HVAC SYMBOLS LIST

SYMBOL	DESCRIPTION
AAD	AUTOMATIC AIR DAMPER
ACC	AIR-COOLED CONDENSING UNIT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
BBD	BOILER BLOW DOWN
BD	BACKDRAFT DAMPER
CA	COMPRESSED AIR
CD	COOLING COIL CONDENSATE DRAIN
CFM	CUBIC FEET PER MINUTE
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CR	CONDENSER WATER RETURN
CS	CONDENSER WATER SUPPLY
CW	DOMESTIC COLD WATER
D	DRAIN
(E)	EXISTING
EA	EXHAUST AIR
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
ERHC	ELECTRIC REHEAT COIL
ETR	EXISTING TO REMAIN
EUH	ELECTRIC UNIT HEATER
F&T	FLOAT AND THERMOSTATIC TRAP
FCU	FAN-COIL UNIT
FPM	FEET PER MINUTE
FT	FIN-TUBE
GC	GENERAL CONTRACTOR
GR	GLYCOL RETURN
GS	GLYCOL SUPPLY
HC	HVAC CONTRACTOR
HHWR	HEATING HOT WATER RETURN
HHWS	HEATING HOT WATER SUPPLY
HP	HEAT PUMP
HPC	HIGH PRESSURE CONDENSATE
HPS	HIGH PRESSURE STEAM
LF	LINEAR FOOTAGE OF FIN-TUBE RADIATION
LPC	LOW PRESSURE CONDENSATE
LPG	LIQUEFIED PROPANE GAS
LPS	LOW PRESSURE STEAM
MBH	1,000 BTU/HR
MC	MECHANICAL CONTRACTOR
MPC	MEDIUM PRESSURE CONDENSATE
MPS	MEDIUM PRESSURE STEAM
MRD	MONOFLO FITTING DOWN – HHWR
MSD	MONOFLO FITTING DOWN – HHWS
MUW	MAKE-UP WATER
NC	NORMALLY CLOSED
NG	NATURAL GAS
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
PC	PLUMBING CONTRACTOR
PD	PUMP DISCHARGE
PHWR	PRIMARY HEATING HOT WATER RETURN
PHWS	PRIMARY HEATING HOT WATER SUPPLY
RA	RETURN AIR
RD	REFRIGERANT DISCHARGE
RHC	HOT WATER REHEAT COIL
RLL	REFRIGERANT LIQUID PIPE
RSL	REFRIGERANT SUCTION PIPE
RTU	ROOFTOP UNIT
RV	ROOF VENT
SA	SUPPLY AIR
SHWR	SECONDARY HEATING HOT WATER RETURN
SHWS	SECONDARY HEATING HOT WATER SUPPLY
SSI	SPLIT SYSTEM INDOOR SECTION (EVAPORATOR SECTION)
SSO	SPLIT SYSTEM OUTDOOR SECTION (CONDENSING UNIT)
TC	TEMPERATURE CONTROLS CONTRACTOR
UH	UNIT HEATER
UV	UNIT VENTILATOR
V	VENT
WAHP	WATER-TO-AIR HEAT PUMP
WWHP	WATER-TO-WATER HEAT PUMP

SYMBOL	DESCRIPTION
	CONNECTION - TOP
	CONNECTION - BOTTOM
	DIRECTION OF FLOW
	REDUCER
	CAP OR PLUG
	ELBOW DOWN
	ELBOW UP
	TEE OUTLET - UP
	TEE OUTLET - DOWN
	UNION
	GATE VALVE
	BALL VALVE
	BALANCING VALVE
	STRAINER
	STRAINER WITH BLOW-DOWN
	BUTTERFLY VALVE
	BUTTERFLY CONTROL VALVE, PNEUMATIC 2-WAY
	BUTTERFLY CONTROL VALVE, ELECTRIC ACTUATOR
	GLOBE VALVE
	CHECK VALVE
	TRIPLE DUTY VALVE
	GAS COCK, PLUG VALVE
	UNDERCUT DOOR 1"
	LOUVERED DOOR W/ SQ. FT. OF FREE AREA
	AIR VENT - MANUAL
	AIR VENT - AUTOMATIC
	FLANGE
	CONTROL/SOLENOIND VALVE, ELECTRIC 2-WAY
	CONTROL VALVE, ELECTRIC 3-WAY
	CONTROL VALVE, PNEUMATIC 2-WAY
	CONTROL VALVE, PNEUMATIC 3-WAY
	RELIEF / SAFETY VALVE
	PRESSURE REDUCING VALVE
	VACUUM BREAKER
	FLEXIBLE PIPE CONNECTOR
	EXPANSION COMPENSATOR W/ GUIDES
	EXPANSION JOINT
	PIPE ANCHOR
	PIPE GUIDE
	THERMOSTATIC TRAP
	FLOAT & THERMOSTATIC TRAP
	BUCKET TRAP
	THERMODYNAMIC TRAP
	THERMOMETER
	WELL
	PRESSURE GAUGE
	STEAM PRESSURE GAUGE WITH 1/4" NEEDLE VALVE
	PRESSURE GAUGE WITH 1/4" NEEDLE VALVE
	PNEUMATIC (CONTROL) TUBING
	BUTTERFLY VALVE WITH PNEUMATIC AND MANUAL OPERATORS
	PIPING
	PIPING BELOW GRADE
	BASE MOUNTED PUMP
	IN-LINE PUMP
	AIR TERMINAL UNIT WITH REHEAT COIL AND SOUND ATTENUATOR
	AIR TERMINAL UNIT WITH SOUND ATTENUATOR
	AIR TERMINAL UNIT WITH REHEAT COIL
	AIR TERMINAL UNIT
W/W ENCL.	WALL TO WALL FIN TUBE ENCLOSURE

SYMBOL	DESCRIPTION
(DBL)	DOUBLE WALL LINED DUCT
20/10	DUCT SECTION - SUPPLY
20/10	DUCT SECTION - RETURN/EXHAUST
A"	DUCT SECTION - ROUND DUCT IN INCHES
AXB FO	DUCT SECTION - FLAT OVAL DUCT IN INCHES
	ACOUSTIC THERMAL LINING
	FLEXIBLE DUCTWORK
FC	FLEXIBLE CONNECTION
	FIRE DAMPER
SD	SMOKE DAMPER
FSD	COMBINATION FIRE AND SMOKE DAMPER
VD	VOLUME DAMPER
	DAMPER CONTROL, PARALLEL BLADE
	DAMPER CONTROL, OPPOSED BLADE
AAD	AUTOMATIC AIR DAMPER
BDD	BACK DRAFT DAMPER
BG	BLAST GATE
20/10 / 12X10 / 10/20	AIR DUCT (FIRST FIGURE IS DUCT WIDTH/TOP, SECOND FIGURE IS DUCT DEPTH)
	MULTI-BLADE AIR EXTRACTOR
	TURNING VANES
	EXISTING WORK TO BE REMOVED (HATCHED)
	POINT OF CONNECTION
	POINT OF DISCONNECTION
	AIR FLOW SENSOR
	FILTER
	TRANSITION SQUARE TO ROUND
	HUMIDIFIER DISPERSION TUBE
RISE / R	RISE IN DUCT
DROP / D	DROP IN DUCT
	SQUARE CEILING DIFFUSER (4 WAY)
	ROUND CEILING DIFFUSER
	SQUARE OR RECTANGULAR CEILING GRILLE
	SUPPLY REGISTER, RETURN OR EXHAUST GRILLE
1-WAY 2-WAY 3-WAY	SUPPLY DIFFUSER, 1-WAY, 2-WAY, 3-WAY
8"Ø, D-3, 300 CFM	CEILING DIFFUSER WITH NECK SIZE, TYPE, & CFM
10"x10", G-3, 300 CFM	CEILING RETURN OR EXHAUST GRILLE WITH SIZE, TYPE, & CFM
10"x8", R-2, 300 CFM	SUPPLY REGISTER WITH SIZE, TYPE, & CFM
10"x8", G-2, 300 CFM	RETURN OR EXHAUST GRILLE WITH SIZE, TYPE, & CFM
	AIR FLOW
L1	ACOUSTIC/THERMAL DUCTWORK LINING - 1 INCH THICK
L2	ACOUSTIC/THERMAL DUCTWORK LINING - 2 INCH THICK
PL1	ACOUSTIC/THERMAL DUCTWORK PLENUM LINING - 1 INCH THICK
PL2	ACOUSTIC/THERMAL DUCTWORK PLENUM LINING - 2 INCH THICK

SYMBOL	DESCRIPTION
24X12 / 12X10 / VD	SUPPLY / RETURN / EXHAUST AIR TAKEOFFS
24X12 / 8"Ø / VD	SUPPLY / RETURN / EXHAUST AIR TAKEOFFS
14"Ø / 10"Ø / VD	SUPPLY AIR TAKEOFFS
14"Ø / 10"Ø / VD	SUPPLY AIR TAKEOFFS
24X12 / 6X12 / 12X10 / 18X12 / 20X12	SUPPLY AIR TAKEOFFS
24X12 / 12X10 / VD	SUPPLY/RETURN EXHAUST AIR TAKEOFFS W/ REGISTER/GRILLE/ DIFFUSER
VD / VD	SUPPLY/RETURN EXHAUST AIR END OF MAIN BRANCH TAKEOFFS
VD / VD	SUPPLY/RETURN EXHAUST AIR END OF MAIN BRANCH TAKEOFFS
	LONG RADIUS 90° ELBOW R/W=1.5
	LONG RADIUS 45° ELBOW R/W=1.5
	90° ELBOW WITH TURNING VANES
18X16 / 18X8 / 18X8	90 VERTICAL SPLIT OFF (PLAN VIEW)
20X10 / 20X10 / 20X10	DUCT TURNING UP OR DOWN
U MAX MIN	AIR TERMINAL UNIT-DUCTWORK U - UNIT TYPE MAX = MAXIMUM CFM MIN = MINIMUM CFM
U GPM MAX	AIR TERMINAL UNIT-DUCTWORK U - UNIT TYPE GPM = GALLONS PER MIN MAX = MAXIMUM GPM
U MAX MIN FAN	FAN POWERED AIR TERMINAL UNIT U - UNIT TYPE MAX = PRIMARY MAX CFM MIN = PRIMARY MIN CFM FAN = FAN CFM
TYPE / COIL SIZE / CLNG GPM / HTNG GPM	TYPE = VALANCE TYPE COIL SIZE = COIL LENGTH CLNG GPM = COOLING GPM HTNG GPM = HEATING GPM
X / XX	X = DIFFUSER OR GRILL TYPE XX = AIR FLOW VALUE (CFM)

SYMBOL	DESCRIPTION
	ELECTRIC/PNEUMATIC SWITCH OR RELAY
	PNEUMATIC/ELECTRIC SWITCH OR RELAY
CT	CURRENT TRANSDUCER
	OPEN/CLOSED
	START/STOP
	ENABLE/DISABLE
T	TEMPERATURE SENSOR (DUCT OR PIPE MOUNTED)
H	HUMIDITY SENSOR (DUCT MOUNTED)
F	FLOW TRANSMITTER
P	PRESSURE TRANSMITTER
DP	DIFFERENTIAL PRESSURE TRANSMITTER
	ELECTRIC/PNEUMATIC TRANSDUCER
	ELECTRIC/ELECTRONIC TRANSDUCER
	DUCT SMOKE DETECTOR
T	SPACE THERMOSTAT
T	SPACE TEMPERATURE SENSOR
CO2	SPACE CARBON DIOXIDE SENSOR
CH4	SPACE NATURAL GAS SENSOR
CO	SPACE CARBON MONOXIDE SENSOR
G	SPACE SENSOR WITH GUARD
H	SPACE HUMIDISTAT
FS	WATER FLOW SENSOR
	PNEUMATIC ACTUATOR
	ELECTRIC ACTUATOR
VSD VFD	VARIABLE SPEED / FREQUENCY DRIVE
C	COOLING COIL
H	HEATING COIL
F	GAS FURNACE
H	HUMIDIFIER
A	ALARM
S	STATUS
FS	FLOW SWITCH
ΔP	DIFFERENTIAL STATIC PRESSURE SWITCH
R	RELAY
	PRESSURE GAUGE
FZ	FREEZE-STAT
DI	DIGITAL INPUT (TO BUILDING MANAGEMENT SYSTEM)
DO	DIGITAL OUTPUT (FROM BUILDING MANAGEMENT SYSTEM)
AO	ANALOG OUTPUT (FROM BUILDING MANAGEMENT SYSTEM)
AI	ANALOG INPUT (TO BUILDING MANAGEMENT SYSTEM)
	ELECTRICAL INTERFACE
SF	SPEED FEED BACK
ES	END SWITCH
PF	POSITION FEEDBACK
	TRAVERSE AVERAGING SENSOR
	PROBE SENSOR
	FREEZE STAT SENSOR

SYMBOLS GENERAL NOTES:

1) VALVE AND DAMPER ACTUATOR TYPES (ELECTRIC OR PNEUMATIC) WHICH ARE INDICATED IN HVAC TEMPERATURE CONTROL DRAWINGS SHALL SUPERSEDE TYPE INDICATED ON ALL OTHER HVAC DRAWINGS.

HVAC CONTRACTOR GENERAL NOTES:

A. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS WITHIN THE BUILDING PRIOR TO COMMENCEMENT OF ALL DEMOLITION AND NEW WORK.

B. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE AND REPLACE EXISTING CEILINGS, UNLESS OTHERWISE NOTED ON THE ARCHITECTURAL DRAWINGS, FOR PERFORMING DEMOLITION OR NEW WORK WITHIN THE BUILDING. THE EXISTING CEILINGS SHALL BE REMOVED IN A MANNER TO AVOID DAMAGE TO THE CEILING SYSTEMS. STORAGE OF CEILING SYSTEM COMPONENTS FOR REINSTALLATION IS THE RESPONSIBILITY OF THE CONTRACTOR. THE STORAGE OF ALL MATERIAL SHALL BE IN AREAS OR LOCATIONS APPROVED BY THE OWNER. THE OWNER WILL NOT COMPENSATE FOR ANY DAMAGED OR LOST MATERIAL WHILE IN STORAGE. AFTER COMPLETION OF ALL DEMOLITION OR NEW WORK, THE CONTRACTOR SHALL REINSTALL THE CEILING SYSTEMS TO MATCH THE ORIGINAL INSTALLATION.

C. DEMOLITION DRAWINGS SHOW MAJOR EQUIPMENT, PIPING, AND DUCTWORK REMOVALS. THE INTENT IS NOT TO IDENTIFY ALL MISCELLANEOUS PIPING, PIPING ACCESSORIES, DUCTWORK, DUCTWORK ACCESSORIES, SUPPORTS, CONTROLS, CONTROL ACCESSORIES, CONTROL WIRING, CONDUIT, AND PNEUMATIC CONTROL TUBING TO BE DISCONNECTED AND REMOVED, BUT IS THE REQUIREMENT UNDER THIS CONTRACT. NO EQUIPMENT, PIPING, OR DUCTWORK SHALL BE ABANDONED IN PLACE, UNLESS OTHERWISE NOTED ON THE DRAWINGS.

D. ALL EQUIPMENT INDICATED TO BE TURNED OVER TO THE OWNER SHALL BE DISCONNECTED AND REMOVED FROM THE EXISTING SYSTEMS AND DELIVERED (INCLUDING LOADING AND UNLOADING) TO A STORAGE AREA WITHIN THE BUILDING AS SELECTED BY THE OWNER. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR ANY EQUIPMENT DAMAGED DURING REMOVAL AND DELIVERY. ANY DAMAGE TO EQUIPMENT PRIOR TO DISCONNECTING SHOULD BE REPORTED TO THE OWNER'S REPRESENTATIVE. IF NOT REPORTED, THE CONTRACTOR TAKES FULL RESPONSIBILITY FOR REPAIRS TO THE EQUIPMENT.

E. BEFORE DISCONNECTING, REMOVING, OR SERVICING ANY AIR CONDITIONING EQUIPMENT OR SYSTEMS CONTAINING REFRIGERANTS, THE EQUIPMENT OR SYSTEMS SHALL BE EVACUATED OF ALL REFRIGERANT PER THE LATEST ADOPTED RULES AND REGULATIONS BY THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA). THE CONTRACTOR OR TECHNICIAN PERFORMING THE WORK SHALL BE CERTIFIED BY AN EPA APPROVED CERTIFYING AGENCY OR ORGANIZATION.

F. ALL DUCTWORK, PIPING, AND CONDUIT PENETRATIONS THROUGH RATED WALLS OR FLOORS SHALL BE PROVIDED WITH FIRE/SMOKE STOPPINGS PER SPECIFICATION. REFER TO CODE ANALYSIS DRAWING FOR ALL RATED WALL LOCATIONS. ALL FLOORS SHALL BE CONSIDERED RATED.

G. UNLESS SHOWN ON THE ARCHITECTURAL DRAWINGS, IT IS THE RESPONSIBILITY OF THIS CONTRACT TO PATCH AND FINISH ALL EXISTING DUCTWORK OR PIPE PENETRATIONS THROUGH FLOORS, ROOFS, INTERIOR WALLS, AND EXTERIOR WALLS AFTER DEMOLITION WORK. IN ADDITION, ALL NEW PENETRATIONS SHALL BE PROVIDED FOR INSTALLATION OF MECHANICAL SYSTEMS INCLUDING, BUT NOT LIMITED TO, EQUIPMENT, CURBING, DUCTWORK, PIPING, CONTROLS, ETC. PATCHING AND FINISHING SHALL MATCH EXISTING CONSTRUCTION INCLUDING FIRE RATINGS. PROVIDE LINTELS PER LINTEL SCHEDULE.

H. IT IS NOT THE INTENT OF THE DRAWINGS TO SHOW ALL AIR VENTS AND DRAINS IN THE PIPING SYSTEMS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE AIR VENTS AT ALL SYSTEM HIGH POINTS AND AT AREAS WITHIN THE PIPING SYSTEMS THAT COULD ACCUMULATE OR TRAP AIR WHICH WOULD PREVENT PROPER VENTING OR OPERATION OF THE SYSTEMS. DRAINS SHALL BE PROVIDED AT ALL LOW POINTS WITHIN THE PIPING SYSTEM TO FACILITATE COMPLETE DRAINING OF THE SYSTEM .

I. PROVIDE THERMAL EXPANSION COMPENSATORS AND THERMAL EXPANSION LOOPS IN PIPING SYSTEM PER INDUSTRY STANDARDS.

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PROJECT INFORMATION
Project Number
13296.23
Client Name
SUFFERN CSD
Project Name
RP CONNOR - BOILER CONVERSION
District Office Address
SUFFERN CENTRAL SCHOOL DISTRICT
45 MOUNTAIN AVENUE
HILLBURN, NY 10951

SUFFERN CSD
BID #SD-04-01-06-0-005-021

PROJECT ISSUE & REVISION SCHEDULE

No.	Date	Description

PROFESSIONAL STAMPS

NEW YORK STATE EDUCATION STATEMENT
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SHEET INFORMATION

Issued	Scale
06/15/2023	1/8" = 1'- 0"

Project Status: CD

Drawn By	Checked By
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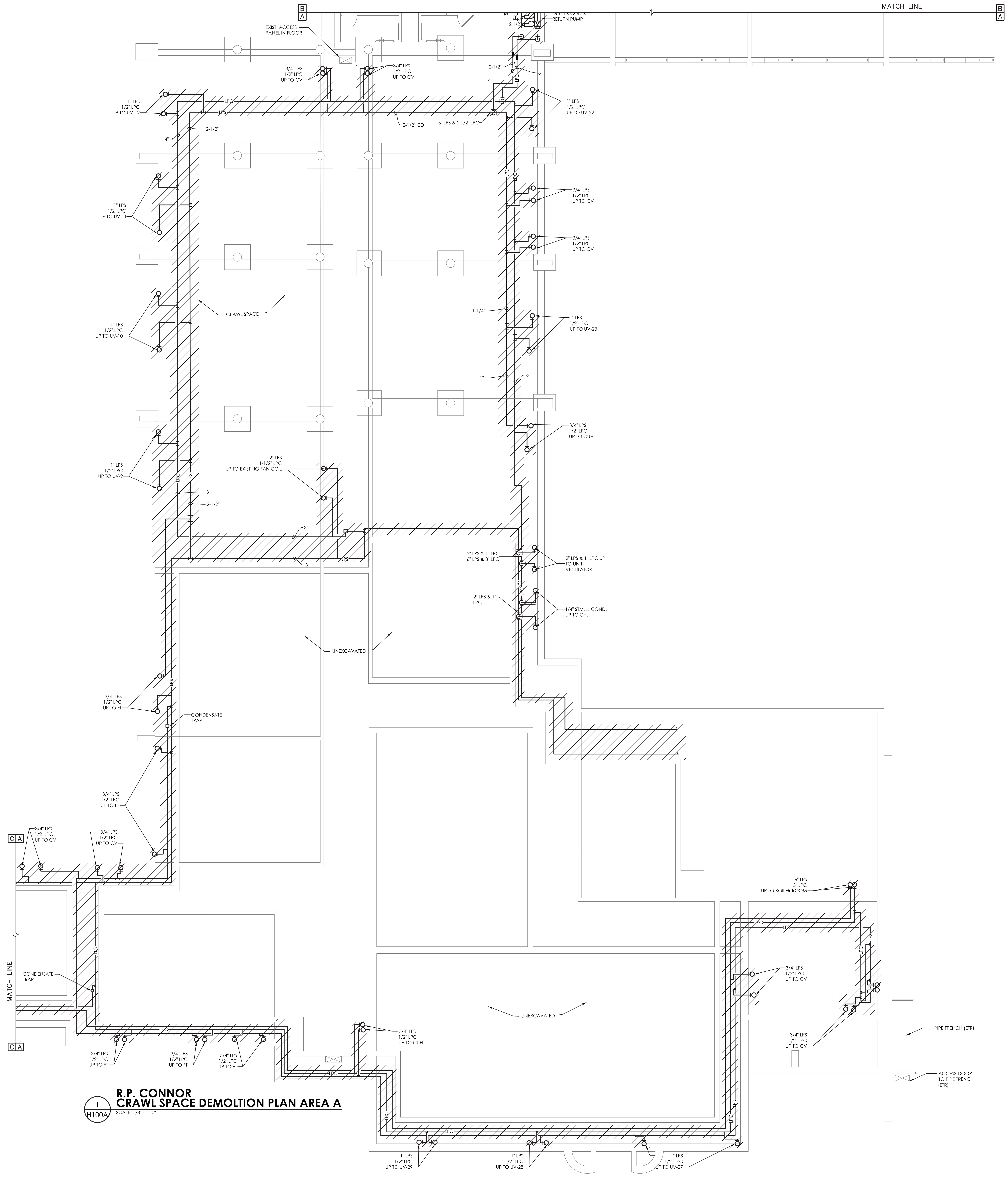
Drawing Title: HVAC SYMBOLS LEGENDS AND CONTRACTOR NOTES

Drawing Number: RPC H000



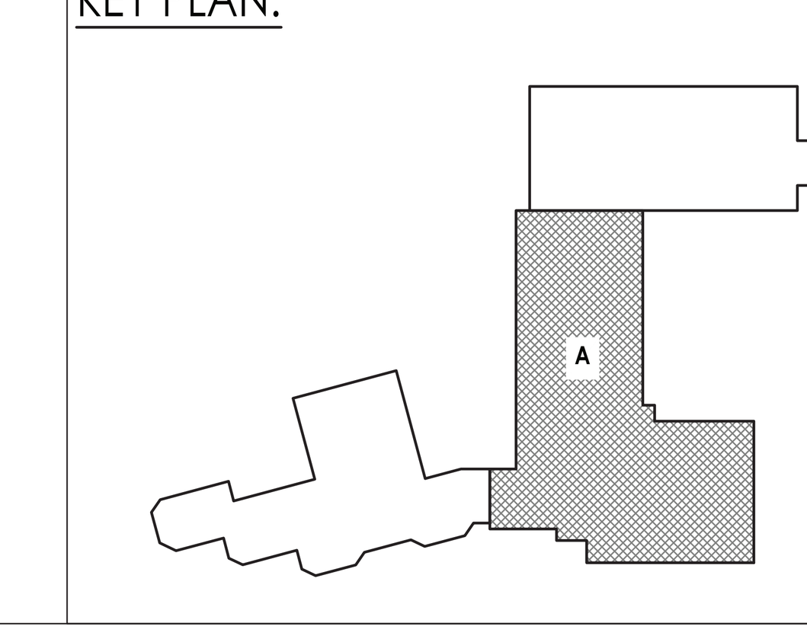
R.P. CONNOR
CRAWL SPACE DEMOLTION PLAN AREA A

1 / H100A — SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. REMOVE EXISTING STEAM PIPES AND CONDENSATE PIPE IN THEIR ENTIRETY, INCLUDING BUT NOT LIMITED TO, HANGERS AND CONDENSATE TRAPS.
2. STEAM PIPING REMOVAL TO BE INCLUDED IN PHASE 2. STEAM PIPING SYSTEM AND EQUIPMENT SHALL BE OPERATIONAL DURING PHASE 1.

KEY PLAN:



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HILLBURN, NY 10931

SUFFERN CSD
☐ SED #50-04-01-06-0-005-021

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SHEET INFORMATION

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06/15/2023	AS SHOWN

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CD

Drawn By	Checked By
KCM	AJS

Drawing Title
CRAWLSPACE HVAC DEMOLITION PLAN AREA A

Drawing Number
RCP H100A

Sheet size: 30x42
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Date last accessed: 6/13/2023 1:32 PM
Date last plotted: 6/13/2023 2:24 PM
Plotted By: Brenden Wisnewski

GENERAL NOTES:

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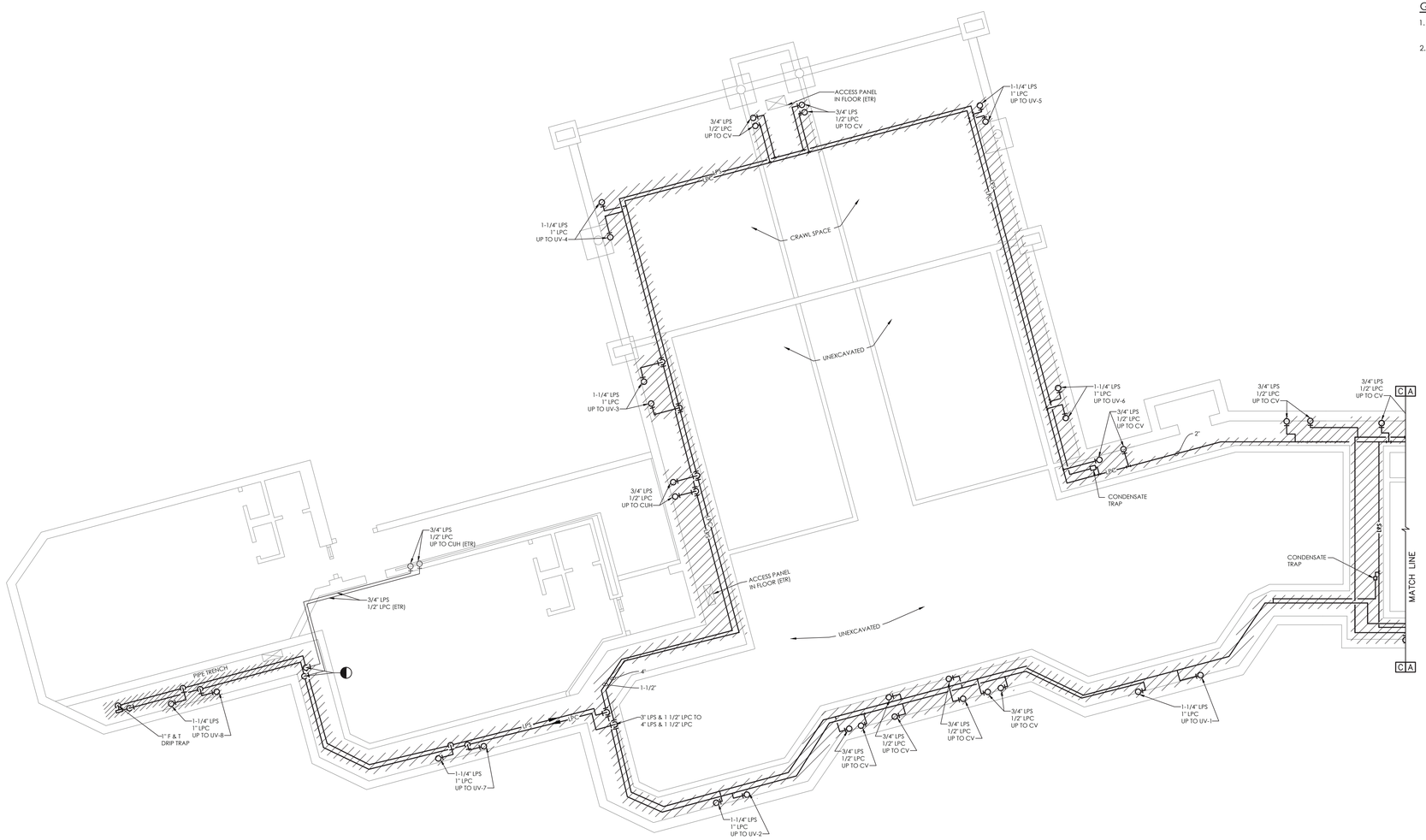
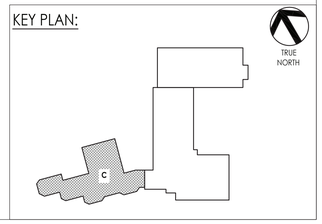


R.P. CONNOR
CRAWL SPACE DEMOLITION PLAN AREA C

1 / H100C

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

KEY PLAN:



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- ☐ BID #SD-04-01-06-0-005-021

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SHEET INFORMATION

Issued	Scale
06/15/2023	1/8" = 1'- 0"

Project Status
CD

Drawn By	Checked By
KCM	AJS

Drawing Title
CRAWL SPACE HVAC
DEMOLITION PLAN AREA C

Drawing Number
RPC
H100C

Sheet size: 30x42
Drawing Name: S:\Projects\Suffern CSD\RP Connor Heating Conv\D Design\06 CAD\AutoCAD\MECH\H1\RP-H100C.dwg
Date last accessed: 6/13/2023 1:32 PM
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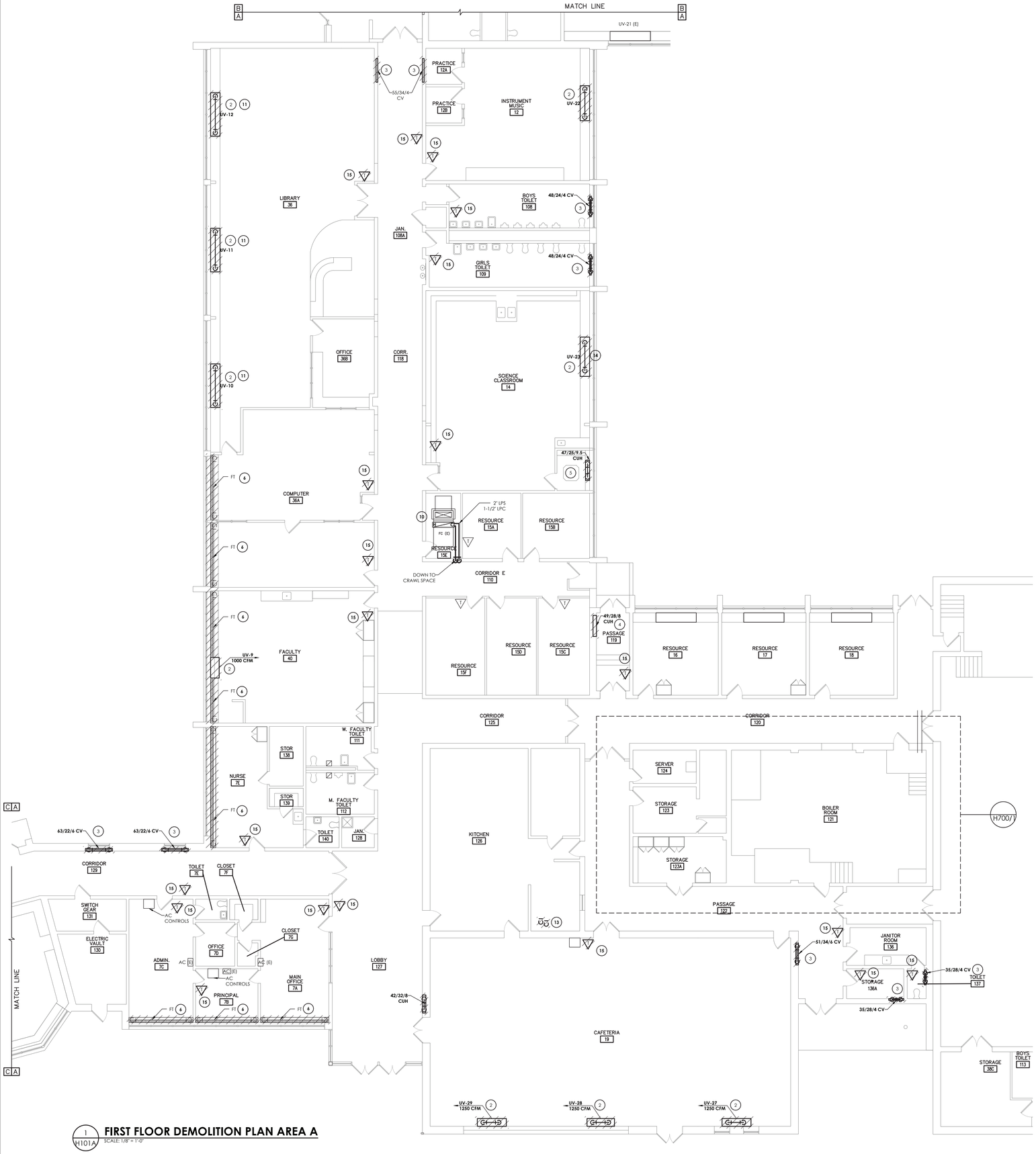
Plotted By: Brenden Wisniewski



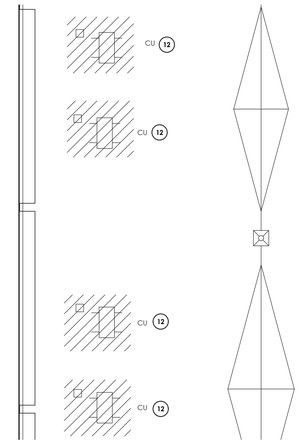
1 H101A FIRST FLOOR DEMOLITION PLAN AREA A
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

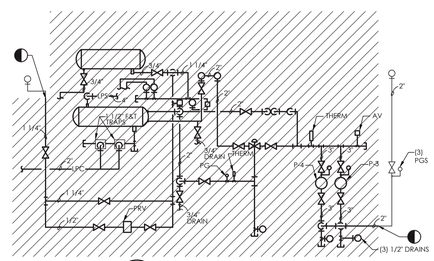
1. ALL STEAM UNIT VENTILATORS, CABINET UNIT HEATERS, CONVECTORS, AND FIN TUBE TO BE REMOVED DURING PHASE 2. STEAM SYSTEM SHALL REMAIN OPERATIONAL DURING PHASE 1.
2. SEE DRAWINGS H700 AND H701 FOR BOILER ROOM PHASING DRAWINGS.

KEY NOTES:

1. REMOVE EXISTING STEAM BOILERS IN THEIR ENTIRETY INCLUDING ALL LPS AND LPC PIPING, BREACHING, GAS TRAIN, CONTROLS, ETC. COORDINATE REQUIREMENTS OF NEW BOILERS PRIOR TO DEMOLITION OF EXISTING BOILER.
2. REMOVE EXISTING STEAM UNIT VENTILATOR IN ITS ENTIRETY INCLUDING ALL PIPING, CONTROLS, AND TEMPERATURE SENSORS. COORDINATE REQUIREMENTS OF NEW UNIT PRIOR TO DEMOLITION OF EXISTING UNIT.
3. REMOVE EXISTING CONVECTOR IN ITS ENTIRETY INCLUDING ALL PIPING, CONTROLS, AND TEMPERATURE SENSORS.
4. REMOVE EXISTING STEAM TO HOT WATER HEAT EXCHANGER AND EXPANSION TANK IN THEIR ENTIRETY. REMOVE HOT WATER PIPING TO POINT INDICATED AND PREPARE FOR NEW WORK. SAVE EXISTING PUMP P-3 AND P-4 TO BE REUSED.
5. REMOVE EXISTING VACUUM CONDENSATE RETURN PUMP AND CONDENSATE FEED TANK IN THEIR ENTIRETY INCLUDING ALL PIPING.
6. REMOVE EXISTING FIN TUBE IN ITS ENTIRETY INCLUDING ALL STEAM TRAPS, PIPING AND TEMPERATURE SENSORS. PREPARE FOR NEW WORK.
7. REMOVE EXISTING COMBUSTION AIR LOUVERS AND DUCTWORK IN THEIR ENTIRETY UP TO GRAVITY VENTILATORS ON ROOF. PREPARE FOR NEW WORK.
8. REMOVE GAS PIPING BACK TO POINT INDICATED. PREPARE FOR NEW WORK.
9. REMOVE EXISTING COLD WATER SUPPLY LINE BACK TO POINT INDICATED AND CAP.
10. REMOVE EXISTING STEAM COIL IN EXISTING FAN COIL AND ALL SYSTEM PIPING BACK TO MAIN. PREPARE FOR NEW WORK.
11. REMOVE ALL EXISTING REFRIGERANT PIPING FROM COOILING COIL UP TO CONDENSER ON ROOF ABOVE.
12. REMOVE EXISTING CONDENSING UNIT IN ITS ENTIRETY INCLUDING ALL REFRIGERANT PIPING AND PIPE PORTALS. EXISTING ROOF RAILS TO REMAIN AND BE REUSED. PREPARE FOR NEW WORK. MAINTAIN ALL EXISTING ROOF WARRANTIES.
13. REMOVE CAPPED PIPING BACK TO MAIN.
14. INFILL EXISTING LOUVER WITH LIKE CONSTRUCTION.
15. REMOVE EXISTING THERMOSTAT AND CONTROLS. PREPARE FOR NEW. COORDINATE REQUIREMENTS OF NEW THERMOSTAT PRIOR TO DEMOLITION OF EXISTING THERMOSTAT.

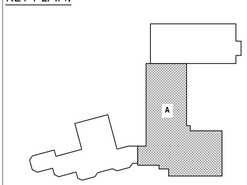


2 H101A LIBRARY ROOF DEMO PLAN
SCALE: 1/4" = 1'-0"



3 H101A SECTION 6-3 VIEW
SCALE: 1/4" = 1'-0"

KEY PLAN:



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SUFFERN CSD

- BID #SD-04-01-06-0-005-021

PROJECT ISSUE & REVISION SCHEDULE

No.	Date	Description

PROFESSIONAL STAMPS

NEW YORK STATE EDUCATION EXCERPT
IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND THE COMMISSIONER'S REGULATIONS FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT, ENGINEER OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE SEAL OF AN ARCHITECT, ENGINEER OR SURVEYOR IS ALTERED, THE ALTERING PARTY SHALL AFFIX TO THE ITEM THEIR SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

SHEET INFORMATION

Issued	Scale
06/15/2023	AS NOTED
Project Status	
CD	
Drawn By	Checked By
KCM	AJS

Drawing Title
FIRST FLOOR HVAC DEMOLITION PLANS AREA A

Drawing Number
RPC
H101A

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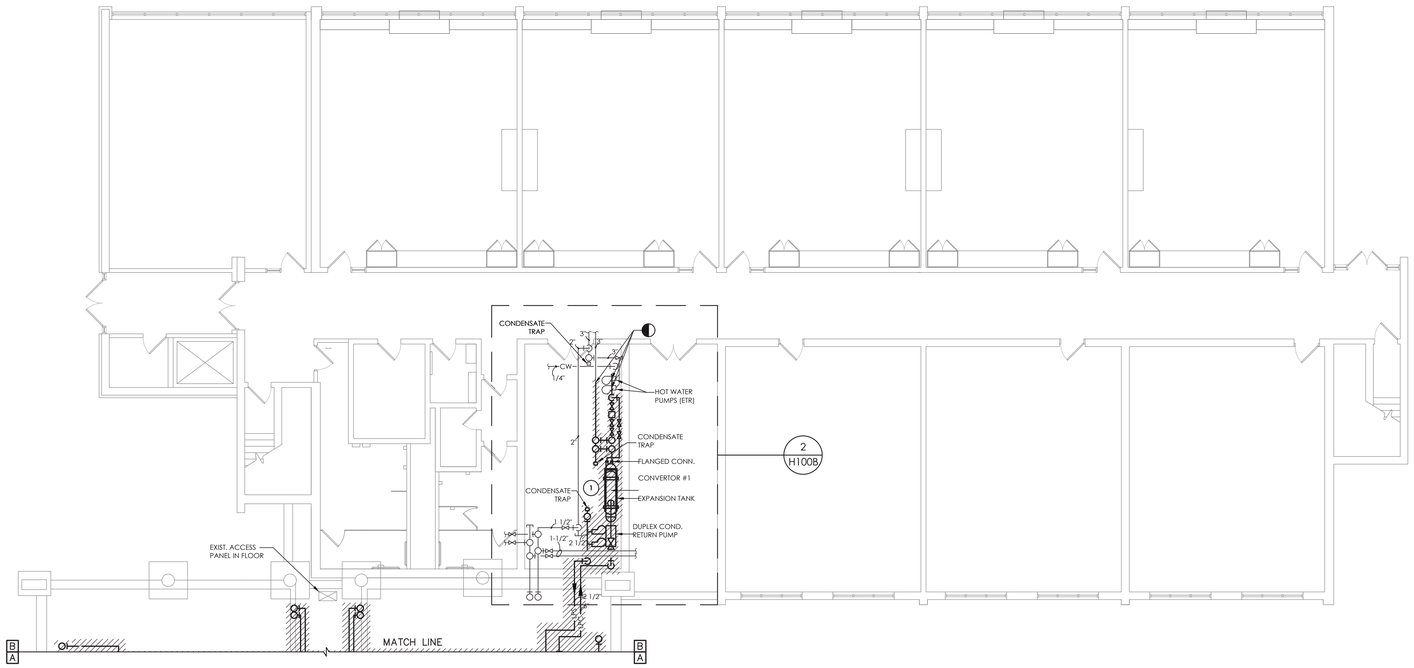
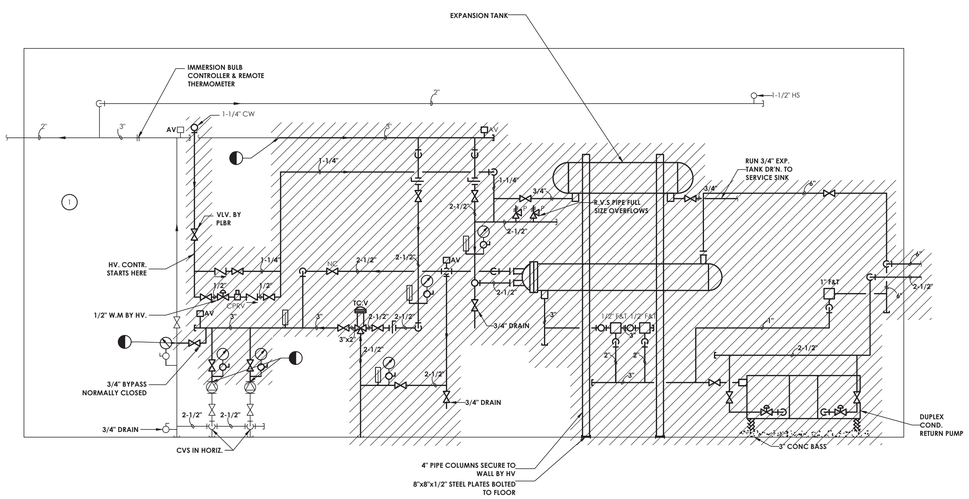
Plotted By: Brenden Wisniewski



1 H101B

R.P. CONNOR
CRAWL SPACE DEMOLITION PLAN AREA B

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



2 H101B

R.P. CONNOR
MECHANICAL ROOM PIPING SIDE VIEW

SCALE: 1/4" = 1'-0"

GENERAL NOTES:

1. REMOVE EXISTING STEAM PIPES AND CONDENSATE PIPE IN THEIR ENTIRETY, INCLUDING BUT NOT LIMITED TO, HANGERS AND CONDENSATE TRAPS.
2. EXISTING STEAM TO HOT WATER HEAT EXCHANGER TO BE REMOVED DURING PHASE 1 AND EXISTING HOT WATER SYSTEM WILL BE CONNECTED TO NEW HOT WATER BOILERS. SEE H700 AND H701 FOR PHASING DRAWINGS.

KEY NOTES:

1 REMOVE EXISTING STEAM TO HOT WATER HEAT EXCHANGER IN ITS ENTIRETY INCLUDING EXPANSION TANK AND CONDENSATE RETURN PUMPS. HOT WATER PUMPS TO REMAIN AND BE REUSED. PREPARE FOR NEW WORK.

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50 Front St. Suite 202
Newburgh, NY 12550
CPLteam.com

PROJECT INFORMATION

Project Number
13296.23

Client Name
SUFFERN CSD

Project Name
RP CONNOR - BOILER CONVERSION

District Office Address
SUFFERN CENTRAL SCHOOL DISTRICT
45 MOUNTAIN AVENUE
HILLBURN, NY 10951

SUFFERN CSD

■ BID #50-04-01-06-0-005-021

PROJECT ISSUE & REVISION SCHEDULE

No.	Date	Description

PROFESSIONAL STAMPS

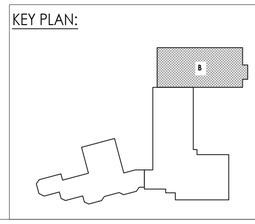
SHEET INFORMATION

Issued	Scale
06/15/2023	DRAWING SCALE
Project Status	
CD	
Drawn By	Checked By
XXX	XXX

Drawing Title
FIRST FLOOR HVAC DEMOLITION PLAN AREA B

Drawing Number
RPC H101B

KEY PLAN:



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Date last accessed: 6/13/2023 1:32 PM
Date last plotted: 6/13/2023 2:24 PM
Plotted By: Brenden Wisniewski

GENERAL NOTES:

1. ALL STEAM UNIT VENTILATORS, CABINET UNIT HEATERS, CONVECTORS, AND FIN TUBE TO BE REMOVED DURING PHASE 2. STEAM SYSTEM SHALL REMAIN OPERATIONAL DURING PHASE 1.

KEY NOTES:

1. REMOVE EXISTING STEAM UNIT VENTILATOR IN ITS ENTIRETY INCLUDING ALL PIPING, CONTROLS, AND TEMPERATURE SENSORS. PREPARE FOR NEW WORK.
2. REMOVE EXISTING THERMOSTAT AND CONTROLS. PREPARE FOR NEW WORK.
3. REMOVE EXISTING CONVECTOR AND PIPING IN ITS ENTIRETY INCLUDING ALL PIPING AND CONTROLS. PREPARE OPENING FOR NEW CONVECTOR.
4. REMOVE EXISTING CABINET UNIT HEATER IN ITS ENTIRETY INCLUDING ALL PIPING AND CONTROLS. PREPARE OPENING FOR NEW CABINET UNIT HEATER.
5. REMOVE EXISTING CABINET UNIT HEATER IN ITS ENTIRETY INCLUDING CONTROLS AND TEMPERATURE SENSOR. EXISTING PIPING TO REMAIN AND BE REUSED. PREPARE OPENING FOR NEW CABINET UNIT HEATER.

1 H101C FIRST FLOOR DEMOLITION PLAN AREA C

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

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PROJECT INFORMATION

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13296.23

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District Office Address
SUFFERN CENTRAL SCHOOL DISTRICT
45 MOUNTAIN AVENUE
HILLBURN, NY 10931

SUFFERN CSD

BID #SD-04-01-06-0-005-021

PROJECT ISSUE & REVISION SCHEDULE

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PROFESSIONAL STAMPS

NEW YORK STATE EDUCATION STATEMENT
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SHEET INFORMATION

Issued
06/15/2023

Scale
1/8" = 1'- 0"

Project Status
CD

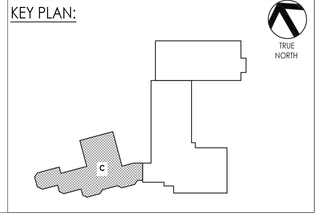
Drawn By
KCM

Checked By
AJS

Drawing Title
FIRST FLOOR HVAC DEMOLITION PLANS AREA C

Drawing Number
RPC
H101C

KEY PLAN:



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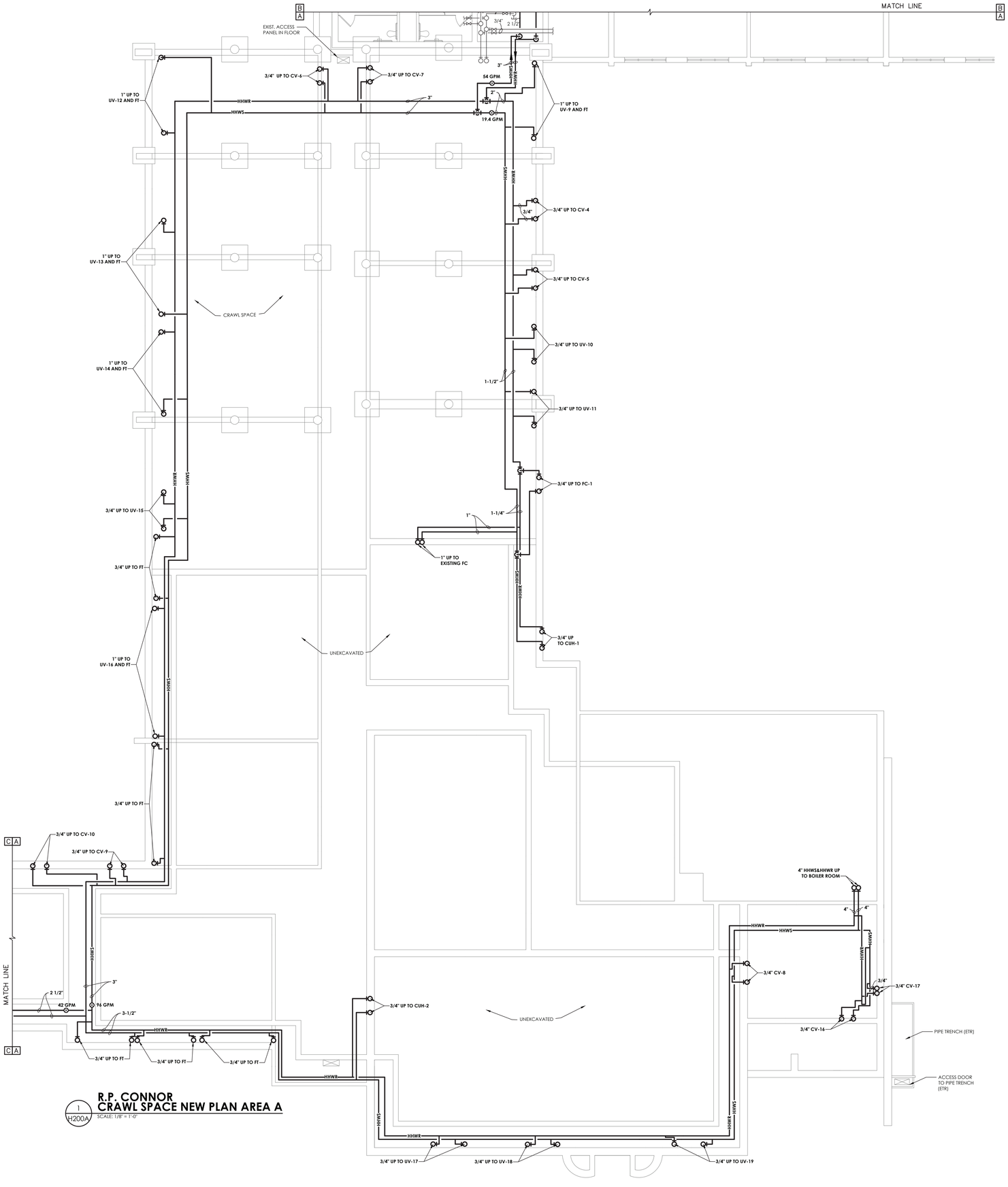
Date last plotted: 6/13/2023 2:24 PM
Plotted By: Brenden Wisniewski



1 H200A

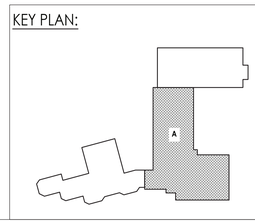
R.P. CONNOR CRAWL SPACE NEW PLAN AREA A

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

GENERAL NOTES:

1. FURNISH AND INSTALL NEW HOT WATER PIPES IN THEIR ENTIRETY INCLUDING BUT NOT LIMITED TO HANGERS.
2. NEW HOT WATER PIPING SHALL BE RUN DURING PHASE 1 INCLUDING STUB UPS TO PIPING AND VALVES IN PREPARATION OF PHASE 2.

KEY PLAN:



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Newburgh, NY 12550
CPLteam.com

PROJECT INFORMATION

Project Number
13296.23

Client Name
SUFFERN CSD

Project Name
RP CONNOR - BOILER CONVERSION

District Office Address
SUFFERN CENTRAL SCHOOL DISTRICT
45 MOUNTAIN AVENUE
HILLBURN, NY 10931

SUFFERN CSD

- BID #50-04-01-06-0-005-021

PROJECT ISSUE & REVISION SCHEDULE

No.	Date	Description

PROFESSIONAL STAMPS

NEW YORK STATE EDUCATION DEPARTMENT
IT IS A VIOLATION OF ARTICLE 145 OF THE NYS EDUCATION LAW AND THE COMMISSIONER'S REGULATIONS FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT, ENGINEER OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE SEAL OF AN ARCHITECT, ENGINEER OR SURVEYOR IS ALTERED, THE ALTERING PARTY SHALL AFFIX TO THE ITEM THE SEAL OF THE ARCHITECT, ENGINEER OR SURVEYOR AND THE NOTATION "ALTERED" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

SHEET INFORMATION

Issued	Scale
06/15/2023	1/8" = 1'-0"
Project Status	
CD	
Drawn By	Checked By
KCM	AJS

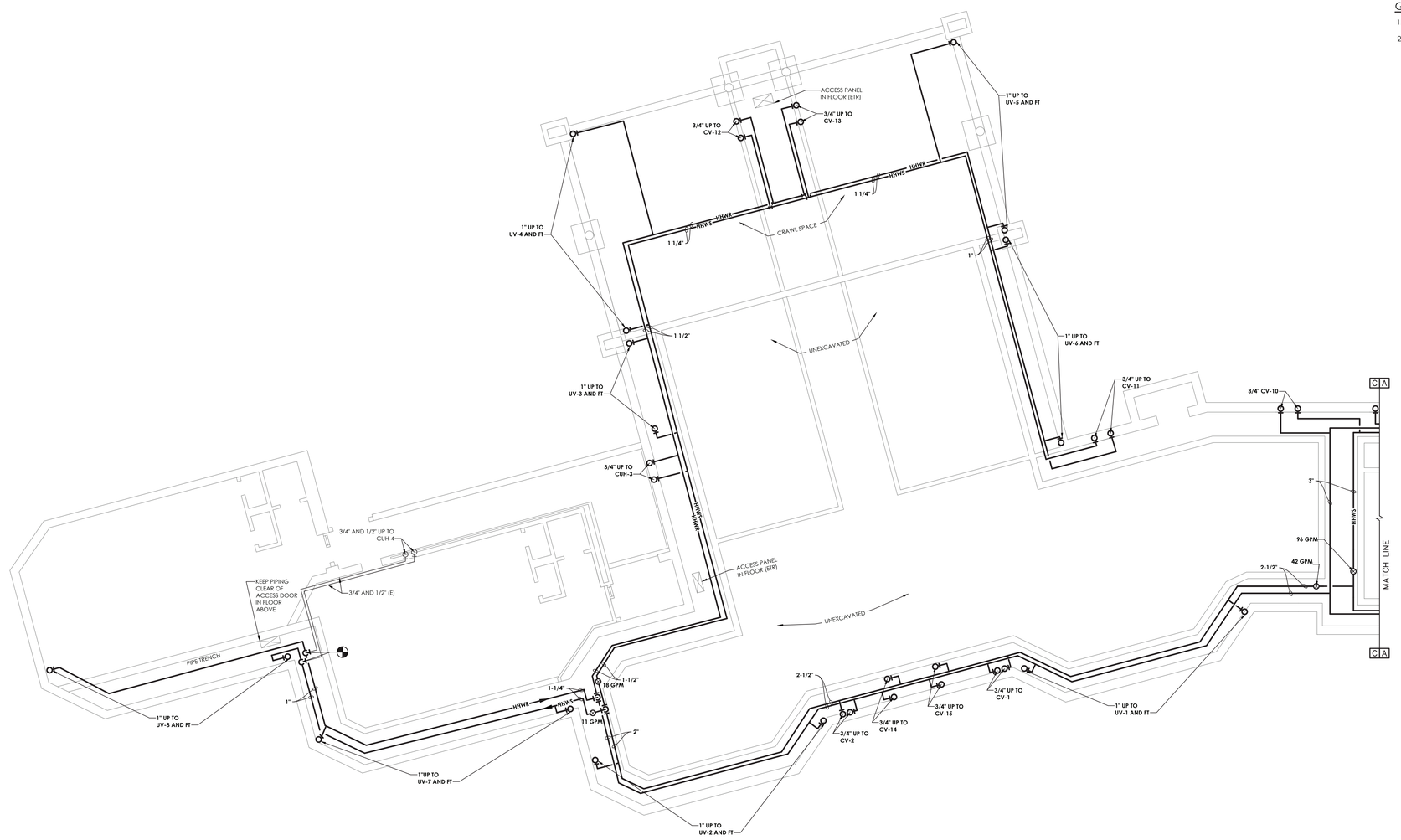
Drawing Title
CRAWL SPACE HVAC NEW PLANS AREA A

Drawing Number
RPC H200A

Plotted By: Brenden Wisniewski
Date last accessed: 6/13/2023 1:31 PM
Date last plotted: 6/13/2023 2:24 PM
Sheet size: 30x42
Drawing Name: S:\Projects\Suffern CSD\RP Connor Heating Conv\D Design\06 CAD\AutoCAD\MECH\H2\H200A.dwg

GENERAL NOTES:

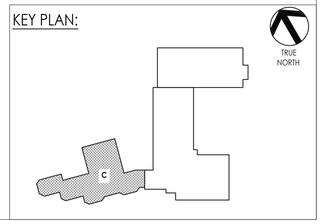
1. FURNISH AND INSTALL NEW HOT WATER PIPES IN THEIR ENTIRETY INCLUDING BUT NOT LIMITED TO HANGERS.
2. NEW HOT WATER PIPING SHALL BE RUN DURING PHASE 1 INCLUDING STUB UPS TO PIPING AND VALVES IN PREPARATION OF PHASE 2.



R.P. CONNOR
CRAWL SPACE NEW PLAN AREA C

1 / H200C SCALE: 1/8" = 1'-0"

KEY PLAN:



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50 Front St. Suite 202
Newburgh, NY 12550
CPLteam.com

PROJECT INFORMATION

Project Number
13296.23

Client Name
SUFFERN CSD

Project Name
RP CONNOR - BOILER CONVERSION

District Office Address
SUFFERN CENTRAL SCHOOL DISTRICT
45 MOUNTAIN AVENUE
HILLBURN, NY 10951

SUFFERN CSD

- STD #SD-04-01-06-0-005-021

PROJECT ISSUE & REVISION SCHEDULE

No.	Date	Description

PROFESSIONAL STAMPS

NEW YORK STATE EDUCATION STATEMENT
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Issued	Scale
06/15/2023	1/8" = 1'- 0"

Project Status
CD

Drawn By	Checked By
KCM	AJS

Drawing Title
CRAWLSPACE HVAC NEW PLANS AREA C

Drawing Number
RPC H200C

Sheet size: 30x42
Drawing Name: S:\Projects\Suffern CSD\RP Connor Heating Conv\D Design\06 CAD\AutoCAD\MECH\H2\H200C.dwg
Date last accessed: 6/13/2023 1:31 PM
Date last plotted: 6/13/2023 2:24 PM
Plotted By: Brenden Wisniewski

1 H201A **FIRST FLOOR PLAN - AREA A**
SCALE:1/8" = 1'-0"

GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL CABINETRY AND WINDOW SILL DIMENSIONS PRIOR TO SUBMITTING SHOP DRAWINGS FOR UNIT VENTILATORS.
2. ALL CONTROLS WORK TO BE DONE BY DISTRICT BMS PROVIDER HONEYWELL.
   CONTACT: BOB GARVEY OR SEAN YATES
   O: 973-455-2503 C: 908-963-0467
   C: 862-579-8821
3. ALL NEW UNIT VENTILATORS, CABINET UNIT HEATERS, CONVECTORS, AND FIN TUBE TO BE INSTALLED DURING PHASE 2.
4. SEE H700 AND H701 FOR THE BOILER ROOM PHASING PLANS.
5. NEW CLASSROOM EXHAUST FAN RELIEF TO BE INSTALLED DURING PHASE 2.
6. EXISTING UV LOUVERS TO REMAIN. ALTERNATE NO 1. TO REPLACE WITH NEW. PROVIDE INTEL AND MATCH WITH LIKE CONSTRUCTION.

KEY NOTES:

1. FURNISH AND INSTALL NEW UNIT VENTILATOR, TEMPERATURE SENSOR, WALL BOX, EXTERIOR LOUVER, AND FIN-TUBE. MODIFY EXISTING CABINETRY AS NECESSARY TO FIT NEW UNIT. CONTRACTOR IS RESPONSIBLE FOR LINTELS AND INCREASING EXTERIOR OPENING TO ACCOMMODATE NEW WORK. CONTRACTOR TO CONSTRUCT CHASE WALL BEHIND UNIT TO ACCOMMODATE TRANSITION DUCTWORK.
2. FURNISH AND INSTALL NEW DDC TEMPERATURE SENSOR AND CONTROLS. COORDINATE ALL CONTROLS WORK WITH THE DISTRICTS CONTROLS PROVIDER.
3. FURNISH AND INSTALL NEW DDC TEMPERATURE SENSOR AND CONTROLS. ONE THERMOSTAT SHALL CONTROL THREE UNITS. COORDINATE ALL CONTROLS WORK WITH THE DISTRICTS CONTROLS PROVIDER.
4. FURNISH AND INSTALL NEW FIN TUBE BEHIND EXISTING CABINETRY.
5. FURNISH AND INSTALL NEW CONVECTOR IN EXISTING CONVECTOR LOCATION. MODIFY WALL OPENING AS NECESSARY. PATCH AROUND NEW CONVECTOR AS NECESSARY AND MATCH TO EXISTING WALL.
6. FURNISH AND INSTALL NEW HOT WATER COIL FOR EXISTING FAN COIL UNIT. MANUFACTURER MODEL NUMBER: ENVIROTECH CDH-16. CONFIRM MANUFACTURER AND MODEL NUMBER PRIOR TO ORDERING.
7. RUN NEW REFRIGERANT PIPING FOR NEW COOLING COIL UP TO NEW CONDENSERS ON ROOF ABOVE. SIZE PIPING PER MANUFACTURER'S RECOMMENDATION. NEW REFRIGERANT PIPING TO BE RUN IN NEW PVC PIPE FORTRESS LINE SET COVERS. ROUTE NEW 3/4" CONDENSATE LINE OUT THE BACK OF THE UNIT AND TERMINATE 6" ABOVE GROUND DIRECTED AWAY FROM THE BUILDING.
8. PROVIDE NEW LOUVER OPENINGS. SEE LINTEL SCHEDULE ON H900. PATCH WITH LIKE CONSTRUCTION.
9. ALTERNATE MC-01: TO REPLACE EXISTING LOUVER WITH NEW LOUVER. SEE LINTEL SCHEDULE ON H900. PATCH WITH LIKE CONSTRUCTION.
10. FURNISH AND INSTALL NEW CABINET UNIT HEATER AIN EXITING CABINET UNIT HEATER LOCATION. MODIFY WALL OPENING AS NECESSARY. PATCH AROUND NEW CABINET UNIT HEATER AS NECESSARY AND MATCH TO EXISTING WALL.

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50 Front St. Suite 202
Newburgh, NY 12550
CPLteam.com

PROJECT INFORMATION

Project Number
13296.23

Client Name
SUFFERN CSD

Project Name
RP CONNOR - BOILER CONVERSION

District Office Address
SUFFERN CENTRAL SCHOOL DISTRICT
45 MOUNTAIN AVENUE
HILLBURN, NY 10931

SUFFERN CSD
BID #SD-04-01-06-0-005-021

PROJECT ISSUE & REVISION SCHEDULE

No.	Date	Description

PROFESSIONAL STAMPS

NEW YORK STATE EDUCATION STATEMENT
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SHEET INFORMATION

Issued	Scale
06/15/2023	1/8" = 1'- 0"
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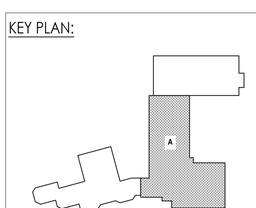
CD	
Drawn By	Checked By
AJS	AJS

Drawing Title
FIRST FLOOR HVAC NEW PLANS AREA A

KEY PLAN:



Drawing Number
RPC H201A

Plotted By: Brenden Wisniewski
Date last plotted: 6/13/2023 2:24 PM
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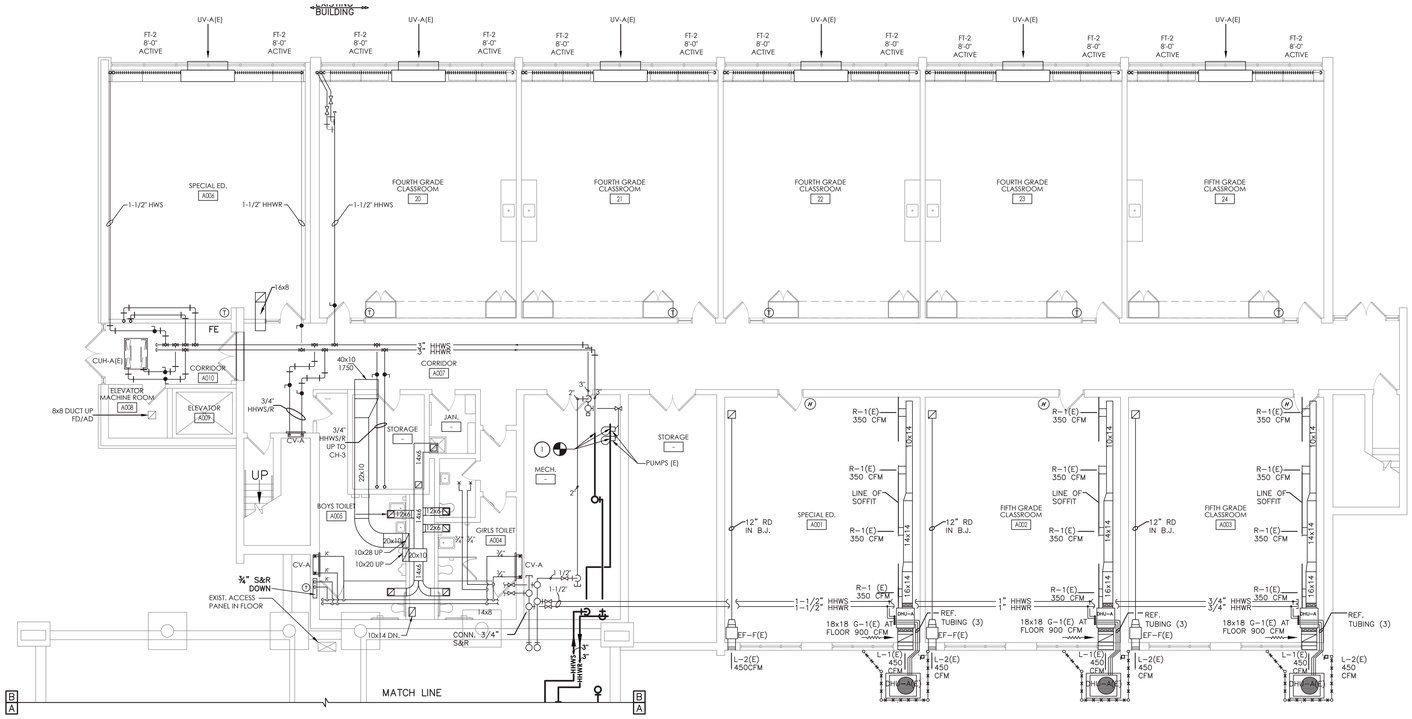


1 H200B

R.P. CONNOR BASEMENT NEW PLAN AREA B

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

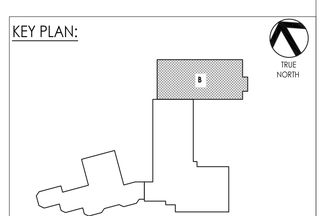
GENERAL NOTES:

1. FURNISH AND INSTALL NEW HOT WATER PIPES IN THEIR ENTIRETY INCLUDING BUT NOT LIMITED TO HANGERS.
2. HOT WATER SYSTEM IN THIS WING TO BE CONNECTED TO NEW HOT WATER BOILERS DURING PHASE 1.

KEY NOTES:

1. CONNECT NEW HOT WATER SUPPLY PIPING TO EXISTING HOT WATER PUMPS. CONNECT NEW HOT WATER RETURN LINE TO EXISTING RETURN LINE AT POINT INDICATED.

KEY PLAN:



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PROJECT INFORMATION

Project Number
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Client Name
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District Office Address
SUFFERN CENTRAL SCHOOL DISTRICT
45 MOUNTAIN AVENUE
HILLBURN, NY 10951

SUFFERN CSD

■ BID #50-04-01-06-0-005-021

PROJECT ISSUE & REVISION SCHEDULE

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PROFESSIONAL STAMPS

SHEET INFORMATION

Issued	Scale
06/15/2023	DRAWING SCALE
Project Status	
CD	
Drawn By	Checked By
XXX	XXX

Drawing Title
FIRST FLOOR HVAC NEW WORK PLANS AREA B

Drawing Number
RPC H201B

Sheet size: 30x42
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Date last plotted: 6/13/2023 2:24 PM
Plotted By: Brenden Wisniewski

GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL CABINETRY AND WINDOW SILL DIMENSIONS PRIOR TO SUBMITTING SHOP DRAWINGS.
2. ALL CONTROLS WORK TO BE DONE BY DISTRICT BMS PROVIDER HONEYWELL.
   CONTACT: BOB GARVEY OR SEAN YATES
   O: 973-455-2503 C: 908-963-0467
   C: 862-579-8821
3. ALL NEW UNIT VENTILATORS, CABINET UNIT HEATERS, CONVECTORS, AND FIN TUBE TO BE INSTALLED DURING PHASE 2.
4. NEW CLASSROOM EXHAUST FAN RELIEF TO BE INSTALLED DURING PHASE 2.
5. EXISTING UV LOUVERS TO REMAIN. ALTERNATE NO 1. TO REPLACE WITH NEW. PROVIDE INTEL AND MATCH WITH LIKE CONSTRUCTION.

KEY NOTES:

1. FURNISH AND INSTALL NEW UNIT VENTILATOR, TEMPERATURE SENSOR, WALL BOX, EXTERIOR LOUVER, AND FIN-TUBE. MODIFY EXISTING CABINETRY AS NECESSARY TO FIT NEW UNIT. CONTRACTOR IS RESPONSIBLE FOR LINTELS AND INCREASING EXTERIOR OPENING TO ACCOMMODATE NEW WORK. CONTRACTOR TO CONSTRUCT CHASE WALL BEHIND UNIT TO ACCOMMODATE TRANSITION DUCTWORK.
2. FURNISH AND INSTALL NEW DDC TEMPERATURE SENSOR AND CONTROLS. COORDINATE ALL CONTROLS WORK WITH THE DISTRICTS CONTROLS PROVIDER.
3. FURNISH AND INSTALL NEW FIN TUBE BEHIND EXISTING CABINETRY.
4. FURNISH AND INSTALL NEW CONVECTOR IN EXISTING CONVECTOR LOCATION. MODIFY WALL OPENING AS NECESSARY. PATCH AROUND NEW CONVECTOR AS NECESSARY AND MATCH TO EXISTING WALL.
5. FURNISH AND INSTALL NEW CABINET UNIT HEATER IN EXISTING CABINET UNIT HEATER LOCATION. MODIFY WALL OPENING AS NECESSARY. PATCH AROUND NEW CABINET UNIT HEATERS AS NECESSARY AND MATCH TO EXISTING WALL.
6. ALTERNATE MC-01 TO REPLACE EXISTING LOUVER WITH NEW LOUVER. SEE LINTEL SCHEDULE ON H900. PATCH WITH LIKE CONSTRUCTION.

1 H201C **FIRST FLOOR PLAN - AREA C**
SCALE:1/8" = 1'-0"

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CPLteam.com

PROJECT INFORMATION

Project Number
13296.23

Client Name
SUFFERN CSD

Project Name
RP CONNOR - BOILER CONVERSION

District Office Address
SUFFERN CENTRAL SCHOOL DISTRICT
45 MOUNTAIN AVENUE
HILLBURN, NY 10931

SUFFERN CSD

SED #30-04-01-06-0-009-021

PROJECT ISSUE & REVISION SCHEDULE

No.	Date	Description

PROFESSIONAL STAMPS

NEW YORK STATE EDUCATION (EXTRACT)
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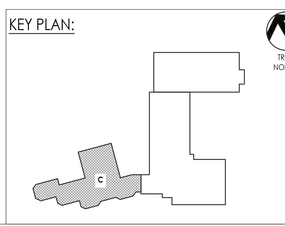
Drawn By	Checked By
AJS	AJS

Drawing Title
FIRST FLOOR HVAC NEW PLANS AREA C

KEY PLAN:



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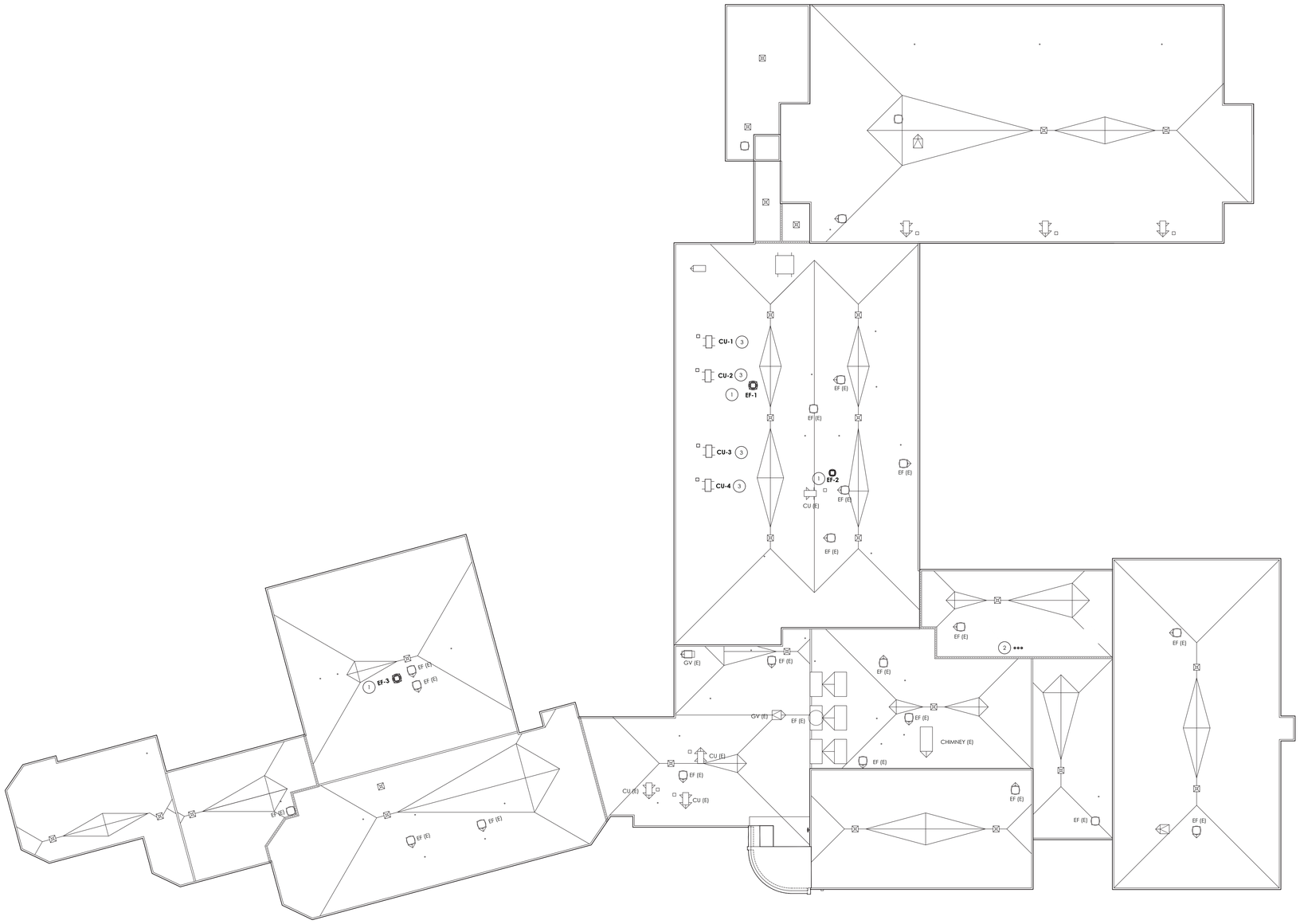
Date last plotted: 6/13/2023 2:24 PM
Plotted By: Brenden Wisniewski

GENERAL NOTES:

1. ALL CONTROLS WORK TO BE DONE BY DISTRICT BMS PROVIDER HONEYWELL.
   CONTACT: BOB GARVEY OR SEAN YATES
   O: 973-455-2503 C: 908-963-0467
   C: 862-579-8821
2. ALL CONDENSERS AND EXHAUST FANS TO BE INSTALLED DURING PHASE 2.

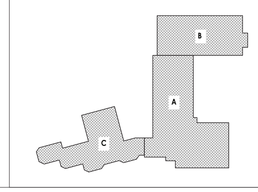
KEY NOTES:

1. FURNISH AND INSTALL NEW EXHAUST FAN AND CURB ON ROOF. MAINTAIN ALL EXISTING ROOF WARRANTIES.
2. PROVIDE GOOSENECK AND BIRD SCREEN FOR NEW COMBUSTION AIR VENTS THROUGH ROOF. PATCH ROOF AND SEAL. MAINTAIN ALL EXISTING ROOF WARRANTIES.
3. INSTALL NEW CONDENSING UNIT ON EXISTING ROOF RAILS FROM REMOVED CONDENSER. PROVIDE NEW PIPE PORTAL FOR REFRIGERANT PIPING DOWN TO NEW LIBRARY UNIT VENTILATOR COOLING COILS. MAINTAIN ALL EXISTING ROOF WARRANTIES.



1 H202 **ROOF NEW WORK PLAN**
SCALE:1/16" = 1'-0"

KEY PLAN:



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PROJECT INFORMATION

Project Number
13296.23

Client Name
SUFFERN CSD

Project Name
RP CONNOR - BOILER CONVERSION

District Office Address
SUFFERN CENTRAL SCHOOL DISTRICT
45 MOUNTAIN AVENUE
HILLBURN, NY 10951

SUFFERN CSD

SED #50-04-01-06-0-005-021

PROJECT ISSUE & REVISION SCHEDULE

No.	Date	Description

PROFESSIONAL STAMPS

NEW YORK STATE EDUCATION STATEMENT
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SHEET INFORMATION

Issued	Scale
06/15/2023	AS SHOWN

Project Status
CD

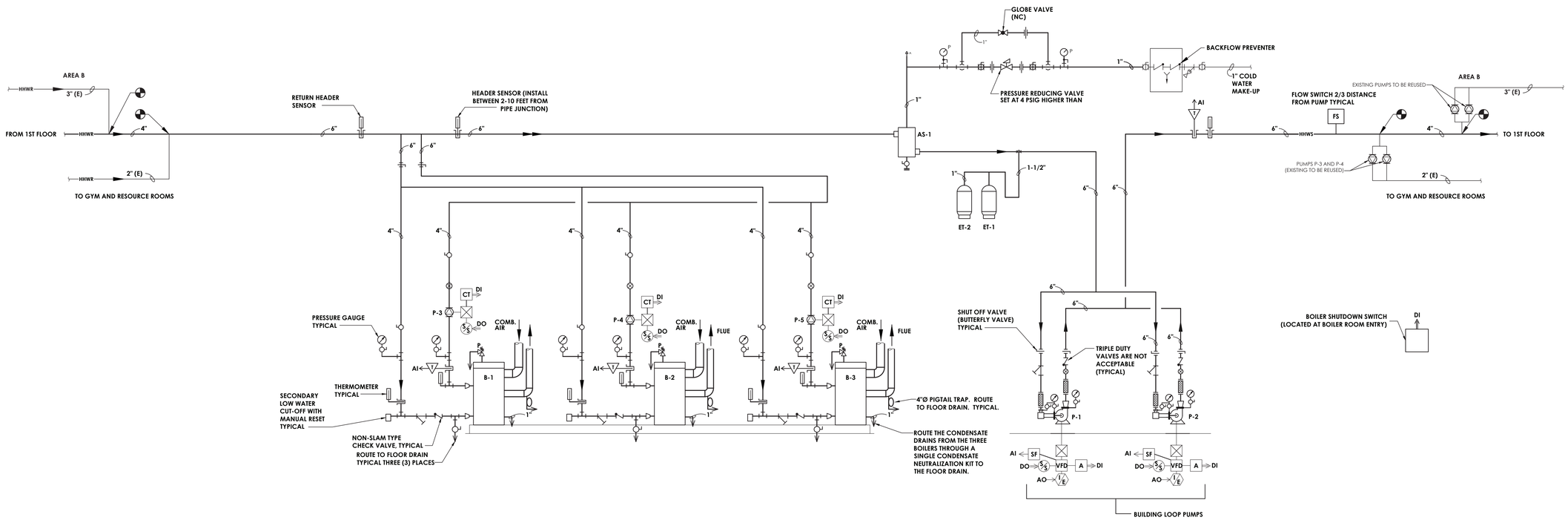
Drawn By	Checked By
BKM	XXX

Drawing Title
HVAC ROOF PLAN NEW WORK

Drawing Number
RPC
H202

GENERAL NOTES:

1. NEW BOILERS TO USE STANDALONE MANUFACTURERS CONTROLLER. ALL OTHER BOILER SYSTEMS TO CONNECT TO HONEYWELL BMS.
   CONTACT: BOB GARVEY OR SEAN YATES
   O: 973-455-2503 C: 908-963-0467
   C: 862-579-8821



1 H500 **SYSTEM PIPING AND CONTROLS SCHEMATIC**
SCALE: NOT TO SCALE

SEQUENCE OF OPERATIONS

1. Onboard BST
   1.1. The first boiler will increase input, as required, until 50% fire rate valve position (user programmed in the BST menu) is readched. Boiler inputs will modulate at that point, the BST will start a second boiler and run both at 30% fire rate valve position. The two boilers will continue to increase their energy input, as required by the BST. When the two firing boilers reach a combined percentae of 50%, the BST will start a third boiler and run all three at 30% fire rate valve position to minimize temperature fluctuation.
   1.2. Boiler inputs will modulate down in response to the BST in reverse manner. Each boiler will come off line at the boiler stop level percentage transfer setpoint to maximize condensing. Whether the bms is set in a constant termperture or modulating temperature mode, it will use its modulating ability to prevent header temperature fluctuation and maximize efficiency.
2. Enable boiler system at outdoor air temperatures below 55°F. 1-hour minimum changeover time. Boilers shall not be commanded on until building heating hot water circulation pumps are proven on.
3. Boilers
   a. Send demand signal to master boiler to maintain building supply water temperature per reset schedule below
      1) Utilize optimum start program to reach the above temperatures five-minutes prior to any building equipment warm-up modes or unoccupied mode.
      - Building supply water reset.

OAT	Occupied Modes	Unoccupied Modes
55	100	100
0	180	160

      Provide manual override for building supply water temperature set point. Override shall be maintained for a period of 24-hours prior to automatically resuming reset schedule.
   b. Boiler control system opens the associated control valve(s).
   c. Alarms
   d. Boiler alarm.
      d.a. High CO or CH4. Shutdown if either of these rise to unsafe levels.
      d.b. High/low boiler discharge temp.
      d.c. High/low building supply temp.
3. Building Heating Hot Water Pumps
   a. Enable lead/standby sequence at all times in heating modes. See lead/standby pump sequence below.
   b. Modulate the lead pump to maintain the pressure differential set point as determined by balancer.
   c. If any associated control valve opens to 90%, modulate the pump speed up to compensate.
   d. Alarms
      d.a. Equipment failure.
      d.b. VFD Alarm.

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45 MOUNTAIN AVENUE
HILLBURN, NY 10951

SUFFERN CSD

- ☐ BID #SD-04-01-06-0-005-021

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SHEET INFORMATION

Issued	Scale
06/15/2023	NOT TO SCALE
Project Status	
CD	
Drawn By	Checked By
KCM	AJS

Drawing Title
BOILER CONTROLS DIAGRAM

Drawing Number
RPC
H500

Sheet size: 30x42
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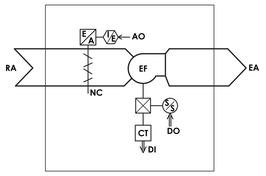
Plotted By: Brendan Wisniewski



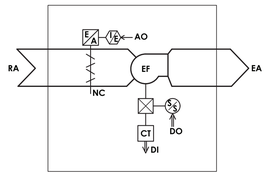
DI
UO
UNOCCUPIED OVERRIDE

SEQUENCE OF OPERATIONS

A. RELIEF FANS:

1. OCCUPIED MODE
   a. ENABLE FAN AT ALL TIMES.
   b. ENABLE FAN AT MINIMUM SCHEDULED AIRFLOW UNLESS ANY OF THE ASSOCIATED UNIT VENTILATORS.
1. UNOCCUPIED MODE (INCLUDING UNOCCUPIED AS SENSED BY OCCUPANCY SENSOR DURING SCHEDULED OCCUPIED MODE.)
   a. DISABLE FAN AT ALL TIMES EXCEPT AS OUTLINED IN THE UNIT VENTILATOR PURGE MODE.
3. ALARMS
   a. FAN FAILS TO RUN AFTER 30 SECONDS OF BEING COMMANDED ON.
   b. FAN FAILS TO STOP AFTER 30 SECONDS OF BEING COMMANDED OFF.

3 H501 CLASSROOM EF-1,3 CONTROLS DIAGRAM
SCALE: NOT TO SCALE



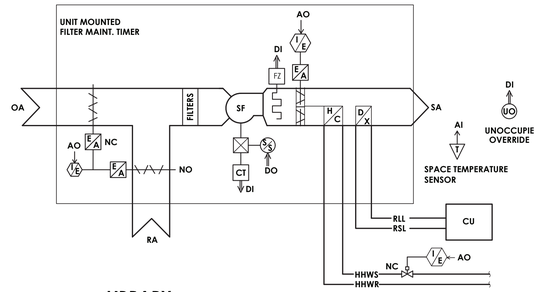
DI
UO
UNOCCUPIED OVERRIDE

SEQUENCE OF OPERATIONS

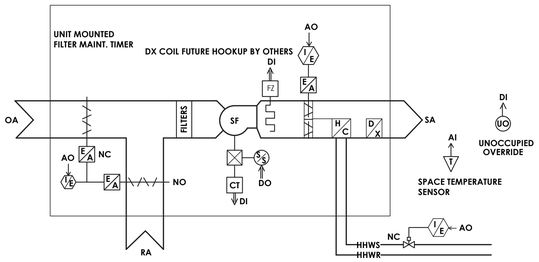
A. RELIEF FANS:

1. OCCUPIED MODE
   a. ENABLE FAN AT ALL TIMES.
   b. ENABLE FAN AT MINIMUM SCHEDULED AIRFLOW UNLESS ANY OF THE ASSOCIATED UNIT VENTILATORS.
   c. WHEN KILN ROOM EXHAUST FAN IS ENABLED ART CLASSROOM RELIEF FAN SHALL BE DISABLED. WHEN KILN ROOM EXHAUST FAN IS DISABLED ART CLASSROOM RELIEF FAN SHALL BE ENABLED.
1. UNOCCUPIED MODE (INCLUDING UNOCCUPIED AS SENSED BY OCCUPANCY SENSOR DURING SCHEDULED OCCUPIED MODE.)
   a. DISABLE FAN AT ALL TIMES EXCEPT AS OUTLINED IN THE UNIT VENTILATOR PURGE MODE.
3. ALARMS
   a. FAN FAILS TO RUN AFTER 30 SECONDS OF BEING COMMANDED ON.
   b. FAN FAILS TO STOP AFTER 30 SECONDS OF BEING COMMANDED OFF.

4 H501 ART CLASSROOM EF-2 CONTROLS DIAGRAM
SCALE: NOT TO SCALE



1 H501 LIBRARY UNIT VENTILATOR TYPICAL CONTROLS DIAGRAM
SCALE: NOT TO SCALE



2 H501 TYP WITH DX COIL BUT NO CONDENSING UNIT UNIT VENTILATOR TYPICAL CONTROLS DIAGRAM
SCALE: NOT TO SCALE

SEQUENCE OF OPERATIONS

A. UNIT VENTILATORS WITH COOLING:

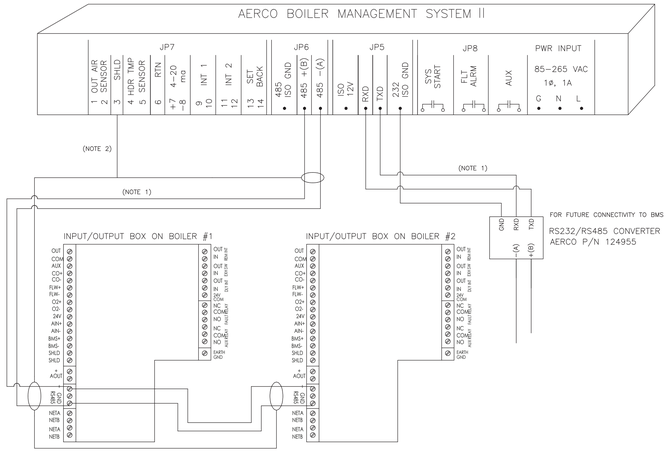
1. UNIT VENTILATOR SHALL OPERATE IN OCCUPIED/UNOCCUPIED MODES AS DETERMINED BY THE DDC BUILDING TIME CLOCK SYSTEM AND BY OCCUPANCY SENSOR.
2. ASSIGN EACH UNIT VENTILATOR A STAGGER START NUMBER TO KEEP TOO MANY UNITS FROM STARTING AT THE SAME TIME. IN EFFECT, THIS FLATTENS LOAD PEAKS.
3. OCCUPIED HEATING SET-POINT, UNOCCUPIED HEATING SET-POINT, UNOCCUPIED COOLING SET-POINT AND PURGE ENABLE/DISABLE SHALL BE GLOBAL AND FULLY ADJUSTABLE FROM ANY INTERFACE.
4. OUTSIDE AIR IS ADMITTED TO MEET VENTILATION AND COOLING REQUIREMENTS AS OUTLINED IN THE INDIVIDUAL UNIT SEQUENCES. MECHANICAL COOLING, IF EQUIPPED IS UTILIZED AS OUTLINED IN THE INDIVIDUAL UNIT SEQUENCES.
5. EACH UNIT VENTILATOR SHALL HAVE A SOFTWARE HOA FOR CONTROL OF THE SUPPLY FAN.
6. WIRE THE SUPPLY FAN NORMALLY OPEN AT THE CONTROL RELAY AND FAIL OFF.
7. CONTROL CYCLE TO FOLLOW ASHRAE CYCLE II STANDARD..
10. PURGE MODE CONTROL:
    a. PURGE MODE (FRESH AIR CHANGEOVER) SHALL ONLY BE PERMITTED DURING AN UNOCCUPIED PERIOD.
    b. IF THE OUTSIDE AIR IS BETWEEN 45°F AND 60°F AND THE SPACE TEMPERATURE RISES ABOVE 75°F, THE SUPPLY FAN SHALL BE COMMANDED ON, THE MIXING DAMPERS SHALL BE FULLY OPEN, THE HEATING COIL SHALL BE FULLY CLOSED AND THE INTEGRAL RELIEF FAN OR ASSOCIATED EXHAUST FAN SHALL BE ENABLED AT THE MAXIMUM AIRFLOW. WHEN THE SPACE TEMPERATURE DROPS TO 70°F, THE FANS SHALL BE COMMANDED OFF AND THE MIXING DAMPERS SHALL RETURN TO THE NORMAL POSITION.
11. WARM-UP MODE CONTROL:
    a. OPTIMUM START DURATION SHALL BE DETERMINED BASED ON OUTSIDE AIR TEMPERATURE.
    b. DURING THE OPTIMUM START PERIOD, THE HEATING SET-POINT WILL BE LINEARLY RAMPED UP FROM UNOCCUPIED HEATING SET-POINT TO OCCUPIED HEATING SET-POINT.
    c. WHEN THE HEATING SET-POINT CROSSES ABOVE THE SPACE TEMPERATURE, THE SUPPLY FAN WILL BE COMMANDED ON. THE MIXING DAMPERS SHALL REMAIN CLOSED AND THE HEATING VALVE WILL MODULATE TO MAINTAIN HEATING SET-POINT.
12. COOL-DOWN MODE CONTROL:
    a. OPTIMUM START DURATION SHALL BE DETERMINED BASED ON OUTSIDE AIR TEMPERATURE.
    b. DURING THE OPTIMUM START PERIOD, THE COOLING SET-POINT WILL BE LINEARLY RAMPED DOWN FROM UNOCCUPIED COOLING SET-POINT TO OCCUPIED COOLING SET-POINT.
    c. WHEN THE COOLING SET-POINT CROSSES BELOW THE SPACE TEMPERATURE, THE SUPPLY FAN WILL BE COMMANDED ON, THE MIXING DAMPERS SHALL MODULATE TO MAINTAIN COOLING SET-POINT.
13. OCCUPIED MODE:
    a. UNIT VENTILATOR:
       1) SUPPLY FAN:
          a) ENABLE CONTINUOUSLY.
       2) OUTSIDE AIR DAMPER:
          a) OPEN TO MAINTAIN OUTSIDE AIR QUANTITY AS SCHEDULED. OUTSIDE AIR DAMPER SHALL NEVER BE POSITIONED BELOW THIS MINIMUM EXCEPT IN CASE OF EMERGENCY.
          b) MODULATE OUTSIDE AIR DAMPER BEYOND SCHEDULED MINIMUM POSITION AS FOLLOWS: MAINTAIN VENTILATION COOLING TEMPERATURE SET POINT.
       3) HOT WATER COIL CONTROL VALVE:
          a) LAT SCHEDULE
             UTILIZE DISCHARGE AIR MINIMUM TEMPERATURE RESET SCHEDULE AS OUTLINED BELOW.
             55°F LAT AT 55°F OAT
             65°F LAT AT 0°F OAT.
             UTILIZE DISCHARGE AIR TEMPERATURE PID LOOP TO MAINTAIN SPACE TEMPERATURE SET POINT AND MINIMUM LAT.
          b) OUTSIDE AIR TEMPERATURE DROPS BELOW 35 DEGREES:
             MODULATE FULL OPEN. (VALVE SHALL STAY FULL OPEN UNTIL O.A. RISES ABOVE 38 DEGREES).
          c) OUTSIDE AIR TEMPERATURE ABOVE 38 DEGREES:
             MODULATE TO MAINTAIN SPACE TEMPERATURE SET POINT. MODULATE TO MAINTAIN 65 DEGREE MINIMUM DISCHARGE AIR TEMPERATURE DURING HEATING MODE.
       4) COIL FACE AND BY-PASS DAMPER :
          a) OUTSIDE AIR TEMPERATURE DROPS BELOW 35 DEGREES:
             MODULATE TO MAINTAIN SPACE TEMPERATURE SET POINT. MODULATE TO MAINTAIN 65 DEGREE MINIMUM DISCHARGE AIR TEMPERATURE.
             MODULATE UNTIL O.A. RISES ABOVE 38 DEGREES.
          b) OUTSIDE AIR TEMPERATURE ABOVE 38 DEGREES:
             POSITION TO FULL COIL FACE POSITION.
       5) RA DAMPER:
          a) MODULATE WITH OUTSIDE AIR DAMPER TO MAINTAIN THE FOLLOWING BALANCE: RA CFM = SA CFM - OA CFM.
       6) COOLING COIL (AS INDICATED ON THE DRAWINGS):
          a) MODULATE VALVE TO MAINTAIN SPACE TEMPERATURE SET POINT.
14. UNOCCUPIED MODE BY OCCUPANCY SENSOR DURING DDC SCHEDULED OCCUPIED PERIOD
    a. DURING THE SCHEDULED OCCUPIED MODE, WHEN THE SPACE IS UNOCCUPIED AS SENSED BY THE ROOM OCCUPANCY SENSOR, THE DAMPER WILL BE CLOSED TO OUTSIDE AIR.
    b. IN HEATING MODE, THE SPACE TEMPERATURE SET-POINT SHALL BE RESET TO 2°F (ADJUSTABLE) LOWER THAN THE OCCUPIED SET-POINT. IN COOLING MODE, THE SPACE TEMPERATURE SET-POINT SHALL BE RESET TO 2°F (ADJUSTABLE) HIGHER THAN THE OCCUPIED SET-POINT.
    c. THE SUPPLY FAN SHALL CYCLE ON AND OFF TO MAINTAIN THE SPACE TEMPERATURE SET-POINT. IN HEATING MODE, THE FINNED-TUBE CONTROL VALVE SHALL CONTINUE TO MODULATE TO MAINTAIN THE SPACE TEMPERATURE SET POINT. IF THE SPACE TEMPERATURE DROPS 1°F BELOW IN THE RESET HEATING SET-POINT, THE SUPPLY FAN SHALL BE COMMANDED ON, THE MIXING DAMPER SHALL REMAIN CLOSED AND THE HEATING VALVE SHALL MODULATE OPEN. WHEN THE SPACE TEMPERATURE RISES 1°F ABOVE THE RESET HEATING SET-POINT, THE SUPPLY FAN SHALL BE COMMANDED OFF. IN COOLING MODE, IF THE SPACE TEMPERATURE RISES 1°F ABOVE IN THE RESET COOLING SET-POINT, THE SUPPLY FAN SHALL BE COMMANDED ON, THE MIXING DAMPER SHALL REMAIN CLOSED AND THE COOLING VALVE SHALL MODULATE OPEN. WHEN THE SPACE TEMPERATURE DROPS 1°F BELOW THE RESET COOLING SET-POINT, THE SUPPLY FAN SHALL BE COMMANDED OFF.
    d. WHEN THE SPACE IS OCCUPIED AS SENSED BY THE ROOM OCCUPANCY SENSOR, THE SEQUENCE SHALL BE INDEXED TO THE OCCUPIED MODE.
15. UNOCCUPIED MODE BY DDC SCHEDULE:
    a. UNIT VENTILATORS
       1) SUPPLY FAN:
          START (2°F BELOW HEATING SET POINT) AND STOP (1°F ABOVE HEATING SET POINT) TO MAINTAIN SPACE TEMPERATURE SET POINT.
       2) OUTSIDE AIR DAMPER:
          FULLY CLOSED.
       3) HOT WATER COIL CONTROL VALVE:
          SAME AS OCCUPIED MODE.
       4) COIL FACE AND BY-PASS DAMPER:
          SAME AS OCCUPIED MODE.
       5) RA DAMPER:
          FULLY OPEN.
       6) COOLING WATER COIL CONTROL VALVE:
          • MODULATE TO FULL CLOSED POSITION UNLESS NIGHT COOLING IS REQUIRED. WHEN NIGHT COOLING IS REQUIRED, MODULATE VALVE TO MAINTAIN SPACE TEMPERATURE SET POINT.
16. ALARMS - PROVIDE AN ALARM FOR EACH OF THE FOLLOWING:
    a. FAN FAILS TO RUN AFTER 30 SECONDS OF BEING COMMANDED ON.
    b. FAN FAILS TO STOP AFTER 30 SECONDS OF BEING COMMANDED OFF.
    c. SOFTWARE SAFETY TRIP.
    d. SOFTWARE SAFETY LOCKOUT (4 SAFETY TRIPS IN 3 HOURS).
    e. LOW OR HIGH DISCHARGE AIR TEMPERATURES.
       1) IF THE DISCHARGE AIR TEMPERATURE FALLS BELOW 40°F (ADJUSTABLE) IN HEATING MODE, OPEN THE HEATING HOT WATER CONTROL VALVE, CLOSE THE OUTDOOR AIR DAMPER AND TURN OFF ALL FANS.
    f. LOW OR HIGH SPACE TEMPERATURES.

SEQUENCE OF OPERATIONS

A. FIN-TUBE:

   a. HEATING MODE:
      1. OCCUPIED MODE: MODULATE CONTROL VALVE TO MAINTAIN SPACE TEMPERATURE SET POINT OF 69°F - ADJUSTABLE.
      2. UNOCCUPIED MODE: MODULATE CONTROL VALVE TO MAINTAIN SPACE TEMPERATURE SET POINT OF 55°F - ADJUSTABLE.
   b. COOLING MODE: MODULATE CONTROL VALVE TO FULL CLOSED POSITION.
   c. ALARMS:
      3. HIGH/LOW SPACE TEMPERATURE.

5 H501 TYPICAL FINTUBE AND CONVECTOR CONTROLS DIAGRAM
NOT TO SCALE



6 H501 BOILER CONTROLS WIRING DIAGRAM
SCALE: NOT TO SCALE

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☐ BID #SD-04-01-06-0-005-021

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SHEET INFORMATION

Issued	Scale
06/15/2023	NOT TO SCALE

Project Status
CD

Drawn By	Checked By
KCM	AJS

Drawing Title
CONTROLS DIAGRAMS

Drawing Number
RPC
H501

Sheet size: 30x42
Drawing Names: S:\Projects\Suffern CSD\RP Connor Heating Conv\D Design\04 CAD\AutoCAD\MECH\H501.dwg | Plotted By: Brenden Wisniewski
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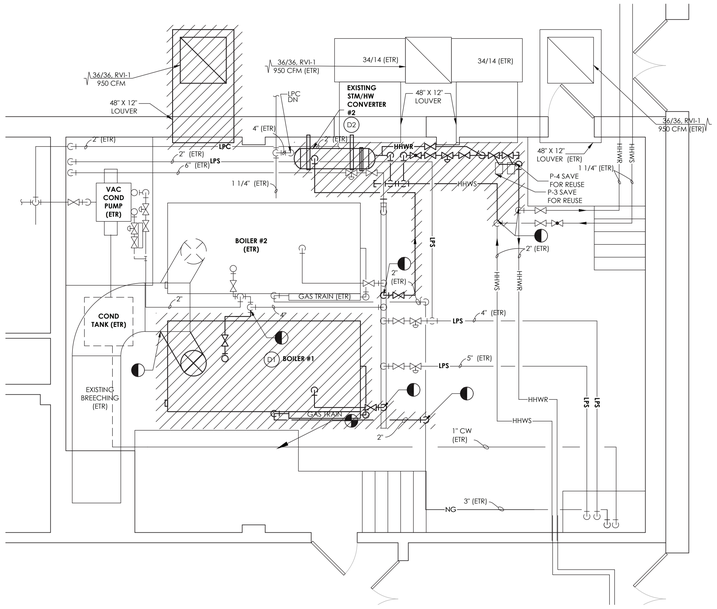
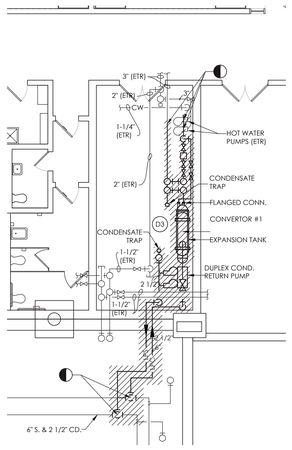
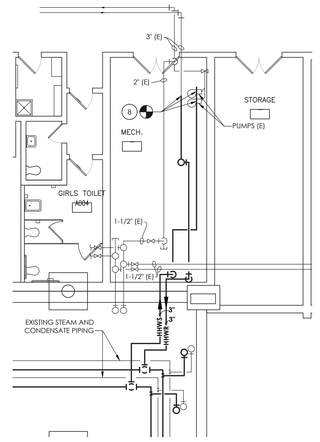


1 H700 **BOILER ROOM DEMOLITION PLAN PHASE 1**
SCALE:1/4" = 1'-0"



3 H700 **MECHANICAL ROOM DEMOLITION PLAN PHASE 1**
SCALE:1/4" = 1'-0"



4 H700 **MECHANICAL ROOM NEW WORK PLAN PHASE 1**
SCALE:1/4" = 1'-0"

GENERAL NOTES:

1. ALL CONTROLS WORK TO BE DONE BY DISTRICT BMS PROVIDER HONEYWELL.
   CONTACT: BOB GARVEY OR SEAN YATES
   O: 973-455-2503 C: 908-963-0467
   C: 862-579-8821
2. BOILER 2 AND EXISTING STEAM SYSTEM TO REMAIN OPERATIONAL DURING PHASE 1. NEW HOT WATER PIPING TO BE RUN THROUGHOUT THE BUILDING IN PREPARATION OF PHASE 2.

DEMOLITION KEY NOTES:

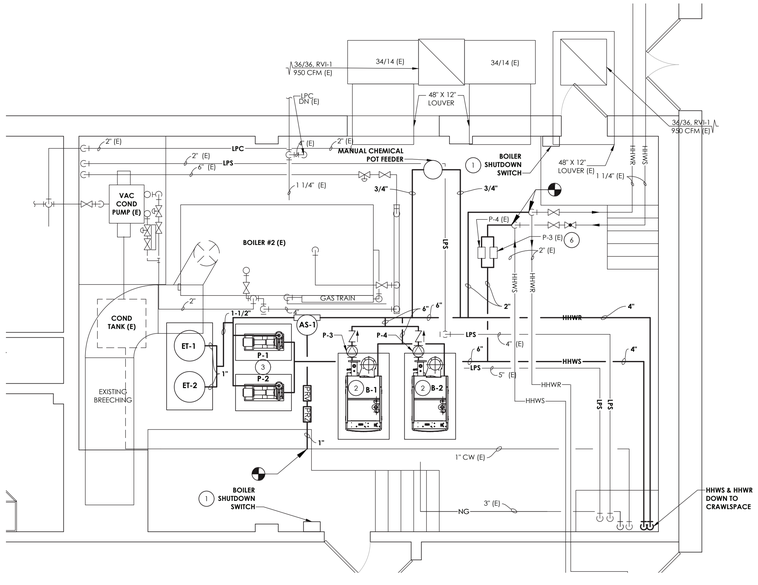
D1 REMOVE EXISTING BOILER 1 IN ITS ENTIRETY INCLUDING GAS TRAIN, ALL PIPING TO POINTS INDICATED, AND EXHAUST FLUE BACK TO BREECHING. SEAL EXISTING BREECHING AIR TIGHT TO MAINTAIN BOILER 2 OPERATION.

D2 REMOVE EXISTING STEAM TO HOT WATER HEAT EXCHANGER IN ITS ENTIRETY INCLUDING ALL STEAM AND CONDENSATE PIPING BACK TO MAINS. REMOVE HOT WATER PIPING BACK TO POINT INDICATED. CLEAN AND SAVE EXISTING HOT WATER PUMPS P-3 AND P-4 TO BE REUSED.

D3 REMOVE EXISTING STEAM TO HOT WATER HEAT EXCHANGER IN ITS ENTIRETY INCLUDING ALL STEAM AND CONDENSATE PIPING BACK TO MAINS AND CAP. STEAM PIPING TO BE MAINTAINED OPERATIONAL DURING PHASE 1. CLEAN AND SAVE EXISTING HOT WATER PUMPS TO BE REUSED.

KEY NOTES:

1. PROVIDE NEW BOILER SHUTDOWN SWITCH AT BOILER ROOM EXIITS.
2. INSTALL NEW BOILERS IN LOCATION SHOWN. PROVIDE NEW 6" CONCRETE HOUSEKEEPING PAD.
3. INSTALL NEW HOT WATER HEATING PUMPS. PROVIDE NEW 6" HOUSEKEEPING PAD.
4. PROVIDE 8" COMBUSTION AIR DUCT FROM EACH BOILER UP THROUGH ROOF. TERMINATE ON ROOF WITH GOOSENECK AND BIRDSCREEN. MODIFY AND USE EXISTING COMBUSTION AIR OPENINGS IF POSSIBLE. SEAL ALL UNUSED OPENING WITH LIKE CONSTRUCTION. MAINTAIN ALL ROOF WARRANTIES. MAINTAIN SHOWN EXISTING OUTDOOR AIR LOUVERS DURING PHASE 1.
5. PROVIDE NEW VENT FOR GAS REGULATORS PER MANUFACTURER'S RECOMMENDATION.
6. REUSE EXISTING PUMPS FOR GYM LOOP.
7. PROVIDE CONDENSATE DRAIN PIPING WITH NEUTRALIZATION KIT AND ROUTE TO NEAREST FLOOR DRAIN.
8. REUSE EXISTING HOT WATER PUMPS SERVING AREA B AND CONNECT TO NEW HOT WATER PIPING.
9. INSTALL NEW 18" FLUE AND ROUTE TO NEW BOILERS. CONNECT NEW FLUE TO EXISTING BOILER BREECHING.



2 H700 **BOILER ROOM NEW WORK PIPING PLAN PHASE 1**
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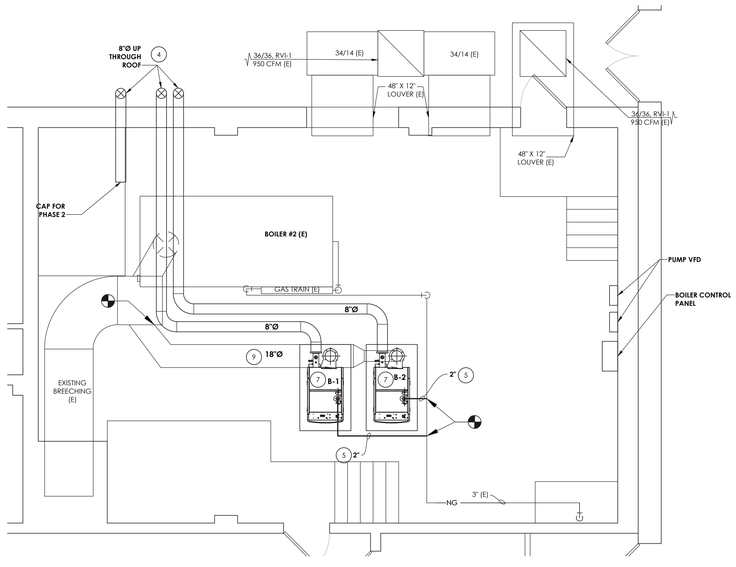
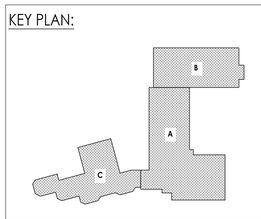


5 H700 **BOILER ROOM NEW WORK GAS, BREECHING, AND COMBUSTION AIR PLAN PHASE 1**
SCALE:1/4" = 1'-0"

KEY PLAN:



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PROJECT INFORMATION

Project Number
13296.23

Client Name
SUFFERN CSD

Project Name
RP CONNOR - BOILER CONVERSION

District Office Address
SUFFERN CENTRAL SCHOOL DISTRICT
45 MOUNTAIN AVENUE
HILLBURN, NY 10931

SUFFERN CSD

☐ SED #50-04-01-06-0-005-021

PROJECT ISSUE & REVISION SCHEDULE

No.	Date	Description

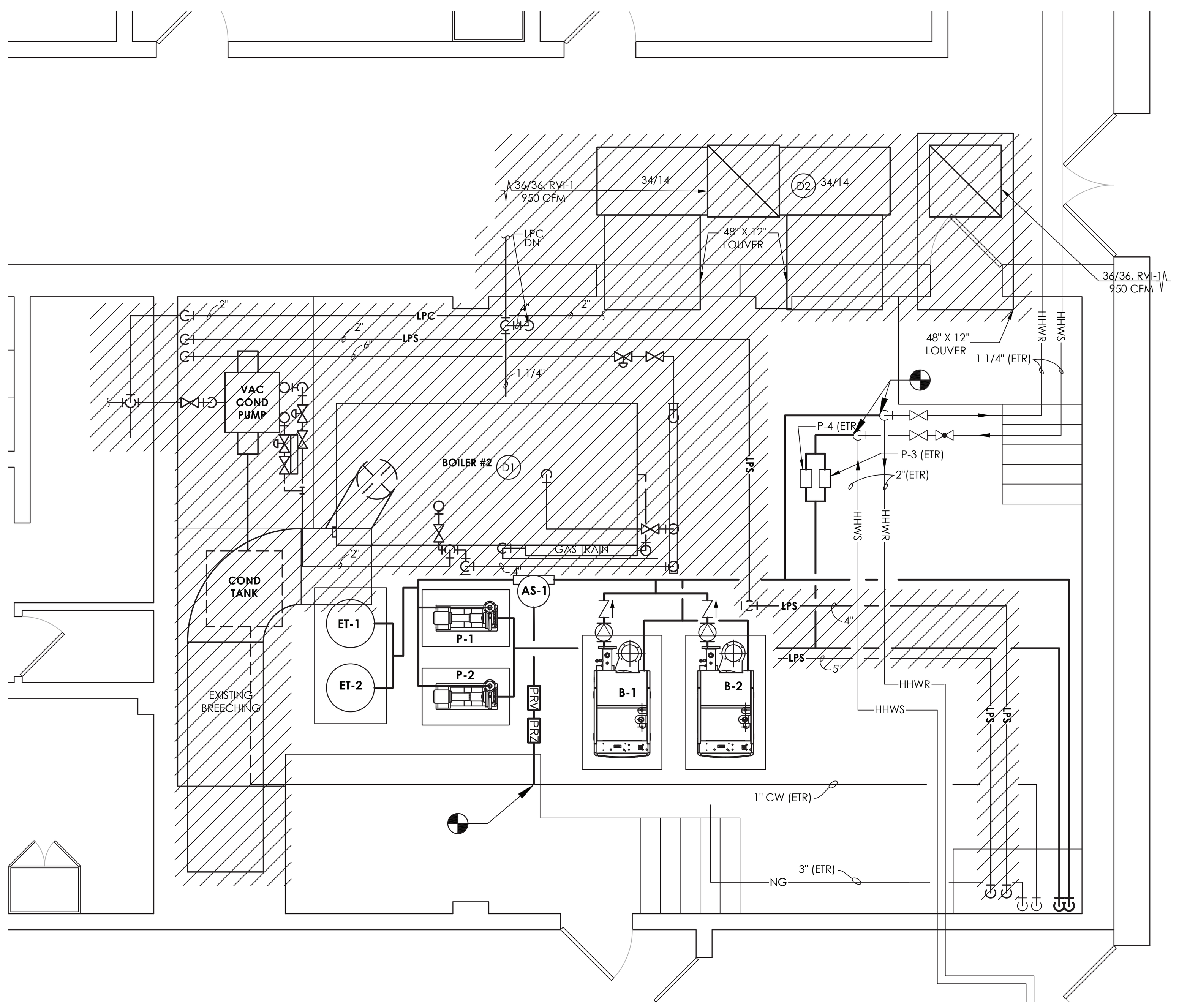
PROFESSIONAL STAMPS

SHEET INFORMATION

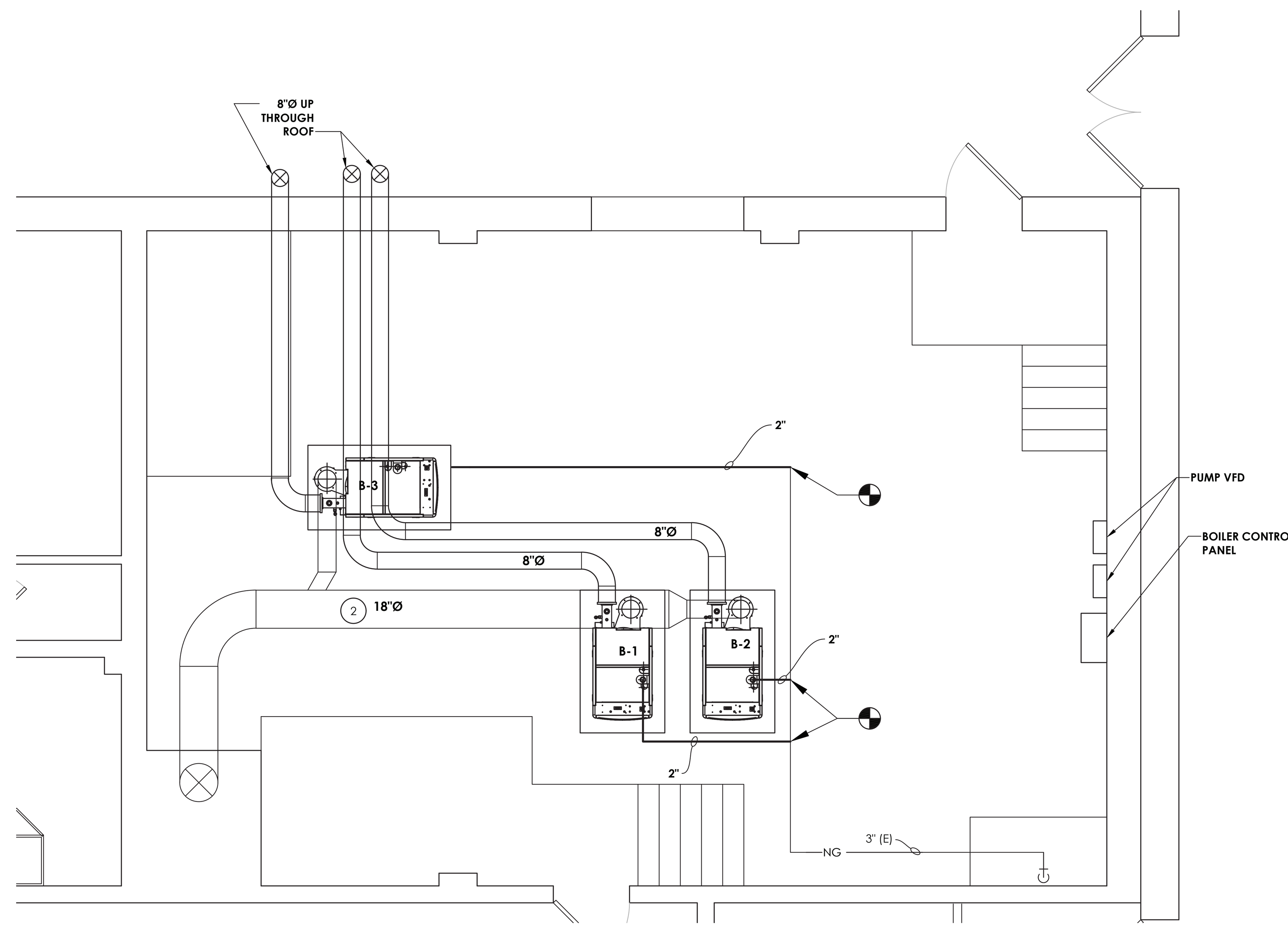
Issued	Scale
06/15/2023	1/4" =1'-0"
Project Status	
CD	
Drawn By	Checked By
BKM	XXX

Drawing Title
PHASE 1 BOILER ROOM DEMOLITION AND NEW WORK PLANS

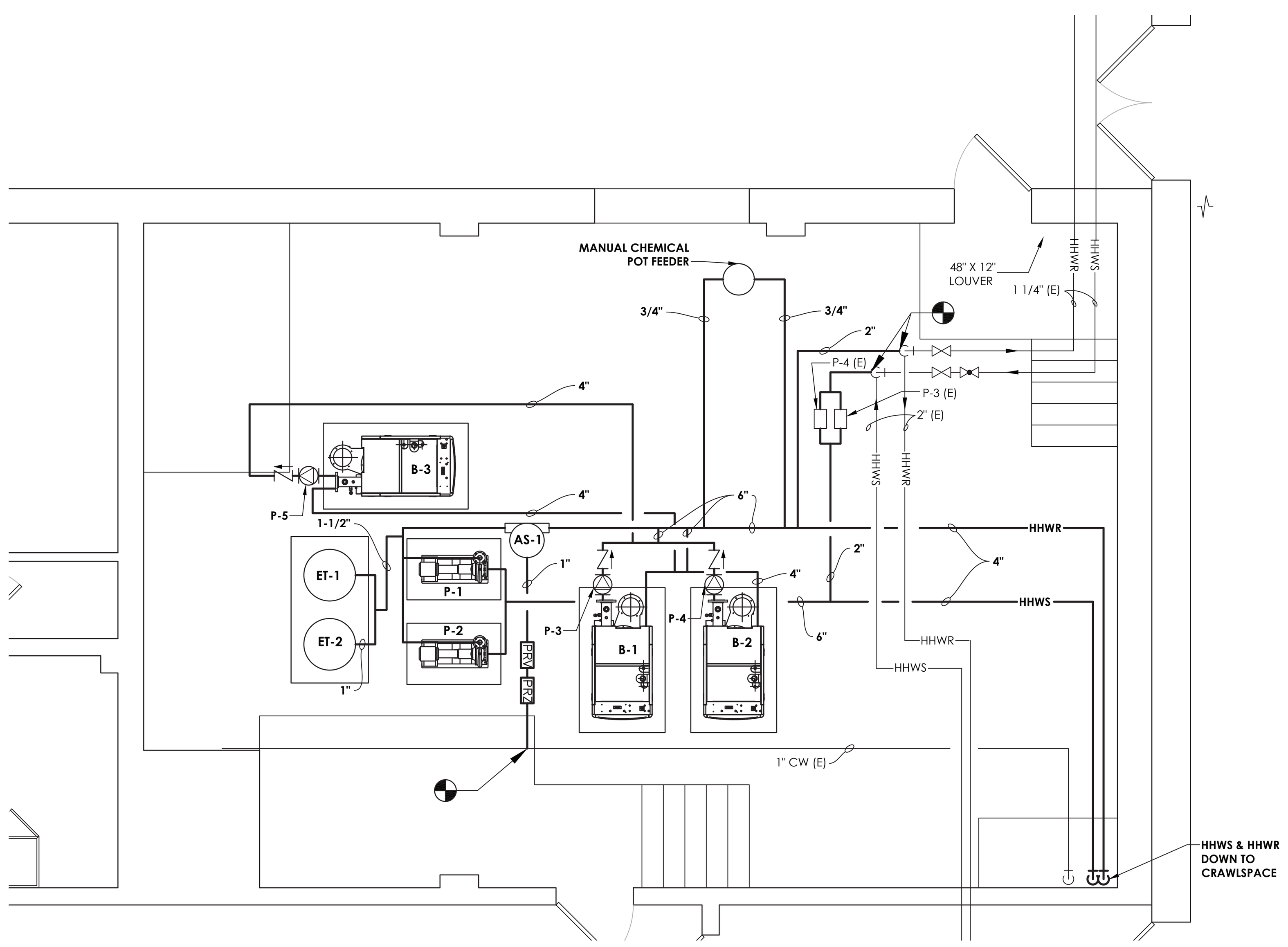
Drawing Number
RPC
H700



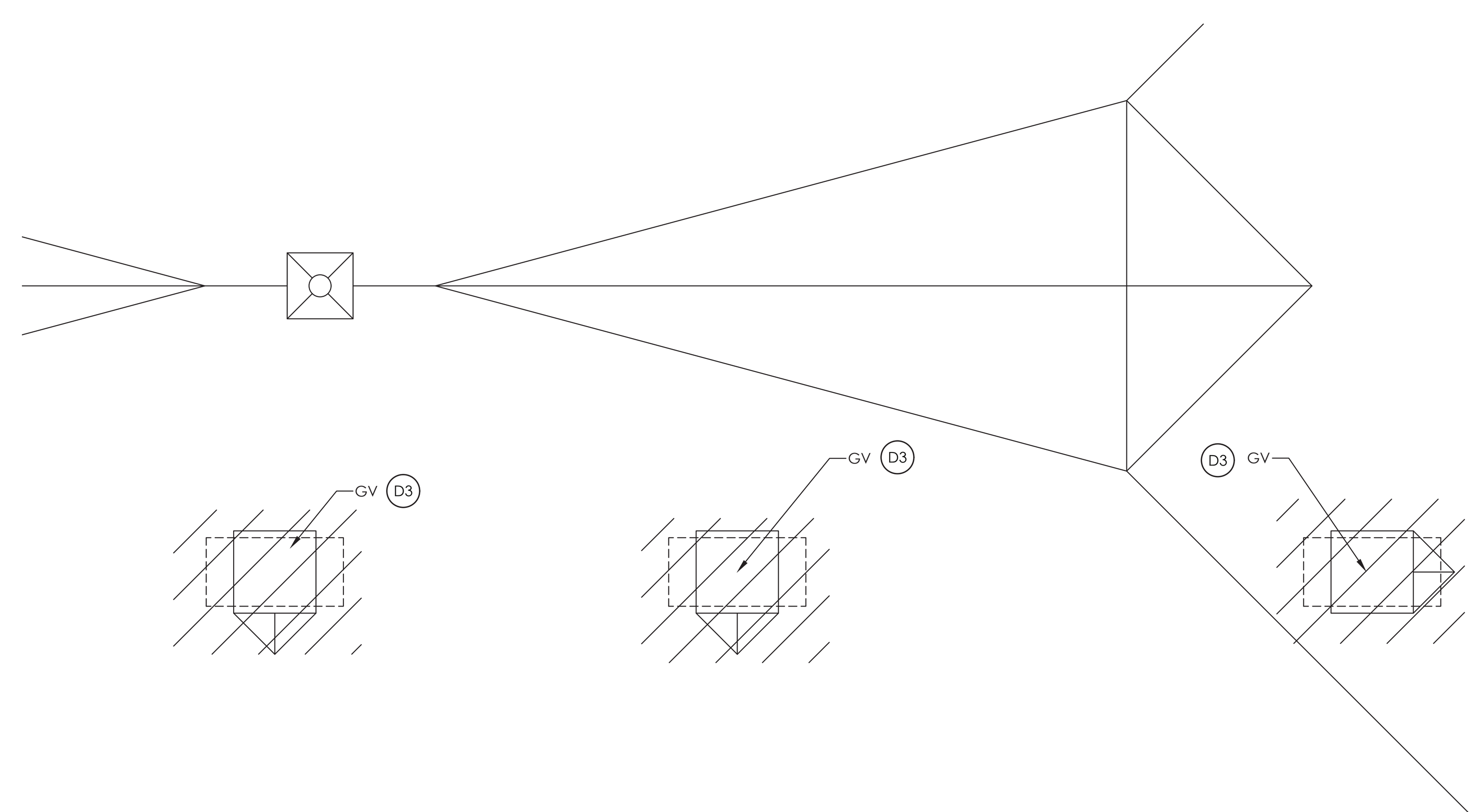
1 H701 **BOILER ROOM DEMOLITION PLAN PHASE 2**
SCALE:1/4" = 1'-0"



3 H701 **BOILER ROOM NEW WORK GAS, BREECHING, AND COMBUSTION AIR PLAN PHASE 2**
SCALE:1/4" = 1'-0"



2 H701 **BOILER ROOM NEW WORK PIPING PLAN PHASE 2**
SCALE:1/4" = 1'-0"



4 H701 **BOILER ROOM ROOF DEMO PLAN**
SCALE:1/4" = 1'-0"

GENERAL NOTES:

1. ALL CONTROLS WORK TO BE DONE BY DISTRICT BMS PROVIDER HONEYWELL.
   CONTACT: BOB GARVEY OR SEAN YATES
   O: 973-455-2503 C: 908-963-0467
   C: 862-579-8821

DEMOLITION KEY NOTES:

(D1) REMOVE EXISTING BOILER 2 IN ITS ENTIRETY INCLUDING GAS TRAIN, STEAM PIPING AND HEADER, CONDENSATE AND VACUUM PUMPS, AND BOILER BREECHING. BOILER FLUE INSTALLED DURING PHASE 1 TO REMAIN.

(D2) REMOVE REMAINING COMBUSTION AIR LOUVERS, DUCTWORK, AND GRAVITY VENTS ON ROOF. SEAL ALL UNUSED OPENING WITH LIKE CONSTRUCTION. MAINTAIN ALL ROOF WARRANTIES.

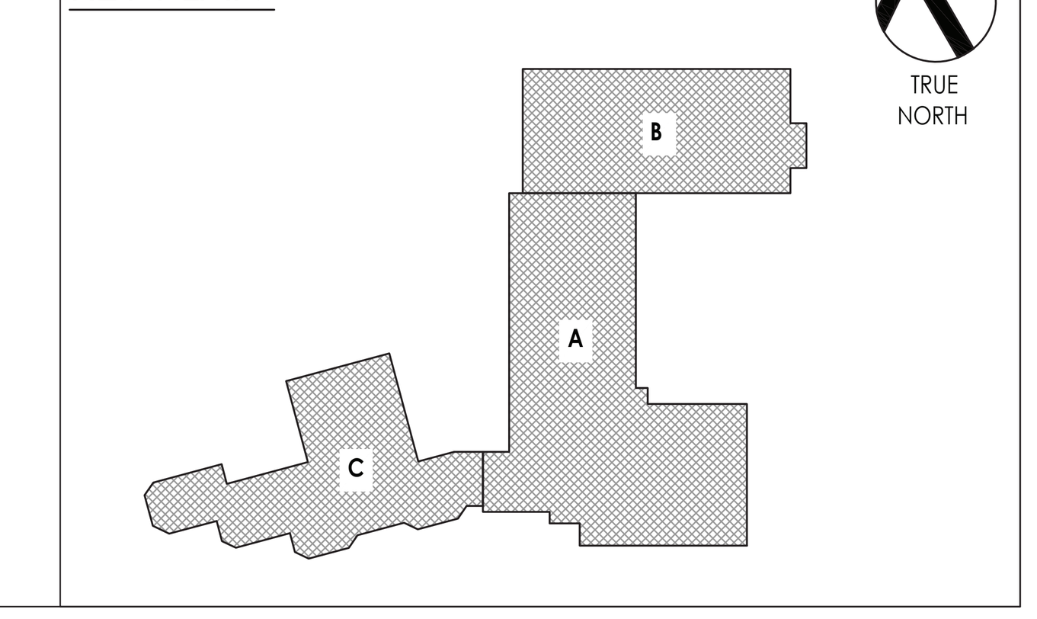
(D3) REMOVE EXISTING GRAVITY VENTILATORS IN THEIR ENTIRETY. PATCH AND FILL ROOF PENETRATION. MAINTAIN ALL EXISTING ROOF WARRANTIES.

KEY NOTES:

(1) INSTALL NEW BOILER B-3 AND CONNECT TO NEW HOT WATER SYSTEM. SEE PHASE 1 DRAWINGS FOR BOILER INSTALLATION NOTES.

(2) INSTALL NEW 8" FLUE FROM BOILER B-3 AND CONNECT TO NEW 18" BOILER BREECHING INSTALLED DURING PHASE 1. RUN 18" BREECHING UP THROUGH EXISTING CHIMNEY.

KEY PLAN:



TRUE NORTH

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SUFFERN CENTRAL SCHOOL DISTRICT
45 MOUNTAIN AVENUE
HILLBURN, NY 10931

SUFFERN CSD

☐ SED #50-04-01-06-0-005-021

PROJECT ISSUE & REVISION SCHEDULE

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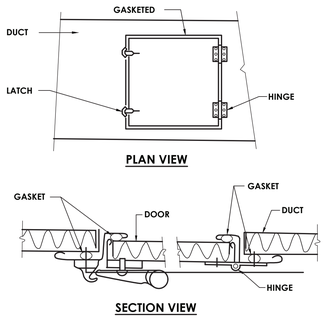
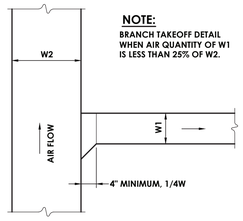
06/15/2023	1/4" =1'-0"
Project Status	
CD	
Drawn By	Checked By
BKM	XXX

Drawing Title
PHASE 2 BOILER ROOM DEMOLITION AND NEW WORK PLANS

Drawing Number
RPC
H701

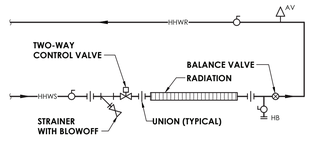


1 H800 **ACCESS DOOR DETAIL**
NOT TO SCALE

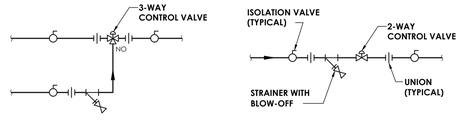


NOTE:
BRANCH TAKEOFF DETAIL WHEN AIR QUANTITY OF W1 IS LESS THAN 25% OF W2.

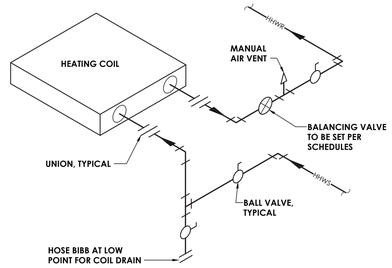
2 H800 **BRANCH TAKE-OFF DETAIL**
NOT TO SCALE



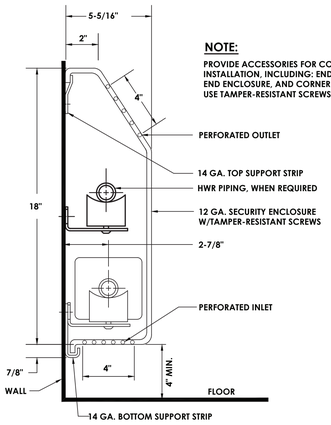
3 H800 **FIN-TUBE RADIATION DETAIL**
NOT TO SCALE



4 H800 **CONTROL VALVE SCHEMATICS**
NOT TO SCALE

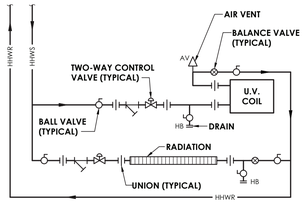


5 H800 **CABINET UNIT HEATER AND UNIT HEATER COIL PIPING SCHEMATIC**
NOT TO SCALE

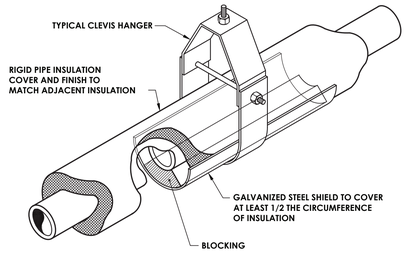


NOTE:
PROVIDE ACCESSORIES FOR COMPLETE INSTALLATION, INCLUDING: END TRIM, END ENCLOSURE, AND CORNER PIECES. USE TAMPER-RESISTANT SCREWS.

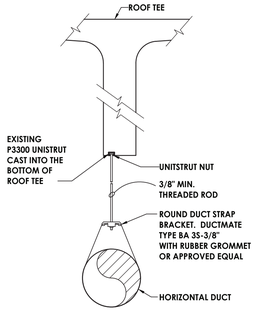
6 H800 **FIN TUBE RADIATION DETAIL**
NOT TO SCALE



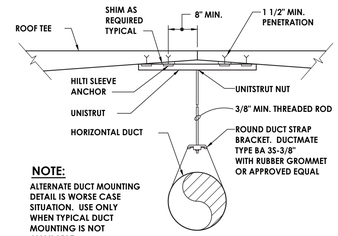
7 H800 **UNIT VENTILATOR DETAIL WITH HOT WATER RADIATION**
NOT TO SCALE



8 H800 **INSULATED PIPE HANGER DETAIL**
NOT TO SCALE



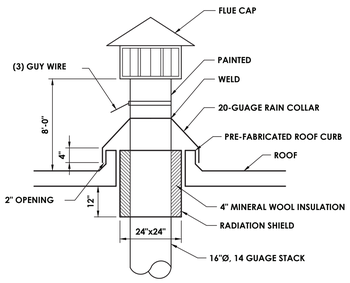
TYPICAL DUCT MOUNTING BRACKET



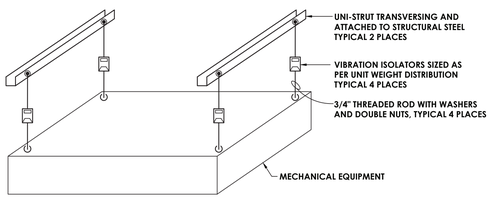
NOTE:
ALTERNATE DUCT MOUNTING DETAIL IS WORSE CASE SITUATION. USE ONLY WHEN TYPICAL DUCT MOUNTING IS NOT AVAILABLE.

ALTERNATE DUCT MOUNTING

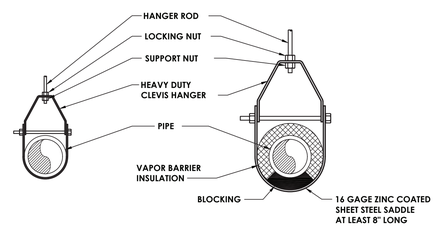
9 H800 **DUCT MOUNTING DETAILS**
NOT TO SCALE



10 H800 **BOILER STACK DETAIL**
NOT TO SCALE



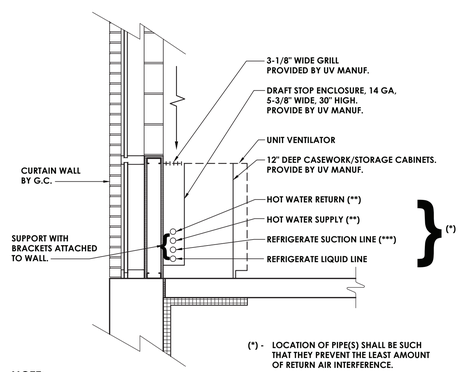
11 H800 **INDOOR UNIT SUPPORT INSTALLATION DETAIL**
NOT TO SCALE



CLEVIS HANGER SINGLE HORIZONTAL RUNS NO VAPOR BARRIER INSULATION

CLEVIS HANGER SINGLE HORIZONTAL RUNS WITH VAPOR BARRIER INSULATION

16 H800 **PIPE SUPPORT DETAIL**
NOT TO SCALE



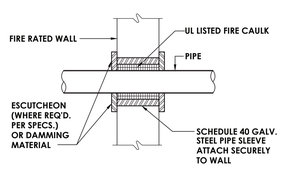
NOTE:
DRAFT STOP ENCLOSURE AND CABINETRY SHALL RUN FULL LENGTH OF EXTERIOR WALL UNLESS OTHERWISE NOTED.

(*) - LOCATION OF PIPE(S) SHALL BE SUCH THAT THEY PREVENT THE LEAST AMOUNT OF RETURN AIR INTERFERENCE.

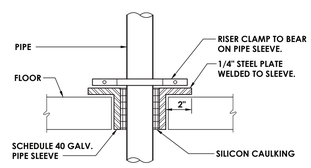
(**) - DO NOT INSULATE WITHIN DRAFT STOP ENCLOSURE

(***) - 1" THK. INSULATION WITHIN DRAFT STOP ENCLOSURE. CLOSED-CELL PHENOLIC FOAM INSULATION.

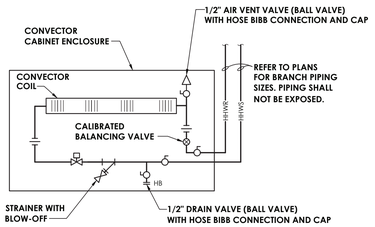
13 H800 **TYPICAL SECTION/ELEVATION OF UNIT VENTILATOR AT DRAFT STOP**
NOT TO SCALE



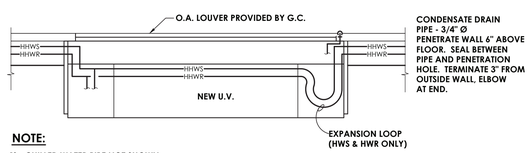
14 H800 **PIPE THROUGH RATED WALL**
NOT TO SCALE



15 H800 **PIPE THROUGH NON-RATED FLOOR**
NOT TO SCALE



17 H800 **CONVECTOR DETAIL**
NOT TO SCALE



NOTE:
1) CHILLED WATER PIPE NOT SHOWN.

18 H800 **TYPICAL PLAN AT VERTICAL UNIT VENTILATOR**
NOT TO SCALE

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PROJECT INFORMATION
Project Number
13296.23
Client Name
SUFFERN CSD
Project Name
RP CONNOR - BOILER CONVERSION
District Office Address
SUFFERN CENTRAL SCHOOL DISTRICT
45 MOUNTAIN AVENUE
HILLBURN, NY 10951

SUFFERN CSD
STD #SD-04-01-06-0-005-021

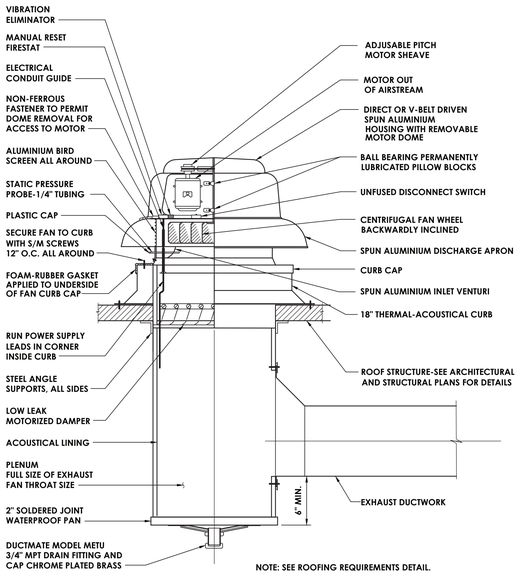
PROJECT ISSUE & REVISION SCHEDULE
No. Date Description

PROFESSIONAL STAMPS

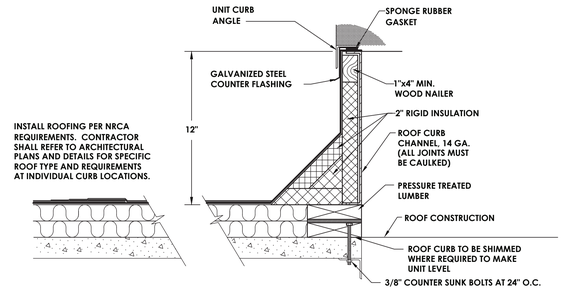
SHEET INFORMATION
Issued 06/15/2023
Scale NOT TO SCALE
Project Status CD
Drawn By ---
Checked By ---
Drawing Title HVAC DETAILS

Drawing Number
RPC
H800

Sheet size: 30x42
Drawing Name: S:\Projects\Suffern CSD\RP Connor Heating Conv\D Design\06 CAD\AutoCAD\MECH\HB\H800.dwg | Date last accessed: 6/12/2023 5:02 PM | Date last plotted: 6/13/2023 2:25 PM | Plotted By: Brenden Wisniewski



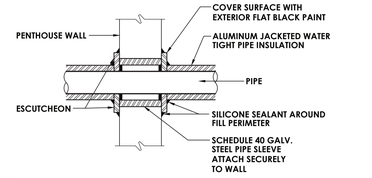
1 H801 **EXHAUST FAN DETAIL**
NOT TO SCALE



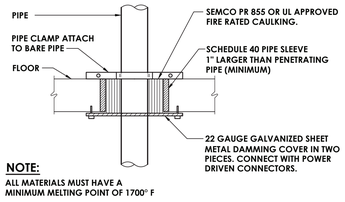
NOTE:

- FOR EXISTING ROOFS, SEE 5/H802 FOR ROOFING REQUIREMENTS.

2 H801 **EXHAUST FAN ROOF CURB DETAIL**
NOT TO SCALE

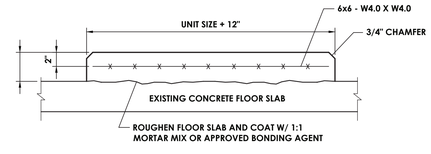


4 H801 **PIPE THROUGH NON-RATED WALL**
NOT TO SCALE



NOTE:
ALL MATERIALS MUST HAVE A MINIMUM MELTING POINT OF 1700° F

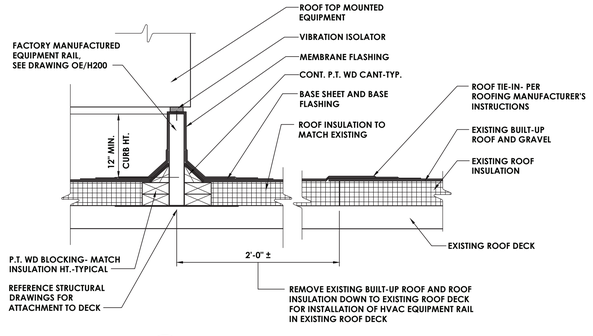
3 H801 **PIPE THROUGH RATED FLOOR**
NOT TO SCALE



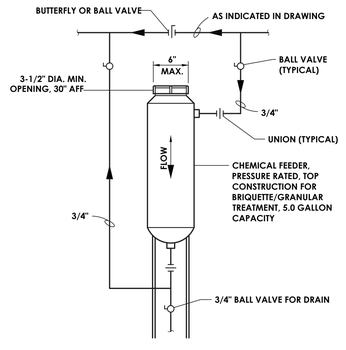
INTERIOR PAD DETAIL FOR LOCATION ON EXISTING CONCRETE FLOOR

NOTE: COORDINATE UNIT SIZE WITH EQUIPMENT SELECTED.

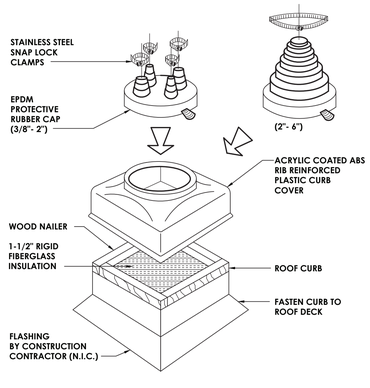
5 H801 **EQUIPMENT HOUSEKEEPING PAD DETAIL**
N.T.S.



7 H801 **EQUIPMENT RAIL DETAIL**
SCALE: 1 1/2" = 1'-0"



6 H801 **MANUAL CHEMICAL FEEDER SCHEMATIC**
N.T.S.



8 H801 **PIPE PORTAL DETAIL**
N.T.S.

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SUFFERN CSD

- ☐ BID #SC-04-01-06-0-005-021

PROJECT ISSUE & REVISION SCHEDULE

No.	Date	Description

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SHEET INFORMATION

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06/15/2023	NOT TO SCALE
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Drawing Title
HVAC DETAILS

Drawing Number
RPC
H801

Sheet size: 30x42
Drawing Name: S:\Projects\Suffern CSD\RP Connor Heating Conv\D Design\0A CAD\AutoCAD\MECH\H801.dwg
Plotted By: Brenden Wisniewski
Date last plotted: 6/13/2023 2:25 PM
Date last accessed: 6/12/2023 3:02 PM

LOOSE LINTEL SCHEDULE

WALL TYPE	SPAN	LINTEL
4" MASONRY / VENEER	1'-4" to 4'-6" 4'-7" to 5'-6" 5'-7" to 6'-6" 6'-7" to 7'-6"	L 4 x 3 1/2 x 5/16 (L.L.V.) L 4 x 3 1/2 x 5/16 (L.L.V.) L 5 x 3 1/2 x 5/16 (L.L.V.) L 6 x 3 1/2 x 5/16 (L.L.V.)
6" BLOCK	1'-4" to 4'-6" 4'-7" to 5'-6" 5'-7" to 6'-6" 6'-7" to 7'-6" 7'-7" to 9'-0"	WT 4 x 9 WT 4 x 10.5 WT 5 x 13 WT 5 x 13 W8 x 10 + 5 1/2 x 5/16 PL.
8" BLOCK	1'-4" to 4'-6" 4'-7" to 5'-6" 5'-7" to 6'-6" 6'-7" to 7'-6" 7'-7" to 9'-0"	(2) - L4 x 3 1/2 x 5/16 (L.L.V.) (2) - L4 x 3 1/2 x 5/16 (L.L.V.) (2) - L5 x 3 1/2 x 5/16 (L.L.V.) (2) - L6 x 3 1/2 x 5/16 (L.L.V.) WT 9 x 25
4" BRICK & 8" BLOCK OR 12" BLOCK	1'-4" to 4'-6" 4'-7" to 5'-6" 5'-7" to 6'-6" 6'-7" to 7'-6"	(3) - L4 x 3 1/2 x 5/16 (L.L.V.) (3) - L4 x 3 1/2 x 5/16 (L.L.V.) (3) - L5 x 3 1/2 x 5/16 (L.L.V.) (3) - L6 x 3 1/2 x 5/16 (L.L.V.)

1. PROVIDE LOOSE LINTELS OVER ALL OPENINGS IN EXTERIOR AND INTERIOR MASONRY WALLS AS SCHEDULED UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
2. MINIMUM BEARING FOR ALL LINTELS SHALL BE 8" EACH END.
3. BLOCK WALLS SHALL BE GROUTED SOLID 3 COURSES BELOW BEARING POINT FOR A WIDTH OF 16" UNLESS NOTED OTHERWISE ON STRUCTURAL FRAMING PLANS.
4. SEE ARCH., HVAC, & PLUMBING DRAWINGS FOR SIZE AND LOCATION OF ALL WALL OPENINGS.
5. CONTRACTOR SHALL PROVIDE AN ADDITIONAL 50 FT. OF ANGLE 5 x 3 1/2 x 5/16 OR THE EQUIVALENT.
6. FOR LINTEL SPANS GRATER THAN 6'-0", BOLT ASSEMBLIES TOGETHER AT 1/3 POINTS.
7. WHERE LINTELS REQUIRE 3 ANGLES, PROVIDE A 3/16" PLATE EQUAL TO WALL WIDTH ACROSS SPAN, ATTACHED TO BOTTOM OF THE LINTEL.

UNIT VENTILATOR SCHEDULE

MARK	ROOM SERVES	OA FAN	UNIT TYPE	CFM	ELECTRICAL		WINTER		HW COIL CAPACITY						COOLING COIL CAPACITY				CABINET SIZE (LXHXD) IN	TYPICAL UNIT MFG & MODEL NO.	REMARKS:
					MCA	VOLT/Ø	OA °F	RA °F	EWT °F	LWT °F	EAT °F	LAT °F	MBH	GPM	TONS	EAT °F	LAT °F	MBH			
UV-1	1	475	HORIZONTAL	1500	6.3	115/1	2	72	180	113.5	37.0	100.6	99.7	3.0	5.0	81.3	55	57.9	98X30X22	DAIKIN UAVS9H15	1,2,3,4,5,6,7
UV-2	2	475	HORIZONTAL	1500	6.3	115/1	2	72	180	113.5	37.0	100.6	99.7	3.0	5.0	81.3	55	57.9	98X30X22	DAIKIN UAVS9H15	1,2,3,4,5,6,7
UV-3	3	350	HORIZONTAL	1500	6.3	115/1	2	72	180	117.3	37.0	101.9	78.4	2.5	4.0	81.9	54.2	47.1	98X30X22	DAIKIN UAVS9H15	1,2,3,4,5,6,7
UV-4	4	350	HORIZONTAL	1500	6.3	115/1	2	72	180	113.5	37.0	100.6	99.7	3.0	5.0	81.3	55	57.9	98X30X22	DAIKIN UAVS9H15	1,2,3,4,5,6,7
UV-5	5	350	HORIZONTAL	1500	6.3	115/1	2	72	180	113.5	37.0	100.6	99.7	3.0	5.0	81.3	55	57.9	98X30X22	DAIKIN UAVS9H15	1,2,3,4,5,6,7
UV-6	6	350	HORIZONTAL	1500	6.3	115/1	2	72	180	113.5	37.0	100.6	99.7	3.0	5.0	81.3	55	57.9	98X30X22	DAIKIN UAVS9H15	1,2,3,4,5,6,7
UV-7	8	475	HORIZONTAL	1500	6.3	115/1	2	72	180	113.5	37.0	100.6	99.7	3.0	5.0	81.3	55	57.9	98X30X22	DAIKIN UAVS9H15	1,2,3,4,5,6,7
UV-8	9	475	HORIZONTAL	1500	6.3	115/1	2	72	180	113.5	37.0	100.6	99.7	3.0	5.0	81.3	55	57.9	98X30X22	DAIKIN UAVS9H15	1,2,3,4,5,6,7
UV-9	12	500	HORIZONTAL	1500	6.3	115/1	2	72	180	117.3	37.0	101.9	78.4	2.5	4.0	81.9	54.2	47.1	98X30X22	DAIKIN UAVS9H15	1,2,3,4,5,6,7
UV-10	14	450	HORIZONTAL	1500	6.3	115/1	2	72	180	117.3	37.0	101.9	78.4	2.5	4.0	81.9	54.2	47.1	98X30X22	DAIKIN UAVS9H15	1,2,3,4,5,6,8
UV-11	14	450	HORIZONTAL	1500	6.3	115/1	2	72	180	117.3	37.0	101.9	78.4	2.5	4.0	81.9	54.2	47.1	98X30X22	DAIKIN UAVS9H15	1,2,3,4,5,6,8
UV-12	36	370	HORIZONTAL	1500	6.3	115/1	2	72	180	117.3	37.0	101.9	78.4	2.5	3.5	80.2	54.9	40.4	98X30X22	DAIKIN UAVS9H15	1,2,4,5,6,7
UV-13	36	370	HORIZONTAL	1500	6.3	115/1	2	72	180	117.3	37.0	101.9	78.4	2.5	3.5	80.2	54.9	40.4	98X30X22	DAIKIN UAVS9H15	1,2,4,5,6,7
UV-14	36	370	HORIZONTAL	1500	6.3	115/1	2	72	180	117.3	37.0	101.9	78.4	2.5	3.5	80.2	54.9	40.4	98X30X22	DAIKIN UAVS9H15	1,2,4,5,6,7
UV-15	36A	310	HORIZONTAL	1500	6.3	115/1	2	72	180	117.3	37.0	101.9	78.4	2.5	3.5	80.2	54.9	40.4	98X30X22	DAIKIN UAVS9H15	1,2,4,5,6,7
UV-16	40	100	HORIZONTAL	1500	6.3	115/1	2	72	180	143.8	60.0	103.8	54.3	3.0	3.0	76.4	54.9	30.5	98X30X22	DAIKIN UAVS9H15	1,2,3,4,5,6,7
UV-17	19	450	HORIZONTAL	1500	6.3	115/1	2	72	180	111.3	37.0	99	103.1	3.0	-	-	-	-	98X30X22	DAIKIN UAVS9H15	1,4,5,6
UV-18	19	450	HORIZONTAL	1500	6.3	115/1	2	72	180	111.3	37.0	99	103.1	3.0	-	-	-	-	98X30X22	DAIKIN UAVS9H15	1,4,5,6
UV-19	19	450	HORIZONTAL	1500	6.3	115/1	2	72	180	111.3	37.0	99	103.1	3.0	-	-	-	-	98X30X22	DAIKIN UAVS9H15	1,4,5,6

REMARKS:
1. FACTORY MOUNTED AND WIRED DISCONNECT.
2. CONDENSATE PUMP, DRAIN PAN ALARM.
3. PROVIDE DX COIL FOR FUTURE CONNECTION BY OTHERS.
4. FLOOR MOUNTED.
5. COLOR TO BE SELECTED BY ARCHITECT BASED ON MANUFACTURER'S STANDARD COLORS.
6. PROVIDE FACE AND BYPASS DAMPER.
7. ALTERNATE MC-01, REPLACE EXISTING UV LOUVER WITH NEW 72" X 10-3/8" LOUVER.
8. PROVIDE NEW LOUVER 72" X 10-3/8".

UNIT HEATER SCHEDULE

MARK	LOCATION	TYPE	CFM	EWT	LWT	OUTPUT MBH	GPM	PRESS. DROP (FT WC)	EAT	LAT	V/PH/HZ	HP	TYPICAL UNIT MFG. & MODEL NO.	REMARKS:
CUH-1	PASSAGE 119	WALL RECESSED	271	180	150	17	1.2	1.7	65	121.6	115/1/60	0.140	IEC FHY02	1
CUH-2	LOBBY 121	WALL RECESSED	261	180	150	21	1.4	3.6	65	137.4	115/1/60	0.140	IEC FHY02	1
CUH-3	CORRIDOR 135	WALL RECESSED	271	180	150	17	1.2	1.7	65	121.6	115/1/60	0.140	IEC FHY02	1
CUH-4	KINDERGARTEN 8	WALL RECESSED	271	180	150	17	1.2	1.7	65	121.6	115/1/60	0.140	IEC FHY02	1

REMARKS:
1. PROVIDE WITH FACTORY MOUNTED DISCONNECT SWITCH
2. COLOR TO BE SELECTED BY ARCHITECT BASED ON MANUFACTURER'S STANDARD COLORS.

RP CONNOR OUTSIDE AIR CALCS

Unit TAG	Space Description	CFM/ft^2 at Maximum	TOTAL OCCUPANCY FOR VENTILATION	TOTAL SQ. FT.	O.A. PER PERSON (CFM)	O.A. PER SQ. FT. (CFM)	Vbz (CFM)	Ez	EXHAUST AIRFLOW RATE CFM/FT2	Voz=Vot (CFM)	ADJUSTED CFM	REMARK
UV-1	001 KINDER		29	1121	10	0.12	425	0.9		472	600	
UV-2	002 KINDER		28	1090	10	0.12	411	0.9		456	600	
UV-3	003 FIRST GRADE		21	823	10	0.12	309	0.9		343	450	
UV-4	004 FIRST GRADE		21	807	10	0.12	307	0.9		341	450	
UV-5	005 FIRST GRADE		21	807	10	0.12	307	0.9		341	450	
UV-6	006 FIRST GRADE		21	823	10	0.12	309	0.9		343	450	
UV-7	008 KINDER		29	1137	10	0.12	426	0.9		474	600	
UV-8	009 KINDER		29	1126	10	0.12	425	0.9		472	600	
UV-9	012 MUSIC		25	705	10	0.06	292	0.9		325	400	
UV-9	012A PRACTICE		2	49	10	0.06	23	0.9		25	50	
UV-9	012B PRACTICE		2	49	10	0.06	23	0.9		25	50	
UV-10	014 ART		50	1164	10	0.18	710	0.9	0.7	788	450	
UV-11	014 ART		-	-	-	-	-	-	-	-	450	
CV-1	014A KILN		1	50	10	0.18	19	0.9	0.7	21	50	
UV-17	19 CAFETERIA		257	2561	7.5	0.18	2388	0.9		2654	450	1
UV-18	19 CAFETERIA		-	-	-	-	-	-		-	450	1
UV-19	19 CAFETERIA		-	-	-	-	-	-		-	450	1
UV-12	36 LIBRARY		71	2020	10	0.12	952	0.9		1058	370	
UV-13	36 LIBRARY		-	-	-	-	-	-		-	370	
UV-14	36 LIBRARY		-	-	-	-	-	-		-	370	
UV-15	36A RESOURCE		16	613	10	0.12	234	0.9		260	260	
UV-15	36B OFFICE		2	204	5	0.06	22	0.9		25	50	
UV-15	36C COMPUTER OFFICE		3	402	5	0.06	39	0.9		43	50	
UV-16	040 FACULTY		5	816	5	0.06	74	0.9		82	100	

REMARKS: 1. ADDITIONAL OUTSIDE AIR PROVIDED BY EXISTING ROOFTOP UNIT.

AIR COOLED CONDENSER UNIT SCHEDULE

MARK	LOCATION	SERVES	NOMINAL TONS	REFRIGERANT TYPE	RATED COOLING CAPACITY (BTU/HR)	SST °F	ELECTRICAL DATA					EER/SEER	OPERATING WEIGHT (LBS.)	TYPICAL UNIT MFG & MODEL NO.	REMARKS
							FAN	COMPRESSOR							
							NO.	QTY	RLA	VOLT/Ø	MCA				
CU-1	ROOF	UV-12	4	R-401A	45,500	32	1	1	19.9	208/1	26.2	11.7/14	220	DAIKIN DX14SA0481	1,2
CU-2	ROOF	UV-13	4	R-401A	45,500	32	1	1	19.9	208/1	26.2	11.7/14	220	DAIKIN DX14SA0481	1,2
CU-3	ROOF	UV-14	4	R-401A	45,500	32	1	1	19.9	208/1	26.2	11.7/14	220	DAIKIN DX14SA0481	1,2
CU-4	ROOF	UV-15	4	R-401A	45,500	32	1	1	19.9	208/1	26.2	11.7/14	220	DAIKIN DX14SA0481	1,2

REMARKS:
1.ENERGY EFFICIENT SCROLL COMPRESSOR
2. PROVIDE FACTORY MOUNTED AND WIRED DISCONNECT

REGISTERS, GRILLES, AND DIFFUSERS

MARK	APPLICATION	MATERIAL	TYPE	FINISH	DESIGN EQUIP.	REMARKS
R1	RETURN/EA	STEEL	LAY-IN	WHITE	PRICE 500	1

REMARKS: 1.PROVIDE WITH 24"X24" CEILING MODULE FRAME LAY IN STYLE.

FAN COIL UNIT SCHEDULE

MARK	TYPE	LOCATION	MAX CFM	HEATING					ELECTRICAL DATA			TYPICAL UNIT MFG & MODEL NO.	REMARKS:
				MBH	EWT (°F)	WATER ΔT	GPM	WPD (FT WC)	WATTS	VOLTS	PHASE		
FC-1	VERTICAL CABINET	KILN ROOM 14A	710	51.262	180	30	3.5	3.2	171.6	115	1	IEC FXY08	1, 2

REMARKS:
1. FACTORY MOUNTED AND WIRED DISCONNECT.
2. COLOR TO BE SELECTED BY ARCHITECT BASED ON MANUFACTURER'S STANDARD COLORS.

FAN SCHEDULE

MARK	LOCATION	SERVICE	TYPE	CFM	SP IN W.G.	RPM	ELECTRICAL DATA				TYPICAL UNIT MFG & MODEL NO.	REMARKS:
							HP	VOLTS	PHASE	FLA		
EF-1	ROOF	12,36,36A,40	DOWNBLAST	2020	0.37	694	1/3	115	1	7.2	GREENHECK GB-180	1,2
EF-2	ROOF	14	DOWNBLAST	900	0.21	673	1/4	115	1	3.8	GREENHECK G-140-VG	1,2
EF-3	ROOF	1,2,3,4,5,6	DOWNBLAST	1150	0.58	1162	1/4	115	1	5.8	GREENHECK GB-130	1,2

REMARKS:
1. FACTORY MOUNTED AND WIRED DISCONNECT.
2. PROVIDE BACKDRAFT DAMPER

BOILER SCHEDULE - HOT WATER

MARK	FUEL	INPUT MBH	OUTPUT MBH	GAS TURNDOWN	MAX GAS PRESSURE	ELECTRICAL DATA		FLUE SIZE	THERMAL EFFICIENCY	OPERATING WT. LBS.	TYPICAL UNIT MFG & MODEL NO.	REMARKS:
						FLA	VOLTS/Ø					
B-1	NATURAL GAS	2,000	1,860	20:1	14" W.C.	16	120/1	8	94.60%	1500	AERCO BMK 2000	1,2,3
B-2	NATURAL GAS	2,000	1,860	20:1	14" W.C.	16	120/1	8	94.60%	1500	AERCO BMK 2000	1,2,3
B-3	NATURAL GAS	2,000	1,860	20:1	14" W.C.	16	120/1	8	94.60%	1500	AERCO BMK 2000	1,2,3

REMARKS:
1. PROVIDE WITH FACTORY BOILER MANAGEMENT SYSTEM, BMS II, AND BACNET CONTROLLER.
2. PROVIDE WITH AL29-4C STAINLESS STEEL VENTING PER UL1738.
3. PROVIDE WITH CONDENSATE NEUTRALIZATION KIT.

FIN TUBE SCHEDULE

MARK	BTU/FT.	GPM	TUBE SIZE (IN.)	FINS / FT.	EWT (°F)	LWT (°F)	EAT (°F)	ENCLOSURE			TYPICAL UNIT MFG & MODEL NO.	REMARKS:
								H (IN.)	D (IN.)	STYLE		
FT-A	580	0.5	3/4	32	180	150	65	-	-	-	STERLING GSBF	
FT-B	930	0.5	3/4	32	180	150	65	14	5-5/16	SLOPED	STERLING JVB-ARS	

REMARKS:
1. CONTROL VALVES ABOVE THE CEILING.
2. COLOR BY ARCHITECT.
3. ELEMENT LENGTH LISTED ON PLANS. CAT - 66289C RETURN
4. COORDINATE HEIGHT WITH ELECTRICAL DEVICES.

PUMP SCHEDULE

MARK	LOCATION	SERVICE	GPM	HD (FT.)	ELECTRICAL DATA			TYPE	TYPICAL UNIT MFG & MODEL NO.	REMARKS:
					HP	VOLTS	PH			
P-1	BOILER ROOM	LOOP PUMP	210	85	10	230	3	CENTRIFUGAL BASE MOUNTED	BELL AND GOSSETT 2.5BB SERIES E-1510	1,2
P-2	BOILER ROOM	LOOP PUMP	210	85	10	230	3	CENTRIFUGAL BASE MOUNTED	BELL AND GOSSETT 2.5BB SERIES E-1510	1,2
P-3	BOILER ROOM	BOILER CIRCULATOR PUMP	210	15	2	208	3	INLINE	BELL AND GOSSETT ECOCIRC XL 27-320	1,2
P-4	BOILER ROOM	BOILER CIRCULATOR PUMP	210	15	2	208	3	INLINE	BELL AND GOSSETT ECOCIRC XL 27-320	1,2
P-5	BOILER ROOM	BOILER CIRCULATOR PUMP	210	15	2	208	3	INLINE	BELL AND GOSSETT ECOCIRC XL 27-320	1,2

REMARKS:
1. PROVIDE FACTORY MOUNTED DISCONNECT
2. PROVIDE VFD

EXPANSION TANK SCHEDULE

MARK	LOCATION	SERVED	ACCEPT. GAL.	DIA (IN.)	HEIGHT (IN.)	WEIGHT FULL (LBS.)	TYPICAL UNIT MFG & MODEL NO.	REMARKS:
ET-1	BOILER ROOM	HOT WATER SYSTEM	132	24	78	1417	BELL AND GOSSETT B-500	1,2
ET-2	BOILER ROOM	HOT WATER SYSTEM	132	24	78	1417	BELL AND GOSSETT B-500	1,2

REMARKS:
1. REMOVABLE BLADDER TYPE
2. CHARGE TO 12PSI.

AIR SEPARATOR SCHEDULE

MARK	LOCATION	SERVED	GPM	DIA. (IN)	LNG. (IN)	STRAINER SQ. IN. FA	TYPICAL UNIT MFG & MODEL NO.
AS-1	BOILER ROOM	HOT WATER SYSTEM	225	16	31.44	140	BELL AND GOSSETT R-4F

REMARKS:

CONVECTOR SCHEDULE

MARK	SERVICE	MBH	LENGTH	HEIGHT	DEPTH	GPM	TYPICAL UNIT MFG & MODEL NO.	REMARKS:
CV-1	1C	2.7	28	24	4	0.5	SIGMA CFRB	1
CV-2	2B	2.7	28	24	4	0.5	SIGMA CFRB	1
CV-4	108	5	48	24	4	0.5	SIGMA CFRB	1
CV-5	109	5	48	24	4	0.5	SIGMA CFRB	1
CV-6	118	6.7	56	32	4	0.5	SIGMA CFRB	1
CV-7	118	6.7	56	32	4	0.5	SIGMA CFRB	1
CV-8	122	9.7	56	32	6	0.65	SIGMA CFRB	1
CV-9	129	9.8	64	24	6	0.65	SIGMA CFRB	1
CV-10	129	9.8	64	24	6	0.65	SIGMA CFRB	1
CV-11	132	9.8	64	24	6	0.65	SIGMA CFRB	1
CV-12	133	6.7	56	32	4	0.5	SIGMA CFRB	1
CV-13	133	6.7	56	32	4	0.5	SIGMA CFRB	1
CV-14	134	7.7	64	32	4	0.51	SIGMA CFRB	1
CV-15	134	7.7	64	32	4	0.51	SIGMA CFRB	1
CV-16	136A	2.7	34	28	4	0.5	SIGMA CFRB	1
CV-17	136A	2.7	34	28	4	0.5	SIGMA CFRB	1

REMARKS: 1.COLOR TO BE SELECTED BY ARCHITECT BASED ON MANUFACTURER'S STANDARD COLORS.

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PROJECT INFORMATION

Project Number
13296.23

Client Name
SUFFERN CSD

Project Name
RP CONNOR - BOILER CONVERSION

District Office Address
SUFFERN CENTRAL SCHOOL DISTRICT
45 MOUNTAIN AVENUE
HILLBURN, NY 10951

SUFFERN CSD
BID #SD-04-01-06-0-005-021

PROJECT ISSUE & REVISION SCHEDULE

No.	Date	Description

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SHEET INFORMATION

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