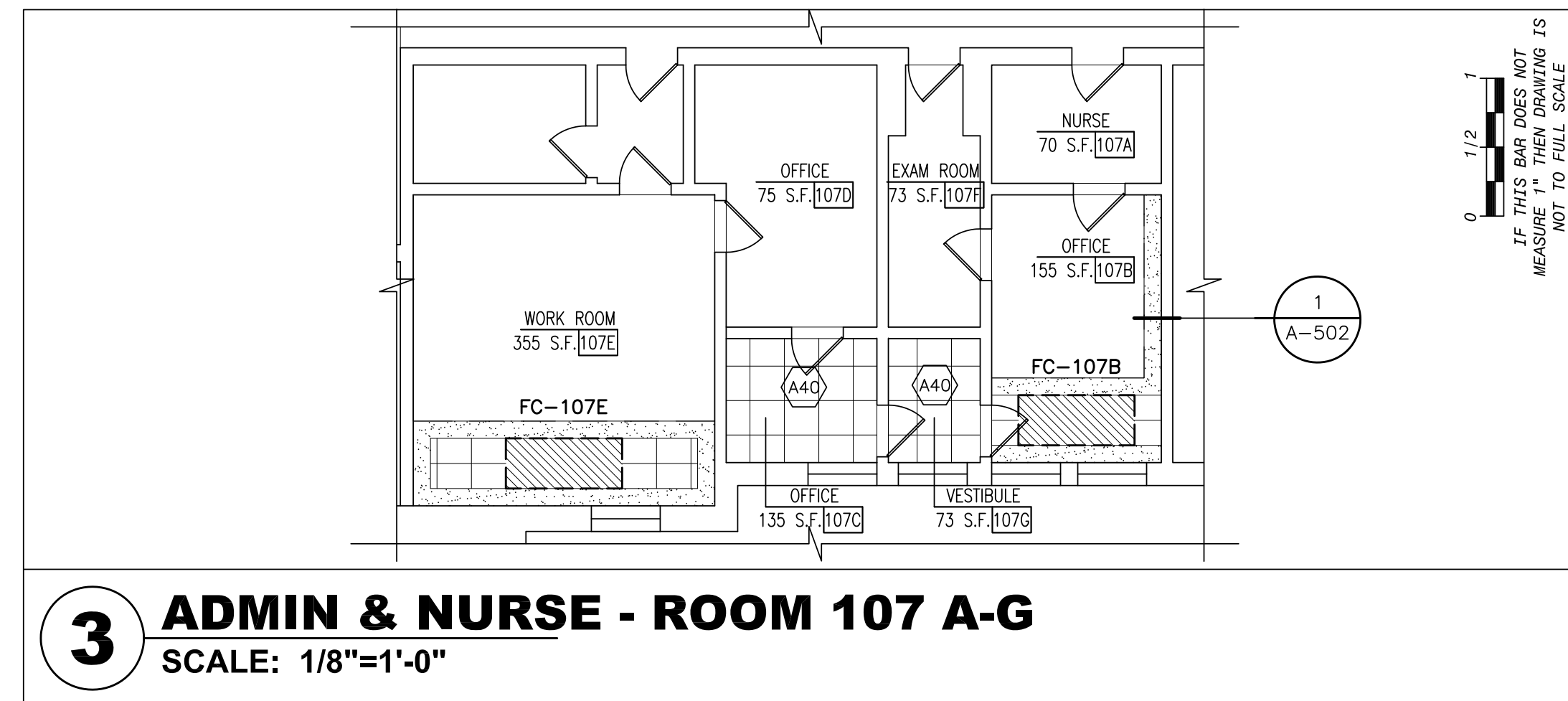
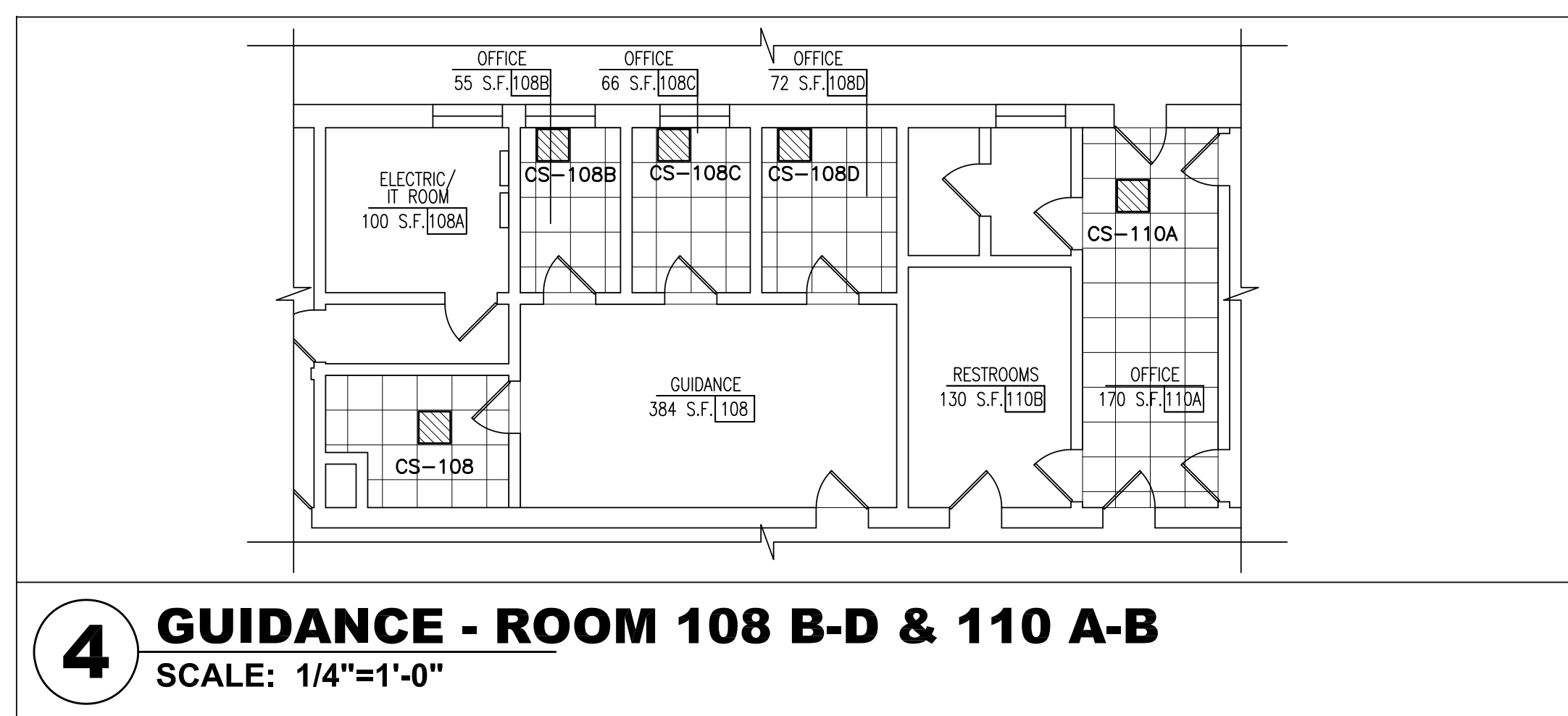
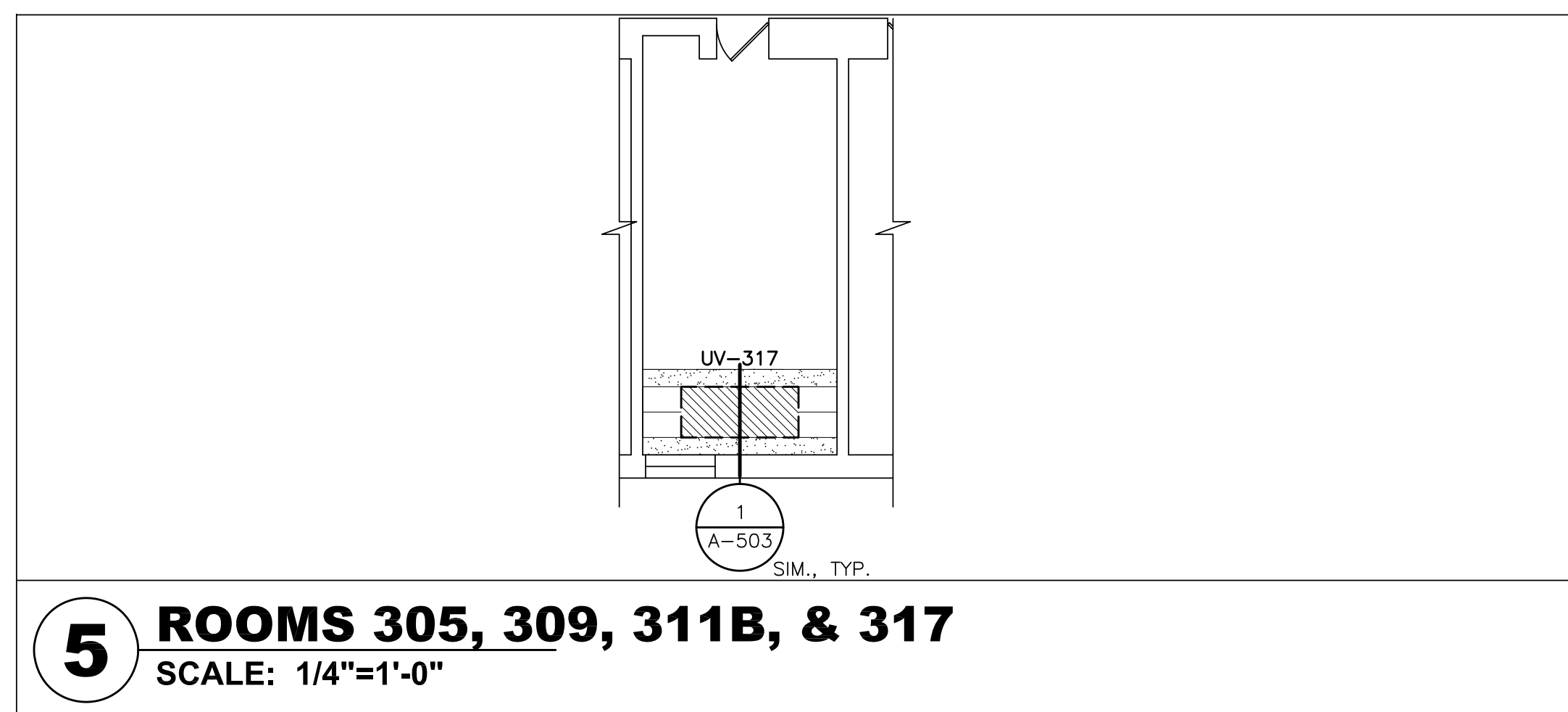
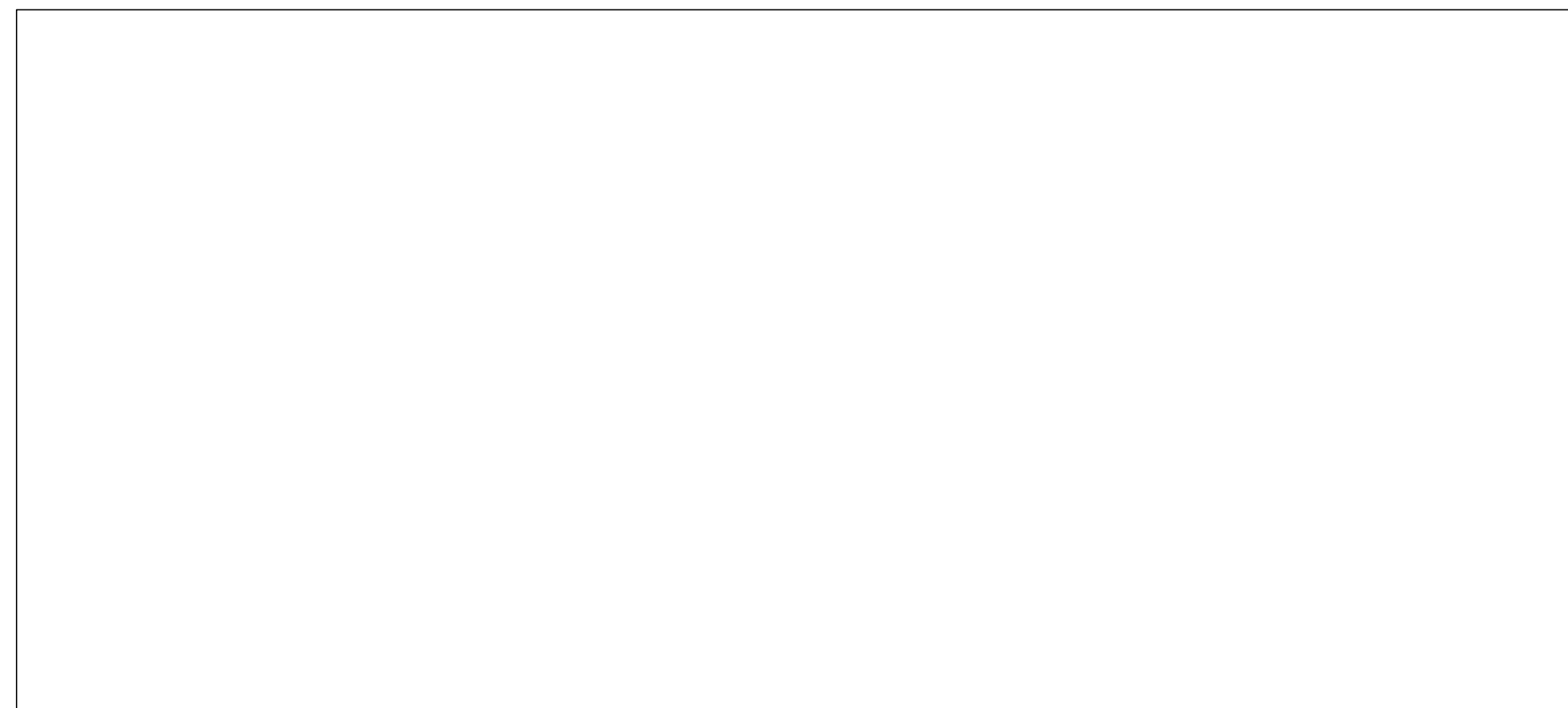
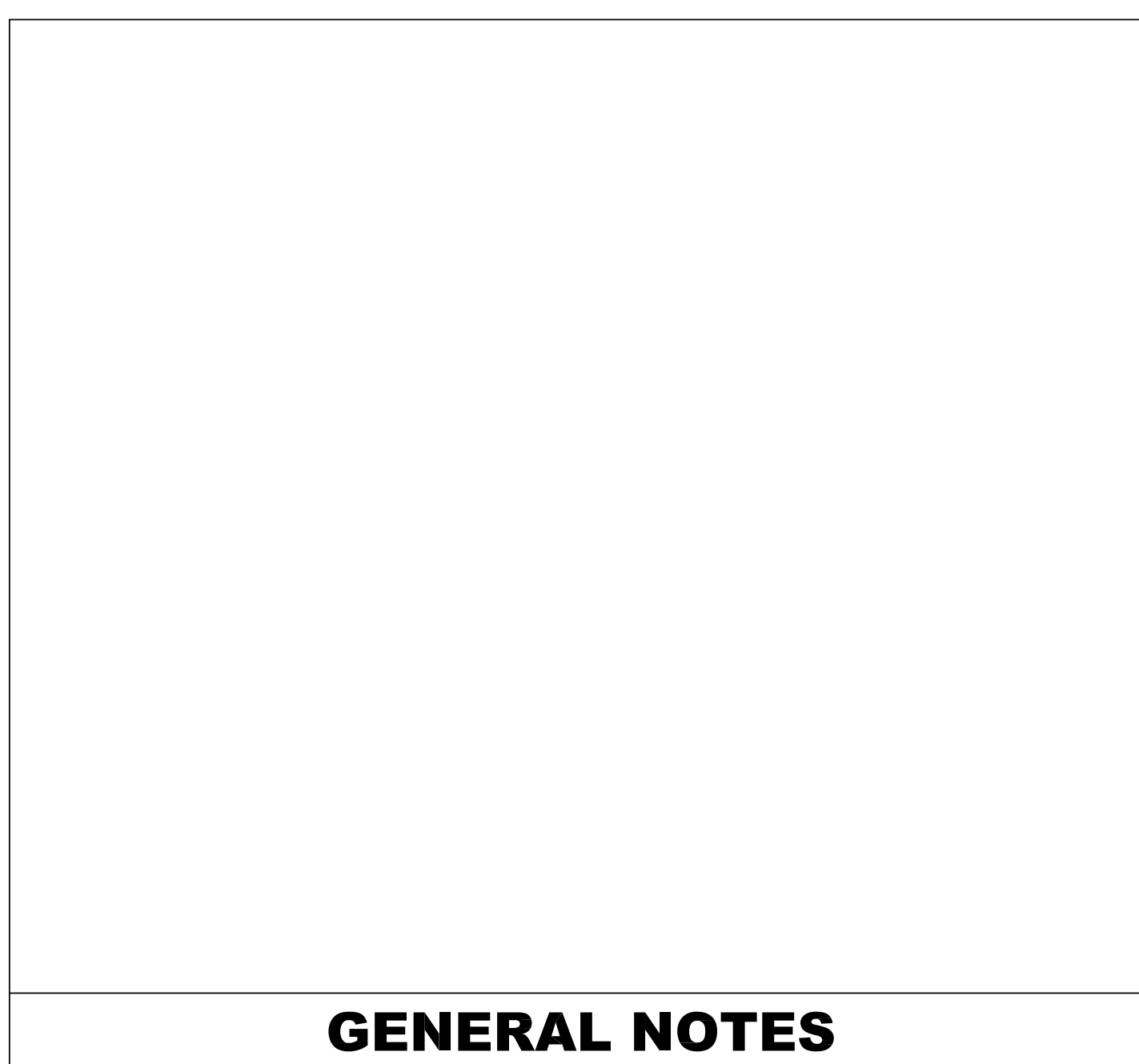
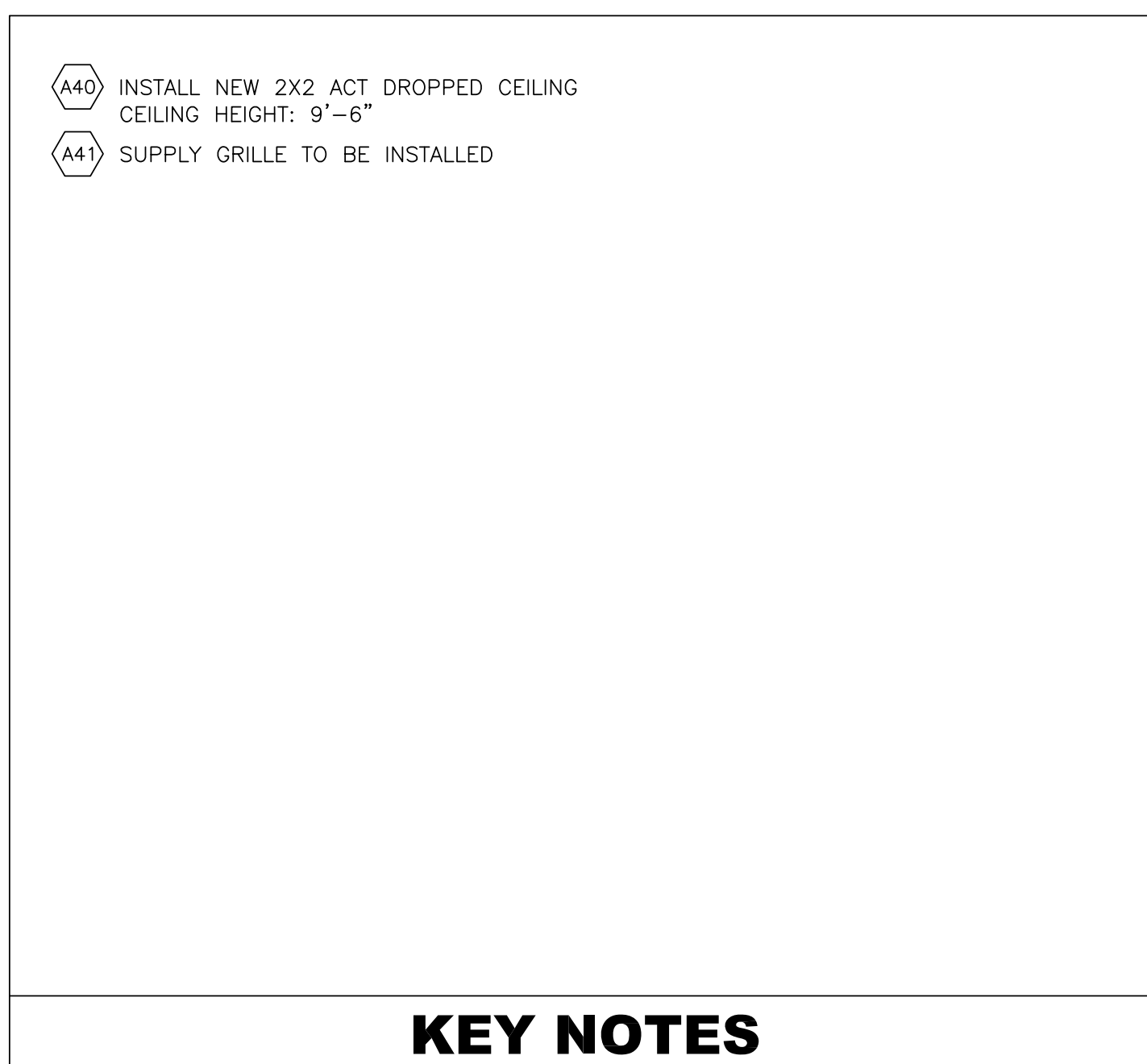
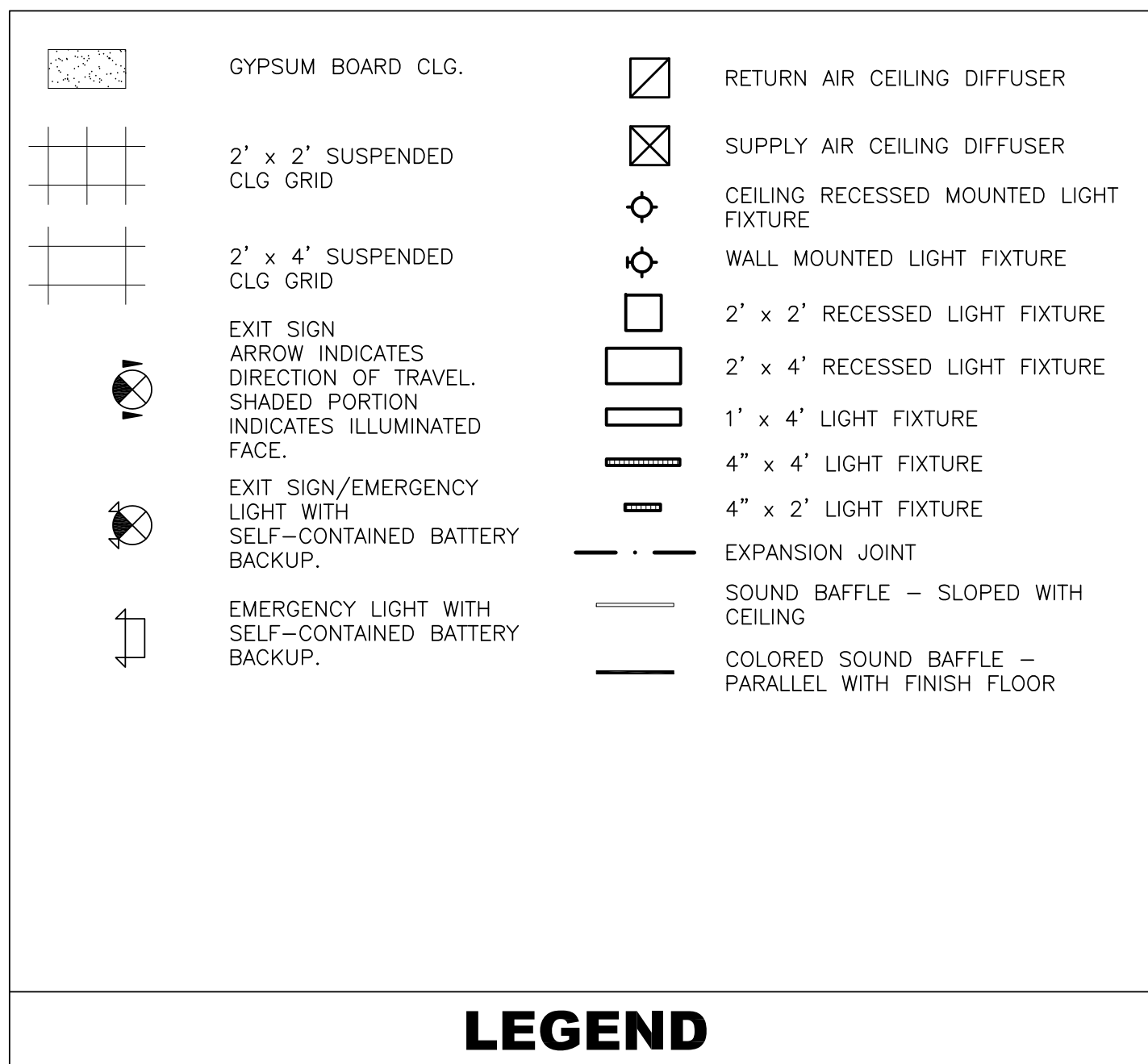


Drawing Title
**PROPOSED
 SECOND FLOOR
 PLAN**

Drawing No.
A-102





[illegible]

Drawn by	MAL/JR
Checked by	MS/JC
Project No.	41048
Scale	AS NOTED
Date	11-12-21

Mechanical & Electrical Engineer:	GREENMAN PEDERSEN, INC 400 RELLA BOULEVARD MONTEBELLO, NY 10901
Structural Engineer:	— — — —

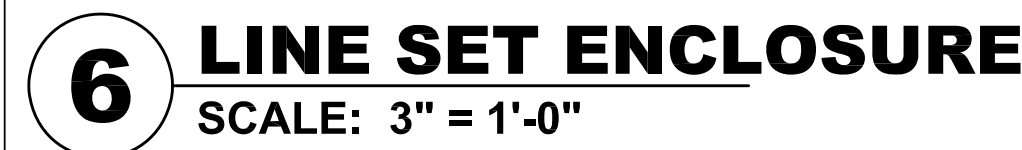
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Drawing No. **A-400**



FINISH MATERIAL SCHEDULE



PLAN DESIGNATION ©



PLAN DESIGNATION (B)



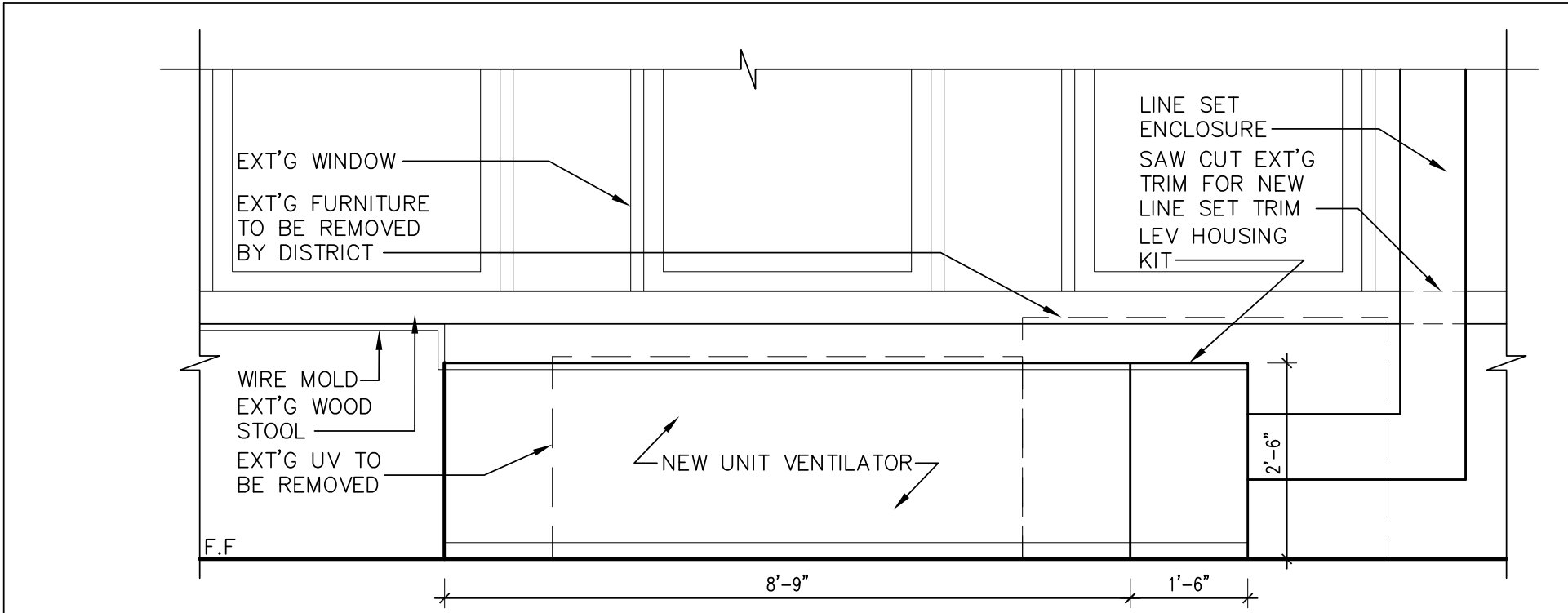
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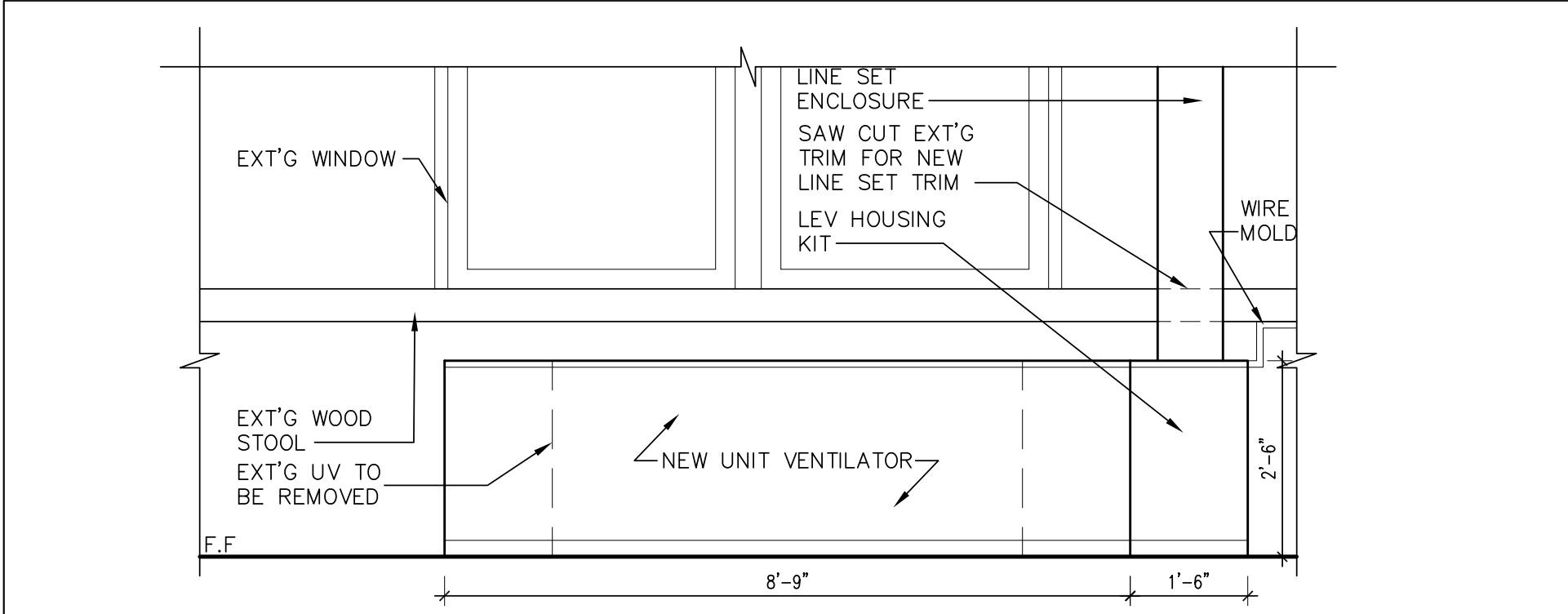
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A-500

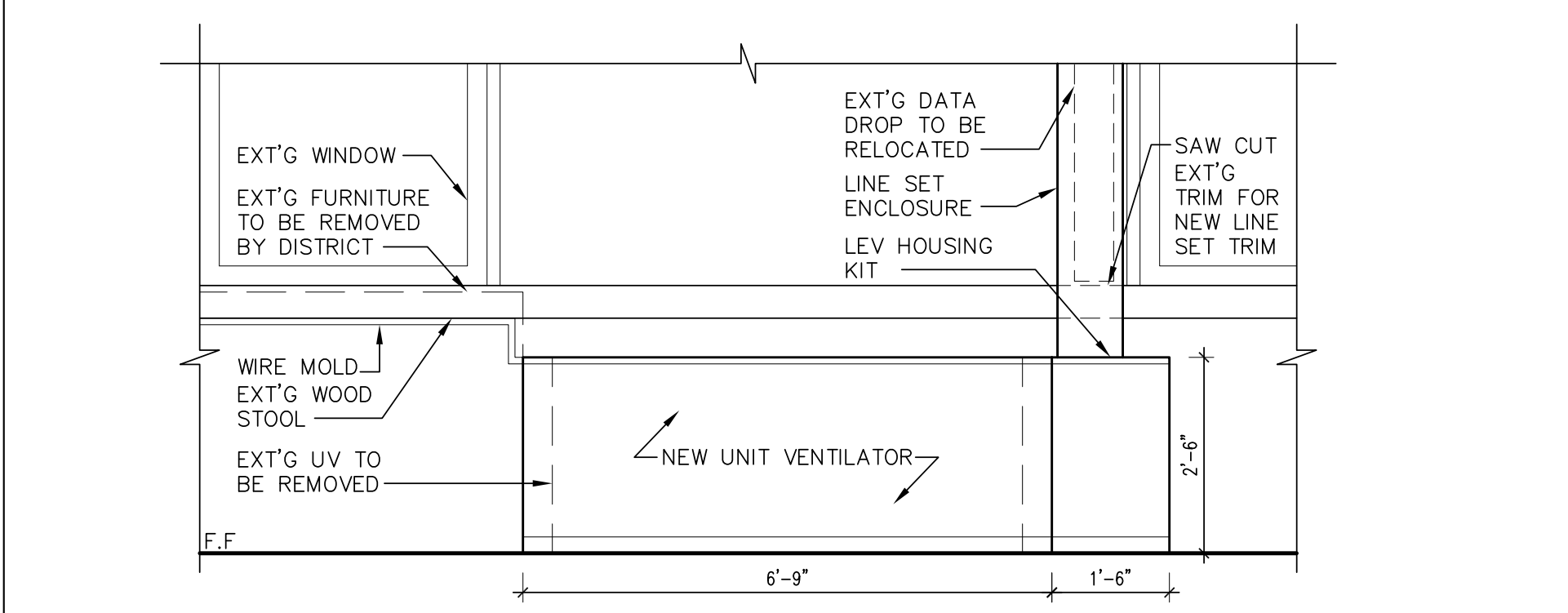
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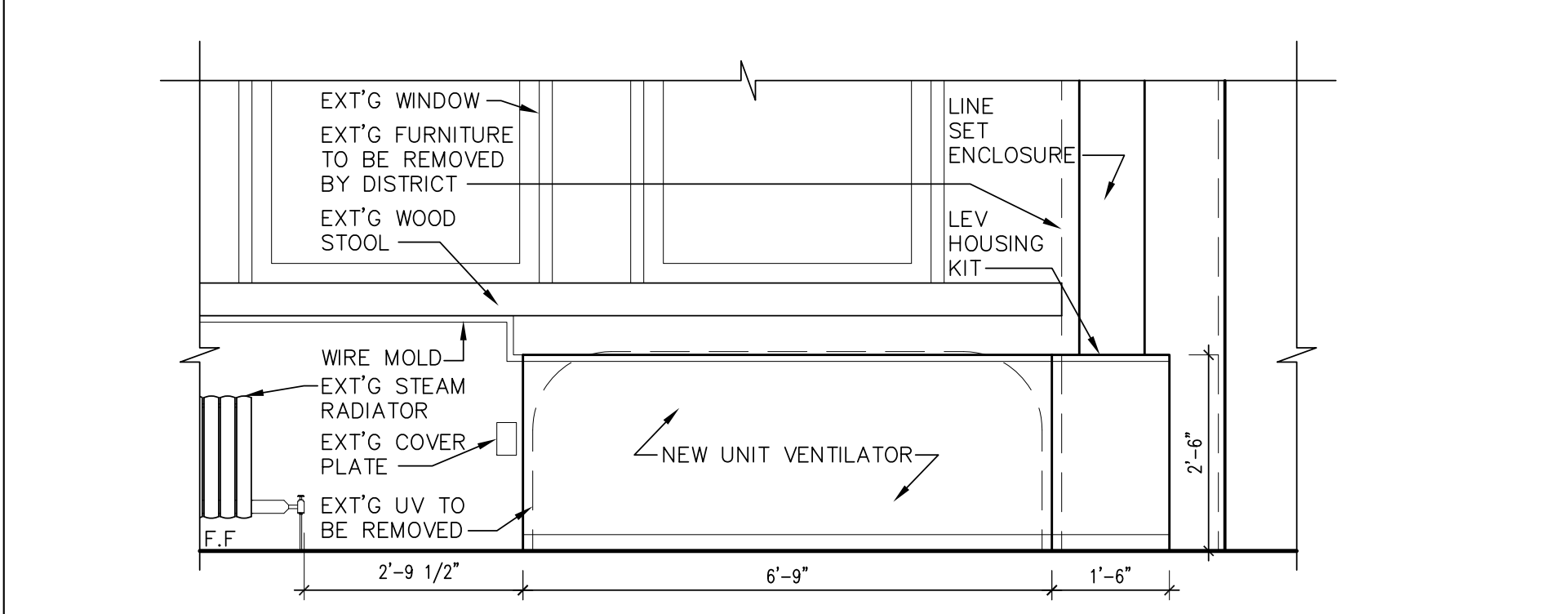
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SCALE: 1/2" = 1'-0"



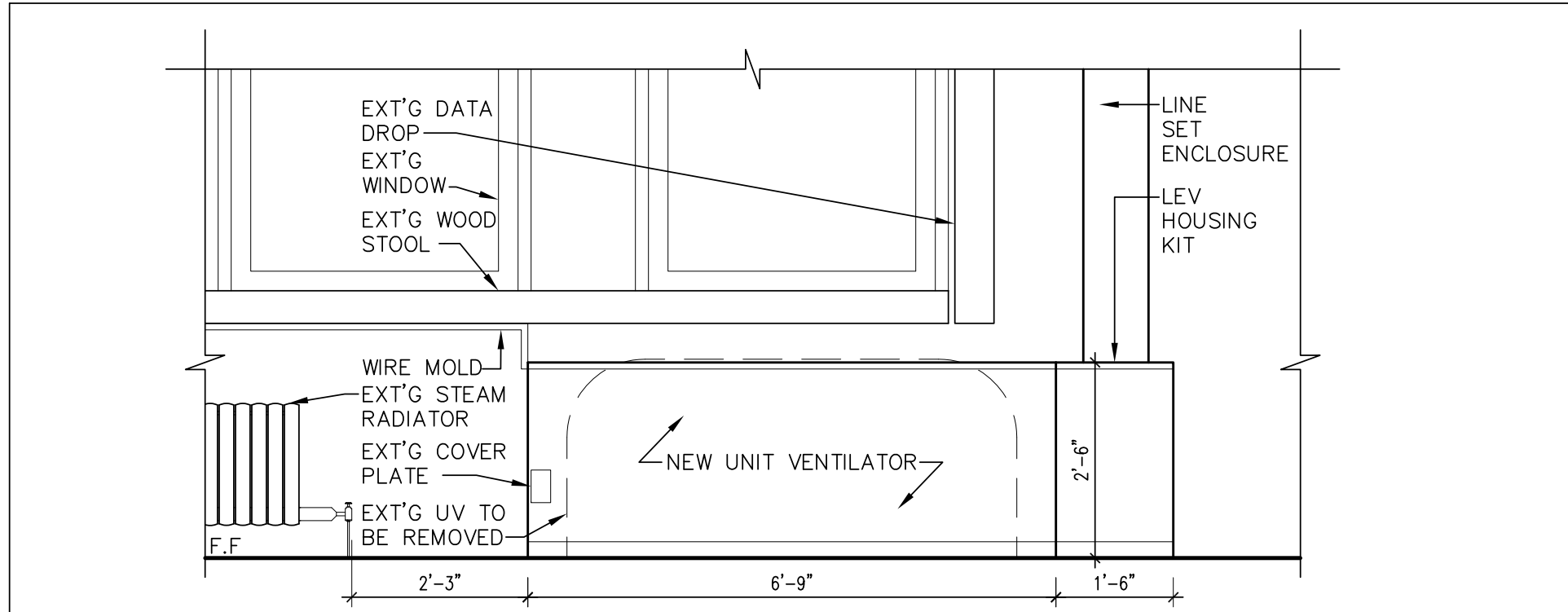
11 NEW UNIVENT ELEVATION - ROOM 311
SCALE: 1/2" = 1'-0"



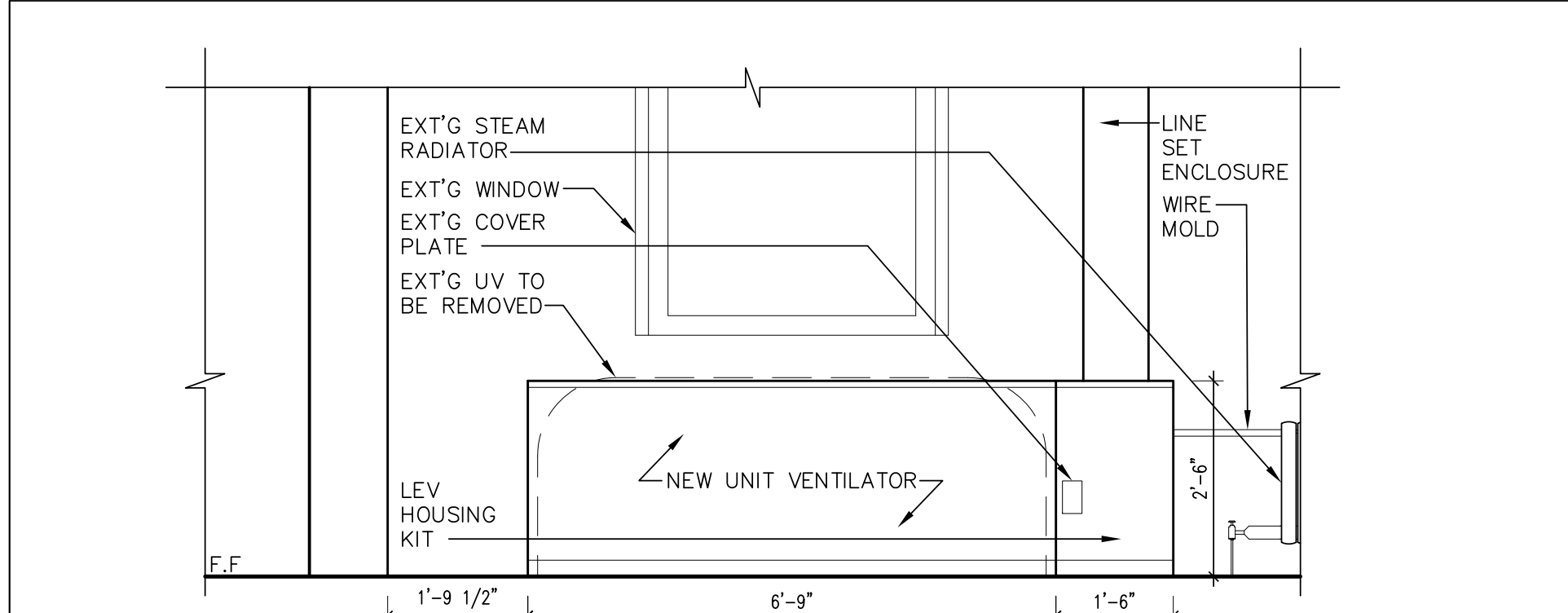
10 NEW UNIVENT ELEVATION - ROOM 307
SCALE: 1/2" = 1'-0"



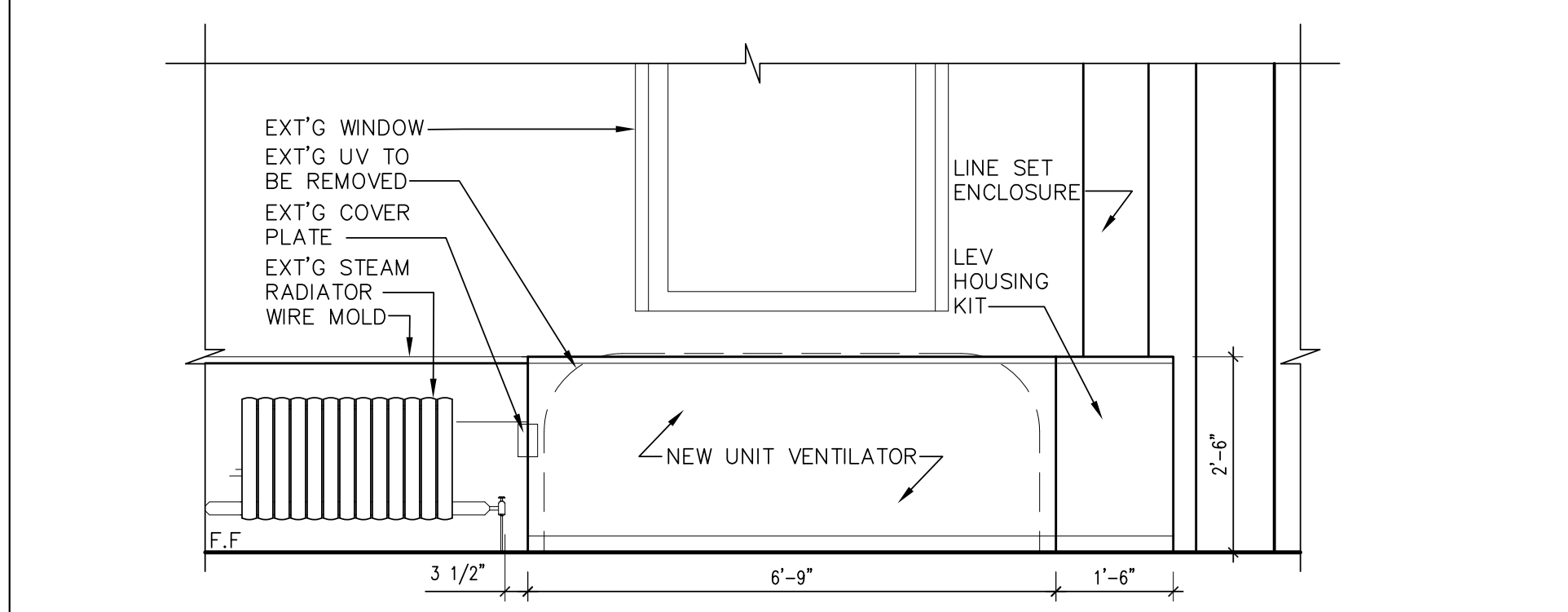
9 NEW UNIVENT ELEVATION - ROOM 306
SCALE: 1/2" = 1'-0"



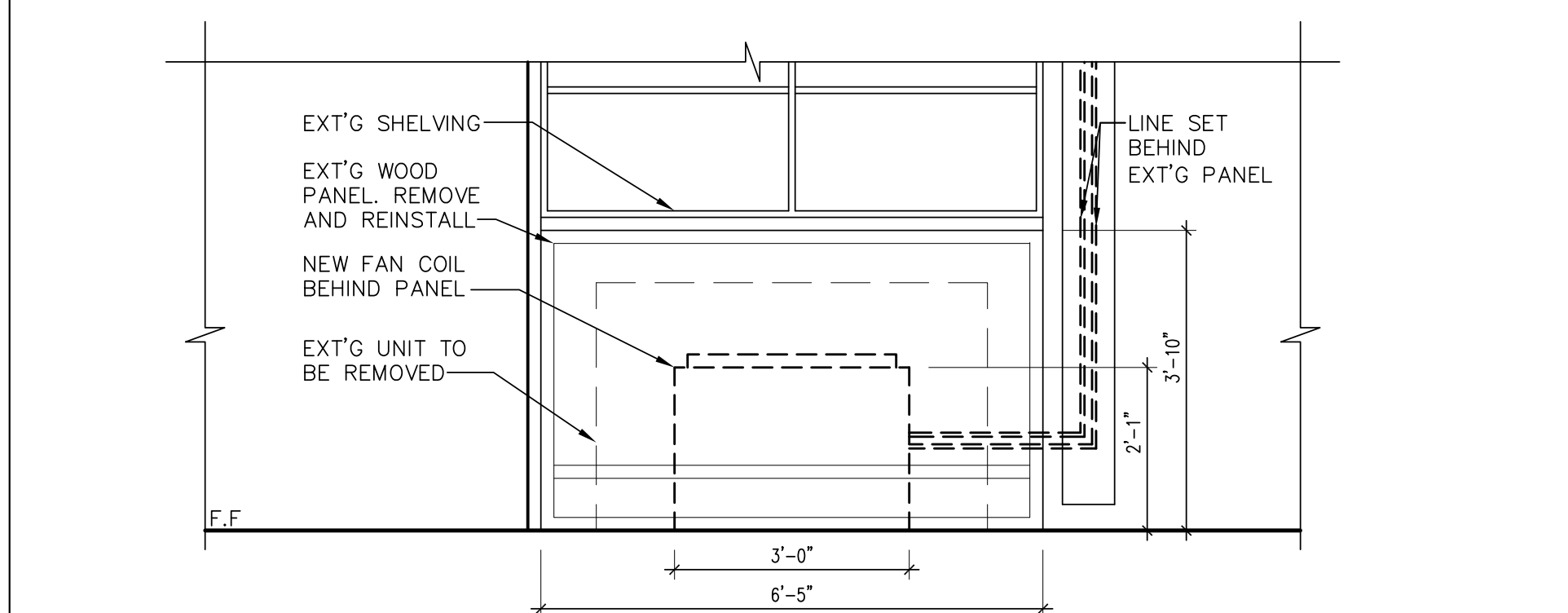
8 NEW UNIVENT ELEVATION - ROOM 303
SCALE: 1/2" = 1'-0"



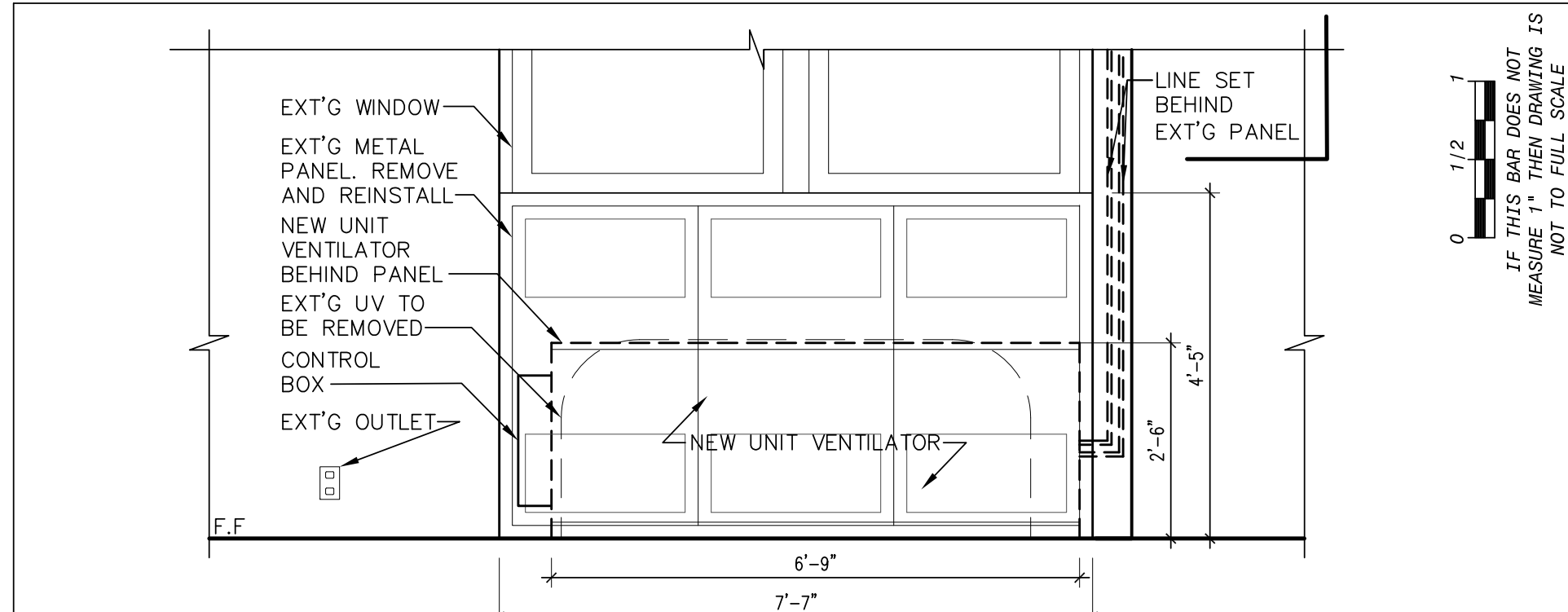
7 NEW UNIVENT ELEVATION - ROOM 222
SCALE: 1/2" = 1'-0"



6 NEW UNIVENT ELEVATION - ROOM 221
SCALE: 1/2" = 1'-0"



5 EXISTING UNIVENT ELEVATION - ROOM 207A
SCALE: 1/2" = 1'-0"



4 NEW UNIVENT ELEVATION - ROOM 186
SCALE: 1/2" = 1'-0"



1 NEW UNIVENT ELEVATION - ROOM 175
SCALE: 1/2" = 1'-0"

0 1/2 1
IF THIS BAR DOES NOT
MEASURE 1" THEN DRAWING IS
NOT TO FULL SCALE

No.	Date	Revisions
3	12-17-21	ISSUED FOR BID
2	11-19-21	SED ADDENDUM 1
1	08-30-21	BIDDING DOCUMENTS

--

Drawn by	MAL/JR
Checked by	MS/JC
Project No.	41048
Scale	AS NOTED
Date	08-30-21

GREENMAN PEDERSEN, INC 400 BELLA BOULEVARD MONTROSE, NY 10901
--

Mechanical & Electrical Engineer	Structural Engineer
---	----------------------------

UNIVENT REPLACEMENT AT HAVERSTRAW ELEMENTARY SED# 50-02-01-06-0-009-018 18 Grant Street Haverstraw, NY 10927 COUNTY OF ROCKLAND
--

MSA MICHAEL SHILALE ARCHITECTS, L.L.P. 140 Park Avenue New York, NY 10022 Tel 945-7063/9200 www.mshale.com
--

UNIT ELEVATIONS	A-501
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Drawn by	MAL/JR
Checked by	MS/JC
Project No.	41048
Scale	AS NOTED
Date	11-12-21

<i>Mechanical & Electrical Engineer;</i>	GREENMAN PEDERSEN, INC 400 BELLA BOULEVARD MONTBELLEO, NY 10001
<i>Structural Engineer;</i>	— — —

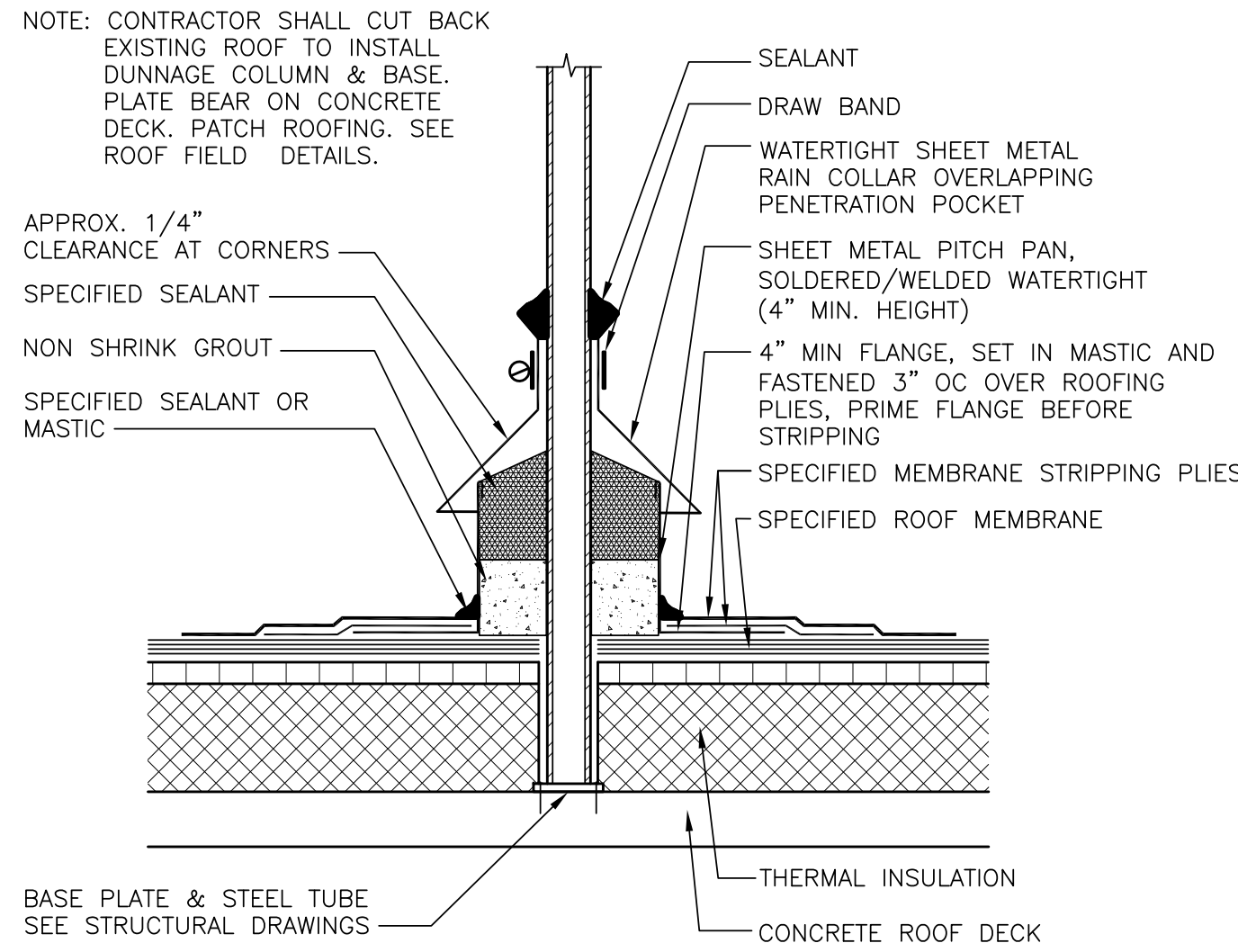
UNIVENT REPLACEMENT
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HAVERSTRAW
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SED# 50-02-01-06-0-009-018
15 Grant St.
Haverstraw, NY 10927
COUNTY OF ROCKLAND



MICHAEL SHILALE ARCHITECTS, L.L.P.
140 Park Avenue New City, NY 10956 Tel 845-708-0200
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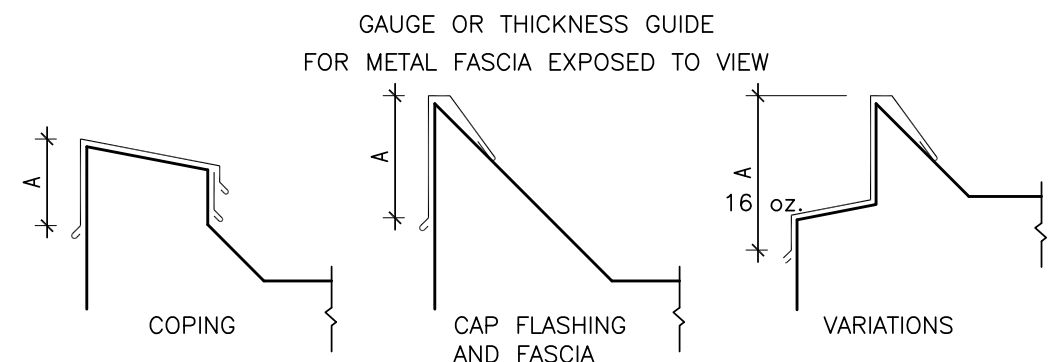
Drawing Title	UNIT ELEVATIONS
Drawing No.	A-501.1

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7 PITCH POCKET AT ROOF DUNNAGE

SCALE: 3" = 1'-0"

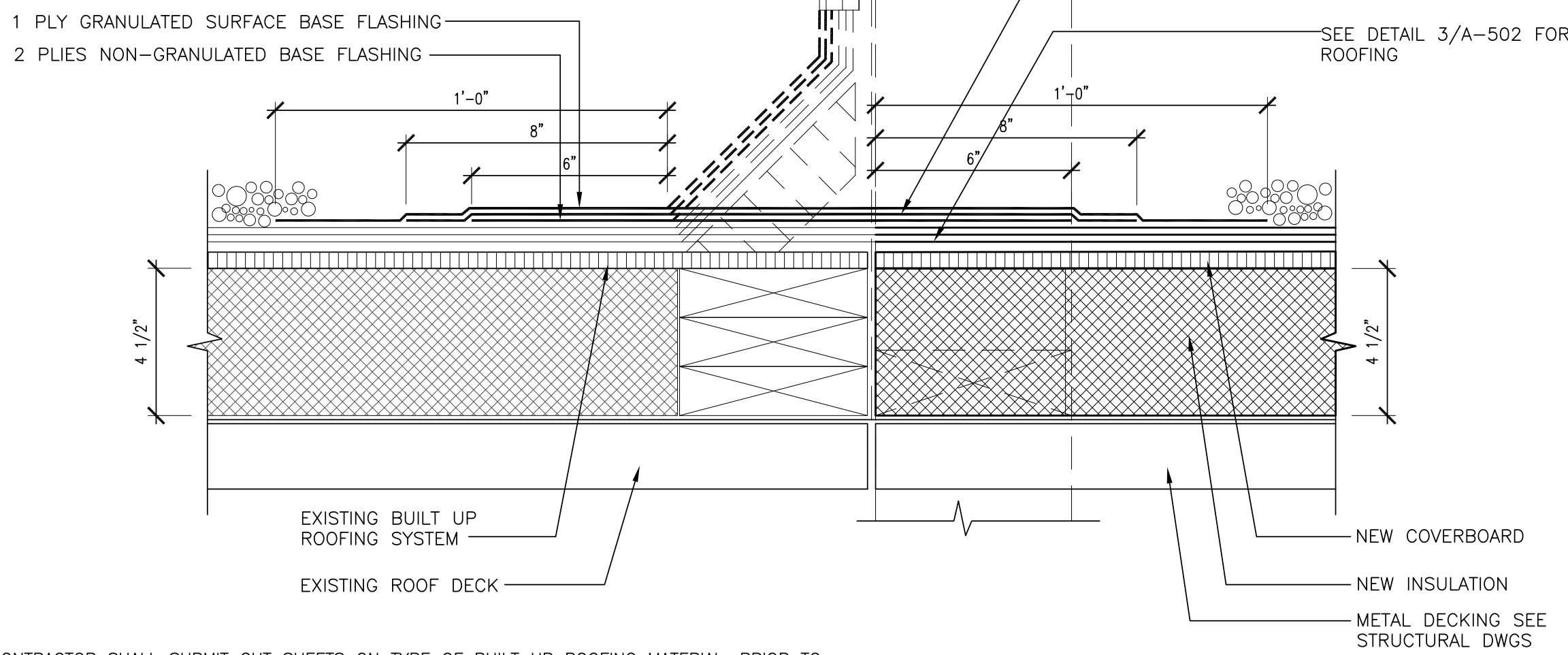


RECOMMENDED MINIMUM GAUGES FOR FASCIA SHOWN ABOVE				
EXPOSED FACE WITHOUT BREAKS "A" DIMENSION	CLEAT REQUIRED	GALVANIZED IRON	COLD ROLLED COPPER	ALUMINUM 3003-H14
UP TO 4" FACE	NO	26 GA.	16 oz.	.032" (20 GA.)
4" TO 6" FACE	YES	26 GA.	16 oz.	.040" (18 GA.)
6" TO 8" FACE	YES	24 GA.	.050" (16 GA.)	
8" TO 10" FACE	YES	22 GA.	20 oz.	.064" (14 GA.)
10" TO 15" FACE	YES	20 GA.	ADD BRAKES TO STIFFEN	.080" (12 GA.)

NOTE:
1. WHEN USING THE ABOVE TABLE, OTHER ITEMS SHOULD BE CONSIDERED, SUCH AS FASTENING PATTERN. FOR INSTANCE, IF THE METAL CAN ONLY BE FASTENED AT 100" FOOT INTERVALS, A HEAVIER GAUGE METAL WOULD BE REQUIRED. ALL CLEATS SHALL BE CONTINUOUS AND OF SAME MATERIAL OF EQUAL OR GREATER THICKNESS THAN THE FASCIA METAL USED.

6 FASCIA THICKNESS

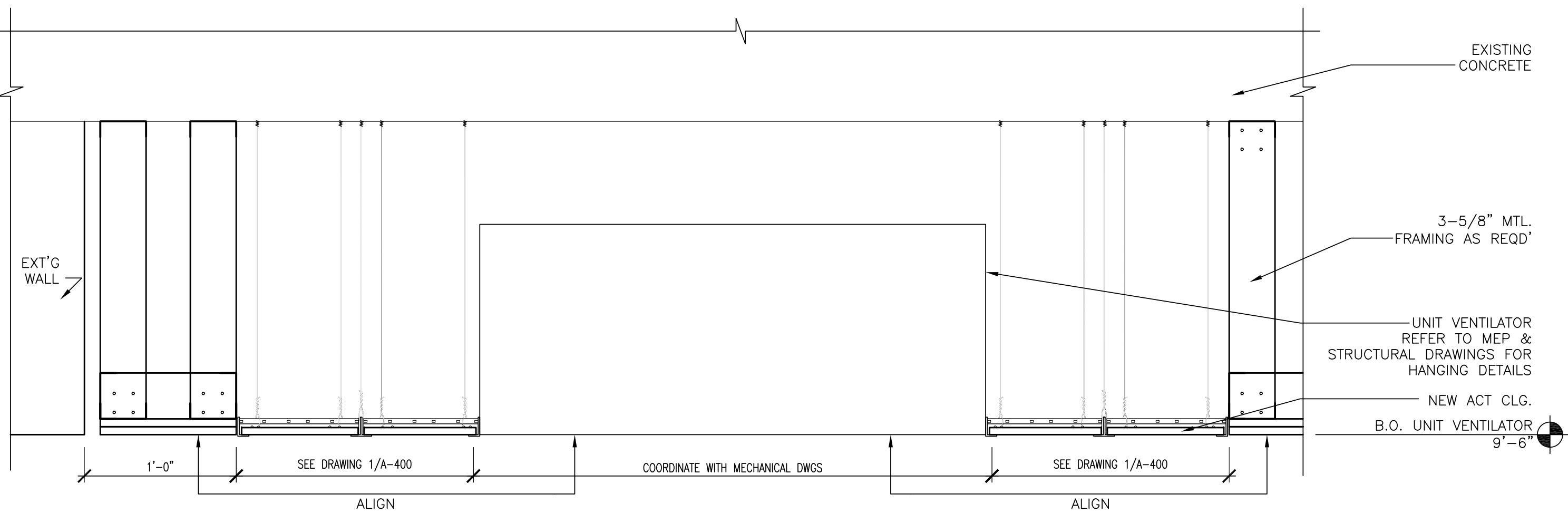
SCALE: N.T.S.



NOTES:
1. ROOFING CONTRACTOR SHALL SUBMIT CUT SHEETS ON TYPE OF BUILT UP ROOFING MATERIAL, PRIOR TO PURCHASE OF MATERIALS.
2. ANY CHANGES THAT MAY EXIST OR OCCUR DURING CONSTRUCTION, THAT DIFFERS FROM DETAILS SHOWN, MUST BE REPORTED TO THE ARCHITECT PRIOR TO PROCEEDING W/ WORK IN AREA.
3. BOTTOM OF EXISTING WALL TO BE RECONSTRUCTED TO THE EXTENT NECESSARY TO RAISE EXISTING WEEP.

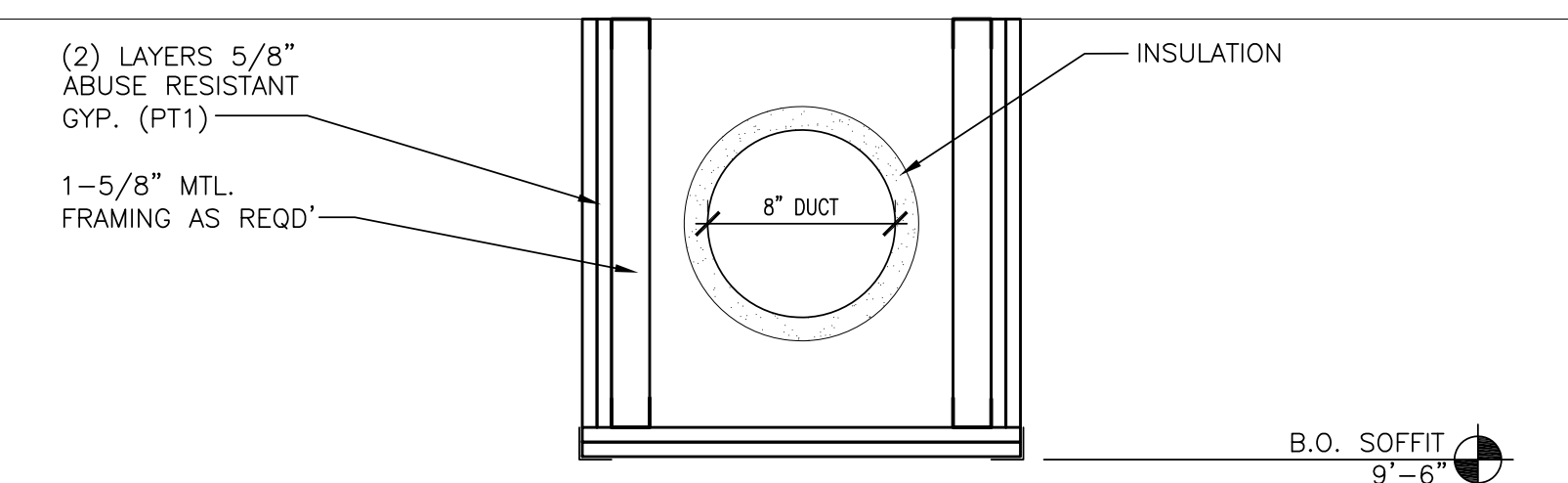
5 ROOFING DETAIL AT REMOVED GRAVITY VENT CURB

SCALE: 3" = 1'-0"



2 SOFFIT DETAIL

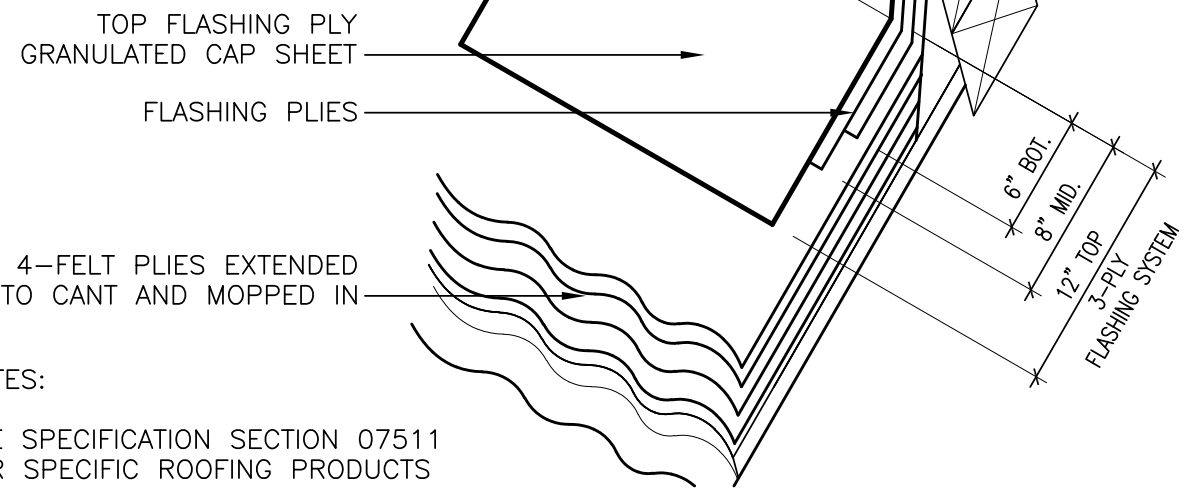
SCALE: 1 1/2" = 1'-0"



NOTE:
REFERENCE DETAIL 1/A-503

1 SOFFIT DETAIL

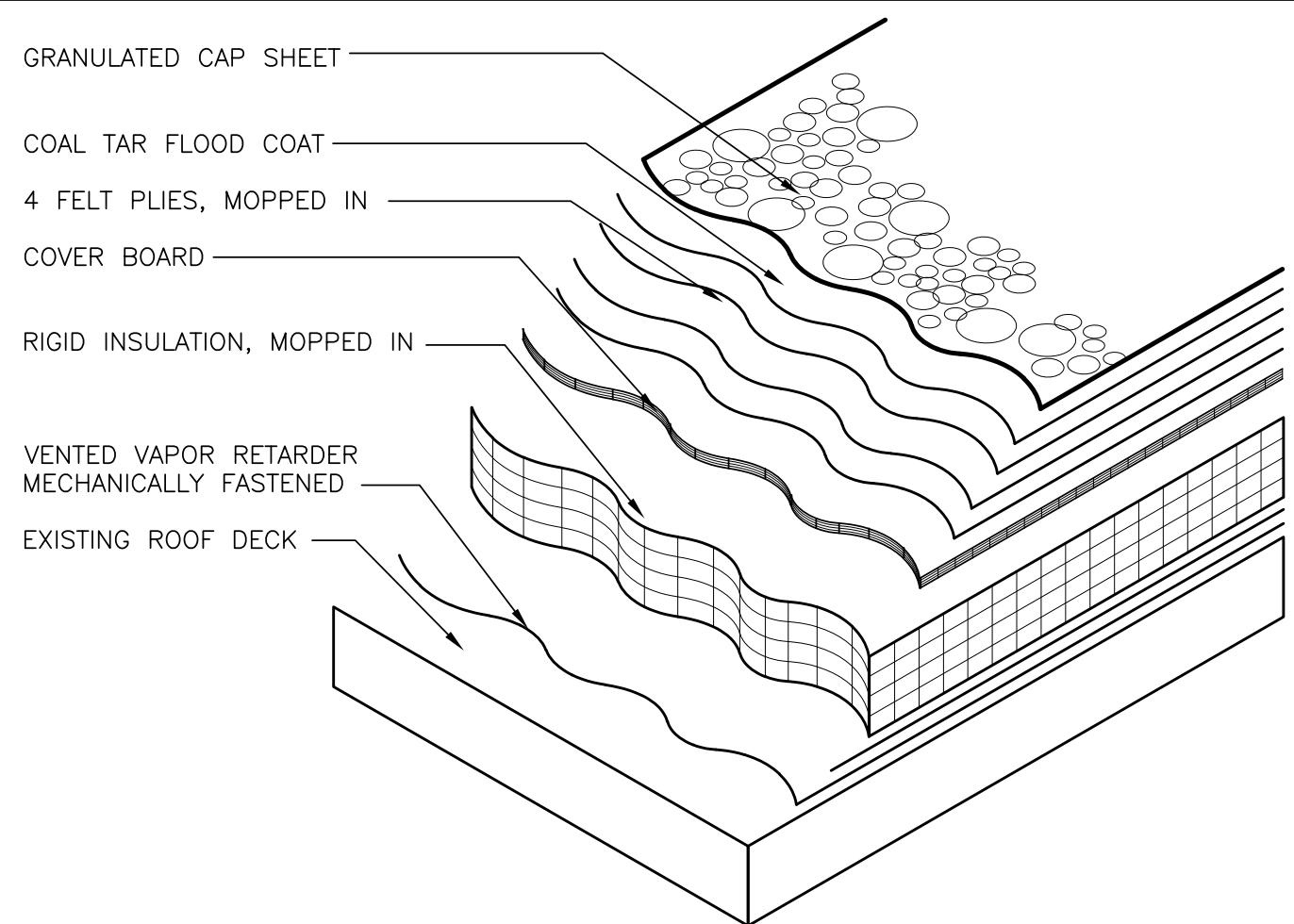
SCALE: 1 1/2" = 1'-0"



NOTES:
SEE SPECIFICATION SECTION 07511 FOR SPECIFIC ROOFING PRODUCTS

4 TYP.B.U.R. FLASHING

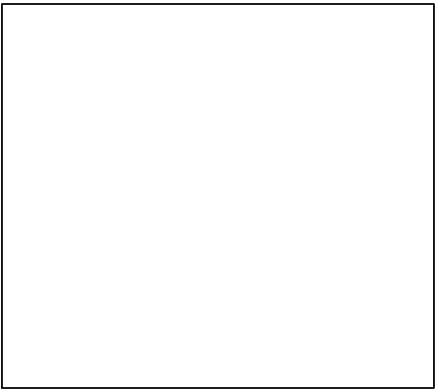
SCALE: N.T.S.



3 TYP. B.U.R. FIELD W/ GRAVEL SURFACE

SCALE: N.T.S.

No.	Date	Revisions
1	08-30-21	BIDDING DOCUMENTS
2	11-19-21	SED ADDENDUM 1
3	12-17-21	ISSUED FOR BID



Drawn by	MAL/JR
Checked by	MS/JC
Project No.	41048
Scale	AS NOTED
Date	08-30-21

GREENMAN PEDERSEN, INC 400 BELLA BOULEVARD MONTBELLO, NY 10901	---
<i>Mechanical & Electrical Engineer</i>	<i>Structural Engineer</i>

UNIVENT REPLACEMENT AT HAVERSTRAW ELEMENTARY SED# 50-02-01-06-0-009-018 18 Grant Street Haverstraw, NY 10627	COUNTY OF ROCKLAND
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MICHAEL SHILALE ARCHITECTS, L.L.P.
140 Park Avenue New York, NY 10056 Tel 945-708-9200
www.mshilale.com

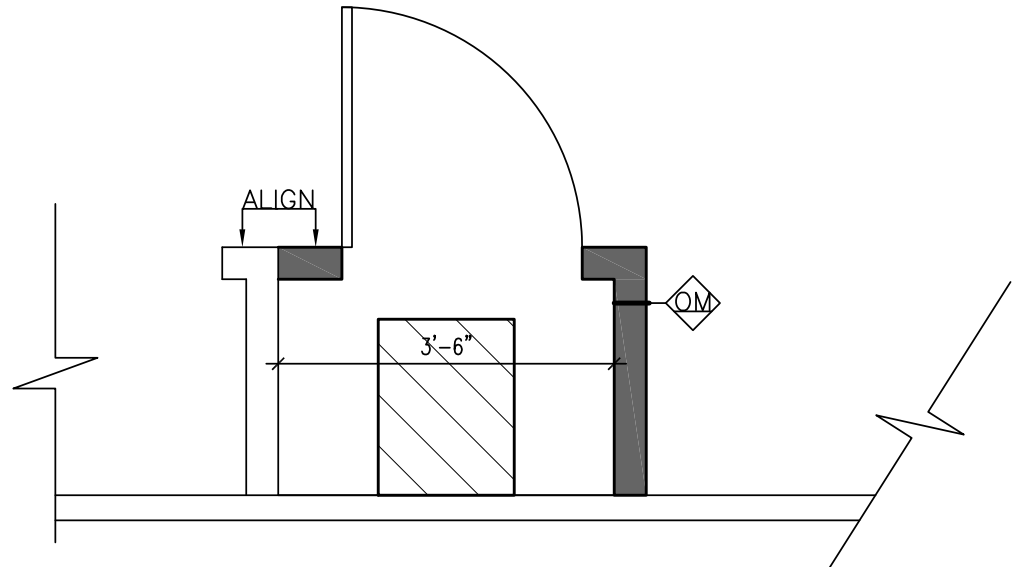
DETAILS

A-502

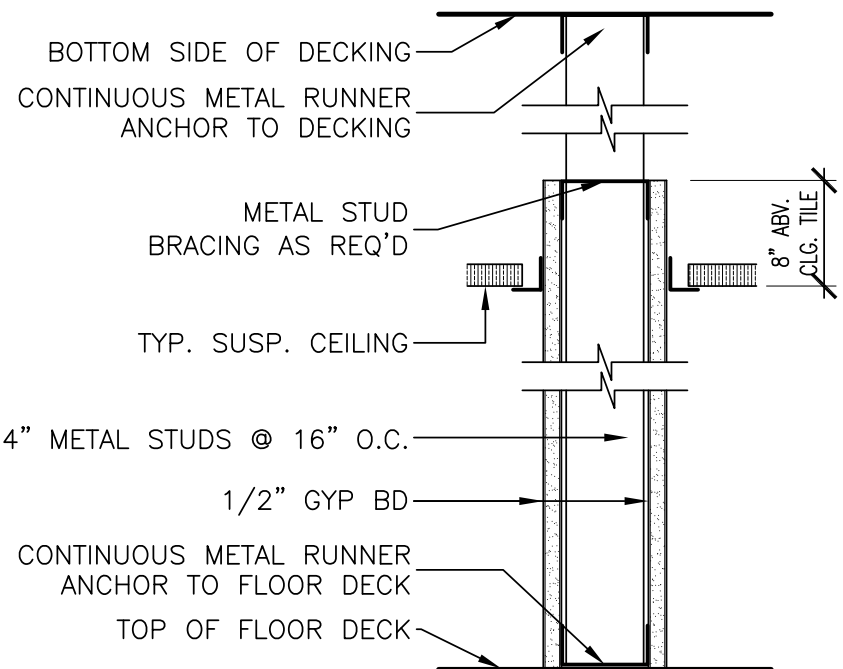
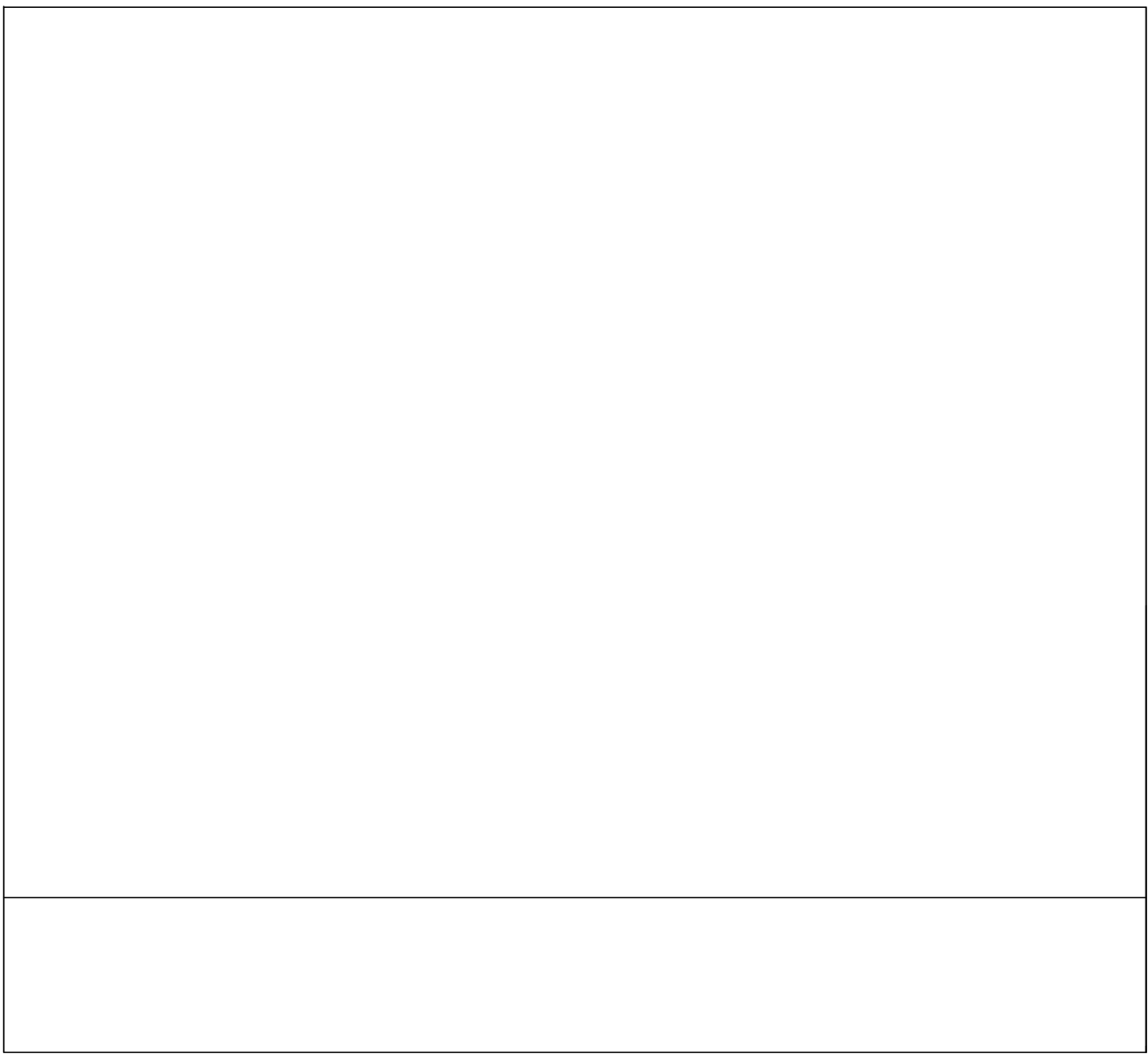
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Drawing Title



NEW DOOR
36" X 6'-8"
CONTINUOUS HINGES:
MARKAR(FM-300 EDGE
MOUNT)
HEAVY DUTY LOCK SET:
CORBIN RUSWIN
CL3300(CL3355, AZD)

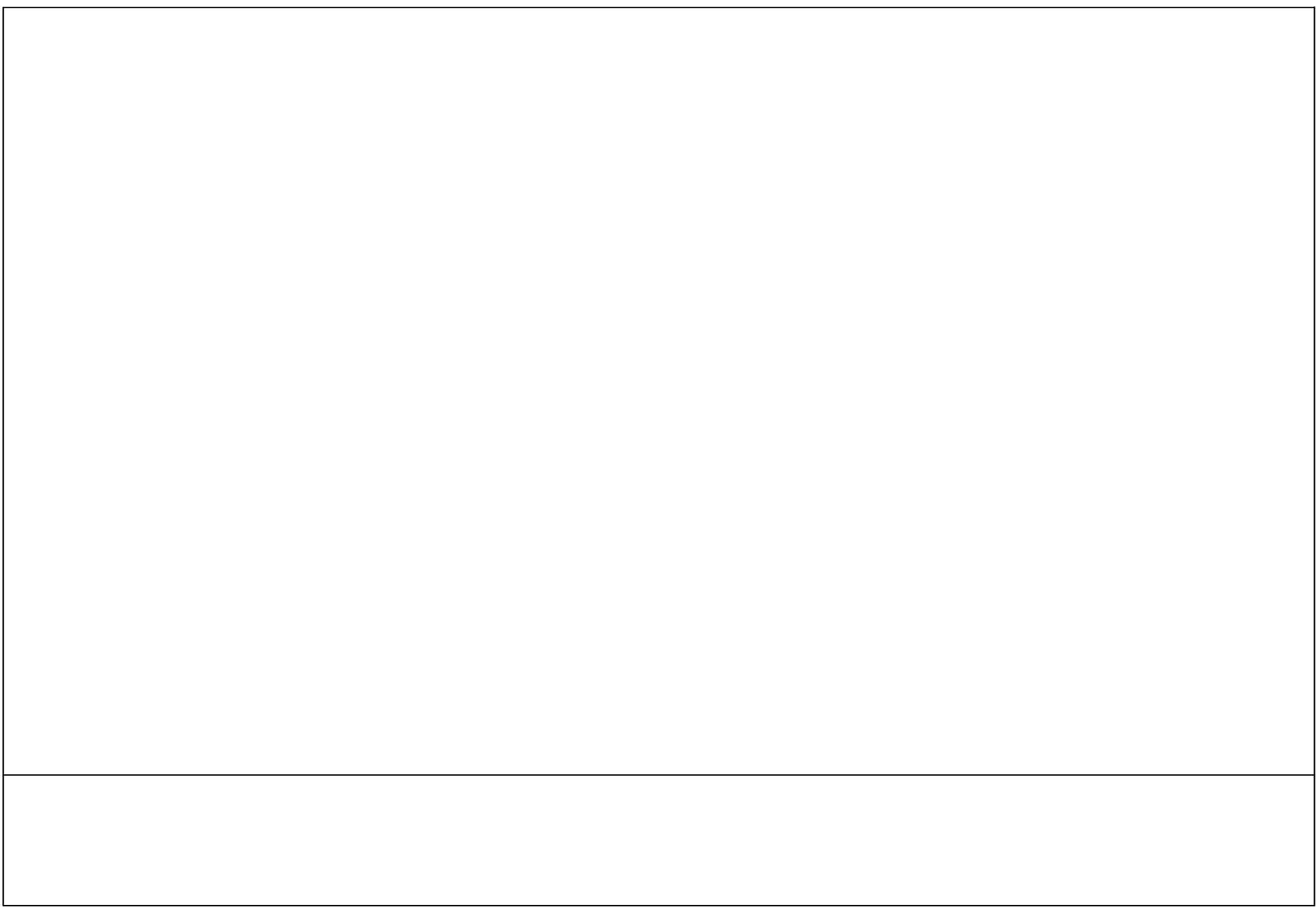


3 CLOSET AT ROOM # 185
SCALE: 1/2" = 1'-0"



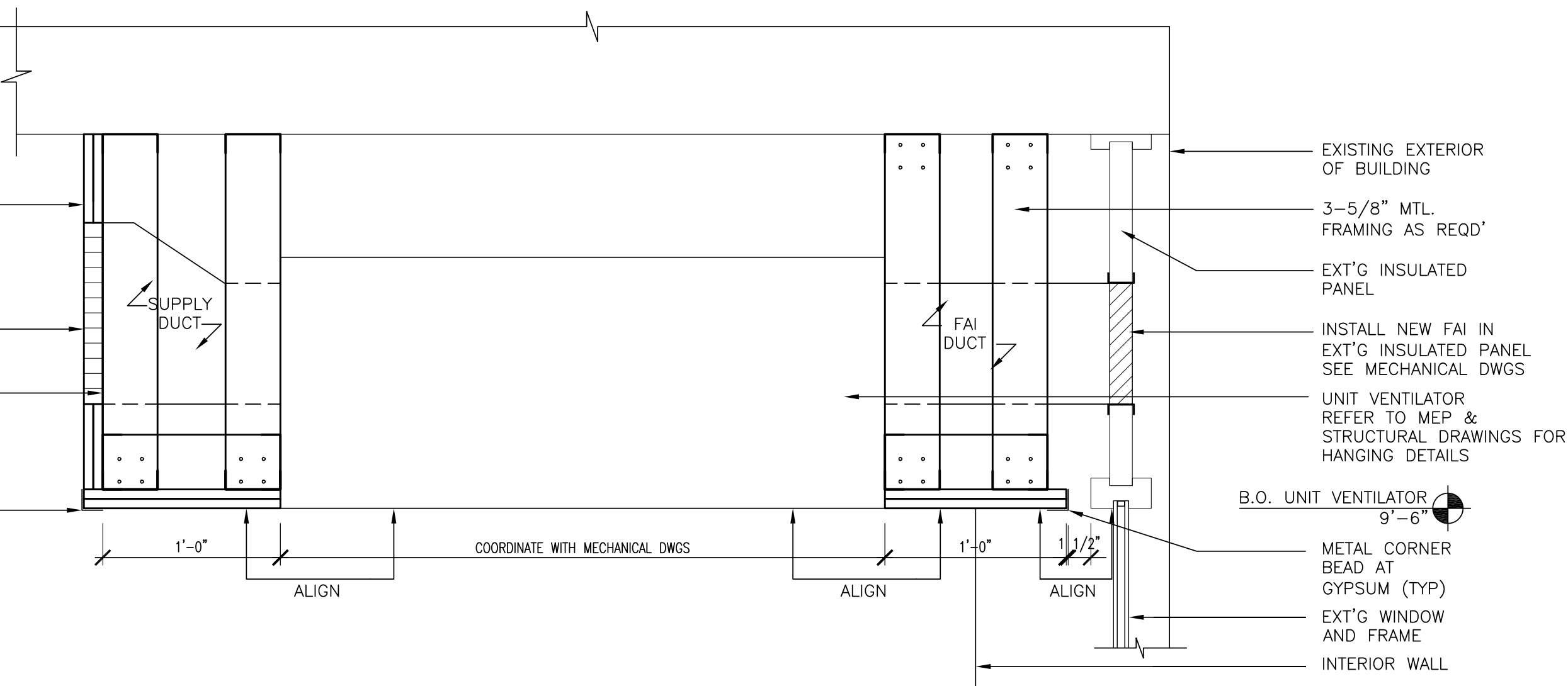
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PARTITION 0a



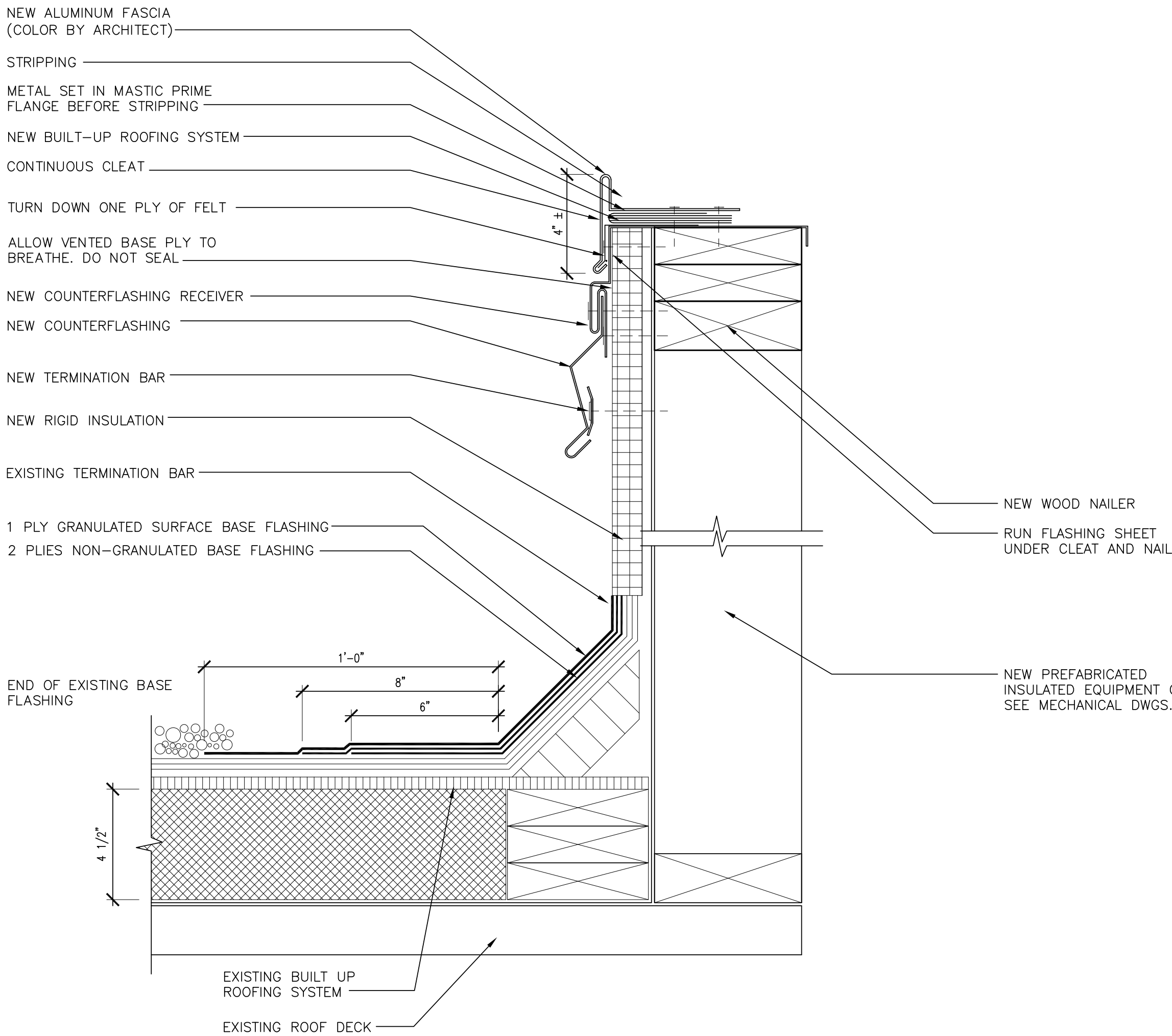
1 SOFFIT DETAIL
SCALE: 1 1/2" = 1'-0"

(2) LAYERS 5/8"
ABUSE RESISTANT
GYP. (PT1)
SUPPLY DIFFUSER
SEE MECHANICAL
DWGS
3-5/8" MTL.
FRAMING AS REQD'
METAL CORNER
BEAD AT
GYPSUM (TYP)



2 ROOFING DETAIL AT NEW HVAC CURB
SCALE: 3" = 1'-0"

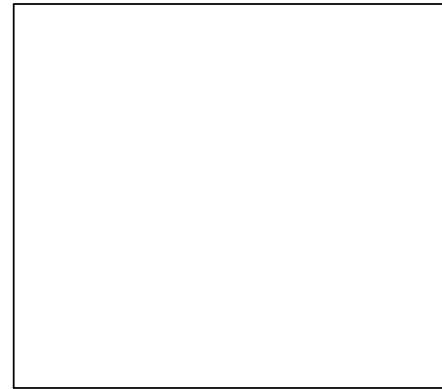
- NOTES:
1. ROOFING CONTRACTOR SHALL SUBMIT CUT SHEETS ON TYPE OF BUILT UP ROOFING MATERIAL, PRIOR TO PURCHASE OF MATERIALS.
 2. ANY CHANGES THAT MAY EXIST OR OCCUR DURING CONSTRUCTION, THAT DIFFERS FROM DETAILS SHOWN, MUST BE REPORTED TO THE ARCHITECT PRIOR TO PROCEEDING W/ WORK IN AREA.
 3. BOTTOM OF EXISTING WALL TO BE RECONSTRUCTED TO THE EXTENT NECESSARY TO RAISE EXISTING WEEP.



0 1/2 1
IF THIS BAR DOES NOT
MEASURE 1" THEN DRAWING IS
NOT TO FULL SCALE

IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT, TO ALTER AN ITEM IN ANY WAY.

Drawn by	MAL/JR
Checked by	MS/JC
Project No.	41048
Scale	AS NOTED
Date	08-30-21
No.	Date
	Revisions



Drawn by	MAL/JR
Checked by	MS/JC
Project No.	41048
Scale	AS NOTED
Date	08-30-21

GREENMAN PEDERSEN, INC 400 BELLA BOULEVARD MONTROSE, NY 10901	— — —
Mechanical & Electrical Engineer	Structural Engineer

UNIVENT REPLACEMENT AT HAVERSTRAW ELEMENTARY SED# 50-02-01-06-0-009-018 18 Grant Street Haverstraw, NY 10927	COUNTY OF ROCKLAND
--	--------------------

MSA MICHAEL SHILALE ARCHITECTS, L.L.P. 140 Park Avenue New York, NY 10022 Tel 945-7065/9200 info@msa.com
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DETAILS	A-503
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OUTDOOR CONDENSING UNIT SCHEDULE NOTES:

1. NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DBWB), OUTDOOR OF 95°F (DB).

2. NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB), OUTDOOR OF 45°F (WB).

3. EFFICIENCY VALUES FOR IEER, COP ARE BASED ON AHRI 1230 TEST METHOD FOR MIXTURE OF DUCTED & NON-DUCTED INDOOR UNITS.

4. FOR SYSTEMS WITH MULTIPLE MODULES, REFRIGERANT PIPE DIMENSIONS INDICATE TOTAL SYSTEM COMBINED PIPING DOWNSTREAM OF MODULE TWINNING.

5. ADDITIONAL CHARGE LISTED IS IN ADDITION TO FACTORY CHARGE, THIS MUST BE UPDATED BASED UPON FINAL FIELD PIPING LAYOUT.

6. COOLING EFFICIENCY FOR CONDENSING UNITS MUST BE 10% GREATER THAN LIMITS SET IN 2020 EBC NYS C406.2-10.5.5, 11.8 IEER.

7. FACTORY REPRESENTATIVES SHALL STARTUP AND COMMISSION CITY MULTI EQUIPMENT UPON COMPLETION OF EQUIPMENT INSTALLATION.

8. FACTORY REPRESENTATIVES SHALL PROVIDE ON-SITE ASSISTANCE FOR THE BMS INTEGRATION OF THE CITY MULTI EQUIPMENT.

Tag Reference	System Tag	Model Number	Type (double / Main / Sub)	Number of Ports	Connected Capacity to BC	Voltage / Phase	Power Cooling 208V/230V (kW)	Power Heating 208V/230V (kW)	MCA 208/230	Notes / Options
BC-1	CU-1	TCMBM0108JA11N4	Main	8	160,000.0	208/230V/1-phase	0.137/0.176	0.076/0.098	0.83/0.97	1, 2, 3, 4
BC-2	CU-2	TCMBM0108JA11N4	Main	8	150,000.0	208/230V/1-phase	0.137/0.176	0.076/0.098	0.83/0.97	1, 2, 3, 4
BC-3	CU-3	TCMBM0108JA11N4	Main	8	164,000.0	208/230V/1-phase	0.137/0.176	0.076/0.098	0.83/0.97	1, 2, 3, 4
BC-4	CU-4	TCMBM0108JA11N4	Main	8	156,000.0	208/230V/1-phase	0.137/0.176	0.076/0.098	0.83/0.97	1, 2, 3, 4
BC-5	CU-5	TCMBM0108JA11N4	Main	8	148,000.0	208/230V/1-phase	0.137/0.176	0.076/0.098	0.83/0.97	1, 2, 3, 4
BC-6	CU-6	TCMBM0108JA11N4	Main	8	132,000.0	208/230V/1-phase	0.137/0.176	0.076/0.098	0.83/0.97	1, 2, 3, 4
BC-7	CU-7	TCMBM0108JA11N4	Main	8	92,000.0	208/230V/1-phase	0.137/0.176	0.076/0.098	0.83/0.97	1, 2, 3, 4
BC-8	CU-8	TCMBM0108JA11N4	Main	8	140,000.0	208/230V/1-phase	0.137/0.176	0.076/0.098	0.83/0.97	1, 2, 3, 4
BC-9	CU-9	TCMBM0106JA11N4	Main	16	169,000.0	208/230V/1-phase	0.258/0.333	0.137/0.176	1.57/1.82	1, 2, 3, 4
BC-10	CU-10	TCMBM0108JA11N4	Main	8	158,000.0	208/230V/1-phase	0.137/0.176	0.076/0.098	0.83/0.97	1, 2, 3, 4
BC-11	CU-11	TCMBM0108JA11N4	Main	8	102,000.0	208/230V/1-phase	0.137/0.176	0.076/0.098	0.83/0.97	1, 2, 3, 4
BC-12	CU-12	TCMBM0108JA11N4	Main	8	150,000.0	208/230V/1-phase	0.137/0.176	0.076/0.098	0.83/0.97	1, 2, 3, 4

BC CONTROLLER SCHEDULE NOTES:

1. INCLUDE DIAMONDBACK BALL VALVES BV-SERIES, 700PSIG WORKING PRESSURE, FULL PORT, 410A RATED
2. A SUB BC CONTROLLER IS NOT REQUIRED FOR THIS PROJECT. FOR SUB BC CONTROLLER INFO, SEE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
3. PROVIDE REFRIGERATION BALL VALVE-BRAZE/SCHRADER/INSULATED - 3/8" SIZE
4. PROVIDE REFRIGERATION BALL VALVE-BRAZE/SCHRADER/INSULATED - 5/8" SIZE

STEAM HEATING COIL		
UNIT SERVED	RTU-2	RTU-3
LOCATION	RTU-2	RTU-3
BTU/HR	125,000	137,500
STEAM FLOW RATE (LB/H)	318	318
AIRFLOW (CFM)	8,085	8,328
ENTERING AIR TEMP (F)	45.4	45.4
LEAVING AIR TEMP (F)	80.5	80.5
ENTERING STEAM PRESSURE (PSIG)	2	2
STEAM PRESSURE DROP (PSIG)	1	1
AIRSIDE PRESSURE DROP (IN WC)	0.25	0.25
NOMINAL TUBE DIAMETER (IN)	1	1
TUBE THICKNESS (IN)	0.035	0.035
REMARKS:		
1. PROVIDE STEAM DISTRIBUTING TYPE COIL.		
2. THIS COIL SHALL BE A STANDARD PRODUCT OF THE RTU MANUFACTURER AND SHALL BE INTEGRAL TO THE RTU HEATING SECTION. REFER TO THE ROOFTOP UNIT SCHEDULE FOR RTU DETAILS.		

PACKAGED ROOFTOP UNIT SCHEDULE NOTES:

1. PROVIDE SINGLE ZONE VARIABLE AIR VOLUME (SZVAV) CONTROL AND VARIABLE SPEED COMPRESSORS (TRANE #REFX OR EQUAL).
2. PROVIDE EXHAUST REFERENCE OR COMPARATIVE ENTHALPY ECONOMIZER WITH EXHAUST DUCT DIAGNOSIS AND BAKETTES, RELIEF DAMPER.
3. PROVIDE CO2 BASED DEMAND VENTILATION WITH FIELD INSTALLED, WALL MOUNTED CO2 SENSORS. SEE SPEC 237313, 2.20 FOR MORE INFO.
4. PROVIDE ROOF CURB, 24" HIGH U.O.N. REFER TO DETAIL 6/M502.
5. PROVIDE DISCONNECT SWITCH AND POWERED CONVENIENCE OUTLET.
6. PROVIDE WITH MANUFACTURER'S STANDARD STEAM HEAT EXCHANGER. REFER TO THE STEAM COIL SCHEDULE ON THIS DRAWING.
7. PROVIDE DUCT SMOKE DETECTORS FOR BOTH THE SUPPLY AND RETURN AIR. SEE GENERAL NOTE #5 ON M-004.
8. PROVIDE MOTORIZED DAMPERS AT OUTSIDE AND EXHAUST AIR OPENINGS. SEE HVAC NOTE #16 ON M-001.
9. PROVIDE EXHAUST FAN START/STOP PROTECTION, FOR OVERHEATING, OVERCURREN, OVERVOLTAGE, AND CONTROLS. SEE DRAWING M-004, SPEC 230993 AND 237313.
10. PROVIDE UNIT MOUNTED, DISCONNECT SWITCH WITH VFD. SEE DRAWING M-004.

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

3	12-17-21	ISSUED FOR BID
2	11-19-21	SED ADDENDUM 1
1	08-30-21	BIDDING DOCUMENTS
No.	Date	Revisions

Drawn by	WM
Checked by	ERF
Project No.	41048
Scale	AS NOTED
Date	08-30-21

Mechanical & Electrical Engineer:	GREENMAN PEDERSEN, INC 400 BELLA BOULEVARD MONTEBELLO, NY 10001
Structural Engineer:	— — —

UNIVENT REPLACEMENT
AT
HAVERSTRAW
ELEMENTARY
SED# 50-02-01-06-0-009-018
18 Grant Street
Haverstraw, NY 10927
COUNTY OF ROCKLAND



MICHAEL SHILALE ARCHITECTS, LLP.

New City, NY 10956 Tel 845-708-9200
 140 Park Avenue
www.shilale.com

Drawing Title
**MECHANICAL
SCHEDULES**

Drawing No.
M-002

VRF HEAT RECOVERY INDOOR UNIT SCHEDULE																		
Tag Reference	Related System	Room Name	Model	Type	Nominal Cooling Capacity (BTU/h)	Nominal Heating Capacity (BTU/h)	Cooling Design Entering Temp DB/WB (°F)	Heating Design Entering Temp DB/WB (°F)	Cooling Total Capacity (BTU/h)	Cooling Sensible Capacity (BTU/h)	Heating Capacity (BTU/h)	Estimated Cooling Coil LAT (°F)	Estimated Heating Coil LAT (°F)	Refrig Pipe Dim Liquid/Suction (inch)	Voltage / Phase	Power 208V Cooling/Heating (kW)	Electrical MCA/MFS	Notes / Options
UV-101	CU-1	CR 101	30000 Btu/h LEV Kit	LEV KIT	30,000.0	34,000.0	78.0/67.9	72.0	30,157.2	Dependent on 3rd Party Coil	21,809.8	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
UV-102	CU-1	CR 102	30000 Btu/h LEV Kit	LEV KIT	30,000.0	34,000.0	78.0/67.9	72.0	30,157.2	Dependent on 3rd Party Coil	21,809.8	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
UV-103	CU-1	CR 103	30000 Btu/h LEV Kit	LEV KIT	30,000.0	34,000.0	78.0/67.9	72.0	30,157.2	Dependent on 3rd Party Coil	21,809.8	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
UV-104	CU-1	CR 104	30000 Btu/h LEV Kit	LEV KIT	30,000.0	34,000.0	78.0/67.9	72.0	30,157.2	Dependent on 3rd Party Coil	21,809.8	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
AC-1A	CU-1	AP 105D	TPLFY005FM140A	Ceiling-Cassette (Four-Way)	5,000.0	5,600.0	78.0/67.9	72.0	5,026.2	3,757.3	3,592.2	65.4	83.9	1/4 / 1/2	208/230V/1-phase	0.02 / 0.02	0.24/15	1, 2, 3, 4, 5, 6
AC-1B	CU-1	Kitchenette 105	TPLFY005FM140A	Ceiling-Cassette (Four-Way)	5,000.0	5,600.0	78.0/67.9	72.0	5,026.2	3,757.3	3,592.2	65.4	83.9	1/4 / 1/2	208/230V/1-phase	0.02 / 0.02	0.24/15	1, 2, 3, 4, 5, 6
UV-106	CU-1	CR 106	30000 Btu/h LEV Kit	LEV KIT	30,000.0	34,000.0	78.0/67.9	72.0	30,157.2	Dependent on 3rd Party Coil	21,809.8	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
UV-201	CU-2	CR 201	30000 Btu/h LEV Kit	LEV KIT	30,000.0	34,000.0	78.0/67.9	72.0	30,157.2	Dependent on 3rd Party Coil	23,416.3	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
UV-202	CU-2	CR 202	30000 Btu/h LEV Kit	LEV KIT	30,000.0	34,000.0	78.0/67.9	72.0	30,157.2	Dependent on 3rd Party Coil	23,416.3	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
UV-203	CU-2	CR 203	30000 Btu/h LEV Kit	LEV KIT	30,000.0	34,000.0	78.0/67.9	72.0	30,157.2	Dependent on 3rd Party Coil	23,416.3	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
UV-204	CU-2	CR 204	30000 Btu/h LEV Kit	LEV KIT	30,000.0	34,000.0	78.0/67.9	72.0	30,157.2	Dependent on 3rd Party Coil	23,416.3	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
UV-205	CU-2	CR 205	30000 Btu/h LEV Kit	LEV KIT	30,000.0	34,000.0	78.0/67.9	72.0	30,157.2	Dependent on 3rd Party Coil	23,416.3	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
UV-301	CU-3	CR 301	30000 Btu/h LEV Kit	LEV KIT	30,000.0	34,000.0	78.0/67.9	72.0	30,157.2	Dependent on 3rd Party Coil	21,619.9	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
UV-302	CU-3	CR 302	30000 Btu/h LEV Kit	LEV KIT	30,000.0	34,000.0	78.0/67.9	72.0	30,157.2	Dependent on 3rd Party Coil	21,619.9	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
UV-303	CU-3	CR 303	36000 Btu/h LEV Kit	LEV KIT	36,000.0	40,000.0	78.0/67.9	72.0	36,188.6	Dependent on 3rd Party Coil	25,435.1	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
UV-304	CU-3	CR 304	30000 Btu/h LEV Kit	LEV KIT	30,000.0	34,000.0	78.0/67.9	72.0	30,157.2	Dependent on 3rd Party Coil	21,619.9	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
AC-3A	CU-3	CR 305	TPEFYP008MA143A	Ceiling-Concealed (Ducted)	8,000.0	9,000.0	78.0/67.9	72.0	8,041.9	5,558.7	5,722.9	60.6	89.8	1/4 / 1/2	208/230V/1-phase	0.06 / 0.04	1.05/15	1, 2, 3, 4, 5, 6, 8
UV-306	CU-3	CR 306	30000 Btu/h LEV Kit	LEV KIT	30,000.0	34,000.0	78.0/67.9	72.0	30,157.2	Dependent on 3rd Party Coil	21,619.9	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
AC-4A	CU-4	Main Office 105A	TPEFYP008MA143A	Ceiling-Concealed (Ducted)	8,000.0	9,000.0	78.0/67.9	72.0	8,041.9	5,558.7	5,939.3	60.6	90.4	1/4 / 1/2	208/230V/1-phase	0.06 / 0.04	1.05/15	1, 2, 3, 4, 5, 6, 8
AC-4B	CU-4	Principal 105C	TPEFYP006MA143A	Ceiling-Concealed (Ducted)	6,000.0	6,700.0	78.0/67.9	72.0	6,031.4	4,892.2	4,421.5	78.0	85.7	1/4 / 1/2	208/230V/1-phase	0.06 / 0.04	1.05/15	1, 2, 3, 4, 5, 6, 8
AC-4C	CU-4	Conference 105B	TPEFYP008MA143A	Ceiling-Concealed (Ducted)	8,000.0	9,000.0	78.0/67.9	72.0	8,041.9	5,558.7	5,939.3	60.6	90.4	1/4 / 1/2	208/230V/1-phase	0.06 / 0.04	1.05/15	1, 2, 3, 4, 5, 6, 8
UV-206	CU-4	CR 206	30000 Btu/h LEV Kit	LEV KIT	30,000.0	34,000.0	78.0/67.9	72.0	30,157.2	Dependent on 3rd Party Coil	21,619.9	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
UV-207	CU-4	CR 207	30000 Btu/h LEV Kit	LEV KIT	30,000.0	34,000.0	78.0/67.9	72.0	30,157.2	Dependent on 3rd Party Coil	22,437.3	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
UV-208	CU-4	CR 208	30000 Btu/h LEV Kit	LEV KIT	30,000.0	34,000.0	78.0/67.9	72.0	30,157.2	Dependent on 3rd Party Coil	22,437.3	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
UV-307	CU-4	CR 307	36000 Btu/h LEV Kit	LEV KIT	36,000.0	40,000.0	78.0/67.9	72.0	36,188.6	Dependent on 3rd Party Coil	26,396.8	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
AC-4D	CU-4	CR 309	TPEFYP008MA143A	Ceiling-Concealed (Ducted)	8,000.0	9,000.0	78.0/67.9	72.0	8,041.9	5,558.7	5,939.3	60.6	90.4	1/4 / 1/2	208/230V/1-phase	0.06 / 0.04	1.05/15	1, 2, 3, 4, 5, 6, 8
UV-186	CU-5	Music 186	30000 Btu/h LEV Kit	LEV KIT	30,000.0	34,000.0	78.0/67.9	72.0	30,157.2	Dependent on 3rd Party Coil	23,116.6	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
AC-5C	CU-5	Music 185	TPVFYP018AM141A	Multi-Position Air Handler	18,000.0	40,000.0	78.0/67.9	72.0	18,094.3	11,937.6	13,598.0	58.8	93.6	1/4 / 1/2	208/230V/1-phase	0.13 / 0.13	3.0/15	1, 2, 3, 4, 5, 6
UV-190	CU-5	Home Ec 190	30000 Btu/h LEV Kit	LEV KIT	30,000.0	34,000.0	78.0/67.9	72.0	30,157.2	Dependent on 3rd Party Coil	23,116.6	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
UV-195A	CU-5	Home Ec 195A	30000 Btu/h LEV Kit	LEV KIT	30,000.0	34,000.0	78.0/67.9	72.0	30,157.2	Dependent on 3rd Party Coil	23,116.6	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
AC-5A	CU-5	Office 220A	TPLFY005FM140A	Ceiling-Cassette (Four-Way)	5,000.0	5,600.0	78.0/67.9	72.0	5,026.2	3,757.3	3,807.4	65.4	84.7	1/4 / 1/2	208/230V/1-phase	0.02 / 0.02	0.24/15	1, 2, 3, 4, 5, 6
AC-5B	CU-5	Office 220B	TPLFY005FM140A	Ceiling-Cassette (Four-Way)	5,000.0	5,600.0	78.0/67.9	72.0	5,026.2	3,757.3	3,807.4	65.4	84.7	1/4 / 1/2	208/230V/1-phase	0.02 / 0.02	0.24/15	1, 2, 3, 4, 5, 6
UV-105B	CU-5	Conference 105B	30000 Btu/h LEV Kit	LEV KIT	30,000.0	34,000.0	78.0/67.9	72.0	30,157.2	Dependent on 3rd Party Coil	23,116.6	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
UV-180A-1	CU-6	Room 180A	36000 Btu/h LEV Kit	LEV KIT	36,000.0	40,000.0	78.0/67.9	72.0	36,188.6	Dependent on 3rd Party Coil	27,023.6	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
UV-180A-2	CU-6	Room 180A	36000 Btu/h LEV Kit	LEV KIT	36,000.0	40,000.0	78.0/67.9	72.0	36,188.6	Dependent on 3rd Party Coil	27,023.6	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
UV-175	CU-6	Room 175	60000 Btu/h LEV Kit	LEV KIT	60,000.0	66,000.0	78.0/67.9	72.0	60,314.4	Dependent on 3rd Party Coil	44,589.0	78.0	72.0	3/8 / 3/4	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
UV-221	CU-7	Locker Rm 221	36000 Btu/h LEV Kit	LEV KIT	36,000.0	40,000.0	78.0/67.9	72.0	36,188.6	Dependent on 3rd Party Coil	32,571.1	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
UV-222	CU-7	Locker Rm 222	36000 Btu/h LEV Kit	LEV KIT	36,000.0	40,000.0	78.0/67.9	72.0	36,188.6	Dependent on 3rd Party Coil	32,571.1	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
AC-7A	CU-7	Office 222C	TPLFY005FM140A	Ceiling-Cassette (Four-Way)	5,000.0	5,600.0	78.0/67.9	72.0	5,026.2	3,757.3	4,560.0	65.4	87.2	1/4 / 1/2	208/230V/1-phase	0.02 / 0.02	0.24/15	1, 2, 3, 4, 5, 6, 7
AC-7B	CU-7	Office 222B	TPLFY005FM140A	Ceiling-Cassette (Four-Way)	5,000.0	5,600.0	78.0/67.9	72.0	5,026.2	3,757.3	4,560.0	65.4	87.2	1/4 / 1/2	208/230V/1-phase	0.02 / 0.02	0.24/15	1, 2, 3, 4, 5, 6, 7
AC-7C	CU-7	Office 221B	TPLFY005FM140A	Ceiling-Cassette (Four-Way)	5,000.0	5,600.0	78.0/67.9	72.0	5,026.2	3,757.3	4,560.0	65.4	87.2	1/4 / 1/2	208/230V/1-phase	0.02 / 0.02	0.24/15	1, 2, 3, 4, 5, 6, 7
AC-7D	CU-7	Office 221C	TPLFY005FM140A	Ceiling-Cassette (Four-Way)	5,000.0	5,600.0	78.0/67.9	72.0	5,026.2	3,757.3	4,560.0	65.4	87.2	1/4 / 1/2	208/230V/1-phase	0.02 / 0.02	0.24/15	1, 2, 3, 4, 5, 6, 7
UV-207-1	CU-8	Library 207	36000 Btu/h LEV Kit	LEV KIT	36,000.0	40,000.0	78.0/67.9	72.0	36,188.6	Dependent on 3rd Party Coil	25,745.5	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
UV-207-2	CU-8	Library 207	36000 Btu/h LEV Kit	LEV KIT	36,000.0	40,000.0	78.0/67.9	72.0	36,188.6	Dependent on 3rd Party Coil	25,745.5	78.0	72.0	3/8 / 5/8	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
UV-311	CU-8	Science 311	60000 Btu/h LEV Kit	LEV KIT	60,000.0	66,000.0	78.0/67.9	72.0	60,314.4	Dependent on 3rd Party Coil	42,480.1	78.0	72.0	3/8 / 3/4	208/230V/1-phase	0.012 / 0.012	/16	1, 2, 3, 4, 5, 6
AC-8A	CU-8	Office 209A	TPEFYP008MA143A	Ceiling-Concealed (Ducted)	8,000.0	9,000.0	78.0/67.9	72.0	8,041.9	5,558.7	5,792.7	60.6	90.0	1/4 / 1/2	208/230V/1-phase	0.06 / 0.04	1.05/15	1, 2, 3, 4, 5, 6, 8
AC-9A	CU-9	Office 107B	TPEFYP006MA143A	Ceiling-Concealed (Ducted)	6,000.0	6,700.0	78.0/67.9	72.0	5,598.1	4,738.6	4,071.2	63.1	84.6	1/4 / 1/2	208/230V/1-phase	0.06 / 0.04	1.05/15	1, 2, 3, 4, 5, 6, 8
AC-9B	CU-9	Office 107F	TPEFYP006MA143A	Ceiling-Concealed (Ducted)	6,000.0	6,700.0	78.0/67.9	72.0	5,598.1	4,738.6	4,071.2	63.1	84.6	1/4 / 1/2	208/230V/1-phase	0.06 / 0.04	1.05/15	1, 2, 3, 4, 5, 6
AC-9C	CU-9	Office 107D	TPEFYP006MA143A	Ceiling-Concealed (Ducted)	6,000.0	6,700.0	78.0/67.9	72.0	5,598.1	4,738.6	4,071.2	63.1	84.6	1/4 / 1/2	208/230V/1-phase	0.06 / 0.04	1.05/15	1, 2, 3, 4, 5, 6, 8
AC-9E	CU-9	Office 107E	TPEFYP006MA143A	Ceiling-Concealed (Ducted)	6,000.0	6,700.0	78.0/67.9	72.0	5,598.1	4,738.6	4,071.2	63.1	84.6	1/4 / 1/2	208/230V/1-phase	0.06 / 0.04	1.05/15	1, 2, 3, 4, 5, 6
AC-9I	CU-9	Office 108E	TPLFY005FM140A	Ceiling-Cassette (Four-Way)	5,000.0													

1. DUCT SMOKE DETECTORS SHALL BE PROVIDED IN MAIN SUPPLY AND RETURN DUCT FOR SYSTEMS OVER 1,000 CFM AND ALSO UPSTREAM OF EACH STORY RETURN DUCT/ RISER CONNECTION WHERE RETURN AIR RISERS SERVE TWO OR MORE STORIES FOR SYSTEMS OVER 15,000 CFM.
2. INTEGRATE AIR FLOW MEASURING APPARATUS INTO THE BMS/DDC NETWORK. PROVIDE ONE OUTSIDE AIR FLOW MEASURING STATION FOR EACH OUTSIDE AIR INTAKE PORT. PROVIDE FACTORY INSTALLED AIRFLOW STATION.
3. PROVIDE NEW THERMOSTATS WITH LOCK BOXES IN ROOMS BEING SERVED BY AHU. CONTRACTOR SHALL PROVIDE ALL ASSOCIATED CONTROL WIRING.
4. SAFETY SHUTDOWN DEVICES SHALL BE HARDWIRED TO THE FAN STARTER CIRCUIT IN ADDITION TO THE DDC SYSTEM. COORDINATE WITH MANUFACTURER FOR SHUTDOWN UNDER ALL MODES OF OPERATION.
5. MECHANICAL CONTRACTOR SHALL HIRE A FIRE ALARM SUBCONTRACTOR. FIRE ALARM CONTRACTOR TO FURNISH FIRE ALARM SYSTEM COMPLIANT SMOKE DETECTORS TO THE MECHANICAL CONTRACTOR WHO SHALL IN TURN FURNISH THEM TO THE CENTRAL AIR HANDLING UNIT MANUFACTURER FOR FACTORY INSTALLATION OR TO THE SHEET METAL CONTRACTOR FOR FIELD DUCTWORK INSTALLATION FOR THE FLOOR RETURN/RISER RETURN CONNECTIONS AS APPLICABLE. CONTRACTOR SHALL PROVIDE ALL SIGNAL AND CONTROL POWER WIRING TO UNIT.

GENERAL NOTES

VFD	VARIABLE FREQUENCY DRIVE	DCV	DEMAND CONTROL VENTILATION
TLL-1	TEMPERATURE LOW LIMIT	CO2	CARBON DIOXIDE
TCC	TEMPERATURE CONTROLS	DI	DIGITAL INPUT
TS-1	OUTSIDE AIR TEMP	DO	DIGITAL OUTPUT
TS-2	MIXED AIR TEMP	AI	ANALOG INPUT
TS-3	HEATING COIL DISCHARGE	AO	ANALOG OUTPUT
TS-4	DISCHARGE AIR TEMP	LON	LOWVOLTAGE NETWORK CONNECTION
TS-5	RETURN AIR TEMP	PSL	PRESSURE SWITCH LOW
FE	FLOW ELEMENT	PSH	PRESSURE SWITCH HIGH
FM	FLOW METER	DPS/I	DIFF. PRESSURE SWITCH/INDICATOR
BI	BINARY INPUT	AD	DPR ACTUATORS
BO	BINARY OUTPUT	BMS	BUILDING MANAGEMENT SYSTEM
DA	DISCHARGE AIR	RTU	ROOFTOP UNIT
OA	OUTSIDE AIR	RVF	VARIABLE REFRIGERANT FLOW
QA	SUPPLY AIR	STM	STEAM SUPPLY
RA	RETURN AIR	CON	CONDENSATE RETURN
IDU	INDOOR UNIT	WCI	WIRELESS COMMUNICATION INTERFACE
ODU	OUTDOOR UNIT	MA ACT	MIXED AIR ACTIVE
FLTG	FLOATING	SF STS	SUPPLY FAN STATUS
TEMP	TEMPERATURE	SFD	SPEED
STPT	SETPOINT	CMD	COMMAND
VAL	VALVE	---	FIELD INSTALLED WIRING
EC	ELECTRICAL CONTRACTOR		

LEGEND

POINTS LIST NOTES:

LEGEND:

X = PROVIDE QUANTITY AS REQUIRED TO INCLUDE ALL INSTANCES OF THE INDICATED FEATURE. INCLUDE MULTIPLE POINTS WITHIN EACH MECHANICAL SYSTEM AS NECESSARY. COORDINATE WITH EQUIPMENT VENDOR.

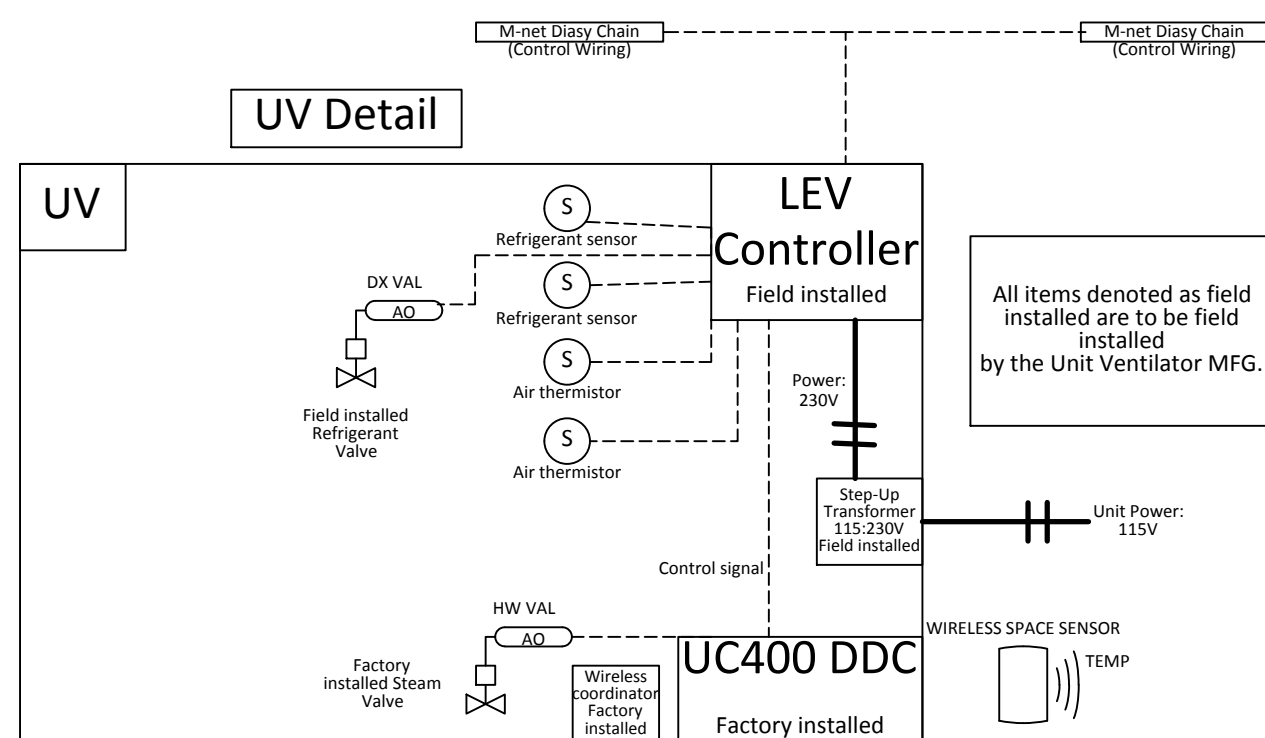
B = INFORMATION PROVIDED TO EACH SYSTEM VIA NETWORK BROADCAST.

NVO = NETWORK VARIABLE OUTPUT, NVI = NETWORK VARIABLE INPUT

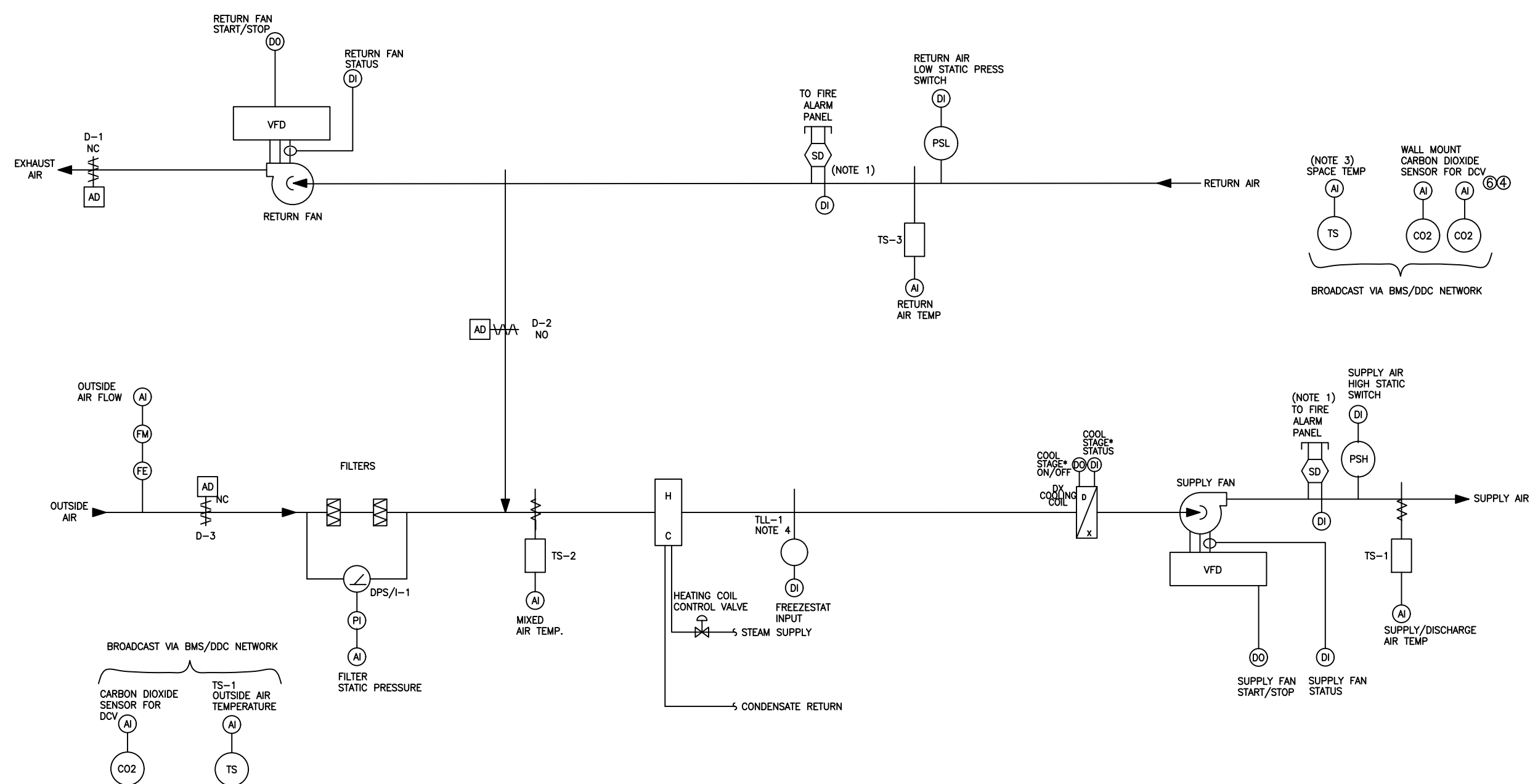
KEY NOTES:

- 1) THE POINT LISTED HEREIN ARE THE MINIMUM POINTS REQUIRED FOR THE CONTROL AND MONITORING OF THIS EQUIPMENT. THIS POINT LIST IS TYPICAL FOR EACH MECHANICAL/ELECTRICAL SYSTEM OF THIS TYPE. IF THE REQUIREMENT OF OPERATION REQUIRES ADDITIONAL OR DIFFERING INFORMATION, IT MUST BE PROVIDED BY THE RESPECTIVE PROVIDER OF THE CONTROLS FOR THIS TYPE OF EQUIPMENT AS COORDINATED BY THE GENERAL AND MECHANICAL CONTRACTORS.
- 2) THE TCC SHALL PROVIDE ALL DIGITAL ALARM LOGIC. ALL DIGITAL ALARMS SHALL BE COMPATIBLE WITH THE EXISTING SIEMENS BMS SYSTEM.
- 3) THE TCC SHALL PROVIDE ALL TRENDING AND ANALOG ALARMING VIA THE SOFTWARE USED AT THE SIEMENS BMS SYSTEM.
- 4) PROVIDE ACCUMULATED AIR FLOW FOR VALIDATION OF PURGE--MODE AND FOR PERMANENT VALIDATION OF OCCUPANT VENTILATION.
- 5) PROVIDE MANUAL RESET DEVICE. NOTE THAT THIS DEVICE BOTH ALARMS IN THE BMS AND IS HARDWIRED TO THE VFDs FOR SHUTDOWN OF THE FANS IN ALL OPERATING CONDITIONS OF THE VFD.
- 6) PROVIDE THE ALARM WHEN AT THE CALCULATED DIFFERENTIAL BETWEEN OUTSIDE AIR AND SPACE AIR CO₂ VALUE IS 1000 ppm.
- 7) PROVIDE LNS COMMUNICATION CONNECTION TO THIS DEVICE MAPPING ALL REQUIRED POINTS INTO THE LNS DATABASE.

		Input/Output (Note 1)						Software/Firmware Features (Note 2,3)							Notes		
"SZVAV AIR HANDLING UNIT"		Sensed		Calculated		Alarms and Advisories (with Instructions)			Misc. Features								
Reference No.	Point Name	Analog Input	Analog Output	Digital Output	String Value	Rate of Variable	Trended Variable	Digital Alarm	Change-Of-State Alarm	High Limit Alarm	Low Limit Alarm	Runtime Limit (Hrs)	Broadcast Point	"Direct Link Communication" Trended Value	Misc. Other	Network Variable Type	Notes
1	Outside Air Temp	X											X		X	nvo	① ③
2	Outside Air CO2	X											X		X	nvo	
3	Supply Airflow	X								20% over SP	20% under SP				X	nvo	
4	Exhaust/Return Airflow	X								20% over SP	20% under SP					nvo	
5	Supply Air Enthalpy/Wheel Discharge Temp	X													X	nvo	
6	Supply Air Temp Heating Setpoint (Leaving The Wheel)		X														no/nvo
7	Heating Coil Discharge Air Temp	X													X	nvo	
8	Cooling Coil Discharge Air Temp	X													X	nvo	
9	Supply Air Temp	X														X	nvo
10	Exhaust/Return Air Temp	X													X	nvo	
11	Room Temp	X								Note 8					X	nvo	
12	Room CO2	X															nvo
13	Differential CO2 (Calculated)				X					1000 ppm							nvo
14	SP High Static Pressure		X					X		[TBD]							nvo
15	ET/RF Low Suction Pressure		X					X			[TBD]						nvo
16	Supply Fan Status		X									1,000					nvo
17	Supply Fan VFD												X				nvo
18	Supply Fan VFD Fault		X					X									nvo
19	Supply Fan VFD Speed		X														nvo
20	Supply Fan Failure			X				X									nvo
21	Exhaust Fan Status		X									1,000					nvo
22	Exhaust Fan VFD												X				nvo
23	Exhaust Fan VFD Fault		X					X									nvo
24	Exhaust Fan VFD Speed		X														nvo
25	Exhaust Fan Failure			X				X									nvo
26	Outside Air Flow	X				cfm	CCF			SP-20%	SP+20%				X	nvo	④
27	Common Fire Alarm		X					X					X				nvo
28	Freeze/stat Alarm		X					X			39°F						nvo
29	HVAC Mode				X								X				nvo
30	Occupancy Mode (Bypass Mode)		X														nvo
31	Occupancy Mode				X												nvo
32	DX Cooling Command			X													nvo
33	DX Compressor Status		X									1,000					nvo

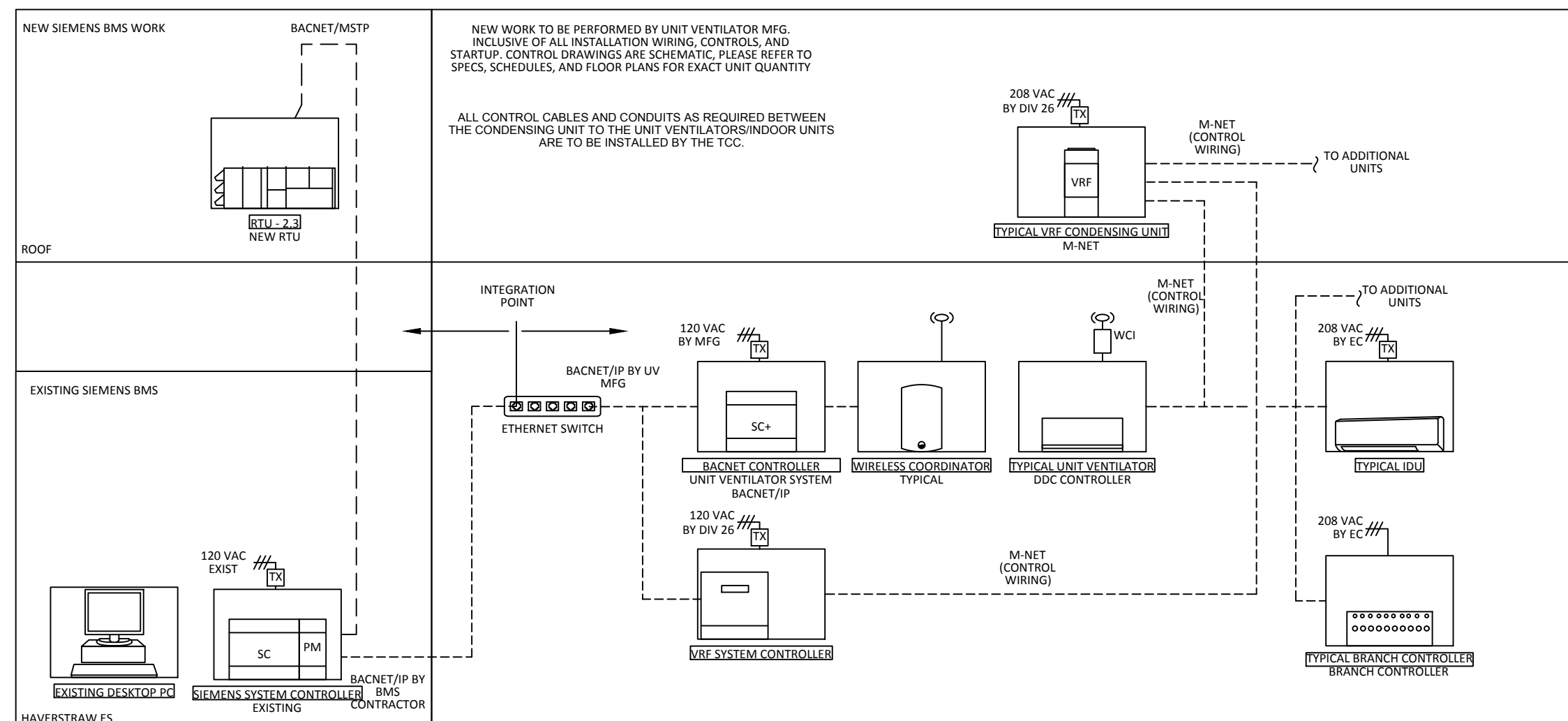


4 LEV KIT WIRING DIAGRAM

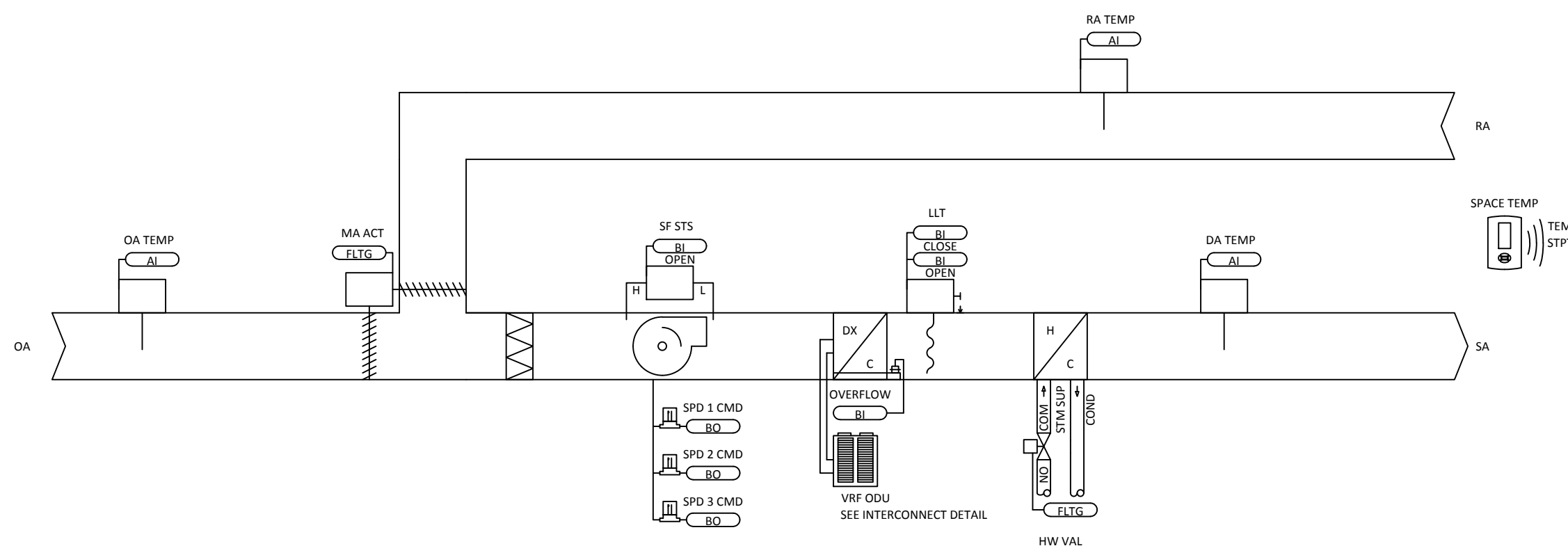


1 RTU CONTROL DIAGRAM

SCALE: N.T.S.



3 VRF BMS WIRING DIAGRAM



2 UV CONTROL DIAGRAM

[illegible]

Drawn by	WM
Checked by	ERF
Project No.	41048
Scale	AS NOTED
Date	08-30-21

Mechanical & Electrical Engineer:	GREENMAN PEDERSEN, INC 400 BELLA BOULEVARD MONTEBELLO, NY 10901
Structural Engineer:	— — — —

UNIVERSITY REPLACEMENT
AT
HAVERSTRAW
ELEMENTARY
SED# 50-02-01-06-0-009-018
16 Grant Street
Haverstraw, NY 10927
COUNTY OF ROCKLAND



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Drawing Title

CONTROLS

Drawing No.

M-004

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MECHANICAL VENTILATION SCHEDULE

ROOM	OCCUPANCY CLASSIFICATION	FLOOR AREA SF	ROOM VOLUME	OCCUPANT LOAD	# OF OCCUPANTS	REQUIRED CFM/ OCCUPANT	REQUIRED CFM/SF	BREATHING ZONE OUTDOOR AIRFLOW	ZONE DISTRIBUTION EFFECTIVENESS		TOTAL ROOM OUTDOOR AIR REQUIRED		ACTUAL ROOM OUTDOOR AIR FLOW RATE		TOTAL SUPPLY AIRFLOW		AIR CHANGE RATE		REQUIRED EXHAUST RATE (CFM/FT^2)	REQUIRED EXHAUST AIRFLOW (CFM/FT^2)	ACTUAL EXHAUST AIRFLOW (CFM/FT^2)
									Ez		Vot=Vbz/Ez		CFM		(CFM)		(ACH)				
									COOLING	HEATING	COOLING	HEATING	COOLING	HEATING	COOLING	HEATING	COOLING	HEATING			
101	CLASSROOM	760	9120	35	27	10	0.12	357	0.9	0.9	397	397	400	400	750	750	4.9	4.9	-	-	-
102	CLASSROOM	666	7992	35	23	10	0.12	313	0.9	0.9	348	348	400	400	750	750	5.6	5.6	-	-	-
103	CLASSROOM	762	9144	35	27	10	0.12	358	0.9	0.9	398	398	400	400	750	750	4.9	4.9	-	-	-
104	CLASSROOM	666	7992	35	23	10	0.12	313	0.9	0.9	348	348	375	375	750	750	5.6	5.6	-	-	-
105	KITCHENETTE	85	1020	0	0	5	0.12	10	0.9	0.9	11	11	15	15	265	265	15.6	15.6	-	-	-
105A	MAIN OFFICE	635	5080	5	3	5	0.06	54	0.9	0.9	60	60	60	60	300	300	3.5	3.5	-	-	-
105B	CONFERENCE RM	420	3360	50	21	5	0.06	130	0.9	0.9	145	145	150	150	315	315	5.6	5.6	-	-	-
105C	PRINCIPAL OFFICE	460	3680	5	2	5	0.06	39	0.9	0.9	43	43	50	50	265	265	4.3	4.3	-	-	-
105D	AP OFFICE	150	1200	5	1	5	0.06	13	0.9	0.9	14	14	15	15	265	265	13.3	13.3	-	-	-
106	CLASSROOM	640	7680	35	22	10	0.12	301	0.9	0.9	334	334	375	375	750	750	5.9	5.9	-	-	-
107	CLASSROOM	755	9060	35	26	10	0.12	355	0.9	0.9	394	394	400	400	750	750	5.0	5.0	-	-	-
107A	NURSE OFFICE	70	840	5	0	5	0.06	6	0.9	0.9	7	7	15	15	265	265	18.9	18.9	-	-	-
107B	OFFICE	155	1860	5	1	5	0.06	13	0.9	0.9	15	15	15	15	265	265	8.5	8.5	-	-	-
107C	OFFICE	135	1620	5	1	5	0.06	11	0.9	0.9	13	13	15	15	265	265	9.8	9.8	-	-	-
107D	OFFICE	75	900	5	0	5	0.06	6	0.9	0.9	7	7	10	10	265	265	17.7	17.7	-	-	-
107E	WORK ROOM-OFFICE	355	4260	5	2	5	0.06	30	0.9	0.9	34	34	40	40	315	315	4.4	4.4	-	-	-
108	GUIDANCE OFFICE	384	4608	5	2	5	0.06	33	0.9	0.9	36	36	40	40	315	315	4.1	4.1	-	-	-
108B	OFFICE	55	660	5	0	5	0.06	5	0.9	0.9	5	5	10	10	265	265	24.1	24.1	-	-	-
108C	OFFICE	66	792	5	0	5	0.06	6	0.9	0.9	6	6	10	10	265	265	20.1	20.1	-	-	-
108D	OFFICE	72	864	5	0	5	0.06	6	0.9	0.9	7	7	10	10	265	265	18.4	18.4	-	-	-
109	CLASSROOM	765	9180	35	27	10	0.12	360	0.9	0.9	400	400	400	400	750	750	4.9	4.9	-	-	-
110	CLASSROOM - ART	896	10752	35	31	10	0.12	421	0.9	0.9	468	468	475	475	750	750	4.2	4.2	0.7	627	630
110A	OFFICE	315	3780	5	2	5	0.06	27	0.9	0.9	30	30	30	30	265	265	4.2	4.2	-	-	-
111	CLASSROOM	740	8880	35	26	10	0.12	348	0.9	0.9	386	386	400	400	750	750	5.1	5.1	-	-	-
175	CLASSROOM - BAND	1610	19320	35	56	10	0.12	757	0.9	0.9	841	841	850	850	1500	1500	4.7	4.7	-	-	-
180A	CLASSROOM - TECH	1995	23940	35	70	10	0.12	938	0.9	0.9	1042	1042	1050	1050	2000	2000	5.0	5.0	-	-	-
180C	OFFICE	150	1800	5	1	5	0.06	13	0.9	0.9	14	14	15	15	265	265	8.8	8.8	-	-	-
185	CLASSROOM - MUSIC	624	7488	35	22	10	0.06	256	0.9	0.9	284	284	285	285	585	585	4.7	4.7	-	-	-
186	CLASSROOM - MUSIC	1070	12840	35	37	10	0.06	439	0.9	0.9	487	487	500	500	1000	1000	4.7	4.7	-	-	-
190	CLASSROOM - HOME EC	690	8280	35	24	10	0.12	324	0.9	0.9	360	360	365	365	750	750	5.4	5.4	-	-	-
195A	CLASSROOM - HOME EC	830	9960	35	29	10	0.12	390	0.9	0.9	433	433	435	435	750	750	4.5	4.5	-	-	-
201	CLASSROOM	759	9108	35	27	10	0.12	357	0.9	0.9	396	396	400	400	750	750	4.9	4.9	-	-	-
202	CLASSROOM	737	8844	35	26	10	0.12	346	0.9	0.9	385	385	400	400	750	750	5.1	5.1	-	-	-
203	CLASSROOM	732	8784	35	26	10	0.12	344	0.9	0.9	382	382	400	400	750	750	5.1	5.1	-	-	-
204	CLASSROOM	529	6348	35	19	10	0.12	249	0.9	0.9	276	276	300	300	750	750	7.1	7.1	-	-	-
205	CLASSROOM	700	8400	35	25	10	0.12	329	0.9	0.9	366	366	375	375	750	750	5.4	5.4	-	-	-
206	CLASSROOM	448	5376	35	16	10	0.12	211	0.9	0.9	234	234	250	250	750	750	8.4	8.4	-	-	-
207	CLASSROOM	688	8256	35	24	10	0.12	323	0.9	0.9	359	359	375	375	750	750	5.5	5.5	-	-	-
208	CLASSROOM	465	5580	35	16	10	0.12	219	0.9	0.9	243	243	250	250	750	750	8.1	8.1	-	-	-
207A	LIBRARY	1886	22632	35	66	10	0.12	886	0.9	0.9	985	985	1000	1000	2000	2000	5.3	5.3	-	-	-
209	CLASSROOM	706	8472	35	25	10	0.12	332	0.9	0.9	369	369	375	375	750	750	5.3	5.3	-	-	-
209A	OFFICE	339	4068	5	2	5	0.06	29	0.9	0.9	32	32	50	50	265	265	3.9	3.9	-	-	-
210	CLASSROOM	755	9060	35	26	10	0.12	355	0.9	0.9	394	394	400	400	750	750	5.0	5.0	-	-	-
211	CLASSROOM	339	4068	35	12	10	0.12	159	0.9	0.9	177	177	180	180	750	750	11.1	11.1	-	-	-
213	CLASSROOM	707	8484	35	25	10	0.12	332	0.9	0.9	369	369	375	375	750	750	5.3	5.3	-	-	-
212	CLASSROOM	743	8916	35	26	10	0.12	349	0.9	0.9	388	388	400	400	750	750	5.0	5.0	-	-	-
215	CLASSROOM	741	8892	35	26	10	0.12	348	0.9	0.9	387	387	400	400	750	750	5.1	5.1	-	-	-
216	CLASSROOM	729	8748	35	26	10	0.12	343	0.9	0.9	381	381	400	400	750	750	5.1	5.1	-	-	-
218	AUDITORIUM	6121	124042	150	918	5	0.06	4958	0.8	0.8	6198	6198	6200	6200	12000	12000	5.8	5.8	-	-	-
220A	OFFICE	96	1152	5	0	5	0.06	8	0.9	0.9	9	9	15	15	265	265	13.8	13.8	-	-	-
220B	OFFICE	96	1152	5	0	5	0.06	8	0.9	0.9	9	9	15	15	265	265	13.8	13.8	-	-	-
220	GYMNASIUM	6152	147648	7	43	20	0.18	1969	0.8	0.8	2461	2461	2500	2500	11500	11500	4.7	4.7	-	-	-
221	GIRLS LOCKER RM	1020	12240	5	5	5	0.06	87	0.9	0.9	96	96	100	100	1000	1000	4.9	4.9	.25	257	260
222	BOYS LOCKER RM	1027	12324																		

UNIT VENTILATOR SCHEDULE

UNIT TAG	LOCATION	TOTAL SUPPLY AIRFLOW (CFM)	MINIMUM OUTSIDE AIRFLOW (CFM)		MAXIMUM OUTSIDE AIRFLOW (CFM)	COOLING							HEATING				FILTER	ELECTRICAL				UNIT WEIGHT (LBS)	UNIT DIMENSIONS (LxDxH, IN) (V.I.F.)	BASIS OF DESIGN	REMARKS
			COOLING	HEATING		EADB (°F)	EAWB (°F)	LADB (°F)	LADB (°F)	MIN. SENSIBLE CAPACITY (BTU/H)	MIN. TOTAL CAPACITY (BTU/H)	EADB (°F)	LADB (°F)	STEAM PRESSURE (PSIG)	REQUIRED TOTAL CAPACITY (BTU/H)	MERV	MCA	MAX FUSE SIZE	VOLT/PH/HZ						
UV-101	101	750	400	400	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-102	102	750	400	400	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-103	103	750	400	400	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-104	104	750	375	375	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-105B	105	750	375	375	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10,11		
UV-106	106	750	375	375	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-107	107	750	400	400	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-109	109	750	400	400	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-110	110	750	475	475	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-111	111	750	400	400	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-175	175	1500	850	850	1500	80.0	67.0	55.4	52.2	30,890	51,010	12.0	116.3	2.0	129,700	13	9.0	15	115/1/60	470	105x21.25x30	TRANE VUVE1500	SEE NOTES 1-10		
UV-180A-1	180A	1000	525	525	1000	80.0	67.0	54.7	51.8	21,720	35,670	12.0	124.2	2.0	106,950	13	4.5	15	120/1/60	375	82.25x35.6x16.6	TRANE HUV1001	SEE NOTES 1-10,12		
UV-180A-2	180A	1000	525	525	1000	80.0	67.0	54.7	51.8	21,720	35,670	12.0	124.2	2.0	106,950	13	4.5	15	120/1/60	375	82.25x35.6x16.6	TRANE HUV1001	SEE NOTES 1-10,12		
UV-186	186	1000	500	500	1000	80.0	67.0	54.7	51.8	21,720	35,670	12.0	112.5	2.0	85,380	13	4.5	15	115/1/60	405	81x21.25x30	TRANE VUVE1000	SEE NOTES 1-10,11		
UV-190	190	750	365	365	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-195A	195A	750	435	435	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-201	201	750	400	400	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-202	202	750	400	400	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-203	203	750	400	400	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-204	204	750	300	300	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-205	205	750	375	375	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-206	206	750	250	250	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-207	207	750	375	375	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-208	208	750	250	250	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-207A-1	207A	1000	500	500	1000	80.0	67.0	54.7	51.8	21,720	35,670	12.0	112.5	2.0	85,380	13	4.5	15	115/1/60	405	81x21.25x30	TRANE VUVE1000	SEE NOTES 1-10,11		
UV-207A-2	207A	1000	500	500	1000	80.0	67.0	54.7	51.8	21,720	35,670	12.0	112.5	2.0	85,380	13	4.5	15	115/1/60	405	81x21.25x30	TRANE VUVE1000	SEE NOTES 1-10,11		
UV-209	209	750	375	375	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-210	210	750	400	400	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-213	213	750	375	375	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-214	214	750	400	400	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-215	215	750	400	400	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-216	216	750	400	400	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-221	221	1000	100	100	1000	80.0	67.0	54.7	51.8	21,720	35,670	12.0	112.5	2.0	85,380	13	4.5	15	115/1/60	405	81x21.25x30	TRANE VUVE1000	SEE NOTES 1-10		
UV-222	222	1000	100	100	1000	80.0	67.0	54.7	51.8	21,720	35,670	12.0	112.5	2.0	85,380	13	4.5	15	115/1/60	405	81x21.25x30	TRANE VUVE1000	SEE NOTES 1-10		
UV-301	301	750	400	400	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-302	302	750	375	375	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-303	303	1000	475	475	1000	80.0	67.0	54.7	51.8	21,720	35,670	12.0	112.5	2.0	85,380	13	4.5	15	115/1/60	405	81x21.25x30	TRANE VUVE1000	SEE NOTES 1-10		
UV-304	304	750	350	350	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-306	306	1000	500	500	1000	80.0	67.0	54.7	51.8	21,720	35,670	12.0	112.5	2.0	85,380	13	4.5	15	115/1/60	405	81x21.25x30	TRANE VUVE1000	SEE NOTES 1-10		
UV-307	307	1000	400	400	1000	80.0	67.0	54.7	51.8	21,720	35,670	12.0	112.5	2.0	85,380	13	4.5	15	115/1/60	405	81x21.25x30	TRANE VUVE1000	SEE NOTES 1-10		
UV-310	310	750	400	400	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	105x21.25x30	TRANE VUVE1500	SEE NOTES 1-10		
UV-311	311	1500	625	625	1500	80.0	67.0	55.4	52.2	30,890	51,010	12.0	116.3	2.0	129,700	13	9.0	15	115/1/60	470	105x21.25x30	TRANE VUVE1500	SEE NOTES 1-10		
UV-312	312	750	400	400	750	80.0	67.0	54.7	52.4	17,810	28,250	12.0	102.6	2.0	63,200	13	4.5	15	115/1/60	320	69x21.25x30	TRANE VUVE0750	SEE NOTES 1-10		
UV-313	313	1500	575	575	1500	80.0	67.0	55.4	52.2	30,890	51,010	12.0													

UNIT VENTILATOR SCHEDULE NOTES:

- PROVIDE VARIABLE VOLUME SPEED CONTROL ECM MOTORS, MOTOR CONTROL TO BE FIELD INSTALLED.
- PROVIDE LOW LEAKAGE OUTSIDE AIR DAMPER, CLASS 1 MOTORIZED DAMPERS, LOW LEAKAGE TYPE FOR OUTSIDE AIR AND EXHAUST OPENINGS. AIR LEAKAGE SHALL NOT BE GREATER THAN 4CFM/FT² AND BE IN ACCORDANCE WITH AMCA 500D.
- PROVIDE FIXED DRY-BULB ECONOMIZER WITH FAULT DETECTION DIAGNOSIS.
- PROVIDE DISCONNECT SWITCH.
- CONTRACTOR TO VERIFY STEAM HEAT COIL PIPING CONNECTIONS AND NEW DX COIL PIPING CONNECTIONS PRIOR TO ORDERING. STEAM HEAT COILS SHALL MATCH EXISTING LOCATIONS. TYPICAL LOCATIONS ARE AS FOLLOWS: ELECTRICAL - LH SIDE, STEAM - RH SIDE, DX - RH SIDE.
- AT COMPLETION OF UV INSTALLATION, CONTRACTOR SHALL INSTALL MERV-13 FILTERS FURNISHED BY THE UNIT MANUFACTURER.
- PROVIDE MODULATING TWO-WAY STEAM CONTROL VALVE.
- CABINET COLOR TO BE OF DELUXE BEIGE FINISH U.O.N. BY ARCHITECT AND/OR FACILITIES.
- PROVIDE HEAVY GAUGE FRONT PANEL AND OUT-TO-FIT FILLER PANELS ON BOTH SIDES OF THE UNIT VENTILATOR TO MATCH THE INSTALLED WIDTH OF THE EXISTING UNITS AND ENCLOSE EXISTING PIPING.
- PROVIDE FIELD INSTALLED DDC CONTROLS TO SATISFY SEQUENCE OF OPERATIONS, COORDINATE/INTEGRATE WITH EXISTING SIEMENS BMS. SEE DRAWING M004 FOR MORE INFO. PROVIDE LEV KIT AS PER INDOOR UNIT SCHEDULE, SEE DRAWING M003.
- PROVIDE WITH NO ENCLOSURE/END COVERS FOR INSTALLATION BEHIND EXISTING CABINETY ENCLOSURE.
- PROVIDE ALL REQUIRED SUPPORTS FOR CEILING MOUNT HORIZONTAL UNIT.



- ① DEMOLISH EXISTING UNIT VENTILATOR OR FCU.
- ② REMOVE STEAM CONTROL VALVE, TRAPS, AND ASSOCIATED APPURTENANCES. CAP AND REMOVE STEAM PIPING BACK TO NEAREST RISER, APPROX. 5 LF OF PIPING.
- ③ REMOVE AND DISCONNECT FRESH AIR CONNECTION. EXISTING LOUVER TO REMAIN. PROVIDE TEMPORARY CLOSURE FOR OA LOUVER TO PREVENT INFILTRATION FROM OUTDOORS.
- ④ REMOVE AND DISCONNECT FRESH AIR CONNECTION. PERMANENTLY CAP EXISTING 36"x12" (V.I.F.) LOUVER OPENING FROM THE INSIDE WITH 22 GA MIN GALVANIZED PANEL. FILL VOID WITH INSULATION, R-12 MIN. RESTORE INTERIOR FINISHES. COORDINATE WITH GC AND ARCHITECT.
- ⑤ DEMO EXISTING A/C UNIT IN SPACE AND ASSOCIATED CONDENSING UNIT AND RETURN EQUIPMENT TO FACILITIES.
- ⑥ DEMO EXISTING WINDOW A/C UNIT. RETURN WINDOW A/C UNIT TO THE SCHOOL. CAP INSULATED WINDOW PANEL AT LOCATION OF EXISTING WINDOW AC UNIT, REFER TO ARCHITECTURAL PLANS.
- ⑦ DEMO EXISTING VACUUM EXHAUST DUCT, FITTINGS AND SUPPORTS IN CEILING. TEMPORARILY CAP AND SEAL ANY PENETRATIONS TO THE OUTSIDE. ALL DUCT DIMENSIONS AND ROUTING AS SHOWN ARE APPROXIMATE. CONTRACTOR TO VERIFY IN THE FIELD.
- ⑧ PERMANENTLY CAP EXISTING DUCT AT BUILDING WALL.
- ⑨ EXISTING RADIATOR TO REMAIN.
- ⑩ EXISTING CABINETRY ENCLOSURE TO REMAIN.
- ⑪ EXISTING ENERGY RECOVERY VENTILATOR IN SPACE TO REMAIN.

This detailed floor plan of the second floor shows a complex arrangement of rooms and corridors. Key features include:

- Room Labels:** UV-101, UV-103, UV-105B, UV-107, UV-109, UV-111, UV-102, UV-104, UV-106, UV-108D, UV-110, and UV-111.
- Staircases:** Multiple 'UP' staircases are indicated throughout the plan.
- Other Labels:** 'EXT'G ACT CEILING' is labeled in several areas.
- Callouts:** Circled numbers 1, 2, 3, 4, 6, and 9 are placed at various locations, corresponding to the legend.

PLAN NORTH

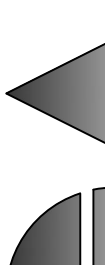
IF THIS BAR DOES NOT
MEASURE 1" THEN DRAWING IS
NOT TO FULL SCALE

3	12-17-21	ISSUED FOR BID
2	11-19-21	SED ADDENDUM 1
1	08-30-21	BIDDING DOCUMENTS
No.	Date	Revisions

Drawn by	WM
Checked by	ERF
Project No.	41048
Scale	AS NOTED
Date	08-30-21

Mechanical & Electrical Engineer:	GREENMAN PEDERSEN, INC 400 BELLA BOULEVARD MONTEBELLO, NY 10001
Structural Engineer:	— — —

UNIVENT REPLACEMENT
AT
HAVERSTRAW
ELEMENTARY
SED# 50-02-01-06-0-009-018
16 Grant Street
Haverstraw, NY 10927
COUNTY OF ROCKLAND



MICHAEL SHILA LE ARCHITECTS, L.L.P.

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 140 Park Avenue
www.shilale.com

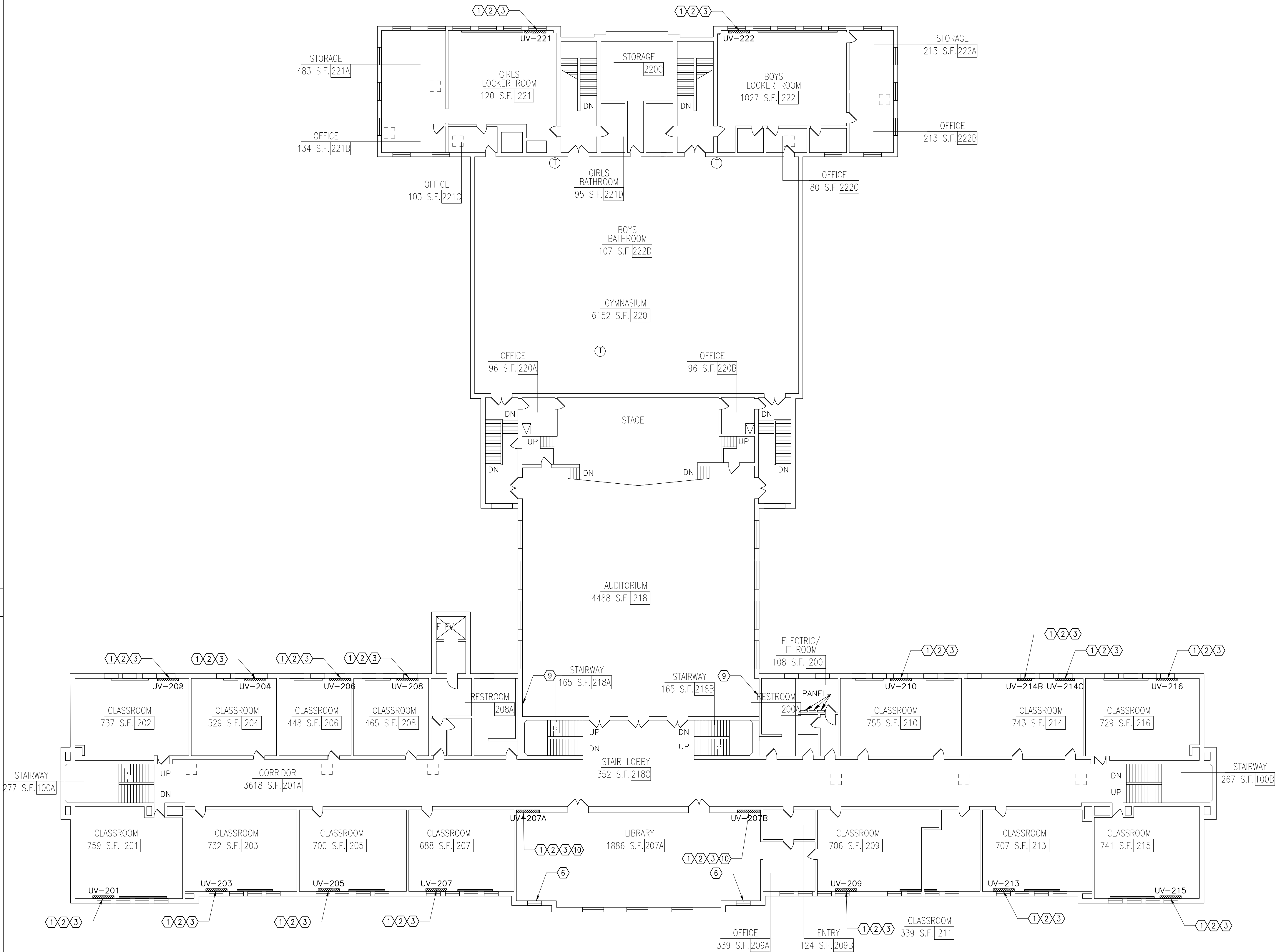
Drawing Title
**HVAC DEMO -
1ST FLOOR
PLAN**

Drawing No.
M-061

NOTES:

- ① DEMOLISH EXISTING UNIT VENTILATOR OR FCU.
- ② REMOVE STEAM CONTROL VALVE, TRAPS, AND ASSOCIATED APPURTENANCES. CAP AND REMOVE STEAM PIPING BACK TO NEAREST RISER, APPROX. 5 LF OF PIPING.
- ③ REMOVE AND DISCONNECT FRESH AIR CONNECTION. EXISTING LOUVER TO REMAIN. PROVIDE TEMPORARY CLOSURE FOR OA LOUVER TO PREVENT INFILTRATION FROM OUTDOORS.
- ④ REMOVE AND DISCONNECT FRESH AIR CONNECTION. PERMANENTLY CAP EXISTING 36"x12" (V.I.F.) LOUVER OPENING FROM THE INSIDE WITH 22 GA MIN GALVANIZED PANEL. FILL VOID WITH INSULATION, R-12 MIN. RESTORE INTERIOR FINISHES, COORDINATE WITH GC AND ARCHITECT.
- ⑤ DEMO EXISTING A/C UNIT IN SPACE AND ASSOCIATED CONDENSING UNIT AND RETURN EQUIPMENT TO FACILITIES.
- ⑥ DEMO EXISTING WINDOW A/C UNIT. RETURN WINDOW A/C UNIT TO THE SCHOOL. CAP INSULATED WINDOW PANEL AT LOCATION OF EXISTING WINDOW AC UNIT, REFER TO ARCHITECTURAL PLANS.
- ⑦ DEMO EXISTING VACUUM EXHAUST DUCT, FITTINGS AND SUPPORTS IN CEILING. TEMPORARILY CAP AND SEAL ANY PENETRATIONS TO THE OUTSIDE. ALL DUCT DIMENSIONS AND ROUTING AS SHOWN ARE APPROXIMATE. CONTRACTOR TO VERIFY IN THE FIELD.
- ⑧ PERMANENTLY CAP EXISTING DUCT AT BUILDING WALL.
- ⑨ EXISTING RADIATOR TO REMAIN.
- ⑩ EXISTING CABINETY ENCLOSURE TO REMAIN.

NOTES



1 SECOND FLOOR PLAN
SCALE: 1/16" = 1'-0"



0 1/2 1
IF THIS BAR DOES NOT
MEASURE 1" THEN DRAWING IS
NOT TO FULL SCALE

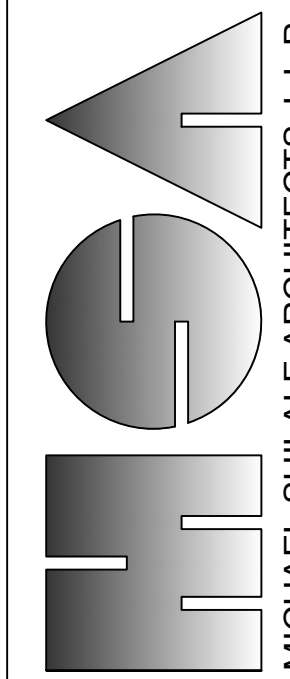
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Drawing Title

**HVAC DEMO -
2ND FLOOR
PLAN**

Drawing No.

M-062



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**UNIVENT REPLACEMENT
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HAVERSTRAW
ELEMENTARY**
SED# 50-02-01-06-0-009-018
18 Grant Street
Haverstraw, NY 10627
COUNTY OF ROCKLAND

Mechanical
Electrical
Engineer:

**GREENMAN
PEDERSEN, INC**
400 BELLA BOULEVARD
MONTICELLO, NY 10801

Structural
Engineer:

Drawn by WM
Checked by ERF
Project No. 41048
Scale AS NOTED
Date 08-30-21

No.	Date	Revisions
3	12-17-21	ISSUED FOR BID
2	11-19-21	SED ADDENDUM 1
1	08-30-21	BIDDING DOCUMENTS

- ① DEMOLISH EXISTING UNIT VENTILATOR OR FCU.
- ② REMOVE STEAM CONTROL VALVE, TRAPS, AND ASSOCIATED APPURTENANCES. CAP AND REMOVE STEAM PIPING BACK TO NEAREST RISER, APPROX. 5 LF OF PIPING.
- ③ REMOVE AND DISCONNECT FRESH AIR CONNECTION. EXISTING LOUVER TO REMAIN. PROVIDE TEMPORARY CLOSURE FOR OA LOUVER TO PREVENT INFILTRATION FROM OUTDOORS.
- ④ REMOVE AND DISCONNECT FRESH AIR CONNECTION. PERMANENTLY CAP EXISTING 36"x12" (V.I.F.) LOUVER OPENING FROM THE INSIDE WITH 22 GA MIN GALVANIZED PANEL. FILL VOID WITH INSULATION, R-12 MIN. RESTORE INTERIOR FINISHES, COORDINATE WITH GC AND ARCHITECT.
- ⑤ DEMO EXISTING A/C UNIT IN SPACE AND ASSOCIATED CONDENSING UNIT AND RETURN EQUIPMENT TO FACILITIES.
- ⑥ DEMO EXISTING WINDOW A/C UNIT. RETURN WINDOW A/C UNIT TO THE SCHOOL. CAP INSULATED WINDOW PANEL AT LOCATION OF EXISTING WINDOW AC UNIT, REFER TO ARCHITECTURAL PLANS.
- ⑦ DEMO EXISTING VACUUM EXHAUST DUCT, FITTINGS AND SUPPORTS IN CEILING. TEMPORARILY CAP AND SEAL ANY PENETRATIONS TO THE OUTSIDE. ALL DUCT DIMENSIONS AND ROUTING AS SHOWN ARE APPROXIMATE. CONTRACTOR TO VERIFY IN THE FIELD.
- ⑧ PERMANENTLY CAP EXISTING DUCT AT BUILDING WALL.
- ⑨ EXISTING RADIATOR TO REMAIN.
- ⑩ EXISTING CABINETRY ENCLOSURE TO REMAIN.
- ⑪ DEMOLISH EXISTING AIR HANDLING UNIT, SUPPORTS AND ASSOCIATED DISCONNECT SWITCH/CONTROLS.
- ⑫ DEMOLISH EXISTING DUCTWORK AND SUPPORTS.
- ⑬ EXISTING GRILLE/REGISTER TO REMAIN.
- ⑭ DEMOLISH EXISTING STEAM AND CONDENSATE RETURNS AND F&T TRAPS. CAP PIPING BACK AT MAIN IN EACH SPACE.

1 THIRD FLOOR PLAN

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



Drawing Title

HVAC DEMO -
3RD FLOOR
PLAN

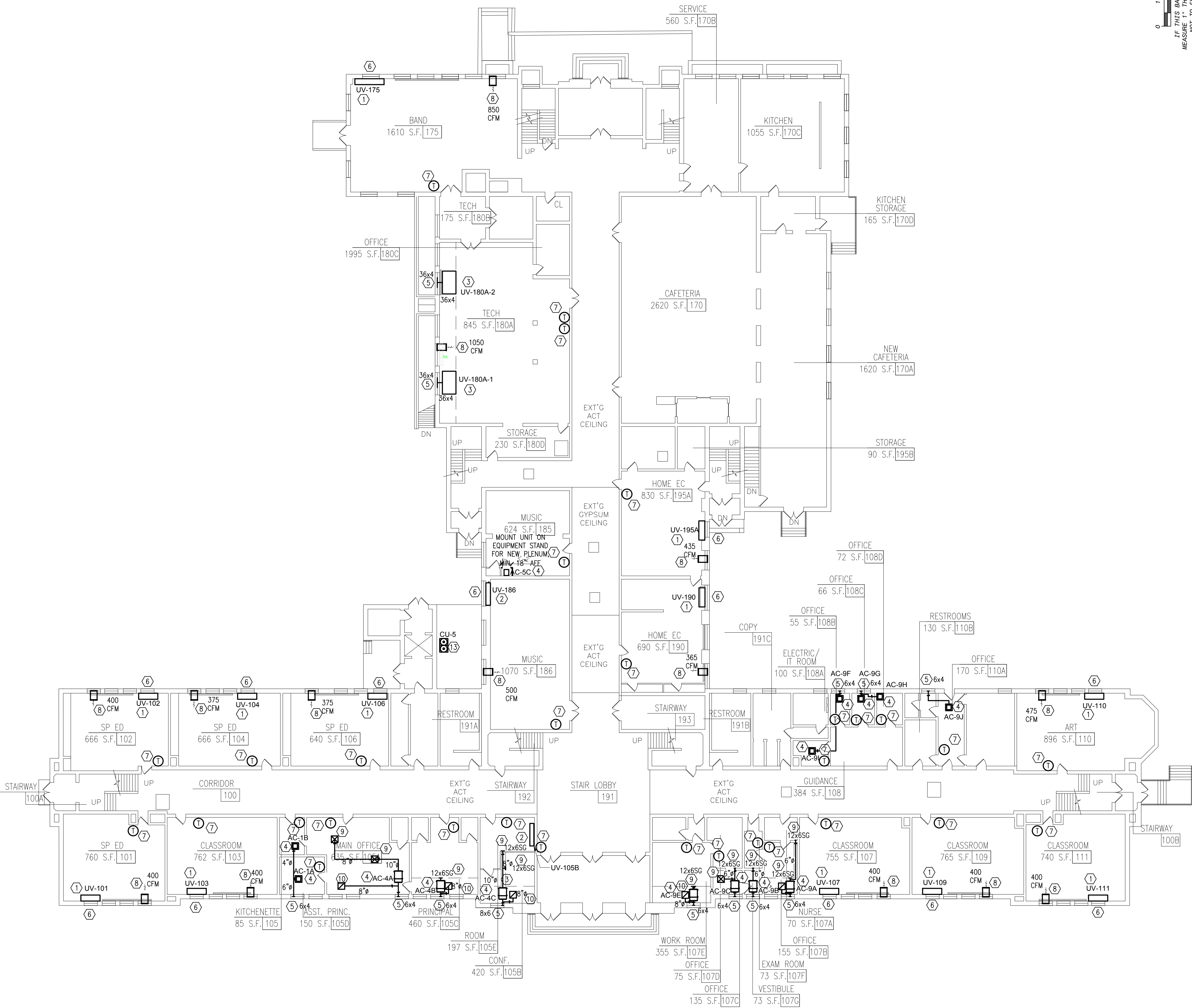
Drawing No.

M-063

- NOTES:
- FURNISH AND INSTALL NEW VERTICAL UNIT VENTILATOR. REFER TO THE UNIT VENTILATOR SCHEDULE ON DRAWING M-006 AND DETAILS ON DRAWING M-501. CONNECT OUTSIDE AIR DUCT TO EXISTING OUTSIDE AIR OPENING/LOUVER.
 - FURNISH AND INSTALL NEW VERTICAL UNIT VENTILATOR. UTILIZE EXISTING ORIGINAL BUILT-IN CABINETRY ENCLOSURE. REFER TO THE UNIT VENTILATOR SCHEDULE ON DRAWING M-006 AND DETAILS ON DRAWING M-501. CONNECT OUTSIDE AIR DUCT TO EXISTING OUTSIDE AIR OPENING/LOUVER.
 - FURNISH AND INSTALL NEW HORIZONTAL UNIT VENTILATOR WITH NEW CEILING SUPPORTS. REFER TO THE UNIT VENTILATOR SCHEDULE ON DRAWING M-006 AND DETAILS ON DRAWING M-501.
 - FURNISH AND INSTALL NEW EVAPORATOR/AC INDOOR UNIT. REFER TO VRF HEAT RECOVERY INDOOR UNIT SCHEDULE ON DRAWING M-003 AND DETAILS ON DRAWING M-501.
 - FURNISH AND INSTALL NEW OUTSIDE AIR INTAKE LOUVER AT WINDOW INSULATED PANEL. GC TO PROVIDE OPENING TO ACCOMMODATE NEW LOUVER. COORDINATE OPENINGS WITH THE ARCHITECT AND GC. FURNISH AND INSTALL OUTSIDE AIR DUCT CONNECTION TO LOUVER WITH VOLUME DAMPER, SEE PLANS FOR DUCT SIZE.
 - EXISTING OUTSIDE AIR WALL LOUVER TO REMAIN. SIZE VARIES PER EACH ROOM. CONNECT OA INTAKE DUCT TO EXISTING LOUVER. SEE DETAILS ON DRAWING M-501.
 - FURNISH AND INSTALL NEW PROGRAMMABLE ELECTRONIC THERMOSTAT WITH LOCKING GUARD. INTEGRATE WITH THE SIEMENS BMS.
 - FURNISH AND INSTALL NEW RELIEF AIR LOUVER WITH MOTORIZED DAMPER, PROVIDE NEW OPENING AT INSULATED PANEL. COORDINATE OPENINGS WITH GC, SEE ARCHITECTURAL DETAILS. SEE DETAIL 9/M-501.
 - PROVIDE SUPPLY DIFFUSER WITH VOLUME DAMPER AND ASSOCIATED INSULATED DUCTWORK AS INDICATED. FLEX DUCT SHALL BE LIMITED TO 3'-0" MAX. BASIS OF DESIGN: TITUS TMS OR EQUAL.
 - PROVIDE 24x24 RETURN GRILLE IN EXISTING LAY-IN ACOUSTIC CEILING OR NEW SOFFIT. BASIS OF DESIGN: TITUS 45F OR EQUAL. EXTEND DUCTWORK AS INDICATED.
 - THE EXISTING DOOR UNDERCUT IS SUFFICIENT FOR AIR TRANSFER TO THE ADJACENT SPACE.
 - PROVIDE NEW DOOR UNDERCUT IN SPACE FOR SUFFICIENT AIR TRANSFER OF RELIEF AIR, SEE ARCHITECT DRAWINGS.
 - FURNISH AND INSTALL NEW OUTDOOR CONDENSING UNIT, SEE SCHEDULE ON DRAWING M-002. MOUNT AND SECURE UNIT TO WALL. UNIT SHALL BE MOUNTED MIN. 3'-0" ABOVE GRADE.

GENERAL NOTE:
FOR PIPING LAYOUT FOR EACH NEW EQUIPMENT, REFER TO DRAWINGS M-301, M-302 AND M-303.

NOTES

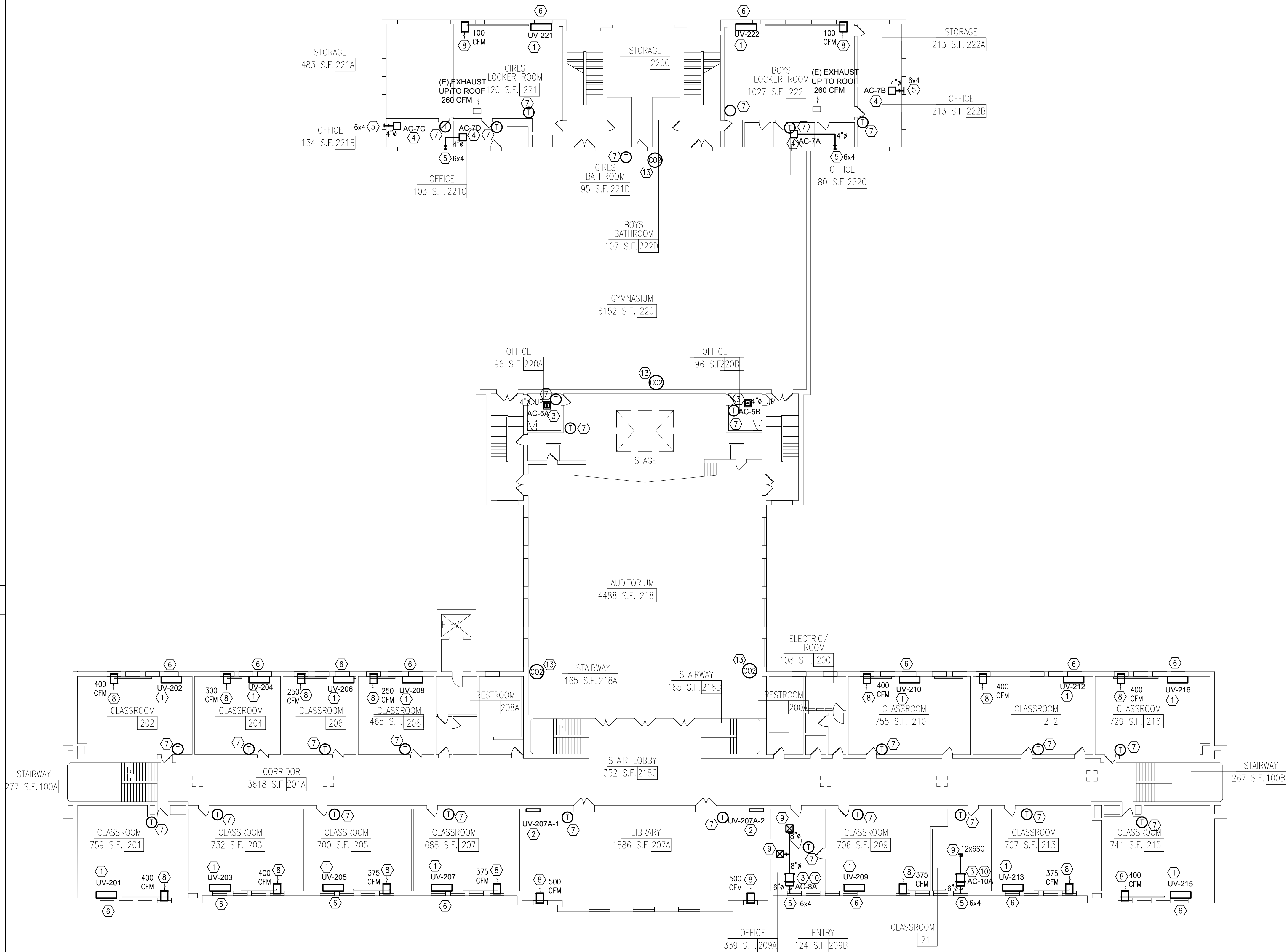


- ① FURNISH AND INSTALL NEW VERTICAL UNIT VENTILATOR. REFER TO THE UNIT VENTILATOR SCHEDULE ON DRAWING M-006 AND DETAILS ON DRAWING M-501. CONNECT OUTSIDE AIR DUCT TO EXISTING OUTSIDE AIR OPENING/LOUVER.
- ② FURNISH AND INSTALL NEW VERTICAL UNIT VENTILATOR. UTILIZE EXISTING ORIGINAL BUILT-IN CABINERY ENCLOSURE. REFER TO THE UNIT VENTILATOR SCHEDULE ON DRAWING M-006 AND DETAILS ON DRAWING M-501. CONNECT OUTSIDE AIR DUCT TO EXISTING OUTSIDE AIR OPENING/LOUVER.
- ③ FURNISH AND INSTALL NEW HORIZONTAL UNIT VENTILATOR WITH NEW CEILING SUPPORTS. REFER TO THE UNIT VENTILATOR SCHEDULE ON DRAWING M-006 AND DETAILS ON DRAWING M-501.
- ④ FURNISH AND INSTALL NEW EVAPORATOR/AC INDOOR UNIT. REFER TO VRF HEAT RECOVERY INDOOR UNIT SCHEDULE ON DRAWING M-003 AND DETAILS ON DRAWING M-501.
- ⑤ FURNISH AND INSTALL NEW OUTSIDE AIR INTAKE LOUVER AT WINDOW INSULATED PANEL. GC TO PROVIDE OPENING TO ACCOMMODATE NEW LOUVER. COORDINATE OPENINGS WITH THE ARCHITECT AND GC. FURNISH AND INSTALL OUTSIDE AIR DUCT CONNECTION TO LOUVER WITH VOLUME DAMPER, SEE PLANS FOR DUCT SIZE.
- ⑥ EXISTING OUTSIDE AIR WALL LOUVER TO REMAIN. SIZE VARIES PER EACH ROOM. CONNECT ON INTAKE DUCT TO EXISTING LOUVER. SEE DETAILS ON DRAWING M-501.
- ⑦ FURNISH AND INSTALL NEW PROGRAMMABLE ELECTRONIC THERMOSTAT WITH LOCKING GUARD. INTEGRATE WITH THE SIEMENS BMS.
- ⑧ FURNISH AND INSTALL NEW RELIEF AIR LOUVER WITH MOTORIZED DAMPER, PROVIDE NEW OPENING AT INSULATED PANEL. COORDINATE OPENINGS WITH GC, SEE ARCHITECTURAL DETAILS. SEE DETAIL 9/M-501.
- ⑨ PROVIDE SUPPLY DIFFUSER WITH VOLUME DAMPER AND ASSOCIATED INSULATED DUCTWORK AS INDICATED. FLEX DUCT SHALL BE LIMITED TO 3'-0" MAX. BASIS OF DESIGN: TITUS TWO OR EQUAL.
- ⑩ PROVIDE 24x24 RETURN GRILLE IN EXISTING LAY-IN ACOUSTIC CEILING OR NEW SOFFIT. BASIS OF DESIGN: TITUS 450 OR EQUAL.
- ⑪ THE EXISTING DOOR UNDERCUT IS SUFFICIENT FOR AIR TRANSFER TO THE ADJACENT SPACE.
- ⑫ PROVIDE NEW DOOR UNDERCUT IN SPACE FOR SUFFICIENT AIR TRANSFER OF RELIEF AIR, SEE ARCHITECT DRAWINGS.
- ⑬ FURNISH AND INSTALL NEW WALL MOUNT CARBON DIOXIDE SENSOR FOR NEW RTU. REFER TO DRAWING M-004 FOR CONTROL DIAGRAM. MOUNT THE SENSOR ON INSIDE WALL OR PANEL APPROXIMATELY 54" ABOVE THE FLOOR (OR OTHERWISE DIRECTED) TO ALLOW EXPOSURE TO THE AVERAGE ZONE TEMPERATURE. FOR ACCURATE TEMPERATURE SENSING DO NOT MOUNT DEVICE ON OUTSIDE WALL, ADJACENT TO PIPES, IN DIRECT SUNLIGHT, NEAR RADIAN HEAT SOURCES, AIR DUCTS, ETC. THAT COULD IMPACT SENSING ACCURACY. REFER TO MANUFACTURER'S IOM INSTRUCTIONS FOR MORE INFO.

FOR PIPING LAYOUT FOR EACH NEW EQUIPMENT, REFER TO DRAWINGS M-301, M-302 AND M-303

1 SECOND FLOOR PLAN

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



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UNIVENT REPLACEMENT
AT
HAVERSTRAW
ELEMENTARY
SED# 50-02-01-06-0-009-018
16 Grant Street
Haverstraw, NY 10627
COUNTY OF ROCKLAND

Mechanical & Electrical Engineer:	GREENMAN PEDERSEN, INC 400 BELLA BOULEVARD MONTEBELLO, NY 10001
Structural Engineer:	— — — —

Drawn by	WM
Checked by	ERF
Project No.	41048
Scale	AS NOTED
Date	08-30-21

No.			
3	12-17-21	ISSUED FOR BID	
2	11-19-21	ISSUED ADDENDUM 1	
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No.	Date	Revisions	

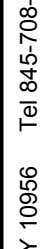
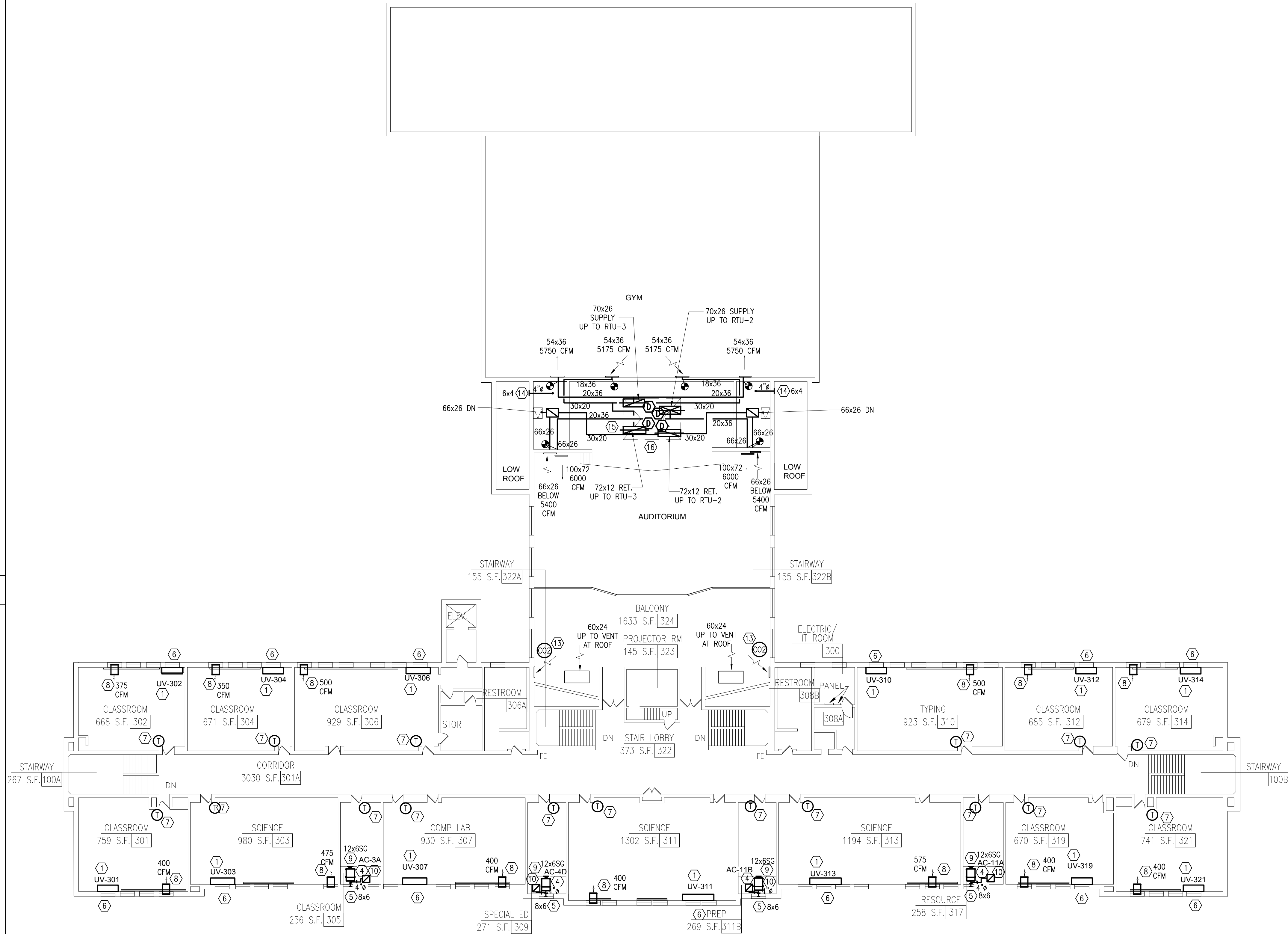
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M-102

- ① FURNISH AND INSTALL NEW VERTICAL UNIT VENTILATOR. REFER TO THE UNIT VENTILATOR SCHEDULE ON DRAWING M-006 AND DETAILS ON DRAWING M-501. CONNECT OUTSIDE AIR DUCT TO EXISTING OUTSIDE AIR OPENING/LOUVER.
- ② FURNISH AND INSTALL NEW VERTICAL UNIT VENTILATOR. UTILIZE EXISTING ORIGINAL BUILT-IN CABINETY ENCLOSURE. REFER TO THE UNIT VENTILATOR SCHEDULE ON DRAWING M-006 AND DETAILS ON DRAWING M-501. CONNECT OUTSIDE AIR DUCT TO EXISTING OUTSIDE AIR OPENING/LOUVER.
- ③ FURNISH AND INSTALL NEW HORIZONTAL UNIT VENTILATOR WITH NEW CEILING SUPPORTS. REFER TO THE UNIT VENTILATOR SCHEDULE ON DRAWING M-006 AND DETAILS ON DRAWING M-501.
- ④ FURNISH AND INSTALL NEW EVAPORATOR/AC INDOOR UNIT. REFER TO VRF HEAT RECOVERY INDOOR UNIT SCHEDULE ON DRAWING M-003 AND DETAILS ON DRAWING M-501.
- ⑤ FURNISH AND INSTALL NEW OUTSIDE AIR INTAKE LOUVER AT WINDOW INSULATED PANEL. GC TO PROVIDE OPENING TO ACCOMMODATE NEW LOUVER. COORDINATE OPENINGS WITH THE ARCHITECT AND GC. FURNISH AND INSTALL OUTSIDE AIR DUCT CONNECTION TO LOUVER WITH VOLUME DAMPER. SEE PLANS FOR DUCT SIZE.
- ⑥ EXISTING OUTSIDE AIR WALL LOUVER TO REMAIN. SIZE VARIES PER EACH ROOM. CONNECT OA INTAKE DUCT TO EXISTING LOUVER. SEE DETAILS ON DRAWING M-501.
- ⑦ FURNISH AND INSTALL NEW PROGRAMMABLE ELECTRONIC THERMOSTAT WITH LOCKING GUARD. INTEGRATE WITH THE SIEMENS BMS.
- ⑧ FURNISH AND INSTALL NEW RELIEF AIR LOUVER 24X12 WITH MOTORIZED DAMPER(24x12). PROVIDE NEW OPENING AT INSULATED PANEL. COORDINATE OPENINGS WITH GC. SEE ARCHITECTURAL DETAILS. SEE DETAIL 9/M-501.
- ⑨ PROVIDE SUPPLY DIFFUSER WITH VOLUME DAMPER AND ASSOCIATED INSULATED DUCTWORK AS INDICATED. FLEX DUCT SHALL BE LIMITED TO 3'-0" MAX. BASIS OF DESIGN: TITUS TMS OR EQUAL.
- ⑩ PROVIDE 24x24 RETURN GRILLE IN EXISTING LA-IN ACOUSTIC CEILING OR NEW SOFFIT. BASIS OF DESIGN: TITUS 45F OR EQUAL.
- ⑪ THE EXISTING DOOR UNDERCUT IS SUFFICIENT FOR AIR TRANSFER TO THE ADJACENT SPACE.
- ⑫ PROVIDE NEW DOOR UNDERCUT IN SPACE FOR SUFFICIENT AIR TRANSFER OF RELIEF AIR. SEE ARCHITECT DRAWINGS.
- ⑬ FURNISH AND INSTALL NEW WALL MOUNT CARBON DIOXIDE SENSOR FOR NEW RTU. REFER TO DRAWING M-004 FOR CONTROL DIAGRAM. MOUNT THE SENSOR ON INSIDE WALL OR PANEL APPROXIMATELY 5'4" ABOVE THE FLOOR (OR OTHERWISE DIRECTED) TO ALLOW EXPOSURE TO THE AVERAGE ZONE TEMPERATURE. FOR ACCURATE TEMPERATURE SENSING DO NOT MOUNT DEVICE ON OUTSIDE WALL, ADJACENT TO PIPES, IN DIRECT SUNLIGHT, NEAR RADIAN HEAT SOURCES, AIR DUCTS, ETC. THAT COULD IMPACT SENSING ACCURACY. REFER TO MANUFACTURER'S IOM INSTRUCTIONS FOR MORE INFO.
- ⑭ PROVIDE NEW NON-FLANGED LOUVER AT EXISTING OPENING. INFILL EXISTING OPENING TO ACCOMMODATE NEW LOUVER. SEE ARCHITECT'S PLANS FOR PATCHING AND REPAIR DETAILS AT BUILDING FACADE.
- ⑮ FURNISH AND INSTALL DUCT SMOKE DETECTOR ON STRAIGHT DUCT, COORDINATE INSTALLATION WITH ELECTRICAL. FURNISH AND INSTALL FIRE SMOKE DAMPER AT ROOF PENETRATION. (TYP. 4).
- ⑯ CONTRACTOR RESPONSIBLE TO FIELD VERIFY AND MEASURE ROUTING OF NEW DUCTWORK AT STAGE AREA FOR THE NEW RTUs. AVOID ANY CONFLICTS/INTERFERENCE WITH EXISTING CONDITIONS, SUCH AS THE CABLES AND PULLEYS FOR THE STAGE CURTAINS. DUCTWORK SHALL BE ROUTED HIGH AT WALL. SUPPLY DUCTWORK IS TO BE INSULATED. RETURN DUCTWORK TO BE PAINTED BLACK, VERIFY FINISH REQUIREMENTS WITH ARCHITECT.

FOR PIPING LAYOUT FOR EACH NEW EQUIPMENT, REFER TO DRAWINGS M-301, M-302 AND M-303

NOTES



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Drawing Title
**3RD FLOOR
PLAN -
MECHANICAL**

Drawing No.

M-103

UNIVENT REPLACEMENT
AT
HAVERSTRAW
ELEMENTARY
SED# 50-02-01-06-0-009-018

**GREENMAN
PEDERSEN, INC.**
400 RELLIS BOULEVARD
MONTEBELLO, NY 10901

Mechanical
& Electrical
Engineer:

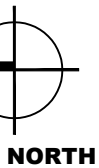
Structural Engineer:

Drawn by	WM
Checked by	ERF
Project No.	41048
Scale	AS NOTED
Date	08-30-21

No.	Date	Business
1	08-30-21	BIDDING DOCUMENTS
2	11-19-21	SED ADDENDUM 1
3	12-17-21	ISSUED FOR BID

- ① DEMOLISH EXISTING GRAVITY VENTILATOR AND DAMPER AT ROOF. DEMOLISH ASSOCIATED DUCTWORK DIRECTLY BELOW ROOF. DISCONNECT DAMPER FROM SIEMENS BMS CONTROL.
- ② PROVIDE NEW OUTDOOR CONDENSING UNIT, SEE SCHEDULE ON DRAWING M-002. MOUNT UNIT ON MODIFIED ROOF CURB/DUNNAGE, SEE STRUCTURAL DRAWINGS.
- ③ PROVIDE NEW DX PIPING FROM BRANCH CONTROLLER, SEE FLOOR BELOW. FOR ROOF CURB AND ROOF SUPPORT DETAIL, SEE DRAWING M-502 AND ARCHITECTURAL DRAWINGS FOR PROPER SEALING FOR PIPE SIZES, SEE DRAWING M-401.
- ④ PROVIDE NEW ROOFTOP AIR HANDLING UNIT AT LOCATION OF EXISTING SKYLIGHT, SEE SCHEDULE ON DRAWING M-002. GC TO DEMO EXISTING SKYLIGHT. MOUNT AHUS ON NEW ROOF CURB. PROVIDE ADEQUATE CLEARANCE AS PER MANUFACTURER'S IOM. SEE DETAILS FOR MORE INFO.
- ⑤ EXISTING GRAVITY VENTILATOR TO REMAIN.
- ⑥ PROVIDE NEW CONDENSATE DRAINAGE, TERMINATE ON ROOF TO NEAREST DRAIN. PROVIDE SPLASH BLOCK. SEE DETAIL 5/M501 FOR SUPPORT OF PIPING ON ROOF.
- ⑦ PROVIDE NEW STEAM AND CONDENSATE PIPING, CONNECT TO EXISTING MAIN. SEE DETAIL 3/M501. PROVIDE FACTORY ASSEMBLED PIPE CABINET WITH ROOFTOP AIR HANDLING UNIT. EXTEND BASE FLASHING TO CURB.

NOTES



IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

Drawing	Title
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M-104

3	12-17-21	ISSUED FOR BID		
2	11-19-21	SED ADDENDUM 1		
1	08-30-21	BIDDING DOCUMENTS		
No.	Date	Revisions		

Drawn by	WM
Checked by	ERF
Project No.	41048
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Mechanical & Electrical Engineer:	GREENMAN PEDERSEN, INC 400 BELLA BOULEVARD MONTEBELLO, NY 10001
Structural Engineer:	— — —

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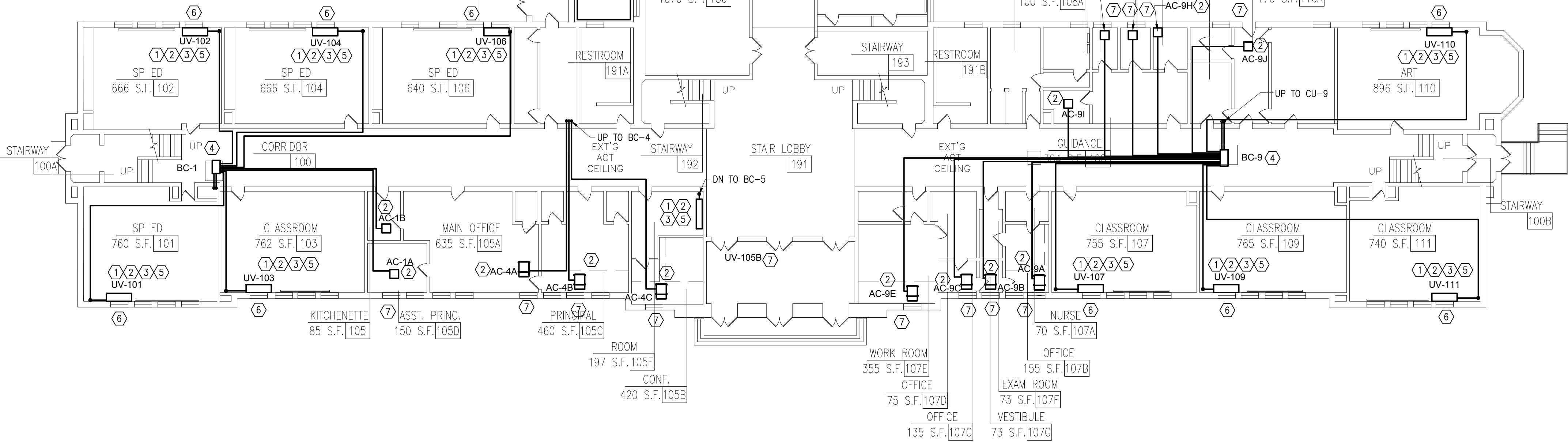
NOTES:

- ① FURNISH AND INSTALL NEW STEAM PIPING AND INSULATION AT COIL CONNECTIONS AT NEW UNIT VENTILATOR. SEE DETAIL 4/M-501. ALL PENETRATIONS THROUGH FIRE-RATED CONSTRUCTION SHALL BE SLEEVED/FIRESTOPPED, SEE DETAILS ON M-502. PROVIDE ADEQUATE SUPPORTS THROUGHOUT, SEE DETAILS ON M-502.
- ② FURNISH AND INSTALL NEW DX PIPING WITH INSULATION AT NEW INDOOR UNIT. FOR PIPE SIZES REFER TO DRAWING M-401. ALL PENETRATIONS THROUGH FIRE-RATED CONSTRUCTION SHALL BE SLEEVED/FIRESTOPPED, SEE DETAILS ON M-502. PROVIDE ADEQUATE SUPPORTS THROUGHOUT, SEE DETAILS ON M-502.
- ③ FURNISH AND INSTALL LEV KIT FOR NEW UNIT VENTILATOR, SEE VRF INDOOR UNIT SCHEDULE ON DRAWING M-003.
- ④ FURNISH AND INSTALL NEW BRANCH CIRCUIT CONTROLLER, SEE BC CONTROLLER SCHEDULE ON DRAWING M-002. FURNISH AND INSTALL 3/4" CONDENSATE DRAINAGE PIPING FOR EACH BRANCH CONTROLLER. TERMINATE DRAIN IN AIR GAP AT NEAREST JANITOR SINK. FOLLOW MANUFACTURER'S IOM MANUAL FOR ADDITIONAL INSTRUCTIONS.
- ⑤ FURNISH AND INSTALL ENCLOSURE TO CONCEAL EXPOSED PIPING CONNECTED TO UNIT. SEE ARCH PLANS FOR DETAILS, FINISH AND COLOR. ENCLOSURE SHALL BE REMOVABLE AND CONSTRUCTED OF 24 GA STEEL. ENCLOSURE SHALL BE PAINTED TO MATCH EXISTING FINISHES. VERIFY COLOR FINISH WITH ARCHITECT AND FACILITIES.
- ⑥ AT EACH UNIT VENTILATOR, FURNISH AND INSTALL NEW 3/4" CONDENSATE DRAIN FROM DRAIN PAN. TERMINATE AT BUILDING EXTERIOR WALL, SEE DETAIL 1/M501.
- ⑦ AT EACH EVAPORATOR INDOOR UNIT/CEILING MOUNTED UNIT VENTILATOR, FURNISH AND INSTALL NEW 3/4" CONDENSATE DRAIN. TERMINATE DRAIN AT BUILDING EXTERIOR WALL THROUGH INSULATED PANEL BENEATH NEW OUTSIDE AIR LOUVER.

GENERAL NOTE:

FOR APPROXIMATE REFRIGERANT PIPE SIZES AND LENGTHS, SEE VRF PIPING RISERS DRAWING M-401.

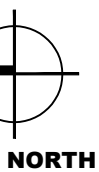
NOTES



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FIRST FLOOR PLAN

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



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IF THIS BAR DOES NOT
MEASURE 1" THEN DRAWING IS
NOT TO FULL SCALE

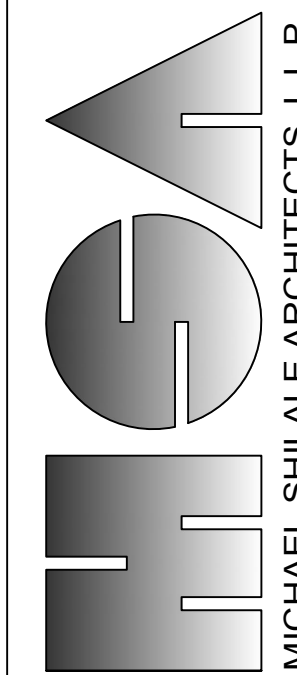
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Drawing Title

HVAC PIPING -
1ST FLOOR
PLAN

Drawing No.

M-301



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UNIVENT REPLACEMENT
AT
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18 Grant Street
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COUNTY OF ROCKLAND

GREENMAN
PEDERSEN, INC
400 BELLA BOULEVARD
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Mechanical
Electrical
Engineer:

Structural
Engineer:

Drawn by

WM

Checked by

ERF

Project No.

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No.

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Revisions

3

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08-30-21

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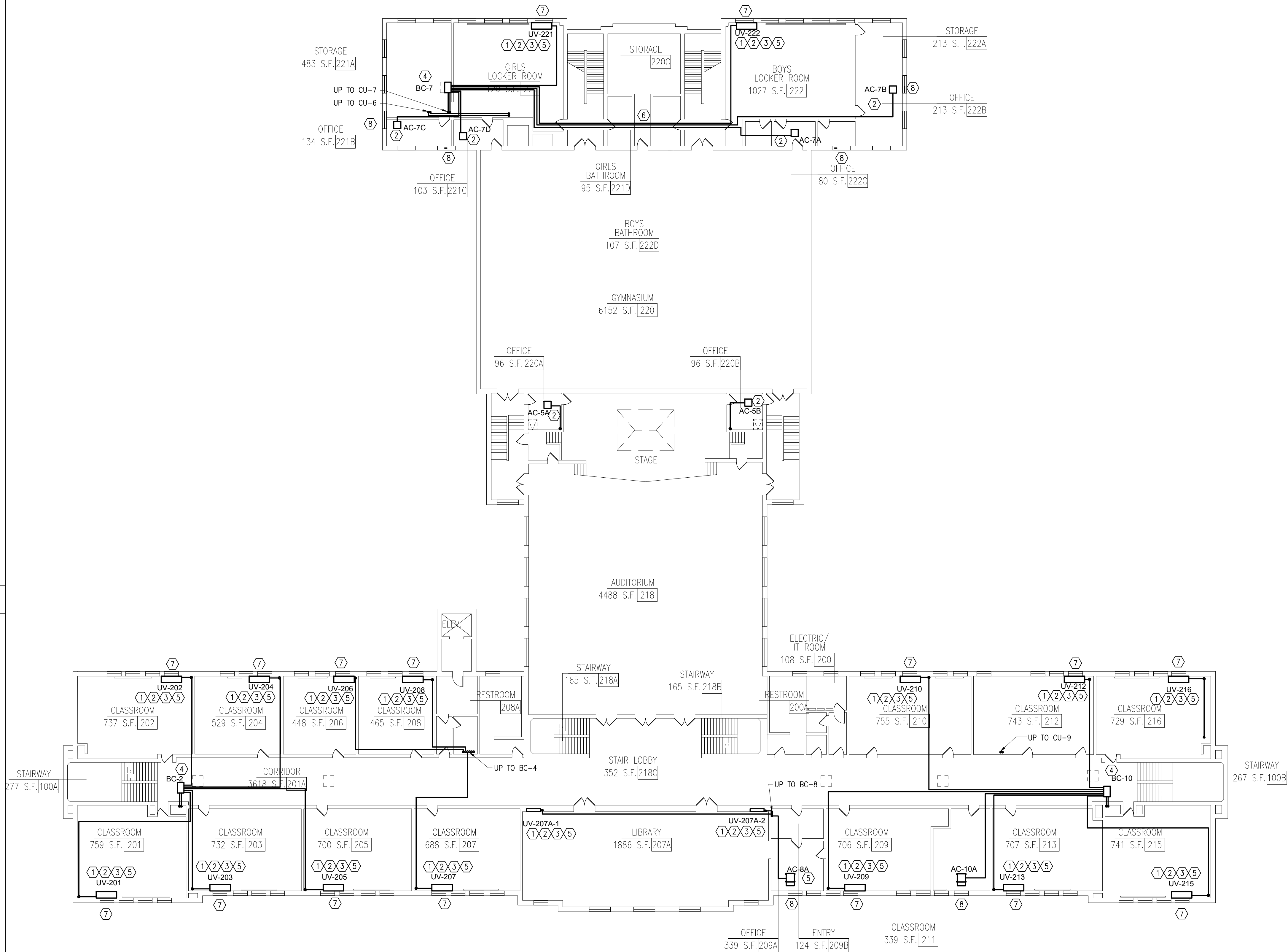
NOTES:

- ① FURNISH AND INSTALL NEW STEAM PIPING AND INSULATION AT COIL CONNECTIONS AT NEW UNIT VENTILATOR. SEE DETAIL 4/M-501. ALL PENETRATIONS THROUGH FIRE-RATED CONSTRUCTION SHALL BE SLEEVED/FIRESTOPPED, SEE DETAILS ON M-502. PROVIDE ADEQUATE SUPPORTS THROUGHOUT, SEE DETAILS ON M-502.
- ② FURNISH AND INSTALL NEW DX PIPING WITH INSULATION AT NEW INDOOR UNIT. FOR PIPE SIZES REFER TO DRAWING M-401. ALL PENETRATIONS THROUGH FIRE-RATED CONSTRUCTION SHALL BE SLEEVED/FIRESTOPPED, SEE DETAILS ON M-502. PROVIDE ADEQUATE SUPPORTS THROUGHOUT, SEE DETAILS ON M-502.
- ③ FURNISH AND INSTALL LEV KIT FOR NEW UNIT VENTILATOR, SEE VRF INDOOR UNIT SCHEDULE ON DRAWING M-003.
- ④ FURNISH AND INSTALL NEW BRANCH CIRCUIT CONTROLLER, SEE BC CONTROLLER SCHEDULE ON DRAWING M-002. FURNISH AND INSTALL 3/4" CONDENSATE DRAINAGE PIPING FOR EACH BRANCH CONTROLLER. TERMINATE DRAIN IN AIR GAP AT NEAREST JANITOR SINK. FOLLOW MANUFACTURER'S IOM MANUAL FOR ADDITIONAL INSTRUCTIONS.
- ⑤ FURNISH AND INSTALL ENCLOSURE TO CONCEAL EXPOSED PIPING CONNECTED TO UNIT. SEE ARCH PLANS FOR DETAILS, FINISH AND COLOR. ENCLOSURE SHALL BE REMOVABLE AND CONSTRUCTED OF 24 GA STEEL. ENCLOSURE SHALL BE PAINTED TO MATCH EXISTING FINISHES. VERIFY COLOR FINISH WITH ARCHITECT AND FACILITIES.
- ⑥ ENCLOSE NEW PIPING IN 6" Ø AIR-TIGHT PIPE ENCLOSURE. PROVIDE FIRESTOPPING AT WALL PENETRATIONS, SEE DETAILS ON M-502.
- ⑦ AT EACH UNIT VENTILATOR, FURNISH AND INSTALL NEW 3/4" CONDENSATE DRAIN FROM DRAIN PAN. TERMINATE AT BUILDING EXTERIOR WALL, SEE DETAIL 1/M501.
- ⑧ AT EACH EVAPORATOR INDOOR UNIT, FURNISH AND INSTALL NEW 3/4" CONDENSATE DRAIN. TERMINATE DRAIN AT BUILDING EXTERIOR WALL THROUGH INSULATED PANEL BENEATH NEW OUTSIDE AIR LOUVER.

GENERAL NOTE:

FOR APPROXIMATE REFRIGERANT PIPE SIZES AND LENGTHS, SEE VRF PIPING RISERS DRAWING M-401.

NOTES



1 SECOND FLOOR PLAN
SCALE: 1/16" = 1'-0"



0 1/2 1
IF THIS BAR DOES NOT
MEASURE 1" THEN DRAWING IS
NOT TO FULL SCALE

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Drawing Title
**HVAC PIPING -
2ND FLOOR
PLAN**

Drawing No.

M-302

**UNIVENT REPLACEMENT
AT
HAVERSTRAW
ELEMENTARY**
SED# 50-02-01-06-0-009-018
18 Grant Street
Haverstraw, NY 10627
COUNTY OF ROCKLAND

**GREENMAN
PEDERSEN, INC**
400 BELLA BOULEVARD
MONTICELLO, NY 10801
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Engineer:
Structural
Engineer:

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2	11-19-21	SED ADDENDUM 1
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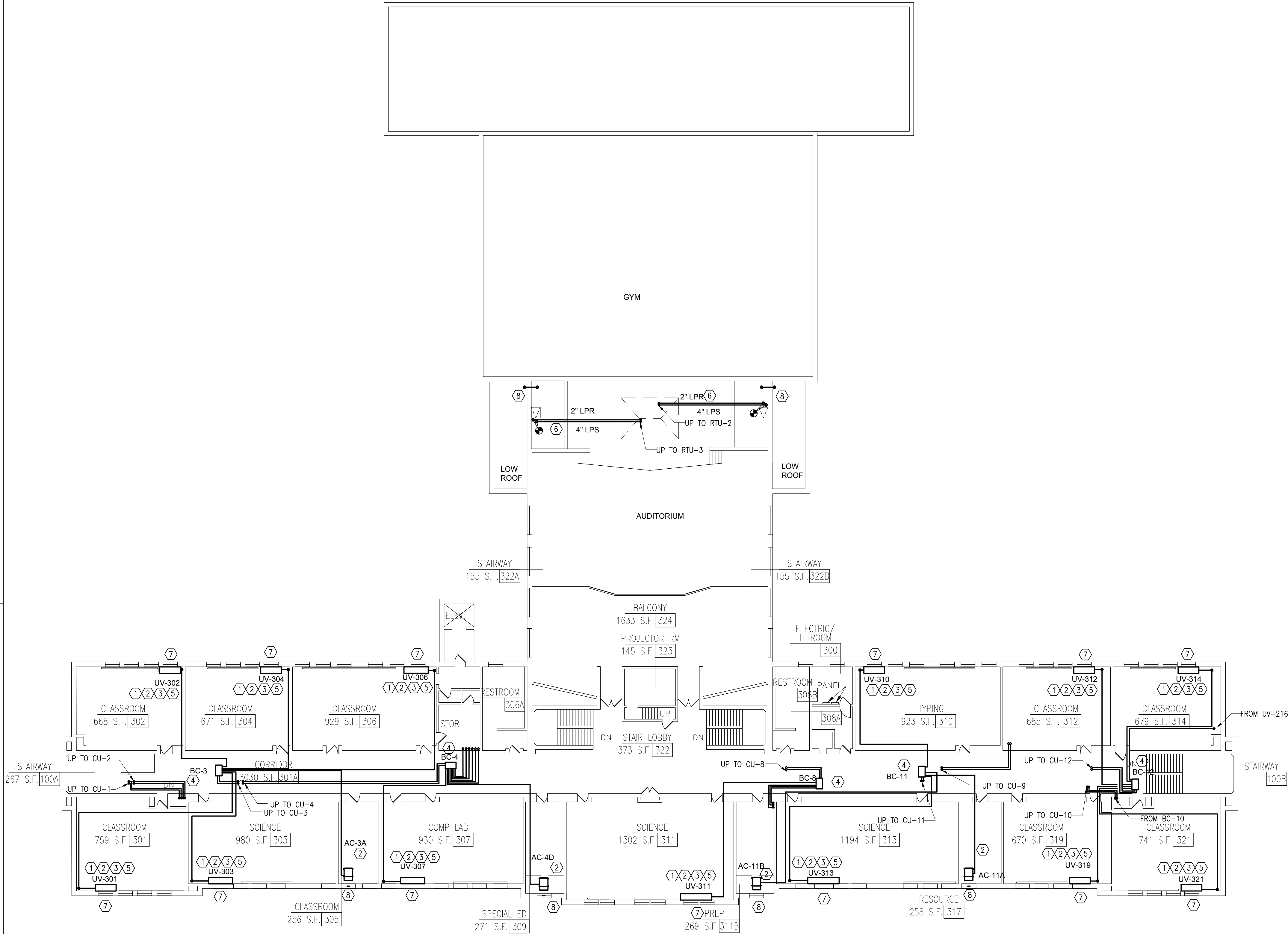
NOTES:

- ① FURNISH AND INSTALL NEW STEAM PIPING AND INSULATION AT COIL CONNECTIONS AT NEW UNIT VENTILATOR. SEE DETAIL 4/M-501. ALL PENETRATIONS THROUGH FIRE-RATED CONSTRUCTION SHALL BE SLEEVED/FIRESTOPPED, SEE DETAILS ON M-502. PROVIDE ADEQUATE SUPPORTS THROUGHOUT, SEE DETAILS ON M-502.
- ② FURNISH AND INSTALL NEW DX PIPING WITH INSULATION AT NEW INDOOR UNIT. FOR PIPE SIZES REFER TO DRAWING M-401. ALL PENETRATIONS THROUGH FIRE-RATED CONSTRUCTION SHALL BE SLEEVED/FIRESTOPPED, SEE DETAILS ON M-502. PROVIDE ADEQUATE SUPPORTS THROUGHOUT, SEE DETAILS ON M-502.
- ③ FURNISH AND INSTALL LEV KIT FOR NEW UNIT VENTILATOR, SEE VRF INDOOR UNIT SCHEDULE ON DRAWING M-003.
- ④ FURNISH AND INSTALL NEW BRANCH CIRCUIT CONTROLLER, SEE BC CONTROLLER SCHEDULE ON DRAWING M-002. FURNISH AND INSTALL 3/4" CONDENSATE DRAINAGE PIPING FOR EACH BRANCH CONTROLLER. TERMINATE DRAIN IN AIR GAP AT NEAREST JANITOR SINK. FOLLOW MANUFACTURER'S IOM MANUAL FOR ADDITIONAL INSTRUCTIONS.
- ⑤ FURNISH AND INSTALL ENCLOSURE TO CONCEAL EXPOSED PIPING CONNECTED TO UNIT. SEE ARCH PLANS FOR DETAILS, FINISH AND COLOR. ENCLOSURE SHALL BE REMOVABLE AND CONSTRUCTED OF 24 GA STEEL. ENCLOSURE SHALL BE PAINTED TO MATCH EXISTING FINISHES. VERIFY COLOR FINISH WITH ARCHITECT AND FACILITIES.
- ⑥ FURNISH AND INSTALL NEW STEAM SUPPLY AND RETURN PIPING AND INSULATION AT COIL CONNECTIONS FOR NEW RTU. SEE DETAIL 3/M-501. FIRESTOP ALL RATED PENETRATIONS, SEE DRAWING M-502.
- ⑦ AT EACH UNIT VENTILATOR, FURNISH AND INSTALL NEW 3/4" CONDENSATE DRAIN FROM DRAIN PAN. TERMINATE AT BUILDING EXTERIOR WALL, SEE DETAIL 1/M501.
- ⑧ AT EACH EVAPORATOR INDOOR UNIT, FURNISH AND INSTALL NEW 3/4" CONDENSATE DRAIN. TERMINATE DRAIN AT BUILDING EXTERIOR WALL THROUGH INSULATED PANEL BENEATH NEW OUTSIDE AIR LOUVER.

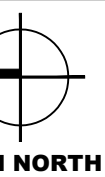
GENERAL NOTE:

FOR APPROXIMATE REFRIGERANT PIPE SIZES AND LENGTHS, SEE VRF PIPING RISERS DRAWING M-401.

NOTES



1 THIRD FLOOR PLAN
SCALE: 1/16" = 1'-0"



0 1/2 1
IF THIS BAR DOES NOT
MEASURE 1" THEN DRAWING IS
NOT TO FULL SCALE

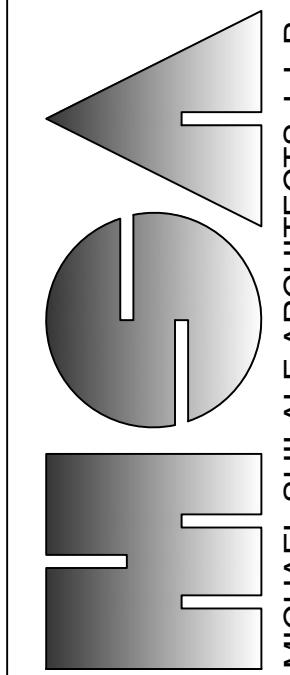
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Drawing Title

**HVAC PIPING -
3RD FLOOR
PLAN**

Drawing No.

M-303



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**UNIVENT REPLACEMENT
AT
HAVERSTRAW
ELEMENTARY**
SBD# 50-02-01-06-0-009-018
18 Grant Street
Haverstraw, NY 10627
COUNTY OF ROCKLAND

Mechanical
Electrical
Engineer:

**GREENMAN
PEDERSEN, INC**
400 BELLA BOULEVARD
MONTICELLO, NY 10801

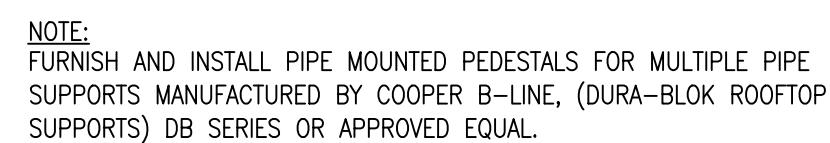
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Checked by ERF
Project No. 41048
Scale AS NOTED
Date 08-30-21

No. Date Revisions

3 12-17-21 ISSUED FOR BID

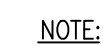
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7 ROOF PIPE SUPPORT

SCALE: N.T.S.



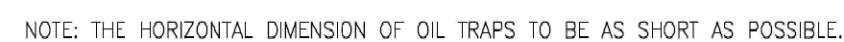
1. LIQUID AND SUCTION LINES MAY BE ROUTED TOGETHER FOR CONVENIENCE, BUT MUST BE COMPLETELY INSULATED FROM EACH OTHER. DO NOT SOLDER LIQUID AND SUCTION LINES TOGETHER. DO NOT ALLOW METAL TO METAL CONTACT.
2. LINES SHOULD BE INSTALLED WITH AS FEW BENDS AS POSSIBLE, ALLOWING SERVICE ACCESS TO THE INDOOR COIL.
3. SLOPE HORIZONTAL SUCTION LINES 1 INCH EVERY 20 FEET TOWARD THE OUTDOOR UNIT.
4. USE LONG RADIUS ELBOWS WHEREVER POSSIBLE, EXCEPT IN OIL RETURN TRAPS, WHERE SHORT RADIUS ELBOWS SHOULD BE USED.

6 REFRIGERANT PIPE SUPPORT DETAIL



NOTE:

1. CONTRACTOR SHALL FURNISH AND INSTALL NEW PIPING, TRAPS, CONTROL VALVES AND INSULATION AT EACH COIL WHERE INDICATED. PIPE SIZES TO MATCH EXISTING, SEE PIPE SCHEDULE.
2. PROVIDE AN ALLOWANCE FOR REPLACEMENT OF 20 LF OF PIPING AND INSULATION FOR EACH UNIT BEING REPLACED.



5 DX COIL PIPING DIAGRAM

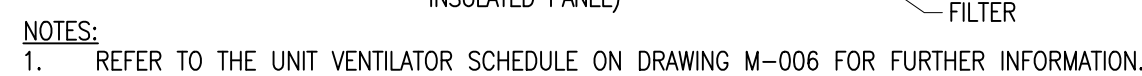
NOTE:

1. CONTRACTOR SHALL PROVIDE NEW PIPING AND INSULATION AT EACH COIL, WHERE INDICATED. PIPE SIZES TO BE PROVIDED AS PER MANUFACTURER'S REQUIREMENTS.



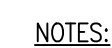
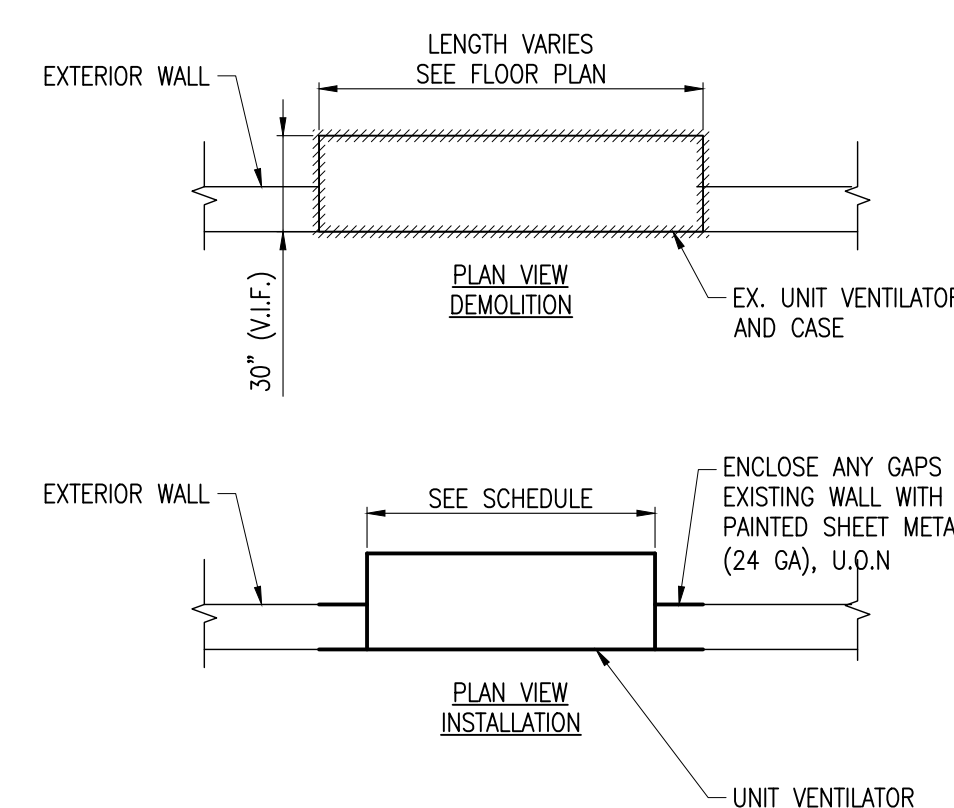
NOTE:

1. CONTRACTOR SHALL FURNISH AND INSTALL NEW PIPING, TRAPS, CONTROL VALVES AND INSULATION AT EACH UNIT VENTILATOR. PROVIDE AN ALLOWANCE FOR REPLACEMENT OF 10 LF OF PIPING AND INSULATION FOR EACH UNIT VENTILATOR BEING REPLACED.
2. REFER TO MANUFACTURER'S IOM MANUAL FOR ADDITIONAL INFORMATION



2 HORIZONTAL UNIT VENTILATOR

SCALE: N.T.S.



1. DEMOLITION: REMOVE THE EXISTING UNIT VENTILATOR WHERE SHOWN ON THE PLANS. THE EXISTING OUTSIDE AIR LOUVER AND WALL SLEEVE SHALL REMAIN.
2. CONSTRUCTION: PROVIDE THE UNIT VENTILATOR IN THE SAME LOCATION AS EXISTING WHERE SHOWN ON THE PLANS. CONNECT THE OUTSIDE AIR DUCT TO THE EXISTING OUTSIDE AIR LOUVER AND WALL SLEEVE. PROVIDE A LOW-LEAKAGE DAMPER, END PANELS, AND SUB-BASE AS NECESSARY FOR A COMPLETE INSTALLATION. VERIFY MEASUREMENTS IN FIELD PRIOR TO FABRICATION.

1 UNIT VENTILATOR DETAILS

SCALE: N.T.S.

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		2	11-19-21 SED ADDENDUM 1
		1	08-30-21 BIDDING DOCUMENTS
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Checked by	ERF
Project No.	41048
Scale	AS NOTED
Date	08-30-21

Mechanical & Electrical Engineer:	GREENMAN PEDERSEN, INC 400 REAL BUSINESS MONTPELIER, NY 10901
Structural Engineer:	— — —

UNIVENT REPLACEMENT
AT
HAVERSTRAW
ELEMENTARY
SED # 50-02-01-06-0-009-018
16 Grant Street
Haverstraw, NY 10827
COUNTY OF ROCKLAND

The logo for Michael Shilale Architects, LLP features the letters 'M', 'S', and 'A' in a large, bold, sans-serif font. The letters are filled with a horizontal gradient, transitioning from a light gray at the top to a dark gray at the bottom. The 'M' and 'S' are solid, while the 'A' has a small rectangular cutout in its center.

MICHAEL SHILALE ARCHITECTS, LLP.

140 Park Avenue
New City, NY 10956
Tel 945-708-9200
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Drawing Title

**MECHANICAL
DETAILS**

Drawing No.

M-501

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10 DUCTWORK DETAILS

9 PIPE AT FIRE-RATED WALL PENETRATION

8 PIPE AT FLOOR PENETRATION (TYP)
SCALE: N.T.S.

7 PIPE WALL SUPPORT DETAIL

SCALE: N.T.S.

11 RTU PLENUM DETAIL
SCALE: N.T.S.

6 RTU ROOF CURB DETAIL

SCALE: N.T.S.

5 CONDENSATE PIPING

4 CONDENSATE TRAP

3 RTU EQUIPMENT OPENING DETAIL

SCALE: N.T.S.

2 RTU EQUIPMENT BASE DETAIL

SCALE: N.T.S.

1 RTU DRIP PAN DETAIL

[illegible]

Drawn by	WM
Checked by	ERF
Project No.	41048
Scale	AS NOTED
Date	08-30-21

Mechanical & Electrical Engineer:	GREENMAN, PETERSEN, INC 400 RELLA BOULEVARD MONTEBELLO, NY 10901
Structural Engineer:	— — — —

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ES&A

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Drawing title

**MECHANICAL
DETAILS - 2**

Drawing No.

M-502

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FIRE ALARM NOTES

1. ALL WIRING, POWER, CONDUCTORS, CONDUITS ETC. SHALL MEET NYS ELECTRICAL CODE ARTICLE 760.
2. ALL WORK SHALL BE IN ACCORDANCE WITH THE NYS BUILDING CODE AND NFPA 72.
3. ALL FIRE ALARM CIRCUITS SHALL BE SIZED TO INCLUDE A MINIMUM OF 20% SPARE CAPACITY.
4. ALL FIRE ALARM EQUIPMENT SHALL BE INSTALLED WITH AESTHETICS IN MIND, AS FOLLOWS: PAINT ALL NEW CONDUIT AND BOXES TO MATCH EXISTING CONDITIONS, PATCH AND PAINT LOCATIONS OF REMOVED BOXES TO MATCH EXISTING.
5. ALL FIRE ALARM CABINETS SHALL BE CLEARLY LABELED WITH A LAMINATE ENGRAVED LABEL.
6. ALL FIRE ALARM WIRE SHALL BE CLEARLY LABELED IN JUNCTION BOXES AND CABINETS. ALL TERMINALS SHALL BE NUMBERED AND LABELED. ALL CONNECTIONS SHALL BE EITHER SOLDERED, APPROVED TERMINAL STRIPS OR SCOTCH LOCKS.
7. ALL FIRE ALARM CONDUCTORS SHALL BE PROTECTED BY EITHER BUILDING CONSTRUCTION OR CONDUIT. LOADING DOCKS, GARAGES, SUPPRESSION AND EXTINGUISHING SYSTEM WIRING, MECHANICAL AND ELECTRICAL ROOMS AND OTHER LOCATIONS SUBJECT TO MECHANICAL DAMAGE SHALL BE IN FULL RIGID CONDUIT. IN ALL AREAS, WIRING MUST MEET NEC ARTICLE 760.
8. FIRE ALARM CABLES SHALL NOT BE MIXED WITH NON FIRE ALARM CABLING. LOW VOLTAGE FIRE ALARM CABLING SHALL NOT BE MIXED OR WIRED NEAR ANY AC CIRCUIT.
9. ALL NOTIFICATION CIRCUITS SHALL BE A MINIMUM OF 12 AWG AND ALL OTHER LOW VOLTAGE FIRE ALARM CIRCUITS SHALL BE 14 AWG MINIMUM.
10. ALL WIRING SHALL BE INSPECTED TO ASSURE THERE ARE NO OPENS, SHORTS OR EARTH GROUNDS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY AND ALL ABANDONED FIRE ALARM CABINETS, DEVICES, AND WIRE. PAINT, PATCH AND CLEANUP SHALL ALSO BE INCLUDED.
12. FIRE ALARM PANEL SHALL PROVIDE CONTINUOUSLY SUPERVISED MONITORING OF ALL SYSTEMS FOR OPENS, SHORTS AND GROUNDS.
13. UPON ENTERING THE PANEL ALARM MODE, THE ALARM INDICATING DEVICE SHALL BE ACTIVATED, AND HVAC LOADS SHALL SHUT DOWN. THE DIGITAL COMMUNICATOR SHALL NOTIFY THE CENTRAL RECEIVING STATION.
14. CONTRACTOR SHALL PROVIDE ALL NECESSARY ADDITIONAL RELAY DEVICES OR POWER TRANSFORMERS FOR PROPER OPERATION OF ALL INTERLOCKED DEVICES WITH FIRE ALARM PANEL.
15. BATTERY BACKUP SHALL PROVIDE A MINIMUM OF 24 HRS OPERATION WITH A 10 MINUTE ALARM AT THE END OF 24 HRS.
16. ALL WIRING SHALL BE IN ACCORDANCE WITH NFPA CODES 70, 72, 72E, AS WELL AS LOCAL AND STATE CODE REQUIREMENTS.
17. FIRE ALARM SYSTEM SHALL BE TESTED IN ACCORDANCE WITH NFPA CODES 70, 72, 72E, AS WELL AS ALL LOCAL AND STATE CODE REQUIREMENTS.
18. ENTIRE FIRE DETECTION AND ALARM SYSTEM SHALL BE FURNISHED AND INSTALLED BY A N.Y. STATE LICENSED ALARM CONTRACTOR.
19. CONTRACTOR SHALL PROVIDE ALL ADDITIONAL APPURTENANCES AS REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM. MODEL NUMBERS GIVEN MAY NOT INCLUDE ALL SPECIFIC REQUIRED ACCESSORIES FOR COMPLETE INSTALLATION.
20. GENERAL LOCATIONS ARE SHOWN ON PLANS. DETECTORS SHALL NOT BE MOUNTED FURTHER THAN 30' APART AND THOSE ALONG WALLS SHALL NOT BE FURTHER THAN 15'-16" FROM THE WALL.
21. SMOKE DETECTORS MUST BE MOUNTED AT LEAST 3 FEET AWAY FROM ANY AIR REGISTER.
22. ALL CEILING MOUNT DEVICES MUST BE SECURELY FASTENED TO BUILDING CONSTRUCTION.
23. DEVICE LOCATIONS MUST BE READILY ACCESSIBLE TO ALLOW FOR MAINTENANCE AND REPAIR.
24. DUCT MOUNTED SMOKE DETECTORS SHALL BE MOUNTED ON THE DUCTWORK IN STRICT ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS. DETECTORS SHALL BE PROVIDED WITH A REMOTE LED.
25. ALL AUXILIARY RELAYS FOR FAN SHUTDOWN, ETC SHALL BE WIRED A MAXIMUM OF 3 FT FROM THE CONTROLLED DEVICE. THE AUXILIARY RELAY SHALL FUNCTION WITHIN THE REQUIRED VOLTAGE AND CURRENT OF THE CONTROLLED DEVICE. SLAVE OR INTERPOSING RELAYS SHALL BE INCLUDED AND POWERED BY THE FIRE ALARM CONTROL PANEL IN A FAIL-SAFE (FIRE FUNCTION) POSITION. POWER TO THE INTERPOSING RELAY SHALL BE MONITORED BY THE FIRE ALARM SYSTEM.
26. RISER DIAGRAM ON THIS DRAWING IS FOR DESIGN PURPOSE ONLY. FIRE ALARM CONTRACTOR SHALL PROVIDE A COMPLETE RISER DIAGRAM WITH ACTUAL FIELD WIRING REQUIRED.
27. THE CONTRACTOR IS TO RE-PROGRAM THE EXISTING FIRE ALARM SYSTEM TO MATCH THE EXISTING SEQUENCE OF OPERATION.
28. THE EXISTING FIRE ALARM PANEL IS A MODEL ~ BY ~

ABBREVIATIONS			
A	AMPERE	LP	120/208V PANEL
AC	ALTERNATING CURRENT	LS	LOUDSPEAKER
ACS	ADMINISTRATIVE CONTROL STATION	LTG	LIGHTING
ADA	AMERICANS WITH DISABILITIES ACT	MATV	MASTER TELEVISION
ADF	ABOVE FINISHED FLOOR	MCC	MOTOR CONTROL CENTER
ARCH	ARCHITECTURAL	MECH	MECHANICAL
ATS	AUTOMATIC TRANSFER SWITCH	WER	MECHANICAL EQUIPMENT ROOM
A/C	AIR CONDITIONING	MIC	MICROPHONE
C	CONDUIT	MTD	MOUNTED
CAB	CABINET	N	NEUTRAL
CLG	CEILING	N.C.	NORMALLY CLOSED
CB	CIRCUIT BREAKER	N.O.	NORMALLY OPEN
CKT(S)	CIRCUIT(S)	O & R	ORANGE AND ROCKLAND
COL	COLUMN	P	POLE(S)
DWG	DRAWING	PB	PULL BOX
EC	EMPTY CONDUIT	PNL	PANEL
ELEC	ELECTRIC	PP	277/480V PANEL
EMR	ELEVATOR MECHANICAL ROOM	RC	REMOTE CONTROL
EMT	ELECTRIC METALLIC TUBING	SP	SPARE
EXH	EXHAUST	SSB	SOLID STATE BALLAST
EXIST	EXISTING	STD	STANDARD
FATB	FIRE ALARM TERMINAL BOX	SW	SWITCH
FL	FLOOR	SWBD	SWITCHBOARD
G	GUARD	TEL	TELEPHONE
GND	GROUND	TV	TELEVISION
GFI	GROUND FAULT INTERRUPTER	TYP	TYPICAL
GRG	GALVANIZED RIGID CONDUIT	V	VOLT
IG	ISOLATED GROUND	W	WATT
JB	JUNCTION BOX	WP	WEATHERPROOF
KVA	KILOVOLT AMPERE		
KW	KILOWATT		
KWH	KILOWATT HOUR		

INSTALLATION NOTES	
1.	CONTRACTOR SHALL PERMANENTLY FASTEN ALL THE EQUIPMENT AS INDICATED ON THE DRAWINGS IN AN APPROVED MANNER, WITH ALL NECESSARY HARDWARE.
2.	CONTRACTOR SHALL PROVIDE ALL CONDUITS, WIRING, OUTLET BOXES AND ALL ACCESSORIES NECESSARY TO COMPLETE THE WIRING TO ALL COMPONENTS OF THE SYSTEM. ALL CONNECTIONS SHALL BE MADE COMPLETE AND TESTED.

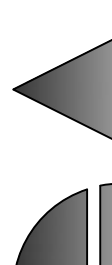
FIRE ALARM SYSTEM SYMBOL LIST	
	EXISTING FIRE ALARM SYSTEM CONTROL PANEL / FIRE ALARM COMMAND CENTER.
	CONTROL MODULE
	RELAY
	DUCT MOUNTED SMOKE DETECTOR
	REMOTE INDICATING LED LIGHT
	FIRE SMOKE DAMPERS



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Mechanical & Electrical Engineer;	GREENMAN PEDERSEN, INC 400 BELLA BOULEVARD MONTEBELLO, NY 10801
Structural Engineer;	— — —

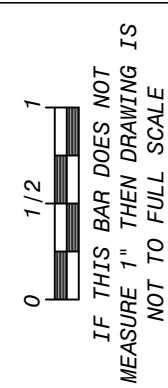
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The logo for Michael Shilale Architects, LLP features the letters 'M', 'S', and 'A' in a large, bold, stylized font. The letters are white with a thick black outline and a grey gradient fill. The 'M' and 'S' are positioned on the left, and the 'A' is on the right. To the right of the letters, the text 'MICHAEL SHILALE ARCHITECTS, LLP.' is written in a smaller, black, sans-serif font. Below this, the address '140 Park Avenue' and 'New City, NY 10956' are listed, followed by the phone number 'Tel 845-708-9200' and the website 'www.shilale.com'.

Drawing Title	FIRE ALARM SYSTEM COVER SHEET
Drawing No.	FA-001

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1. FOR SYMBOL LIST, ABBREVIATIONS AND GENERAL NOTES SEE DRAWING E001
2. LOCATION OF DEVICES AND EQUIPMENT ARE APPROXIMATE. FINAL LOCATIONS MUST BE DETERMINED ACCORDING TO THE SITE CONDITIONS.
3. ELECTRICAL CONTRACTOR SHALL VERIFY THE ROOM NUMBERS SHOWN ON THE DRAWINGS IN FIELD. SUBMIT AN AS BUILT FIRE ALARM RISER DIAGRAM WITH THE CORRECT ROOM NUMBERS INDICATED.
4. ALL CONDUITS AND FIRE ALARM EQUIPMENT SHALL BE GROUNDED TO THE WATER MAIN WITH A MINIMUM #8 CONDUCTOR.
5. EACH FIRE ALARM INITIATION AND INDICATION CIRCUIT SHALL BE ELECTRICALLY SUPERVISED.
6. EACH VISUAL FIRE ALARM CIRCUIT SHALL CONTAIN AT LEAST 20% SPARE CAPACITY.
7. ALL NEW FIRE ALARM DEVICES SHALL BE ADDRESSABLE OR AND CONNECT WITH THE EXISTING FIRE ALARM SYSTEM. PROVIDE COMPATIBLE DEVICES, PREFERABLY FROM THE SAME EXISTING MANUFACTURER.
8. ALL NOTIFICATION CIRCUITS SHALL BE A MINIMUM OF 12 AWG AND ALL OTHER LOW VOLTAGE FIRE ALARM CIRCUITS SHALL BE 14 AWG MINIMUM. ALL INTERIOR WIRING SHALL BE DONE IN 3/4" CONDUIT. PLENUM RATED MULTI-CONDUCTOR CABLE IS ACCEPTABLE IN PLENUM SPACES. RGS CONDUIT SHALL BE INSTALLED WHERE REQUIRED BY BUILDING CODE.
9. ALL WIRING SHALL BE INSPECTED TO ASSURE THERE ARE NO OPENS, SHORTS OR EARTH GROUNDS.
10. ALL NEW FIRE ALARM SYSTEM DEVICES SHALL BE INSPECTED AND TESTED IN ACCORDANCE WITH REQUIREMENTS OF NFPA 72, CHAPTER 14.
11. COMMUNICATION LOOPS SHALL BE WIRES AS CLASS "B" (LEVEL 1). A BREAK OR GROUND FAULT IN ANY CONDUCTOR SHALL BE REPORTED AS A TROUBLE CONDITION.
12. THE CONTRACTOR IS REQUIRED TO OBTAIN SERVICE FROM THE EXISTING SYSTEM MANUFACTURER OR AUTHORIZED VENDOR FROM THE SAME MANUFACTURER FOR RE-PROGRAMMING THE EXISTING SYSTEM TO ACCOMMODATE NEW DEVICES TO MATCH WITH EXISTING SEQUENCE OF OPERATION.
13. WHERE A REQUIRED FIRE ALARM SYSTEM IS OUT OF SERVICE FOR MORE THAN 4 HOURS IN A 24-HOUR PERIOD, THE AUTHORITY HAVING JURISDICTION SHALL BE NOTIFIED, AND THE BUILDING SHALL BE EVACUATED, OR AN APPROVED FIRE WATCH SHALL BE PROVIDED BY THE CONTRACTOR UNTIL THE FIRE ALARM SYSTEM HAS RETURNED TO SERVICE.
14. THE CONTRACTOR WILL BE RESPONSIBLE TO OBTAIN FINAL LETTER OF APPROVAL OF THE MODIFIED SYSTEM FROM LOCAL CODE OFFICIAL/FIRE DEPARTMENT.
15. ALL THE NEW INSTALLATION SHALL BE IN COMPLIANCE WITH THE 2020 NYS BUILDING CODE.



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Drawing	Title
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3RD FLOOR PLAN - FIRE ALARM

Drawing No.

FA-101



UNIVENT REPLACEMENT

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SED# 50-02-01-06-0-009-018

16 Grant Street
Haverstraw, NY 10927

COUNTY OF ROCKLAND

**GREENMAN
PEDERSEN, INC**
400 RELL BULEVARD
MONTEBELLO, NY 10901

**Mechanical
& Electrical
Engineer:**

Structural Engineer:

Drawn by

Checked by

Project No.	41048
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Scale AS NOTED

Date 08-30-21

3	12-17-21	ISSUED FOR BID
2	11-19-21	SED ADDENDUM 1
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GENERAL NOTES

1. THE CONTRACTOR SHALL BE HELD TO HAVE VISITED THE PREMISES AND TO HAVE COMPARED THEIR OBSERVATIONS WITH THE DRAWINGS AND SPECIFICATIONS, AND TO HAVE VERIFIED THE EXISTING CONDITIONS THROUGHOUT THE BUILDING. LATER CLAIMS MADE BY THE CONTRACTOR FOR HAVING INCURRED EXTRA COSTS SHALL NOT BE CONSIDERED WITHOUT FIRST SECURING SUFFICIENT PROOF IN SUPPORT OF EVIDENCE OF SUCH EXTRA CLAIMS. IT IS THE CONTRACTORS RESPONSIBILITY TO IDENTIFY AREAS WHERE INSUFFICIENT INFORMATION IS AVAILABLE, OR WHERE IT CAN BE DOCUMENTED WITH PHOTOS, AND OTHER SUPPORTING INFORMATION THAT SUCH EVIDENCE WAS BEYOND THE MEANS OF THE CONTRACTOR AS JUDGED BY THE OWNER. FINAL JUDGMENT FOR SUCH CLAIMS SHALL BE BY THE OWNER.
2. THE CONTRACTOR SHALL PERFORM ALL OPERATIONS OF DEMOLITION AND REMOVAL AS MAY BE REQUIRED BY THE WORK. ALL WORK SHALL BE DONE IN A CAREFUL AND SYSTEMATIC MANNER.
3. VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS IN THE FIELD, AND BE RESPONSIBLE FOR THE SAME PRIOR TO COMMENCING WORK. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER, THE ARCHITECT AND THE ENGINEER ON RECORD.
4. ALL ELECTRICAL WIRING SHALL ADHERE TO THE LATEST REVISION OF BOTH NATIONAL ELECTRICAL CODE AND THE NEW YORK STATE BUILDING CODES.
5. ALL WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE AND MOST RECENT EDITION OF THE STATE AND LOCAL CODES AND SHALL MEET THE REQUIREMENTS OF ALL OTHER AUTHORITIES, ORGANIZATIONS AND GOVERNMENT AGENCIES HAVING JURISDICTION.
6. THE WORK OF THIS CONTRACT IS TO BE PERFORMED WITH A HIGH LEVEL OF QUALITY. WORK WHICH IS, IN THE OPINION OF DESIGNATED REPRESENTATIVE NOT IN COMPLIANCE WITH THE HIGHEST RECOGNIZED INDUSTRY STANDARD FOR WORKMANSHIP OR WORK WHICH HAS BEEN DAMAGED BY FACILITY WORKMANSHIP, WILL BE REMOVED AND REPLACED, OR REPAIRED TO THE SATISFACTION OF THE OWNER.
7. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES NECESSARY TO COMPLETE THE WORK DESCRIBED HEREIN AND/OR AS INDICATED ON THE DRAWINGS AND SPECIFICATIONS. DETAILS NOT USUALLY SHOWN OR SPECIFIED, BUT NECESSARY FOR THE PROPER CONSTRUCTION SHALL BE INCLUDED AS IF THEY WERE ON THE DRAWINGS.
8. THE LOCATIONS SHOWN ON THE DRAWINGS INDICATE INTENT AND SHALL BE VERIFIED IN THE FIELD.
9. ALL HOLES MADE BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE PROPERLY PATCHED AND REPAIRED. ALL CONDUIT PENETRATIONS THROUGH FLOORS AND WALLS SHALL BE SEALED.
10. THE CONTRACTOR SHALL DO ALL CUTTING, PATCHING AND REPAIRING AS REQUIRED TO PERFORM ALL WORK INDICATED ON THE DRAWINGS, AND ALL OTHER WORK THAT MAY BE REQUIRED TO COMPLETE THE JOB.
11. THE CONTRACTOR SHALL PROVIDE ALL PHYSICAL PROTECTION REQUIRED TO PROTECT ALL EQUIPMENT DURING CONSTRUCTION.
12. WHERE CONDUIT ROUTING HAS NOT BEEN SHOWN ON THE DRAWINGS, THE ROUTING OF POWER BRANCH CIRCUITS WILL BE AT THE CONTRACTOR'S DISCRETION AND THE OWNER APPROVAL IN ACCORDANCE WITH CODES AND SPECIFICATIONS.
13. ANY UTILITY SHOWN ON THE PLANS ARE BASED ON OBSERVATION OF THE SURFACE ONLY. THE CONTRACTOR SHALL PROVIDE TONE-OUT/UTILITY LOCATING SERVICES PRIOR TO COMMENCING EXCAVATION IN ANY WORK AREAS.

ABBREVIATIONS

A	AMPERE	LP	120/208V PANEL
AC	ALTERNATING CURRENT	LS	LOUDSPEAKER
ACS	ADMINISTRATIVE CONTROL STATION	LTG	LIGHTING
ADA	AMERICANS WITH DISABILITIES ACT	MATV	MASTER TELEVISION
AFF	ABOVE FINISHED FLOOR	MCC	MOTOR CONTROL CENTER
ARCH	ARCHITECTURAL	MECH	MECHANICAL
ATS	AUTOMATIC TRANSFER SWITCH	MER	MECHANICAL EQUIPMENT ROOM
A/C	AIR CONDITIONING	MIC	MICROPHONE
C	CONDUIT	MTD	MOUNTED
CAB	CABINET	N	NEUTRAL
CLG	CEILING	N.C.	NORMALLY CLOSED
CB	CIRCUIT BREAKER	N.O.	NORMALLY OPEN
CKT(S)	CIRCUIT(S)	O & R	ORANGE AND ROCKLAND
COL	COLUMN	P	POLE(S)
DWG	DRAWING	PB	PULL BOX
EC	EMPTY CONDUIT	PNL	PANEL
ELEC	ELECTRIC	PP	277/480V PANEL
EMR	ELEVATOR MECHANICAL ROOM	RC	REMOTE CONTROL
EMT	ELECTRIC METALLIC TUBING	SP	SPARE
EXH	EXHAUST	SSB	SOLID STATE BALLAST
EXIST	EXISTING	STD	STANDARD
FATB	FIRE ALARM TERMINAL BOX	SW	SWITCH
FL	FLOOR	SWBD	SWITCHBOARD
G	GUARD	TEL	TELEPHONE
GND	GROUND	TV	TELEVISION
GFI	GROUND FAULT INTERRUPTER	TYP	TYPICAL
GRC	GALVANIZED RIGID CONDUIT	V	VOLT
IG	ISOLATED GROUND	W	WATT
JB	JUNCTION BOX	WP	WEATHERPROOF
KVA	KILOVOLT AMPERE		
KW	KILOWATT		
KWH	KILOWATT HOUR		

INSTALLATION NOTES

1. CONTRACTOR SHALL PERMANENTLY FASTEN ALL THE EQUIPMENT AS INDICATED ON THE DRAWINGS IN AN APPROVED MANNER, WITH ALL NECESSARY HARDWARE.
2. CONTRACTOR SHALL PROVIDE ALL CONDUITS, WIRING, OUTLET BOXES AND ALL ACCESSORIES NECESSARY TO COMPLETE THE WIRING TO ALL COMPONENTS OF THE SYSTEM. ALL CONNECTIONS SHALL BE MADE COMPLETE AND TESTED.

GENERAL SYMBOL LIST

	RECEPTACLE, DUPLEX, 125V 20A GFI - INDICATES GFI TYPE WP - INDICATES WEATHER PROOF TYPE
	JUNCTION BOX AND FINAL CONNECTION TO EQUIPMENT.
200AF/UF/3P 	NON-FUSIBLE DISCONNECT SWITCH. 200A INDICATES FRAME RATING, "UF" MEANS UNFUSED & 3P INDICATES NO. OF POLES
	SURFACE MOUNTED PANELBOARD
	HOMERUN
	TOGGLE SWITCH WITH BI-METALLIC OVERLOAD ELEMENTS.

REMOVAL SYMBOL

	HATCHING OVER OBJECT INDICATES EXISTING EQUIPMENT TO BE REMOVED AND DISPOSED.
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Project No.	41048
Scale	AS NOTED
Date	08-30-21

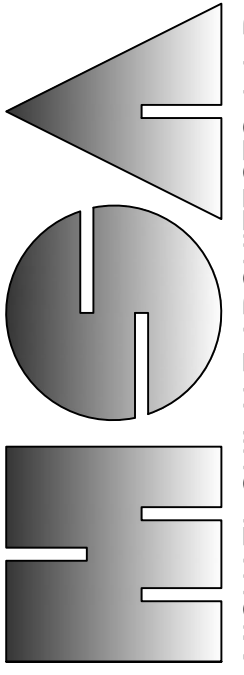
GREENMAN PEDERSEN, INC 400 BELLA BOULEVARD MONTICELLO, NY 10801	
Mechanical Electrical Engineer:	Structural Engineer:

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18 Grant Street
Haverstraw, NY 10627

COUNTY OF ROCKLAND

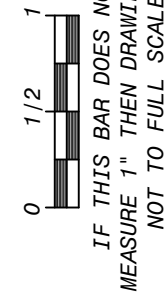


MICHAEL SHILALE ARCHITECTS, L.L.P.
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New City, NY 10956
Tel 845-708-9200
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ELECTRICAL
COVER SHEET

E-001

1. FOR ELECTRICAL SYMBOLS & LEGENDS, GENERAL NOTES, ABBREVIATIONS REFER TO DRAWING E001.00
2. MAINTAIN CIRCUIT CONTINUITY TO AREAS NOT AFFECTED BY DEMOLITION
3. ALL DEVICES, EQUIPMENT AND CONNECTIONS SHOWN IN THIS DRAWING ARE EXISTING AND SHALL BE REMOVED WITH ALL ASSOCIATED CONTROLLERS, WIRING, EXPOSED CONDUITS, PULL BOX, SWITCHES, DISCONNECTS, JUNCTION BOX, SUPPORTS ETC. BACK TO SOURCE, UNLESS OTHERWISE INDICATED.
4. CONTRACTOR SHALL PATCH AND PAINT AREAS AFFECTED BY REMOVAL TO MATCH SURROUNDINGS.
5. THE CONTRACTOR IS REQUIRED TO COORDINATE WITH OTHER TRADES AND BUILDING FACILITY DURING THE DEMOLITION WORK ON THIS FLOOR. ANY SERVICE DISRUPTION AND SHUTDOWN TO THE ELECTRICAL AND LOW VOLTAGE SYSTEMS IN THE EXISTING BUILDING, IF AND WHEN REQUIRED SHALL BE PERFORMER AFTER WELL COORDINATION WITH BUILDING FACILITY AND OBTAINING A WRITTEN PERMISSION FROM THEM. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY UNAUTHORIZED SERVICE DISRUPTION OR SHUTDOWN ON THE EXISTING BUILDING
6. COORDINATE REMOVAL OF POWER TO MECHANICAL AND PLUMBING EQUIPMENT WITH THE RESPECTIVE CONTRACTOR.
7. REFER TO PLUMBING AND MECHANICAL DRAWINGS FOR REMOVAL OF PLUMBING AND MECHANICAL EQUIPMENTS. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE TO REMOVE ALL ASSOCIATED ELECTRICAL FEEDERS, CIRCUITS, STARTERS, DISCONNECT SWITCHES, PULL BOXES, EXPOSED CONDUITS, ETC BACK TO SOURCE FOR THE EQUIPMENTS BEING REMOVED BY THE MECHANICAL AND PLUMBING CONTRACTOR, UNLESS OTHERWISE INDICATED.
8. THE ELECTRICAL CONTRACTOR SHALL FIELD EXAMINE THE ENTIRE AREA AFFECTED BY THIS CONSTRUCTION AND SHALL REMOVE ALL EXISTING ELECTRICAL EQUIPMENT AND DEVICES, RECEPTACLE, LIGHTING, LOW VOLTAGE DEVICES ETC. COMPLETE WITH ALL ASSOCIATED WIRING, SWITCHES, CONTROLLERS, SURFACE CONDUITS, PULL BOXES, JUNCTION BOX, SUPPORTS ETC. BACK TO SOURCE AS REQUIRED TO COMPLETE THE NEW WORK, EXCEPT THE EXISTING DEVICES SHOWN AS "EXISTING TO REMAIN" AND UNLESS OTHERWISE INDICATED.
9. ALL UNIT VENTILATORS ARE CURRENTLY BEING FED FROM EXISTING UNIT VENTILATOR PANEL LOCATED IN THE BASEMENT.

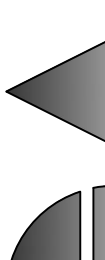


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Mechanical & Electrical Engineer:	GREENMAN PEDERSEN, INC 400 BELLA BOULEVARD MONTEBELLO, NY 10901
Structural Engineer:	— — —

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COUNTY OF ROCKLAND



MICHAEL SHILA LE ARCHITECTS, L.L.P.

140 Park Avenue
New City, NY 10556
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www.shilale.com

Drawing Title
**BASEMENT
DEMO PLAN -
ELECTRICAL**

Drawing No.
E-060

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Drawing	Title
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**BASEMENT
DEMO PLAN -
ELECTRICAL**

Drawing No.

E-060



PLAN NORTH

1

SCALE: 3/16" = 1'-0"

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Mechanical & Electrical Engineer:	GREENMAN PEDERSEN, INC 400 BELLA BOULEVARD MONTEBELLO, NY 10001
Structural Engineer:	— — —

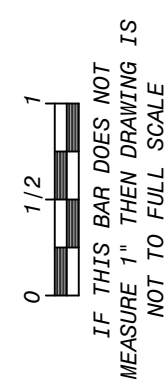
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16 Grant Street
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COUNTY OF ROCKLAND



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New City, NY 10956 Tel 845-708-9200
140 Park Avenue
www.shilale.com

Drawing Title FIRST FLOOR - ELECTRICAL DEMO PLAN	Drawing No. E-061
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1. FOR ELECTRICAL SYMBOLS & LEGENDS, GENERAL NOTES, ABBREVIATIONS REFER TO DRAWING E001.00
2. MAINTAIN CIRCUIT CONTINUITY TO AREAS NOT AFFECTED BY DEMOLITION
3. ALL DEVICES, EQUIPMENT AND CONNECTIONS SHOWN IN THIS DRAWING ARE EXISTING AND SHALL BE REMOVED WITH ALL ASSOCIATED CONTROLLERS, WIRING, EXPOSED CONDUITS, PULL BOX, SWITCHES, DISCONNECTS, JUNCTION BOX, SUPPORTS ETC. BACK TO SOURCE, UNLESS OTHERWISE INDICATED.
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9. ALL UNIT VENTILATORS ARE CURRENTLY BEING FED FROM EXISTING UNIT VENTILATOR PANEL LOCATED IN THE BASEMENT.

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Checked by	SH
Project No.	41048
Scale	AS NOTED
Date	08-30-21

Mechanical & Electrical Engineer:	GREENMAN PEDERSEN, INC 400 BELLA BOULEVARD MONTEBELLO, NY 10901
Structural Engineer:	— — —

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Drawing Title
**SECOND FLOOR-
ELECTRICAL
DEMO PLAN**

Drawing No.
E-062



1. FOR ELECTRICAL SYMBOLS & LEGENDS, GENERAL NOTES, ABBREVIATIONS REFER TO DRAWING E001.00
2. MAINTAIN CIRCUIT CONTINUITY TO AREAS NOT AFFECTED BY DEMOLITION
3. ALL DEVICES, EQUIPMENT AND CONNECTIONS SHOWN IN THIS DRAWING ARE EXISTING AND SHALL BE REMOVED WITH ALL ASSOCIATED CONTROLLERS, WIRING, EXPOSED CONDUITS, PULL BOX, SWITCHES, DISCONNECTS, JUNCTION BOX, SUPPORTS ETC. BACK TO SOURCE, UNLESS OTHERWISE INDICATED.
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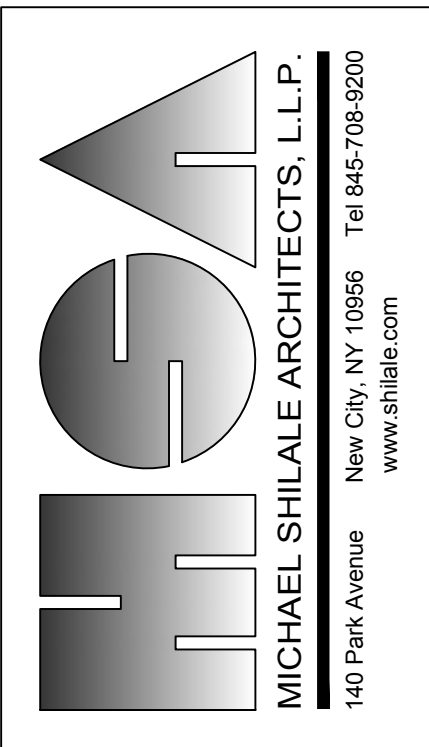


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Mechanical & Electrical Engineer:	GREENMAN PEDERSEN, INC 400 BELLA BOULEVARD MONTEBELLO, NY 10001
Structural Engineer:	— — —

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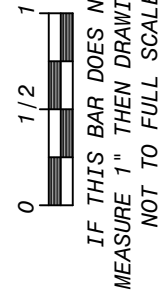
Drawing Title THIRD FLOOR - ELECTRICAL DEMO PLAN	Drawing No. E-063
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1 THIRD FLOOR DEMO PLAN

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



1. REFER TO ADDITIONAL INSTALLATION NOTES ON DRAWING E-001.
2. ALL NEW RUNS SHALL BE WITH MINIMUM OF 2#12+1#12G IN 3/4" CONDUIT, UNLESS OTHERWISE NOTED ON THE PANEL SCHEDULES.
3. PROVIDE LABELS ON ALL ELECTRICAL EQUIPMENT INDICATING CIRCUIT ORIGINATION.
4. UPDATE ALL EXISTING PANEL DIRECTORIES AFFECTED BY NEW WORK.
5. CONTRACTOR SHALL PERFORM AMP PROBE READINGS ON EXISTING SERVICE EQUIPMENT BEFORE AND AFTER WORK TO ENSURE EQUIPMENT WILL NOT BE LOADED BEYOND ITS MAX AMPLITY.
6. CONTRACTOR SHALL MAINTAIN CONTINUITY TO ALL EXISTING CIRCUITRY TO REMAIN WHICH ARE AFFECTED BY THE SCOPE OF WORK; CONTRACTOR SHALL FURNISH ALL NECESSARY JUNCTION BOXES, CONDUIT, AND WIRES AS REQUIRED TO KEEP CONTINUITY.
7. REFER TO MECHANICAL PLANS FOR EQUIPMENT TO BE SUPPLIED BY OTHER TRADES AND INSTALLED/WIRED UNDER THIS SECTION. COORDINATE LOCATION OF DEVICES WITH OTHER CONTRACTORS.
8. PROVIDE FIRESTOPPING FOR ALL PENETRATIONS TO MATCH EXISTING FIRE RATING WHERE APPLICABLE. ALL CORE DRILLS SHALL BE VERIFIED BY BUILDING REPRESENTATIVE PRIOR TO COMMENCING WORK. XRAY ALL FLOOR SLABS PRIOR TO ROUGH-INS FOR CORE DRILL WORK.
9. THE CONTRACTOR SHALL FIELD ROUTE FEEDER FOR NEW POWER PANELS. COORDINATE EXACT ROUTING PATH WITH OWNER. SUBMIT A PROPOSED ROUTING PATH TO ENGINEER OF RECORD FOR APPROVAL PRIOR TO RUNNING ANY CONDUIT OR WIRE ASSOCIATED WITH THIS FEEDER.
10. ALL NEW FIRE ALARM DEVICES SHALL BE CIRCUITED TO RESPECTIVE ZONES IN THE EXISTING MAIN FIRE ALARM CONTROL PANEL SHOWN ON THIS DRAWING. ALL NEW DEVICES SHALL BE COMPATIBLE WITH THE EXISTING SYSTEM. COORDINATE ALL WORK WITH THE FIRE ALARM VENDOR. PROVIDE ALL APPURTENANCES AS REQUIRED FOR A COMPLETE, CODE COMPLIANT, OPERABLE SYSTEM INSTALLATION IN A NEAT AND WORKMANLIKE MANNER.
11. ALL THE 120/208V PANELS AND DISTRIBUTION BOARD NEEDS TO BE INSTALLED IN SUCH A WAY SO THAT A 3 FEET CLEARANCE IN FRONT OF THE PANELS IS BEING MAINTAINED AS REQUIRED BY NEC 2017.



3	12-17-21	ISSUED FOR BID
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Mechanical & Electrical Engineer:	GREENMAN PEDERSEN, INC 400 BELLA BOULEVARD MONTEBELLO, NY 10001
Structural Engineer:	— — —

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The logo for Michael Shilale Architects, LLP features the letters 'M', 'S', and 'A' in a large, bold, sans-serif font. Each letter is filled with a horizontal gradient, transitioning from a light gray at the top to a dark gray at the bottom. The letters are positioned on the left side of the advertisement.

MICHAEL SHILALE ARCHITECTS, LLP.

New City, NY 10956 Tel 845-708-9200
140 Park Avenue
www.shilale.com

Drawing Title
**BASEMENT
PLAN -
ELECTRICAL**

Drawing No.
E-100

1 BASEMENT PLAN

SCALE: 3/16" = 1'-0"



1. REFER TO ADDITIONAL INSTALLATION NOTES ON DRAWING E-001.
2. ALL NEW RUNS SHALL BE MADE WITH MINIMUM OF 2#12+1#12 IN 3/4" CONDUIT, UNLESS OTHERWISE NOTED ON THE PANEL SCHEDULES.
3. PROVIDE LABELS ON ALL ELECTRICAL EQUIPMENT INDICATING CIRCUIT ORIGINATION.
4. UPDATE ALL EXISTING PANEL DIRECTORIES AFFECTED BY NEW WORK.
5. CONTRACTOR SHALL PERFORM AMP PROBE READINGS ON EXISTING SERVICE EQUIPMENT BEFORE AND AFTER WORK TO ENSURE EQUIPMENT WILL NOT BE LOADED BEYOND ITS MAX AMPACITY.
6. CONTRACTOR SHALL MAINTAIN CONTINUITY TO ALL EXISTING CIRCUITRY TO REMAIN WHICH ARE AFFECTED BY THE SCOPE OF WORK; CONTRACTOR SHALL FURNISH ALL NECESSARY JUNCTION BOXES, CONDUIT, AND WIRES AS REQUIRED TO KEEP CONTINUITY.
7. REFER TO MECHANICAL PLANS FOR EQUIPMENT TO BE SUPPLIED BY OTHER TRADES AND INSTALLED/WIRED UNDER THIS SECTION. COORDINATE LOCATION OF DEVICES WITH OTHER CONTRACTORS.
8. PROVIDE FIRESTOPPING FOR ALL PENETRATIONS TO MATCH EXISTING FIRE RATING WHERE APPLICABLE, ALL CORE DRILLS SHALL BE VERIFIED BY BUILDING REPRESENTATIVE PRIOR TO COMMENCING WORK. XRAY ALL FLOOR SLABS PRIOR TO ROUGH-INS FOR CORE DRILL WORK.
9. THE CONTRACTOR SHALL FIELD ROUTE FEEDER FOR NEW POWER PANELS. COORDINATE EXACT ROUTING PATH WITH OWNER, SUBMIT A PROPOSED ROUTING PATH TO ENGINEER OF RECORD FOR APPROVAL PRIOR TO RUNNING ANY CONDUIT OR WIRE ASSOCIATED WITH THIS FEEDER.
10. REFER TO DRAWING E-102 FOR LOCATIONS OF NEW PANELS THAT WILL FEED NEW EQUIPMENTS.
11. AT EACH NEW UNIVENT, THE CONTRACTOR SHALL RELOCATE TWO (2) EXISTING DUPLEX RECEPTACLES AND TWO (2) EXISTING DATA OUTLETS. EXTEND ALL WIRING AND CONDUIT TO THE NEW LOCATION. FIELD DETERMINE WITH THE SCHOOL THE IDEAL LOCATION FOR THE NEW DEVICES. RELOCATE THESE OUTLETS TOWARDS THE EXISTING ROUTING OF EXISTING CONDUIT IN ORDER TO AVOID NEW HOME RUNS OF DATA CABLE.
12. DISCONNECT SWITCH FOR UNIT VENTILATORS IS PROVIDED BY HVAC CONTRACTOR. COORDINATE WITH HVAC CONTRACTOR.
13. ALL GROUNDING SHALL BE PROVIDED BY THE CONTRACTOR AS PER NEC 2017.

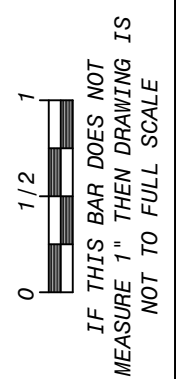


PLAN NORTH

Drawing Title
**FIRST FLOOR
 PLAN -
 ELECTRICAL**

Drawing No.
E-101

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9. THE CONTRACTOR SHALL FIELD ROUTE FEEDER FOR NEW POWER PANELS. COORDINATE EXACT ROUTING PATH WITH OWNER, SUBMIT A PROPOSED ROUTING PATH TO ENGINEER OF RECORD FOR APPROVAL PRIOR TO RUNNING ANY CONDUIT OR WIRE ASSOCIATED WITH THIS FEEDER.
10. REFER TO DRAWING E-102 FOR LOCATIONS OF NEW PANELS THAT WILL FEED NEW EQUIPMENTS.
11. AT EACH NEW UNIVENT, THE CONTRACTOR SHALL RELOCATE TWO (2) EXISTING DUPLEX RECEPTACLES AND TWO (2) EXISTING DATA OUTLETS. EXTEND ALL WIRING AND CONDUIT TO THE NEW LOCATION. FIELD DETERMINE WITH THE SCHOOL, THE IDEAL LOCATION FOR THE NEW DEVICES. RELOCATE THESE OUTLETS TOWARDS THE EXISTING ROUTING OF EXISTING CONDUIT IN ORDER TO AVOID NEW HOME RUNS OF DATA CABLE.
12. DISCONNECT SWITCH FOR UNIT VENTILATORS IS PROVIDED BY HVAC CONTRACTOR. COORDINATE WITH HVAC CONTRACTOR.
13. ALL GROUNDING SHALL BE PROVIDED BY THE CONTRACTOR AS PER NEC 2017.
14. ALL 120/208V PANELS AND DISTRIBUTION BOARD NEEDS TO BE INSTALLED IN SUCH A WAY SO THAT A 3 FEET CLEARANCE IN FRONT OF THE PANELS IS BEING MAINTAINED AS REQUIRED BY NEC 2017.



PLAN NORTH

Drawing	Title
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2ND FLOOR PLAN - ELECTRICAL

Drawing No.

E-102



FSA
MICHAEL SHILALE ARCHITECTS, L.L.P.
140 Park Avenue New City, NY 10956 Tel 845-708-9200
www.shilale.com

UNIVENT REPLACEMENT
AT
HAVERSTRAW
ELEMENTARY
SED# 50-02-01-06-0-009-018

Mechanical & Electrical Engineer:	GREENMAN PEDERSEN, INC 400 BELLA BOULEVARD MONTEREIRO, NY 10001
Structural Engineer:	— — —

Drawn by	FC
Checked by	SH
Project No.	41048
Scale	AS NOTED
Date	08-30-21

[illegible]

1. REFER TO ADDITIONAL INSTALLATION NOTES ON DRAWING E-001.
2. ALL NEW RUNS SHALL BE WITH MINIMUM OF 2#12+1#12G IN 3/4" CONDUIT, UNLESS OTHERWISE NOTED ON THE PANEL SCHEDULES.
3. PROVIDE LABELS ON ALL ELECTRICAL EQUIPMENT INDICATING CIRCUIT ORIGINATION.
4. UPDATE ALL EXISTING PANEL DIRECTORIES AFFECTED BY NEW WORK.
5. CONTRACTOR SHALL PERFORM AMP PROBE READINGS ON EXISTING SERVICE EQUIPMENT BEFORE AND AFTER WORK TO ENSURE EQUIPMENT WILL NOT BE LOADED BEYOND ITS MAX AMPACITY.
6. CONTRACTOR SHALL MAINTAIN CONTINUITY TO ALL EXISTING CIRCUITRY TO REMAIN WHICH ARE AFFECTED BY THE SCOPE OF WORK. CONTRACTOR SHALL FURNISH ALL NECESSARY JUNCTION BOXES, CONDUIT, AND WIRES AS REQUIRED TO KEEP CONTINUITY.
7. REFER TO MECHANICAL PLANS FOR EQUIPMENT TO BE SUPPLIED BY OTHER TRADES AND INSTALLED/WIRED UNDER THIS SECTION. COORDINATE LOCATION OF DEVICES WITH OTHER CONTRACTORS.
8. PROVIDE FIRESTOPPING FOR ALL PENETRATIONS TO MATCH EXISTING FIRE RATING WHERE APPLICABLE. ALL CORE DRILLS SHALL BE VERIFIED BY BUILDING REPRESENTATIVE PRIOR TO COMMENCING WORK. XRAY ALL FLOOR SLABS PRIOR TO ROUGH-INS FOR CORE DRILL WORK.
9. THE CONTRACTOR SHALL FIELD ROUTE FEEDER FOR NEW POWER PANELS. COORDINATE EXACT ROUTING PATH WITH OWNER. SUBMIT A PROPOSED ROUTING PATH TO ENGINEER OF RECORD FOR APPROVAL PRIOR TO RUNNING ANY CONDUIT OR WIRE ASSOCIATED WITH THIS FEEDER.
10. REFER TO DRAWING E-102 FOR LOCATIONS OF NEW PANELS THAT WILL FEED NEW EQUIPMENTS.
11. AT EACH NEW UNIVENT, THE CONTRACTOR SHALL RELOCATE TWO (2) EXISTING DUPLEX RECEPTACLES AND TWO (2) EXISTING DATA OUTLETS. EXTEND ALL WIRING AND CONDUIT TO THE NEW LOCATION. FIELD DETERMINE WITH THE SCHOOL THE IDEAL LOCATION FOR THE NEW DEVICES. RELOCATE THESE OUTLETS TOWARDS THE EXISTING ROUTING OF EXISTING CONDUIT IN ORDER TO AVOID NEW HOME RUNS OF DATA CABLE.
12. DISCONNECT SWITCH FOR UNIT VENTILATORS IS PROVIDED BY HVAC CONTRACTOR. COORDINATE WITH HVAC CONTRACTOR.
13. ALL GROUNDING SHALL BE PROVIDED BY THE CONTRACTOR AS PER NEC 2017.



1 THIRD FLOOR PLAN

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



Drawn by	FC
Checked by	SH
Project No.	41048
Scale	AS NOTED
Date	08-30-21

Mechanical & Electrical Engineer:	GREENMAN PEDERSEN, INC 400 BELLA BOULEVARD MONTEBELLO, NY 10801
Structural Engineer:	— — —

UNIVENT REPLACEMENT
AT
HAVERSTRAW
ELEMENTARY
SED# 50-02-01-06-0-009-018
16 Grant Street
Haverstraw, NY 10927
COUNTY OF ROCKLAND



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Drawing Title
**3RD FLOOR
 PLAN -
 ELECTRICAL**

1. REFER TO ADDITIONAL INSTALLATION NOTES ON DRAWING E-001.
2. ALL NEW RUNS SHALL BE WITH MINIMUM OF 2#12+1#12G IN 3/4" CONDUIT, UNLESS OTHERWISE NOTED ON THE PANEL SCHEDULES.
3. PROVIDE LABELS ON ALL ELECTRICAL EQUIPMENT INDICATING CIRCUIT ORIGINATION.
4. UPDATE ALL EXISTING PANEL DIRECTORIES AFFECTED BY NEW WORK.
5. CONTRACTOR SHALL PERFORM AMP PROBE READINGS ON EXISTING SERVICE EQUIPMENT BEFORE AND AFTER WORK TO ENSURE EQUIPMENT WILL NOT BE LOADED BEYOND ITS MAX AMPACITY.
6. CONTRACTOR SHALL MAINTAIN CONTINUITY TO ALL EXISTING CIRCUITRY TO REMAIN WHICH ARE AFFECTED BY THE SCOPE OF WORK; CONTRACTOR SHALL FURNISH ALL NECESSARY JUNCTION BOXES, CONDUIT, AND WIRES AS REQUIRED TO KEEP CONTINUITY.
7. REFER TO MECHANICAL PLANS FOR EQUIPMENT TO BE SUPPLIED BY OTHER TRADES AND INSTALLED/WIRED UNDER THIS SECTION. COORDINATE LOCATION OF DEVICES WITH OTHER CONTRACTORS.
8. PROVIDE FIRESTOPPING FOR ALL PENETRATIONS TO MATCH EXISTING DETAILS. WHERE APPLICABLE, ALL CORE DRILLS SHALL BE VERIFIED BY BUILDING REPRESENTATIVE PRIOR TO COMMENCING WORK. XRAY ALL FLOOR SLABS PRIOR TO ROUGH-INS FOR CORE DRILL WORK.
9. THE CONTRACTOR SHALL FIELD ROUTE FEEDER FOR NEW POWER PANELS. COORDINATE EXACT ROUTING PATH WITH OWNER. SUBMIT A PROPOSED ROUTING PATH. ENGINEER OF RECORD FOR APPROVAL PRIOR TO RUNNING ANY CONDUIT OR WIRE ASSOCIATED WITH THIS FEEDER.
10. ALL EXTERIOR RUNS SHALL BE IN RIGID GALVANIZED STEEL CONDUIT.
11. ALL GROUNDING SHALL BE PROVIDED BY THE CONTRACTOR AS PER NEC 2017.
12. ALL DISCONNECT SWITCH ON ROOF SHALL BE WEATHER PROOF.



Drawing Title

ROOF PLAN - ELECTRICAL

Drawing No.

E-104

3	12-17-21	ISSUED FOR BID
2	11-19-21	SED ADDENDUM 1
1	08-30-21	BIDDING DOCUMENTS
No.	Date	Revisions

Drawn by	FC
Checked by	SH
Project No.	41048
Scale	AS NOTED
Date	08-30-21

**GREENMAN
PEDERSEN, INC**
400 RELLA BOULEVARD
MONTEBELLO, NY 10901

Mechanical
& Electrical
Engineer:

Structural Engineer:

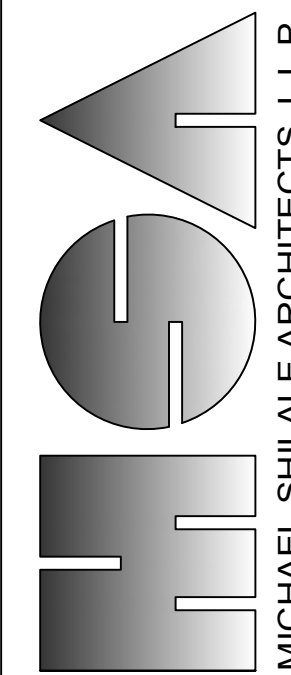
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SED# 50-02-01-06-0-009-018

16 Grant Street
Haverstraw, NY 10927

**18 Grant Street
Haverstraw, NY 10927**



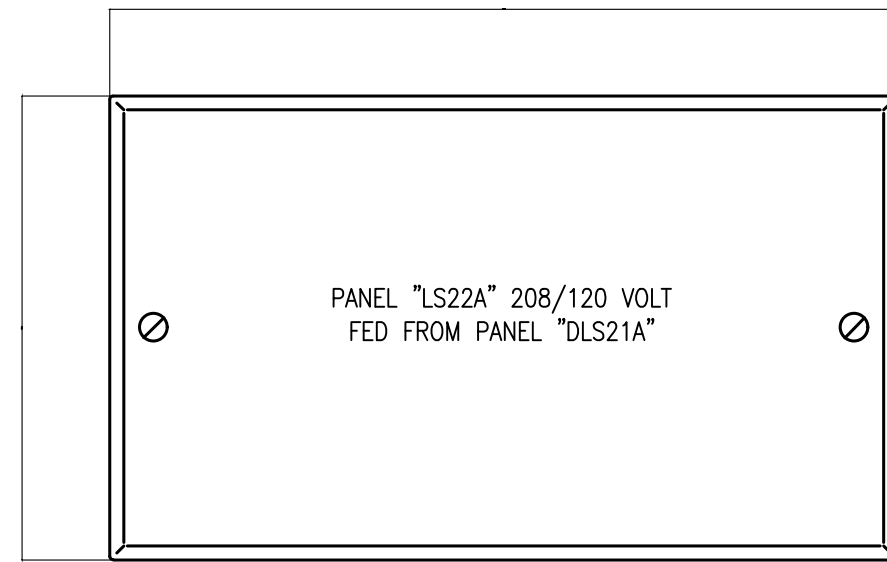
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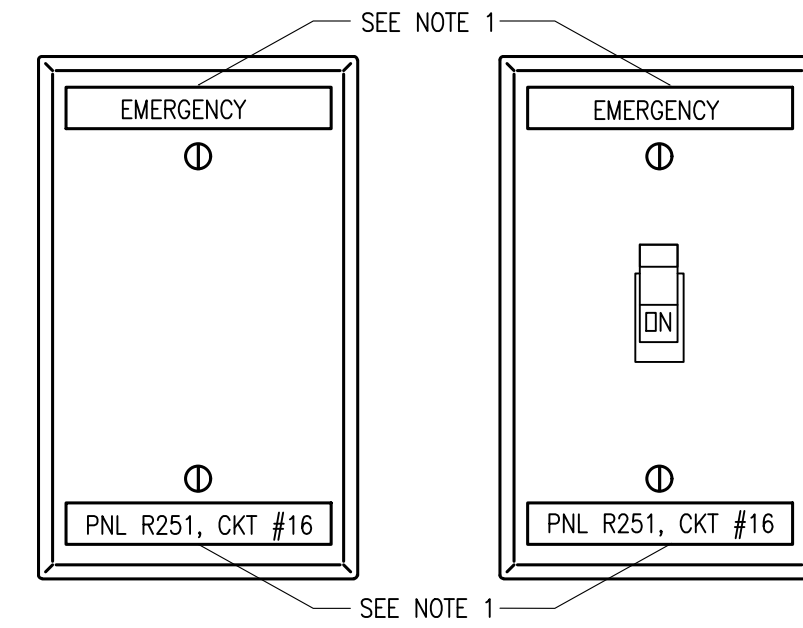
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CONDUCTOR AWG	#12	#10	#8
MAXIMUM CONDUCTOR LENGTH (IN FT.) AT 120V	95	160	245
MAXIMUM CONDUCTOR LENGTH (IN FT.) AT 208V,1PH	170	280	425
GROUND CONDUCTOR AWG	#12	#12	#12

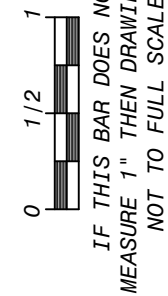
1. INCREASE BRANCH CIRCUIT CONDUCTOR AS REQUIRED.
2. BASED ON 20 AMP CIRCUIT LOADED TO 10 AMP USING SINGLE PHASE, 2 WIRE CIRCUITS.
3. ΔI REPRESENTS MINIMUM CONDUCTOR SIZE BASED ON LENGTH OF BRANCH CIRCUIT CONDUCTOR FROM PANEL TO PHYSICAL CENTER OF LOAD TO OVERCOME VOLTAGE DROP. 3% VOLTAGE DROP ASSUMED.
4. TRANSITION FROM LARGER CONDUCTOR SIZE TO #12 FOR FINAL TERMINATION TO OUTLET DEVICE. PROVIDE JUNCTION BOX WITHIN 10' OF OUTLET. EXTEND #12 CONDUCTOR TO OUTLET.



3 NAME PLATES SHALL BE PROVIDED FOR ALL ELECTRICAL EQUIPMENT INCLUDING, BUT NOT LIMITED TO, PANELBOARDS, SWITCHBOARDS, MOTOR CONTROL CENTERS, STARTERS, JUNCTION BOXES, PULL BOXES, DISCONNECT SWITCHES, TRANSFORMERS, CABINETS, ETC.



1. AT A MINIMUM, ELECTRICAL CONTRACTOR SHALL PROVIDE TYPED LABELS WITH PTOUCH MACHINE TO INDICATE PANEL NAME AND CIRCUIT NUMBER. PROVIDE "EMERGENCY" TYPED LABEL FOR CIRCUITS CONNECTED TO EMERGENCY PANELS. COORDINATE EXACT NAMING WITH FACILITY'S PERSONNEL. IF FACILITY STANDARD IS ENGRAVED COVERPLATES, THE ELECTRICAL CONTRACTOR SHALL PROVIDE ENGRAVED COVERPLATES TO MATCH FACILITY REQUIREMENTS.



1. AT A MINIMUM, ELECTRICAL CONTRACTOR SHALL PROVIDE TYPED LABELS WITH PTOUCH MACHINE TO INDICATE PANEL NAME AND CIRCUIT NUMBER. PROVIDE "EMERGENCY" TYPED LABEL FOR CIRCUITS CONNECTED TO EMERGENCY PANELS. COORDINATE EXACT NAMING WITH FACILITY'S PERSONNEL. IF FACILITY STANDARD IS ENGRAVED COVERPLATES, THE ELECTRICAL CONTRACTOR SHALL PROVIDE ENGRAVED COVERPLATES TO MATCH FACILITY REQUIREMENTS.

Diagram illustrating the mounting assembly components and their arrangement:

- 9.52mm (3/8") MIN GALVANIZED THREADED ROD, TYP.
- LOCKING SQUARE WASHER & LOCKNUT
- REFER TO PLANS FOR QUANTITY & SIZE OF CONDUITS
- CONDUIT CLAMP. SIZE AS REQUIRED
- INTEGRAL GALVANIZED LIPPED STEEL MOUNTING CHANNEL
- UV-INHIBITED POLYCARBONATE OR HIGH-DENSITY POLYPROPYLENE PLASTIC BLOCK, LENGTH AS REQUIRED

Diagram of a VFD control panel. The panel has a top switch labeled "ON" and a bottom switch labeled "OFF". Two callouts point to the panel:

- "PROVIDE ENGRAVED NAMEPLATE" points to the top of the panel.
- "PROVIDE ENGRAVED NAMEPLATE WHEN DISCONNECT SWITCH FEEDS A VFD" points to the bottom of the panel.

The panel contains two text boxes:

Top box:

LINE: PANEL
H41A-1,3,5 (20A-3P)
LOAD: EF-1 VIA VFD

Bottom box:

DO NOT OPEN
SWITCH WHEN VFD
IS POWERED, VFD
WILL BE DAMAGED

MASONRY OR CONCRETE
INTERIOR WALL, FLOOR,
OR CEILING.

METAL ESCUTCHEON

FIRE STOP MATERIAL:
HILTI #CP606
MEA #100-99-M OR EQUAL

20 GAUGE SHEET METAL
SLEEVE

3	12-17-21	ISSUED FOR BID
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Structural Engineer:	— — —

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16 Grant Street
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COUNTY OF ROCKLAND

The logo for Michael Shilale Architects, LLP features the letters 'M', 'S', and 'A' in a large, bold, sans-serif font. Each letter is filled with a horizontal gradient, transitioning from a dark grey at the top to a lighter grey at the bottom. The letters are outlined in black. To the right of the letters, the firm's name 'MICHAEL SHILALE ARCHITECTS, LLP.' is written in a smaller, black, sans-serif font. Below the name, the address '140 Park Avenue' and the phone number 'Tel 845-708-9200' are listed. At the bottom, the website 'www.shilale.com' is provided.

M S A

MICHAEL SHILALE ARCHITECTS, LLP.

140 Park Avenue
Tel 845-708-9200
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Drawing Title
**ELECTRICAL
 DETAILS**

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