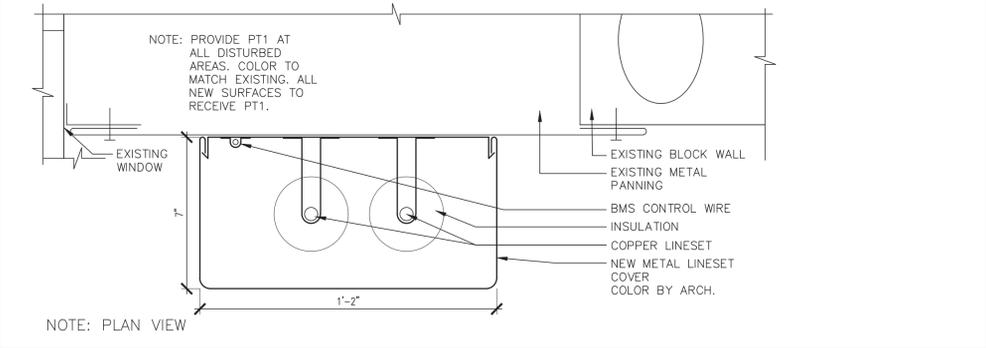
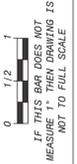


CODE	MATERIAL	MANUFACTURER	PRODUCT	CATALOG NO.	FINISH	COLOR	REMARKS
PT1	LATEX FINISH	BENJAMIN MOORE	REGAL AQUA PEARL	310	EGGSHELL	BY ARCH	(1) COAT PT4, (2) COATS PT1
PT4	LATEX PRIMER	BENJAMIN MOORE	LATEX PRIMER	273	FLAT	BY ARCH	
PT5	LATEX FINISH	BENJAMIN MOORE	DTM ACRYLIC	M29	SEMI-GLOSS	BY ARCH	(3) COAT PT6
BF	BLOCK FILLER	BENJAMIN MOORE	BLOCK FILLER	958-11			
ACT1	2'X2' CEILING TILE	USG	MARS CLIMAPLUS	86185HRC		WHITE	W/ NEW GRID SYSTEM. PROVIDE "A USG DX" GRID PROFILE

FINISH MATERIAL SCHEDULE



1 LINE SET ENCLOSURE
SCALE: 3" = 1'-0"



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	JR
Checked by	MS/JC
Project No.	4-3040
Scale	AS NOTED
Date	03-18-24
No.	0
Date	03-04-25
Revisions	BIDDING DOCUMENTS

REG. EXP. DATE: 12-31-25

GREENMAN PEDERSEN INC
400 BELLA ROUTE
MONTEBELLA, NY 10901

Mechanical & Electrical Engineer:
JR

GREENMAN PEDERSEN INC
400 BELLA ROUTE
MONTEBELLA, NY 10901

Structural Engineer:
MS/JC

UNIVENT REPLACEMENT AT STONY POINT, THELLS AND WEST HAVERSTRAW ELEMENTARY SCHOOL

SPES SED# 50-02-01-08-0-014-012
TES SED# 50-02-01-06-0-025-018
WHES SED# 50-02-01-08-0-024-015

7 GIBBS DRIVE, STONY POINT, NY 10980
COUNTY OF ROCKLAND

MSA

MICHAEL SHILALE ARCHITECTS, L.L.P.
140 Park Avenue New York, NY 10022 Tel 965-7065-5000
www.mshale.com

INTERIOR DETAILS

Drawing No. **A-610**

SAFETY NOTES:

- SPECIAL PRECAUTIONS SHALL BE TAKEN BY THE CONTRACTOR SO THAT EQUIPMENT ON THE APPLICATION AND ITS INSTALLATION WILL NOT AFFECT THE FOLLOWING:
 - EGRESS TO AND FROM THE BUILDING FIRE SAFETY OR CREATE A FIRE HAZARD
 - STRUCTURAL SAFETY OF THE BUILDING.
 - ACCUMULATION OF DUST AND DEBRIS. THE CONTRACTOR SHALL LEAVE THE SITE BROOM CLEAN EACH DAY.
- ASBESTOS MUST FIRST BE INVESTIGATED AND VERIFIED IN FIELD BEFORE ANY DEMOLITION OR CONSTRUCTION WORK TO BE PERFORMED. ASBESTOS FREE MUST BE CERTIFIED FOR ALL HVAC EQUIPMENT, DUCTWORK, AND ALL PIPING INSULATION.
- CONSTRUCTION WORK SHALL BE CONFINED TO WORK AREAS NOTED ON THE DRAWINGS AND SHALL INVOLVE TEMPORARY INTERRUPTION OF HEATING, WATER AND ELECTRIC SERVICES TO THE BUILDING SYSTEMS ONLY AS SCHEDULED WITH NEW YORK CITY.
- FIRE SAFETY: ALL BUILDING MATERIALS STORED IN CONSTRUCTION AREA, AND/OR IN ANY AREA OF THE BUILDING ARE TO BE SECURED IN A LOCKED AREA. ACCESS TO SUCH AREAS TO BE CONTROLLED BY THE FACILITY AND/OR GENERAL CONTRACTOR.
- CONTRACTOR SHALL PROVIDE BARRICADES AROUND WORK AREAS AS REQUIRED TO PREVENT UNAUTHORIZED PERSONS FROM ENTERING THEREIN.
- THE CONTRACTOR SHALL SUBMIT SAFETY PLAN FOR CONSTRUCTION MANAGER'S APPROVAL.
- CONFINED SPACES: ALL WORK WITHIN CONFINED SPACES SHALL BE CONDUCTED IN ACCORDANCE WITH OSHA REGULATIONS. THE BUILDING "E" TUNNEL LEVEL AND THE "DEEP SIX" TUNNEL HAVE ONLY ONE ENTRANCE/EXIT AND SHALL BE CONSIDERED CONFINED SPACES.

MECHANICAL DEMOLITION NOTES:

- DEMOLITION/RELOCATIONS: CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION AND RELOCATIONS OF SERVICES, EQUIPMENT AND MATERIAL RELATING TO HIS/HER RESPECTIVE TRADE. INCLUDE IN BID THE COST TO PROVIDE DEMOLITION OF ALL ELECTRICAL EQUIPMENT AND SYSTEMS ASSOCIATED WITH THE RENOVATION WORK. ALL DEMOLITION WORK SHALL COORDINATE WITH OWNER.
- WHERE EXISTING WALLS, FLOORS OR CEILINGS ARE REMOVED OR PENETRATED, AND WHERE EXISTING END WALLS OF THE BUILDING ARE POINTS OF CONNECTION OF ADDITIONS, ALL SERVICES, PIPING, CONDUIT, CONTROL AND/OR SWITCH DEVICES, LIGHTS, OR OTHER HVAC, PLUMBING, FIRE PROTECTION OR ELECTRICAL EQUIPMENT SHALL BE REMOVED (AND/OR RELOCATED WHERE THEY MUST REMAIN IN SERVICE, OR SERVE, AREAS BEYOND THE IMMEDIATE WORK) CONTRACTOR SHALL FIELD VERIFY CONDITIONS AT THE SITE.
- PRIOR TO DEMOLITION CONTRACTOR SHALL REVIEW WITH OWNER ALL MATERIALS TO BE REMOVED. SHOULD THE OWNER OPT TO KEEP ANY MATERIALS THE CONTRACTOR SHALL REMOVE AND DELIVER THE PARTS TO THE OWNER ON THE SITE WHERE SO DIRECTED. OTHERWISE ALL DEMOLISHED OR REMOVED MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AND BE DISPOSED OF IN A LEGAL MANNER.
- DEMOLITION SHALL INCLUDE REMOVAL OF ALL PARTS AND PIECES IN THEIR ENTIRETY BACK TO POINTS INDICATED OR IF NOT INDICATED BACK TO THEIR POINT OF SOURCE. REMOVE CONDUCTORS FROM REMAINING CONDUITS WHERE IT IS INDICATED. WHERE CONDUCTORS REMAINED IN CONDUITS-DISCONNECT, ISOLATE AND CAPPED THEM TO ENSURE SAFETY AND PROTECTION. WHERE CONDITIONS PROHIBIT TOTAL REMOVAL OF THE WORK, THE REMAINING PORTION SHALL BE CUT FLUSH WITH THE SURROUNDING SURFACE AND BE CAPPED, PLUGGED OR SEALED AND THE SURROUNDING SURFACE SHALL BE REFRESHED IN AN APPROVED MANNER.
- MAINTAIN EXISTING UTILITIES INDICATED OR REQUIRED TO REMAIN, KEEP IN SERVICE, AND PROTECT AGAINST DAMAGE DURING DEMOLITION OPERATIONS. DO NOT INTERRUPT EXISTING UTILITIES SERVING OCCUPIED OR USED FACILITIES, EXCEPT WHEN SCHEDULED WITH THE OWNER.
- DO NOT REMOVE EXISTING STRUCTURAL WORK. DO NOT REMOVE OPERATIONAL ELEMENTS AND SAFETY-RELATED COMPONENTS IN A MANNER RESULTING IN A REDUCTION OF CAPACITIES TO PERFORM IN THE MANNER INTENDED OR RESULTING IN DECREASED OPERATIONAL LIFE, INCREASED MAINTENANCE, OR DECREASED SAFETY.
- REMOVALS, DISCONNECTIONS, AND RELOCATIONS SHALL BE PERFORMED BY WORKMEN SKILLED IN THE TRADE INVOLVED AND SHALL BE EMPLOYED BY A CONTRACTOR LICENSED IN THE TRADE INVOLVED. ALL WORK SHALL BE DONE IN ACCORDANCE WITH ACCEPTED TRADE PRACTICES.
- PROVIDE ADEQUATE TEMPORARY SUPPORT FOR WORK TO REMAIN, TO PREVENT FAILURE. DO NOT ENDANGER OTHER WORK.
- PROTECTION: PROVIDE ADEQUATE PROTECTION WHERE REQUIRED FOR THE PRESENT BUILDING AND ITS CONTENTS. TEMPORARY DUSTPROOF BARRIERS AND BARRICADES SHALL BE ERCTED WHERE REQUIRED FOR PROTECTION OF PERSONNEL, PROTECTION FROM DUST AND DIRT, FOR SECURITY, FIRE AND WEATHER PROTECTIVE REASONS. CONTRACTOR SHALL TAKE EVERY PRECAUTION AGAINST FIRE BY EMPLOYING FIRE DEPARTMENT TYPE HOSES AND PORTABLE FIRE EXTINGUISHERS AS REQUIRED BY OSHA AND/OR THE OWNER'S INSURANCE UNDERWRITER.
- USE TEMPORARY ENCLOSURES, OR OTHER SUITABLE METHODS TO LIMIT DUST AND DIRT RISING AND SCATTERING TO LOWEST PRACTICAL LEVEL. COMPLY WITH GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.
- ALL EXISTING EQUIPMENT REQUIRED TO BE REUSED SHALL BE CLEANED, RECONDITIONED, CALIBRATED AND ADJUSTED. IN ALL INSTANCES WHERE CONTRACTOR FINDS THAT EXISTING EQUIPMENT IS DEFECTIVE TO THE POINT WHERE IT CANNOT BE PROPERLY RESTORED AND WILL NOT OPERATE PROPERLY, HE SHALL REPORT THE SPECIFIC INSTRUMENTS OR EQUIPMENT TO THE OWNER/ENGINEER FOR DIRECTIONS.
- TEMPORARY SHUTDOWNS OF SERVICE OF EXISTING ELECTRICAL, 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 PROJECT OFFICER.
- ELECTRICAL CONTRACTOR SHALL RING OUT AND IDENTIFY ALL CIRCUITS REMAINING IN CONTRACT AREA. AFTER DEMOLITION, REMOVE ALL CIRCUITS BACK TO POINT OF SOURCE. MARK PANEL CIRCUITS NO LONGER IN USE "SPARE".

GENERAL NOTES

- 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.
- CONTRACTOR TO REMOVE AND PROPERLY DISPOSE OF EQUIPMENT FROM SITE INDICATED FOR DEMOLITION, UNLESS OTHERWISE DIRECTED BY THE AUTHORITY.
- 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.
- 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.
- 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.
- LOAD CALCULATIONS HAVE BEEN PERFORMED IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING STANDARDS, SPECIFICALLY ASHRAE HANDBOOK - FUNDAMENTALS.
- CONTRACTOR SHALL PERFORM ALL TESTS AND STARTUP PROCEDURES FOR EACH VENTILATION SYSTEM IN ACCORDANCE WITH THE MANUFACTURER AND SPECIFICATIONS.
- ALL THERMOSTATIC CONTROLS SHALL BE TESTED FOR FUNCTIONALITY AND PROPER OPERATION AS REQUIRED BY NYS ECC.
- ELECTRIC MOTORS SHALL COMPLY WITH THE REQUIREMENTS OF THE ENERGY POLICY ACT OF 1992 AS SHOWN IN ASHRAE 90.1-2013 TABLE #10.8.
- IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO PROVIDE CONTROL WIRING. THE MECHANICAL CONTRACTOR SHALL ALSO PROVIDE ALL POWER SUPPLIES, ELECTRICAL WIRING AND CONDUIT FOR POWER AND CONTROL TO ALL VALVE OPERATORS, THERMOSTATS AND AUTOMATIC CONTROL INSTRUMENTATION. ELECTRICAL CONTRACTOR TO INSTALL AND ROUTE POWER WIRING FOR EACH MECHANICAL SYSTEM.
- MOUNTING HEIGHTS FOR ASSOCIATED MECHANICAL THERMOSTAT CONTROLS, ETC. SHALL MEET THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES FOR BUILDING AND FACILITIES. MOUNTING HEIGHTS FOR ALL THERMOSTATS, ETC SHALL BE 48" AFF.

HVAC DESIGN CRITERIA

- SITE (BASED ON NEAREST AVAILABLE DATA: ASHRAE 2013 HANDBOOK CLIMATIC DESIGN INFORMATION, WESTCHESTER CO, NY):
 - 41.07°N, 73.71°W
 - ELEVATION: 397 FT
 - CLIMATE ZONE 5A.
- OUTSIDE DESIGN CONDITIONS (BASED ON NEAREST AVAILABLE DATA: ASHRAE 2013 CLIMATIC DESIGN INFORMATION, WESTCHESTER CO, NY):
 - HEATING DB (99.6%): 9.0°F DB
 - COOLING DB(MCWB) (1%): 86.5°F DB, 72.1°F WB
- INSIDE DESIGN CONDITIONS (PER NYSMD MANUAL OF PLANNING STANDARDS §602-6 B. AND 2015 ASHRAE HANDBOOK CH 7 TABLE 6):
 - HEATING INDOOR SETPOINT: 72°F
 - COOLING INDOOR SETPOINT: 78°F, 60% RH
- ACOUSTICS (PER NYSMD MANUAL OF PLANNING STANDARDS, TABLE S304-1):
 - DESIGN REQUIREMENTS FOR HVAC SYSTEM NOISE FOR CLASSROOMS, 7-12: RC 25-30.
- FILTRATION: MERV 13 (PER NYSMD MANUAL OF PLANNING STANDARDS).
- DEMAND CONTROLLED VENTILATION NOT REQUIRED PER EC03.2.6.1 EXCEPTION #3.

SEQUENCE OF OPERATIONS

- REFER TO SEQUENCE OF OPERATION SPECIFICATION.

HVAC NOTES:

- 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 ALL ITEMS OF MATERIAL, 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.
- 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.
- START-UP SERVICES SHALL BE INCLUDED.
- 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.
- 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.
- 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.
- VERIFY FINAL LOCATIONS FOR ROUGH WORK WITH FIELD MEASUREMENTS AND WITH THE REQUIREMENTS OF THE ACTUAL EQUIPMENT BEING CONNECTED.
- 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.
- 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.
- CONTRACTOR IS RESPONSIBLE TO ATTEND COORDINATION MEETING WITH ALL TRADES TO DETERMINE LOCATIONS OF DEVICES AND DISCOVER IF ANY CONFLICTS MAY EXIST.
- 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.
- ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THE 2020 NYS BUILDING CODE, 2020 NYS MECHANICAL CODE, AND 2020 NYS ENERGY CONSERVATION CONSTRUCTION CODE, AND ALL GOVERNING LOCAL CODES, LAWS, AND REGULATIONS.
- PROVIDE A COMPLETE OPERABLE SYSTEM IN A WORKMANLIKE MANNER. OUTLINE DESCRIPTION AND EQUIPMENT; DO NOT LIMIT CONTRACTOR'S LIABILITY FOR THE INSTALLATION OF A COMPLETE OPERABLE SYSTEM.
- VISIT THE SITE AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS THAT MAY AFFECT THE WORK. NO ADDITIONAL COMPENSATION WILL BE DUE FOR FAILURE TO DO SO.
- CONTRACTOR TO BE RESPONSIBLE FOR REVIEWING THE FULL SET OF BID DOCUMENTS TO BE AWARE OF THE TOTAL SCOPE PRIOR TO SUBMITTING BID. ALL WORK SHOWN ON THE DRAWINGS NOT SPECIFICALLY CALLED OUT AS EXISTING SHALL BE CONSIDERED WORK TO BE PERFORMED UNDER THIS CONTRACT.
- BIDDERS, BEFORE SUBMITTING A PROPOSAL, SHALL VISIT AND CAREFULLY EXAMINE THE SITE TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS AND WITH THE DIFFICULTIES THAT WILL ATTEND THE EXECUTION OF THIS WORK. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH EXAMINATION HAS BEEN MADE. LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED. NO ALLOWANCE WILL SUBSEQUENTLY BE MADE TO THE CONTRACTOR BY REASON OF ANY ERROR DUE TO THE CONTRACTOR'S NEGLIGENCE TO COMPLY WITH THIS REQUIREMENT. REPORT ANY DISCREPANCIES BETWEEN DRAWINGS AND FIELD CONDITIONS TO THE ENGINEER.
- BEFORE COMMENCING WORK, THE CONTRACTOR SHALL FILE ALL REQUIRED CERTIFICATES OF INSURANCE WITH THE BUILDING DEPARTMENT. OBTAIN ALL REQUIRED PERMITS AND PAY ALL FEES REQUIRED.
- THE CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING REQUIRED TO COMPLETE THE WORK OR TO MAKE ITS PARTS FIT TOGETHER PROPERLY WITHOUT COMPROMISING THE QUALITY OF THE WORK. RESTORE WALLS AND CEILINGS TO MATCH EXISTING.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATELY BRACING AND PROTECTING ALL WORK DURING CONSTRUCTION AGAINST DAMAGE, BREAKAGE, COLLAPSE, DISTORTIONS, AND OFF ALIGNMENTS ACCORDING TO CODES AND STANDARDS OF GOOD PRACTICE.
- THE TERM "FINISH FLOOR" SHALL MEAN THE NORMAL FINISHED SURFACE OF THE FLOOR LEVEL. ALL ELEVATIONS GIVEN FOR EXISTING BUILDINGS ARE TO FINISHED FLOOR. THE CONTRACTOR SHALL FIELD VERIFY ALL ELEVATIONS FOR EXISTING STRUCTURES PRIOR TO THE COMMENCEMENT OF WORK.
- THE CONTRACTOR SHALL PATCH AND REPAIR ALL FLOORS, WALLS, CEILINGS, ETC. DAMAGED OR EXPOSED DUE TO WORK OR REMOVALS AND FINISH TO MATCH ADJOINING SURFACES.
- WHERE MANUFACTURERS NAMES AND PRODUCT NUMBERS ARE INDICATED ON THE DRAWINGS IT SHALL BE CONSTRUED TO MEAN THE ESTABLISHING OF QUALITY AND PERFORMANCE STANDARDS OF SUCH ITEMS. ALL OTHER PRODUCTS MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE THEY SHALL BE DEMOLISHED.
- DRAWINGS ARE NOT TO BE SCALED. USE DIMENSIONS ONLY. ALL DIMENSIONS AND CONDITIONS SHOWN AND ASSUMED ON THE DRAWINGS MUST BE VERIFIED AT THE SITE BY THE CONTRACTOR BEFORE ORDERING ANY MATERIAL OR DOING ANY WORK. ANY DISCREPANCIES IN THE DRAWINGS AND SPECIFICATIONS SHALL BE REPORTED TO THE ENGINEER. NO CHANGE IN DRAWINGS OR SPECIFICATIONS IS PERMISSIBLE WITHOUT THE WRITTEN CONSENT OF THE ENGINEER.
- ALL WORK ON THESE DRAWINGS SHALL BE CONSIDERED NEW WORK WHETHER STATED OR NOT EXCEPT WHERE SPECIFICALLY NOTED AS "EXISTING TO REMAIN".
- DETAILS NOT SHOWN OR SPECIFIED, BUT NECESSARY FOR PROPER AND ACCEPTABLE CONSTRUCTION, INSTALLATION OR OPERATION OF ANY PART OF THE WORK AS DETERMINED BY THE ENGINEER, SHALL BE INCLUDED IN THE WORK THE SAME AS IF HEREIN SPECIFIED OR INDICATED.
- ALL WORK SHALL BE INSTALLED SO THAT ALL PARTS REQUIRED ARE READILY ACCESSIBLE FOR INSPECTION, OPERATION, MAINTENANCE AND REPAIR.
- CONTRACTOR SHALL KEEP WORK SITE FREE FROM DEBRIS AND ACCUMULATED REFUSE, AND SHALL HAVE SOLE RESPONSIBILITY FOR PROTECTING ALL DANGEROUS AREAS FROM ENTRY BY UNAUTHORIZED PARTIES. WORK AREA WILL BE LEFT BROOM CLEAN AT THE END OF COMPLETION OF WORK AND UNTIL THE SPACE IS READY TO BE OCCUPIED.
- PROVIDE BARRICADES AROUND WORK AREAS AS REQUIRED TO PREVENT UNAUTHORIZED PERSONS FROM ENTERING THEREIN.
- THE WORD "PROVIDE" USED ON DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THIS PROJECT MEANS "FURNISH AND INSTALL". WHEN ONLY ONE PART OF ACTION IS REQUIRED, EITHER "FURNISH" OR "INSTALL" WILL BE USED ACCORDINGLY (TYP., U.O.W.N.).
- ALL DISCONNECT SWITCHES, STARTERS, AND VARIABLE FREQUENCY DRIVES SHALL BE FURNISHED BY MECHANICAL CONTRACTOR AND INSTALLED BY ELECTRICAL CONTRACTOR.
- PROVIDE OPERATING AND MAINTENANCE MANUALS FOR ALL EQUIPMENT SPECIFIED IN THE SCHEDULES ON THIS DRAWING TO THE BUILDING OWNER WITHIN 90 DAYS AFTER SYSTEM ACCEPTANCE.

ABBREVIATIONS

ABBREVIATION:	DESCRIPTION:
A	AMPERE
AC	AIR CONDITIONING
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AMP	AMPERE
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATING, AND AIR CONDITIONING ENGINEERS
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
AUX	AUXILIARY
BC	BRANCH CONTROLLER
BHP	BRAKE HORSEPOWER
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BMS	BUILDING MANAGEMENT SYSTEM
BTU	BRITISH THERMAL UNIT
CFM	CUBIC FEET PER MINUTE
CW	COLD WATER
DB	DRY BULB
DDC	DIRECT DIGITAL CONTROL
DEG.	DEGREES
DEW	DEW POINT
DWG	DRAWING
DX	DIRECT EXPANSION
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY EFFICIENCY RATIO
EFF	EFFICIENCY
ESP	EXTERNAL STATIC PRESSURE
F	FAHRENHEIT
FA	FIRE ALARM
FC	FLEXIBLE CONNECTION
FD	FLOOR DAMPER
FD	FLOOR DRAIN
FLA	FULL LOAD AMPS
FPI	FINS PER INCH
PFM	FEET PER MINUTE
FSD	COMBINATION FIRE/SMOKE DAMPER
FT	FEET
G	NATURAL GAS
GAL	GALLON
GALV	GALVANIZED
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HOA	HAND/OFF/AUTO
HP	HEAT PUMP
H	HOUR
HP	HORSEPOWER
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING
HW	HOT WATER
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HZ	HERTZ
IEER	INTEGRATED ENERGY EFFICIENCY RATIO
IN	INCHES
KW	KILOWATTS
LxWxH	LENGTH BY WIDTH BY HEIGHT
LAT	LEAVING AIR TEMPERATURE
LB	POUND
LF	LINEAR FEET
LRA	LOCKED ROTOR AMPS
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	1,000 BTUH
OCA	MINIMUM CIRCUIT AMPACITY
MHP	MINOR HORSEPOWER
MIN	MINIMUM, MINUTE
MM	MILLIMETER
MOP	MAXIMUM OVER-CURRENT PROTECTION
OAT	OUTSIDE AIR TEMPERATURE
OC	ON CENTER
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PH	PHASE
PRESS	PRESSURE
PSIA	POUNDS PER SQUARE INCH, ABSOLUTE
PSIG	POUNDS PER SQUARE INCH, GAUGE
QTY	QUANTITY
RA	RETURN AIR
RAT	RETURN AIR TEMPERATURE
REQD	REQUIRED
REV	REVISION
RM	ROOM
RTU	ROOFTOP UNIT
S	SECONDS
SD	SMOKE DAMPER
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SENS	SENSIBLE
SF	SQUARE FEET
SPEC	SPECIFICATION
SO	SQUARE
SS	STAINLESS STEEL
TEMP	TEMPERATURE
THK	THICK
TOD	TOP OF DUCT
TON	12,000 BTUH COOLING CAPACITY
TYP	TYPICAL
UH	UNIT HEATER
V	VENT, VOLTS, OR VOLUME
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
VIF	VERIFY IN FIELD
VRF	VARIABLE REFRIGERANT FLOW
W	WATTS, WIDTH
WB	WET BULB
WC	WATER COLUMN



No.	Date	Revisions
1	03-04-23	BIDDING DOCUMENTS

Drawn by	VF /AW
Checked by	EF
Project No.	43040
Scale	AS NOTED
Date	03-04-25

GREENMAN PEDERSEN, INC MECHANICAL ELECTRICAL PLUMBING & REFRIGERATION CONTRACTORS SUFFERN, NY 10901 PH. NO. : 845-3000000	GREENMAN PEDERSEN, INC MECHANICAL ELECTRICAL PLUMBING & REFRIGERATION CONTRACTORS SUFFERN, NY 10901
--	---

Mechanical Electrical Plumbing & Refrigeration Engineer:	Structural Engineer:
--	----------------------

UNIVENT REPLACEMENT AT STONY POINT THIELS, WEST HAVESTRAW ELEMENTARY SCHOOL

SED# 50-02-01-06-0-014-012
SED# 50-02-01-06-0-025-018
SED# 50-02-01-06-0-024-015

NEW YORK STATE
REGISTERED ARCHITECT

MSA

MICHAEL SHILAIE ARCHITECTS, LLP
140 Park Avenue New City, NY 10956 Tel 845-708-9200
www.shilaie.com

GENERAL NOTES AND ABBREVIATIONS

Drawing No. **M-001**

SYMBOLS:

	CENTER LINE
	DEMOLITION AND REMOVAL
	EXISTING TO REMAIN
	NEW PIPE, DUCTWORK OR EQUIPMENT
	PIPE DROPPING DOWN
	PIPE RISING UP
	AIR VENT
	AUTOMATIC FLOW CONTROL VALVE
	BALL VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	CONCENTRIC REDUCER OR INCREASER
	ECCENTRIC REDUCER OR INCREASER
	FLEXIBLE CONNECTOR
	FLOW IN DIRECTION OF ARROW
	GATE VALVE
	GLOBE VALVE
	MODULATING CONTROL VALVE
	PRESSURE GAUGE WITH NEEDLE VALVE COCK
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	STRAINER
	THERMOMETER
	TRIPLE DUTY VALVE
	UNION
	DISCONNECT POINT
	TIE-IN POINT
	HWR HOT WATER RETURN
	HWS HOT WATER SUPPLY
	REFRIGERANT
	DRAIN
	VENT
	TEMPERATURE SENSOR/THERMOSTAT
	HUMIDITY SENSOR

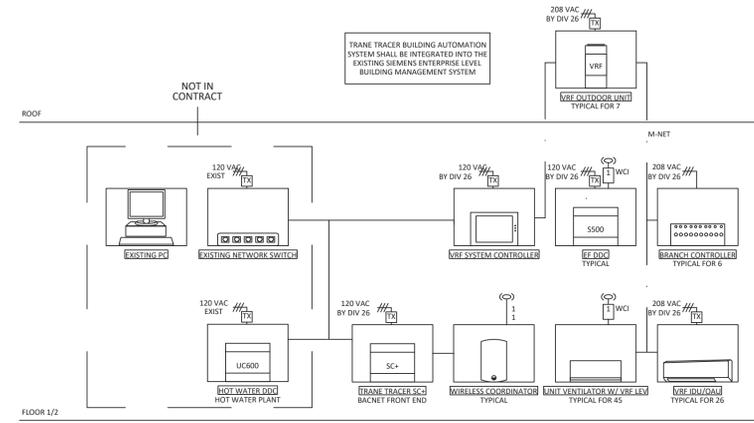
	ACCESS PANEL
	VOLUME DAMPER
	SUPPLY DIFFUSER
	RETURN OR EXHAUST GRILLE
	CEILING CASSETTE
	DEMOLISH
	SECTION A-A

© COPYRIGHT, MICHAEL SHILAIE ARCHITECTS. ALL RIGHTS RESERVED.

SUMMARY OF WORK STONY POINT:

THE WORK OF THIS PROJECT INCLUDES HVAC UPGRADES AT STONY POINT ELEMENTARY SCHOOL. PROVIDE MATERIALS AND SERVICES AS FOLLOWS. THE FOLLOWING IS NOT INTENDED TO BE A COMPLETE DESCRIPTION OF THE WORK; PERFORM THE WORK AS HERINAFTER DESCRIBED IN THESE CONTRACT DOCUMENTS.

- A. REPLACE UNIT VENTILATORS THROUGHOUT THE BUILDING WHERE INDICATED. CONNECT ALL NEW UNIT VENTILATORS TO THE NEW VRF SYSTEM WITH NEWLY INSTALLED REFRIGERANT PIPING. UNIT VENTILATORS TO DX COOLING AND HEATING AND ALSO HYDRONIC HOT WATER HEATING COIL TO BE TIED IN AND CONTROLLED VIA SEPARATE THERMOSTAT. TYP. 50 TO BE TIED INTO EXISTING BMS SYSTEM.
- B. PROVIDE NINE (9) NEW CEILING CASSETTE HVAC UNITS WITH DX COOLING AND HEATING. CONNECTED TO NEW OR EXISTING FRESH AIR DUCTWORK WITH NEW THERMOSTATS. TO BE TIED INTO EXISTING BMS SYSTEM.
- B. PROVIDE EIGHT (8) NEW WALL HUNG HVAC UNITS WITH DX COOLING AND HEATING WITH NEW THERMOSTATS. TO BE TIED INTO EXISTING BMS SYSTEM.
- C. PROVIDE SEVEN (7) NEW DUCTLESS VRF OUTDOOR CONDENSING UNITS.
- D. PROVIDE AND INSTALL THREE (3) ROOFTOP HVAC UNITS. ONE (1) FOR THE LIBRARY, TIE INTO EXISTING DUCT WORK AND EXTEND NEW DUCTWORK INTO THREE ROOM. TWO (2) FOR THE GYM AND SUPPLY AND RETURN DUCTWORK ALL THREE NEW THERMOSTATS AND CONNECT TO BMS.
- E. LIBRARY SUPPLY DUCTWORK TO HAVE NEW HOT WATER COILS TO BE TIED INTO EXISTING HOT WATER SYSTEM. CONNECT TO NEW THERMOSTAT AND BMS.

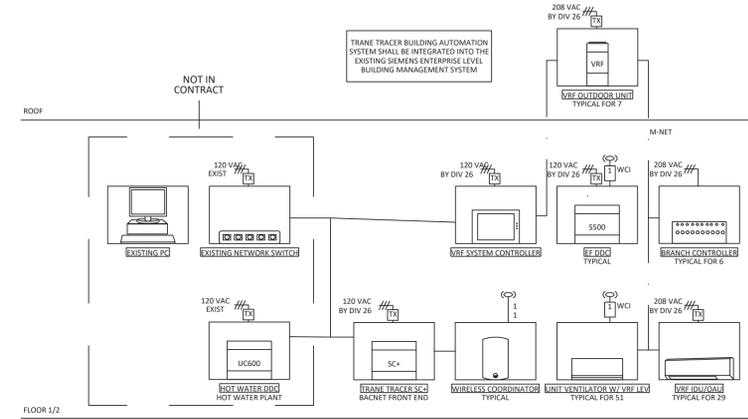


1 HVAC UPGRADE BMS-CONTROLS (THIELS)
SCALE: N.T.S.

SUMMARY OF WORK - THIELS:

THE WORK OF THIS PROJECT INCLUDES HVAC UPGRADES AT THIELS ELEMENTARY SCHOOL. PROVIDE MATERIALS AND SERVICES AS FOLLOWS. THE FOLLOWING IS NOT INTENDED TO BE A COMPLETE DESCRIPTION OF THE WORK; PERFORM THE WORK AS HERINAFTER DESCRIBED IN THESE CONTRACT DOCUMENTS.

- A. REPLACE UNIT VENTILATORS THROUGHOUT THE BUILDING WHERE INDICATED. CONNECT ALL NEW UNIT VENTILATORS TO THE NEW VRF SYSTEM WITH NEWLY INSTALLED REFRIGERANT PIPING. UNIT VENTILATORS TO DX COOLING AND HEATING AND ALSO HYDRONIC HOT WATER HEATING COIL TO BE TIED IN AND CONTROLLED VIA SEPARATE THERMOSTAT. TYP. 51 TO BE TIED INTO EXISTING BMS SYSTEM.
- B. PROVIDE NINE (9) NEW CEILING CASSETTE HVAC UNITS WITH DX COOLING AND HEATING. CONNECTED TO NEW OR EXISTING FRESH AIR DUCTWORK WITH NEW THERMOSTATS. TO BE TIED INTO EXISTING BMS SYSTEM.
- B. PROVIDE EIGHT (8) NEW WALL HUNG HVAC UNITS WITH DX COOLING AND HEATING WITH NEW THERMOSTATS. TO BE TIED INTO EXISTING BMS SYSTEM.
- C. PROVIDE SEVEN (7) NEW DUCTLESS VRF OUTDOOR CONDENSING UNITS.

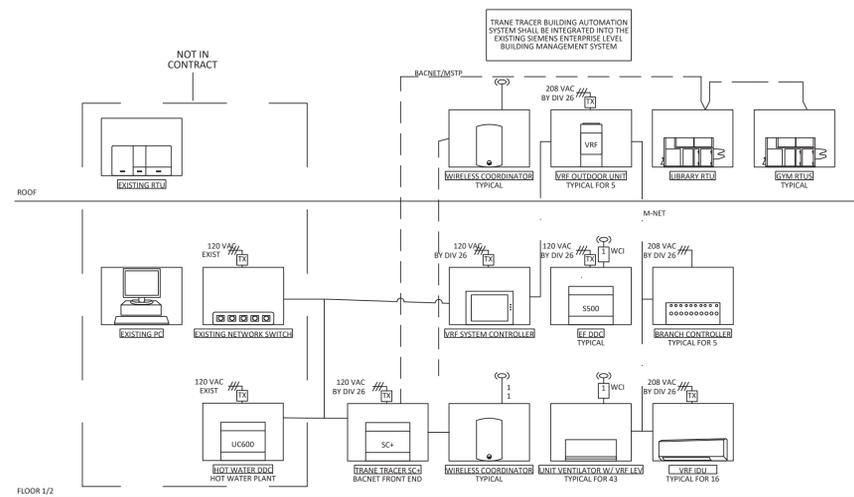


2 HVAC UPGRADE BMS-CONTROLS (WEST HAVERSTRAW)
SCALE: N.T.S.

SUMMARY OF WORK WEST HAVERSTRAW:

THE WORK OF THIS PROJECT INCLUDES HVAC UPGRADES AT WEST HAVERSTRAW ELEMENTARY SCHOOL. PROVIDE MATERIALS AND SERVICES AS FOLLOWS. THE FOLLOWING IS NOT INTENDED TO BE A COMPLETE DESCRIPTION OF THE WORK; PERFORM THE WORK AS HERINAFTER DESCRIBED IN THESE CONTRACT DOCUMENTS.

- A. REPLACE UNIT VENTILATORS THROUGHOUT THE BUILDING WHERE INDICATED. CONNECT ALL NEW UNIT VENTILATORS TO THE NEW VRF SYSTEM WITH NEWLY INSTALLED REFRIGERANT PIPING. UNIT VENTILATORS TO DX COOLING AND HEATING AND ALSO HYDRONIC HOT WATER HEATING COIL TO BE TIED IN AND CONTROLLED VIA SEPARATE THERMOSTAT. TYP. 50 TO BE TIED INTO EXISTING BMS SYSTEM.
- B. PROVIDE NINE (9) NEW CEILING CASSETTE HVAC UNITS WITH DX COOLING AND HEATING. CONNECTED TO NEW OR EXISTING FRESH AIR DUCTWORK WITH NEW THERMOSTATS. TO BE TIED INTO EXISTING BMS SYSTEM.
- B. PROVIDE EIGHT (8) NEW WALL HUNG HVAC UNITS WITH DX COOLING AND HEATING WITH NEW THERMOSTATS. TO BE TIED INTO EXISTING BMS SYSTEM.
- C. PROVIDE SEVEN (7) NEW DUCTLESS VRF OUTDOOR CONDENSING UNITS.



3 HVAC UPGRADE BMS-CONTROLS (STONY POINT)
SCALE: N.T.S.

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

No.	Date	Revisions
1	03-04-25	BIDDING DOCUMENTS

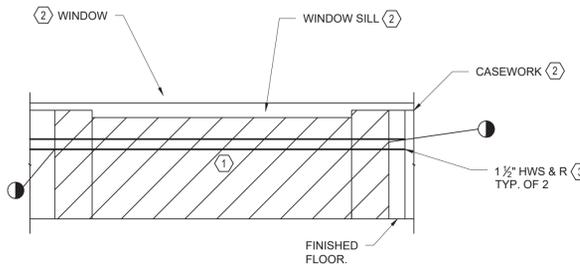
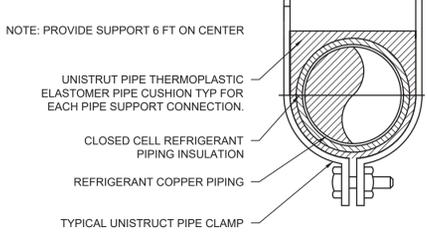
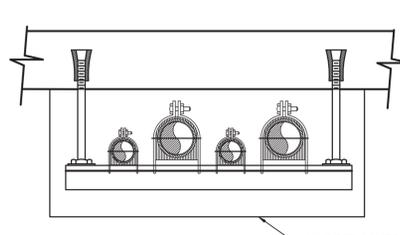
Drawn by	VF / AW
Checked by	EF
Project No.	43040
Scale	AS NOTED
Date	03-04-25

GREENMAN PEDERSEN, INC Mechanical Electrical & Structural Engineer PROJ. NO. : NY-20000800	GREENMAN PEDERSEN, INC Structural Engineer PROJ. NO. : NY-10001
---	--

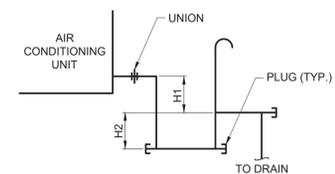
UNIVENT REPLACEMENT AT STONY POINT, THIELS, WEST HAVERSTRAW ELEMENTARY SCHOOL
 SEDA# 50-02-01-06-0-014-012
 SEDA# 50-02-01-06-0-025-018
 SEDA# 50-02-01-06-0-024-015
 GREENMAN PEDERSEN, INC. 10960
 STONY POINT, NY 10980

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

© COPYRIGHT, MICHAEL SHILALE ARCHITECTS. ALL RIGHTS RESERVED.
 Drawing Title
MECHANICAL SCOPE OF WORK
 Drawing No.
M-002



- NOTES:**
- DEMOLISH EXISTING NESBITT UNIT VENTILATOR.
 - REFER TO ARCHITECTURAL DRAWINGS.
 - REMOVE APPROX. 10 LF OF HWS & HWR PIPING SERVING THE FINNED TUBE RADIATORS PER UNIT VENTILATOR. CUT BACK THE ALUMINUM FINS AS NEEDED.



1 REFRIDGERANT AND CONDENSATE PIPING DETAIL
SCALE: N.T.S.

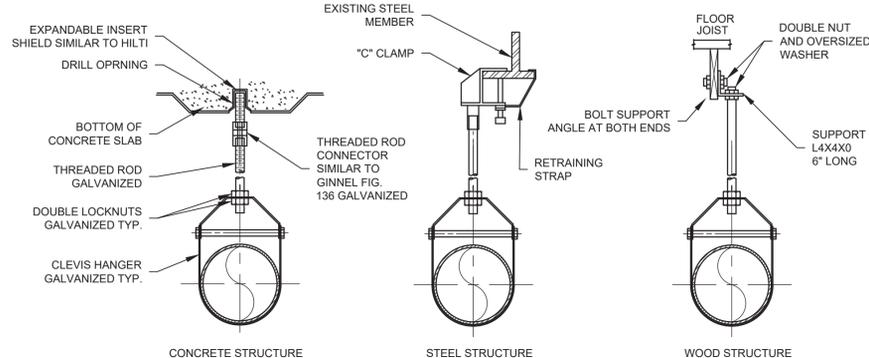
2 UNIT VENTILATOR DEMOLITION
SCALE: 1/2" = 1'0"

3 CONDENSATE TRAP
SCALE: N.T.S.

- NOTE:**
- SLOPE PIPING 1/8" PER FOOT TOWARD DRAIN. TERMINATE WITHIN 6" OF THE NEAREST ROOF DRAIN.
 - FOR DRAW THROUGH UNITS: H1= NEGATIVE STATIC PRESSURE OF FAN + 1" MIN. H2=H1.
 - MINIMUM PIPE SIZES SHALL BE AS FOLLOWS:
a. FOR EQUIPMENT UP TO 20 TONS REFRIGERATION: 3/4"
b. FOR EQUIPMENT OVER 20 TONS UP TO 40 TONS REFRIGERATION: 1"
 - CONNECT THE CONDENSATE DRAIN TO THE EXISTING CONDENSATE DRAIN PIPING AT EACH UNIT VENTILATOR AND FAN COIL UNIT.

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

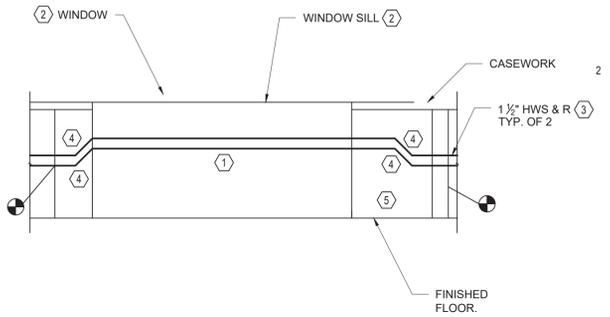
No.	Date	Revisions
1	03-04-25	BIDDING DOCUMENTS



- NOTES:**
- INCREASE CLEVIS HANGER SIZE TO ALLOW FOR INSULATION OF THOSE LINES REQUIRING INSULATION.
 - FOR INSULATED LINES USE STEEL PIPE SHIELDS AT HANGER POINTS.
 - THE ABOVE DETAIL SHALL BE USED ONLY FOR LINES UP TO AND INCLUDING 4" IN SIZE.
 - HANGING DETAILS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW AND APPROVAL.
 - HANGER SPACING SHALL BE AS FOLLOWS:

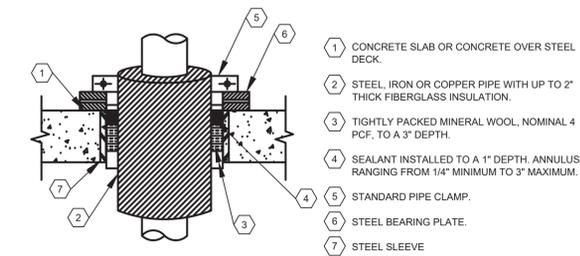
PIPE SIZE	MAX. HANGER SPACING	MIN. ROD SIZE
1/2" TO 1"	7' O.C.	3/8"
1-1/4" TO 2"	9' O.C.	1/2"
2-1/2" TO 4"	10' O.C.	1/2"

4 TYPICAL HANGER DETAILS
SCALE: N.T.S.



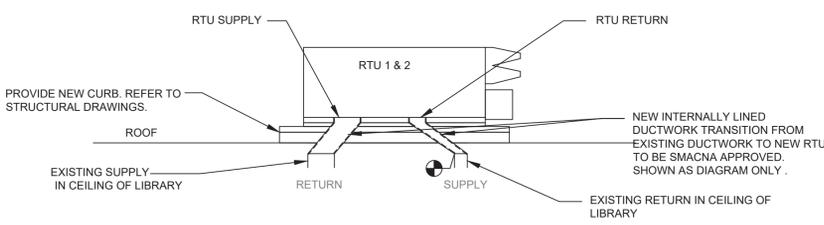
- NOTES:**
- INSTALL NEW UNIT VENTILATOR. REFER TO SCHEDULE FOR DIMENSIONS.
 - REFER TO ARCHITECTURAL DRAWINGS.
 - PROVIDE APPROX. 10 LF OF HWS & HWR PIPING SERVING THE EXISTING FINNED TUBE RADIATORS. RUN WITHIN THE UNIT VENTILATOR'S INTEGRAL PIPE CHASE.
 - OFFSET PIPING WITH 45 DEGREE ELBOWS ONLY IF NEEDED.
 - 12" ± EXTENSION FOR LINEAR EXPANSION VALVE.

5 UNIT VENTILATOR INSTALLATION
SCALE: 1/2" = 1'0"

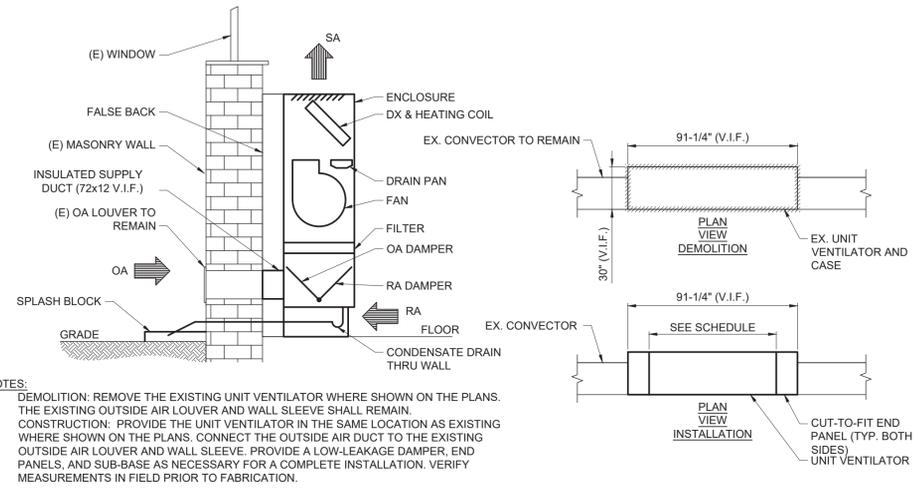


- CONCRETE SLAB OR CONCRETE OVER STEEL DECK.
- STEEL, IRON OR COPPER PIPE WITH UP TO 2" THICK FIBERGLASS INSULATION.
- TIGHTLY PACKED MINERAL WOOL, NOMINAL 4 PCF, TO A 3" DEPTH.
- SEALANT INSTALLED TO A 1" DEPTH ANNULUS RANGING FROM 1/4" MINIMUM TO 3" MAXIMUM.
- STANDARD PIPE CLAMP.
- STEEL BEARING PLATE.
- STEEL SLEEVE.

6 PIPE THRU FLOOR
SCALE: N.T.S.



2 RTU INSTALL DETAIL
SCALE: NONE

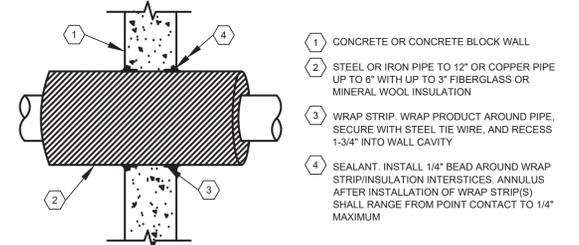


- CONCRETE OR CONCRETE BLOCK WALL.
- STEEL OR IRON PIPE TO 12" OR COPPER PIPE UP TO 8" WITH UP TO 3" FIBERGLASS OR MINERAL WOOL INSULATION.
- WRAP STRIP. WRAP PRODUCT AROUND PIPE, SECURE WITH STEEL TIE WIRE, AND RECESS 1-3/4" INTO WALL CAVITY.
- SEALANT. INSTALL 1/2" BEAD AROUND WRAP STRIP/INSULATION INTERSTICES. ANNULUS AFTER INSTALLATION OF WRAP STRIP(S) SHALL RANGE FROM POINT CONTACT TO 1/2" MAXIMUM.
- STEEL SLEEVE.

8 PIPE THRU WALL
SCALE: N.T.S.

- NOTES:**
- DEMOLITION: REMOVE THE EXISTING UNIT VENTILATOR WHERE SHOWN ON THE PLANS. THE EXISTING OUTSIDE AIR LOUVER AND WALL SLEEVE SHALL REMAIN.
 - 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.

7 UNIT VENTILATOR DETAILS
SCALE: N.T.S.



- CONCRETE OR CONCRETE BLOCK WALL.
- STEEL OR IRON PIPE TO 12" OR COPPER PIPE UP TO 8" WITH UP TO 3" FIBERGLASS OR MINERAL WOOL INSULATION.
- WRAP STRIP. WRAP PRODUCT AROUND PIPE, SECURE WITH STEEL TIE WIRE, AND RECESS 1-3/4" INTO WALL CAVITY.
- SEALANT. INSTALL 1/4" BEAD AROUND WRAP STRIP/INSULATION INTERSTICES. ANNULUS AFTER INSTALLATION OF WRAP STRIP(S) SHALL RANGE FROM POINT CONTACT TO 1/4" MAXIMUM.

9 PIPE THRU MASONRY WALL
SCALE: N.T.S.

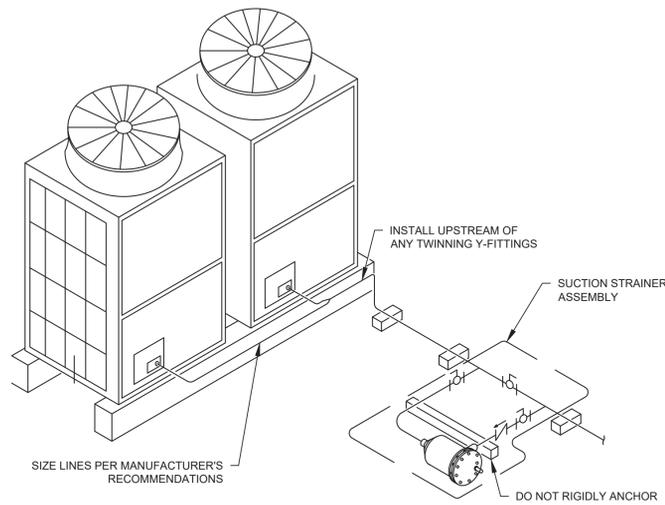
Drawn by: VF/AW
Checked by: EF
Project No.: 43040
Scale: AS NOTED
Date: 03-04-25

MECHANICAL ENGINEER: GREENMAN PEDERSEN, INC. 2 EXECUTIVE BUILDING SUITE 1001 BUFFALO, NY 10001
STRUCTURAL ENGINEER: GREENMAN PEDERSEN, INC. 2 EXECUTIVE BUILDING SUITE 1001 BUFFALO, NY 10001

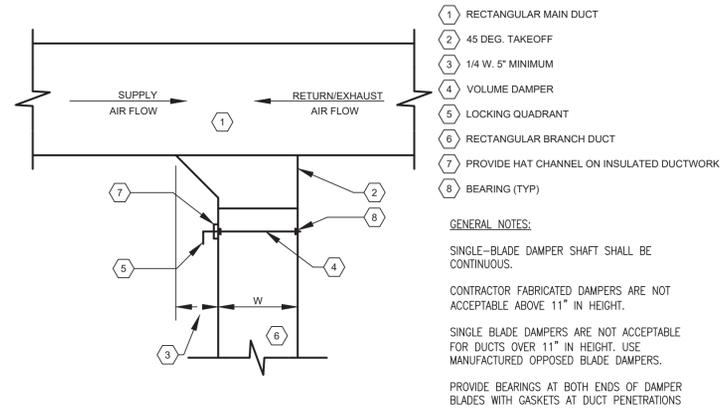
UNIVENT REPLACEMENT AT STONY POINT, THIELLS, WEST HAV ELEMENTARY SCHOOL
SD# 50-02-01-06-0-014-XXX
SD# 50-02-01-06-0-025-XXX
SD# 50-02-01-06-0-024-XXX
MICHAEL SHILALE ARCHITECTS, L.L.P. BUFFALO, NY 10005



© COPYRIGHT, MICHAEL SHILALE ARCHITECTS, ALL RIGHTS RESERVED.
Drawing Title: MECHANICAL DETAILS
Drawing No.: M-501
- 1

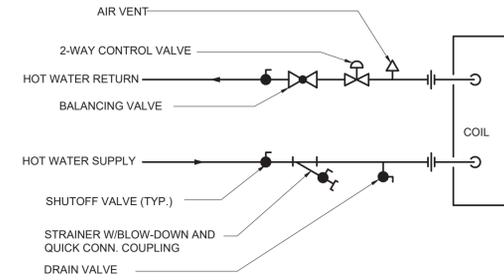


1 PIPING AT ACCU
SCALE: N.T.S.



2 RECTANGULAR DUCT TAP W/ DAMPER
SCALE: N.T.S.

3 HOT WATER PIPING AT VENTILATOR
SCALE: N.T.S.



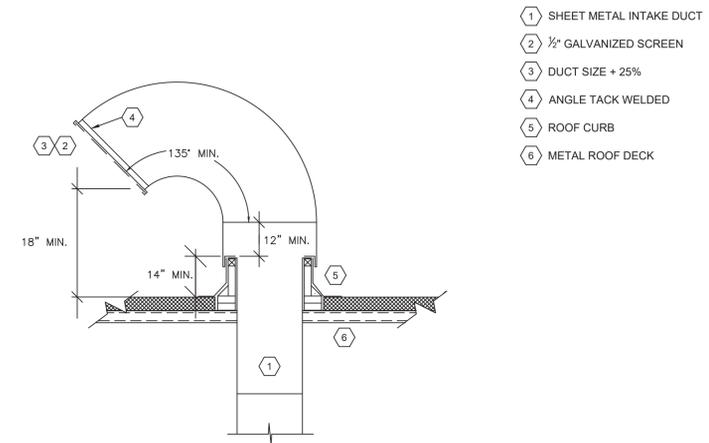
0 1/2
IF THIS BAR DOES NOT MEASURE 1\"/>

No.	Date	Revisions
1	03-04-25	BIDDING DOCUMENTS

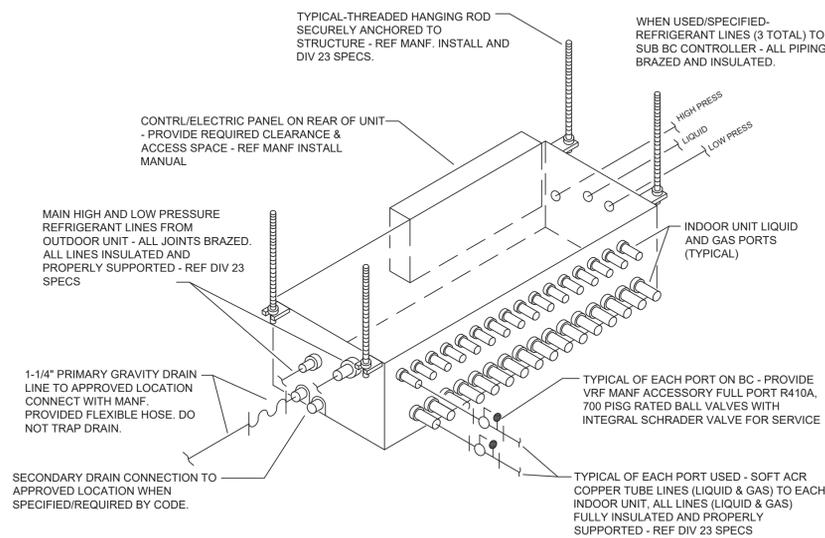
--	--	--

Drawn by	VF / AW
Checked by	EF
Project No.	43040
Scale	AS NOTED
Date	03-04-25

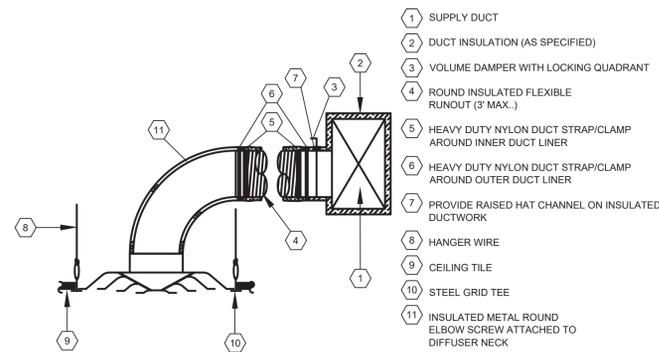
Mechanical Structural Engineer:	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 1001 SYRACUSE, NY 13201 PH. NO. : 315-437-1700
	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUITE 1001 SYRACUSE, NY 13201



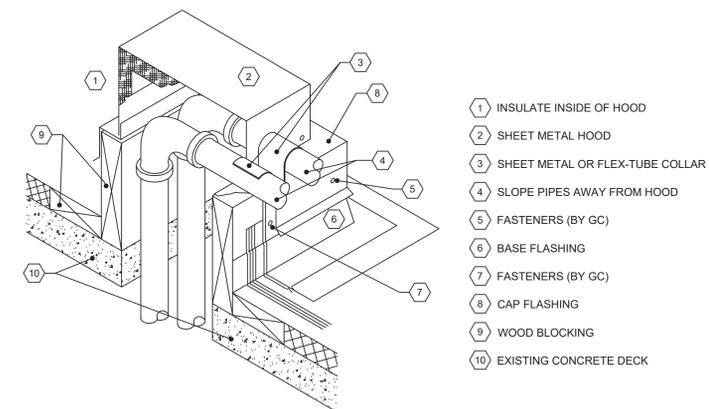
4 INTAKE GOOSE DETAIL
SCALE: N.T.S.



5 BC CONTROLLER DETAIL
SCALE: N.T.S.



6 DIFFUSER/ GRILL CONNECTION DETAIL
SCALE: N.T.S.

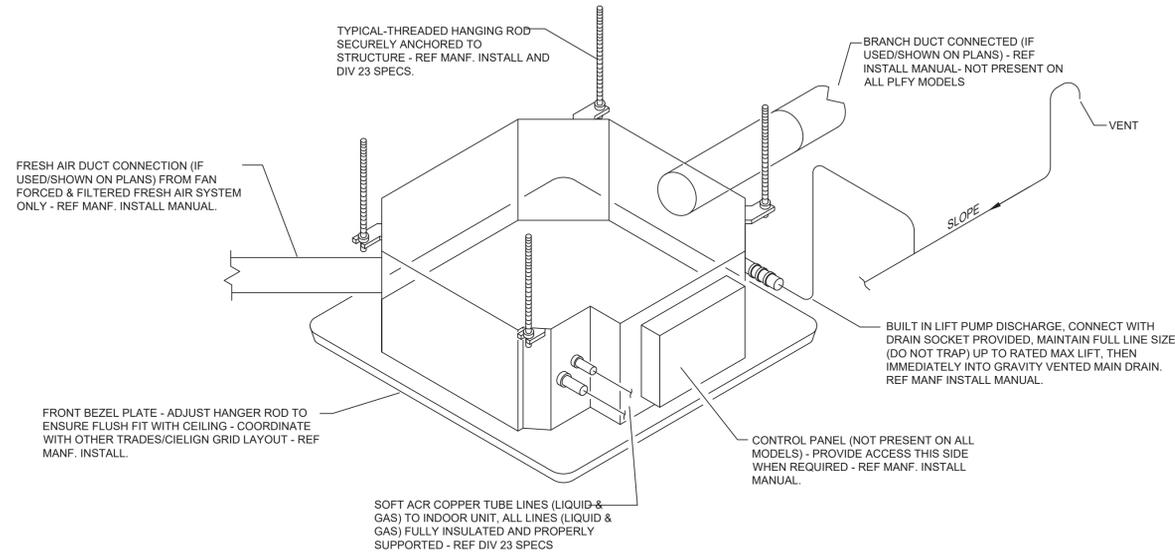


7 ROOFTOP PIPE PENETRATION
SCALE: N.T.S.

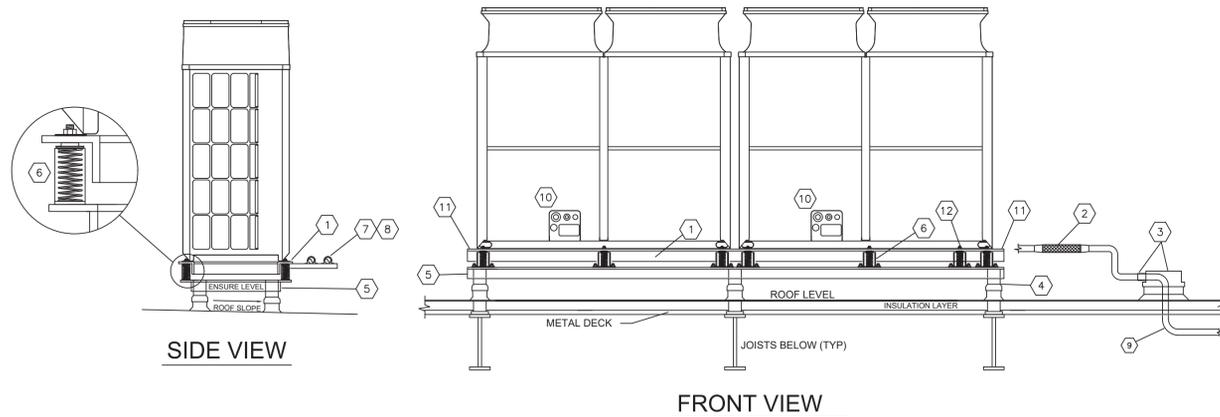
UNIVENT REPLACEMENT
AT STONY POINT,
THIELLS, WEST HAV
ELEMENTARY SCHOOL
SSD# 50-02-01-06-0-014-XXX
SSD# 50-02-01-06-0-025-XXX
SSD# 50-02-01-06-0-024-XXX
NY STATE ARCHITECTURAL BOARD
REGISTERED ARCHITECT
MICHAEL SHILALE ARCHITECTS, L.L.P.



© COPYRIGHT, MICHAEL SHILALE ARCHITECTS, ALL RIGHTS RESERVED.
Drawing Title
MECHANICAL DETAILS
- 2
Drawing No.
M-502



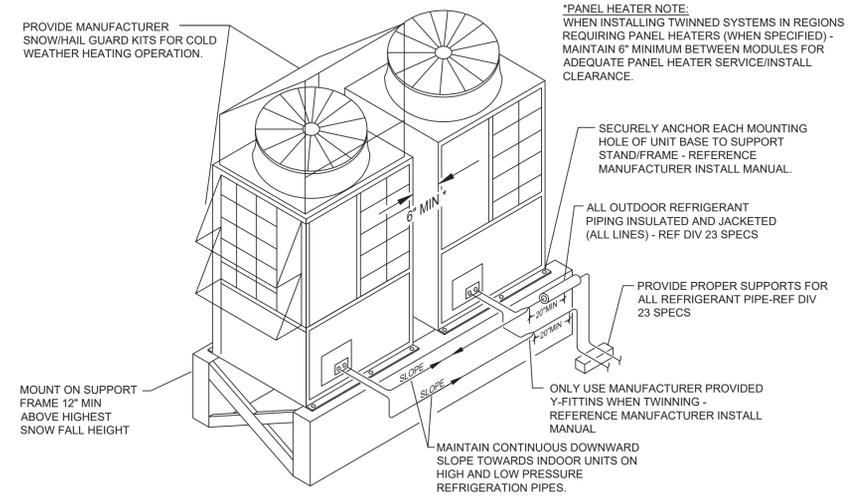
1 CEILING CASSETTE INSTALLATION DETAIL
SCALE: N.T.S.



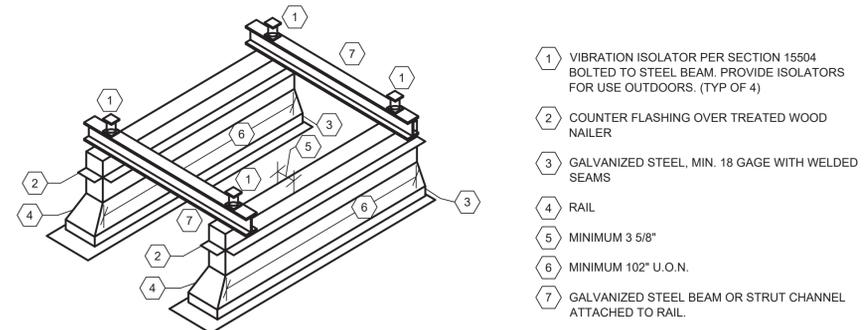
CODING NOTES:

1. PROVIDE STRUCTURAL INTERSTITIAL ANGLE IRON MOUNTING MEMBER OR SIMILAR ATTACHED DIRECTLY TO BOTTOM OF UNIT MOUNTING FLANGE AND PROVIDE CROSS BRACING FOR RIGIDITY. ENSURE IT CARRIES FULL MOUNTING FOOT WIDTH ON UNIT. FINAL SPECIFICATION OF MEMBER BY STRUCTURAL ENGINEER OF RECORD.
2. PROVIDE BRAIDED COPPER FLEXIBLE CONNECTOR, R410A RATED, 650PSI MAX WORKING PRESSURE, PACKLESS INDUSTRIES OR EQUAL ON ALL MAIN PIPING DOWNSTREAM OF TWINNING KITS/CONVERGING FITTINGS PRIOR TO PENETRATION THROUGH ROOF.
3. PIPE ROOF CURB, FLASHED AND SEALED WATER TIGHT. PROVIDE FLEXIBLE WATER TIGHT COLLAR TO ALLOW FOR MOVEMENT WHERE PIPE ENTERS CURB. DO NOT ENTER PIPE CURB FROM VERTICAL DIRECTION.
4. TYPICAL BASE SUPPORT POSTS, SECURELY ANCHORED TO BUILDING STRUCTURE BELOW, QUANTITY, SIZE, AND CARRYING CAPACITY DETERMINED BY STRUCTURAL ENGINEER OF RECORD.
5. STRUCTURAL ANGLE IRON BASE MOUNTING FRAME WITH CROSS MEMBERS FOR RIGIDITY - FINAL SIZING BY STRUCTURAL ENGINEER OF RECORD.
6. VIBRATION SPRING SLR TYPE ISOLATORS (MASON INDUSTRIES OR EQUIV.) WITH RUBBER BASE PADS, SECURELY FASTENED TO STRUCTURAL BASE AND TO VRF UNIT INTERSTITIAL SUPPORT STEEL. SPRING ISOLATOR TO PROVIDE MINIMUM 1" DEFLECTION OR 10 TIMES THE STATIC DEFLECTION OF THE ROOF DECK FROM EQUIPMENT WEIGHT - DETERMINED BY STRUCTURAL ENGINEER OF RECORD. AT A MINIMUM, PROVIDE SPRING ISOLATORS AT EACH EQUIPMENT BASE MOUNTING HOLE LOCATION.
7. IF REQUIRED, ONLY SUPPORT LATERAL PIPE EMANATING FROM VRF UNIT CONNECTIONS BY CROSS MEMBER SUPPORT THAT IS ATTACHED DIRECTLY TO VRF UNIT MOUNTING ANGLE IRON FRAME ABOVE SPRING ISOLATORS. DO NOT ATTACH ANY PIPING TO LOWER FIXED SUPPORT BASE.
8. USE NEOPRENE ISOLATION COLLARS ON PIPE CLAMS WHEN FASTENING PIPING TO SUPPORTS.
9. USE LONG RADIUS SWEEPING COPPER ACR TUBE PIPE BENDS WHERE PIPE ENTERS BUILDING AT FIRST ELBOW INTO CEILING SPACE TO MINIMIZE REFRIGERANT FLOW NOISE AND VIBRATION.
10. ALL ELECTRICAL CONNECTIONS TO UNITS TO BE VIA FLEXIBLE CONDUIT. PROVIDE SUFFICIENT SLACK TO ALLOW FOR UNIT MOVEMENT ON SPRING ISOLATORS.
11. ENSURE CROSS MEMBERS OF INTERSTITIAL FRAME AND BOTTOM SUPPORT FRAME ARE NOT DIRECTLY BELOW ENDS OF MODULES IN ALL LOCATIONS AND DO NOT BLOCK DRAINAGE WEEP HOLES IN BOTTOM OF UNIT CASING. FAILURE TO DO THIS MAY RESULT IN ICE DAMMING/BUILDUP BENEATH UNIT AND SUBSEQUENT BUILDUP OF ICE IN BOTTOM OF UNIT CASING BELOW COIL AND POTENTIAL DAMAGE TO BOTTOM OF COIL.
12. WHEN SELECTING SPRING ISOLATORS ALWAYS CONSIDER WEIGHT DISTRIBUTION BY REFERENCING EQUIPMENT WEIGHT AND CENTER OF GRAVITY. NEAR RIGHT ENDS OF UNITS (VIEWED FROM FRONT PANEL) SPRING WEIGHT CAPACITY MAY BE LARGER. IF HIGHER SPRING WEIGHT CAPACITY IS REQUIRED VS OTHER SPRING LOCATIONS, CONSIDER AN ADDITIONAL SPRING OF EQUAL "K" VALUE (lbs/in) NEAR RIGHT END OF LAST MODULE. IN GENERAL IT IS RECOMMENDED TO SELECT ALL MOUNTING SPRINGS OF EQUIVALENT "K" VALUE (lbs/in).

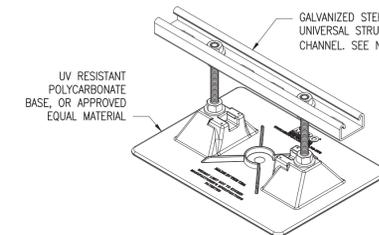
3 ACCU OUTDOOR UNIT MOUNTING DETAIL
SCALE: N.T.S.



2 ACCU OUTDOOR UNIT TWINNING DETAIL
SCALE: N.T.S.



4 ACCU ROOFTOP SUPPORT RAIL DETAIL
SCALE: N.T.S.



NOTES:

1. MINIMUM SUPPORT SPACING SHALL BE AS FOLLOWS:
 - a. COPPER TUBE (1 1/4" AND SMALLER): 6'-0" O.C.
 - b. COPPER TUBE (1 1/2" AND LARGER): 10'-0" O.C.
 - c. PVC: 4'-0" O.C.
 - d. FOR SIZES AND MATERIALS NOT LISTED ABOVE, COMPLY WITH 2015 MCNS 305.4.
2. VERIFY IN FIELD REQUIRED STRUT CHANNEL HEIGHT. SECURE PIPING TO CHANNEL USING CLAMP CONSTRUCTED OF COMPATIBLE MATERIAL.
3. BASIS OF DESIGN: MIRO IND. MODEL 2.5-CS.

5 SUPPORT FOR ROOFTOP CONDENSATE PIPING
SCALE: N.T.S.

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

No.	Date	Revisions
1	03-04-25	BIDDING DOCUMENTS

--

Drawn by	VF/AW
Checked by	EF
Project No.	43040
Scale	AS NOTED
Date	03-04-25

Mechanical Electrical Engineer:	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUFFERN, NY 10901 PROJ. NO.: MNY-200127.00
	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUFFERN, NY 10901
Structural Engineer:	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD SUFFERN, NY 10901

UNIVENT REPLACEMENT AT STONY POINT, THIELS, WEST HAV ELEMENTARY SCHOOL
 SDD# 50-02-01-06-0-014-XXX
 SDD# 50-02-01-06-0-025-XXX
 SDD# 50-02-01-06-0-024-XXX
 MICHAEL SHILALE ARCHITECTS, L.L.P.
 140 Park Avenue New York, NY 10066 Tel 845-708-9200
 www.shilale.com



Copyright, Michael Shilale Architects, All Rights Reserved.
Drawing Title MECHANICAL DETAILS - 3
Drawing No. M-503

