SYMBOLS:

- CENTER LINE
- 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
- REFRIGERANT
- DRAIN
- TEMPERATURE SENSOR/THERMOSTAT
- SECTION A-A

SAFETY NOTES:

1. 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.
2. 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.
3. 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.
4. 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.
5. CONTRACTOR SHALL PROVIDE BARRICADES AROUND WORK AREAS AS REQUIRED TO PREVENT UNAUTHORIZED PERSONS FROM ENTERING THEREIN.
6. THE CONTRACTOR SHALL SUBMIT SAFETY PLAN FOR CONSTRUCTION MANAGER'S APPROVAL.
7. 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.

SUMMARY OF WORK:

1. PROVIDE AND INSTALL SPLIT SYSTEM DUCTLESS HEAT PUMP WITH THERMOSTAT IN ALL PRESS BOXES.
2. PROVIDE AND INSTALL ELECTRIC UNIT HEATER IN ALL PRESS BOXES.
3. REMOVE AND REPLACE FOUR RTU'S WITH HOT WATER AND COLD WATER PIPING ON MAIN HIGH SCHOOL BUILDING.

SEQUENCE OF OPERATIONS

FOR SEQUENCE OF ALL UNITS SPECIFIED ON THESE PLANS, REFER TO SPECIFICATION SECTION 230993 SEQUENCE OF OPERATION. SEE DRAWING M401 FOR CONTROL DIAGRAMS.

GENERAL NOTES

1. 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.
2. CONTRACTOR TO REMOVE AND PROPERLY DISPOSE OF EQUIPMENT FROM SITE INDICATED FOR DEMOLITION, UNLESS OTHERWISE DIRECTED BY THE AUTHORITY.
3. 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.
4. 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.
5. 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.
6. LOAD CALCULATIONS HAVE BEEN PERFORMED IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING STANDARDS, SPECIFICALLY ASHRAE HANDBOOK - FUNDAMENTALS.
7. CONTRACTOR SHALL PERFORM ALL TESTS AND STARTUP PROCEDURES FOR EACH VENTILATION SYSTEM IN ACCORDANCE WITH THE MANUFACTURER AND SPECIFICATIONS.
8. ALL THERMOSTATIC CONTROLS SHALL BE TESTED FOR FUNCTIONALITY AND PROPER OPERATION AS REQUIRED BY NYS ECC.
9. ELECTRIC MOTORS SHALL COMPLY WITH THE REQUIREMENTS OF THE ENERGY POLICY ACT OF 1992 AS SHOWN IN ASHRAE 90.1-2013 TABLE #10.8.
10. 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.
11. 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

A. SITE (BASED ON NEAREST AVAILABLE DATA: ASHRAE 2013 HANDBOOK CLIMATIC DESIGN INFORMATION, WESTCHESTER CO, NY):
   1. 41.07°N, 73.71°W
   2. ELEVATION: 397 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 (99.6%): 9.0°F DB
   2. COOLING DB/MCWB (1%): 86.5°F DB, 72.1°F WB

C. INSIDE DESIGN CONDITIONS (PER NYSED MANUAL OF PLANNING STANDARDS S602-6 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 S304-1):
   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 ECCNYS C403.2.6.1 EXCEPTION #3.

HVAC NOTES:

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 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.
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. START-UP SERVICES SHALL BE INCLUDED.
4. 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.
5. 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.
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.
7. VERIFY FINAL LOCATIONS FOR ROUGH WORK WITH FIELD MEASUREMENTS AND WITH THE REQUIREMENTS OF THE ACTUAL EQUIPMENT BEING CONNECTED.
8. 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.
9. 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.
10. CONTRACTOR IS RESPONSIBLE TO ATTEND COORDINATION MEETING WITH ALL TRADES TO DETERMINE LOCATIONS OF DEVICES AND DISCOVER IF ANY CONFLICTS MAY EXIST.
11. 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.
12. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THE 2014 NYC BUILDING CODE, 2014 NYC MECHANICAL CODE, AND 2020 NYC ENERGY CONSERVATION CODE, AND ALL GOVERNING LOCAL CODES, LAWS, AND REGULATIONS.
13. 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.
14. 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.
15. 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.
16. 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 NEGLECT TO COMPLY WITH THIS REQUIREMENT. REPORT ANY DISCREPANCIES BETWEEN DRAWINGS AND FIELD CONDITIONS TO THE ENGINEER.
17. 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.
18. 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.
19. 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.
20. 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.
21. 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.
22. 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 DEEMED EQUAL.
23. 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.
24. ALL WORK ON THESE DRAWINGS SHALL BE CONSIDERED NEW WORK WHETHER STATED OR NOT EXCEPT WHERE SPECIFICALLY NOTED AS "EXISTING TO REMAIN".
25. 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.
26. ALL WORK SHALL BE INSTALLED SO THAT ALL PARTS REQUIRED ARE READILY ACCESSIBLE FOR INSPECTION, OPERATION, MAINTENANCE AND REPAIR.
27. 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.
28. PROVIDE BARRICADES AROUND WORK AREAS AS REQUIRED TO PREVENT UNAUTHORIZED PERSONS FROM ENTERING THEREIN.
29. 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.).
30. ALL DISCONNECT SWITCHES, STARTERS, AND VARIABLE FREQUENCY DRIVES SHALL BE FURNISHED BY MECHANICAL CONTRACTOR AND INSTALLED BY ELECTRICAL CONTRACTOR.
31. 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
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
DP	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	FIRE DAMPER
FD	FLOOR DRAIN
FLA	FULL LOAD AMPS
FPI	FINS PER INCH
FPM	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
HR	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 BTU/H
MCA	MINIMUM CIRCUIT AMPACITY
MHP	MOTOR 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
SQ	SQUARE
SS	STAINLESS STEEL
TEMP	TEMPERATURE
THK	THICK
TOD	TOP OF DUCT
TON	12,000 BTU/H 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

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

No.	Date	Revisions
1	09/17/24	BIDDING DOCUMENTS

Drawn by	MC
Checked by	WM
Project No.	43045
Scale	AS NOTED
Date	09/17/24

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NORTH ROCKLAND HIGH SCHOOL FIELDS – PHASE 2 & HVAC UPGRADES

HIGH SCHOOL: SED# 50-02-01-06-0-016-036
PRESS BOX – SOFTBALL: SED# 50-02-01-06-7-090-001
PRESS BOX – BASEBALL: SED# 50-02-01-06-7-091-001

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Drawing Title
MECHANICAL GENERAL NOTES

Drawing No.
M-001

SPLIT SYSTEM DUCTLESS UNIT SCHEDULE

LOCATION	UNIT TAG	GENERAL – CAPACITY – TOTAL COOLING MBH	GENERAL – CAPACITY – SENSIBLE COOLING MBH	GENERAL – CAPACITY – TOTAL HEATING @ 17° F MBH	GENERAL – EER	GENERAL – SEER	GENERAL – ENT. AIR – DB °F	GENERAL – ENT. AIR – WB °F	GENERAL – REFRIGERANT	GENERAL – REFRIGERANT LBS	GENERAL – REFRIGERANT SAFETY CLASS	GENERAL – TONS	INDOOR UNIT – ELECTRICAL DATA – VOLTS	INDOOR UNIT – ELECTRICAL DATA – PHASE	INDOOR UNIT – ELECTRICAL DATA – Hz.	INDOOR UNIT – ELECTRICAL DATA – MIN. AMPACITY	INDOOR UNIT – CFM	INDOOR UNIT – DRAIN CONNECTION	INDOOR UNIT – WEIGHT	INDOOR UNIT – MODEL NO.	CONDENSING UNIT – UNIT TAG	CONDENSING UNIT – ELECTRICAL DATA – VOLTS	CONDENSING UNIT – ELECTRICAL DATA – PHASE	CONDENSING UNIT – ELECTRICAL DATA – Hz.	CONDENSING UNIT – ELECTRICAL DATA – MOCP	CONDENSING UNIT – ELECTRICAL DATA – MIN. AMPACITY	CONDENSING UNIT – COMPRESSOR – R.L.A	CONDENSING UNIT – COMPRESSOR – L.R.A	CONDENSING UNIT – REFRIGERANT LINES – SUCTION IN	CONDENSING UNIT – REFRIGERANT LINES – LIQUID IN	CONDENSING UNIT – WEIGHT (LBS.)	CONDENSING UNIT – MODEL NO.
SOFTBALL PRESSBOX	AHU - 1	12	9.6	10.6	13.3	21.3	95	75	410A	4.4375	A1	1	208	1	60	1	290	5/8	28	TPKA0A0121LA10A	ACCU-1	208	1	60	28	11	7	12	1/2	1/4	93	TRUZA0121KA70NA
BASEBALL PRESSBOX	AHU - 2	12	9.6	10.6	13.3	21.3	95	75	410A	4.4375	A1	1	208	1	60	1	290	5/8	28	TPKA0A0121LA10A	ACCU-2	208	1	60	28	11	7	12	1/2	1/4	93	TRUZA0121KA70NA
FIELD HOCKEY PRESSBOX	AHU - 3	12	9.6	10.6	13.3	21.3	95	75	410A	4.4375	A1	1	208	1	60	1	290	5/8	28	TPKA0A0121LA10A	ACCU-3	208	1	60	28	11	7	12	1/2	1/4	93	TRUZA0121KA70NA

SPLIT SYSTEM DUCTLESS UNIT SCHEDULE NOTES

1. INSTALL INDOOR UNITS ACCORDING TO THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
2. PROVIDE MANUFACTURER'S STANDARD PROGRAMMABLE, WIRED THERMOSTAT.
3. MECHANICAL CONTRACTOR TO FURNISH DISCONNECT SWITCH, ELECTRICAL CONTRACTOR TO INSTALL AND WIRE TO UNIT.
4. PROVIDE STAND ALONE FACTORY INSTALLED DIRECT DIGITAL CONTROLS AS NECESSARY TO SATISFY THE SEQUENCE OF OPERATIONS.
5. PROVIDE VIBRATION ISOLATION/NEOPRENE PADS AT OUTDOOR UNIT.

CONTROLS GENERAL NOTE

1. ALL MECHANICAL EQUIPMENT IS TO UTILIZE STAND-ALONE OEM CONTROLS. CONTROLS ARE TO BE INTEGRAL WITH THE EQUIPMENT AND BE EITHER FACTORY OR FIELD INSTALLED, AS REQUIRED.
2. REFER TO SEQUENCE OF OPERATION, SPECIFICATION 230993 FOR MORE INFORMATION.

ROOFTOP AIR HANDLING UNIT SCHEDULE

TAG	SERVES	UNIT – SUPPLY – TOTAL AIRFLOW	UNIT – SUPPLY – OUTSIDE AIRFLOW (CFM)	UNIT – SUPPLY – ESP/TSP	UNIT – SUPPLY – MOTOR POWER (HP)	UNIT – RETURN – TOTAL AIRFLOW	UNIT – RETURN – ESP/TSP	UNIT – RETURN – MOTOR POWER (HP)	COOLING COIL - CHW – EAT – EDB (°F)	COOLING COIL - CHW – EAT – EWB (°F)	COOLING COIL - CHW – LAT – LDB (°F)	COOLING COIL - CHW – EWT (°F)	COOLING COIL - CHW – LWT (°F)	COOLING COIL - CHW – GPM	COOLING COIL - CHW – ROWS	COOLING COIL - CHW – TOTAL CAPACITY (MBH)	HEATING COIL - HW – ROWS	HEATING COIL - HW – EDB (°F)	HEATING COIL - HW – LDB (°F)	HEATING COIL - HW – EWT (°F)	HEATING COIL - HW – LWT (°F)	HEATING COIL - HW – GPM	HEATING COIL - HW – TOTAL CAPACITY (MBH)	FILTERS – FACE VELOCITY (FT/MIN)	FILTERS – EFFICIENCY	ELECTRICAL – V/PH/HZ	ELECTRICAL – FLA	ELECTRICAL – MCA	ELECTRICAL – MAX FUSE (A)	BASIS OF DESIGN – WEIGHT (LBS)	BASIS OF DESIGN – LENGTH (IN)	BASIS OF DESIGN – WIDTH (IN)	BASIS OF DESIGN – HEIGHT (IN)	BASIS OF DESIGN – MANUFACTURER	BASIS OF DESIGN – MODEL
H-1	CLASSRM / OFFICE	7590	1975	1.25/4.54	8.05	7590	1.25/1.97	8.05	80.2	66.09	56.74	45.0	59.0	35.83	6	232	1	53.28	74.85	180.0	140	8.88	177.59	526	MERV 14	460/3/60	25.22	27.28	35.00	3120	212	72	47.7	TRANE	CSAA014UB
F-2	AUDITORIUM	12300	4400	1.00/4.32	7.5	10193	1.00/3.64	5	80.36	68.09	61.36	45.0	59.0	46.46	4	300.82	2	49.4	93.18	180.0	140.0	29.19	584.04	376	MERV 14	460/3/60	40.57	43.32	50.00	7988	297	80	29.4	TRANE	CSAA025UB
B-2	CLASSRM / LABORTRY	6565	1825	3.99/6.60	8.05	6565	0.50/1.04	8.05	80.8	67.7	58.1	45.0	59.0	33.07	6	214.12	1	52.4	75.81	180	140	8.33	166.66	455	MERV 14	460/3/60	25.22	27.28	35.00	3103	212	72	45	TRANE	CSAA014UB
B-3	CLASSRM / LABORTRY	6170	1900	4.19/7.31	8.05	6170	0.50/1.10	8.05	89.0	74.3	62.9	45.0	59.0	40.12	8	259.79	1	52.4	76.10	180	140	16.74	158.12	463	MERV 14	460/3/60	25.22	27.28	35.00	2943	211	67	45	TRANE	CSAA012UB

NOTES:

1. BASIS OF DESIGN IS TRANE.
2. PROVIDED 4" PLEATED AIR FILTER, MERV 14 RATING, SEE SPEC 234100 FOR MORE INFO.
3. PROVIDE START-UP BY MANUFACTURER'S AUTHORIZED TECHNICIAN.
4. PROVIDED FACTORY INSTALLED 0-100% ECONOMIZER WITH DIFFERENTIAL ENTHALPY CONTROL.
5. UNIT SHALL BE SHIPPED IN SEPARATE SPLITS AND RIGGED VIA CRANES. ALL NECESSARY PERMITS FOR RIGGING REQUIRED.
6. MC TO PROVIDE FACTORY INSTALLED VFD WITH INTEGRAL MOTOR STARTERS FOR EACH FAN, EC TO FURNISH AND INSTALL FUSIBLE TYPE DISCONNECT SWITCHES IN THE FIELD.
7. TRANE TO PROVIDE BACNET INTEGRATION ASSISTANCE TO EXISTING TRACER SC+. TRANE TO ENSURE 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.
8. DEMAND CONTROL VENTILATION REQUIRED FOR ALL UNITS.
9. CHILLED WATER SYSTEM COILS TO BE SIZED FOR 30% PROPYLENE GLYCOL.
10. TRANE TO PROVIDE HEATING AND COOLING CONTROL VALVE, SEE COIL PIPING DETAILS.
11. PROVIDE FACTORY INSTALLED FAN CONTROL PANEL FOR HIGH VOLTAGE AND LOW VOLTAGE POWER. SHALL INCLUDE INDIVVIDUAL MOTOR OVER-CURRENT PROTECTION WITH FUSED PANEL DISCONNECT.
12. OUTDOOR UNITS CONTAINING AIR-TO-AIR ENERGY RECOVERY DEVICES AND SHALL BE PROVIDED IN STACKED AIR TUNNEL CONFIGURATION. ALL OTHER OUTDOOR UNIT CONFIGURATIONS ARE PRREFERRED TO BE PROVIDED IN STACKED AIR TUNNEL CONFIGURATION IN ORDER TO ACHIEVE A REDUCED UNIT FOOTPRINT.
13. PROVIDE UNITS THAT DO NOT EXCEED THE WEIGHT OR DIMENSIONS AS SCHEDULED.
14. SOUND DATA SHALL BE PROVIDED USING AHRI 260 METHORDS. UNIT DISCHARGE, INLET , AND RADIATED SOUND POWER LEVELS IN Db SHALL BE PROVIDED FOR 63, 125, 250, 500, 1000, 2000, 4000 and 8000Hz.

MECHANICAL VENTILATION SCHEDULE

SYSTEM	ROOM	OCCUPANCY CLASSIFICATION	FLOOR AREA SF Az	OCCUPANT LOAD OCCUPANT/ 1,000 SF	# OF OCCUP-ANTS Pz	REQUIRED CFM/ OCCUPANT Rp	REQ. CFM/SF Ra	BREATHING ZONE OUTDOOR AIRFLOW Vbz=RpPz+ RaAz	ZONE DISTRIBUTION EFFECTIVENESS Ez	TOTAL ROOM OUTDOOR AIR 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
H1	108	CLASSROOM	1080	35	38	10	0.12	508	0.8	635	650	-	-	-
	109	CLASSROOM	1075	35	38	10	0.12	505	0.8	632	650	-	-	-
	110	CLASSROOM	845	35	30	10	0.12	397	0.8	496	500	-	-	-
	110A	OFFICE	430	5	2	5	0.06	37	0.8	46	50	-	-	-
	110B	CONFERENCE RM	300	50	15	5	0.06	93	0.8	116	125	-	-	-
B2	308	CLASSROOM	950	35	33	10	0.12	444	0.8	555	575	-	-	-
	310	CLASSROOM	895	35	31	10	0.12	417	0.8	522	525	-	-	-
	311	CLASSROOM	1020	35	36	10	0.12	482	0.8	603	625	-	-	-
	CORRIDOR (BETWEEN 311&309)	CORRIDOR	475	-	-	-	0.06	29	0.8	36	50	-	-	-
	CORRIDOR (BETWEEN 309/308&307/306)	CORRIDOR	640	-	-	-	0.06	38	0.8	48	50	-	-	-
B3	307	CLASSROOM	1040	35	36	10	0.12	485	0.8	606	625	-	-	-
	306	CLASSROOM	1055	35	37	10	0.12	497	0.8	621	625	-	-	-
	309	CLASSROOM	930	35	33	10	0.12	442	0.8	552	575	-	-	-
	CORRIDOR (BETWEEN 307& 305A)	CORRIDOR	775	-	-	-	0.06	47	0.8	58	75	-	-	-
F2	AUDITORIUM (1/3)	AUDITORIUM	4300	150	645	5	0.06	3483	0.8	4354	4400	-	-	-

NOTES:

1. VENTILATION CALCULATIONS COMPLY WITH THE 2020 NYS MECHANICAL CODE.
2. AIRFLOWS ARE EXPRESSED IN CFM UNLESS OTHERWISE NOTED.

F-2 RTU ENERGY RECOVERY WHEEL SCHEDULE

FAN – OUTSIDE AIRFLOW (CFM)	RECOVERED CAPACITY – COOLING (MBH)	RECOVERED CAPACITY – HEATING (MBH)	MIXED AIR LAT – COOLING DB (°F)	MIXED AIR LAT – HEATING DB (°F)	WHEELAPD (INH2O)	EFFECTIVENESS – TOTAL COOLING	EFFECTIVENESS – SENSIBLE COOLING	EFFECTIVENESS – TOTAL HEATING	EFFECTIVENESS – SENSIBLE HEATING
4400	156.87	306.35	76.7	64.6	0.70	63.40%	65.50%	64.30%	65.50%

UNIT HEATER SCHEDULE

TAG	SERVES	MODEL NUMBER	MANUFACTURER	POWER (KW)	DIMENSIONS – HEIGHT (INCH)	DIMENSIONS – WIDTH (INCH)	DIMENSIONS – DEPTH (INCH)	HEATING CAPACITY (BTU)	VOLTAGE (VOLTS)	PHASE	CURRENT (AMPS)	CONTROL VOLTAGE	TEMPERATURE RISE (°F)	AIR THROW (FEET)	AIRFLOW (CFM)	MOUNTING HEIGHT (FEET)	WEIGHT (LBS)
UH-1	SOFTBALL PRESSBOX	F2FUH05C03	MARKEL	5	17.75"	14.47"	6.5"	17100	208	1 OR 3	24.1 / 14.0	208	40	26	400	9	44
UH-2	BASEBALL PRESSBOX	F2FUH05C03	MARKEL	5	17.75"	14.47"	6.5"	17100	208	1 OR 3	24.1 / 14.0	208	40	26	400	9	44
UH-3	FIELD HOCKEY PRESSBOX	F2FUH05C03	MARKEL	5	17.75"	14.47"	6.5"	17100	208	1 OR 3	24.1 / 14.0	208	40	26	400	9	44

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

No.	Date	Revisions
1	09/17/24	BIDDING DOCUMENTS

Drawn by: MC
Checked by: WM
Project No.: 43045
Scale: AS NOTED
Date: 09/17/24

Landscape Architect & Civil Engineer: THE LA GROUP, LANDSCAPE ARCHITECTURE & ENGINEERING, 40 LONG ALLEY, SARATOGA SPRINGS, NY 12866

Structural & PME Engineer: GREENMAN PEDERSEN, INC, 2 EXECUTIVE BOULEVARD, SUITE 202, SUFFERN, NY 10901

NORTH ROCKLAND HIGH SCHOOL FIELDS – PHASE 2 & HVAC UPGRADES

HIGH SCHOOL: SED# 50-02-01-06-0-016-036
PRESS BOX – SOFTBALL: SED# 50-02-01-06-7-090-001
PRESS BOX – BASEBALL: SED# 50-02-01-06-7-091-001

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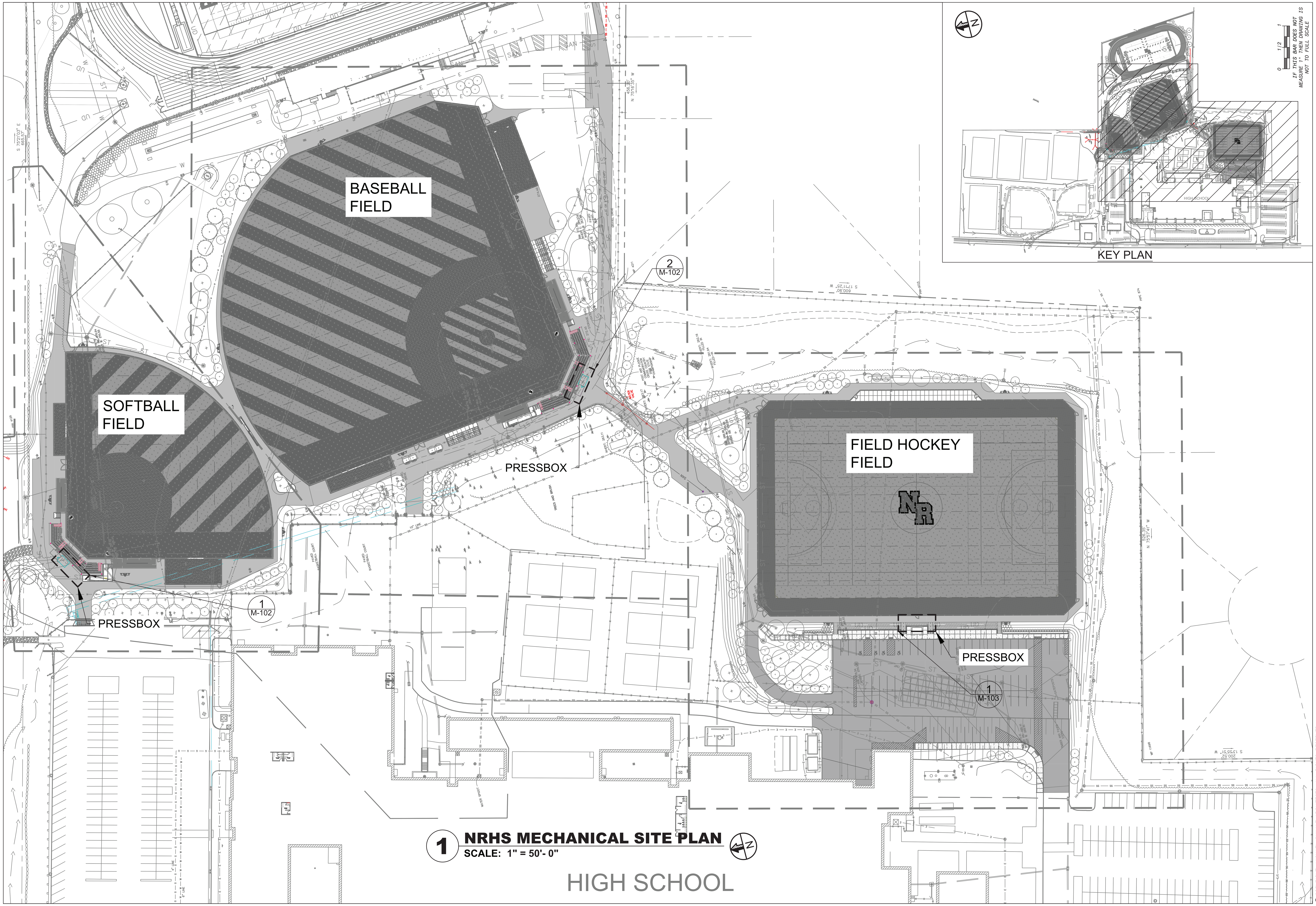
Drawing Title: **MECHANICAL SCHEDULES**

Drawing No.: **M-002**



1 **NRHS MECHANICAL SITE PLAN**
SCALE: 1" = 50'- 0"

KEY PLAN

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

No.	Date	Revisions
2	10/03/24	REV1 BIDDING DOCUMENTS
1	09/17/24	BIDDING DOCUMENTS

Drawn by	EVF
Checked by	ERF
Project No.	43045
Scale	AS NOTED
Date	10/03/24

Landscape Architect & Civil Engineer:	THE LA GROUP LANDSCAPE ARCHITECTURE & ENGINEERING 40 LONG ALLEY, SARATOGA SPRINGS, NY 12866
Structural & PME Engineer:	GREENMAN PEDERSEN, INC 2 EXECUTIVE BOULEVARD, SUITE 202, SUFFERN, NY 10901

NORTH ROCKLAND HIGH SCHOOL FIELDS – PHASE 2 & HVAC UPGRADES

HIGH SCHOOL: SED# 50-02-01-06-0-016-036
PRESS BOX – SOFTBALL: SED# 50-02-01-06-7-090-001
PRESS BOX – BASEBALL: SED# 50-02-01-06-7-091-001

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Drawing Title
MECHANICAL SITE PLAN

Drawing No.
M-101

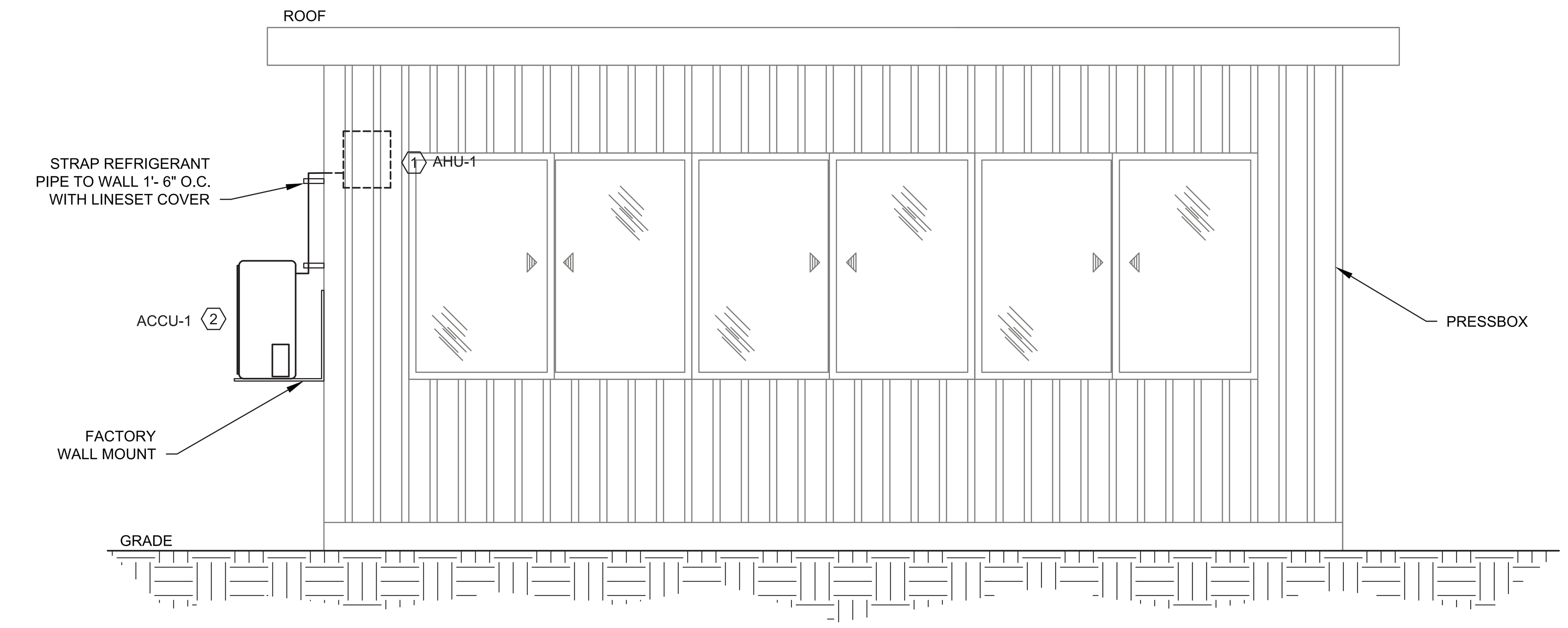
GENERAL NOTES:

1. INSTALL BOTH CONDENSERS AND AIR HANDLING UNITS AS PER MANUFACTURERS DIRECTIONS

KEYED NOTES:

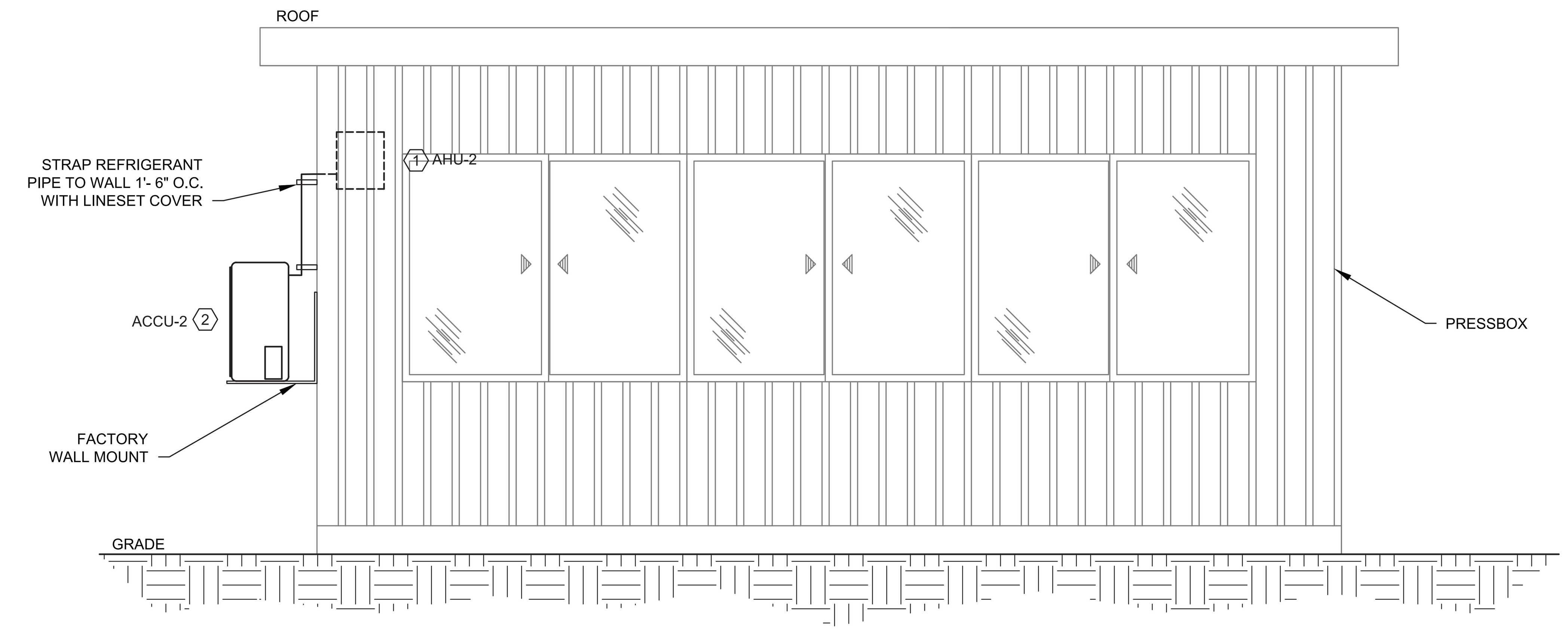
1. FURNISH AND INSTALL NEW INDOOR AC/HEAT PUMP UNIT, MOUNT 71" ABOVE FINISHED FLOOR. SEE SPLIT SYSTEM SCHEDULE ON DRAWING M-102.
2. FURNISH AND INSTALL OUTDOOR CONDENSER UNIT, MOUNT TO WALL, SEE SPLIT SYSTEM SCHEDULE ON DRAWING M-102.
3. FURNISH AND INSTALL NEW STAND-ALONE OEM THERMOSTAT CONTROLS, MOUNT 60" ABOVE FINISHED FLOOR, COORDINATE MOUNTING HEIGHT WITH ARCHITECT.

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



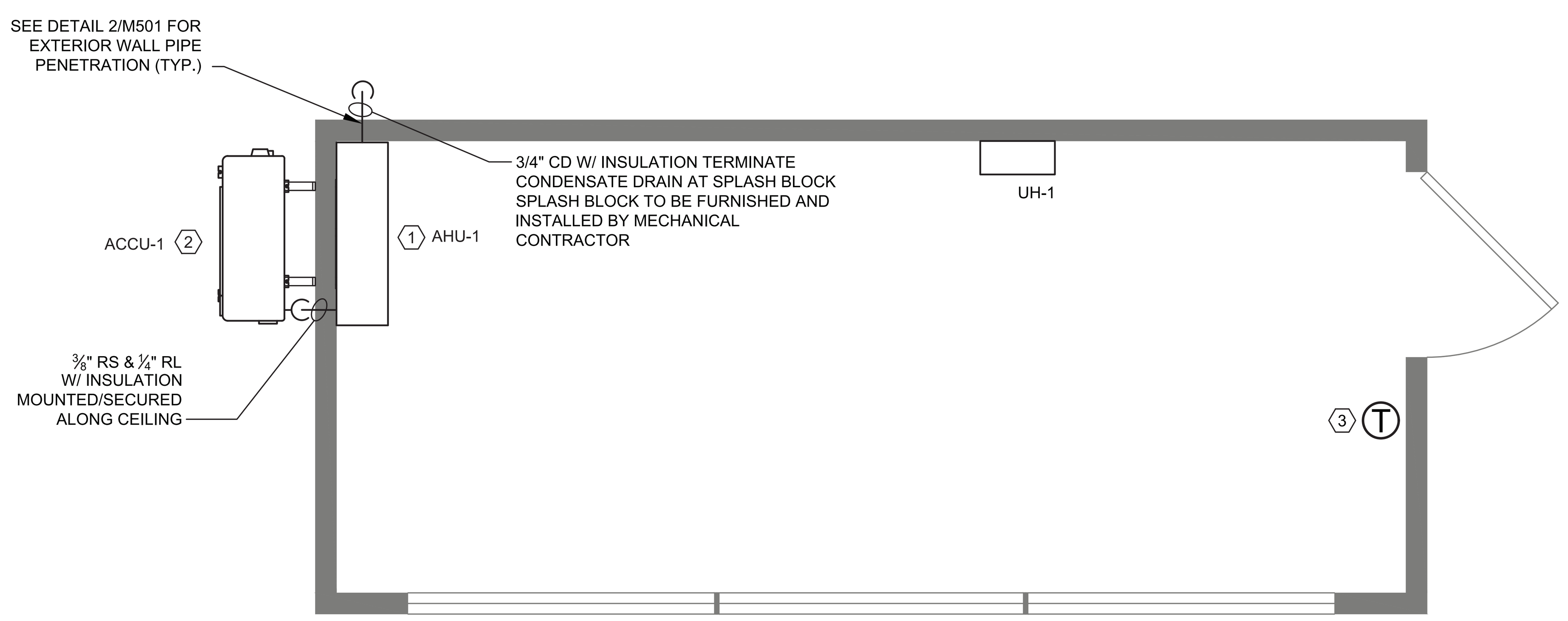
ELEVATION

2 SOFTBALL PRESSBOX - ELEVATION
SCALE: 1/2" = 1'- 0"



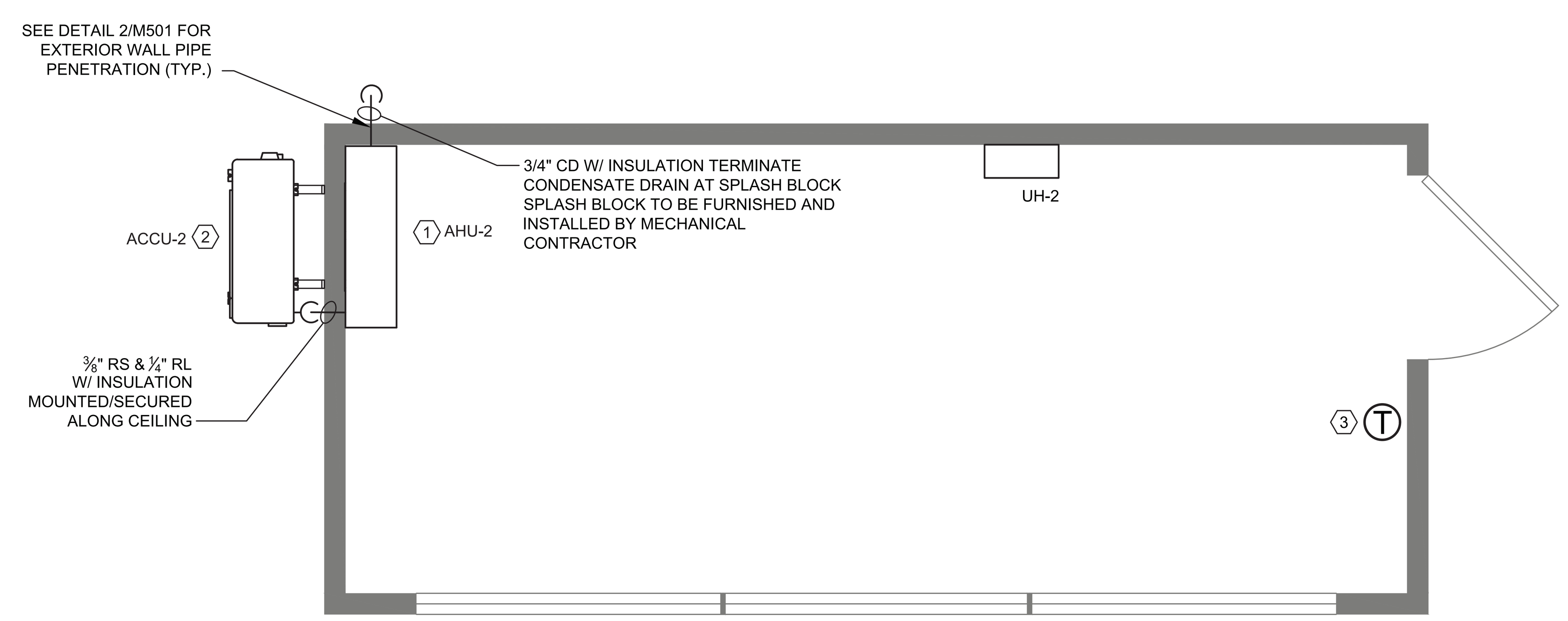
ELEVATION

4 BASEBALL PRESSBOX - ELEVATION
SCALE: 1/2" = 1'- 0"



PLAN

1 SOFTBALL PRESSBOX - MECHANICAL
SCALE: 1/2" = 1'- 0"



PLAN

3 BASEBALL PRESSBOX - MECHANICAL
SCALE: 1/2" = 1'- 0"

No.	Date	Revisions
1	09/17/24	BIDDING DOCUMENTS

Drawn by	EVF
Checked by	ERF
Project No.	43045
Scale	AS NOTED
Date	09/17/24

Landscape Architect & Civil Engineer: THE LA GROUP
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40 LONG ALLEY, SARATOGA SPRINGS, NY 12866

Structural & PME Engineer: GREENMAN PEDERSEN, INC
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NORTH ROCKLAND HIGH SCHOOL FIELDS – PHASE 2 & HVAC UPGRADES

HIGH SCHOOL: SED# 50-02-01-06-0-016-036
PRESS BOX – SOFTBALL: SED# 50-02-01-06-7-090-001
PRESS BOX – BASEBALL: SED# 50-02-01-06-7-091-001

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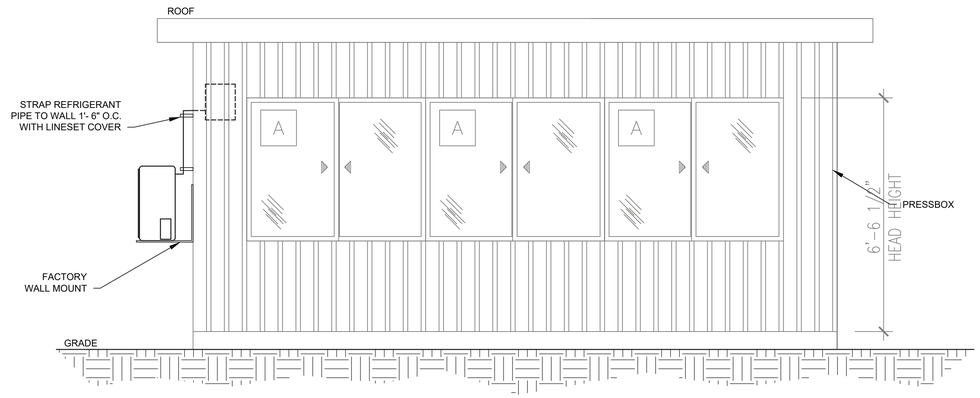
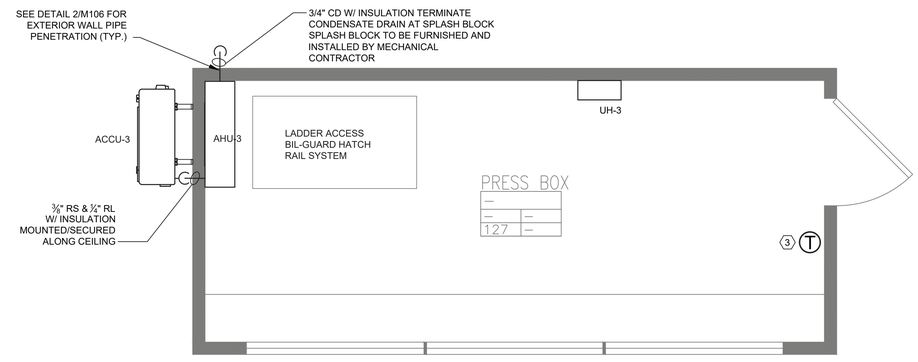
Drawing Title
MECHANICAL PRESSBOX INSTALL - 1

Drawing No.
M-102



2 FIELD HOCKEY PRESSBOX - ELEVATION

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



1 FIELD HOCKEY PRESSBOX - MECHANICAL

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

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

No.	Date	Revisions
1	09/17/24	BIDDING DOCUMENTS

Drawn by MC
Checked by WM
Project No. 43045
Scale AS NOTED
Date 09/17/24

Landscape Architect & Civil Engineer: **THE LA GROUP** LANDSCAPE ARCHITECTURE & ENGINEERING, PLLC 40 LONG ALLEY, SARATOGA SPRINGS, NY 12866

Structural & PME Engineer: **GREENMAN PEDERSEN, INC** 2 EMPIRE DRIVE, SUITE 202, HUNTINGTON STATION, NY 11746

NORTH ROCKLAND HIGH SCHOOL FIELDS – PHASE 2 & HVAC UPGRADES

HIGH SCHOOL: SBL# 69-69-01-05-0-015-000
PRESS BOX – SOFTBALL: SBL# 69-68-01-08-7-000-001
PRESS BOX – BASEBALL: SBL# 69-68-01-08-7-001-001
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COUNTY OF ROCKLAND

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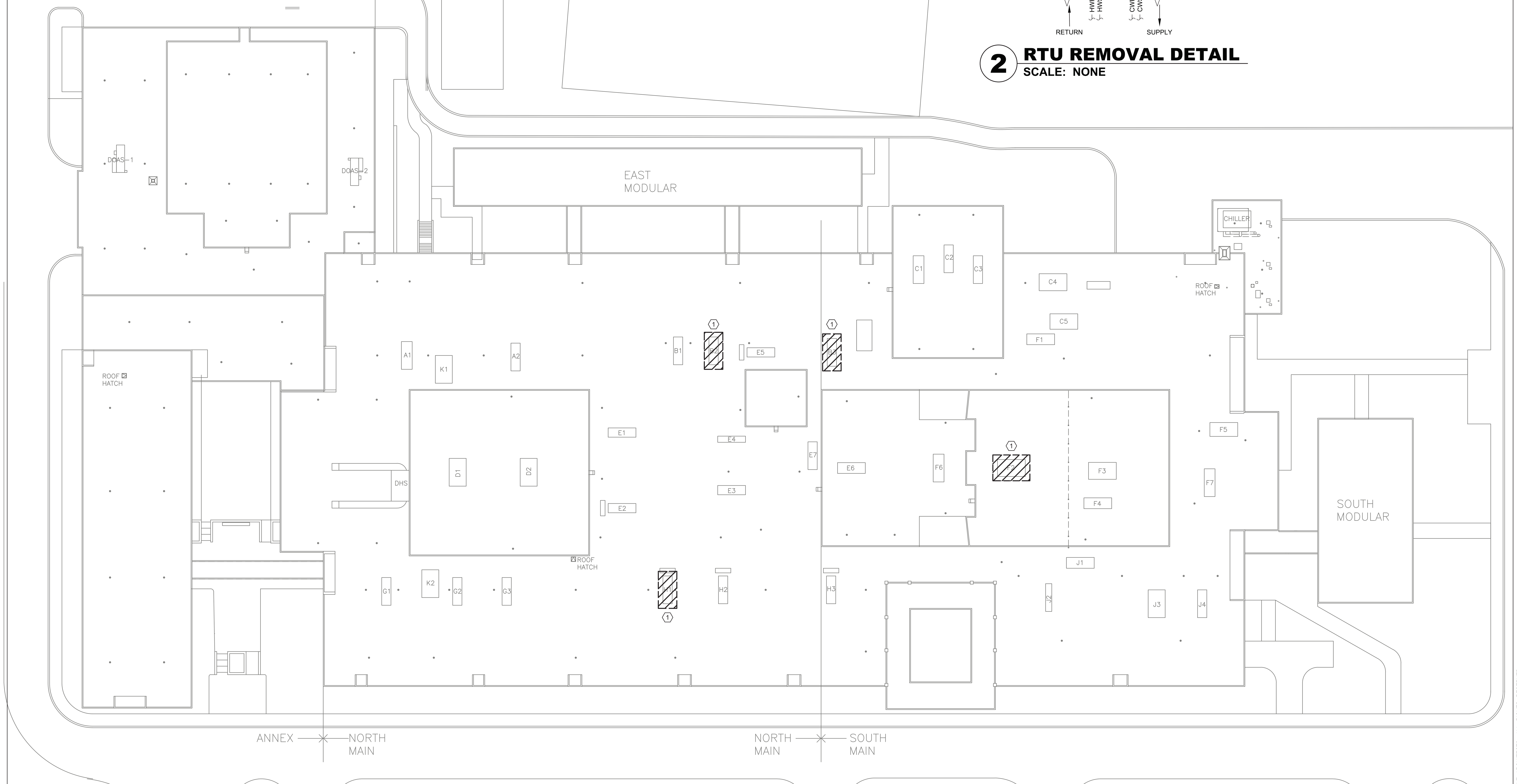
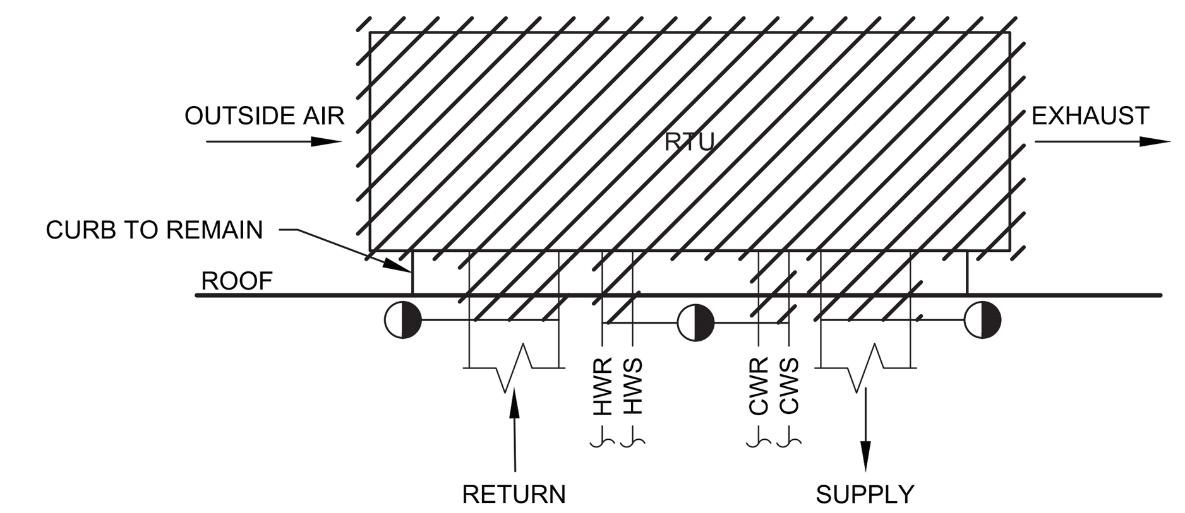
Drawing Title
MECHANICAL
PRESSBOX INSTALL - 2

Drawing No.
M-103



1 NRHS MECHANICAL ROOF PLAN - REMOVAL
SCALE: 1/32" = 1'- 0"



2 RTU REMOVAL DETAIL
SCALE: NONE

KEYED NOTES:

(1) REMOVE AND DISPOSE OF EXISTING ROOF TOP UNIT. THE EXISTING ROOF CURB TO REMAIN.

NOTES:

1. CONTRACTOR SHALL COORDINATE WITH OWNER REGARDING THE SHUTDOWN AND REMOVAL OF EQUIPMENT.
2. PROVIDE ADEQUATE MEANS FOR CONDENSATE DISPOSAL FOR EACH UNIT, SEE DETAILS ON M-530.

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

No.	Date	Revisions
1	09/17/24	BIDDING DOCUMENTS

Drawn by: MC
Checked by: WM
Project No.: 43045
Scale: AS NOTED
Date: 09/17/24

Landscape Architect & Civil Engineer: THE LA GROUP
LANDSCAPE ARCHITECTURE & ENGINEERING
40 LONG ALLEY,
SARATOGA SPRINGS, NY 12866

Structural & PME Engineer: GREENMAN PEDERSEN, INC
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NORTH ROCKLAND HIGH SCHOOL
FIELDS - PHASE 2 & HVAC UPGRADES

HIGH SCHOOL: SED# 50-02-01-06-0-016-036
PRESS BOX - SOFTBALL: SED# 50-02-01-06-7-090-001
PRESS BOX - BASEBALL: SED# 50-02-01-06-7-091-001

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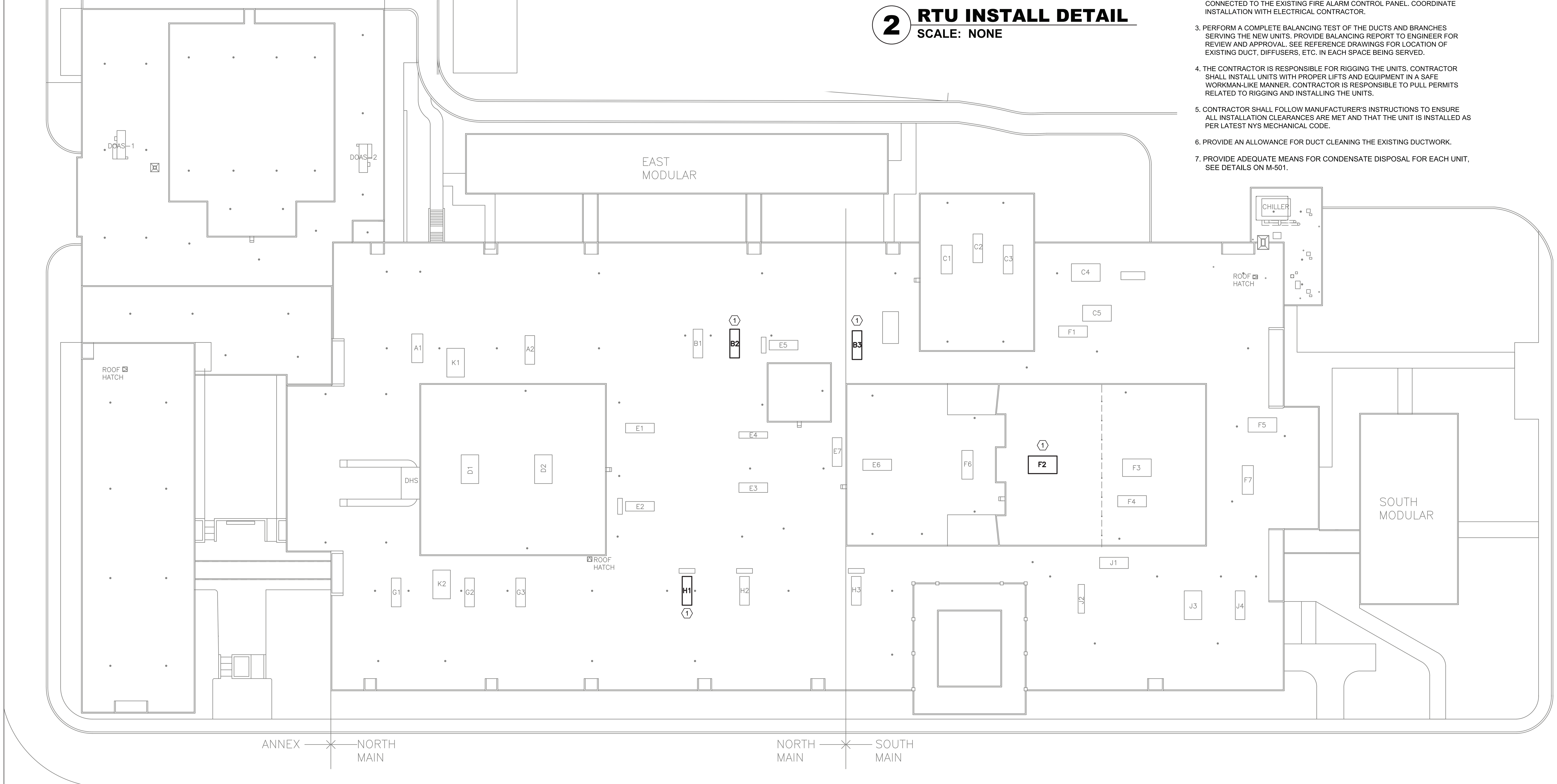
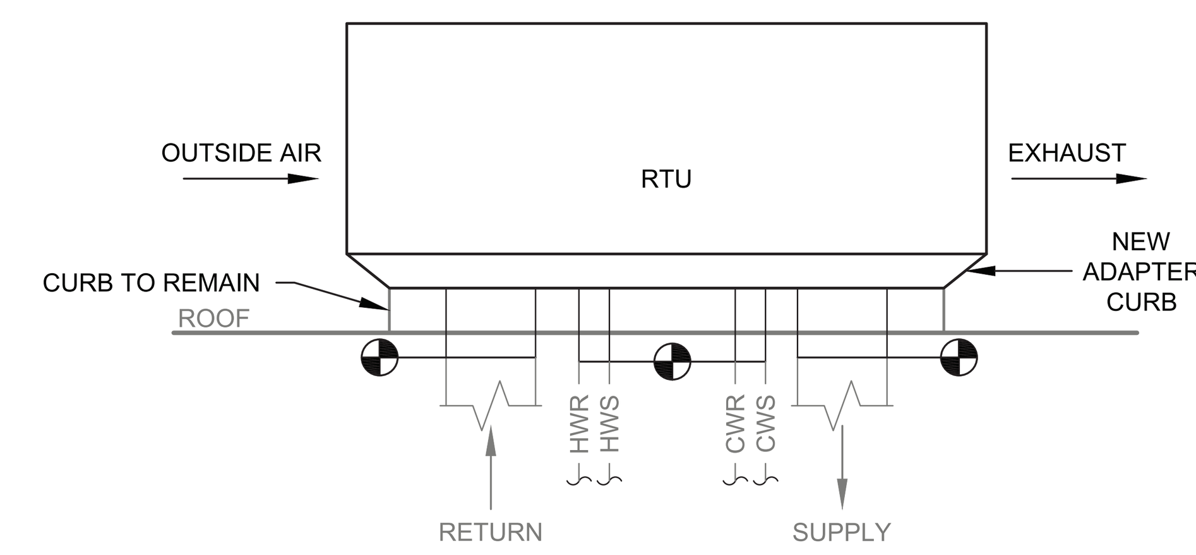
Drawing Title
MECHANICAL ROOF REMOVAL

Drawing No.
M-104



1 NRHS MECHANICAL ROOF PLAN - REMOVAL

SCALE: 1/32" = 1'- 0"



2 RTU INSTALL DETAIL

SCALE: NONE

KEYED NOTES:

1. INSTALL AND CONNECT NEW ROOF TOP UNIT TO EXISTING DUCTWORK AND PIPING. THERE SHALL BE NO NEW ROOF PENETRATIONS. PROVIDE AN ADAPTER ROOF CURB & FACTORY ASSEMBLED PIPE CHASE CURB AND CABINET FOR UNIT, SEE AIR HANDLING UNITS SCHEDULE ON DRAWING M-002 FOR REQUIRED AIRFLOW RATINGS.

NOTES:

1. FOR ADDITIONAL INFORMATION AND SPECIFICS REGARDING AIR HANDLING UNIT INSTALLATION, SEE THE AIR HANDLING UNIT SPECIFICATION AND MANUFACTURER'S INSTALLATION MANUAL. PROVIDE EXTRA PARTS AS DEPICTED IN THE SPECIFICATION.

2. INSTALL DUCT SMOKE DETECTORS FOR THE NEW AIR HANDLING UNITS TO COMPLY TO CODE. EXISTING DUCT SMOKE DETECTORS ON SUPPLY SIDE TO BE REPLACED WITH NEW. NEW DUCT SMOKE DETECTORS SHALL BE INSTALLED ON A STRAIGHT DUCT ON THE RETURN SIDE. NEW SMOKE DETECTORS SHALL BE CONNECTED TO THE EXISTING FIRE ALARM CONTROL PANEL. COORDINATE INSTALLATION WITH ELECTRICAL CONTRACTOR.

3. PERFORM A COMPLETE BALANCING TEST OF THE DUCTS AND BRANCHES SERVING THE NEW UNITS. PROVIDE BALANCING REPORT TO ENGINEER FOR REVIEW AND APPROVAL. SEE REFERENCE DRAWINGS FOR LOCATION OF EXISTING DUCT, DIFFUSERS, ETC. IN EACH SPACE BEING SERVED.

4. THE CONTRACTOR IS RESPONSIBLE FOR RIGGING THE UNITS. CONTRACTOR SHALL INSTALL UNITS WITH PROPER LIFTS AND EQUIPMENT IN A SAFE WORKMAN-LIKE MANNER. CONTRACTOR IS RESPONSIBLE TO PULL PERMITS RELATED TO RIGGING AND INSTALLING THE UNITS.

5. CONTRACTOR SHALL FOLLOW MANUFACTURER'S INSTRUCTIONS TO ENSURE ALL INSTALLATION CLEARANCES ARE MET AND THAT THE UNIT IS INSTALLED AS PER LATEST NYS MECHANICAL CODE.

6. PROVIDE AN ALLOWANCE FOR DUCT CLEANING THE EXISTING DUCTWORK.

7. PROVIDE ADEQUATE MEANS FOR CONDENSATE DISPOSAL FOR EACH UNIT, SEE DETAILS ON M-501.

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

No.	Date	Revisions
1	09/17/24	BIDDING DOCUMENTS

Drawn by	MC
Checked by	WM
Project No.	43045
Scale	AS NOTED
Date	09/17/24

Landscape Architect & Civil Engineer: THE LA GROUP
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NORTH ROCKLAND HIGH SCHOOL FIELDS – PHASE 2 & HVAC UPGRADES

HIGH SCHOOL: SED# 50-02-01-06-0-016-036
PRESS BOX – SOFTBALL: SED# 50-02-01-06-7-090-001
PRESS BOX – BASEBALL: SED# 50-02-01-06-7-091-001

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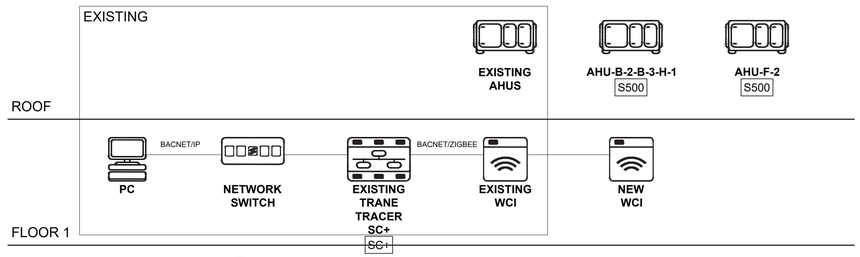
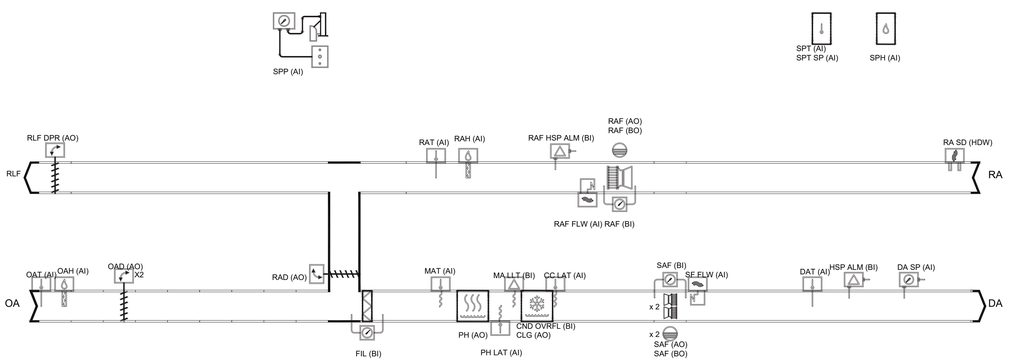
Drawing Title
MECHANICAL ROOF INSTALLATION

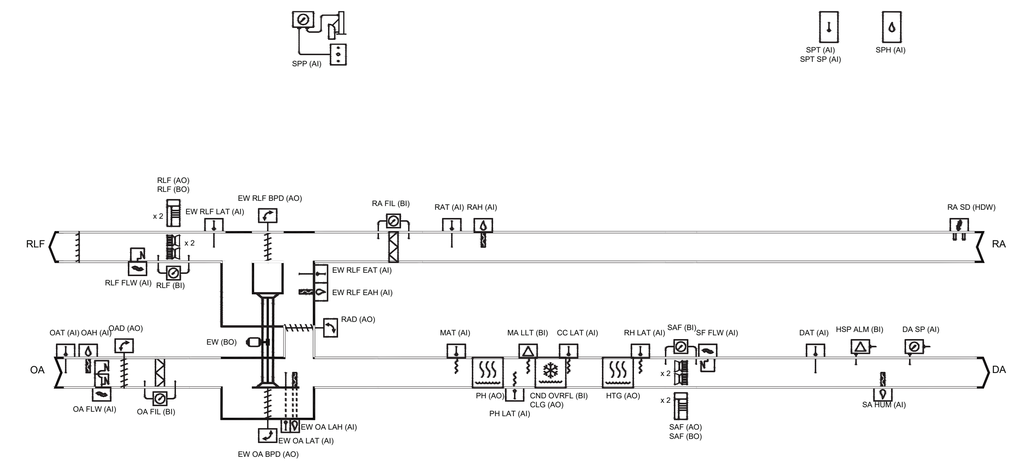
Drawing No.
M-105



1 CONTROL DIAGRAM
SCALE: NONE



2 FLOW DIAGRAM FOR RTU B-2, B-3 AND H-2
SCALE: NONE



3 FLOW DIAGRAM FOR RTU F-2
SCALE: NONE

Drawing Title
CONTROL DIAGRAMS - 1

Drawing No.
M-401

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PRESS BOX - SOFTBALL: SBL# 50-02-01-05-7-030.001
PRESS BOX - BASEBALL: SBL# 50-02-01-05-7-031.001
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Structural & PME Engineer:
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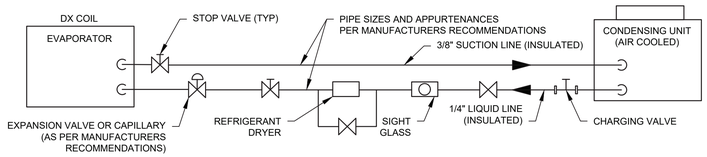
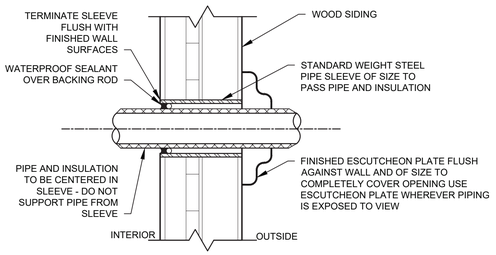
Drawn by	MC
Checked by	WM
Project No.	43045
Scale	AS NOTED
Date	09/17/24

No.	Date	Revisions
1	09/17/24	BIDDING DOCUMENTS

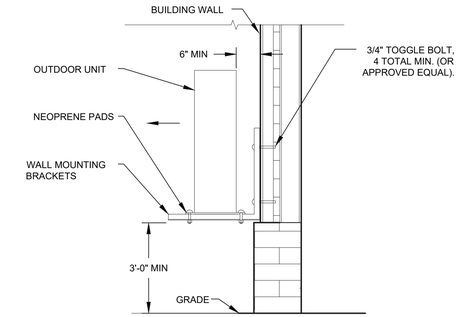
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1", THEN DRAWING IS NOT TO FULL SCALE



1 DX COIL PIPING DIAGRAM
SCALE: NONE

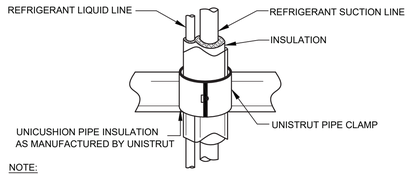


2 EXTERIOR WALL PIPE PENETRATION
SCALE: NONE



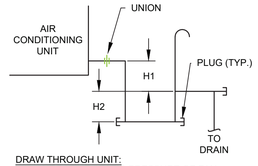
NOTES:
1. MOUNT OUTDOOR UNIT ON WALL MOUNTING BRACKETS WITH NEOPRENE VIBRATION ISOLATOR PADS AS PER UNIT MANUFACTURER'S INSTRUCTIONS.

3 WALL MOUNTED CONDENSER 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.

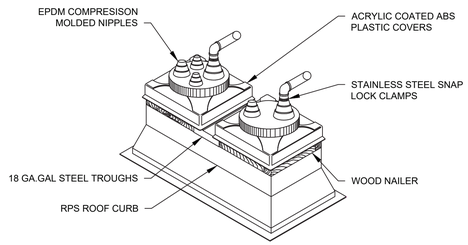
4 REFRIGERANT PIPING SUPPORT
SCALE: NONE



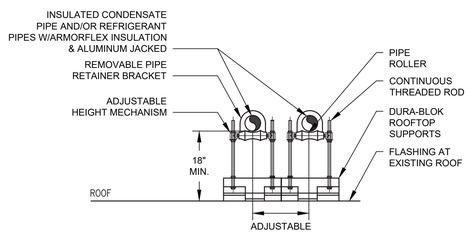
DRAW THROUGH UNIT:
H1= NEGATIVE STATIC PRESSURE OF FAN + 1" MIN.
H2= H1

5 CONDENSATE DRAIN TRAP SIZING
SCALE: NONE

NOTE:
1. MC RESPONSIBLE TO VERIFY AND COMPLY WITH MANUFACTURERS INSTALLATION INSTRUCTIONS FOR PROPER TRAP SIZING.

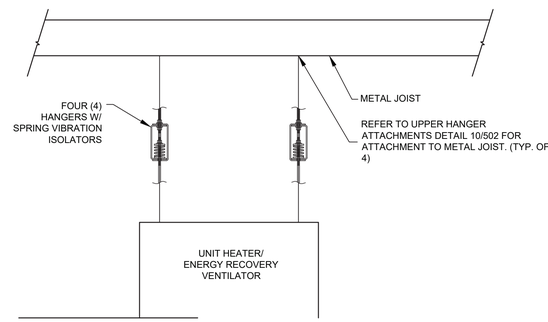


6 PIPE PORTAL AT ROOF PENETRATION
SCALE: NONE



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.

7 ROOF PIPE SUPPORT
SCALE: NONE



8 UH/ERV INSTALLATION DETAIL
SCALE: NONE

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

No.	Date	Revisions
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Drawn by MC
Checked by WM
Project No. 43045
Scale AS NOTED
Date 09/17/24

THE LA GROUP
LANDSCAPE ARCHITECTURE & PLANNING
49 LONG ALLEY,
SARATOGA SPRINGS, NY 12866
Landscape Architect & Civil Engineer:

GREENMAN PEDERSEN, INC
18 COMPUTER DRIVE EAST
SUITE 202, ALBANY, NY 12065
Structural & MEP Engineer:

NORTH ROCKLAND HIGH SCHOOL FIELDS - PHASE 2 & HVAC UPGRADES

HIGH SCHOOL: SBL# 50-02-01-06-4-016-026
PRESS BOX - SOFTBALL: SBL# 50-02-01-06-7-004-001
PRESS BOX - BASEBALL: SBL# 50-02-01-06-7-001-001

TOWN OF HAVERSTRAW
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150 Hamilton Rd.
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MICHAEL SHILALE ARCHITECTS, L.L.P.
140 Park Avenue New City, NY 10956 Tel 845-708-9209
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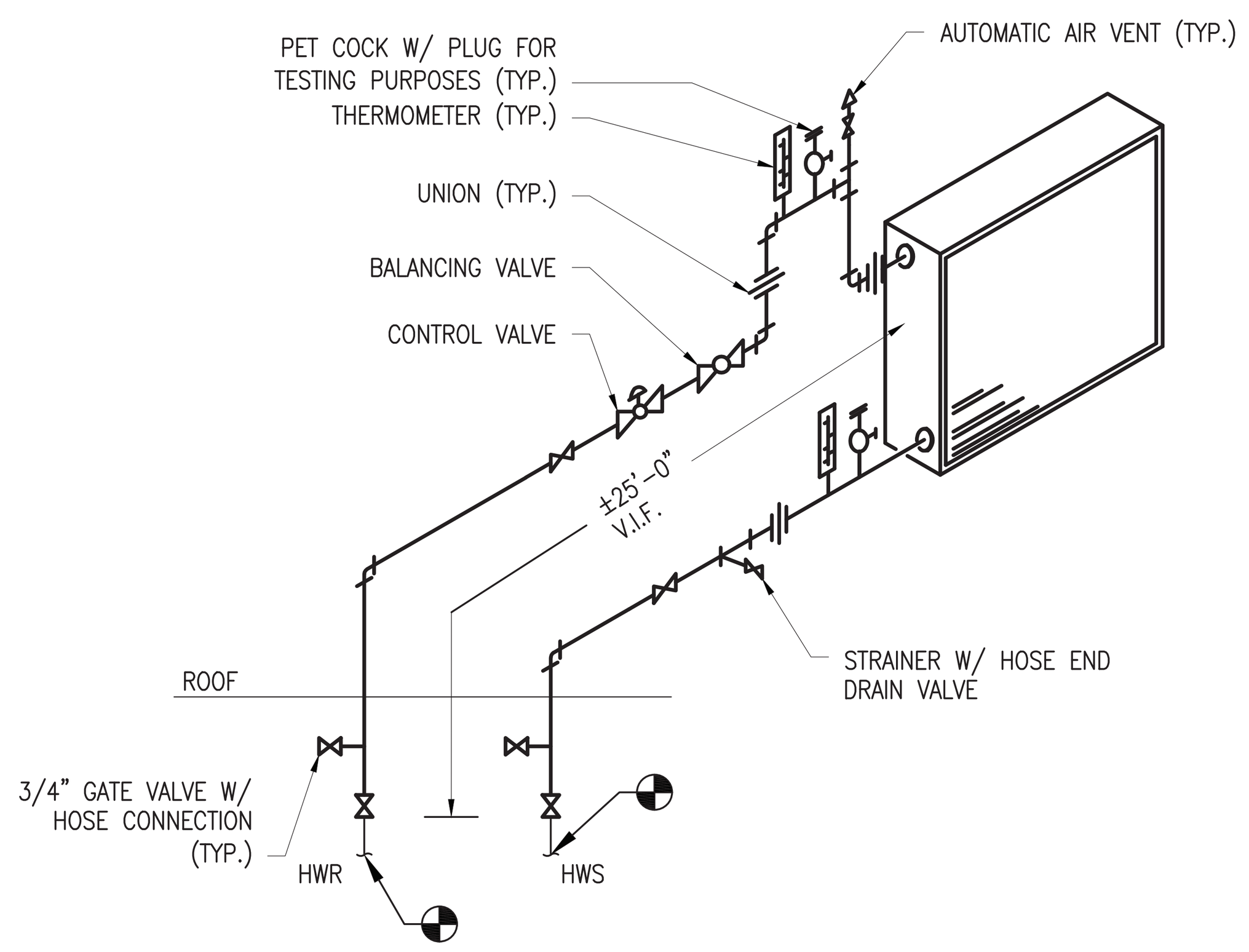
Drawing Title
MECHANICAL DETAILS - 1

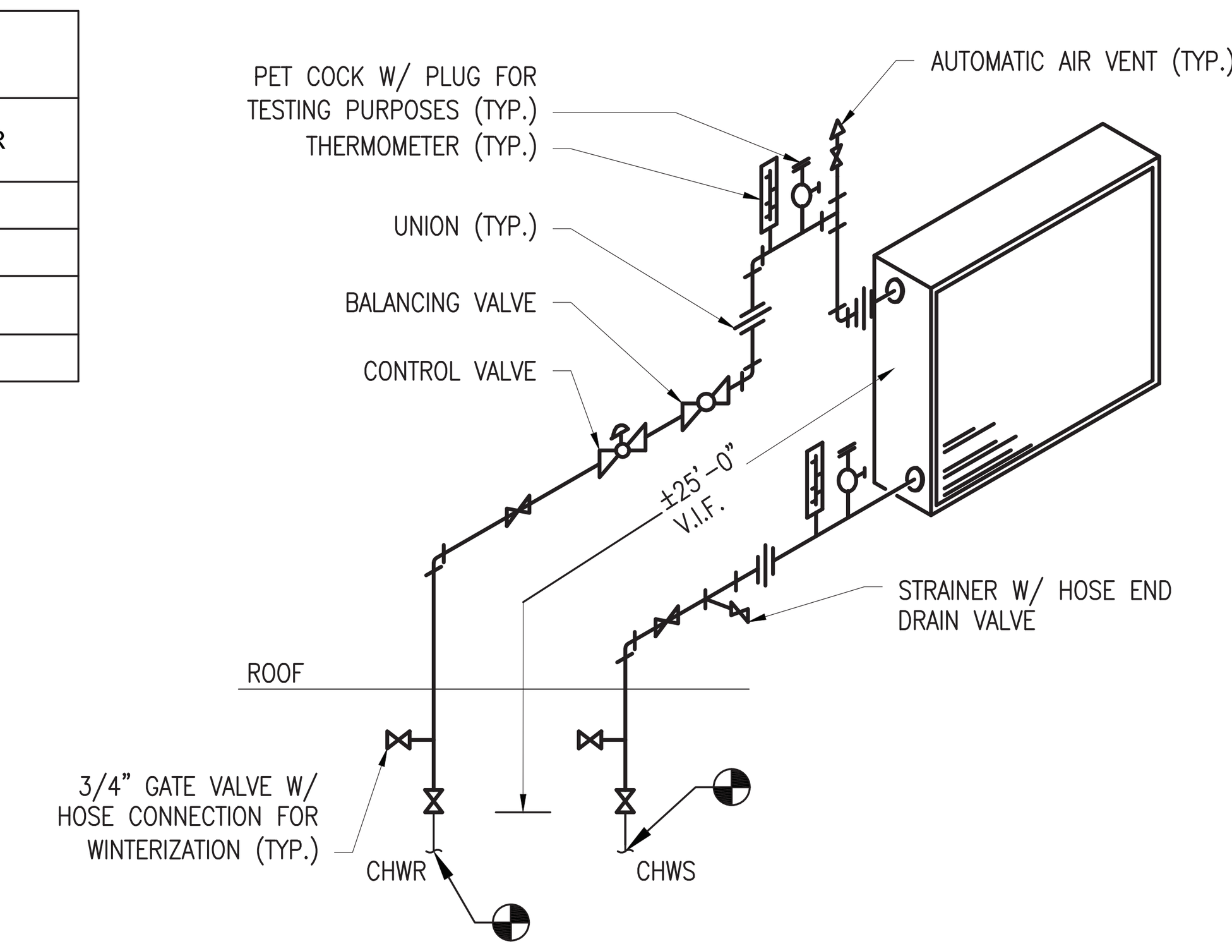
Drawing No.
M-501



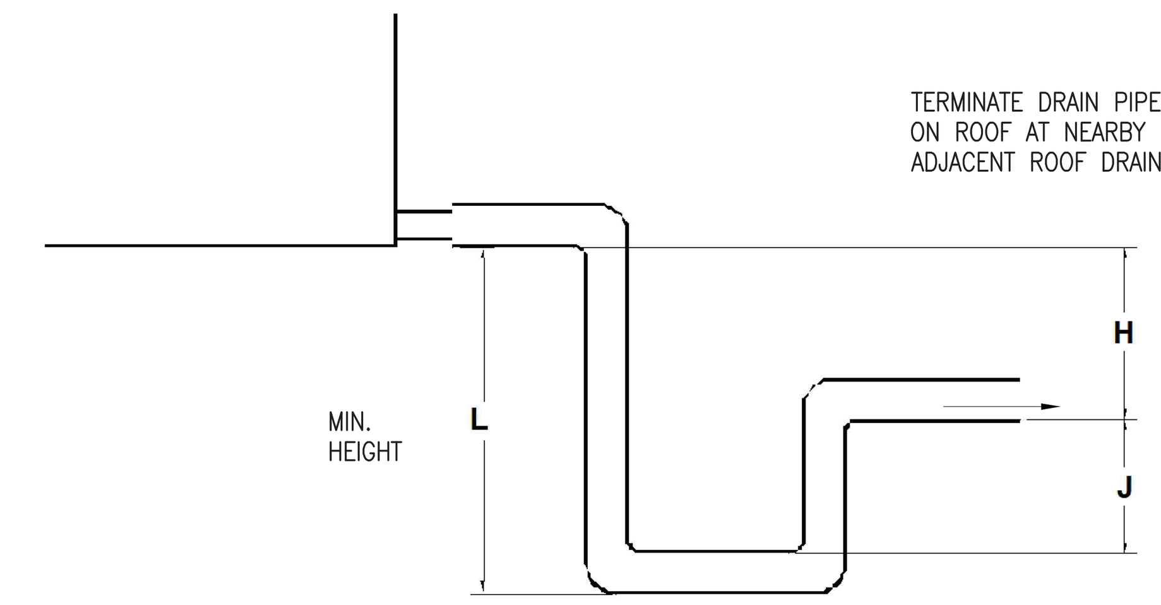
1 RTU HOT WATER COIL
SCALE: NONE

PIPE SCHEDULE

UNIT	HWS/R	CHWS/R
H1	1"	2"
F2	2"	2-1/2"
B2	1"	2"
B3	1"	2"



2 RTU CHILLED WATER COIL
SCALE: NONE



Drain pan trapping for section under negative pressure

L = H + J + pipe diameter where:
H = 1 inch for each inch of negative pressure (loaded filters) plus 1 inch
J = ½ **H**

Drain pan trapping for section under positive pressure

L = H + J + pipe diameter where:
H = 1/2 inch (minimum)
J = ½ inch plus the unit positive static pressure at coil discharge (loaded filters)

3 DRIP PAN DETAIL
SCALE: NONE

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

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Checked by: WM
Project No.: 43045
Scale: AS NOTED
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Drawing Title: **MECHANICAL DETAILS - 2**

Drawing No. **M-502**