

NRHS ROOFTOP HVAC AND ANNEX UV REPLACEMENT

NORTH ROCKLAND HIGH SCHOOL
106 Hammond Road
Thiells, NY 10984
SED# 50-02-01-06-0-016-029

OWNER:
NORTH ROCKLAND
CENTRAL SCHOOL DISTRICT
65 CHAPEL STREET
GARNERVILLE, NY 10923

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

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

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

ABBREVIATIONS	
ACT	ACOUSTICAL 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
EIFS	EXTERIOR INSULATION AND FINISH SYSTEM
E.W.C.	EACH WAY ELECTRICAL WATER COOLER
ELC	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
GL	GLASS
GWB	GYPSUM WALL BOARD
HM	HOLLOW METAL
H.P.	HIGH POINT
HAC	HEATING & A/C CONTRACTOR
ITR	INDIVIDUAL TREATMENT ROOM
JOINT	JOINT
JT	JT
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'D	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

| ABBREVIATIONS | |

DRAWING No.	DRAWING TITLE	DATE
A-000	COVER SHEET	03-25-21
A-100	HS ROOF PLAN	11-10-20
A-101	EXISTING SOLAR PV ROOF PLAN	11-10-20
A-110	HS ANNEX FIRST FLOOR PLAN	11-10-20
A-111	HS ANNEX SECOND AND THIRD FLOOR PLAN	11-10-20
A-400	CLG REMOVAL & INSTALLATION PLAN	03-25-21
A-500	DETAILS	11-10-20
S-001	GENERAL NOTES & TYPICAL DETAILS	03-25-21
S-002	FLOOR PLAN	03-25-21
M-001	NOTES & SCHEDULES	01-26-21
M-002	CONTROLS	01-26-21
M-011	MECHANICAL NOTES AND DETAILS	11-10-20
M-012	MECHANICAL SCHEDULES	03-25-21
M-013	MECHANICAL VENTILATION SCHEDULE	03-25-21
M-101	MECHANICAL ROOF PLAN	11-10-20
M-111	PARTIAL 1ST & 2ND FLR PLANS - MECHANICAL	03-25-21
M-112	PARTIAL 3RD FLR PLAN - MECHANICAL	03-25-21
M-501	DETAILS	11-10-20
E-001	ELECTRICAL COVER SHEET	11-10-20
E-101	ROOF PLAN DEMOLITION	11-10-20
E-102	ROOF PLAN INSTALLATION	11-10-20

| LIST OF DRAWINGS | | |

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
	ROOM NAME
	ROOM NAME/NUMBER IDENTIFICATION
	ROOM NUMBER
	ROOM AREA
	DRAWING NUMBER
	WALL SECTION/ELEVATION REFERENCE
	SHEET NUMBER
	DETAIL NUMBER
	DETAIL REFERENCE
	SHEET NUMBER
	COLUMN LINE DESIGNATION

| SYMBOLS LEGEND | |

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

ALT. #2-1: - REMOVE AND REPLACE UNIT G1
ALT. #2-2: - REMOVE AND REPLACE UNIT K1
ALT. #2-3: - REMOVE AND REPLACE UNIT F2
ALT. #3: - PROVIDE DX COIL, CONDENSING UNIT AND ELECTRICAL FEEDERS FOR UNIT E2. PROVIDE NEW ROOF CURBS AS REQUIRED.
ALT. #4: - PROVIDE DX COIL, CONDENSING UNIT AND ELECTRICAL FEEDERS FOR UNIT E5. PROVIDE NEW ROOF CURBS AS REQUIRED.
ALT. #5: - PROVIDE DX COIL, CONDENSING UNIT AND ELECTRICAL FEEDERS FOR UNIT H2. PROVIDE NEW ROOF CURBS AS REQUIRED.

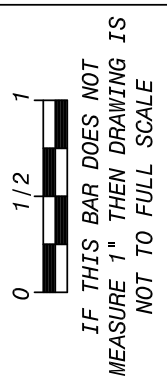
ALTERNATES

ALLOWANCE NO. 1: CLEAN EXISTING MAIN DUCTWORK FOR 20 LINEAR FEET PER UNIT
ALLOWANCE NO. 2: REPLACE EXISTING SUPPLY AND RETURN PIPING AND INSULATION FOR 20 LINEAR FEET PER UNIT
ALLOWANCE NO. 3: PERFORM COMMISSIONING OF INSTALLED AIR HANDLING EQUIPMENT BY THIRD PARTY AGENCY FOR 3 UNITS

ALLOWANCES

UNIT PRICE NO. 1: PROVIDE UNIT PRICE TO CLEAN EXISTING MAIN DUCTWORK FOR EACH UNIT. PRICE IS PER LINEAR FOOT.
UNIT PRICE NO. 2: PROVIDE UNIT PRICE TO REPLACE EXISTING SUPPLY AND RETURN PIPING AND INSULATION FOR EACH UNIT. PRICE IS PER LINEAR FOOT.

UNIT PRICES



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Drawn by MAL/JR		Checked by MS/JC		Project No. 39062G	
GREENMAN PEDERSEN, INC MECHANICAL & ELECTRICAL ENGINEERS MONTABELLO, NY 10901		Scale AS NOTED		Date 11-10-20	
Mechanical & Electrical Engineer.		Structural Engineer.		Revisions	
NRHS ROOFTOP HVAC AND ANNEX UV REPLACEMENT		SED# 50-02-01-06-0-016-029		106 Hammond Rd. Thiells, NY 10984	
MICHAEL SHILALE ARCHITECTS, LLP. 140 Park Avenue New City, NY 10956 Tel 845-708-5200 www.shilale.com		TOWN OF CLARKSTOWN COUNTY OF ROCKLAND			

LEGEND

GENERAL NOTES

DEMO AND REPAIR NOTES

KEY PLAN

CODE ANALYSIS



ROOF PLAN

A-100



Drawn by	MAL/JR
Checked by	MS/JC
Project No.	39062G
Scale	AS NOTED
Date	10-23-20

NRHS
ROOFTOP HVAC
AND ANNEX UV
REPLACEMENT

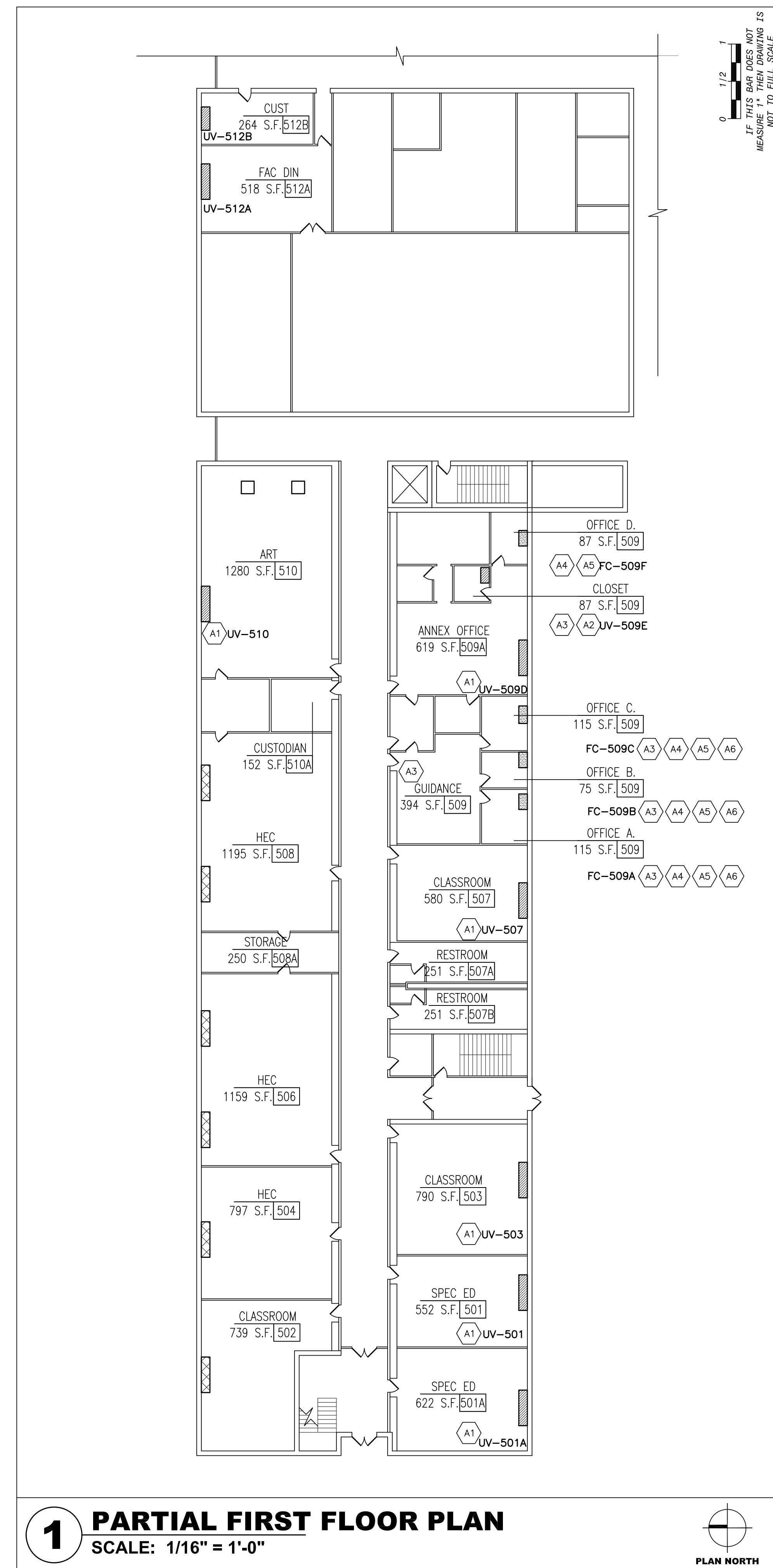
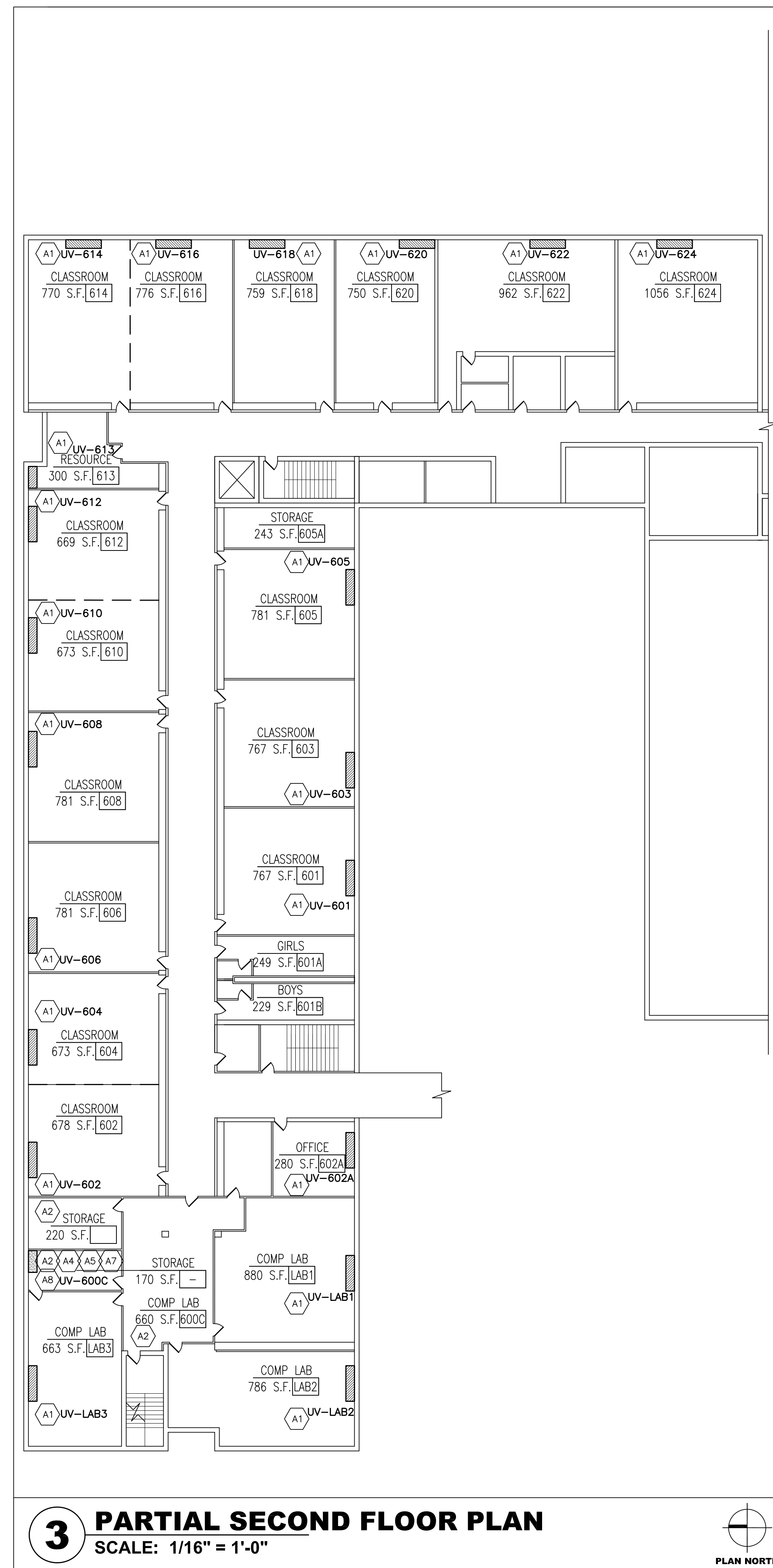
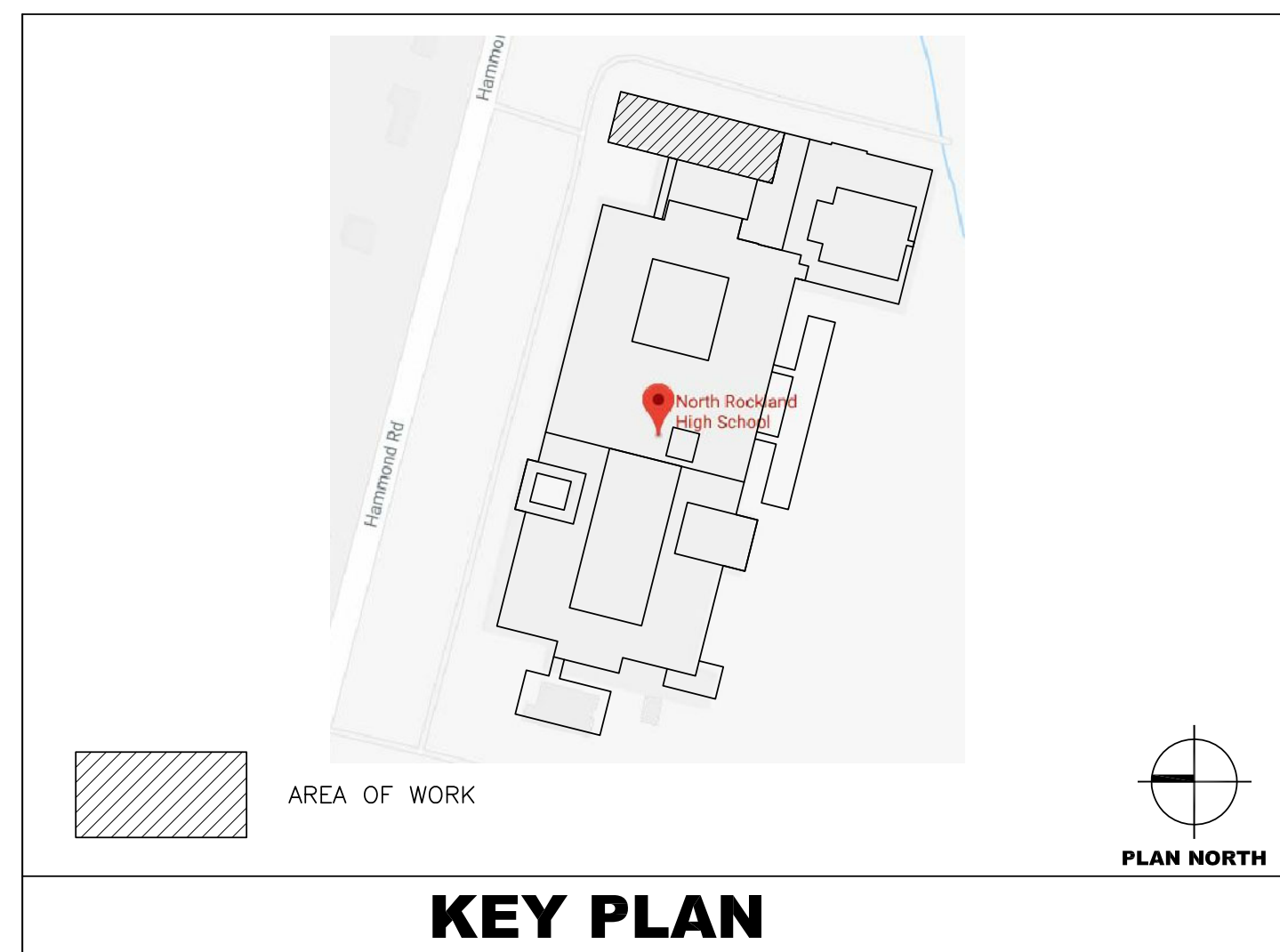
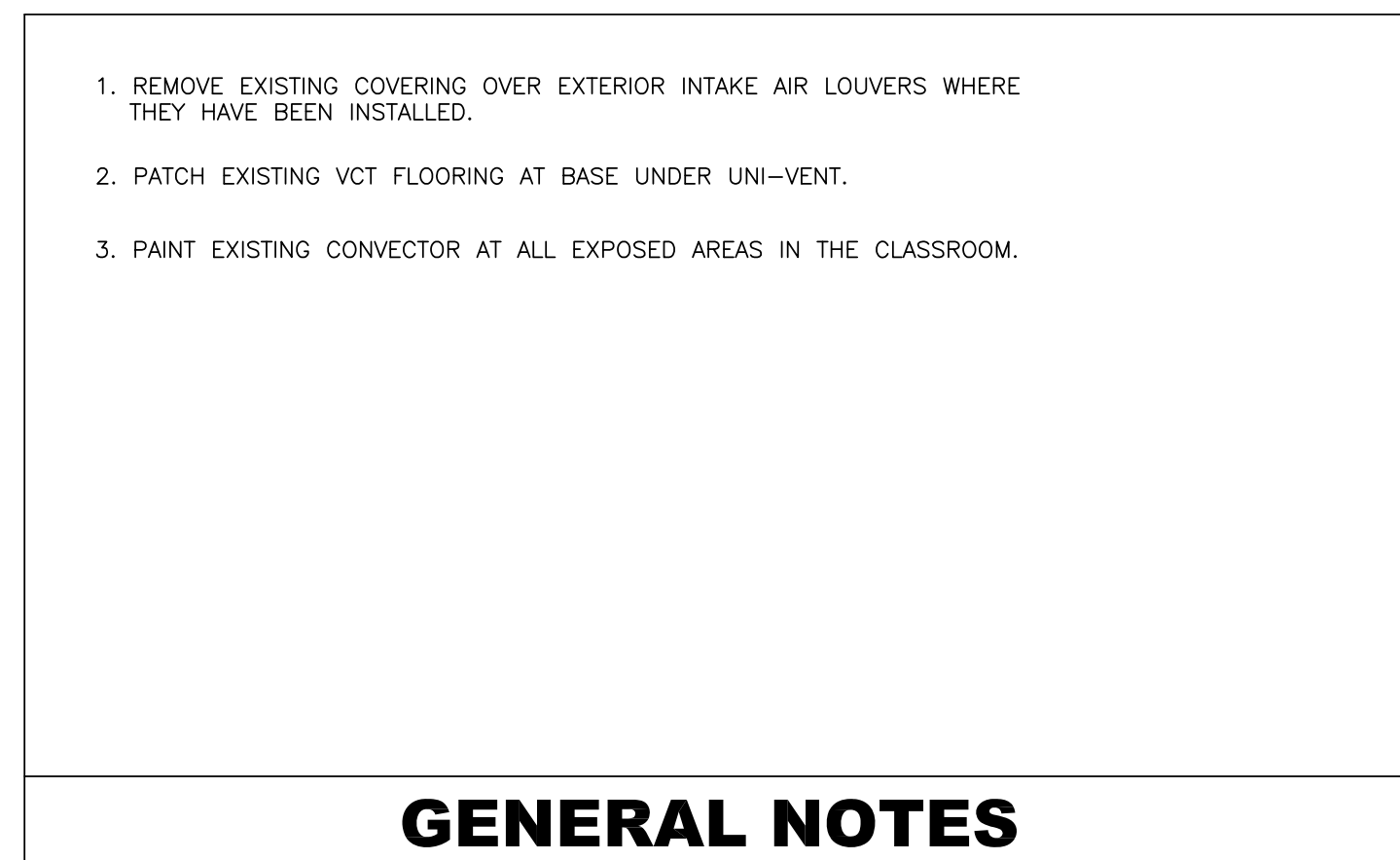
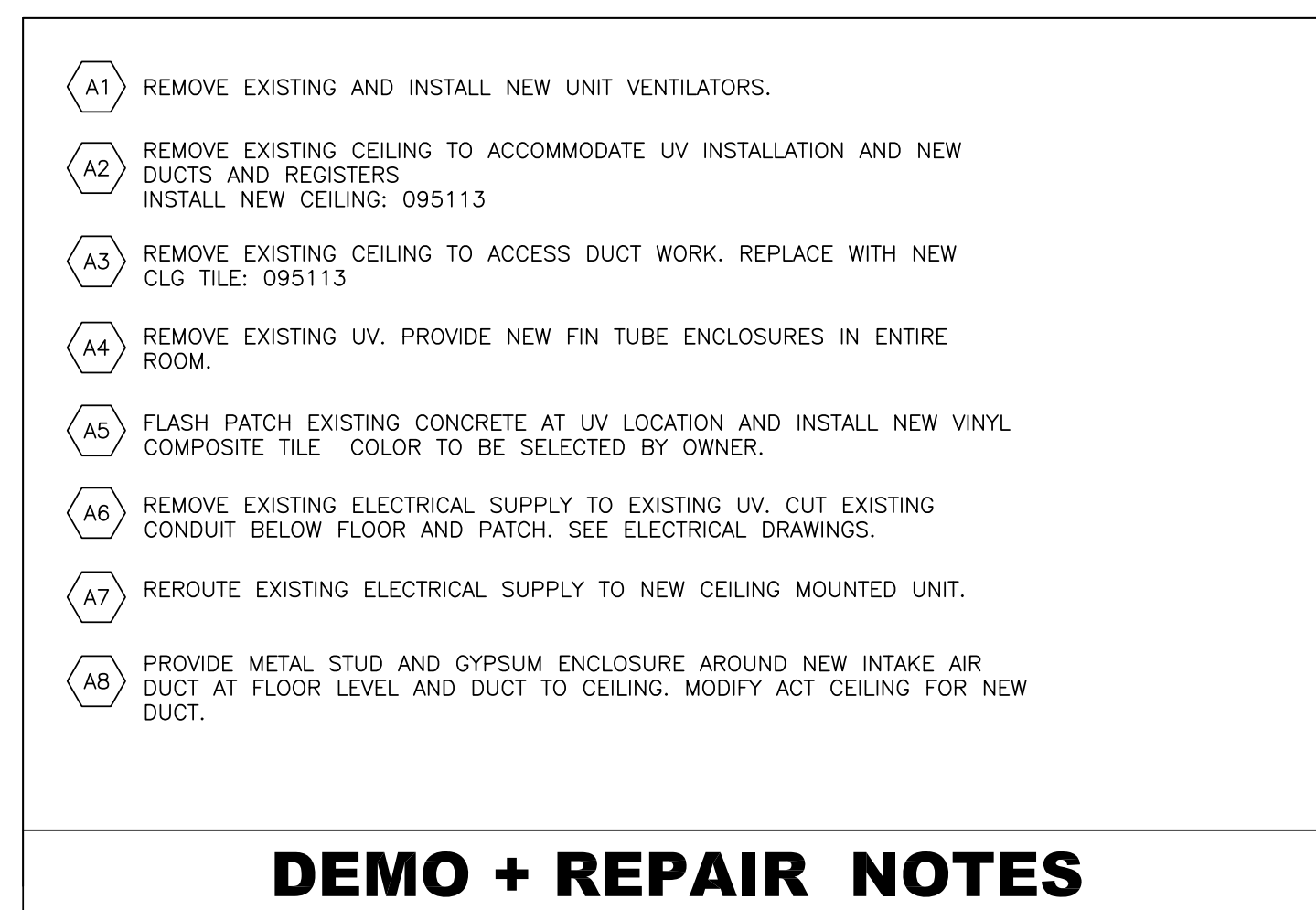
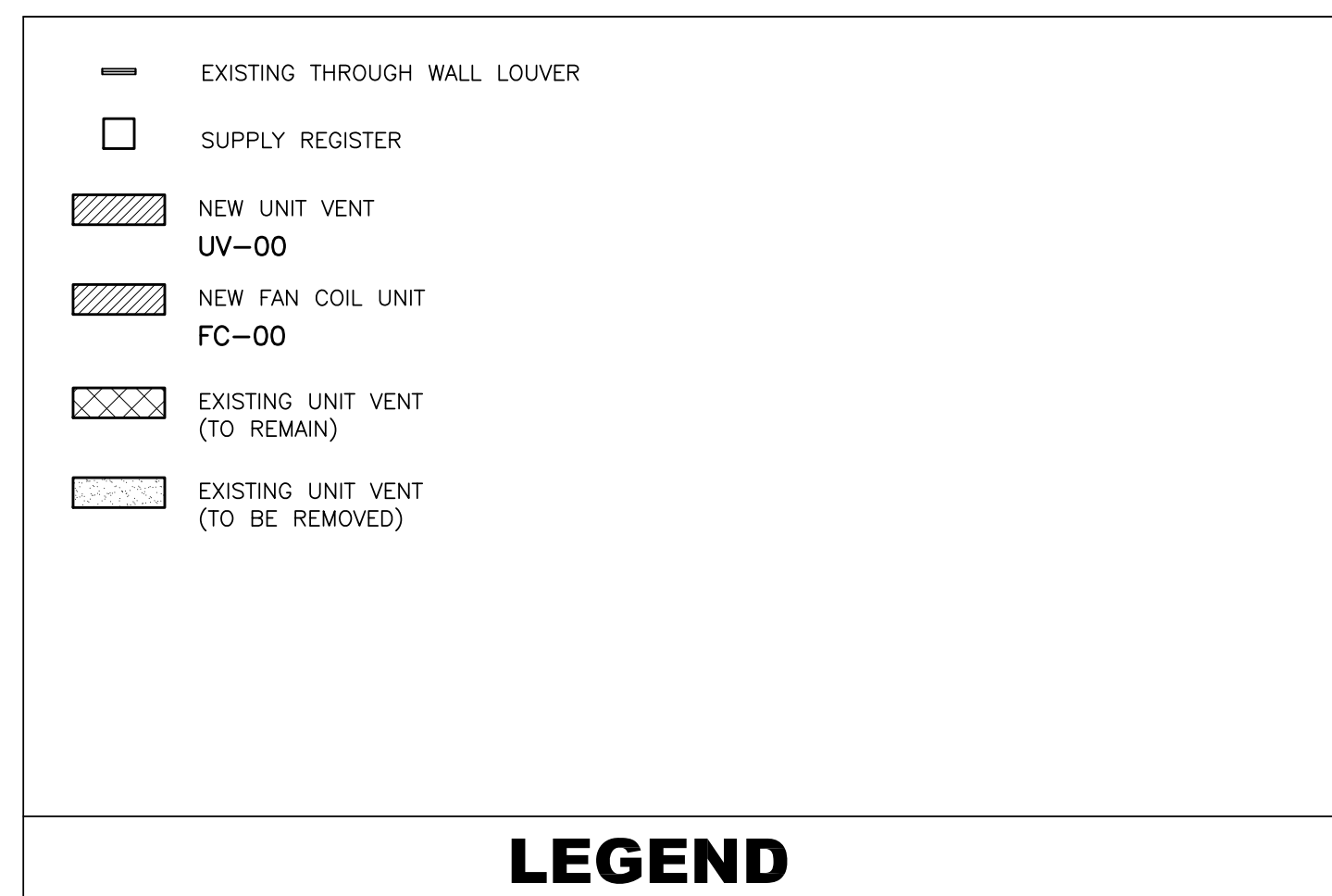
SED# 50-02-01-06-0-016-029

106 Hammond Rd.
Thiells, NY 10984

TOWN OF CLARESTOWN
COUNTY OF ROCKLAND

**EXISTING
SOLAR PV
ROOF PLAN**





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

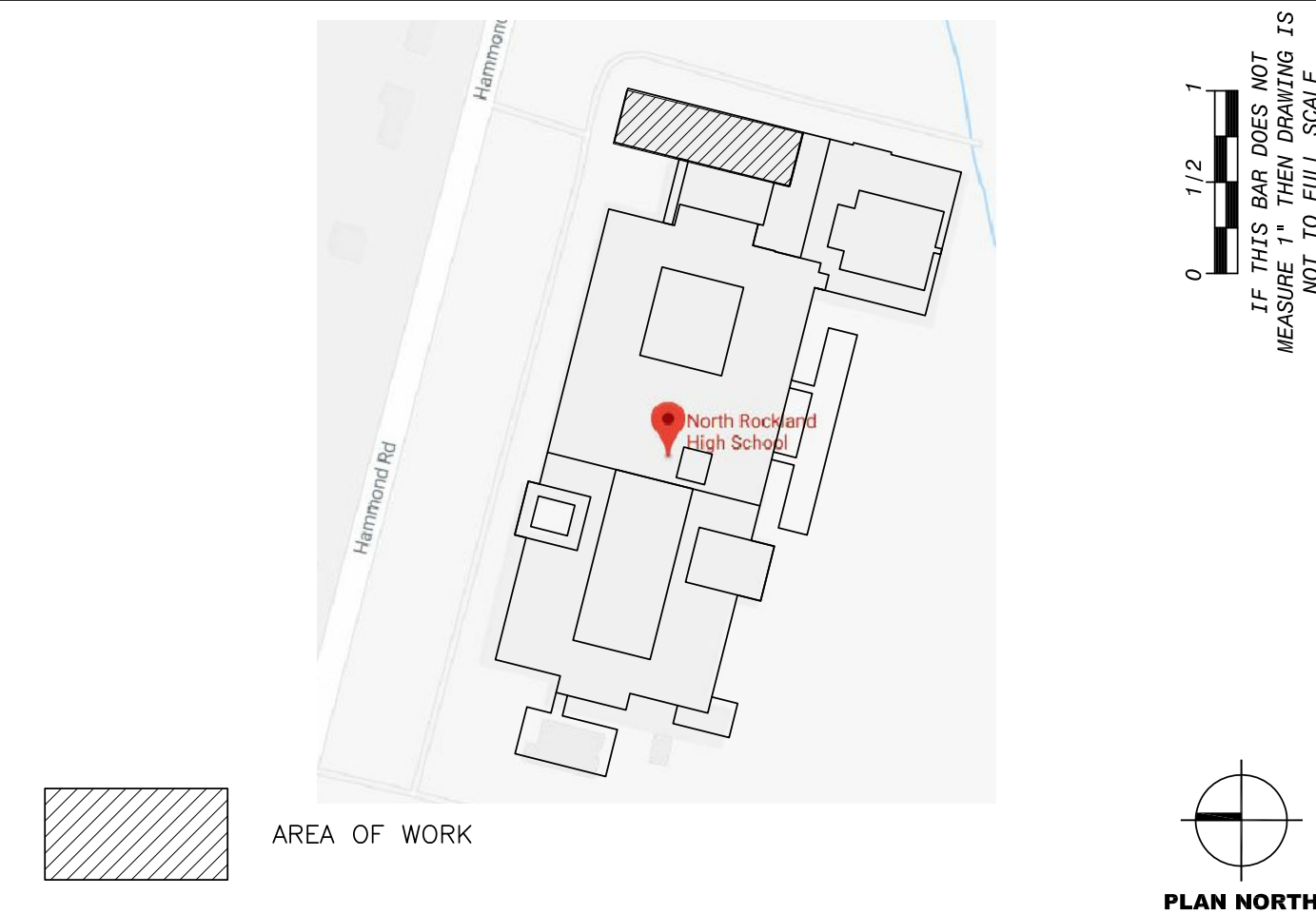
LEGEND

- A1 REMOVE EXISTING AND INSTALL NEW UNIT VENTILATORS.
- A2 REMOVE EXISTING CEILING TO ACCOMMODATE UV INSTALLATION AND NEW DUCTS AND REGISTERS
INSTALL NEW CEILING: 095113
- A3 REMOVE EXISTING CEILING TO ACCESS DUCT WORK. REPLACE WITH NEW CLG TILE: 095113
- A4 REMOVE EXISTING UV. PROVIDE NEW FIN TUBE ENCLOSURES IN ENTIRE ROOM.
- A5 FLASH PATCH EXISTING CONCRETE AT UV LOCATION AND INSTALL NEW VINYL COMPOSITE TILE COLOR TO BE SELECTED BY OWNER.
- A6 REMOVE EXISTING ELECTRICAL SUPPLY TO EXISTING UV, CUT EXISTING CONDUIT BELOW FLOOR AND PATCH. SEE ELECTRICAL DRAWINGS.
- A7 REROUTE EXISTING ELECTRICAL SUPPLY TO NEW CEILING MOUNTED UNIT.
- A8 PROVIDE METAL STUD AND GYPSUM ENCLOSURE AROUND NEW INTAKE AIR DUCT AT FLOOR LEVEL AND DUCT TO CEILING. MODIFY ACT CEILING FOR NEW DUCT.

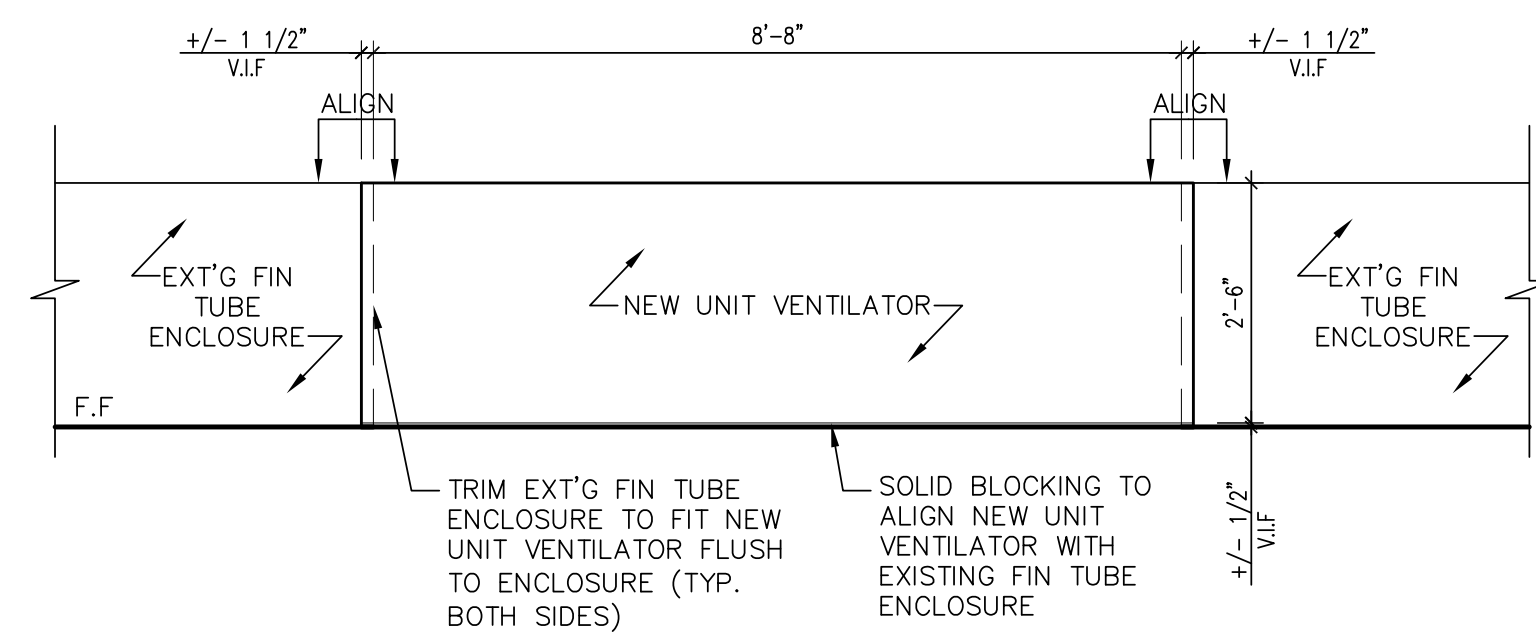
DEMO + REPAIR NOTES

1. REMOVE EXISTING COVERING OVER EXTERIOR INTAKE AIR LOUVERS WHERE THEY HAVE BEEN INSTALLED.
2. PATCH EXISTING VCT FLOORING AT BASE UNDER UNI-VENT.
3. PAINT EXISTING CONVECTOR AT ALL EXPOSED AREAS IN THE CLASSROOM.

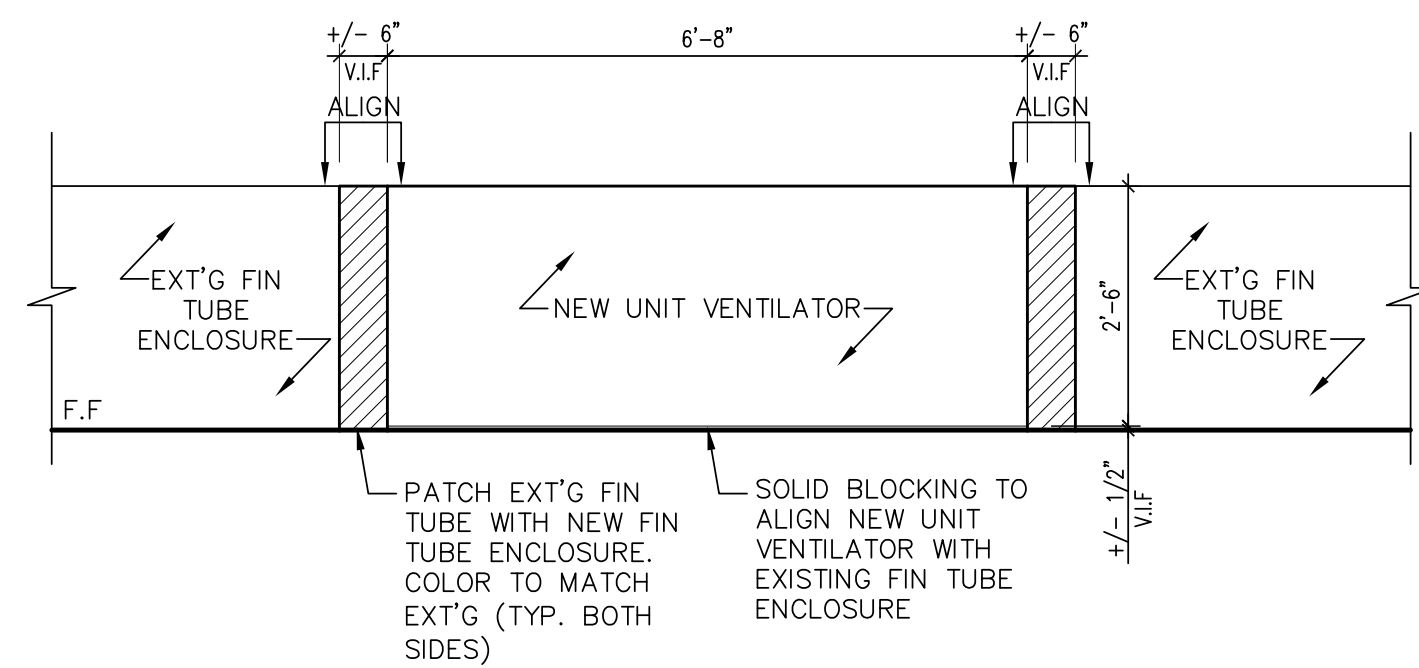
GENERAL NOTES



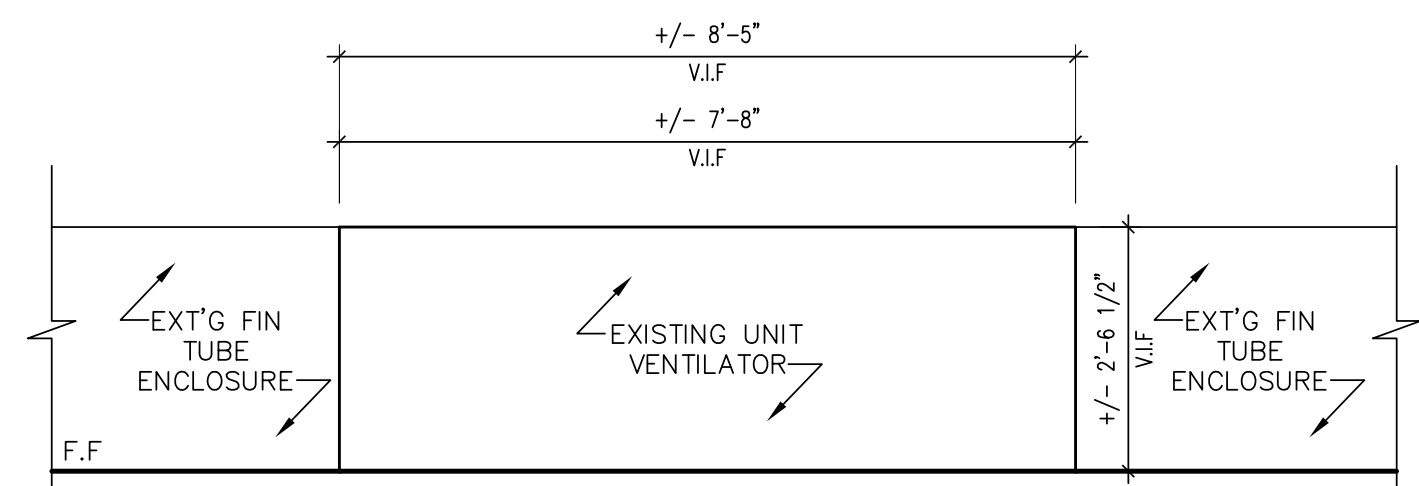
KEY PLAN



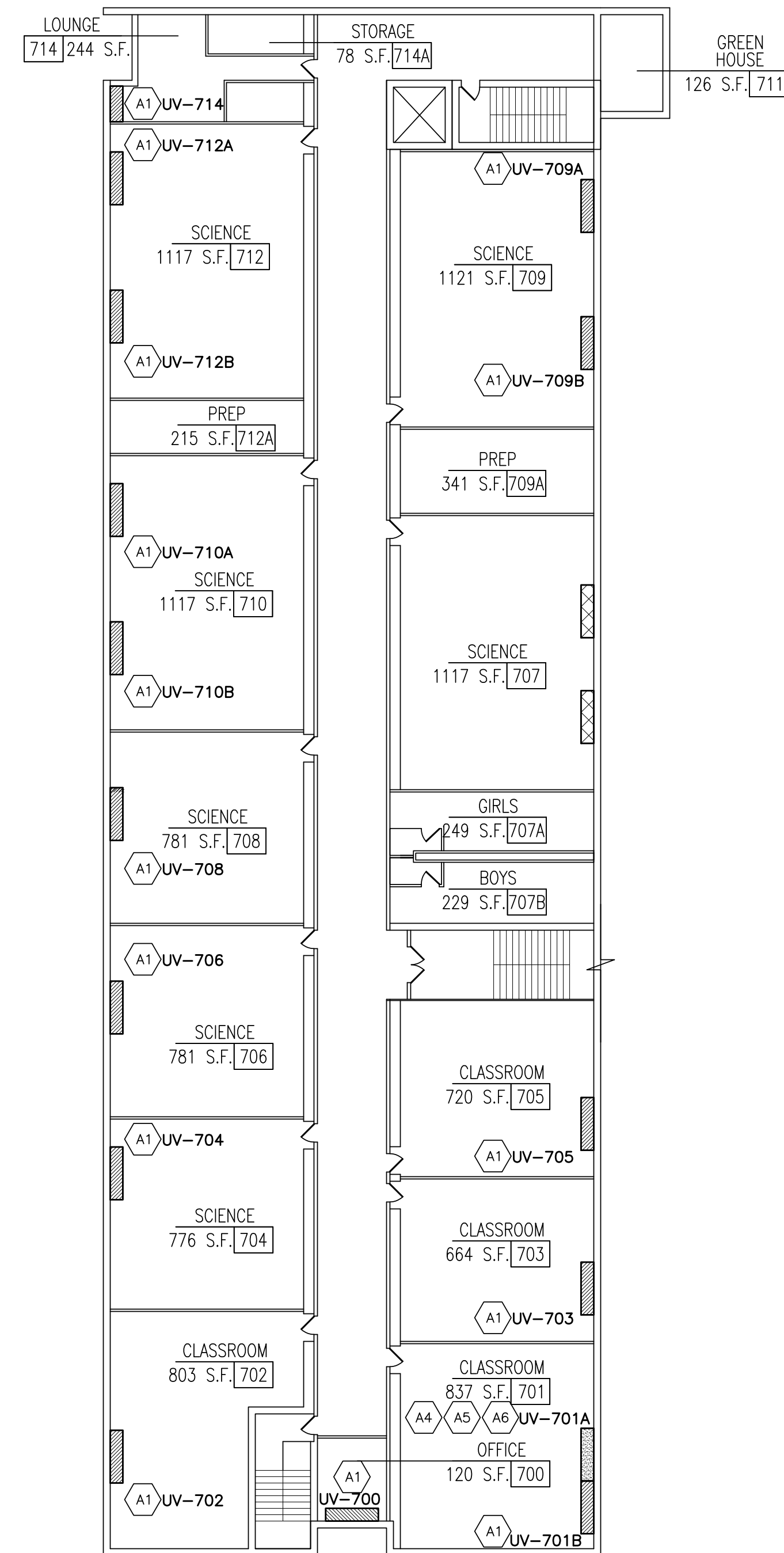
4 NEW 1500 CFM UNIVENT ELEVATION
SCALE: 1/2" = 1'-0"



3 NEW 1000 CFM UNIVENT ELEVATION
SCALE: 1/2" = 1'-0"



2 EXISTING UNIVENT ELEVATION



1 PARTIAL THIRD FLOOR PLAN

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



Drawn by	MAL/JR
Checked by	MS/JC
Project No.	39062G
Scale	AS NOTED
Date	11-10-20

IT IS A VIOLATION OF THE	Mechanical & Electrical Engineer;	GREENMAN PERDSEN, INC 400 BELLA BOULEVARD MONTEBELLO, NY 10601
	Structural Engineer;	— — —

NRHS
ROOFTOP HVAC
AND ANNEX UV
REPLACEMENT

SED# 50-02-01-06-0-016-029

105 Humphreys Rd.
Thaile, NY 13824

TOWN OF CLANSDOWN
COUNTY OF ROCKLAND

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SHILAE

MICHAEL SHILAE ARCHITECTS, L.L.P.

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

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Drawing Title
**NRHS ANNEX
FLOOR PLANS**

Drawing No.
A-111

AREA OF CEILING TILE/GRID REMOVAL AND
REINSTALLATION AS REQUIRED

LEGEND

1. COORDINATE WITH STRUCTURAL DRAWINGS FOR LOCATIONS OF STEEL REINFORCEMENT. CONTRACTOR TO NOTIFY ARCHITECT OF ANY DISCREPANCIES BETWEEN FIELD CONDITIONS AND DRAWINGS PRIOR TO COMMENCEMENT OF WORK.

GENERAL NOTES

A10

CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILING TILES AND GRID TO FACILITATE INSTALLATION OF STEEL AS REQUIRED.

A11

CONTRACTOR MUST REPLACE WITH NEW CEILING TILES AND GRID THAT HAVE BEEN BROKEN OR DAMAGED BY THEIR WORK. CONTRACTOR SHALL NOTIFY OWNER/ARCHITECT OF ANY DAMAGED TILES OR GRID PRIOR TO START OF WORK. CONTRACTOR WILL PROVIDE SUBMITTAL ON CEILING TILE THAT BEST MATCHES CEILING TILE BEING REPLACED IN EACH AREA.

KEY NOTES

6

CEILING TILE DETAIL

SCALE: N.T.S

5

G1

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

4

H2

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

3

E3

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

KEY PLAN

2

E2

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

1

C2 & C3

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

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Drawing Title

CLG REMOVAL &
INSTALLATION PLAN

Drawing No.

A-400

NRHS
ROOFTOP HVAC
AND ANNEX UV
REPLACEMENT

SDP# 50-02-01-06-0-016-029
105 Rensselaer Rd.
Thiells, NY 10844

TOWN OF CLARKSTOWN
COUNTY OF ROCKLAND

GREENMAN
PEDERSEN, INC
MECHANICAL & ELECTRICAL ENGINEERING
MONTICELLO, NY 10801

Mechanical
& Electrical
Engineer.

Structural
Engineer.

Drawn by

JR/MAL

Checked by

MS/JC

Project No.

39062G

Scale

AS NOTED

Date

02-26-21

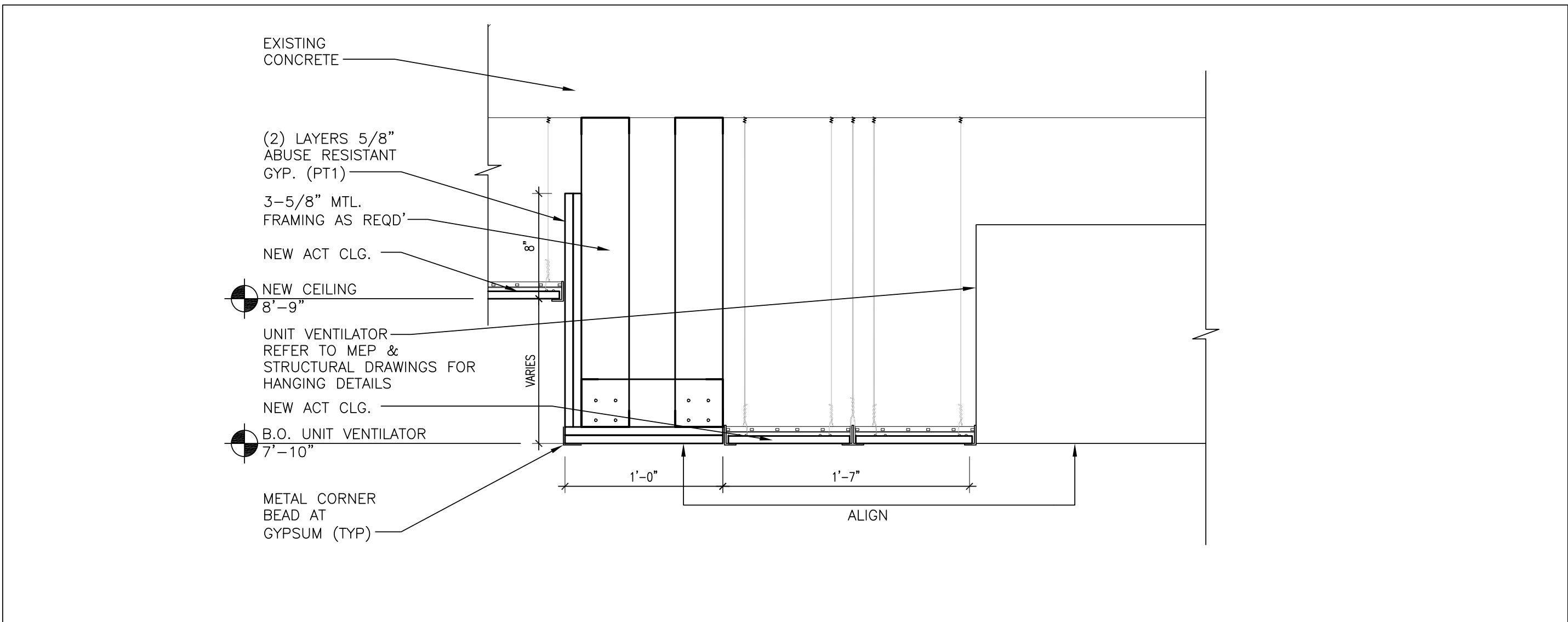
IF THIS BAR DOES NOT
MEASURE 1" THEN DRAWING IS
NOT TO FULL SCALE

0 1/2 1

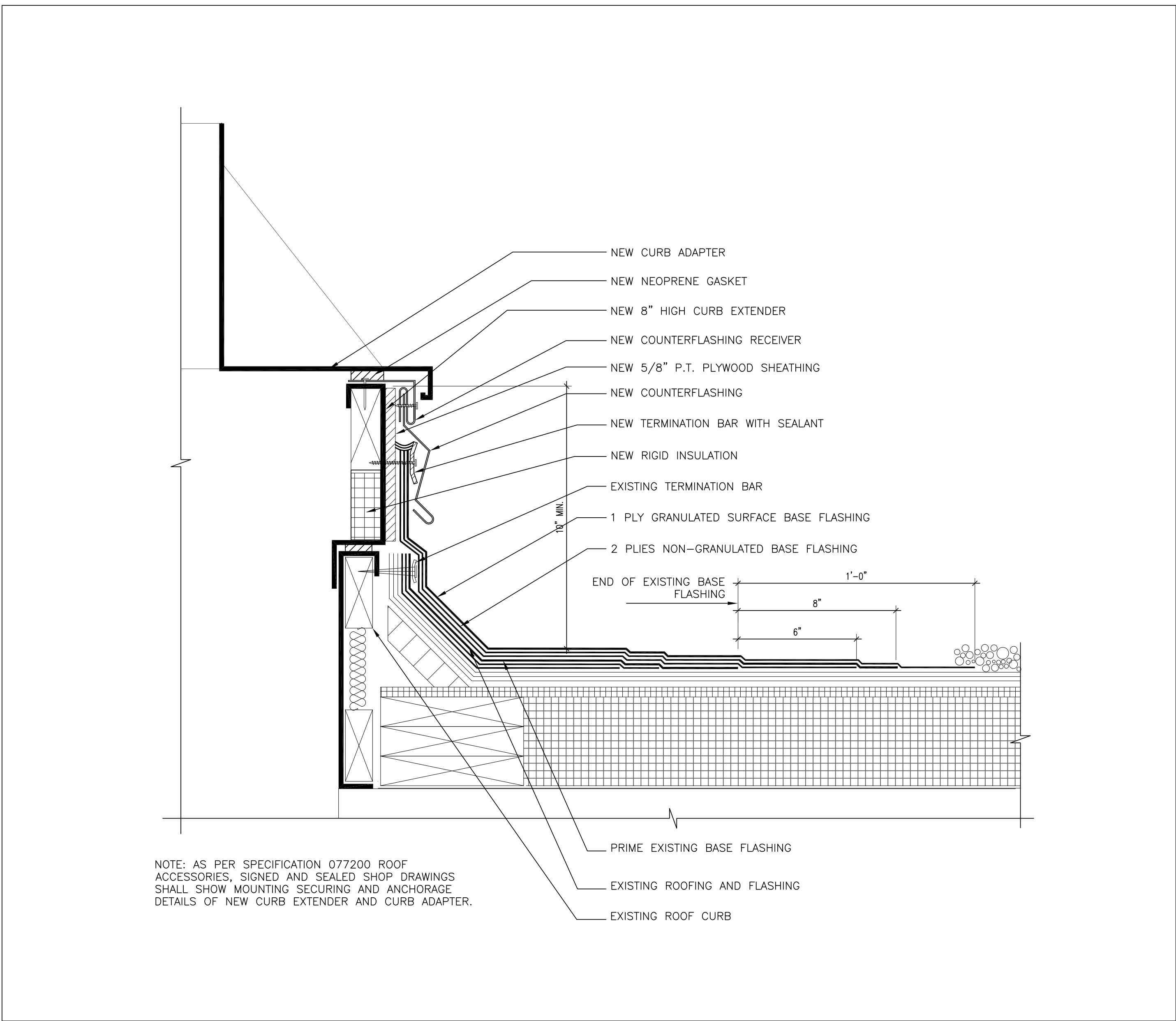
PLAN NORTH

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.

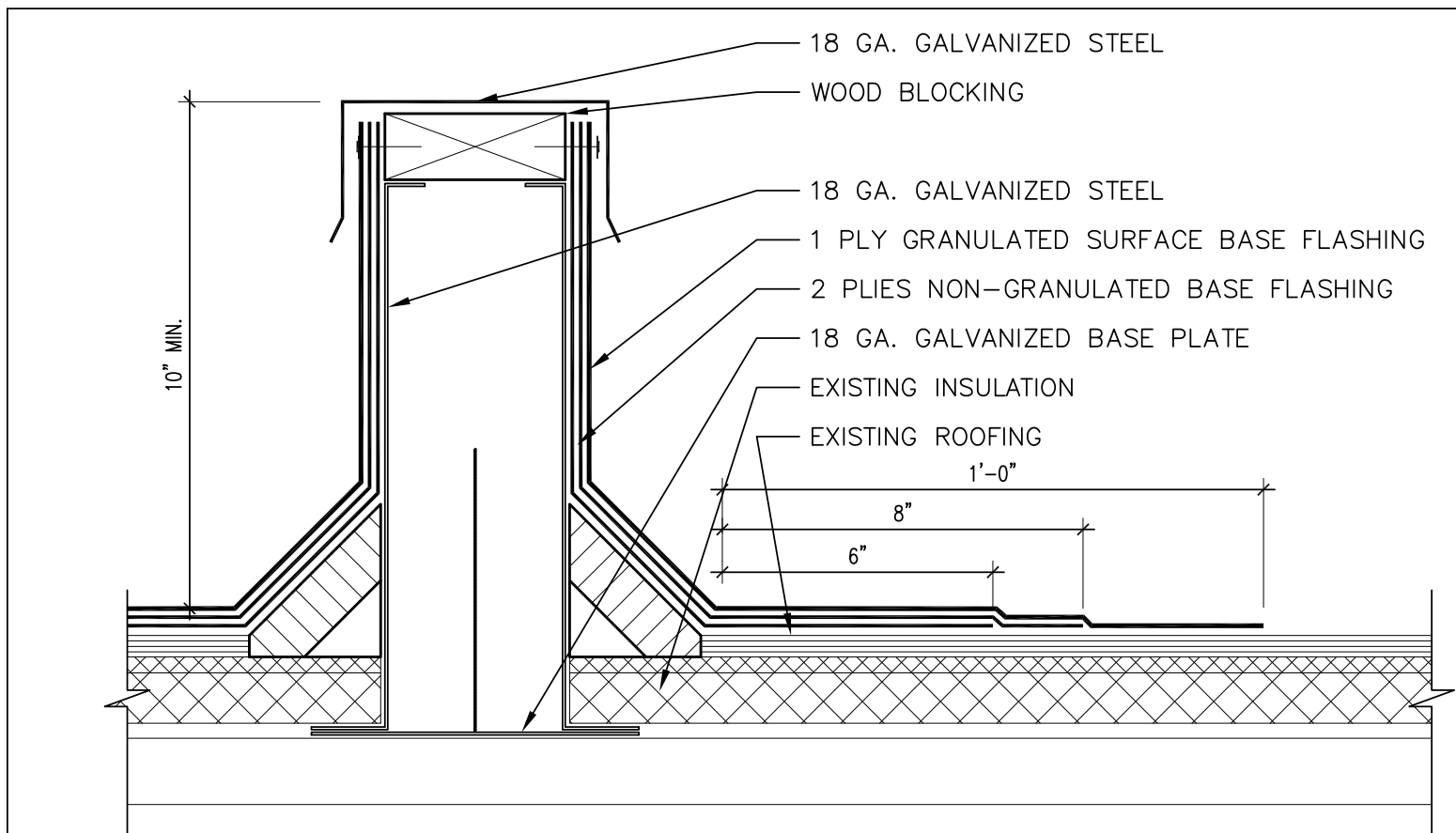
No.	Date	Revisions
3	03-25-21	HVAC & STRUCT REVISIONS



4 UV CEILING DETAIL
SCALE: 1-1/2" = 1'-0"



2 TYPICAL CURB ADAPTER DETAIL
SCALE: 3"=1'-0"



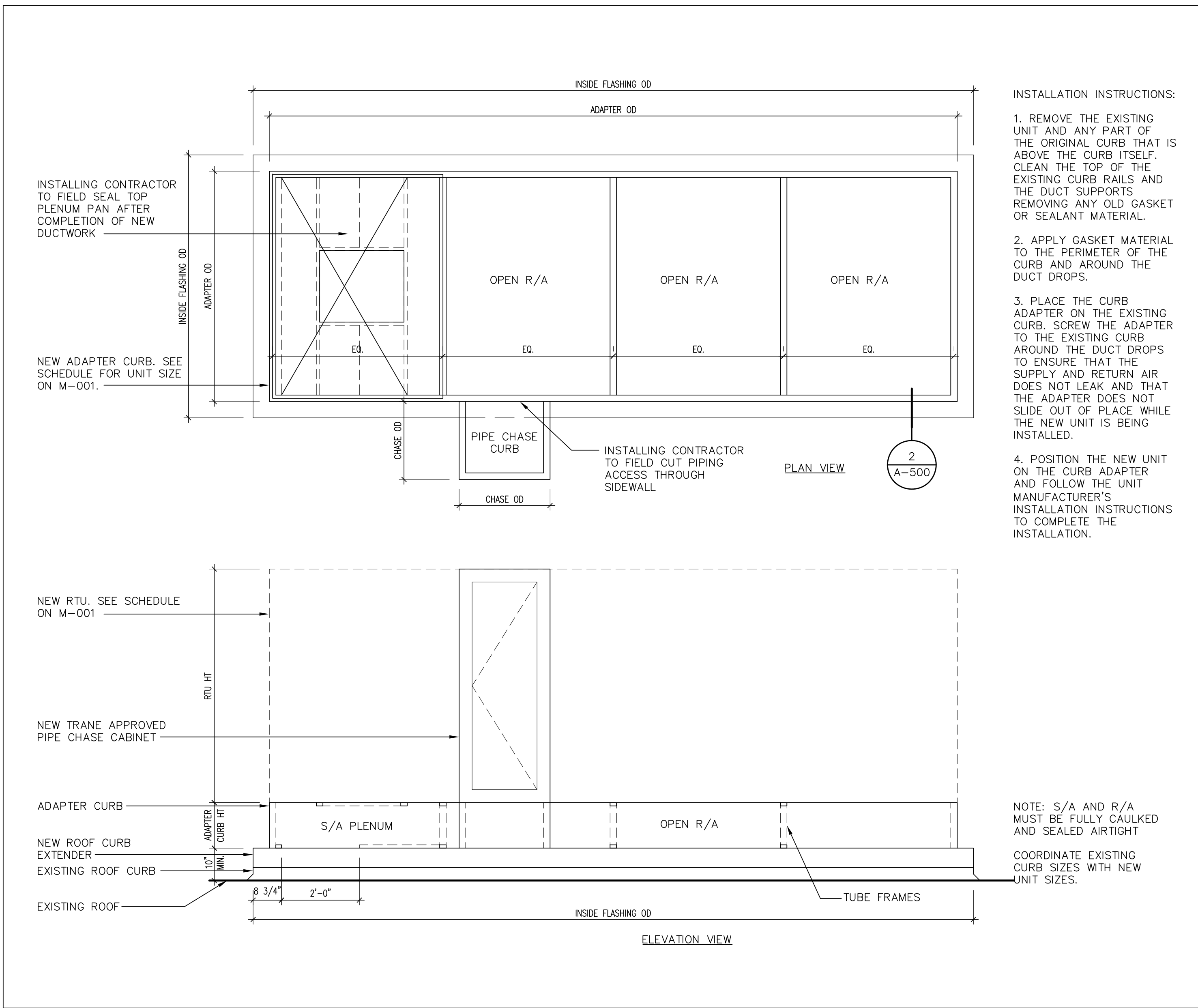
- STANDARD FEATURES:
- 18 GA. GALVANIZED STEEL SHELL, BASE PLATE, AND COUNTER FLASHING
 - FACTORY INSTALLED WOOD NAILER
 - INTERNAL BULKHEAD REINFORCEMENT
 - ALL WELDED CONSTRUCTION

3 NEW PREFAB ROOF CURB DETAIL
SCALE: N.T.S.
ALT. NO. 3, 4 & 5

RTU WEIGHT		
C-2	3,222 LBS	
C-3	3,175 LBS	
E-1	3,302 LBS	
E-2	4,220 LBS	
E-3	3,469 LBS	
E-5	3,304 LBS	
F-2	5,319 LBS	ALT NO. 2-3
H-2	3,623 LBS	
G-1	3,626 LBS	ALT NO. 2-1
K-1	2,766 LBS	ALT NO. 2-2

NOTE: DESIGN EXTENSION CURB AND ADAPTER CURB TO TOLERATE WEIGHT OF NEW RTUS.

RTU WEIGHT



1 TYPICAL ADAPTER CURB DETAIL
SCALE: 1/2"=1'-0"

No.	Date	Revisions
1	11-10-20	BIDDING DOCUMENTS

Drawn by	MAL/ML
Checked by	MS/JC
Project No.	39062G
Scale	AS NOTED
Date	11-13-19

GREENMAN PEDERSEN, INC MECHANICAL & ELECTRICAL ENGINEER MONTELEONE, NY 10901	Structural Engineer:
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NRHS ROOFTOP HVAC AND ANNEX UV REPLACEMENT SER# 50-08-01-06-0-018-029 108 HANCOCK RD. THURSDAY, NY 10984 TOWN OF CLARKSTOWN COUNTY OF ROCKLAND

MSA MICHAEL SHILALE ARCHITECTS, L.L.P. 140 Park Avenue New York, NY 10055 Tel 945-065000 www.mshale.com

DETAILS	A-500
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GENERAL NOTES:

- ALL WORK SHALL BE GOVERNED BY THE TERMS AND CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, THE STRUCTURES HAVE BEEN DESIGNED IN COMPLIANCE WITH THE REQUIREMENTS OF THE NEW YORK STATE BUILDING CODE, 2016 EDITION. (2015 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 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 BE RESPONSIBLE TO THE SCHOOL DISTRICT 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 ARCHITECT AT NO COST TO THE SCHOOL DISTRICT.
- 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.
- WELDING SHALL ONLY BE PERFORMED BY NYS LICENSED WELDERS. CONTRACTOR IS TO SUBMIT WELDERS CERTIFICATION PRIOR TO START OF WORK.
- WHEN OPEN FLAME OR SPARK-PRODUCING TOOLS AND EQUIPMENT SUCH AS WELDING RODS ARE BEING USED, THE CONTRACTOR SHALL PROVIDE FIRE GUARDS TO MAINTAIN A FIRE WATCH OVER THE OPERATION OF THESE ITEMS AT ALL TIMES DURING THE USE AND UNTIL ALL MATERIALS HAVE COOLED SUFFICIENTLY TO NO LONGER CONSTITUTE A FIRE HAZARD.
- SUBMIT SHOP DRAWINGS.

STRUCTURAL STEEL NOTES:

- 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 TUBES TO BE ASTM A500, GRADE B. PIPES TO BE A53, GRADE B. CHANNELS, ANGLES & MISC. STEEL TO BE ASTM A36.
- 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.

DESIGN CRITERIA:

- DEAD LOAD: 29 PSF

ROOF BUILT-UP5 PSF

METAL DECK1 PSF

PERLITE13 PSF

SOLAR PANELS10 PSF

UNITS WEIGHT (SEE BELOW)

C29835 LBS

C39350 LBS

E16482 LBS

E29435 LBS

E2 ALT11521 LBS

E39194 LBS

E56727 LBS

E5 ALT7471 LBS

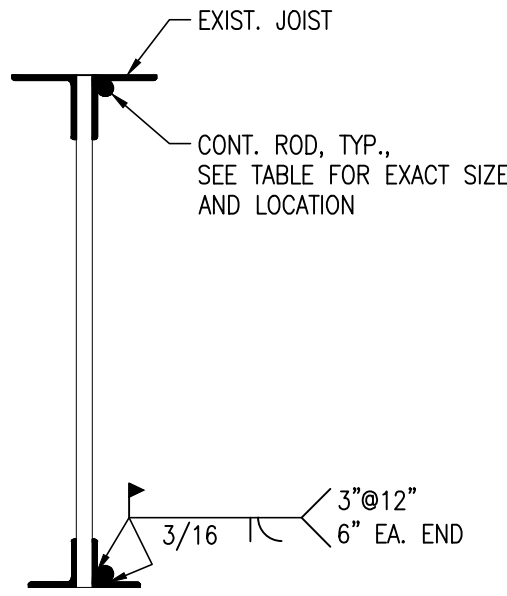
F211475 LBS

G16669 LBS

H26589 LBS

H2 ALT7618 LBS

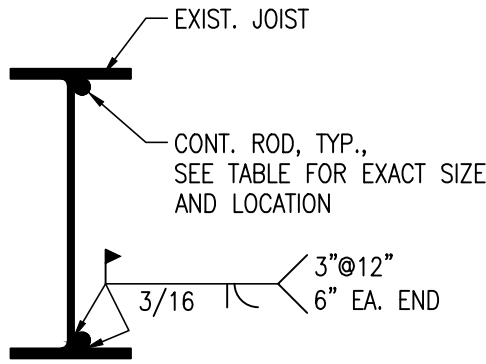
K18619 LBS
- GROUND SNOW LOAD: 30 PSF
SNOW DRIFT LOAD IS ADDED TO THE CALCULATIONS AS PER CODE REQUIREMENTS
- ULTIMATE WIND SPEED: 122 MPH



JOIST SIZE	UNITS SUPPORTED	# OF RODS	ROD DIA. (IN)	REMARKS
36LJ12	E2	2	3/4	SEE NOTES 1 AND 2
36LJ12	E3	2	3/4	SEE NOTES 1 AND 2
36LJ09	H2	2	3/4	SEE NOTES 1 AND 2
36LJ15	H2	2	3/4	SEE NOTES 1 AND 2

NOTE:
1. START CONTINUOUS RODS AT 12" DISTANCE FROM NEAR END SUPPORT AND END AT 15' BEYOND EDGE OF UNIT. SEE DETAIL 3 ON THIS SHEET.
2. REINFORCING RODS SHALL BE CONTINUOUS AND NOT INTERRUPTED.

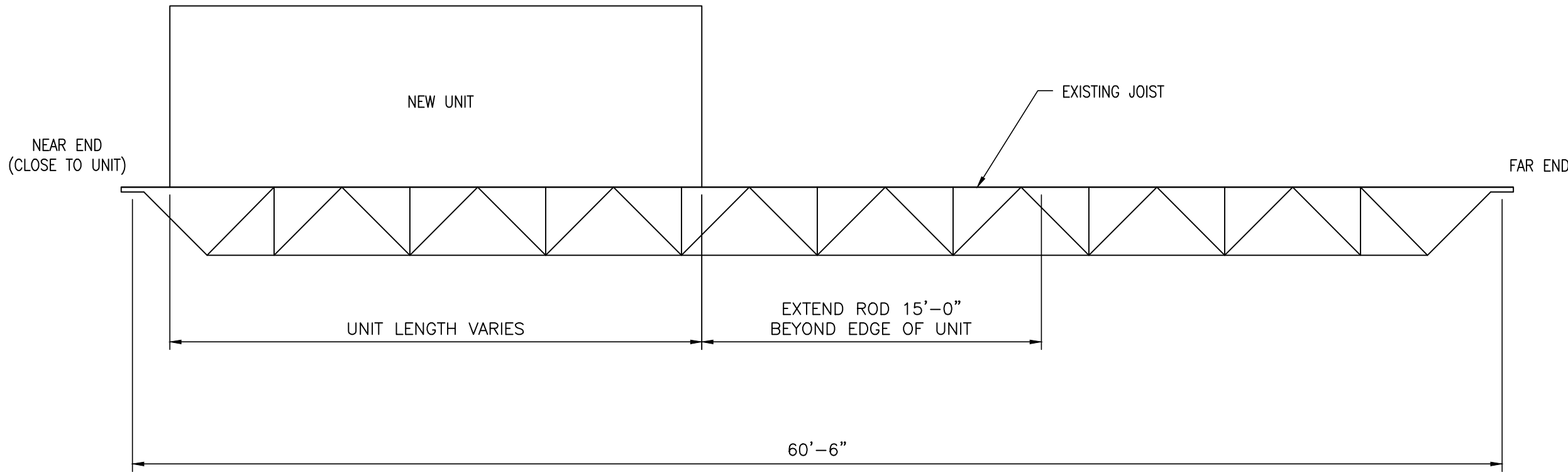
1 TYPICAL EXISTING JOIST REINFORCEMENT DETAIL
SCALE: N.T.S.



BEAM SIZE	UNITS SUPPORTED	# OF RODS	ROD DIA. (IN)	REMARKS
18B35	C1, C2 AND C3	2	1 1/2	SEE NOTES 1 AND 2
16WF36	E2	2	3/4	SEE NOTES 1 AND 2
14B22	G1	2	1 1/2	SEE NOTES 1 AND 2
16WF36	H2	2	1	SEE NOTES 1 AND 2

NOTE:
1. START AND END CONTINUOUS RODS AT A 12" DISTANCE FROM BEAM SUPPORTS.
2. REINFORCING RODS SHALL BE CONTINUOUS AND NOT INTERRUPTED.

2 TYPICAL EXISTING STEEL BEAM REINFORCEMENT DETAIL
SCALE: N.T.S.



3 TYPICAL EXISTING JOIST ELEVATION REINFORCEMENT DETAIL
SCALE: N.T.S.



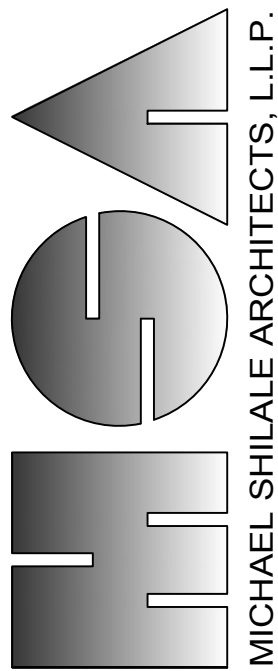
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Drawing Title

GENERAL NOTES &
TYPICAL DETAILS

Drawing No.

S-001



MICHAEL SHILALE ARCHITECTS, L.L.P.
140 Park Avenue
New City, NY 10958
Tel 845-708-9200
www.shilale.com

**NRHS
ROOFTOP HVAC
AND ANNEX UV
REPLACEMENT**

SEP# 50-02-01-06-0-016-029
108 Hannacroia Rd.
Tuckahoe, NY 10687
TOWN OF CLARKSTOWN
COUNTY OF ROCKLAND

**GREENMAN
PEDERSEN, INC**
1000
MONTICELLO, NY 10801

Mechanical
& Electrical
Engineer:

Structural
Engineer:

Drawn by
YAY

Checked by
JCC

Project No.
39062G

Scale
AS NOTED

Date
11-10-20

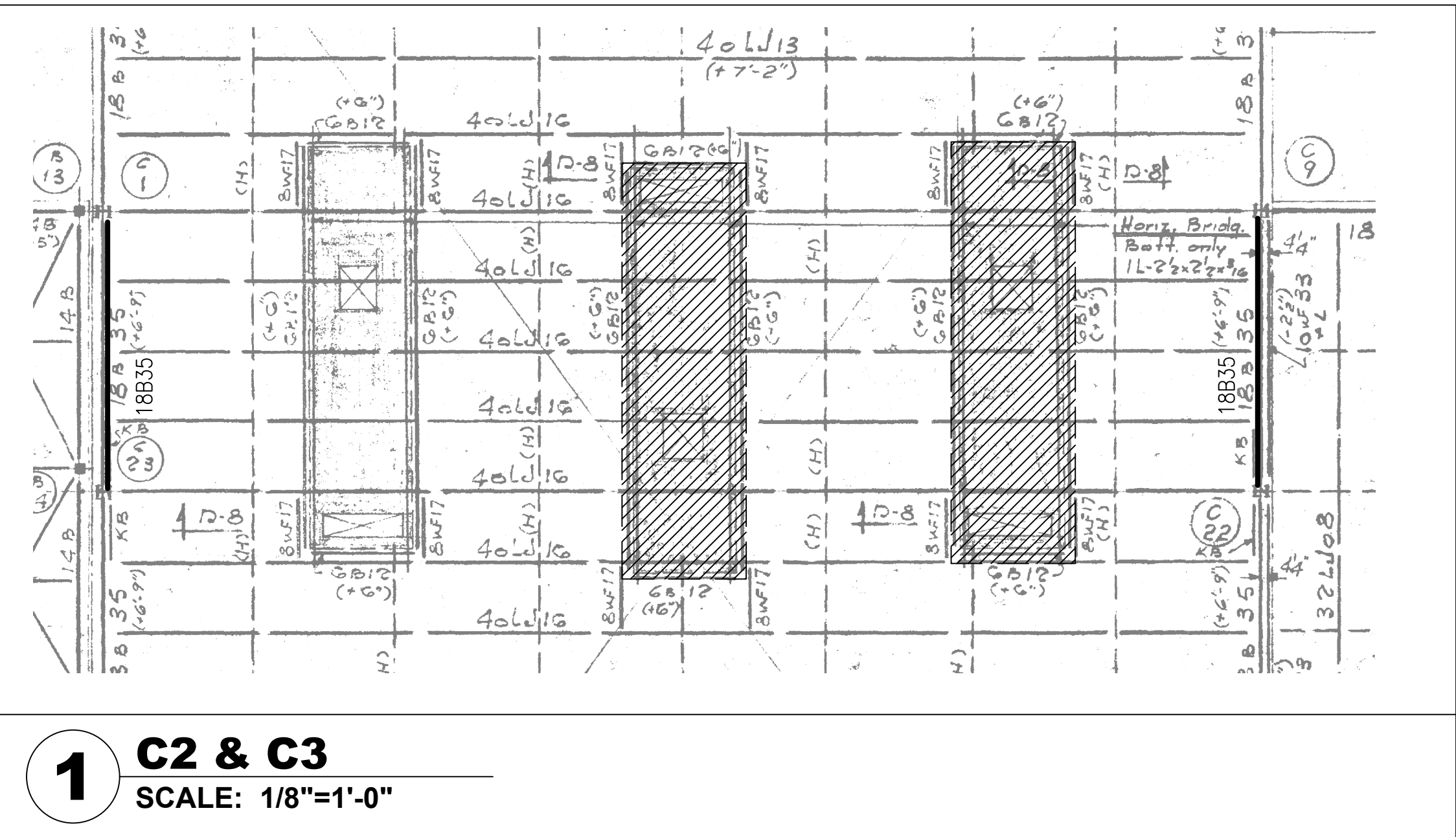
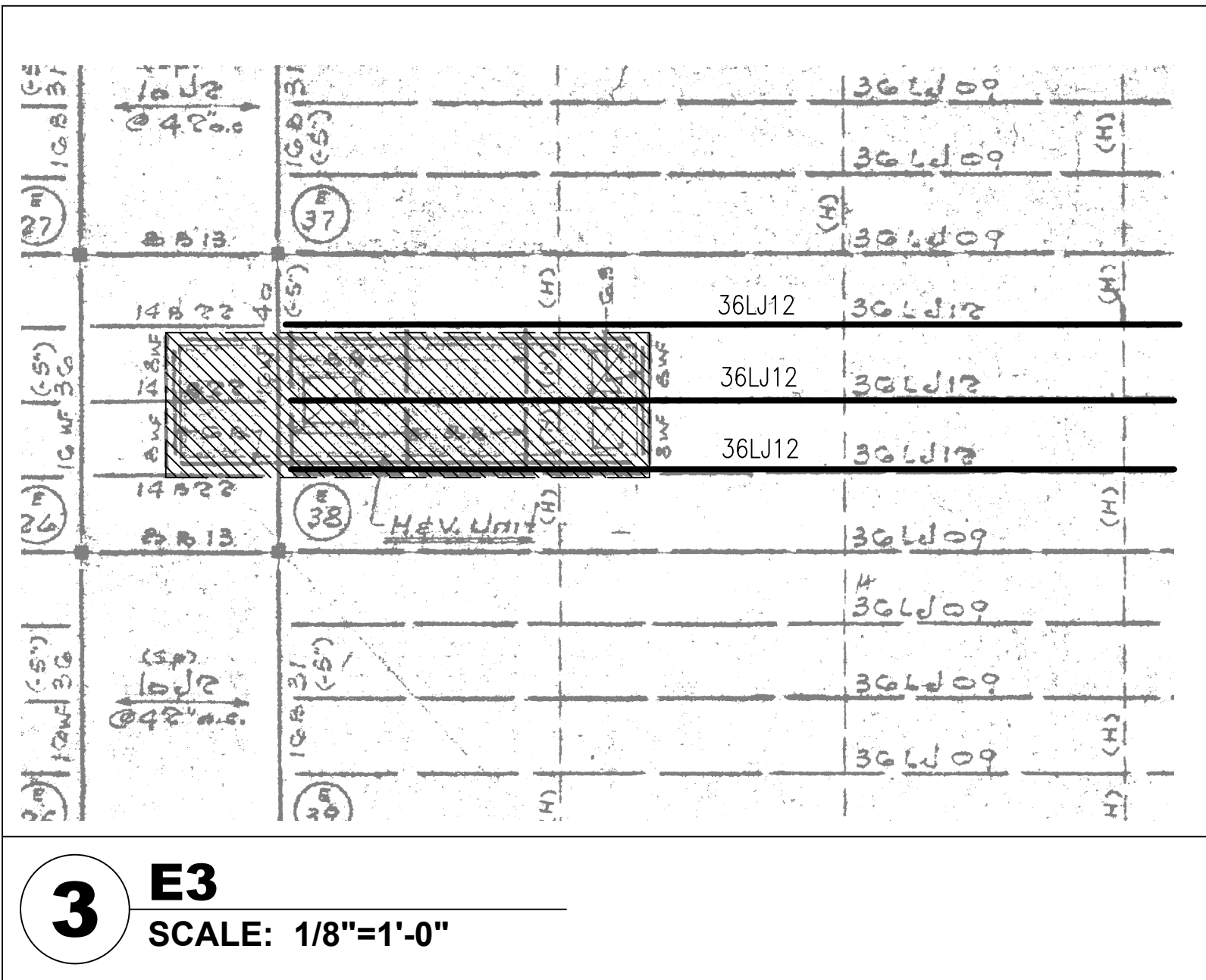
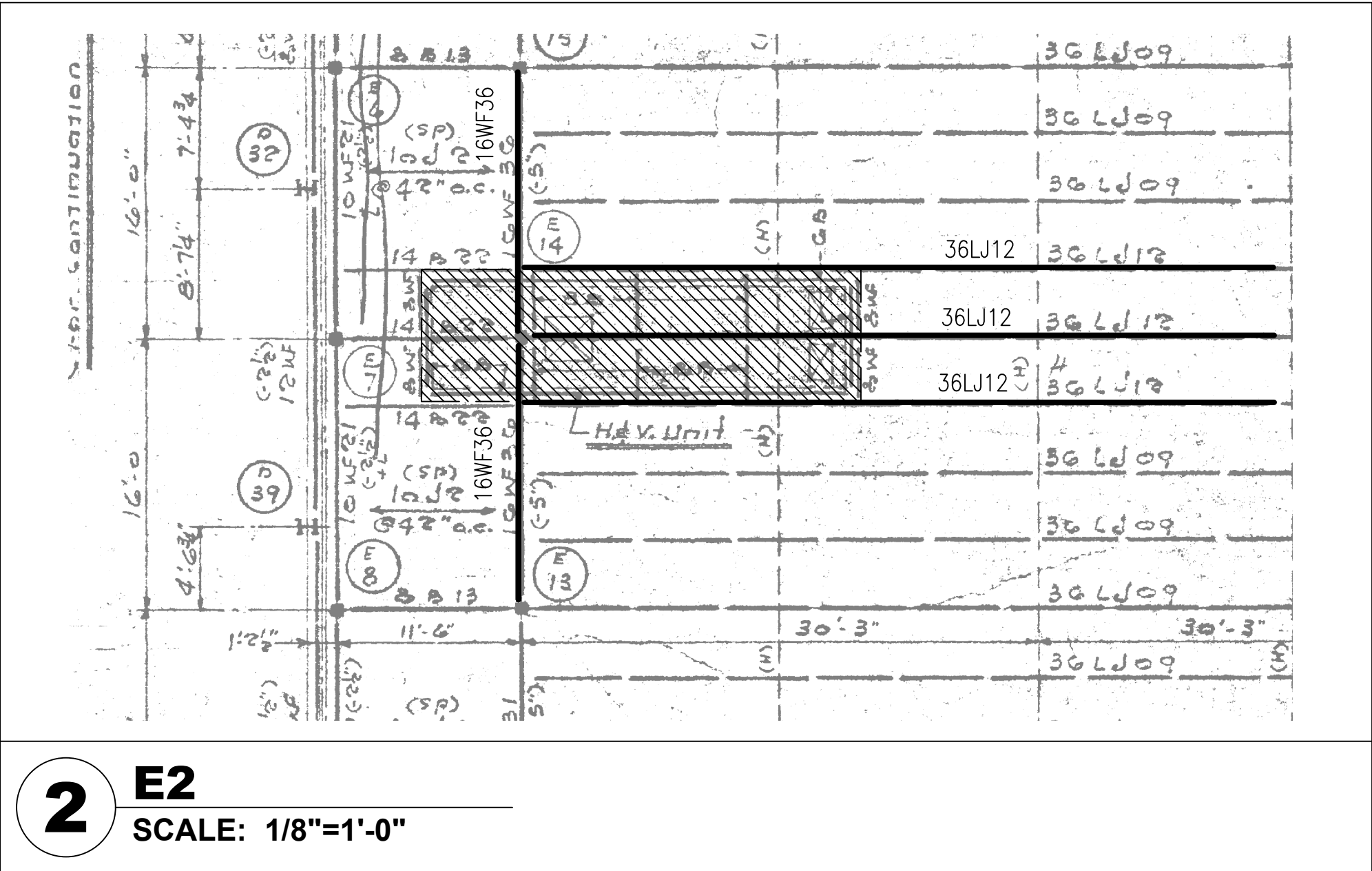
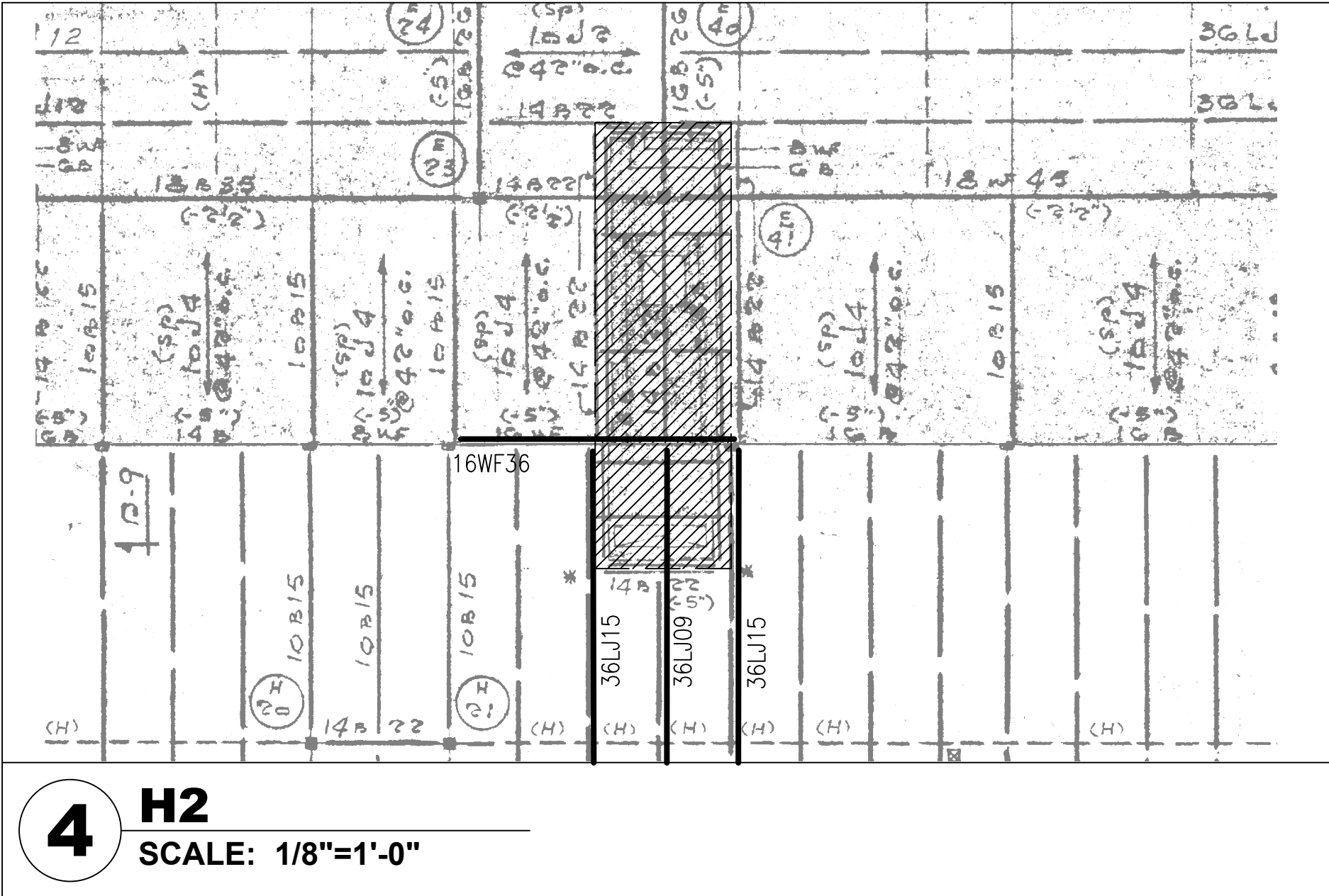
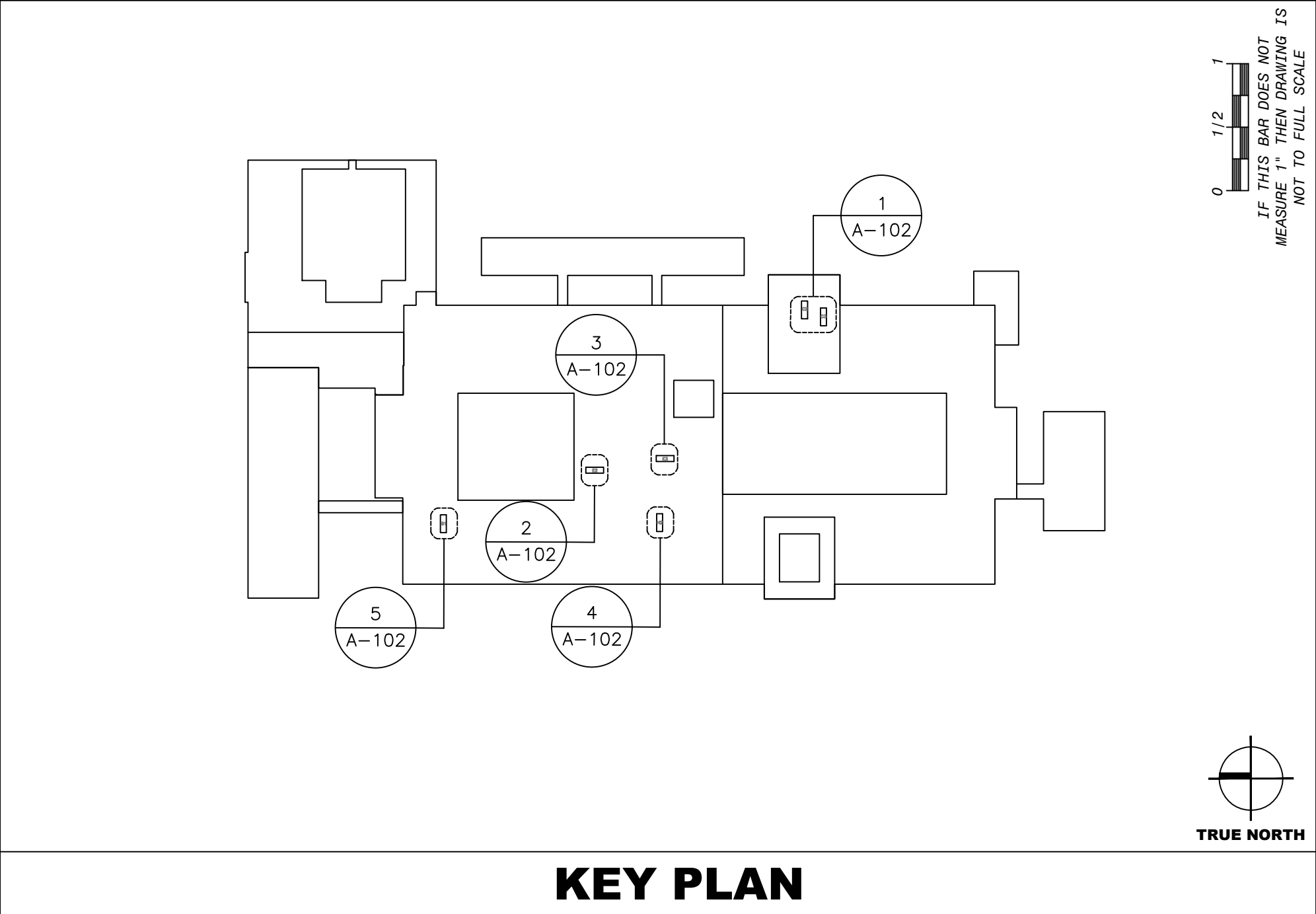
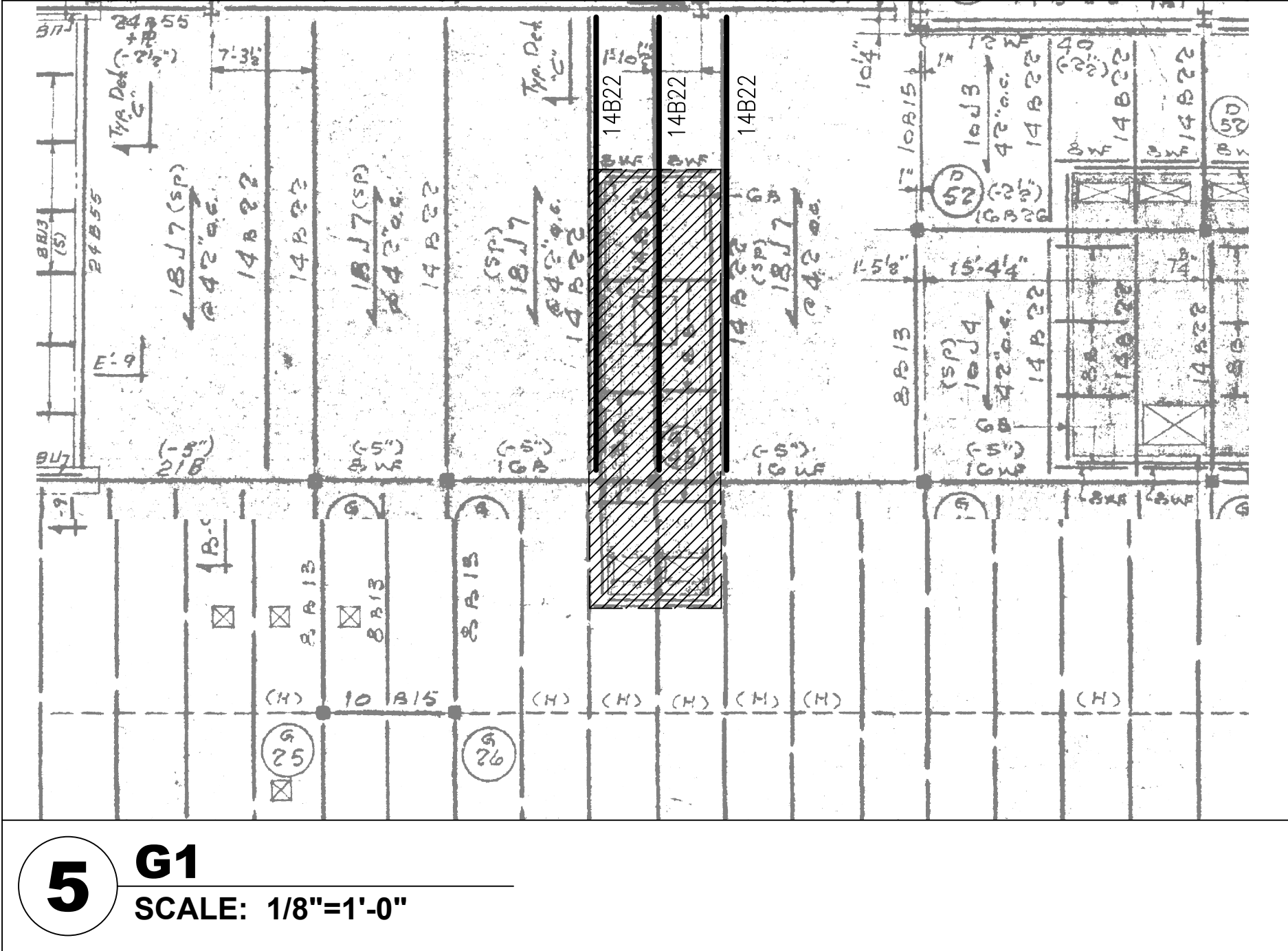
No.	Date	Revisions
3	03-25-21	HVAC & STRUC REVISIONS

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.

1. THIS DRAWING IS SHOWN TO INDICATE THE STRUCTURAL MEMBERS THAT REQUIRE REINFORCEMENT. SEE NOTES AND DETAILS ON DRAWING S-001 FOR AN ACCURATE LENGTH OF ALL REINFORCEMENT.

2. CONTRACTOR SHALL BE RESPONSIBLE TO FIELD MEASURE EXISTING CONDITIONS.

NOTES



Drawn by	WM
Checked by	MS/JC
Project No.	39062G
Scale	AS NOTED
Date	02-12-21

Mechanical & Electrical Engineer:	GREENMAN PEDERSEN, INC. 100 HANOVER RD. THIRTYONE, NY 10984
Structural Engineer:	- - -

NRHS
ROOFTOP HVAC
AND ANNEX UV
REPLACEMENT

SEP# 50-05-01-06-0-010-029
100 HANOVER RD.
THIRTYONE, NY 10984

TOWN OF CLANDON
COUNTY OF ROCKLAND

MSA

MICHAEL SHILALE ARCHITECTS, L.L.P.
140 Park Avenue
New City, NY 10956
Tel 845-708-9200
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FLOOR PLAN

Drawing No.

S-002

6. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES INVOLVING EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.
17. THE SCOPE OF WORK IS TO REPLACE THE EXISTING AIR HANDLING UNITS(AHUs) ON THE ROOF. THE EXISTING AIR HANDLING UNITS ARE CUSTOM MULTI-ZONE OUTDOOR UNITS. EXISTING AHUs SHALL BE REPLACED WITH A TYPICAL STANDARD ROOFTOP AHU.
18. IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO PROVIDE CONTROL WIRING TO THE EXISTING BMS SYSTEM BY SIEMENS. MECHANICAL CONTRACTOR TO FURNISH THE SERVICES OF CONTROL CONTRACTOR TO PREPARE CONTROL WIRING DIAGRAMS.
19. CONTRACTOR SHALL PROVIDE AN ADAPTER CURB AND FACTORY ASSEMBLED PIPE CABINET FOR EACH AHU BEING REPLACED. DURING INSTALLATION OF AHU, REMOVE EXISTING GRAVEL FOR NEW BASE FLASHING. NEW BASE FLASHING TO BE INSTALLED OVER EXISTING ROOFING AND EXISTING TERMINATION BARS AS PER 2/A-500.
20. PERFORM COMMISSIONING OF THE INSTALLED AIR HANDLING EQUIPMENT AS PER 2020 NYS IECC C408. SEE SPEC 019113. SERVICES ARE TO BE PERFORMED BY A THIRD PARTY APPROVED AGENCY, SEE ALLOWANCE #3.
21. FOR SEQUENCE OF OPERATIONS, SEE SPECIFICATION SECTION 230993.
- | UNIT TAG | EXISTING CURB DIMENSIONS L X W | NEW UNIT DIMENSIONS L X W | CHW & DX COIL UNIT DIMENSIONS L X W | |
|----------|--------------------------------|---------------------------|-------------------------------------|--------|
| C2 | 222.0" X 95.0" | 280.0" X 94.0" | - | |
| C3 | 221.5" X 78.5" | 280.0" X 94.0" | - | |
| E1 | 221.5" X 79.5" | 222.0" X 94.0" | - | |
| E2 | 222.0" X 79.25" | 280.0" X 94.0" | 320.0" X 94.0" | ALT.#3 |
| E3 | 222.5" X 78.5" | 280.0" X 94.0" | - | |
| E5 | 221.0" X 79.0" | 222.0" X 94.0" | 262.0" X 94.0" | ALT.#4 |
| F2 | 222.5" X 133.5" | 320.0" X 94.0" | - | |
| H2 | 222.0" X 79.5" | 222.0" X 94.0" | 262.0" X 94.0" | ALT.#5 |
| G1 | 222.0" X 78.5" | 222.0" X 94.0" | - | |
| K1 | 221.25" X 133.0" | 264.0" X 99.0" | - | |
- REFERENCE TABLE 1 – UNIT DIMENSIONS
- NOTE: GC RESPONSIBLE TO PROVIDE ADAPTER CURB FOR NEW UNIT. EXISTING CURB DIMENSIONS AND DIMENSIONS OF NEW UNIT SHOWN FOR REFERENCE ONLY. CONTRACTOR IS RESPONSIBLE TO VERIFY IN FIELD EXACT DIMENSIONS FOR PREPARATION OF ADAPTER CURB. SEE ARCH DETAILS.
- | UNIT TAG | CIRCUIT | CIRCUIT DESCRIPTION | VOLTAGE/PHASE/HZ | MCA(A) | Max Fuse Size (A) |
|----------|---------|---------------------|------------------|--------|-------------------|
| C2, C3 | 1 | Supply & Return Fan | 460/3/60 | 16.1 | 20 |
| E1 | 1 | Supply & Return Fan | 460/3/60 | 14.5 | 20 |
| E2 | 1 | Supply & Return Fan | 460/3/60 | 26.4 | 35 |
| E3 | 1 | Supply & Return Fan | 460/3/60 | 15.5 | 20 |
| E5 | 1 | Supply & Return Fan | 460/3/60 | 13.1 | 15 |
| F2 | 1 | Supply & Return Fan | 460/3/60 | 49.9 | 70 |
| G1, H2 | 1 | Supply & Return Fan | 460/3/60 | 14.5 | 20 |
| K1 | 1 | Supply & Return Fan | 460/3/60 | 23.4 | 40 |
- REFERENCE TABLE 2 – POWER/CIRCUIT INFORMATION
- NOTE: POWER/CIRCUIT INFORMATION OF NEW UNITS TO BE COORDINATED WITH ELECTRICAL CONTRACTOR. SHOWN HERE FOR REFERENCE ONLY.

ROOFTOP AIR HANDLING UNIT SPECIFICATIONS																				
Unit												Energy Recovery								
TAG	Weight (lbs)	Model	Supply Fan				Return/Exhaust Fan			Filters		Fan	Recovered Capacity			Mixed Air LAT			Effective	
			Airflow (CFM)	ESP (inH2O)	TSP (inH2O)	Motor Size (HP)	Airflow (CFM)	ESP (inH2O)	Motor Size (HP)	Face Area (ft²)	Efficiency	Outside Airflow (CFM)	Cooling (MBH)	Heating (MBH)	Cooling DB (°F)	Heating DB (°F)	Wheel APD (inH2O)	Total Cooling	Sensible Cooling	
C-2	8385	RDS800C	5000	1.00	3.13	5.0	5000	1.00	3.0	50.0	MERV 14	2800	109.29	210.18	76.9	63.8	0.45	81.76%	83.09%	
C-3	8255	RDS800C	5000	1.00	2.81	5.0	5000	1.00	3.0	50.0	MERV 14	2800	109.29	210.18	76.9	63.8	0.45	81.76%	83.09%	
E-1	5842	RDS800C	4860	1.00	2.42	5.0	4860	1.00	3.0	50.0	MERV 14	1400	-	-	-	-	-	-	-	
E-2	8235	RDS800C	8520	1.00	3.51	10.0	8520	1.00	5.0	50.0	MERV 14	2925	113.36	218.27	76.2	66.1	0.47	81.18%	82.58%	
E-3	8244	RDS800C	5880	1.00	2.94	5.0	5880	1.00	3.0	50.0	MERV 14	1850	76.25	145.26	75.8	67.3	0.30	86.34%	87.11%	
E-5	5727	RDS800C	5100	0.75	2.33	5.0	5100	1.00	2.0	50.0	MERV 14	850	-	-	-	-	-	-	-	
F-2	8975	RDS800C	12300	1.00	4.53	20.0	12300	1.00	15.0	50.0	MERV 14	4400	156.87	306.35	76.7	64.6	0.70	74.68%	76.83%	
H-2	5589	RDS800C	6710	1.00	2.52	5.0	6710	1.00	3.0	50.0	MERV 14	505	-	-	-	-	-	-	-	
G-1	5669	RDS800C	6210	1.00	2.65	5.0	6210	1.00	3.0	50.0	MERV 14	1150	-	-	-	-	-	-	-	
K-1	6669	RAH047C	14900	1.25	2.77	15.0	-	-	-	63.3	MERV 14	4450	-	-	-	-	-	-	-	

- UNIT TO BE DELIVERED VIA CRANES, ALL NECESSARY PERMITS FOR RIGGING REQUIRED. FURNISH AND INSTALL FUSIBLE DISCONNECT SWITCHES (FIELD INSTALL). PROVIDE FACTORY ZONE AND TEMPERATURE SENSORS FOR PROPER INSTALLATION AND COORDINATION WITH UNIT CONTROLS. PROVIDE BACNET COMPATIBLE CONTROLS FOR INTERCONNECTION TO EXISTING SIEMENS BMS SYSTEM. FULL DDC CONTROL OF ENERGY WHEELS (WHERE APPLICABLE) INCLUDING FROST PROTECTION VIA ENERGY WHEEL VFD SPEED CONTROL, 100% ECONOMIZER MODE VIA ENERGY WHEEL BYPASS DAMPERS

1 SCHEDULES & NOTES

SCALE: N.T.S.

ROOFTOP AIR HANDLING UNIT SCHEDULE																											UNIT SIZE BASED ON DAIKIN																
Unit												Energy Recovery								Cooling Coil - CHW								Cooling Coil - DX R410A As per Alternate 3, 4, & 5			Heating Coil - HW												
TAG	Weight (lbs)	Model	Supply Fan				Return/Exhaust Fan			Filters		Fan	Recovered Capacity		Mixed Air LAT			Effectiveness				EAT		LAT		EWT (°F)	LWT (°F)	GPM	FPI	Rows	Total Capacity (MBH)	Sensible Capacity (MBH)	FPI	Rows	Total Capacity (MBH)	FPI	Rows	EDB (°F)	LDB (°F)	EWT (°F)	LWT (°F)	GPM	Total Capacity (MBH)
			Airflow (CFM)	ESP (inH2O)	TSP (inH2O)	Motor Size (HP)	Airflow (CFM)	ESP (inH2O)	Motor Size (HP)	Face Area (ft²)	Efficiency		Outside Airflow (CFM)	Cooling (MBH)	Heating (MBH)	Cooling DB (°F)		Heating DB (°F)	Wheel APD (inH2O)	Total Cooling	Sensible Cooling	Total Heating	Sensible Heating	EDB (°F)	EWB (°F)																		
C-2	8385	RDS800C	5000	1.00	3.13	5.0	5000	1.00	3.0	50.0	MERV 14	2800	109.29	210.18	76.9	63.8	0.45	81.76%	83.09%	83.82%	84.23%	76.9	63.5	54.1	53.9	45.0	59.1	20.9	11	8	140.98	124.46	-	-	-	14	1	63.8	95.7	180.0	139.9	8.7	174.23
C-3	8255	RDS800C	5000	1.00	2.81	5.0	5000	1.00	3.0	50.0	MERV 14	2800	109.29	210.18	76.9	63.8	0.45	81.76%	83.09%	83.82%	84.23%	76.9	63.5	56.4	55.3	45.0	57.3	20.9	6	8	122.93	112.29	-	-	-	6	1	63.8	81.8	180.0	139.9	4.9	98.17
E-1	5842	RDS800C	4860	1.00	2.42	5.0	4860	1.00	3.0	50.0	MERV 14	1400	-	-	-	-	-	-	-	-	-	78.4	65.5	55.3	55.1	45.0	59.0	23.0	10	8	154.88	122.95	-	-	-	6	1	53.9	74.6	180.0	140.0	5.5	109.89
E-2	8235	RDS800C	8520	1.00	3.51	10.0	8520	1.00	5.0	50.0	MERV 14	2925	113.36	218.27	76.2	66.1	0.47	81.18%	82.58%	83.32%	83.76%	76.2	63.0	59.3	56.8	45.0	58.7	24.0	13	5	157.3	157.3	6	4	225.98	6	1	66.1	79.0	180.0	140.0	6.0	119.95
E-3	8244	RDS800C	5880	1.00	2.94	5.0	5880	1.00	3.0	50.0	MERV 14	1850	76.25	145.26	75.8	67.3	0.30	86.34%	87.11%	87.67%	87.92%	75.8	62.6	56.8	55.6	45.0	59.0	18.2	13	6	122.35	122.04	-	-	-	6	1	67.3	82.9	180.0	139.8	5.0	100.47
E-5	5727	RDS800C	5100	0.75	2.33	5.0	5100	1.00	2.0	50.0	MERV 14	850	-	-	-	-	-	-	-	-	-	79.0	66.1	58.0	57.7	45.0	58.9	20.3	12	6	134.91	117.37	6	4	166.7	14	1	40.3	77.5	180.0	139.9	10.4	207.73
F-2	8975	RDS800C	12300	1.00	4.53	20.0	12300	1.00	15.0	50.0	MERV 14	4400	156.87	306.35	76.7	64.6	0.70	74.68%	76.83%	77.74%	78.41%	76.7	63.3	55.7	55.1	45.0	59.0	45.0	12	6	300.82	282.06	-	-	-	9	2	64.6	104.3	180.0	140.0	26.7	533.75
H-2	5589	RDS800C	6710	1.00	2.52	5.0	6710	1.00	3.0	50.0	MERV 14	505	-	-	-	-	-	-	-	-	-	78.8	65.8	63.5	60.5	45.0	59.2	16.7	7	5	113.26	112.31	6	4	209.4	9	1	65.1	82.9	180.0	139.8	6.5	130.66
G-1	5669	RDS800C	6210	1.00	2.65	5.0	6210	1.00	3.0	50.0	MERV 14	1150	-	-	-	-	-	-	-	-	-	79.7	66.5	59.1	58.3	45.0	58.8	24.7	8	6	163.27	141.18	-	-	-	8	1	59.3	80.1	180.0	140.0		

- UNIT TO BE DELIVERED VIA CRANES, ALL NECESSARY PERMITS FOR RIGGING REQUIRED. FURNISH AND INSTALL FUSIBLE DISCONNECT SWITCHES (FIELD INSTALL). PROVIDE FACTORY ZONE AND TEMPERATURE SENSORS FOR PROPER INSTALLATION AND COORDINATION WITH UNIT CONTROLS. PROVIDE BACNET COMPATIBLE CONTROLS FOR INTERCONNECTION TO EXISTING SIEMENS BMS SYSTEM. FULL DDC CONTROL OF ENERGY WHEELS (WHERE APPLICABLE) INCLUDING FROST PROTECTION VIA ENERGY WHEEL VFD SPEED CONTROL, 100% ECONOMIZER MODE VIA ENERGY WHEEL BYPASS DAMPERS

SYSTEM	ROOM	OCCUPANCY CLASSIFICATION	FLOOR AREA SF Az	OCCUPANT LOAD OCCUPANT/1,000 SF	# OF OCCUPANTS Pz	REQUIRED CFM/OCCUPANT Rp	REQ. CFM/SF Ra	BREATHING ZONE OUTDOOR AIRFLOW Vbz+RpPz+RaAz	ZONE DISTRIBUTION EFFECTIVENESS Ez	TOTAL ROOM OUTDOOR REQUIRED Vot=Vbz/Ez	ACTUAL RM OUTSIDE AIR SUPPLY AIRFLOW CFM	REQ. EXHAUST AIRFLOW RATE CFM/SF	REQUIRED EXHAUST AIRFLOW CFM	ACTUAL EXHAUST AIRFLOW CFM
C1	CAFETERIA (1/3)	CAFETERIA	2373.33	100	237	7.5	0.18	2205	0.8	2756	5000	—	—	—
C2	CAFETERIA (1/3)	CAFETERIA	2373.33	100	237	7.5	0.18	2205	0.8	2756	2800	—	—	—
C3	CAFETERIA (1/3)	CAFETERIA	2373.33	100	237	7.5	0.18	2205	0.8	2756	2800	—	—	—
E1	220	CLASSROOM	680	35	24	10	0.12	322	0.8	402	425	—	—	—
	212	CLASSROOM	690	35	25	10	0.12	333	0.8	416	425	—	—	—
	SUITE BETW/N 220 & 219	OFFICE	560	5	3	5	0.06	49	0.8	61	75	—	—	—
	213	CLASSROOM	810	35	28	10	0.12	377	0.8	471	475	—	—	—
E2	214	CLASSROOM	670	35	24	10	0.12	320	0.8	401	425	—	—	—
	215	CLASSROOM	920	35	33	10	0.12	440	0.8	551	575	—	—	—
	216	CLASSROOM	815	35	29	10	0.12	388	0.8	485	500	—	—	—
	217	CLASSROOM	800	35	28	10	0.12	376	0.8	470	475	—	—	—
E3	218	CLASSROOM	905	35	32	10	0.12	429	0.8	536	550	—	—	—
	219	CLASSROOM	660	35	24	10	0.12	319	0.8	399	400	—	—	—
	206	CLASSROOM	635	35	23	10	0.12	306	0.8	383	400	—	—	—
	207	CLASSROOM	710	35	25	10	0.12	335	0.8	419	425	—	—	—
	208	CLASSROOM	720	35	26	10	0.12	346	0.8	433	450	—	—	—
	209	CLASSROOM	780	35	28	10	0.12	374	0.8	467	475	—	—	—
	209A	STORAGE	580	—	—	—	0.12	70	0.8	87	100	—	—	—
E5	204	CLASSROOM	1405	35	50	10	0.12	669	0.8	836	850	—	—	—
F2	AUDITORIUM (1/3)	AUDITORIUM	4300	150	645	5	0.06	3483	0.8	4354	4400	—	—	—
F3	AUDITORIUM (1/3)	AUDITORIUM	3705	150	556	5	0.06	3002	0.8	3753	4200	—	—	—
F4	AUDITORIUM (1/3)	AUDITORIUM	590	150	89	5	0.06	480	0.8	601	2100	—	—	—
H2	GUIDANCE OFFICE	OFFICE	2560	5	13	5	0.06	219	0.8	273	275	—	—	—
	NURSE OFFICE (109)	OFFICE	1175	5	6	5	0.06	101	0.8	126	130	—	—	—
	CORRIDOR	CORRIDOR	410	—	—	—	0.06	25	0.8	31	50	—	—	—
	CORRIDOR	CORRIDOR	410	—	—	—	0.06	25	0.8	31	50	—	—	—
G1	120	CLASSROOM	335	35	12	10	0.12	160	0.8	200	200	—	—	—
	120A	OFFICE	335	5	2	5	0.06	30	0.8	38	50	—	—	—
	118	CLASSROOM	695	35	25	10	0.12	333	0.8	417	425	—	—	—
	119	CLASSROOM	695	35	25	10	0.12	333	0.8	417	425	—	—	—
	CORRIDOR	CORRIDOR	550	—	—	—	0.06	33	0.8	41	50	—	—	—
K1	GIRLS LOCKER RM	LOCKER RM	2545	—	—	—	—	—	—	—	—	0.5	1273	1273

UNIT No.	LOCATION	EER	COOLING CAPACITY MBH	OPERATING UNIT WEIGHT (LB)	UNIT DIMENSIONS (N) LXXWxH	COMPRESSOR			REFRIGERANT (# OF CONNECTIONS)			COIL		CONDENSER FAN		POWER CONSUMPTION				MANUFACTURER AND MODEL
						QTY.	STAGES	AMPS FLA	TYPE	SUCTION OD (IN)	LIQUID OD (IN)	HOT GAS BYPASS(IN)	NO. OF ROWS	FPI	QTY. MOTORS	AMPS. FLA	V/PH/HZ	MCA	MOPD	
ACCU-E2	ROOF	12.5	283.8	185.3	58.0x99.0x55.5	3	4 STEPS	19.2/10.6/10.6	R-410A	(2) 1.62	(2) 0.88	(2) 0.88	1	18	2	2.1	460/3/60	50	60	RCS025D
ACCU-E5	ROOF	12.0	143.0	650	73.9x38.4x44.8	2	2 STEPS	10.6/10.6	R-410A	(1) 1.325	(1) 0.625	-	1	23	2	1.4	460/3/60	27	35	RCS12F150D
ACCU-H2	ROOF	12.5	143.0	650	73.9x38.4x44.8	2	2 STEPS	10.6/10.6	R-410A	(1) 1.325	(1) 0.625	-	1	23	2	1.4	460/3/60	27	35	RCS12F150D

- ALT. #3
ALT. #4
ALT. #5

ROOFTOP AIR HANDLING UNIT SCHEDULE																												UNIT SIZE BASED ON DAIKIN															
Unit												Energy Recovery								Cooling Coil - CHW										Cooling Coil - DX R410A As per Alternate 3, 4, & 5			Heating Coil - HW										
TAG	Weight (lbs)	Model	Supply Fan				Return/Exhaust Fan			Filters		Fan	Recovered Capacity		Mixed Air LAT			Effectiveness				EAT		LAT		EWT (°F)	LWT (°F)	GPM	FPI	Rows	Total Capacity (MBH)	Sensible Capacity (MBH)	FPI	Rows	Total Capacity (MBH)	FPI	Rows	EDB (°F)	LDB (°F)	EWT (°F)	LWT (°F)	GPM	Total Capacity (MBH)
			Airflow (CFM)	ESP (inH2O)	TSP (inH2O)	Motor Size (HP)	Airflow (CFM)	ESP (inH2O)	Motor Size (HP)	Face Area (ft²)	Efficiency		Outside Airflow (CFM)	Cooling (MBH)	Heating (MBH)	Cooling DB (°F)		Heating DB (°F)	Wheel APD (inH2O)	Total Cooling	Sensible Cooling	Total Heating	Sensible Heating	EDB (°F)	EWB (°F)																		
C-2	8385	RDS800C	5000	1.00	3.13	5.0	5000	1.00	3.0	50.0	MERV 14	2800	109.29	210.18	76.9	63.8	0.45	81.76%	83.09%	83.82%	84.23%	76.9	63.5	54.1	53.9	45.0	59.1	20.9	11	8	140.98	124.46	-	-	-	14	1	63.8	95.7	180.0	139.9	8.7	174.23
C-3	8255	RDS800C	5000	1.00	2.81	5.0	5000	1.00	3.0	50.0	MERV 14	2800	109.29	210.18	76.9	63.8	0.45	81.76%	83.09%	83.82%	84.23%	76.9	63.5	56.4	55.3	45.0	57.3	20.9	6	8	122.93	112.29	-	-	-	6	1	63.8	81.8	180.0	139.9	4.9	98.17
E-1	5842	RDS800C	4860	1.00	2.42	5.0	4860	1.00	3.0	50.0	MERV 14	1400	-	-	-	-	-	-	-	-	-	78.4	65.5	55.3	55.1	45.0	59.0	23.0	10	8	154.88	122.95	-	-	-	6	1	53.9	74.6	180.0	140.0	5.5	109.89
E-2	8235	RDS800C	8520	1.00	3.51	10.0	8520	1.00	5.0	50.0	MERV 14	2925	113.36	218.27	76.2	66.1	0.47	81.18%	82.58%	83.32%	83.76%	76.2	63.0	59.3	56.8	45.0	58.7	24.0	13	5	157.3	157.3	6	4	225.98	6	1	66.1	79.0	180.0	140.0	6.0	119.95
E-3	8244	RDS800C	5880	1.00	2.94	5.0	5880	1.00	3.0	50.0	MERV 14	1850	76.25	145.26	75.8	67.3	0.30	86.34%	87.11%	87.67%	87.92%	75.8	62.6	56.8	55.6	45.0	59.0	18.2	13	6	122.35	122.04	-	-	-	6	1	67.3	82.9	180.0	139.8	5.0	100.47
E-5	5727	RDS800C	5100	0.75	2.33	5.0	5100	1.00	2.0	50.0	MERV 14	850	-	-	-	-	-	-	-	-	-	79.0	66.1	58.0	57.7	45.0	58.9	20.3	12	6	134.91	117.37	6	4	166.7	14	1	40.3	77.5	180.0	139.9	10.4	207.73
F-2	8975	RDS800C	12300	1.00	4.53	20.0	12300	1.00	15.0	50.0	MERV 14	4400	156.87	306.35	76.7	64.6	0.70	74.68%	76.83%	77.74%	78.41%	76.7	63.3	55.7	55.1	45.0	59.0	45.0	12	6	300.82	282.06	-	-	-	9	2	64.6	104.3	180.0	140.0	26.7	533.75
H-2	5589	RDS800C	6710	1.00	2.52	5.0	6710	1.00	3.0	50.0	MERV 14	505	-	-	-	-	-	-	-	-	-	78.8	65.8	63.5	60.5	45.0	59.2	16.7	7	5	113.26	112.31	6	4	209.4	9	1	65.1	82.9	180.0	139.8	6.5	130.66
G-1	5669	RDS800C	6210	1.00	2.65	5.0	6210	1.00	3.0	50.0	MERV 14	1150	-	-	-	-	-	-	-	-	-	79.7	66.5	59.1	58.3	45.0	58.8	24.7	8	6	163.27	141.18	-	-	-	8	1	59.3	80.1	180.0	140.0</		

- UNIT TO BE DELIVERED VIA CRANES, ALL NECESSARY PERMITS FOR RIGGING REQUIRED. FURNISH AND INSTALL FUSIBLE DISCONNECT SWITCHES (FIELD INSTALL). PROVIDE FACTORY ZONE AND TEMPERATURE SENSORS FOR PROPER INSTALLATION AND COORDINATION WITH UNIT CONTROLS. PROVIDE BACNET COMPATIBLE CONTROLS FOR INTERCONNECTION TO EXISTING SIEMENS BMS SYSTEM. FULL DDC CONTROL OF ENERGY WHEELS (WHERE APPLICABLE) INCLUDING FROST PROTECTION VIA ENERGY WHEEL VFD SPEED CONTROL, 100% ECONOMIZER DEW POINT VFD BYPASS WITH CONTINUOUS CAPACITY MODULATION (MAXIMUM 25% TOTAL CAPACITY).

- BASE**
BASE
BASE
BASE
BASE
BASE
ALT. #2-3
BASE
ALT. #2-1
ALT. #2-2



Drawn by	WM
Checked by	KM
Project No.	39062G
Scale	AS NOTED
Date	11-10-20

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

NRHS
ROOFTOP HVAC
AND ANNEX UV
REPLACEMENT

SED # 50-02-01-06-016-029

106 Hammond Rd.,
Tiedia, NY 10884

TOWN OF CLARESTOWN
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 light gray at the top to a dark gray at the bottom. The letters are positioned on the left side of the logo area.

MICHAEL SHILALE ARCHITECTS, LLP.

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

Drawing Title	NOTES & SCHEDULES
Drawing No.	M-001

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Drawing Title

NOTES & SCHEDULES

Drawing No.

M-001

1. PROVIDE LABOR, MATERIALS, TOOLS, MACHINERY, EQUIPMENT, AND SERVICES NECESSARY TO COMPLETE THE HVAC WORK UNDER THIS CONTRACT. ALL SYSTEMS AND EQUIPMENT SHALL BE COMPLETE IN EVERY ASPECT AND THE CONTRACTOR SHALL PROVIDE THE EQUIPMENT AND LABOR SHALL BE PROVIDED FOR A FULLY OPERATIONAL SYSTEM AND READY FOR USE. COORDINATE THE WORK WITH THE WORK OF THE OTHER SUBCONTRACTORS IN ORDER TO RESOLVE ALL CONFLICTS WITHOUT IMPEDING THE JOB PROGRESS.
2. EXAMINE THE ARCHITECTURAL, STRUCTURAL, AND ELECTRICAL DRAWINGS AND OTHER DIVISIONS, AND SECTIONS OF THE SPECIFICATIONS IN ORDER TO DETERMINE THE EXTENT OF THE WORK REQUIRED TO BE COMPLETED UNDER THIS DIVISION. FAILURE TO EXAMINE ALL THE CONTRACT DOCUMENTS FOR THIS PROJECT WILL NOT RELIEVE THIS CONTRACTOR OF HIS RESPONSIBILITIES TO PERFORM THE WORK REQUIRED FOR A COMPLETE FULLY OPERATIONAL AND SATISFACTORY INSTALLATION.
3. THE WORK INCLUDES BUT IS NOT LIMITED TO THE DEPECTED SYSTEMS, EQUIPMENT AND SERVICES, AS SPECIFIED HEREIN.
4. START-UP SERVICES SHALL BE INCLUDED.
5. ALL SYSTEMS, EQUIPMENT AND SERVICES SPECIFIED HEREIN SHALL BE PROVIDED COMPLETE AND READY FOR USE. ALL EQUIPMENT, DUCTWORK, PIPING, DAMPERS, OUTLETS ARE NEW, FURNISHED AND INSTALLED BY THIS CONTRACTOR, UNLESS OTHERWISE NOTED.

6. DUCTWORK AND PIPING ARE SHOWN DIAGRAMMATICALLY AND DO NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF DUCTWORK AND PIPING TO AVOID OBSTRUCTIONS. EXACT LOCATIONS ARE SUBJECT TO APPROVAL OF ENGINEER. COORDINATION WITH THE EXISTING SERVICES, INCLUDING THOSE OF OTHER SUBCONTRACTORS IS REQUIRED. PROVIDE COORDINATION DRAWINGS SHOWING ALL TRADES WORK AND EXISTING CONDITION.
7. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES INVOLVING EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.
8. VERIFY FINAL LOCATIONS FOR ROUGH WORK WITH FIELD MEASUREMENTS AND WITH THE REQUIREMENTS OF THE ACTUAL EQUIPMENT BEING CONNECTED.
9. PROVIDE A COMPLETE SYSTEM OF VIBRATION ISOLATION FOR EACH ITEM OF HVAC EQUIPMENT AND APPARATUS AS SPECIFIED HEREIN, AS SHOWN ON THE DRAWINGS AND AS NEEDED FOR A COMPLETE AND PROPER INSTALLATION.
10. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND, ALL PARTS OF THE BUILDING, EXTERIOR SPACE AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER IN THE INTERIOR OR THE EXTERIOR.
11. ALL PRESENT MATERIAL, EQUIPMENT AND CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF SPECIFIC EQUIPMENT AND APPARATUS REQUESTED BY NYPL, OR AS NOTED TO BE RELOCATED ON THE DRAWINGS, AND SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR.

12. THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, BALANCED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL.
13. ALL CONTROL WIRING SHALL BE DONE BY MECHANICAL CONTRACTOR, ACCORDANCE WITH SEQUENCE OF OPERATION, AS SPECIFIED, AND IN ACCORDANCE WITH MANUFACTURER'S CONTROL DATA.

14. CONTRACTOR IS RESPONSIBLE TO ATTEND COORDINATION MEETING WITH ALL TRADES TO DETERMINE LOCATIONS OF DEVICES AND DISCOVER IF ANY CONFLICTS MAY EXIST.
15. ALL PIPING EXPOSED OR INSULATED, DUCTWORK, CONDUIT AND CONTROL WIRING SHALL BE CONCEALED IN CEILINGS, WALLS AND FLOORS OR CONCEALED IN NEW SOFFITS OR FRAMED ENCLOSURES.

1. THE CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS AND COORDINATE THE WORK WITH OTHER TRADES.
2. THE FULL DEMOLITION SCOPE IS NOT SPECIFICALLY SHOWN ON THE DRAWINGS. PROVIDE DEMOLITION WORK CONSIDERED NECESSARY FOR THE COMPLETION OF THE WORK. SURVEY THE PREMISES TO ACCURATELY DETERMINE THE FULL SCOPE OF THE REMOVAL AND DISPOSAL WORK. NO ADDITIONAL PAYMENTS WILL BE MADE DUE TO CONTRACTOR'S FAILURE TO ADEQUATELY SURVEY THE PREMISES.
3. CONTRACTOR TO REMOVE AND PROPERLY DISPOSE OF EQUIPMENT FROM SITE INDICATED FOR DEMOLITION, UNLESS OTHERWISE DIRECTED BY THE AUTHORITY.
4. THE MECHANICAL CONTRACTOR SHALL PROVIDE POWER SUPPLIES, ELECTRICAL WIRING AND CONDUIT FOR POWER AND CONTROL TO PNEUMATIC OR MOTORIZED DAMPER AND VALVE OPERATORS, THERMOSTATS, AUTOMATIC CONTROL INSTRUMENTATION. COORDINATE WITH THE ELECTRICAL CONTRACTOR TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM.
5. FOR POWERED EQUIPMENT INTENDED FOR DEMOLITION, THE CONTRACTOR SHALL COORDINATE SHUT-OFF POWER SUPPLIES AND DISCONNECT SWITCHES ASSOCIATED WITH THE EQUIPMENT TO BE DISCONNECTED. RECONNECT ELECTRICAL POWER TO NEW EQUIPMENT AFTER INSTALLATION. PROVIDE ELECTRICAL MATERIAL AND LABOR AS REQUIRED FOR A COMPLETE AND FUNCTIONAL INSTALLATION.
6. TEMPORARY SHUTDOWNS OF SERVICE OF EXISTING ELECTRICAL, STEAM, HEATING, AIR CONDITIONING AND VENTILATION SYSTEMS SHALL BE PERFORMED WITH A MINIMUM OF DISRUPTION OF SERVICE, HELD TO AN ABSOLUTE MINIMUM DURATION OF TIME, AND ONLY AFTER HAVING NOTIFIED THE BUILDING OPERATIONS MANAGEMENT AT LEAST TWO WEEKS IN ADVANCE AND HAVING RECEIVED THEIR PERMISSION IN WRITING, AT LEAST TWO WEEKS PRIOR TO THE SCHEDULED SHUTDOWN. COMMUNICATIONS SHALL BE RELAYED THROUGH THE OWNER'S REPRESENTATIVE.
7. PROVIDE MOTOR STARTERS AS REQUIRED FOR MECHANICAL EQUIPMENT.
8. LOAD CALCULATIONS HAVE BEEN PERFORMED IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING STANDARDS, SPECIFICALLY ASHRAE HANDBOOK - FUNDAMENTALS.

 DEMOLISH
 POINT OF CONNECTION
 POINT OF DISCONNECT
 SECTION A-A

—CO— CONDENSATE DRAIN PIPING

 TEMPERATURE SENSOR/THERMOSTAT
 (UH REFERS TO UNIT HEATER)
 (AC REFERS TO SPLIT A/C UNIT)
 (RTU REFERS TO ROOFTOP UNIT)

 MOTORIZED DAMPER/LOUVER

AFB	ABOVE FINISHED FLOOR	LWT	LEAVING WATER TEMPERATURE
BHP	BRAKE HORSEPOWER	M	METER
BTU	BRITISH THERMAL UNIT PER HOUR	MAX	MAXIMUM
CFM	CUBIC FEET PER MINUTE	MBH	1000 BTU/HOUR
DEC	DECIBELS	MD	MOTORIZED DAMPER
Db	DRY-BULB TEMPERATURE	MHP	MOTOR HORSEPOWER
DDC	DIRECT DIGITAL CONTROLS	MIN	MINIMUM
DEG	DEGREE	NA	NOT APPLICABLE
DIA. Ø	DIAMETER	NC	NORMALLY CLOSED
ENT	ENTERING WATER TEMPERATURE	NO	NORMALLY OPEN
EX	EXISTING	NTS	NOT TO SCALE
(E)	EXISTING	OD	OUTSIDE AIR
F	FAHRENHEIT	OD	OUTSIDE DIAMETER
FAI	FRESH AIR INTAKE	PD	PRESSURE DROP
FD	FLOOR DRAIN	PG	PRESSURE GAUGE
FT	FEET	PSI	POUNDS PER SQUARE INCH
GA	GAUGE	PSIA	POUNDS PER SQUARE
GPM	GALLONS PER MINUTE	INCH - ABSOLUTE	
HD	HEAD	PSIG	POUNDS PER SQUARE
HA	HAND/OFF AUTOMATIC	INCH - GAGE	
HOA	HORSEPOWER	RPM	REVOLUTIONS PER MINUTE
HWT	HOT WATER	SP	STATIC PRESSURE
HWS	HEATING HOT WATER RETURN	SS	STAINLESS STEEL
HWT	HEATING HOT WATER SUPPLY	TAB	TESTING, ADJUSTING, BALANCE
HZ	HERTZ	TDN	TOTAL DYNAMIC HEAD
ID	INSIDE DIAMETER	UJH	UNLESS OTHERWISE NOTED
INC	INCH WATER COLUMN	UTP	UP THROUGH ROOF
IN WG	INCH WATER GAUGE	VFD	VARIABLE FREQUENCY DRIVE
KW	KILOWATT	W	WITH
KWH	KILOWATT HOUR	WG	WATER GAGE
LF	LINEAR FOOT (FEET)	WPD	WATER PRESSURE DROP

- UNIT. VENTILATORS:
 1. COOLING OCCUPIED MODE: SUPPLY FANS SHALL BE ON, OA DAMPER SHALL BE AT MINIMUM POSITION, AND THE CONTROL VALVE SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE.
 2. COOLING UNOCCUPIED MODE: THE UNIT SHALL BE OFF AND THE OA DAMPER SHALL BE CLOSED.
 3. HEATING OCCUPIED MODE: SUPPLY FANS SHALL BE ON, OA DAMPER SHALL BE AT MINIMUM POSITION, THE CONTROL VALVE SHALL BE WIDE OPEN, AND THE FACE-AND-BYPASS DAMPERS SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE.
 4. HEATING UNOCCUPIED MODE: THE OA DAMPER SHALL BE CLOSED AND THE CONTROL VALVE SHALL BE WIDE OPEN. THE SUPPLY FANS AND FACE-AND-BYPASS DAMPER SHALL CYCLE TO MAINTAIN SPACE TEMPERATURE AT THE NIGHT SETBACK VALUE.
 5. ECONOMIZER MODE: THE OA DAMPER SHALL MODULATE FROM MINIMUM TO MAXIMUM POSITIONS BASED ON A FIXED DRY-BULB TEMPERATURE. THE CONTROL VALVE SHALL BE CLOSED.
 6. AUTOMATIC FAN SPEED ADJUSTMENT (LOW ACOUSTIC OPTION): THE SUPPLY FANS CAN BE DRIVEN BY ELECTRONICALLY COMMUTATED MOTORS (ECM) WHICH SHALL REDUCE THE FAN SPEED AT PART LOAD CONDITIONS TO REDUCE NOISE. THE OA DAMPER SHALL ALSO ADJUST ITS MINIMUM POSITION TO ENSURE ADEQUATE VENTILATION.
 7. MORNING WARM-UP/COOL-DOWN: THE UNIT SHALL AUTOMATICALLY WARM-UP/COOL-DOWN THE SPACE PRIOR TO OCCUPANCY BASED ON THE PROGRAMMABLE SCHEDULE.
 8. BUILDING MANAGEMENT SYSTEM (BMS): EACH UNIT VENTILATOR INCLUDING DAMPER, CONTROL VALVES, THERMOSTATS, AND APPURTENANCES SHALL BE INTEGRATED WITH THE EXISTING SIEMENS BMS.
- B. FAN COIL UNITS:
 1. COOLING OCCUPIED MODE: SUPPLY FANS SHALL BE ON, OA DAMPER SHALL BE AT MINIMUM POSITION, AND THE CONTROL VALVE SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE.
 2. COOLING UNOCCUPIED MODE: THE UNIT SHALL BE OFF AND THE OA DAMPER SHALL BE CLOSED.
 3. HEATING OCCUPIED MODE: SUPPLY FANS SHALL BE ON, OA DAMPER SHALL BE AT MINIMUM POSITION, THE CONTROL VALVE SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE.
 4. HEATING UNOCCUPIED MODE: THE OA DAMPER SHALL BE CLOSED AND THE CONTROL VALVE SHALL BE WIDE OPEN. THE SUPPLY FANS SHALL CYCLE AND THE CONTROL VALVE SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE AT THE NIGHT SETBACK VALUE.
 5. MORNING WARM-UP/COOL-DOWN: THE UNIT SHALL AUTOMATICALLY WARM-UP/COOL-DOWN THE SPACE PRIOR TO OCCUPANCY BASED ON THE PROGRAMMABLE SCHEDULE.
 6. BUILDING MANAGEMENT SYSTEM (BMS): EACH UNIT VENTILATOR INCLUDING DAMPER, CONTROL VALVES, THERMOSTATS, AND APPURTENANCES SHALL BE INTEGRATED WITH THE EXISTING SIEMENS BMS.

- A. SITE (BASED ON NEAREST AVAILABLE DATA: ASHRAE 2013 HANDBOOK CLIMATIC DESIGN INFORMATION, WESTCHESTER CO, NY):
 - 1. 41.07N, 73.717W
 - 2. ELEVATION: 397 FT FT
 - 3. CLIMATE ZONE 5A.
- B. OUTSIDE DESIGN CONDITIONS (BASED ON NEAREST AVAILABLE DATA: ASHRAE 2013 CLIMATIC DESIGN INFORMATION, WESTCHESTER CO, NY):
 - 1. HEATING DB/(98.6%): 9.0°F DB
 - 2. COOLING DB/MCWb (16%): 86.5°F DB, 72.1°F WB
- C. INSIDE DESIGN CONDITIONS (PER NYSED MANUAL OF PLANNING STANDARDS 5602-6-B, AND 2015 ASHRAE HANDBOOK CH 7 TABLE 6):
 - 1. HEATING INDOOR SETPOINT: 72°F
 - 2. COOLING INDOOR SETPOINT: 78°F, 60% RH
- D. ACOUSTICS (PER NYSED MANUAL OF PLANNING STANDARDS, TABLE 5304-1):
 - 1. DESIGN REQUIREMENTS FOR HVAC SYSTEM NOISE FOR CLASSROOMS, 7-12: RC 25-30.
- E. FILTRATION: MERV 13 (PER NYSED MANUAL OF PLANNING STANDARDS).
- F. DEMAND CONTROLLED VENTILATION NOT REQUIRED PER ECVNYS C403.2.6.1 EXCEPTION #3.

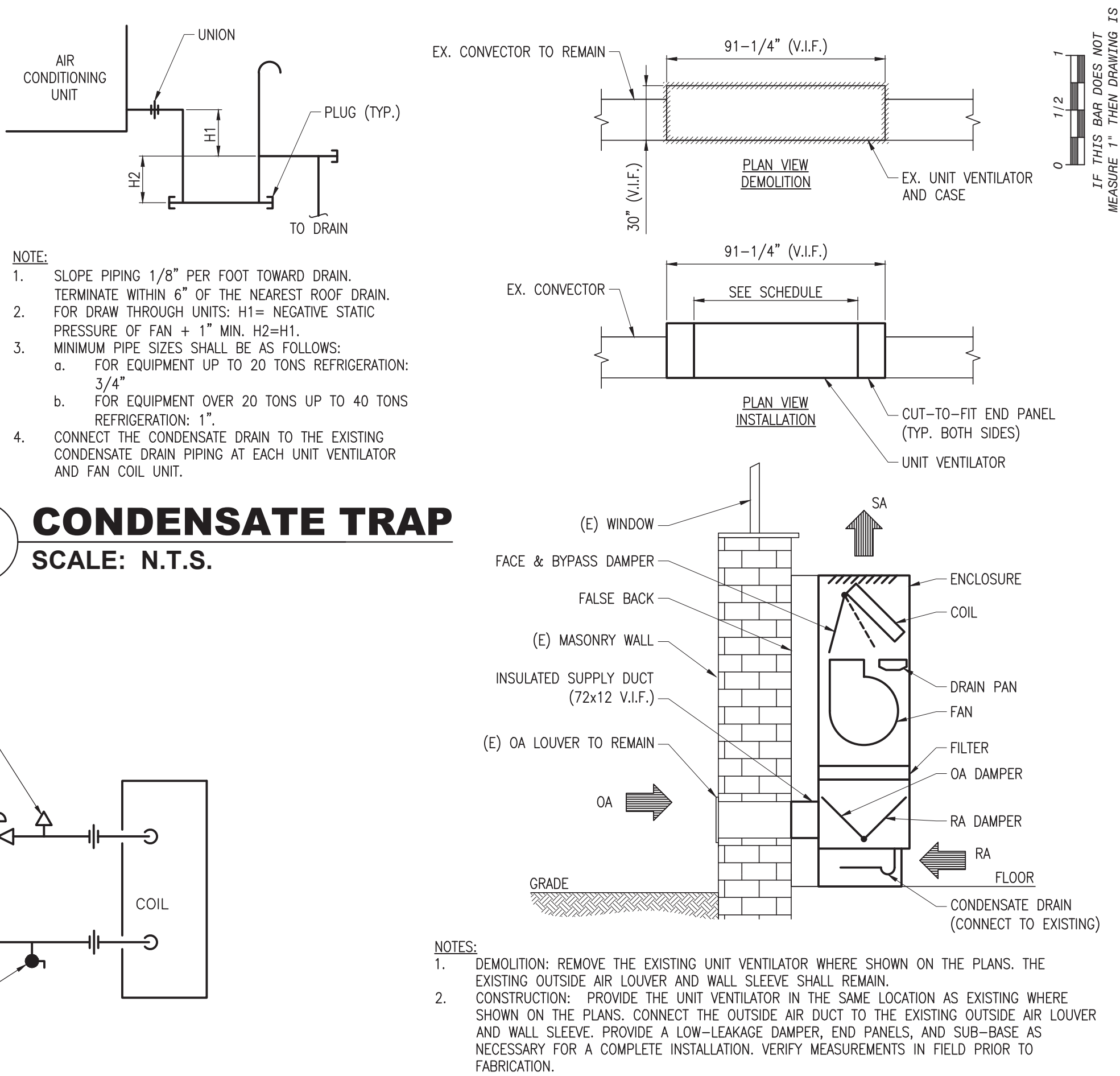
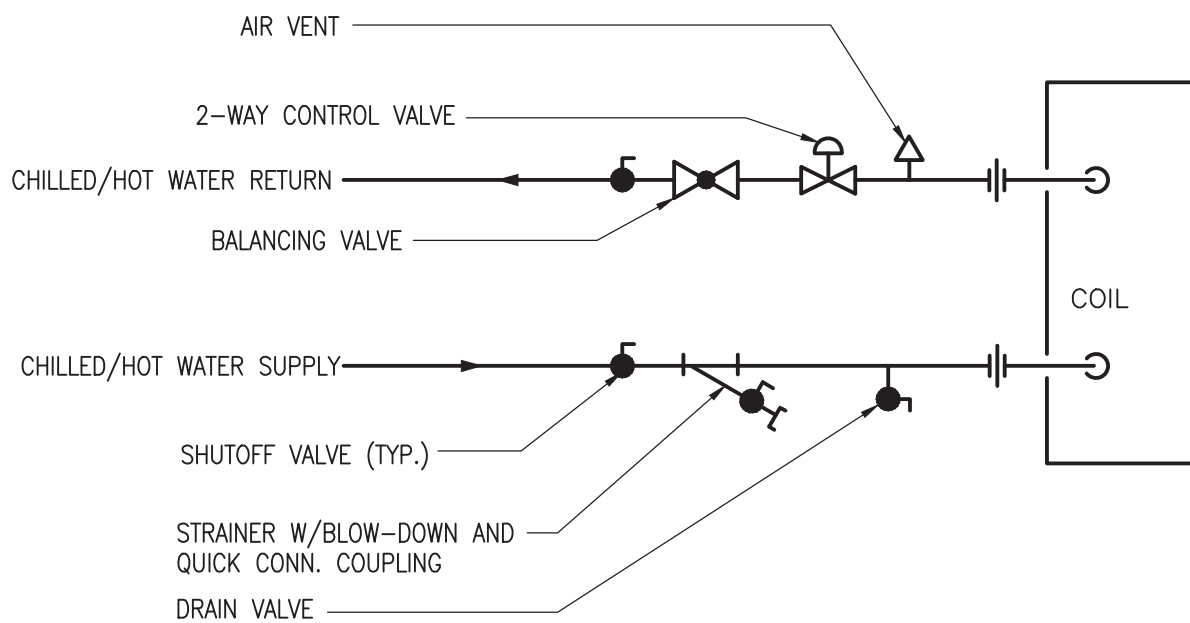


Diagram illustrating the new fan coil unit installation. The unit is shown mounted on the exterior wall, with the following components and labels:

- (E) WINDOW
- (E) CHILLED AND HOT WATER PIPING
- (E) CONVECTOR TO REMAIN
- (E) MASONRY WALL
- INSULATED SUPPLY DUCT (32x12 V.I.F.)
- (E) OA LOUVER TO REMAIN
- OA (Outdoor Air) arrow pointing into the unit
- GRADE
- SA (Supply Air) arrow pointing up from the unit
- DISCHARGE GRILLE
- COIL
- FAN COIL UNIT ENCLOSURE
- DRAIN PAN
- FAN
- FILTERED
- MOTORIZED OA DAMPER
- RETURN GRILLE
- RA (Return Air) arrow pointing into the unit
- FLOOR

DEMOLITION: REMOVE THE EXISTING FAN COIL UNIT WHERE SHOWN ON THE PLANS. THE EXISTING CONVECTOR SHALL REMAIN.

CONSTRUCTION: PROVIDE THE FAN COIL UNIT IN THE SAME LOCATION AS EXISTING WHERE SHOWN ON THE PLANS. PROVIDE PIPING, CONTROLS, AND ACCESSORIES AS NECESSARY FOR A COMPLETE INSTALLATION. VERIFY MEASUREMENTS IN FIELD PRIOR TO FABRICATION.

The diagram illustrates a unit ventilator installed between a ceiling and a slab. Air enters from the left through an 'OA' (Outside Air) grille, passes through a 'FACE & BYPASS DAMPER' and an 'OA DAMPER', and is then split into two paths: one through a 'FC' (Fresh Air Coil) and another through a 'RA' (Return Air) grille. The air then passes through a 'RA DAMPER' and a 'FC' (Fresh Air Coil) before entering the main unit. The unit contains a 'FAN', 'DX COIL' (Direct Expansion Coil), 'HW COIL' (Hot Water Coil), and a 'DRAIN PAN'. The air then passes through a 'FILTER' and is exhausted to the right through an 'SA' (Supply Air) grille. The diagram also shows 'EXPANSION ANCHOR', '1/2" MIN. THREADED ROD', and 'DOUBLE NUT' connections between the unit and the ceiling/slab. A 'SLAB' is indicated above the unit, and a 'CEILING' is indicated below it.

NOTES:
 1. REFER TO THE UNIT VENTILATOR SCHEDULE ON DRAWING M0.01 FOR FURTHER INFORMATION.

NOTES:

1. DEMOLITION: REMOVE THE EXISTING FAN COIL UNIT WHERE SHOWN ON THE PLANS. THE EXISTING CONVECTOR SHALL REMAIN.
2. CONSTRUCTION: PROVIDE THE FAN COIL UNIT IN THE SAME LOCATION AS EXISTING WHERE SHOWN ON THE PLANS. PROVIDE PIPING, CONTROLS, AND ACCESSORIES AS NECESSARY FOR A COMPLETE INSTALLATION. VERIFY MEASUREMENTS IN FIELD PRIOR TO FABRICATION.

[illegible]

Drawn by	MEP
Checked by	RJS
Project No.	39062G
Scale	AS NOTED
Date	10-23-20

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

NRHS
ROOFTOP HVAC
AND ANNEX UV
REPLACEMENT

SED# 50-02-01-06-016-029

106 Hammond Rd.
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TOWNS OF CLARKSTOWN
COUNTY OF ROCKLAND



MICHAEL SHILALE ARCHITECTS, L.L.P.
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Drawing Title

MECHANICAL
NOTES AND
DETAILS

Drawing No.

M-011

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

3	03-25-21	HMC & STRUCT REVISIONS	
2	01-26-21	RESP. TO SED COMMENTS	
1	11-10-20	BIDDING DOCUMENTS	
No.	Date	Revisions	

Drawn by	MEP
Checked by	RJS
Project No.	39062G
Scale	AS NOTED
Date	11-10-20

Mechanical & Electrical Engineer:	GREENMAN PEDERSEN, INC 400 BELLA BOULEVARD MONTEBELLO, NY 10601
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Drawing Title
**MECHANICAL
 SCHEDULES**

2 FAN COIL UNIT SCHEDULE

SCALE: N.T.S.

ROOM	OCCUPANCY CLASSIFICATION	FLOOR AREA SF Az	ROOM VOLUME (Ft³)	OCCUPANT LOAD OCCUPANT/ 1,000 SF	# OF OCCUPANTS Pz	REQUIRED CFM/ OCCUPANT Rp	REQUIRED CFM/SF Ra	BREATHING ZONE OUTDOOR AIRFLOW Vbz=RpPz+RaAz	ZONE DISTRIBUTION EFFECTIVENESS Ez		TOTAL ROOM OUTDOOR AIR REQUIRED Vot=Vbz/Ez		ACTUAL ROOM OUTDOOR AIR FLOW RATE CFM		TOTAL SUPPLY AIRFLOW (CFM)		AIR CHANGE RATE (ACH)	
									COOLING	HEATING	COOLING	HEATING	COOLING	HEATING	COOLING	HEATING	COOLING	HEATING
501	CLASSROOMS (AGE 9 PLUS)	552	5520	35	19	10	0.12	259	0.9	0.9	288	288	300	300	1250	1250	13.6	13.6
501A	CLASSROOMS (AGE 9 PLUS)	622	6220	35	22	10	0.12	292	0.9	0.9	325	325	330	330	1250	1250	12.1	12.1
503	CLASSROOMS (AGE 9 PLUS)	790	7900	35	28	10	0.12	371	0.9	0.9	413	413	420	420	1500	1500	11.4	11.4
507	CLASSROOMS (AGE 9 PLUS)	580	5800	35	20	10	0.12	273	0.9	0.9	303	303	310	310	1250	1250	12.9	12.9
509	GUIDANCE OFFICE	394	3940	5	2	5	0.06	33	0.9	0.9	37	37	40	40	375	375	5.7	5.7
509A	OFFICE	115	1150	5	1	5	0.06	10	0.9	0.9	11	11	15	15	30	30	1.6	1.6
509B	OFFICE	75	750	5	0	5	0.06	6	0.9	0.9	7	7	10	10	20	20	1.6	1.6
509C	OFFICE	115	1150	5	1	5	0.06	10	0.9	0.9	11	11	15	15	30	30	1.6	1.6
509D	OFFICE	87	870	5	0	5	0.06	7	0.9	0.9	8	8	15	15	30	30	2.1	2.1
ANNEX OFFICE	OFFICE	619	6190	5	3	5	0.06	53	0.9	0.9	58	58	60	60	1000	1000	9.7	9.7
509F	OFFICE	222	2220	5	1	5	0.06	19	0.9	0.9	21	21	25	25	215	215	5.8	5.8
509G	OFFICE	60	600	5	0	5	0.06	5	0.9	0.9	6	6	35	35	55	55	5.5	5.5
509H	OFFICE	110	1100	5	1	5	0.06	9	0.9	0.9	10	10	65	65	105	105	5.7	5.7
510	CLASSROOMS (AGE 9 PLUS)	1280	12800	35	45	10	0.12	602	0.9	0.9	668	668	675	675	1250	1250	5.9	5.9
512A	DINING AREA	518	5180	70	36	7.5	0.18	365	0.9	0.9	406	406	410	410	1250	1250	14.5	14.5
512B	CUSTODIAN OFFICE	264	2640	5	1	5	0.06	22	0.9	0.9	25	25	25	25	500	500	11.4	11.4
LAB 1	LABORATORIES	880	8800	35	31	10	0.18	466	0.9	0.9	518	518	525	525	1500	1500	10.2	10.2
LAB 2	LABORATORIES	786	7860	35	28	10	0.18	417	0.9	0.9	463	463	475	475	1500	1500	11.5	11.5
LAB 3	LABORATORIES	663	6630	35	23	10	0.18	351	0.9	0.9	390	390	400	400	1500	1500	13.6	13.6
600C	OFFICE	1050	10500	5	5	10	0.12	179	0.9	0.9	198	198	200	200	750	750	4.3	4.3
601	CLASSROOMS (AGE 9 PLUS)	767	7670	35	27	10	0.12	360	0.9	0.9	401	401	410	410	1000	1000	7.8	7.8
602	CLASSROOMS (AGE 9 PLUS)	678	6780	35	24	10	0.12	319	0.9	0.9	354	354	360	360	1250	1250	11.1	11.1
602A	OFFICE	280	2800	5	1	5	0.06	24	0.9	0.9	26	26	30	30	500	500	10.7	10.7
603	CLASSROOMS (AGE 9 PLUS)	767	7670	35	27	10	0.12	360	0.9	0.9	401	401	405	405	1500	1500	11.7	11.7
604	CLASSROOMS (AGE																	

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

3	03-25-21	HMC & STRUCT REVISIONS			
2	01-26-21	RESP. TO SED COMMENTS			
1	11-10-20	BIDDING DOCUMENTS			
No.	Date	Revisions			

Drawn by	AW
Checked by	RJS
Project No.	39062G
Scale	AS NOTED
Date	11-10-20

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

NRHS
ROOFTOP HVAC
AND ANNEX UV
REPLACEMENT

SED# 50-02-01-06-01-016-029

106 Hammond Rd.
Thiells, NY 10984

TOWN OF CLARENSTON
COUNTY OF ROCKLAND

The logo for Michael Shihale 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 arranged vertically, with 'M' at the top, 'S' in the middle, and 'A' at the bottom.

MICHAEL SHIHALE ARCHITECTS, LLP.

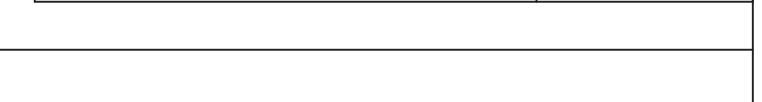
New City, NY 10956
Tel 845-708-9200
www.shihale.com

Drawing Title MECHANICAL VENTILATION SCHEDULE	Drawing No. M-013
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- ## NOTES

- ## KEY NOTES



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



MICHAEL SHILALE ARCHITECTS, L.L.P.

140 Park Avenue
New City, NY 10956
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Drawing Title
**MECHANICAL
ROOF PLAN**

Drawing No.
M-101

Drawing Title

MECHANICAL ROOF PLAN

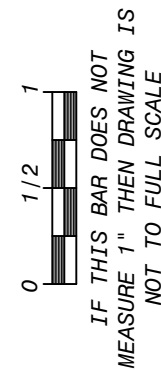
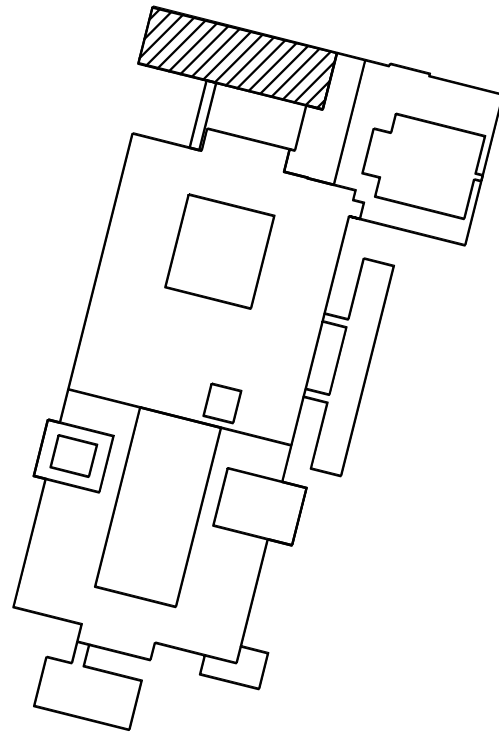
Drawing No.

M-101

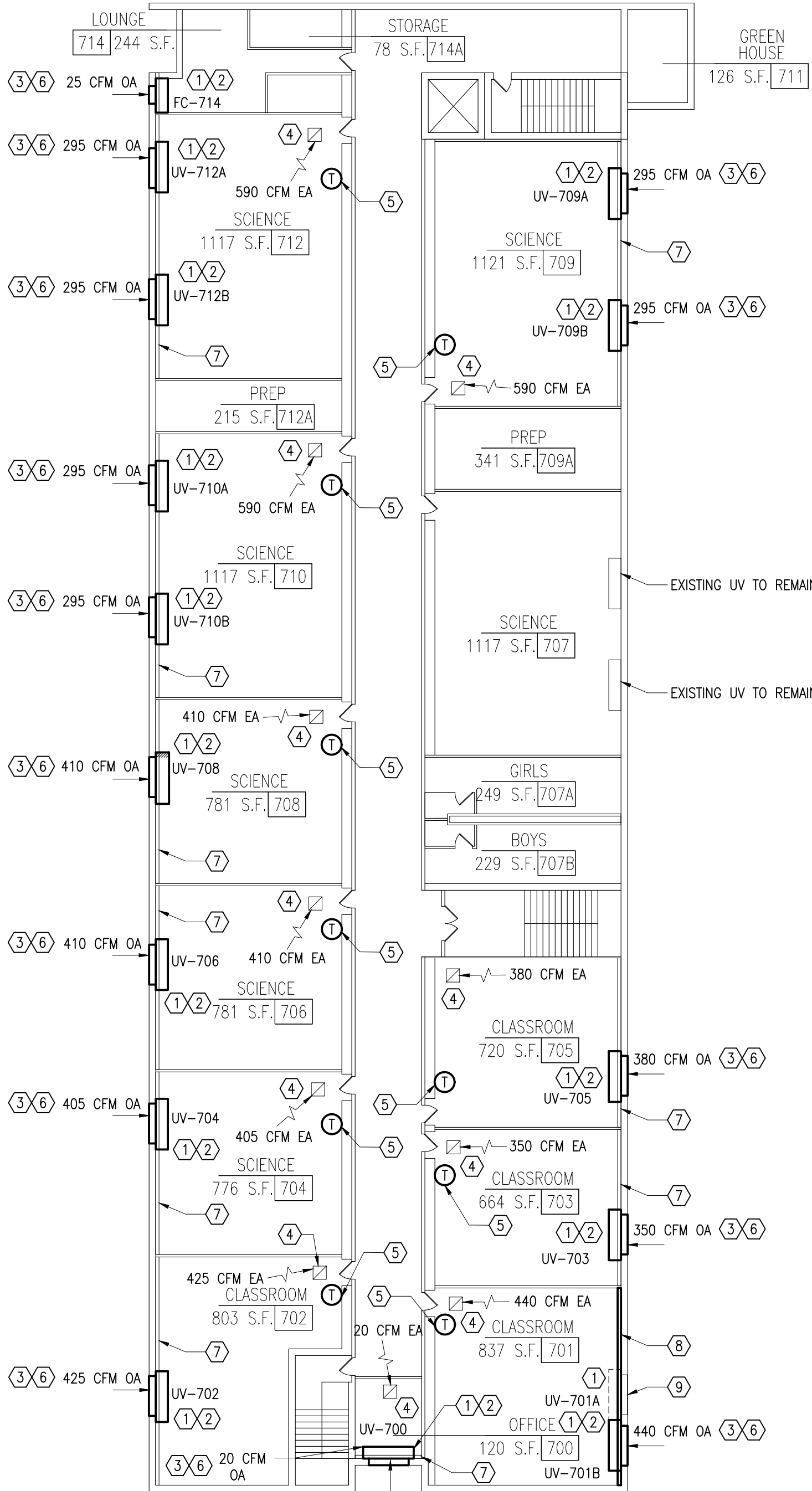
NOTES:

- ① DEMOLISH EXISTING UNIT VENTILATOR. TEMPORARILY CAP PIPING PROVIDE TEMPORARY CLOSURE FOR OA LOUVER TO PREVENT INFILTRATION FROM OUTDOORS.
- ② UNIT VENTILATOR. REFER TO THE UNIT VENTILATOR SCHEDULE AND DETAILS ON DRAWING M-001.
- ③ EXISTING 72"x10" (V.I.F.) WALL LOUVER TO REMAIN.
- ④ EXISTING EXHAUST GRILLES TO REMAIN. INCLUDE THE EXISTING EXHAUST GRILLES IN THE AIR BALANCING REPORT.
- ⑤ PROGRAMMABLE AN ELECTRONIC THERMOSTAT WITH LOCKING GUARD.
- ⑥ PROVIDE AN INSECT SCREEN AT FIRST FLOOR OA LOUVERS TO PREVENT INFILTRATION OF GRASS CLIPPINGS AND OTHER DEBRIS. SCREEN SHALL HAVE AN ALUMINUM FRAME AND SHALL BE INSTALLED ON THE OUTSIDE OF THE EXISTING LOUVER. CONSTRUCT FROM 0.011" ALUMINUM WITH BRIGHT FINISH AND SS HARDWARE.
- ⑦ EXISTING FINNED TUBE CONNECTOR TO REMAIN. TRIM OR EXTEND ENCLOSURE TO FIT THE NEW UNIT VENTILATOR.
- ⑧ PROVIDE A NEW CONVECTOR COVER COVER SHALL BE THE FULL WIDTH OF THE ROOM BY 28" HIGH AND CONSTRUCTED FROM 18 STEEL WITH ALUMINUM GRILL. COLOR TO BE SELECTED FROM MANUFACTURER'S STANDARD COLOR CHART. BASIS OF DESIGN: SLANT-FIN R SERIES.
- ⑨ PERMANENTLY CAP EXISTING 72"x10" (V.I.F.) LOUVER OPENING FROM THE INSIDE WITH 22 GA MIN GALVANIZED PANEL. FILL VOID WITH INSULATION, R-12 MIN.

NOTES



KEY PLAN



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



No.	Date	Revisions
3	03-25-21	HMC & STRUCT REVISIONS
2	01-26-21	RESP. TO SED COMMENTS
1	11-10-20	BIDDING DOCUMENTS

Drawn by	AW
Checked by	RJS
Project No.	39062G
Scale	AS NOTED
Date	11-10-20

GREENMAN PEDERSEN, INC. 400 WEST 10TH STREET MONTRELLA, NY 10801	MECHANICAL & ELECTRICAL ENGINEER
STRUCTURAL ENGINEER	

NRHS ROOFTOP HVAC AND ANNEX UV REPLACEMENT

SED# 50-02-01-06-0-016-020

100 Ramapo Rd.
Thiells, NY 10984

TOWN OF CLANSTOWN
COUNTY OF ROCKLAND

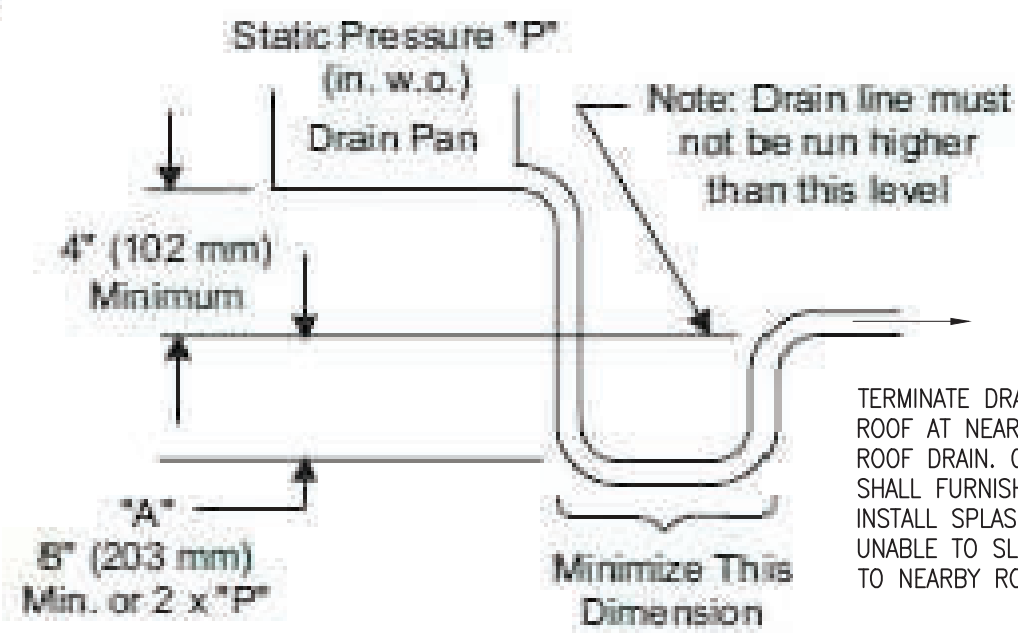
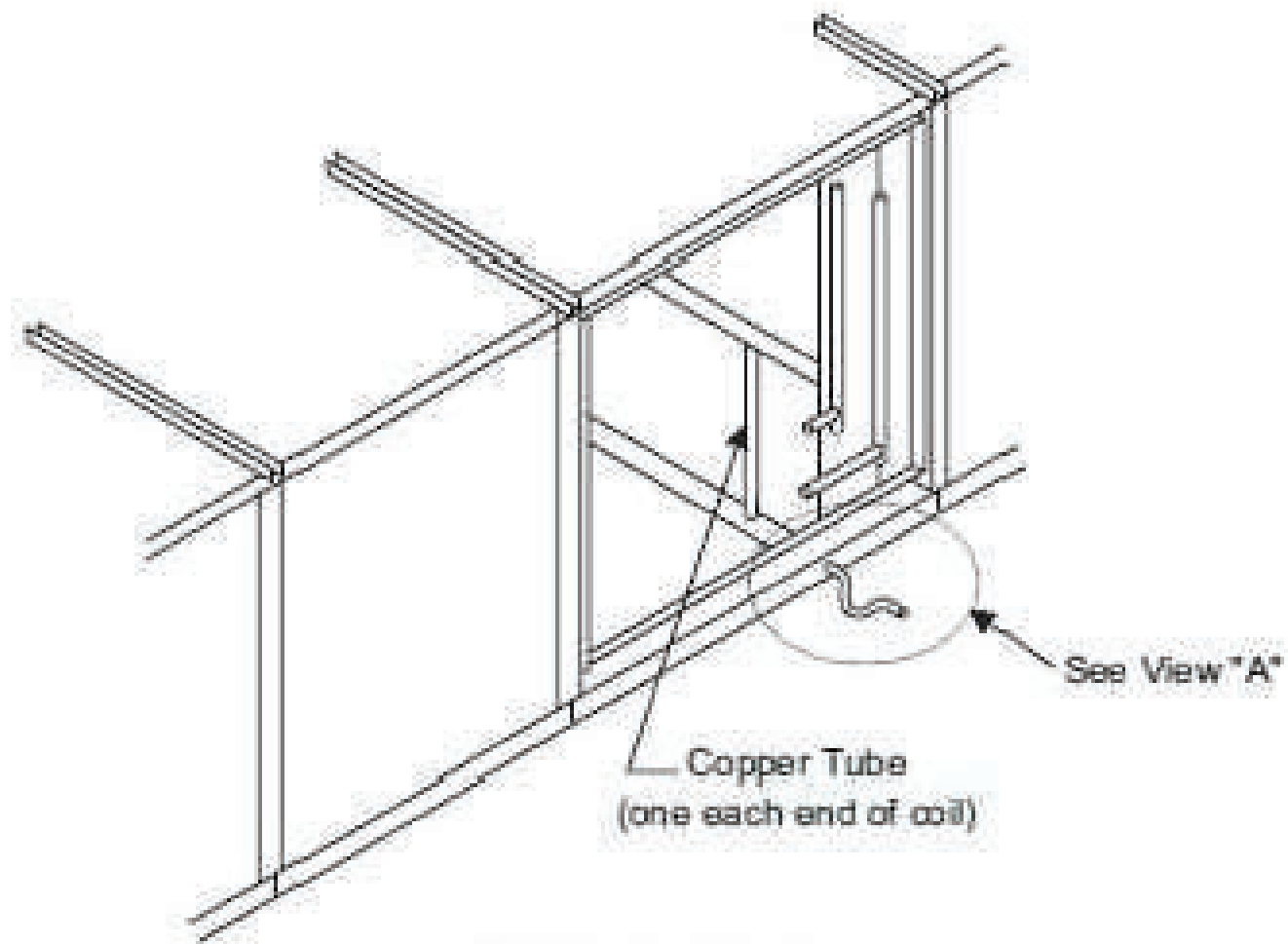
MSA

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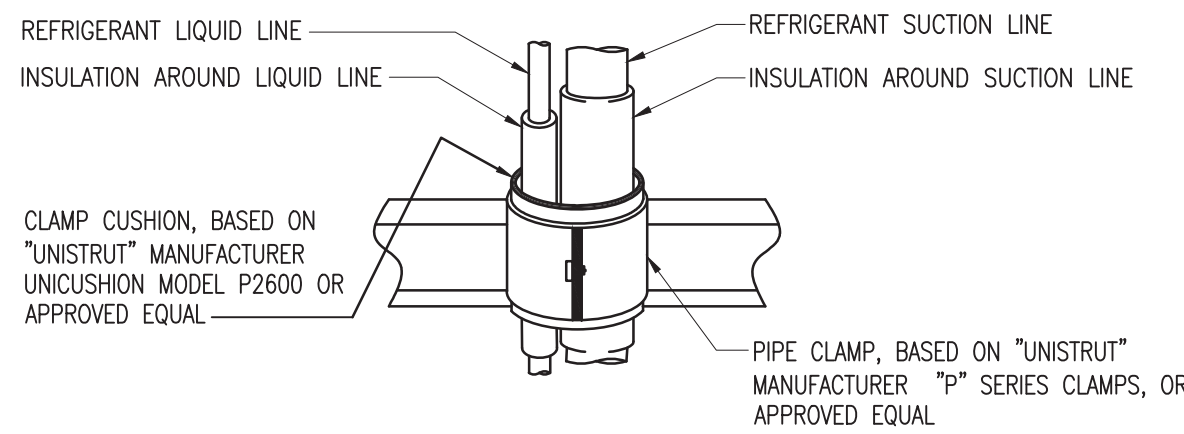
PARTIAL 3RD FLR PLAN - MECHANICAL

Drawing No. **M-112**



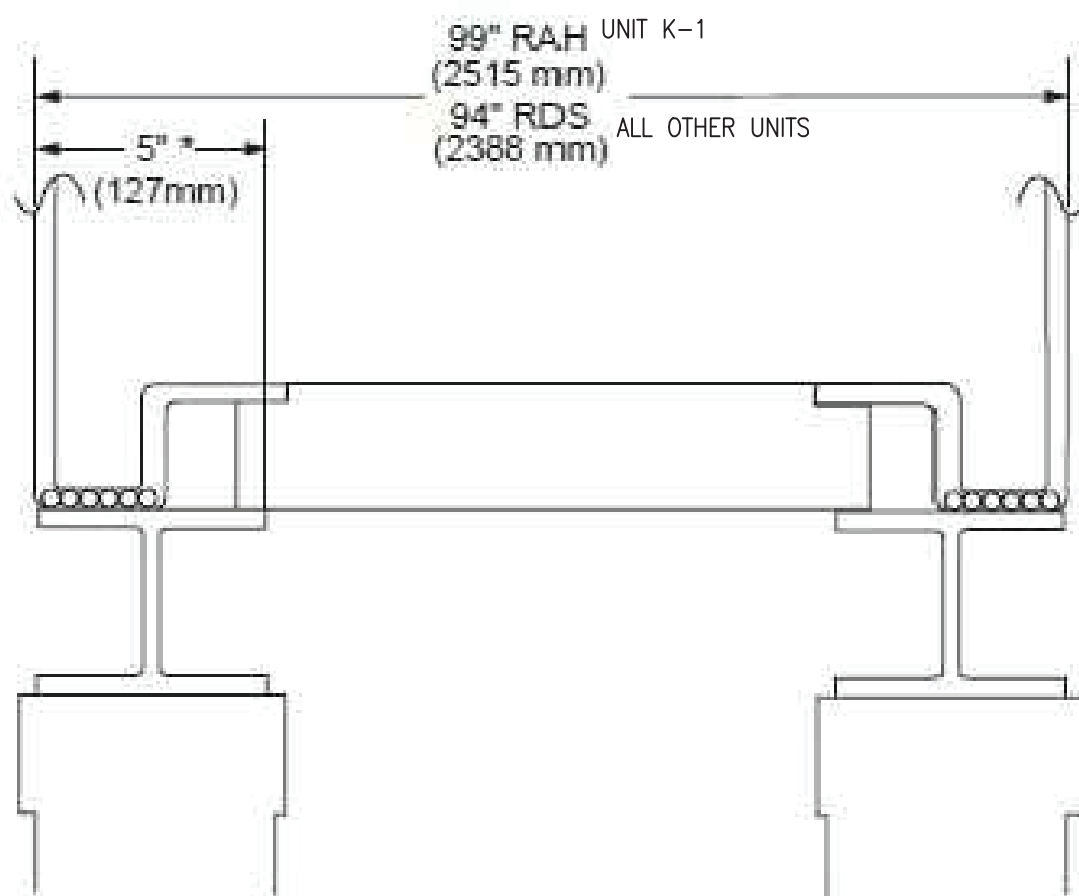
1. CONTRACTOR SHALL REVIEW REQUIRED TRAP HEIGHT AND SELECTED BASERAIL HEIGHTS FOR A COMPLETE AND PROPER INSTALLATION. COORDINATE WITH APPROVED UNIT MANUFACTURER FOR ALL REQUIRED DETAILS AND INSTALLATION GUIDES.

4
M-501
DRIP PAN DETAIL
SCALE: NONE

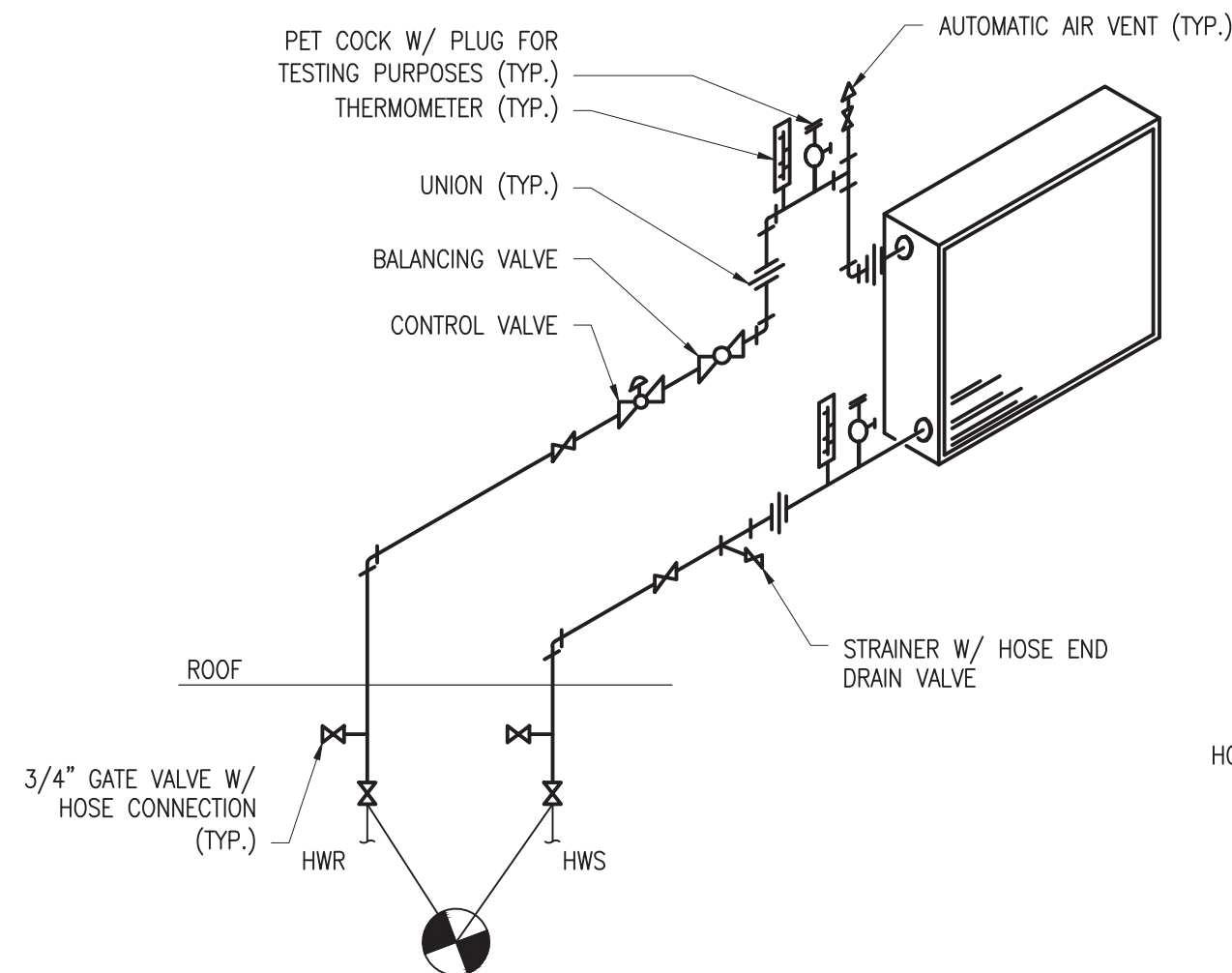


- NOTE:
1. LIQUID AND SUCTION LINES MAY BE ROUTED TOGETHER FOR CONVENIENCE, BUT MUST BE COMPLETELY INSULATED FROM EACH OTHER. DO NOT SOLDER LIQUID AND SUCTION LINES TOGETHER. DO NOT ALLOW METAL TO METAL CONTACT.
 2. LINES SHOULD BE INSTALLED WITH AS FEW BENDS AS POSSIBLE, ALLOWING SERVICE ACCESS TO THE 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.

8
M501
REFRIGERANT PIPE SUPPORT DETAIL
NOT TO SCALE
1. FOR ALTERNATES #3, 4 & 5

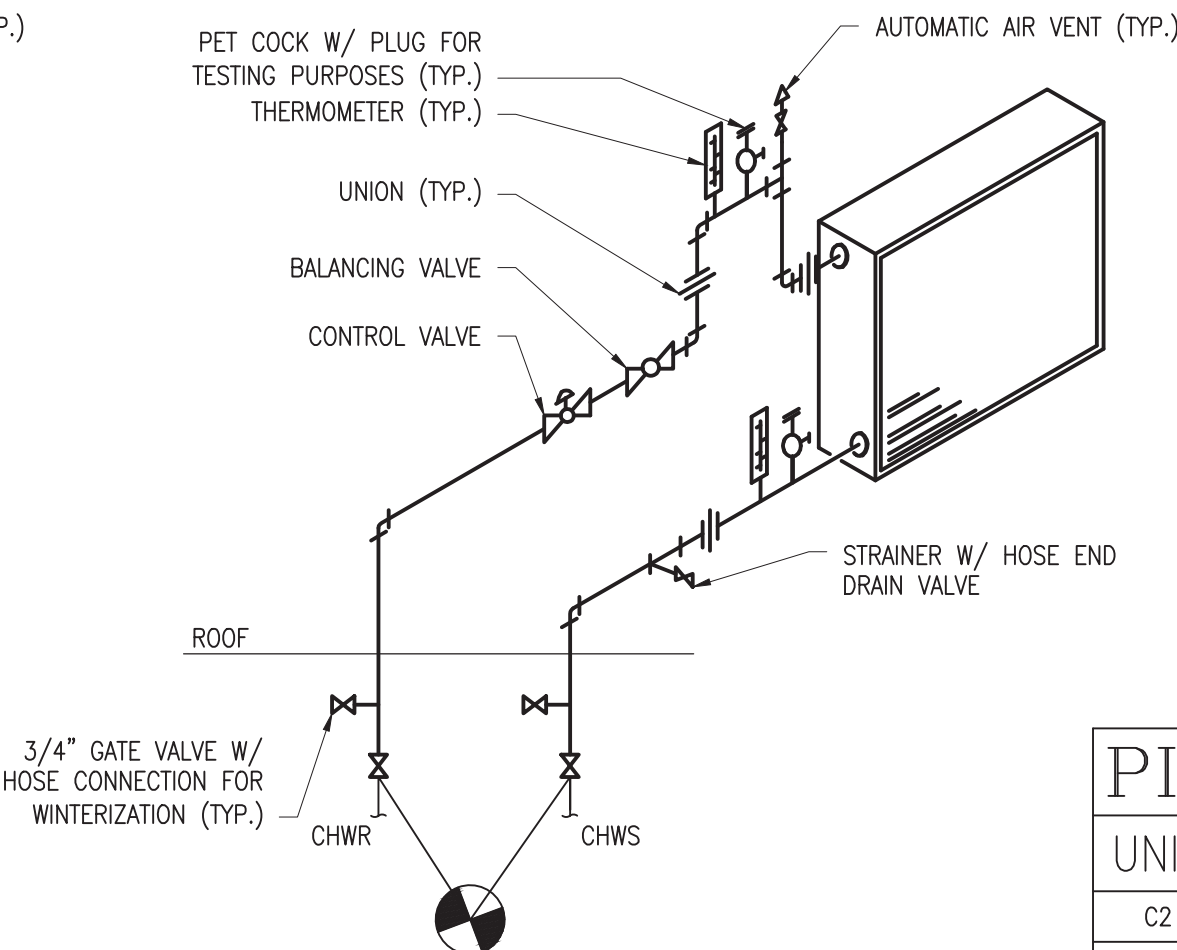


5
M-501
EQUIPMENT BASE DETAIL
SCALE: NONE



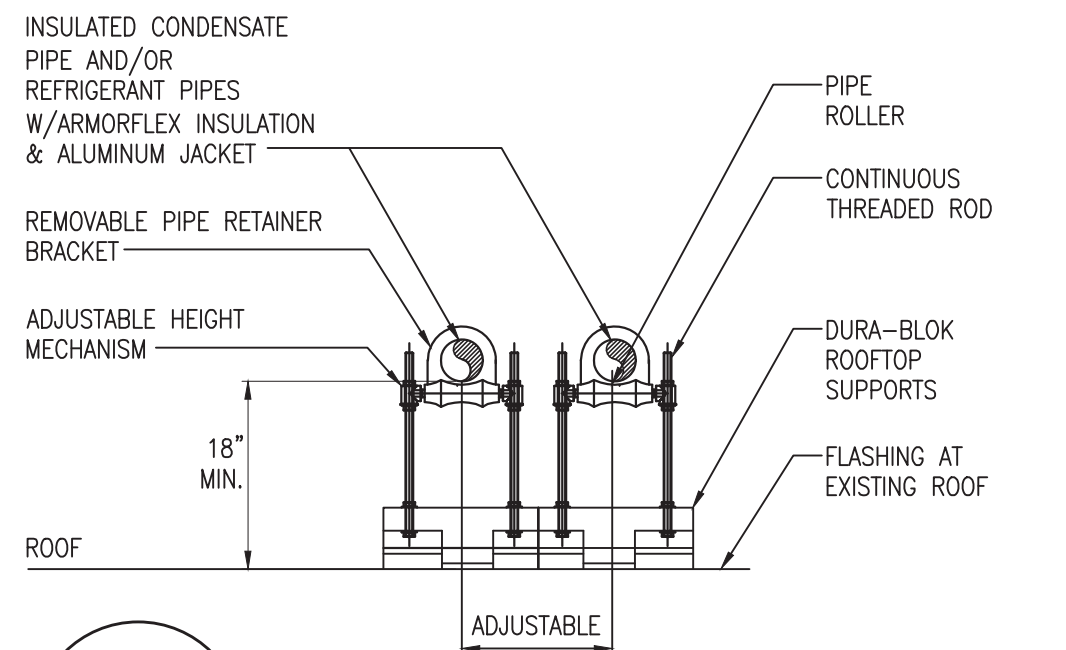
1
M-501
HOT WATER COIL DETAIL
SCALE: NONE

1. CONTRACTOR SHALL PROVIDE NEW PIPING 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.
3. CONTRACTOR TO FURNISH AND INSTALL NEW CONTROL VALVES FOR BOTH HW AND CHW COILS.

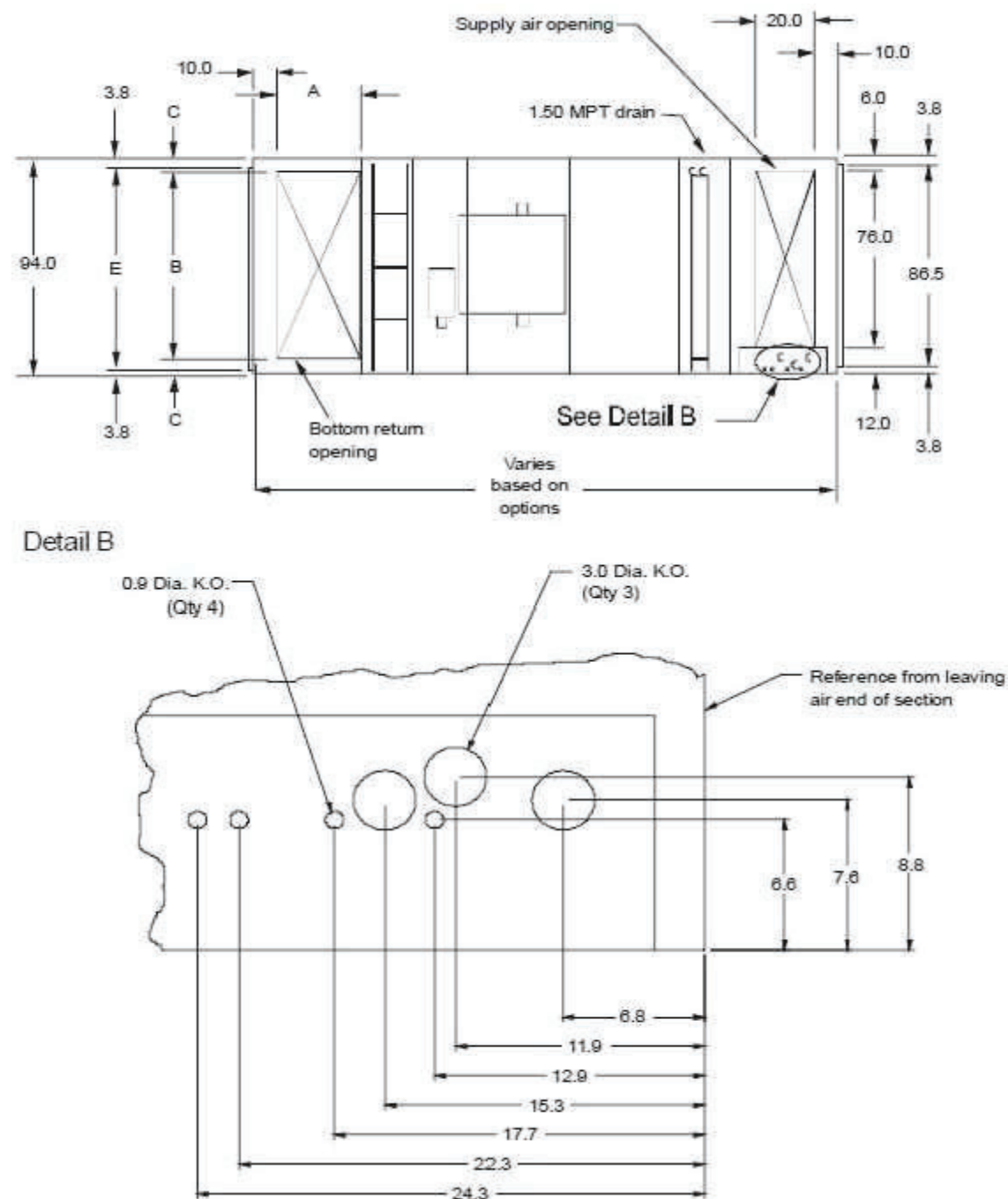


2
M-501
CHILLED WATER COIL DETAIL
SCALE: NONE

PIPE SCHEDULE		
UNIT	HWS/R	CHWS/R
C2	1 1/4"	1 1/2"
C3	1"	1 1/2"
E1	1"	1 1/2"
E2	1"	1 1/2"
E3	1"	1 1/2"
E5	1 1/4"	1 1/2"
F2	2"	2 1/2"
H2	1"	1 1/4"
G1	1"	2"
K1	2"	-

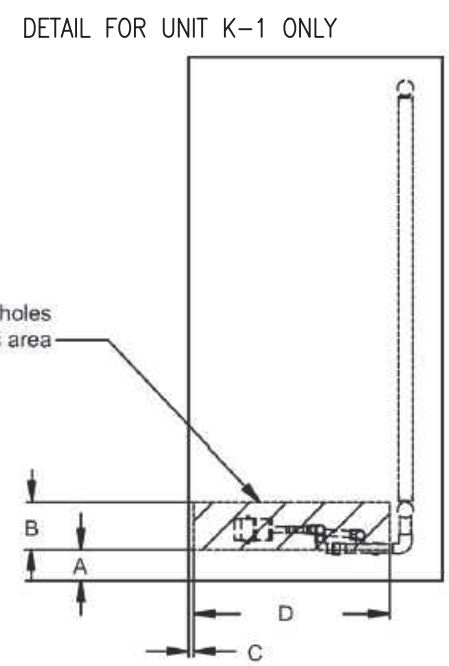
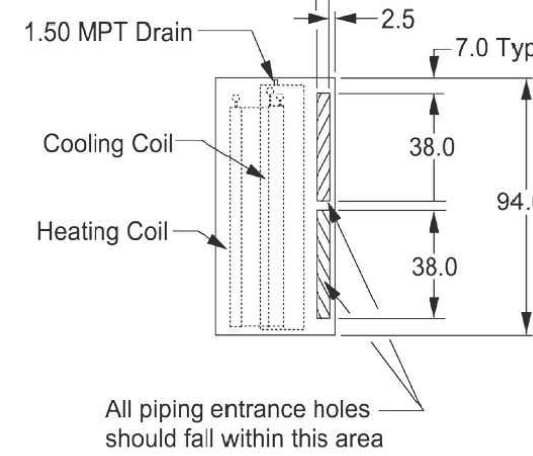


7
M-501
ROOF PIPE SUPPORT
SCALE: NONE
NOTE:
FURNISH AND INSTALL PIPE MOUNTED PEDESTALS FOR MULTIPLE PIPE SUPPORTS MANUFACTURED BY COOPER B-LINE, (DURA-BLOK ROOFTOP SUPPORTS) DB SERIES OR APPROVED EQUAL.



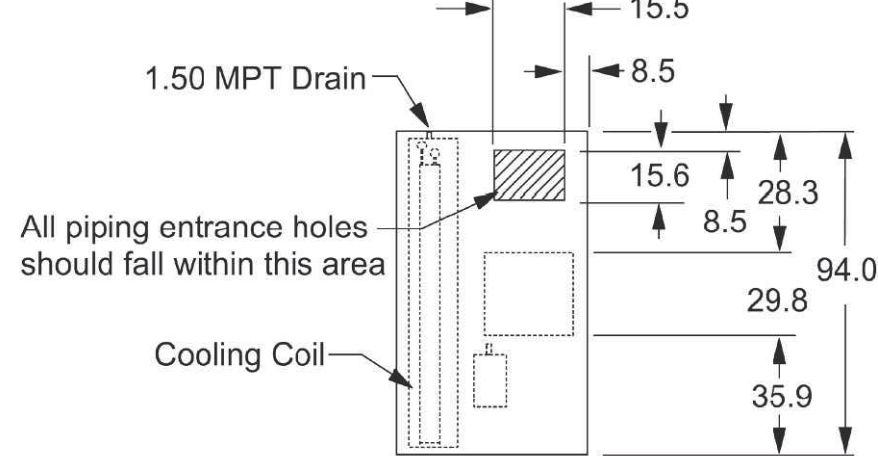
6A
M-501
TYPICAL OPENING DETAIL FOR POWER
SCALE: NONE
1. ALL SIZES INDICATED ABOVE VARY PER UNIT. CONTRACTOR TO CONTACT UNIT MANUFACTURER'S REPRESENTATIVE TO ENSURE ALL REQUIRED OPENINGS ARE PROVIDED FOR EACH UNIT. CONTRACTOR SHALL INSTALL PER MANUFACTURER'S INSTRUCTIONS.

Position D — Draw-Through Heat/Cool Section — RDS800C
Contractor Heating and Cooling DETAIL FOR UNITS C-2, C-3, E-1, E-2, E-3, E-5, G-1 & H-2 ONLY

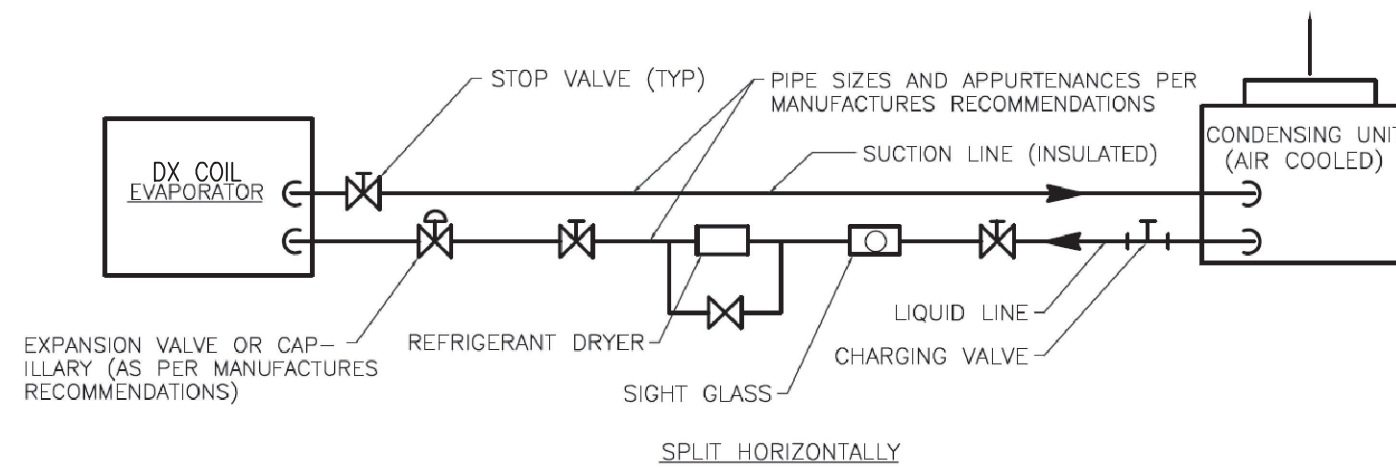


Unit Size	A	B	C	D
045-150	6.0"	9.0"	1.0"	37.0"

Position F — Draw-Through Cooling/Supply Air Fan Section — RDS800C
Supply Air Fan with Cooling Coil DETAIL FOR UNIT F-2 ONLY



6B
M-501
TYPICAL OPENING DETAIL FOR PIPING
SCALE: NONE
1. CONTRACTOR TO CONTACT UNIT MANUFACTURER, MANUFACTURER'S REPRESENTATIVE TO ENSURE ALL REQUIRED OPENINGS ARE PROVIDED FOR EACH UNIT. CONTRACTOR SHALL INSTALL PER MANUFACTURER'S INSTRUCTIONS.



NOTE: THE HORIZONTAL DIMENSION OF OIL TRAPS TO BE AS SHORT AS POSSIBLE.

3
M-501
DX COIL PIPING DIAGRAM
SCALE: NONE
1. FOR ALTERNATES #3, 4 & 5

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



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No.	Date	Revisions
1	11-10-20	BIDDING DOCUMENTS

Drawn by	WM
Checked by	KM
Project No.	39062G
Scale	AS NOTED
Date	11-10-20

Mechanical & Electrical Engineer:	GREENMAN PEDERSEN, INC. 100 BROADWAY RD. MONTEBELLO, NY 10601
Structural Engineer:	

NRHS ROOFTOP HVAC AND ANNEX UV REPLACEMENT	SEP# 50-02-01-06-0-010-020 100 BROADWAY RD. THULIN, NY 10604 TOWN OF CLANDONNY COUNTY OF ROCKLAND
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MICHAEL SHILALE ARCHITECTS, L.L.P. New City, NY 10958 140 Park Avenue Tel 845-708-9200 www.shilale.com
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DETAILS
Drawing No. M-501

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 CONTRACTOR'S 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.

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.

ABBREVIATIONS			
A	AMPERE	LP	120/208V PANEL
AC	ALTERNATING CURRENT	LS	LOUDSPEAKER
ACS	ADMINISTRATIVE CONTROL STATION	LTG	LIGHTING
ADA	AMERICANS WITH DISABILITIES ACT	MATV	MOTOR 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		

SYMBOL LIST	
GENERAL	
	ELECTRICAL MOTOR. INSCRIBED DENOTES HORSE POWER
	RECEPTACLE, DUPLEX, 125V 20A GFI - INDICATES GFI TYPE WP - INDICATES WEATHER PROOF TYPE
	JUNCTION BOX AND FINAL CONNECTION TO EQUIPMENT.
	FUSIBLE DISCONNECT SWITCH, 30A U.O.N., RATING AS FOLLOWS; (EG. 60A, 3P INDICATES 60-AMP SWITCH, 3-POLE).
	COMBINATION STARTER/DISCONNECT SWITCH

SYMBOL LIST	
FIRE ALARM	
	RELAY
	CONTROL MODULE
	DUCT MOUNTED SMOKE DETECTOR
	REMOTE INDICATING LED LIGHT



Following No. **E-001**

106 Hammond Rd,
Tibella, NY 10984

SED# 50-02-01-06-0-016-029

TOWN OF CLARKSTOWN
COUNTY OF ROCKLAND



FSA
MICHAEL SHILALE ARCHITECTS, L.L.P.

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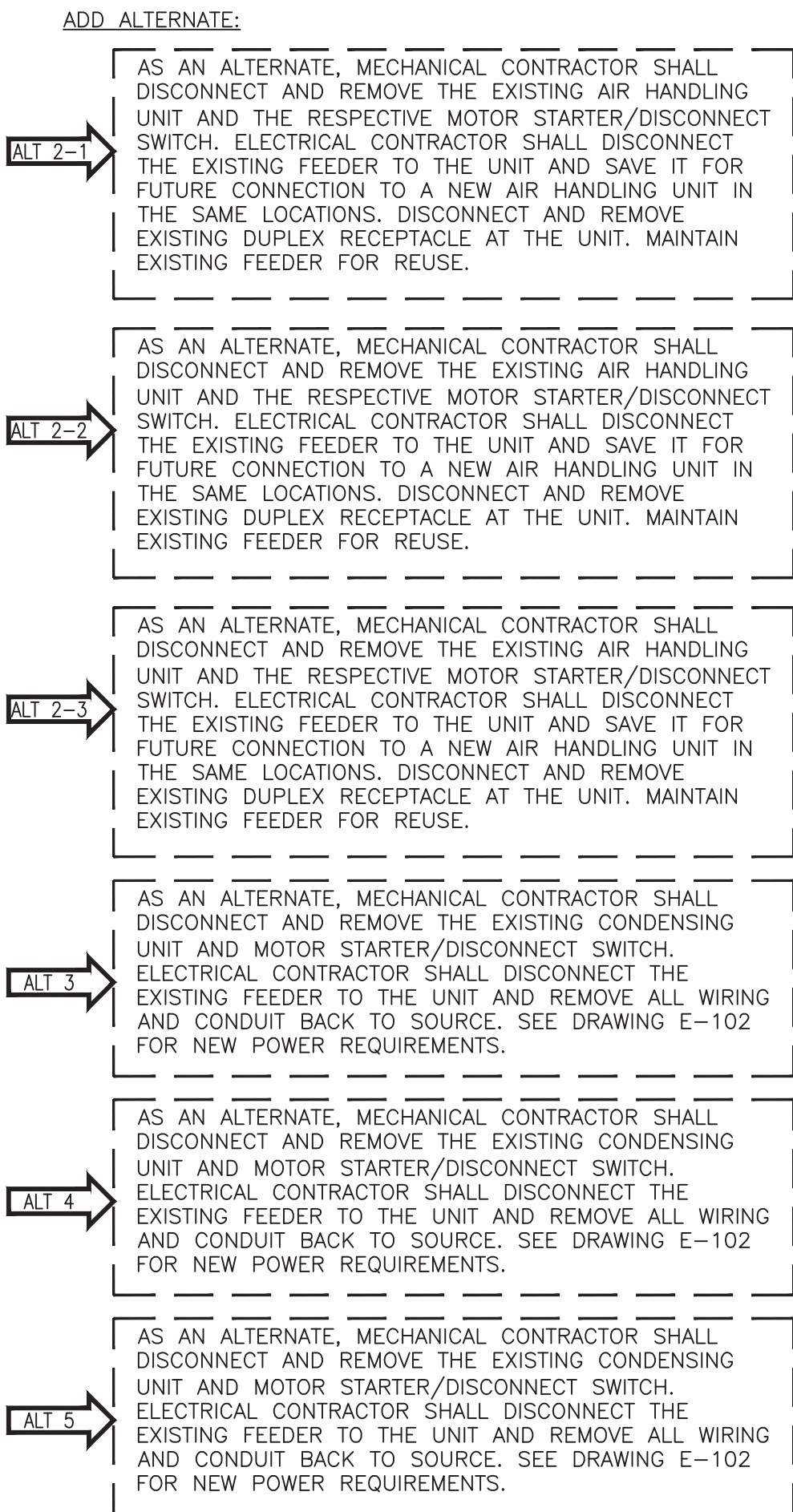
Mechanical
& Electric
Engineer:

Structural Engineer:

Drawn by	FC
Checked by	RS
Project No.	39062G
Scale	AS NOTED
Date	11-10-20

[illegible]

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PLAN NORTH

Drawing No. **E-101**

