MECHANICAL CONTROLS LEGEND

SYMBOL	DESCRIPTION
AI	CONTROL POINT, ANALOG INPUT
AO	CONTROL POINT, ANALOG OUTPUT
DI	CONTROL POINT, DIGITAL INPUT
DO	CONTROL POINT, DIGITAL OUTPUT
A	AIRCUITY SENSOR
BLS	POSITIONING BLADE SWITCH
C	ELECTRICAL CURRENT SWITCH
CO	CARBON MONOXIDE SENSOR
CO_2	CARBON DIOXIDE SENSOR
DH	DUCT HEAT DETECTOR
DP	DIFFERENTIAL PRESSURE SWITCH
D	DUCT SMOKE DETECTOR
ES	END SWITCH
F	FLOW METER
FS	FLOW SWITCH
H	HUMIDISTAT
HT	HIGH TEMPERATURE THERMOSTAT
K	KEY OPERATED SWITCH
L	LEVEL SENSOR
LT	LOW TEMPERATURE THERMOSTAT (FREEZE)
M	MOTOR OR ACTUATOR
MS	MOISTURE SENSOR
O	OXYGEN SENSOR
OR	OVERRIDE BUTTON
OCC / E	OCCUPANCY SENSOR
P	PRESSURE SENSOR
PB	PUSH BUTTON
PPB	PURGE PUSH BUTTON
PS	PRESSURE SWITCH
RH	RELATIVE HUMIDITY SENSOR
RS	RADIANT SLAB / SNOW MELT SENSOR
S	WALL MOUNTED ROOM SENSOR (TEMP, RH, CO_2, CO, ETC.) REFER TO ROOM BY ROOM CONTROL MATRIX FOR SPECIFIC ROOM SENSOR TYPE(S).
T	TEMPERATURE SENSOR
TS	TIMER SWITCH
WCS	WINDOW CONTACT SWITCH
	AIRFLOW CONTROLLER
	AUTOMATIC CONTROL VALVE, 2-WAY
	AUTOMATIC CONTROL VALVE, 3-WAY
	AUTOMATIC CONTROL VALVE, 6-WAY
	BUTTERFLY VALVE, MOTORIZED
	CHILLED BEAM, ACTIVE
	CHILLED BEAM, PASSIVE
	COIL, COOLING
	COIL, HEATING
	COIL, REHEAT
	DAMPER, GRAVITY
	DAMPER, MOTORIZED OPPOSED BLADE
	DAMPER, MOTORIZED PARALLEL BLADE
	FAN; SUPPLY, RETURN OR EXHAUST
	FILTER
	HUMIDIFIER
	LAB AIR CONTROL VALVE
	LAB AIR CONTROL VALVE, VENTURI
	PUMP
	RADIANT CEILING PANEL
	RADIANT FLOOR
	STARTER / DISCONNECT
	VARIABLE FREQUENCY DRIVE
	VARIABLE AIR VOLUME BOX
	VARIABLE AIR VOLUME BOX w/ INTEGRAL REHEAT COIL
	VISUAL INDICATOR

MECHANICAL PIPING SYSTEMS LEGEND

SYMBOL	DESCRIPTION
	AUTOMATIC CONTROL VALVE
	BALANCE VALVE
	BALL VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	ISOLATION VALVE
	MULTI-PURPOSE VALVE (BALANCE, CHECK, SHUT-OFF)
	OUTSIDE SCREW & YOKE GATE VALVE (OS&Y)
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	3-WAY CONTROL VALVE
6	6-WAY CONTROL VALVE
	ELBOW, TURNED DOWN
	ELBOW, TURNED UP
	BRANCH OFF TOP OF MAIN
	BRANCH OFF BOTTOM OF MAIN
	PIPING TO BE REMOVED
C	CONDENSATE DRAIN LINE
CHGR	CHILLED GLYCOL RETURN
CHGS	CHILLED GLYCOL SUPPLY
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CPD	CONDENSATE PUMP DISCHARGE
CGR	CONDENSER GLYCOL RETURN
CGS	CONDENSER GLYCOL SUPPLY
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
DTWR	DUAL TEMPERATURE WATER RETURN
DTWS	DUAL TEMPERATURE WATER SUPPLY
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
HGR	HOT GLYCOL RETURN
HGS	HOT GLYCOL SUPPLY
HPC	HIGH PRESSURE CONDENSATE
HPS	HIGH PRESSURE STEAM
HRGR	HEAT RECOVERY GLYCOL RETURN
HRGS	HEAT RECOVERY GLYCOL SUPPLY
HRWR	HEAT RECOVERY WATER RETURN
HRWS	HEAT RECOVERY WATER SUPPLY
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM
MCHWR	MEDIUM TEMPERATURE CHILLED WATER RETURN
MCHWS	MEDIUM TEMPERATURE CHILLED WATER SUPPLY
MPC	MEDIUM PRESSURE CONDENSATE
MPS	MEDIUM PRESSURE STEAM
PHHWR	PRE-HEAT HOT WATER RETURN
PHHWS	PRE-HEAT HOT WATER SUPPLY
RG	REFRIGERANT HOT GAS
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTION
	PIPE GUIDE
	PIPE ANCHOR
	AIR VENT (MANUAL OR AUTOMATIC)
	FINNED TUBE RADIATION
	FLOAT & THERMOSTATIC TRAP ASSEMBLY
	INVERTED BUCKET TRAP ASSEMBLY
	PRESSURE GAUGE
	PUMP
	STRAINER
	THERMOMETER
	UNION
	DEMOLITION WORK: POINT OF REMOVAL NEW WORK: POINT OF ATTACHMENT

MECHANICAL AIR SYSTEMS LEGEND

SYMBOL	DESCRIPTION
	SUPPLY DUCT UP
	SUPPLY DUCT DOWN
	RETURN DUCT UP
	RETURN DUCT DOWN
	EXHAUST DUCT UP
	EXHAUST DUCT DOWN
	EXISTING DUCT (SINGLE LINE)
	EXISTING DUCT (DOUBLE LINE)
	NEW DUCT (SINGLE LINE)
	NEW DUCT (DOUBLE LINE)
	ACOUSTICALLY LINED DUCT (SINGLE LINE)
	ACOUSTICALLY LINED DUCT (DOUBLE LINE)
	FIRE WRAPPED DUCT (DOUBLE LINE)
	DUCT TO BE REMOVED (SINGLE LINE)
	DUCT TO BE REMOVED (DOUBLE LINE)
	FLUSH CAP, SINGLE LINE
	SUPPLY DIFFUSER
	RETURN GRILLE
	EXHAUST GRILLE
	SUPPLY AIR FLOW
	RETURN/EXHAUST AIR FLOW
LD	LOUVER DOOR (SIZE AS NOTED)
UD	UNDER CUT DOOR
	REHEAT COIL
	VAV BOX
	VAV BOX WITH INTEGRAL SOUND ATTENUATOR
AFC	AIRFLOW CONTROLLER
AFCD	AIRFLOW CONTROLLER WITH INTEGRAL SHUTOFF DAMPER
	LABORATORY AIRFLOW CONTROL VALVE
	SOUND ATTENUATOR
ACD	AUTOMATIC CONTROL DAMPER
FD	FIRE DAMPER
GD	GRAVITY DAMPER
VD	VOLUME DAMPER
FSD	FIRE SMOKE DAMPER
SD	SMOKE DAMPER
	OPPOSED BLADE DAMPER
	PARALLEL BLADE DAMPER
	HUMIDIFIER
	DEMOLITION WORK: POINT OF REMOVAL NEW WORK: POINT OF ATTACHMENT

MECHANICAL ABBREVIATIONS LEGEND

AC	AIR CURTAIN
ACCU	AIR COOLED CONDENSING UNIT
ACU	AIR CONDITIONING UNIT
ACV	AIRFLOW CONTROL VALVE
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AS	AIR SEPARATOR
B	BOILER
BMS	BUILDING MANAGEMENT SYSTEM
CA	COMBUSTION AIR
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CP	CONDENSATE PUMP
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
DN	DOWN
DOAS	DEDICATED OUTDOOR AIR SYSTEM
DX	DIRECT EXPANSION
EA	EXHAUST AIR
EF	EXHAUST FAN
EMH	ELECTRICAL MANHOLE
ERV	ENERGY RECOVERY VENTILATOR
ET	EXPANSION TANK
FCU	FAN COIL UNIT
FTR	FINNED TUBE RADIATION
GEN	GENERATOR
GEX	GENERAL EXHAUST
GPM	GALLONS PER MINUTE
HRU	HEAT RECOVERY UNIT
HUM	HUMIDIFIER
HWC	HOT WATER COIL
HX	HEAT EXCHANGER
LEA	LABORATORY EXHAUST AIR
LSA	LABORATORY SUPPLY AIR
M	MANIFOLD FOR RADIANT FLOOR
NLEA	NON-LAB EXHAUST AIR
NLSA	NON-LAB SUPPLY AIR
OA	OUTSIDE AIR
P	PUMP
RA	RETURN AIR
RCP	RADIANT CEILING PANEL
RHC	REHEAT COIL
SA	SUPPLY AIR
SATT	SOUND ATTENUATOR
SF	SUPPLY FAN
SMH	STEAM MANHOLE
TYP	TYPICAL
UH	UNIT HEATER
VAV	VARIABLE AIR VOLUME
VFD	VARIABLE FREQUENCY DRIVE
VRF	VARIABLE REFRIGERANT FLOW

MECHANICAL GENERAL NOTES

A. ALL MATERIALS, METHODS AND EQUIPMENT INSTALLED UNDER THIS CONTRACT SHALL BE IN COMPLIANCE WITH ALL APPLICABLE CODES AND REGULATIONS.

B. COORDINATE EXACT LOCATIONS, MOUNTING HEIGHTS, AND FINISHES WITH THE ARCHITECTURAL DRAWINGS.

C. ALL EQUIPMENT SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS. IN THE INSTANCE WHERE EQUIPMENT MUST BE INSTALLED BEHIND A WALL OR ABOVE AN INACCESSIBLE CEILING, AN APPROPRIATELY SIZED ACCESS DOOR SHALL BE PROVIDED. REFER TO ARCHITECTURAL PLANS FOR ACCESS DOOR LOCATIONS IN WALLS, CEILINGS AND FLOORS.

D. IN THE EVENT OF A CONFLICT BETWEEN DOCUMENTS, ARCHITECT SHALL BE NOTIFIED AND THE LARGER QUANTITY AND/OR MORE EXPENSIVE ITEMS SHALL BE CARRIED AS PART OF THE BID.

E. THERMOSTAT AND SWITCH LOCATIONS SHALL BE GENERALLY AS SHOWN. ACTUAL LOCATIONS SHALL BE COORDINATED WITH ARCHITECTURAL ELEVATIONS.

F. ALL FLOOR MOUNTED AIR HANDLING UNITS SHALL BE INSTALLED ON A 6" CONCRETE HOUSEKEEPING PAD AND ALL OTHER FLOOR MOUNTED EQUIPMENT SHALL BE INSTALLED ON A 4" CONCRETE HOUSEKEEPING PAD, UNLESS OTHERWISE NOTED.

G. PROVIDE SEISMIC RESTRAINTS ON ALL EQUIPMENT AND PIPING IN COMPLIANCE WITH PROJECT SPECIFICATIONS AND APPLICABLE CODES.

H. THESE PLANS ARE DIAGRAMMATIC IN NATURE. EVERY ELBOW, FITTING, ETC. ARE NOT SHOWN. PROVIDE SUCH COMPONENTS AS REQUIRED FOR COMPLETE INSTALLATION, PROPERLY COORDINATED WITH ALL TRADES.

I. THE HVAC SYSTEMS FOR THIS BUILDING HAVE BEEN DESIGNED AND MODELED FOR LOW TRANSPORT ENERGY (LOW VELOCITY AND LOW PRESSURE DROP). WHEN OFFSETTING THE DUCTWORK AND PIPING IS REQUIRED, THE CONTRACTOR SHALL MAKE EVERY EFFORT TO MINIMIZE THE NUMBER OF FITTINGS AND TRANSITIONS AND TO PROVIDE FITTING TYPES WITH THE LEAST POSSIBLE PRESSURE DROP.

J. ANY DUCTWORK AND PIPING NOT SERVING STAIRWELLS, SHAFTS, ELEVATOR MACHINE ROOMS OR EMERGENCY ELECTRICAL ROOMS SHALL NOT PENETRATE THOSE WALLS.

K. DUCTWORK AND/OR PIPING SHALL NOT BE INSTALLED OVER ELECTRICAL PANELS.

L. COORDINATE NEW DUCTWORK AND PIPING WITH OTHER TRADES. CONTRACTOR SHALL FIELD VERIFY AVAILABLE CEILING CLEARANCE PRIOR TO BID.

M. PROVIDE VOLUME DAMPERS IN ALL SUPPLY, RETURN, OUTSIDE AIR AND EXHAUST BRANCH DUCTS NEAR THE MAIN DUCT TAKE-OFF AS REQUIRED TO PROPERLY BALANCE THE ENTIRE AIR SYSTEM. PROVIDE REMOTELY OPERATED (CABLE) DAMPERS WHEN DAMPERS ARE INACCESSIBLE. COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLANS.

N. DUCT SIZING SHOWN INDICATES CLEAR INSIDE DIMENSIONS OF DUCT AND INSULATION.

O. PROVIDE NEW DUCTWORK, DIFFUSERS AND GRILLES WHERE SHOWN, SEE SPECIFICATIONS. COORDINATE NEW DIFFUSER LOCATIONS WITH ARCHITECT'S REFLECTED CEILING PLAN.

P. ALL FLEXIBLE DUCT SHALL BE A MAXIMUM OF 3 FEET LONG WITH NO BENDS GREATER THAN 45 DEGREES.

Q. SUPPORT ALL PIPING FROM STRUCTURE ABOVE. WHEN PIPE RUNS ARE PERPENDICULAR TO BEAMS, INSTALL PIPING TIGHT TO BOTTOM OF BEAM TO MAXIMIZE SPACE. WHEN PIPE RUNS ARE PARALLEL TO BEAMS, INSTALL PIPING TIGHT TO FLOOR SLAB. PROVIDE ALL NECESSARY TRANSITIONS AND FITTINGS.

R. PROVIDE EXPANSION COMPENSATORS, LOOPS, ANCHORS AND GUIDES FOR ALL PIPING SYSTEMS OPERATING ABOVE AMBIENT CONDITIONS AND INSTALL AS DICTATED BY CODE AND INDUSTRY STANDARDS. EQUIPMENT AND INSTALLATION DETAILS SHALL BE SUBMITTED FOR APPROVAL. THE CONTRACTOR SHALL HIRE AN ENGINEER TO REVIEW DETAILS AND PREPARE COMPLETE DESIGN FOR EXPANSION COMPENSATION SYSTEMS.

S. AIR VENTS SHALL BE PROVIDED AT ALL HIGH POINTS AND DRAINS SHALL BE PROVIDED AT ALL LOW POINTS FOR HYDRONIC SYSTEMS.

T. ALL SUPPLY AND RETURN BRANCH PIPING SHALL BE MINIMUM 3/4" UNLESS OTHERWISE NOTED.

U. PROVIDE BRANCH ISOLATION VALVES OFF OF ALL BUILDING PIPING MAINS ON EACH FLOOR.

V. REFRIGERANT PIPING SHOWN SIZED ON FLOOR PLANS SHALL BE USED AS A GUIDE. THE ACTUAL SIZE AND FITTINGS MAY VARY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND THE MANUFACTURER OF THE EQUIPMENT TO REVIEW THE PIPE SIZING AND MAKE THE NECESSARY ADJUSTMENTS IN SIZES.

W. PROVIDE CLEANOUTS IN ALL MAIN AND BRANCH CONDENSATE PIPING TO ALLOW FOR CLEANING OF ALL PIPING.

LEGEND NOTE

THESE ARE THE GENERAL LEGENDS OF SYMBOLS AND ABBREVIATIONS, AND SHALL BE USED AS A REFERENCE TO DEFINE ITEMS INDICATED ON DRAWINGS. NOT ALL SYMBOLS OR ABBREVIATIONS DEFINED ARE NECESSARILY USED ON THIS PROJECT.

MECHANICAL DEMOLITION NOTES

A. EXISTING MECHANICAL ITEMS THAT ARE BEING DISCONNECTED AND REMOVED SHALL BE DISPOSED OF PROPERLY.

B. NOTIFY CONSTRUCTION MANAGER OF OPENINGS CAUSED BY REMOVAL OF EXISTING EQUIPMENT. ENSURE THE PATCHING IS COMPLETE.

C. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL RELATED DEMOLITION WORK.

D. REMOVE AND PROPERLY DISPOSE OF EQUIPMENT INCLUDING ELECTRICAL CONNECTIONS BACK TO PANEL.

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CONSULTANTS:

PROJECT NAME:

Juliet W. Long School
1854 Route 12
Gales Ferry, CT 06335

KEYPLAN

REVISIONS

REV. NO.	DATE	DESCRIPTION

DRAWING TITLE:

MECHANICAL LEGENDS

DRAWING NUMBER:

M000

DATE: 08/05/24
DRAWN BY: JDP/SPM
CHECKED BY: RSM
SCALE: N.T.S.
PROJ #: 2024087.00

1 MECHANICAL PIPING DEMOLITION PLAN
SCALE: 1/8"=1'-0"

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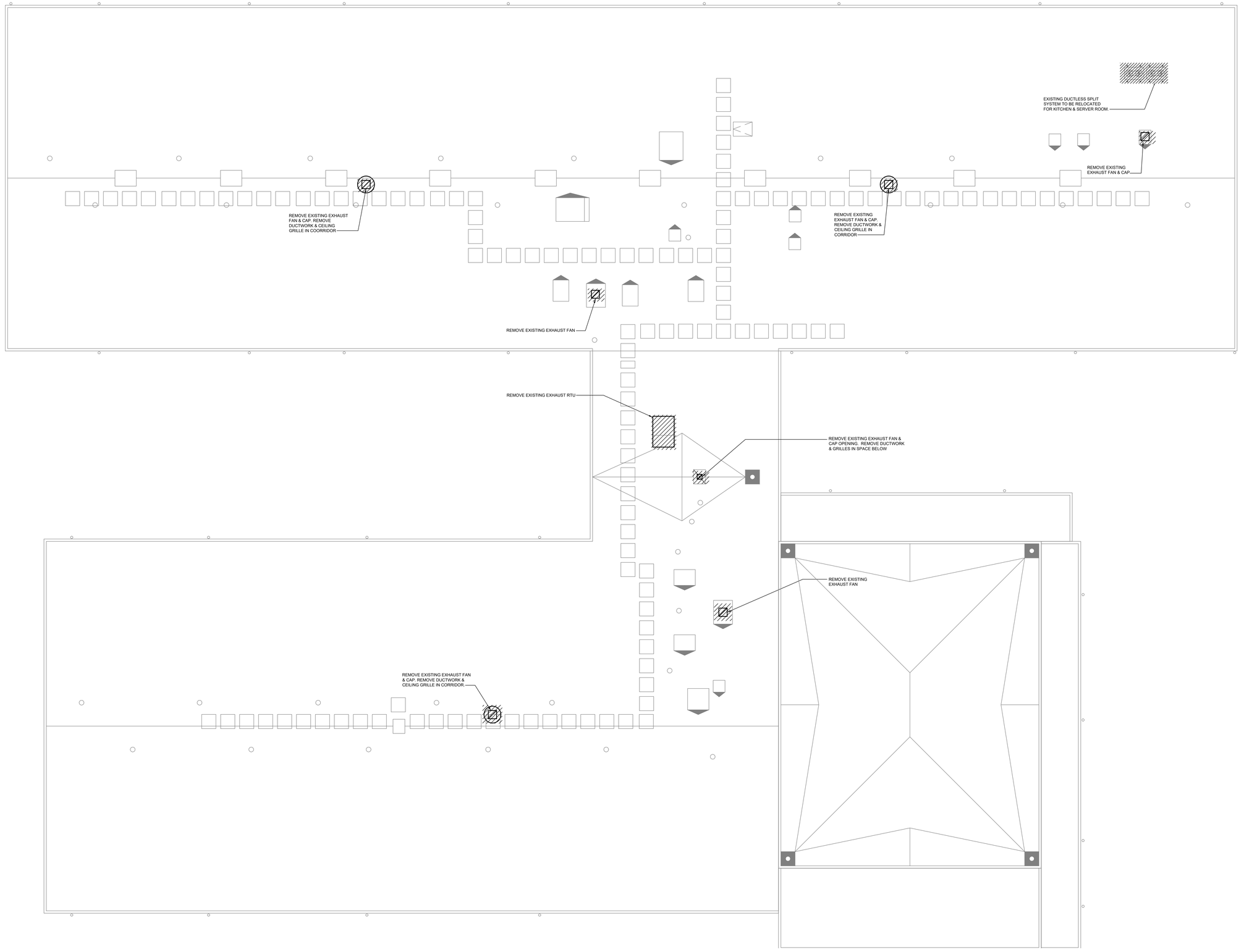
MECHANICAL PIPING DEMOLITION PLAN

DATE: 08/05/24
DRAWN BY: JDP/SPM
CHECKED BY: RSM
SCALE: 1/8"=1'-0"
PROJ #: 2024087.00

DRAWING NUMBER:
MPD101



1 MECHANICAL ROOF DEMOLITION PLAN
SCALE: 1/8"=1'-0"

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KEYPLAN

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REV. NO.	DATE	DESCRIPTION

DRAWING TITLE:
MECHANICAL ROOF DEMOLITION PLAN

DATE: 08/05/24
DRAWN BY: JDP/SPM
CHECKED BY: RSM
SCALE: 1/8"=1'-0"
PROJ #: 2024087.00

DRAWING NUMBER:
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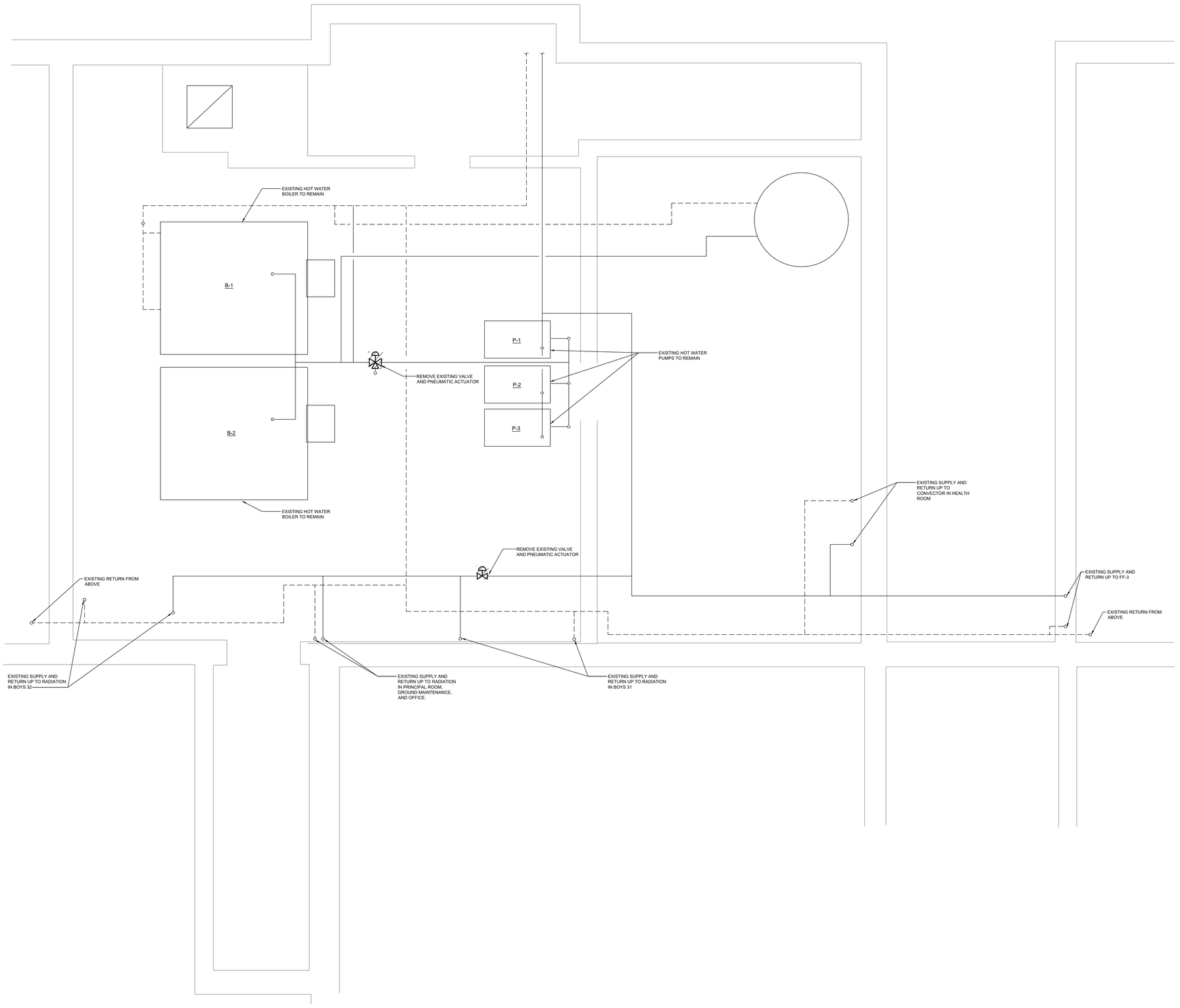

1 BOILER ROOM DEMOLITION PLAN
SCALE: 1/2"=1'-0"

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KEYPLAN

REVISIONS

REV. NO.	DATE	DESCRIPTION

DRAWING TITLE:
BOILER ROOM
DEMOLITION PLAN

DATE: 08/05/24
DRAWN BY: JDP/SPM
CHECKED BY: RSM
SCALE: 1/2"=1'-0"
PROJ #: 2024087.00

DRAWING NUMBER:
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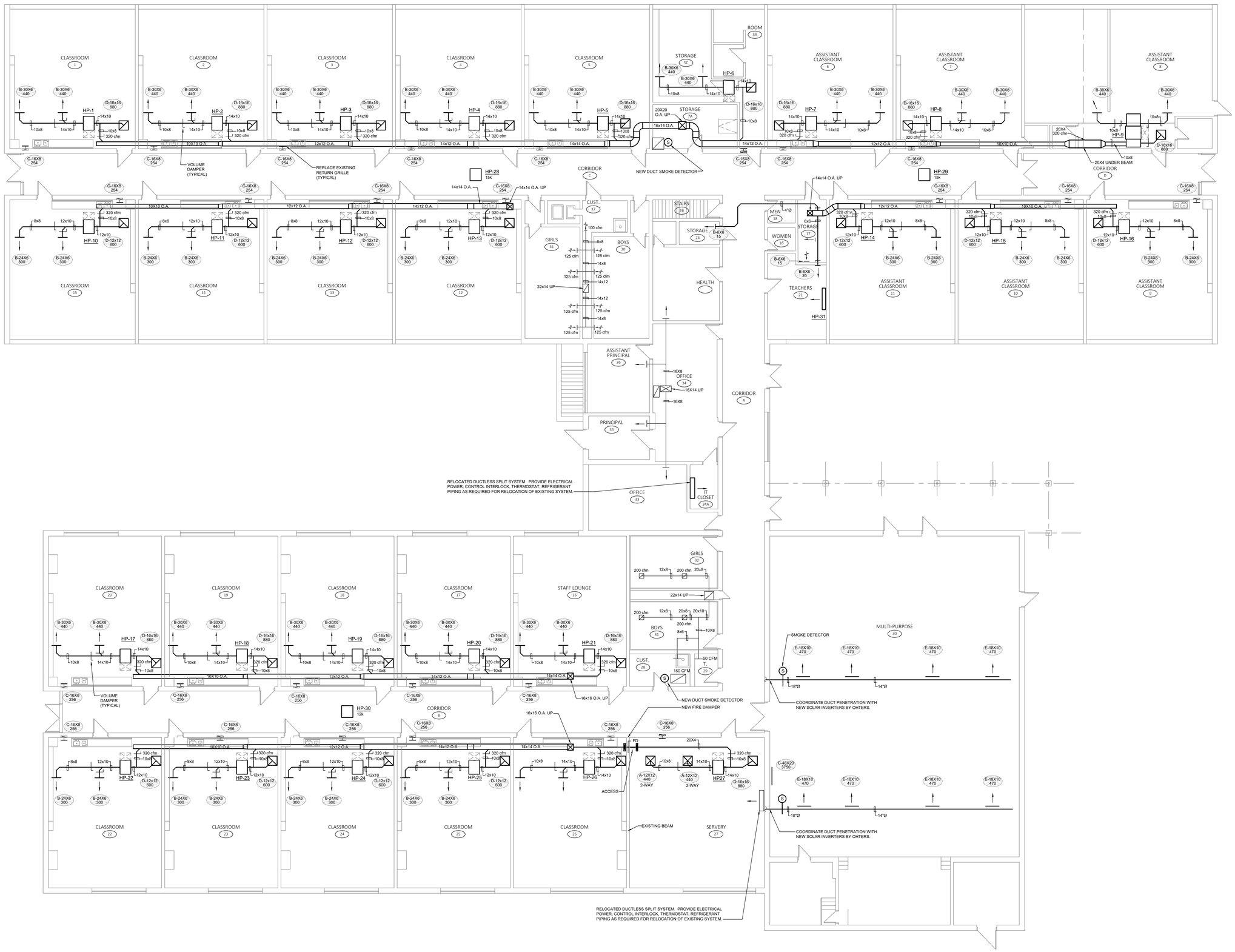

1 MECHANICAL AIR FLOOR PLAN
SCALE: 1/8"=1'-0"

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REV. NO.	DATE	DESCRIPTION

DRAWING TITLE:
MECHANICAL AIR FLOOR PLAN

DATE: 08/05/24
DRAWN BY: JDP/SPM
CHECKED BY: RSM
SCALE: 1/8"=1'-0"
PROJ #: 2024087.00

DRAWING NUMBER:
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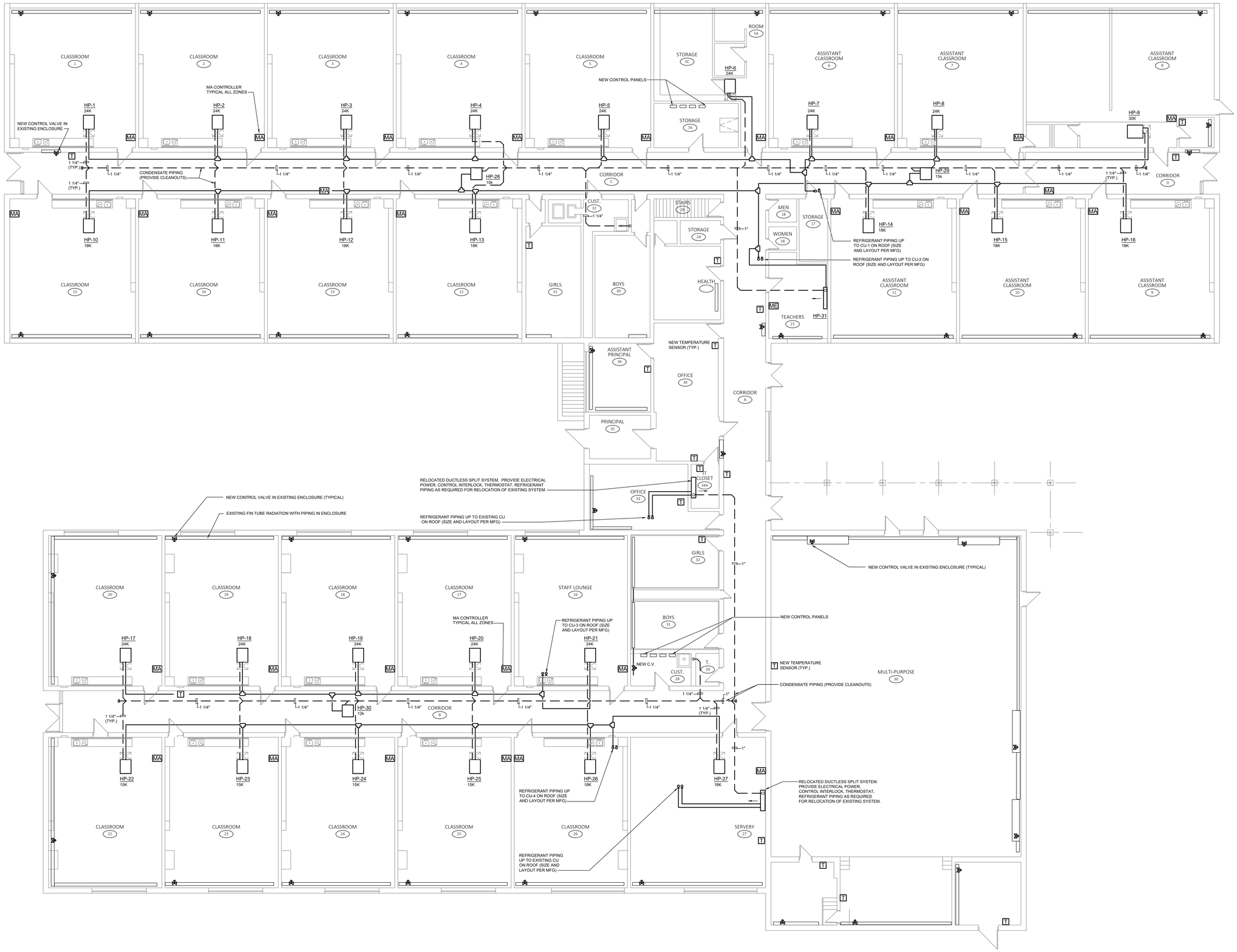

1 MECHANICAL PIPING FLOOR PLAN
SCALE: 1/8"=1'-0"

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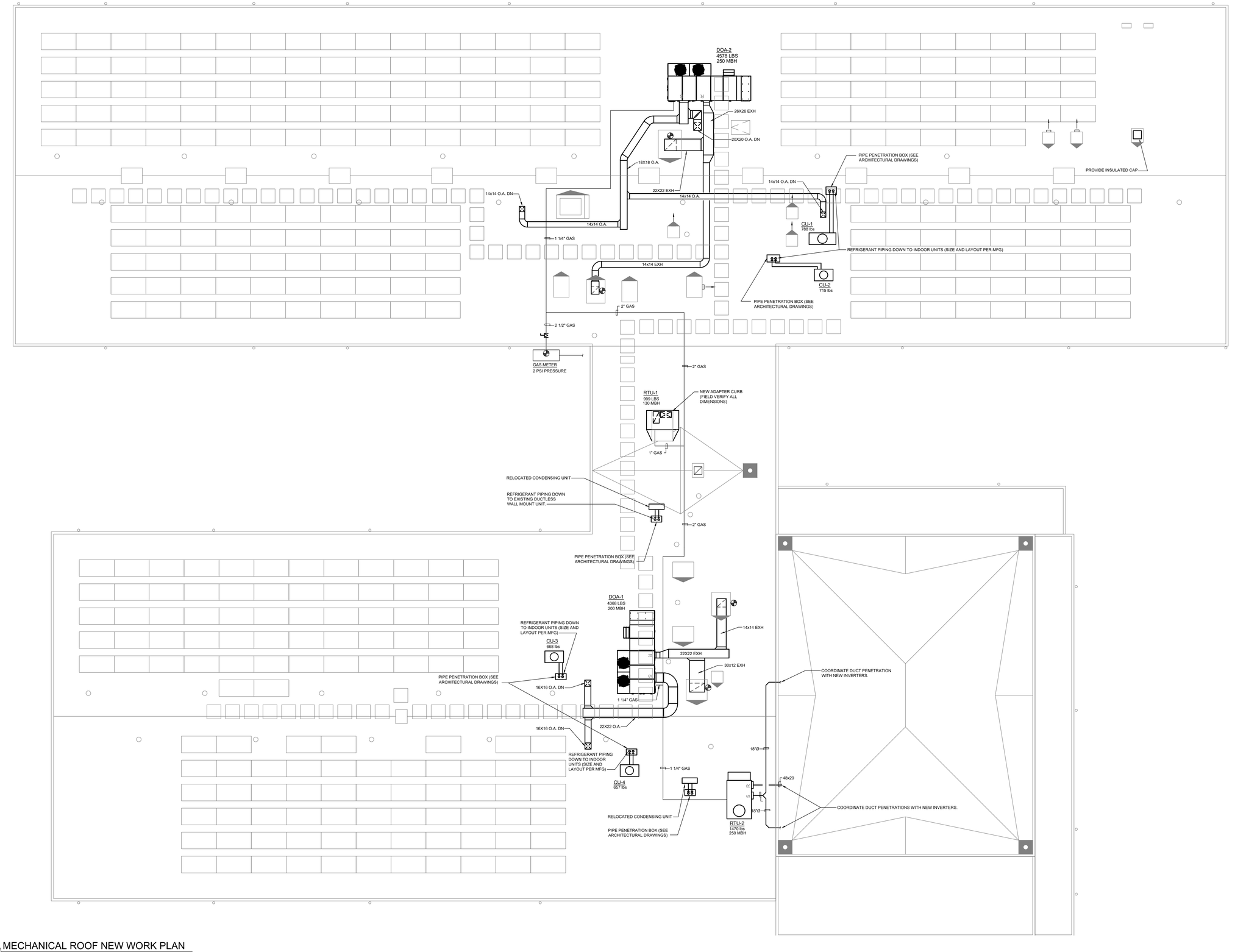

1 MECHANICAL ROOF NEW WORK PLAN
SCALE: 1/8"=1'-0"

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MECHANICAL ROOF NEW WORK PLAN

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SCALE: 1/8"=1'-0"
PROJ #: 2024087.00

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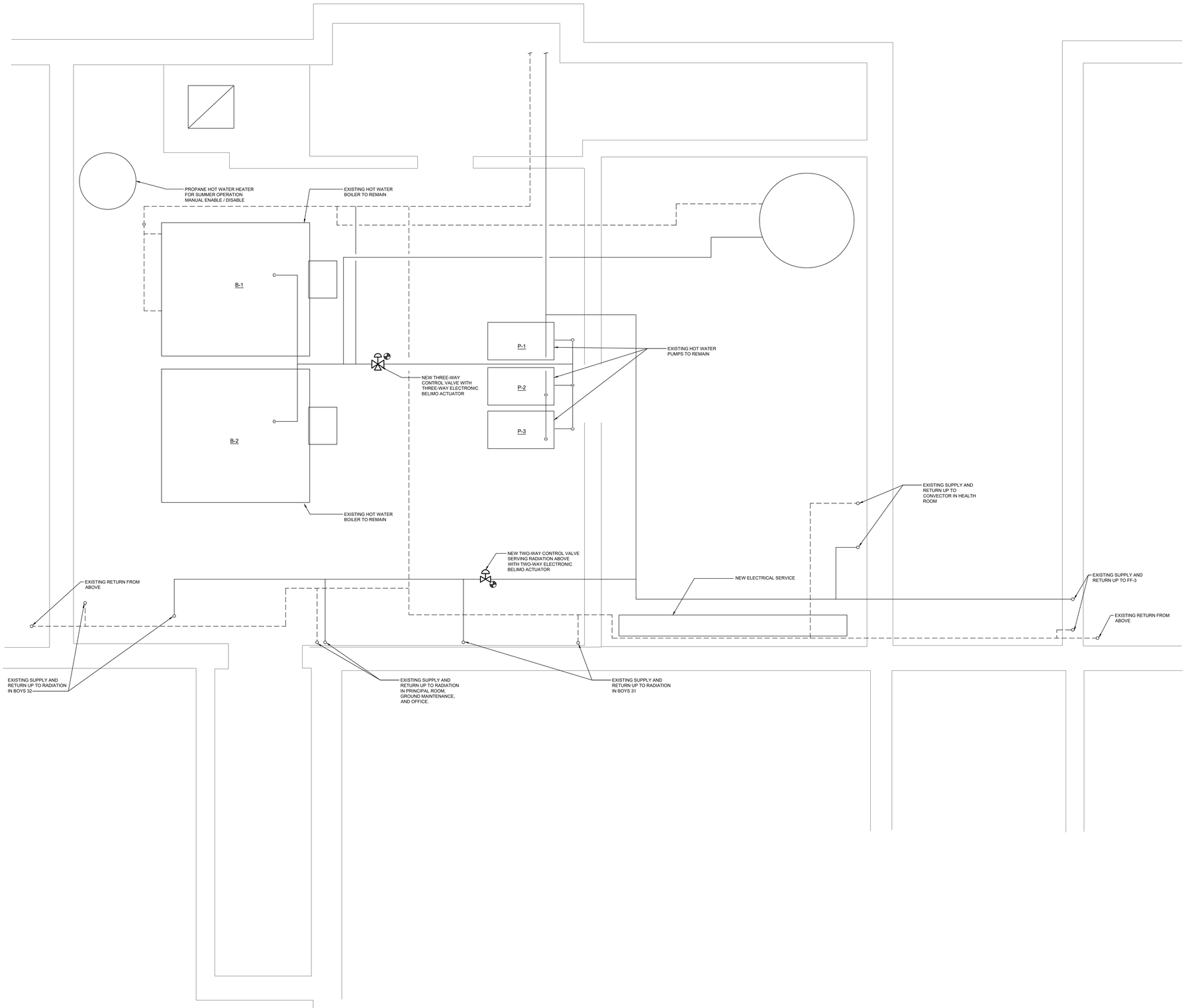

1 BOILER ROOM NEW WORK PLAN
SCALE: 1/2"=1'-0"

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KEYPLAN

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REV. NO.	DATE	DESCRIPTION

DRAWING TITLE:
BOILER ROOM
NEW WORK PLAN

DATE: 08/05/24	***DRAWING NUMBER:***
DRAWN BY: JDP/SPM	M201
CHECKED BY: RSM	
SCALE: 1/2"=1'-0"	
PROJ #: 2024087.00	

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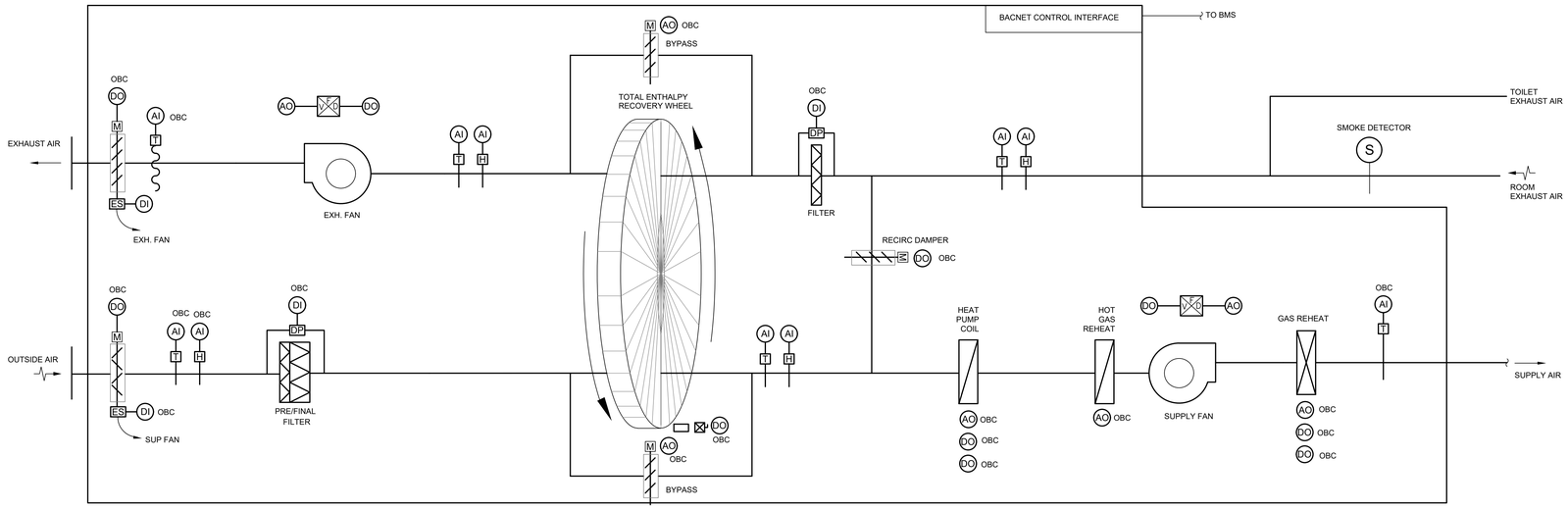

NOTES:

1. BMS SHALL ENABLE UNITS BASED ON TIME SCHEDULE
2. UNIT SHALL SUPPLY 70°F discharge temperature during heating and cooling modes
3. UNIT SHALL BE OFF DURING UN-OCCUPIED PERIODS
4. HOT GAS REHEAT SHALL BE UTILIZED FOR DEHUMIDIFCATION
5. BMS SHALL PROVIDE FOLLOWING ALARMS (EITHER HARD WIRED OR VIA BACNET)
   A - FAN FAILURE
   B - DAMPER FAILURE
   D - HIGH HUMIDITY
   E - VFD FAULT (SUPPLY & RETURN FAN & WHEEL)
   F - FILTER DIRTY
   G - WHEEL FAILURE
   H - COMPRESSOR FAILURE
   I - GAS HEAT ALARM
   J - HIGH / LOW DISCHARGE AIR TEMP

1. BMS SHALL INTERFACE WITH DOA SYSTEM VIA BACNET. COORDINATE WITH DOA MFG & OWNER TO DETERMINE THE NUMBER OF POINTS NEEDED TO SATISFY CONTROL SEQUENCE AND PROVIDE ADEQUATE MONITORING FOR MAINTENANCE PERSONNEL .

BMS
OUTDOOR TEMP & HUMIDITY SENSOR

1 HEAT RECOVERY AIR HANDLING UNIT CONTROL DIAGRAM (DOA#)
SCALE: N.T.S.

CONTROLS LEGEND

AO	ANALOG OUTPUT
AI	ANALOG INPUT
DO	DIGITAL OUTPUT
DI	DIGITAL INPUT
T	TEMPERATURE SENSOR
S	SMOKE DETECTOR
DP	DIFFERENTIAL PRESSURE SENSOR
H	HUMIDITY SENSOR
LT	FREEZE PROTECTION THERMOSTAT
P	STATIC PRESSURE SENSOR
T	PNEUMATIC THERMOSTAT
T	ELECTRIC THERMOSTAT
M	MOTOR STARTER
VFD	VARIABLE FREQUENCY DRIVE
GWS	GLYCOL WATER SUPPLY
GWR	GLYCOL WATER RETURN
GS	GLYCOL SUPPLY
GR	GLYCOL RETURN
STM	STEAM SUPPLY
CS	CURRENT SENSOR
CO2	CARBON DIOXIDE SENSOR
BMS	BUILDING MANAGEMENT SYSTEM POINT
OBC	ON BOARD CONTROLLER POINT

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PROJECT NAME:
Juliet W. Long School
1854 Route 12
Gales Ferry, CT 06335

KEYPLAN

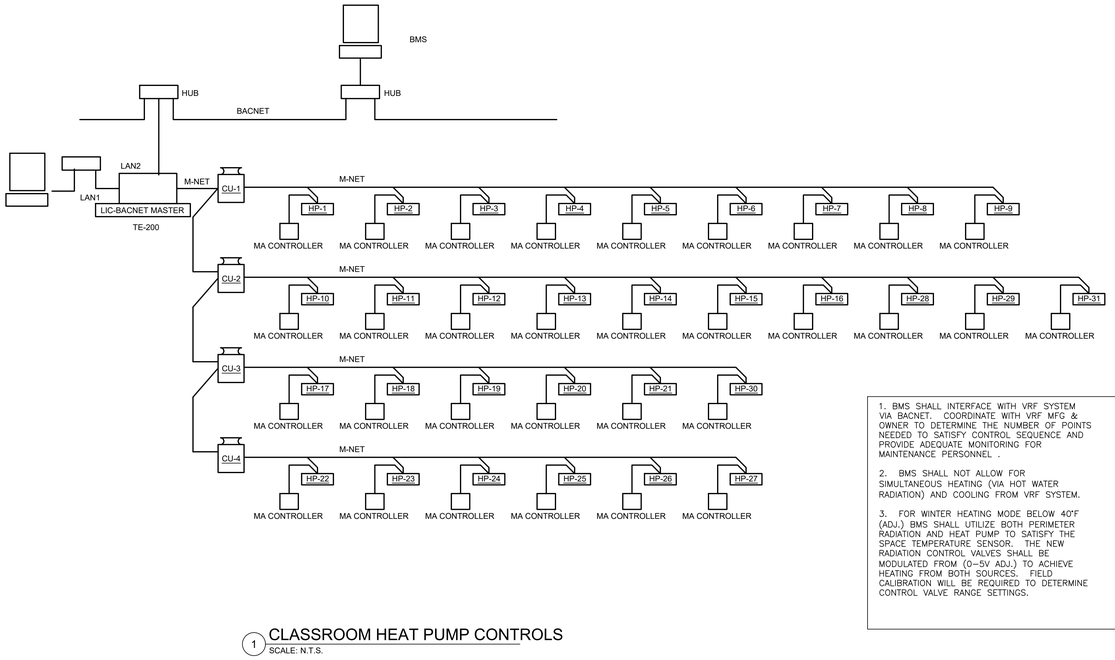
REVISIONS

REV. NO.	DATE	DESCRIPTION

DRAWING TITLE:
MECHANICAL CONTROLS

DATE: 08/05/24
DRAWN BY: JDP/SPM
CHECKED BY: RSM
SCALE: N.T.S.
PROJ #: 2024087.00

DRAWING NUMBER:
M300

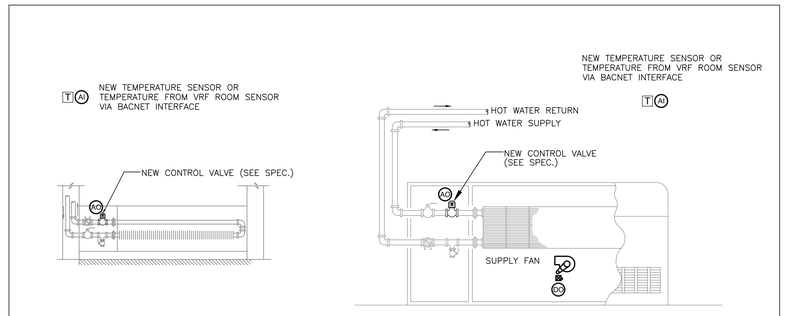


1. BMS SHALL INTERFACE WITH VRF SYSTEM VIA BACNET. COORDINATE WITH VRF MFG & OWNER TO DETERMINE THE NUMBER OF POINTS NEEDED TO SATISFY CONTROL SEQUENCE AND PROVIDE ADEQUATE MONITORING FOR MAINTENANCE PERSONNEL .

2. BMS SHALL NOT ALLOW FOR SIMULTANEOUS HEATING (VIA HOT WATER RADIATION) AND COOLING FROM VRF SYSTEM.

3. FOR WINTER HEATING MODE BELOW 40°F (ADJ.) BMS SHALL UTILIZE BOTH PERIMETER RADIATION AND HEAT PUMP TO SATISFY THE SPACE TEMPERATURE SENSOR. THE NEW RADIATION CONTROL VALVES SHALL BE MODULATED FROM (0-5V ADJ.) TO ACHIEVE HEATING FROM BOTH SOURCES. FIELD CALIBRATION WILL BE REQUIRED TO DETERMINE CONTROL VALVE RANGE SETTINGS.

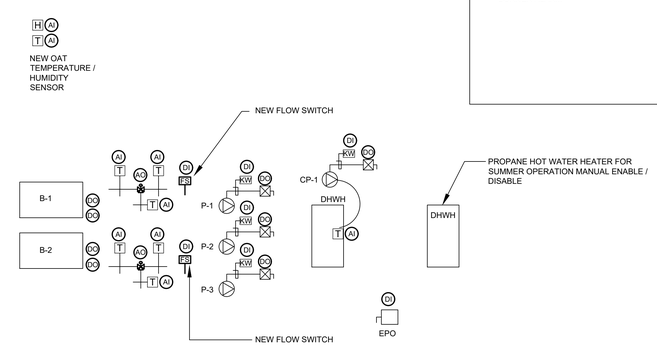
1 CLASSROOM HEAT PUMP CONTROLS
SCALE: N.T.S.



2 EXISTING RADIATION & CUH CONTROLS
SCALE: N.T.S.

NEW CONTROL SYSTEM NOTES:

1. EXISTING CONTROL SYSTEM IN BUILDING IS PNEUMATIC. ALL EXISTING PNEUMATIC CONTROLS SHALL BE REPLACED WITH NEW DDC CONTROLS.
2. NEW CONTROL SYSTEM SHALL BE BY HONEYWELL, DISTEC OR TRANE-LynxSpring (NIAGARA BASED) .
3. NEW CONTROL SYSTEM SHALL INCLUDE HEAD END. IF HONEYWELL IS CHOSEN THE EXISTING SYSTEM IN THE ADJACENT BUILDING CAN BE EXPANDED AS REQUIRED.



NOTES:

1. CONTROL SYSTEM SHALL ENABLE ONE BOILER MAX DUE TO THE ADDITION OF GAS HEAT AND HEAT PUMP OPERATION.

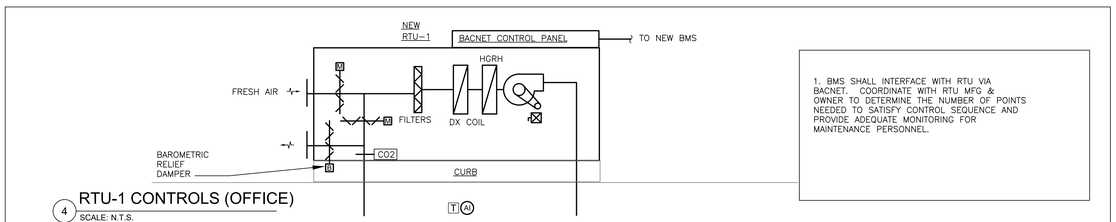
2. BOILERS SHALL BE ENABLED IN LEAD/LAG SEQUENCE.

3. 3-WAY VALVES SHALL MODULATE TO MAINTAIN HOT WATER SUPPLY TEMPERATURE SETPOINT AS DETERMINED BY O.A. RESET SCHEDULE

4. IF PUMP FAILS AS SENSED BY FLOW SWITCH, ENABLE STANDBY PUMP.

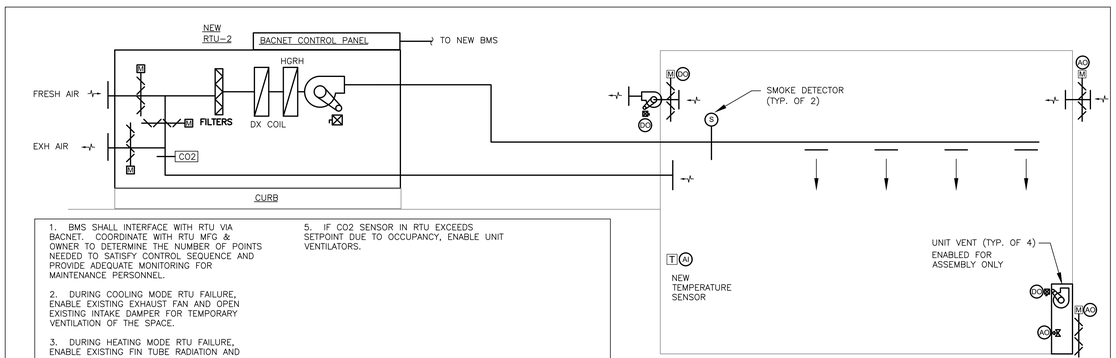
5. ALARMS
- HIGH/LOW HOT WATER SUPPLY TEMP.
- PUMP FAILURE
- BURNER ALARM

3 BOILER ROOM
SCALE: N.T.S.



1. BMS SHALL INTERFACE WITH RTU VIA BACNET. COORDINATE WITH RTU MFG & OWNER TO DETERMINE THE NUMBER OF POINTS NEEDED TO SATISFY CONTROL SEQUENCE AND PROVIDE ADEQUATE MONITORING FOR MAINTENANCE PERSONNEL.

4 RTU-1 CONTROLS (OFFICE)
SCALE: N.T.S.



1. BMS SHALL INTERFACE WITH RTU VIA BACNET. COORDINATE WITH RTU MFG & OWNER TO DETERMINE THE NUMBER OF POINTS NEEDED TO SATISFY CONTROL SEQUENCE AND PROVIDE ADEQUATE MONITORING FOR MAINTENANCE PERSONNEL.

2. DURING COOLING MODE RTU FAILURE, ENABLE EXISTING EXHAUST FAN AND OPEN EXISTING INTAKE DAMPER FOR TEMPORARY VENTILATION OF THE SPACE.

3. DURING HEATING MODE RTU FAILURE, ENABLE EXISTING FIN TUBE RADIATION AND UNIT VENTILATORS.

4. FOR WINTER HEATING MODE BELOW 40°F (ADJ.) BMS SHALL UTILIZE BOTH PERIMETER RADIATION AND RTU (GAS HEAT) TO SATISFY THE SPACE TEMPERATURE SENSOR. THE NEW RADIATION CONTROL VALVES SHALL BE MODULATED FROM (0-5V ADJ.) TO ACHIEVE HEATING FROM BOTH SOURCES. FIELD CALIBRATION WILL BE REQUIRED TO DETERMINE CONTROL VALVE RANGE SETTINGS.

5. IF CO2 SENSOR IN RTU EXCEEDS SETPOINT DUE TO OCCUPANCY, ENABLE UNIT VENTILATORS.

5 RTU-2 CONTROLS (GYM)
SCALE: N.T.S.

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Connecticut | Massachusetts | North Carolina

CONSULTANTS:

PROJECT NAME:
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1854 Route 12
Gales Ferry, CT 06335

KEYPLAN

REVISIONS

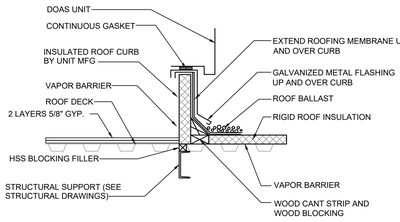
REV. NO.	DATE	DESCRIPTION

DRAWING TITLE:
MECHANICAL CONTROLS

DATE: 08/05/24	DRAWING NUMBER: M301
DRAWN BY: JDP/SPM	
CHECKED BY: RSM	
SCALE: N.T.S.	
PROJ #: 2024087.00	

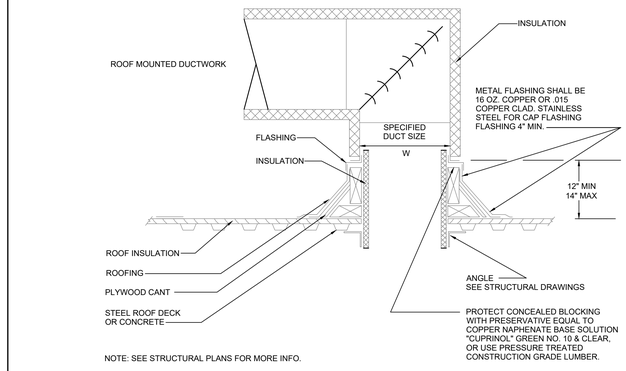
GENERAL NOTES

1. FLOOR PLANS ARE DIAGRAMMATIC ONLY. CONTRACTOR SHALL PERFORM DETAILED SITE VISIT PRIOR TO BIDDING JOB TO LOOK ABOVE CEILINGS WHERE NEW DUCTWORK AND PIPING IS RUN.
2. BALANCING CONTRACTOR SHALL PROVIDE AIR BALANCING ON ALL EXISTING AND NEW REGISTERS AND ALL NEW FANS. BALANCING CONTRACTOR SHALL PROVIDE WATER BALANCING ON ALL EXISTING AND NEW EQUIPMENT. BALANCING CONTRACTOR SHALL WORK WITH CONTROLS CONTRACTOR AS REQUIRED FOR USING VFD'S SETTINGS TO SATISFY AIRFLOW REQUIREMENTS.
3. ROOF MOUNTED DUCTWORK AND EQUIPMENT SHALL BE COORDINATED WITH EXISTING SOLAR PANELS, POWER WIRING, ROOF DRAINS AND PLUMBING VENTS.
4. SEE STRUCTURAL PLANS FOR EXACT LOCATIONS OF UNITS.



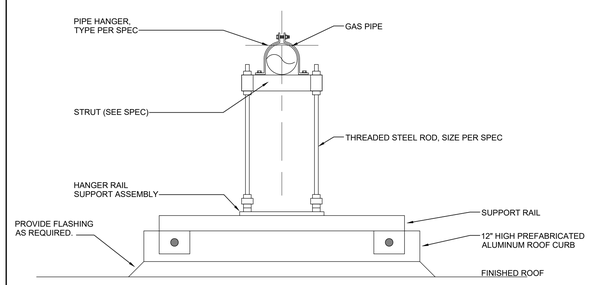
NOTE: SEE STRUCTURAL PLANS FOR MORE INFO.

1 DOAS & RTU CURB DETAIL
SCALE: NOT TO SCALE

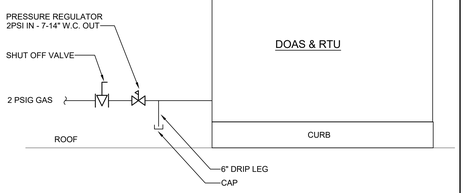


NOTE: SEE STRUCTURAL PLANS FOR MORE INFO.

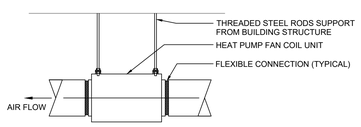
2 ROOF DUCT PENETRATION DETAIL
SCALE: NOT TO SCALE



3 ROOF MOUNTED PIPE SUPPORT DETAIL
SCALE: NOT TO SCALE



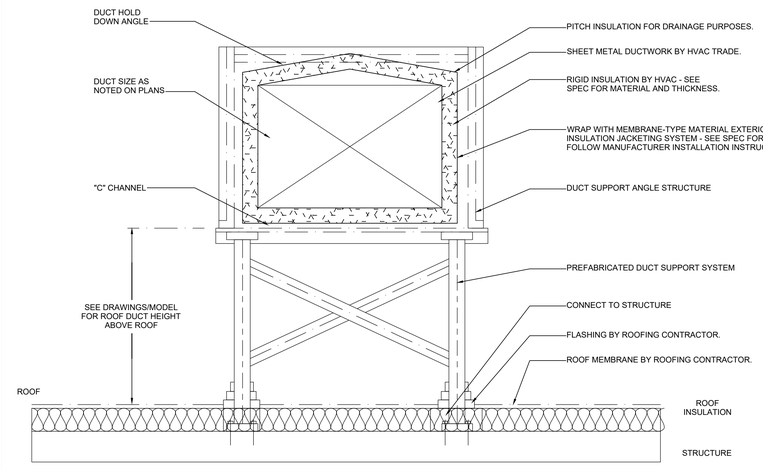
4 DOAS/RTU GAS PIPING DETAIL
SCALE: NOT TO SCALE



WRAP WITH MEMBRANE-TYPE MATERIAL EXTERIOR DUCT INSULATION JACKETING SYSTEM - SEE SPEC FOR MATERIAL. FOLLOW MANUFACTURER INSTALLATION INSTRUCTIONS.

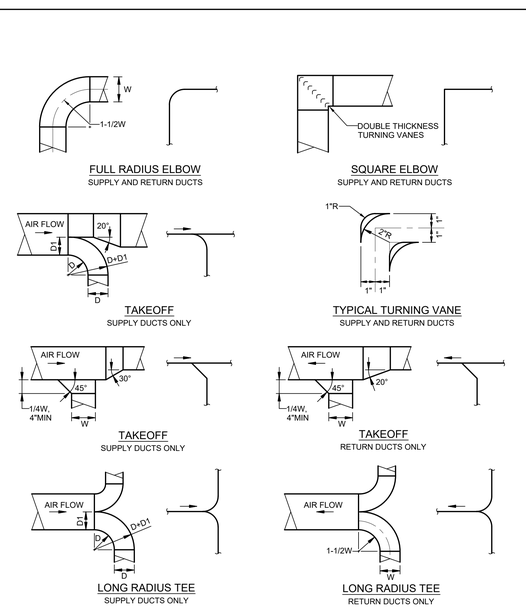
5 INDOOR HEAT PUMP DETAIL
SCALE: NOT TO SCALE

NOTES:
1. DUCTWORK AND PRE-FABRICATED SUPPORT SYSTEM SHALL BE PROVIDED BY THE HVAC CONTRACTOR.
2. PROVIDE CROSS BRACING AS REQUIRED FOR DUCT SUPPORTS TO SATISFY WIND BENDING REQUIREMENTS.



NOTES:
1. COORDINATE WITH STRUCTURAL AND ARCHITECTURAL DRAWINGS.

6 ROOF MOUNTED DUCTWORK DETAIL
SCALE: NOT TO SCALE



7 TYPICAL DUCT DETAILS WITH SINGLE LINE REPRESENTATION
SCALE: NOT TO SCALE

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PROJ #: 2024087.00

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M400

File Name:Juliet Long Mechanical.dwg 8/5/2024
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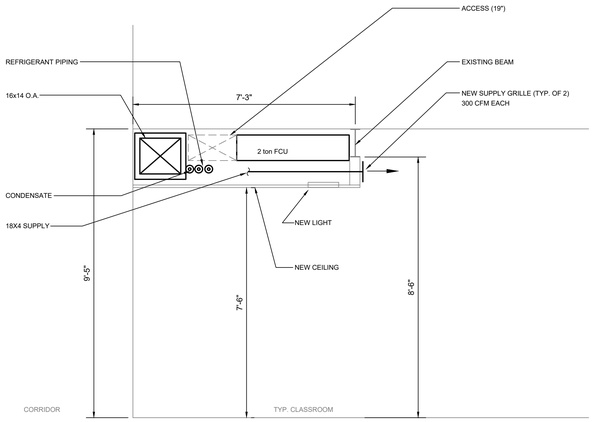
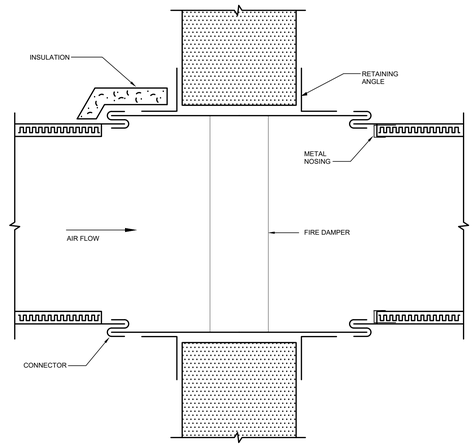


1 TYPICAL CLASSROOM SECTION
SCALE: N.T.S.



2 HORIZONTAL FIRE DAMPER DETAIL
SCALE: N.T.S.

NOTES:

1. OPENING IN FLOOR SHALL BE A MINIMUM OF 1/8" PER FOOT LARGER THAN OVERALL SIZE OF DAMPER AND SLEEVE ASSEMBLY FOR GALVANIZED STEEL DAMPERS. MAXIMUM OPENING NOT TO EXCEED 1/8" PER FOOT PLUS ONE INCH FOR GALVANIZED STEEL DAMPERS. OPENING SHALL NOT BE LESS THAN 1/4" LARGER FOR ANY SIZE DAMPER AND SLEEVE ASSEMBLY.
2. MOUNTING ANGLES SHALL BE A MINIMUM OF 1-1/2" x 1-1/2" x 1/4" AND FASTENED WITH #10 BOLTS OR SCREWS, 1/2" LG. WELDS, OR 3/16" RIVETS TO SLEEVE AT A MAXIMUM SPACING OF 6" WITH A MINIMUM OF TWO CONNECTIONS IN EACH SIDE, TOP AND BOTTOM.
3. WHEN MULTIPLE DAMPER ASSEMBLIES ARE JOINED OR FASTENING DAMPER TO SLEEVE, DAMPERS SHALL BE FASTENED WITH NO. 10 BOLT OR SCREWS, 3/16" RIVET OR 1/2" LG. WELD STAGGERED INTERMITTENTLY, AND SPACED 12" MAXIMUM C-C.

3 VRF CONDENSING UNIT MOUNTING DETAIL
SCALE: N.T.S.

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KEYPLAN

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M401

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File Name: Juliet Long Mechanical.dwg 8/5/2024
File Path: \\vz14\projects\2024\2024087.00\BIM\CAD\Mechanical
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ROOFTOP UNIT SCHEDULE

AIR HANDLING UNIT DATA								SUPPLY FAN DATA						DX COIL DATA							HOT GAS REHEAT DATA					GAS HEAT SECTION DATA			ELEC DATA						REMARKS
UNIT NO.	LOCATION	SERVING	MANUFACTURER	MODEL & SIZE	TOTAL CFM	MIN. O.A. CFM	OPERATING WEIGHT	FAN TYPE	E.S.P. "WC	T.S.P. "WC	RPM	BHP	MHP	AMBIENT D.B. °F	E.D.B. °F	E.W.B. °F	L.D.B. °F	L.W.B. °F	MBH (TOTAL)	MBH (SENS.)	MBH (TOTAL)	E.D.B. °F	L.D.B. °F	LEAVING DEW POINT °F	MOISTURE REMOVAL GPH	E.D.B. °F	L.D.B. °F	MBH IN/OUT	EFF.	VOLTS	PH	HZ	MCA	MOCP	
RTU-1	ROOF	OFFICE	TRANE	PRECEDENT -YHC060	2000	200	999.0 LBS	DIRECT DRIVE	1.000	1.320	1169	1.120	1.000	95.00	80.00	67.00	58.09	56.71	59.87	43.70	38.24	58.09	75.71	55.82	1.83 GPH	70.00	118.40	130/107.63	82%	208	3	60	26	40	SEE NOTES 1-12
RTU-2	ROOF	GYM	TRANE	YHJ150B3S0H	3750	1293	1470 LBS	DIRECT DRIVE	1.5"	1.76"	1169	1.120	4.6	95.00	80.00	67.00	55.8	54.8	139	93	86.5	54.8	71	50.38	6.1 GPH	60	108	250/202	82%	208	3	60	67	90	SEE NOTES 1-12

NOTES:
1. PREMIUM EFFICIENCY MOTOR.
2. PROVIDE COATED CONDENSER COILS DUE TO COASTAL PROXIMITY
3. GAS HEAT.
4. NON-FUSED DISCONNECT SWITCH. FUSED SWITCH BY ELECTRICAL
5. PROVIDE START-UP SERVICES & PROGRAMMING.
6. OUTSIDE AIR ECONOMIZER.
7. C02 DEMAND CONTROL VENTILATION.
8. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
9. HOT GAS REHEAT FOR DEHUMIDIFCATION
10. 24" STRUCTURAL CURB FOR RTU-2 (CONTRACTOR TO VERIFY HEIGHT PRIOR TO ORDERING)
11. PROVIDE UNIT MOUNTED AND POWERED CONVENIENCE OUTLET.
12. SUBMITTAL PACKAGE SHALL INCLUDE A COMPLETE CONTROL DIAGRAM, LIST OF FACTORY HARD-WIRED POINTS, LIST OF INSTALLED BACNET POINTS AND ANY CONTROL REQUIRED BY A 3RD PARTY BMS SYSTEM TO ACCOMMODATE ALL CONTROL SEQUENCES ON CONTRACT DOCUMENTS.

WARRANTY
1. RTU-Office: 1 year parts, 5 year compressor
2. RTU-Gym: 3 year parts, 5 year compressor

RTU-1 - THIS UNIT IS REPLACING AN EXISTING RTU
EXISTING UNIT INFO: CARRIER MODEL - 50TJ 005 501 SERIAL - 2894G20167
ADDITIONAL FEATURES OF NEW UNIT: HOT GAS REHEAT & DEMAND CONTROL VENTILATION
PROVIDE ADAPTER CURB AS REQUIRED.

DEDICATED OUTDOOR AIR SYSTEM SCHEDULE

AIR HANDLING UNIT DATA							SUPPLY FAN DATA							EXHAUST FAN DATA							HEAT PUMP COOLING DATA								HEAT PUMP HEATING DATA				HOT GAS REHEAT COIL DATA				
UNIT NO.	LOCATION	SERVING	MANUFACTURER	MODEL & SIZE	TOTAL CFM	WEIGHT	FAN TYPE	E.S.P. "WC	T.S.P. "WC	RPM	SPEED CONTROL	BHP	MHP	FAN TYPE	TOTAL CFM	E.S.P. "WC	T.S.P. "WC	RPM	SPEED CONTROL	BHP	MHP	EVAPORATOR ROWS / F.P.I.	CONDENSER ROWS / F.P.I.	E.D.B. °F	E.W.B. °F	L.D.B. °F	L.W.B. °F	GROSS MBH (TOTAL)	GROSS MBH (SENS.)	FACE VEL FPM	A.P.D. "WC	O.A.T. °F	E.D.B. °F	L.D.B. °F	MBH (TOTAL)	E.D.B. °F	E.W.B. °F	L.D.B. °F	L.W.B. °F	A.P.D. "WC
DOA-1	ROOF	LOWER WING	TRANE	OADG017F1	3,825	4,368	PLENUM	1.5	3.35	1,856	VFD	2.86	5	PLENUM	4,029	1.0	2.18	2,113	VFD	2.27	3	6 / 14	3 / 12	78.7	66.5	48.2	47.9	200.9	125.8	220	0.23	9.0	44.9	76.0	140.8	48.2	47.9	75.6	59.29	0.03
DOA-2	ROOF	UPPER WING	TRANE	OADG020F1	5,160	4,578	PLENUM	1.5	3.60	1,534	VFD	5.02	7.5	PLENUM	5,420	1.0	1.94	1,507	VFD	2.55	5	6 / 14	3 / 12	78.1	65.9	50.1	49.9	236.4	155.8	297	0.34	9.0	48.7	72.1	147.1	50.1	49.9	74.8	59.92	0.05

DEDICATED OUTDOOR AIR SYSTEM SCHEDULE (CONTINUED)

GAS FURNACE DATA						ENERGY WHEEL DATA										FILTERS			ELECTRICAL SINGLE POINT POWER				REMARKS
UNIT NO.	E.A.T. °F	L.A.T. °F	A.P.D. "WC	MBH IN	MBH OUT	SUMMER CONDITIONS					WINTER CONDITIONS					PREFILTER TYPE	PRIMARY FILTER TYPE	A.P.D. "WC	VOLT/HZ/PH.	MCA	MOP	FLA	
						O.A. D.B./W.B. (°F)	R.A. D.B./W.B. (°F)	S.A. D.B./W.B. (°F)	E.A. D.B./W.B. (°F)	RECOVERY (BTU/H)	O.A. D.B./W.B. (°F)	R.A. D.B./W.B. (°F)	S.A. D.B./W.B. (°F)	E.A. D.B./W.B. (°F)	RECOVERY (BTU/H)								
DOA-1	44.9	83.5	0.37	200	160	85.0/72.0	75.0/62.5	78.7/66.5	81.1/68.4	75,310.0	9.0/5.0	68.0/57.0	44.9/40.3	32.1/30.4	225,940.0	2" MERV 8	2" MERV 13	0.18	208/60/3	98.4	125	91.5	SEE NOTES 1-12
DOA-2	48.7	84.9	0.53	250	202.5	85.0/72.0	75.0/62.5	78.1/65.9	81.8/69.0	112,810.0	9.0/5.0	68.0/57.0	48.7/43.3	28.3/26.9	337,780.0	2" MERV 8	2" MERV 13	0.33	208/60/3	111.8	125	104.7	SEE NOTES 1-12

NOTES:
1. MANUFACTURER 1-YEAR PARTS ONLY WARRANTY. DIGITAL SCROLL COMPRESSOR 5-YEAR WARRANTY. FURNACE HX WARRANTY 25-YEARS.
2. DOUBLE WALL, R13 CONSTRUCTION.
3. STAINLESS STEEL CONDENSATE DRAIN PAN.
4. BACNET MSTP CONTROL INTERFACE.
5. FROST CONTROL AND BYPASS REQUIRED FOR ENERGY WHEEL.
6. HORIZONTAL DUCT CONNECTIONS.
7. INSULATED ENCLOSURE FOR PIPING CONNECTIONS.
8. NON-FUSED DISCONNECT SWITCH.
9. PROVIDE COATED CONDENSER COILS DUE TO COASTAL PROXIMITY
10. 24" STRUCTURAL CURBS (VERIFY HEIGHT WITH NEW ROOFING INSULATION) CONTRACTOR TO VERIFY HEIGHT PRIOR TO ORDERING
11. PROVIDE UNIT MOUNTED AND POWERED CONVENIENCE OUTLET.
12. SUBMITTAL PACKAGE SHALL INCLUDE A COMPLETE CONTROL DIAGRAM, LIST OF FACTORY HARD-WIRED POINTS, LIST OF INSTALLED BACNET POINTS AND ANY CONTROL REQUIRED BY A 3RD PARTY BMS SYSTEM TO ACCOMMODATE ALL CONTROL SEQUENCES ON CONTRACT DOCUMENTS.

OUTDOOR VRF CONDENSING UNIT SCHEDULE

UNIT NO.	MANUFACTURER	MODEL & SIZE	TOTAL CAPACITY (BTU/H)		OUTDOOR TEMP (°F)			EFFICIENCY		REFRIGERANT	POWER SUPPLY					SOUND POWER	REMARKS
			TOTAL COOLING	TOTAL HEATING	COOLING DBT	COOLING WBT	HEATING DBT	COOLING IEER (SEER)	HEATING COP (HSPF)		VOLTS	PHASE	HZ	MCA (A)	MOP (A)		
CU-1	TRANE	TUHYE1923AN41AN	192,000	215,000	95.0	-	-	21.7	3.775	R410A	208	3	60	80	125	-	SEE NOTES 1,2,3
CU-2	TRANE	TUHYE1443AN41AN	144,000	160,000	95.0	-	-	22.2	3.845	R410A	208	3	60	60	100	-	SEE NOTES 1,2,3
CU-3	TRANE	TUHYE1203AN41AN	120,000	135,000	95.0	-	-	23.35	4.005	R410A	208	3	60	55	90	-	SEE NOTES 1,2,3
CU-4	TRANE	TUHYE0963AN41AN	96,000	108,000	95.0	-	-	25.0	4.215	R410A	208	3	60	44	70	-	SEE NOTES 1,2,3

NOTES:
1. MANUFACTURER 1-YEAR PARTS ONLY WARRANTY. DIGITAL SCROLL COMPRESSOR 5-YEAR WARRANTY.
2. MINIMUM ASTM B117 SALT SPRAY TEST STANDARD FOR 2000HRS FOR CONDENSING UNITS.
3. PROVIDE 24" HIGH SUPERSTAND (CONTRACTOR TO VERIFY HEIGHT PRIOR TO ORDERING)
4. SUBMITTAL PACKAGE SHALL INCLUDE A COMPLETE CONTROL DIAGRAM, LIST OF FACTORY HARD-WIRED POINTS, LIST OF INSTALLED BACNET POINTS AND ANY CONTROL REQUIRED BY A 3RD PARTY BMS SYSTEM TO ACCOMMODATE ALL CONTROL SEQUENCES ON CONTRACT DOCUMENTS.

DIFFUSER & REGISTER SCHEDULE

TYPE	MANUFACTURER	MODEL & SIZE	FUNCTION	DESCRIPTION	REMARKS
A	PRICE	PDN	SUPPLY	ALUMINUM SQUARE DIFFUSER	SEE NOTES 1,2,3,4
B	PRICE	610	SUPPLY	ALUMINUM LOUVERED GRILLE	SEE NOTES 1,3,4
C	PRICE	610	RETURN/EXH	ALUMINUM LOUVERED GRILLE	SEE NOTES 1,3,4
D	PRICE	80	EXHAUST/TRANSFER	ALUMINUM EGG CRATE GRILLE	SEE NOTES 1,3,4
E	PRICE	AHCD2	SUPPLY	DRUM LOUVER	SEE NOTES 1,3,4

NOTES:
1. ALL NECK SIZES ARE NOTED ON DRAWINGS.
2. THROW PATTERNS ARE 4-WAY UNLESS NOTED OTHERWISE.
3. PROVIDE OPPOSED BLADE DAMPER.
4. COLOR BY ARCHITECT.

VRF INDOOR UNIT SCHEDULE

UNIT NO.	SERVED BY	LOCATION	MANUFACTURER	MODEL & SIZE	TOTAL CAPACITY (BTU/H)		INDOOR TEMP (°F)			POWER SUPPLY					REMARKS
					TOTAL COOLING	TOTAL HEATING	COOLING DBT	COOLING WBT	HEATING DBT	VOLTS	PHASE	HZ	MCA (A)	MOP (A)	
HP-1	CU-1	CLASSROOM 1	TRANE	TPEFYP024MA144A	24,000	27,000	75.0	62.5	70.0	208	1	60	2.88	15	SEE NOTES 1-4
HP-2	CU-1	CLASSROOM 2	TRANE	TPEFYP024MA144A	24,000	27,000	75.0	62.5	70.0	208	1	60	2.88	15	SEE NOTES 1-4
HP-3	CU-1	CLASSROOM 3	TRANE	TPEFYP024MA144A	24,000	27,000	75.0	62.5	70.0	208	1	60	2.88	15	SEE NOTES 1-4
HP-4	CU-1	CLASSROOM 4	TRANE	TPEFYP024MA144A	24,000	27,000	75.0	62.5	70.0	208	1	60	2.88	15	SEE NOTES 1-4
HP-5	CU-1	CLASSROOM 5	TRANE	TPEFYP024MA144A	24,000	27,000	75.0	62.5	70.0	208	1	60	2.88	15	SEE NOTES 1-4
HP-6	CU-1	CLASSROOM 6	TRANE	TPEFYP024MA144A	24,000	27,000	75.0	62.5	70.0	208	1	60	2.88	15	SEE NOTES 1-4
HP-7	CU-1	CLASSROOM 8	TRANE	TPEFYP024MA144A	24,000	27,000	75.0	62.5	70.0	208	1	60	2.88	15	SEE NOTES 1-4
HP-8	CU-1	CLASSROOM 9	TRANE	TPEFYP024MA144A	24,000	27,000	75.0	62.5	70.0	208	1	60	2.88	15	SEE NOTES 1-4
HP-9	CU-1	KINDERGARTEN 10	TRANE	TPEFYP030MA144A	30,000	34,000	75.0	62.5	70.0	208	1	60	2.88	15	SEE NOTES 1-4
HP-10	CU-2	CLASSROOM 37	TRANE	TPEFYP018MA144A	18,000	20,000	75.0	62.5	70.0	208	1	60	2.94	15	SEE NOTES 1-4
HP-11	CU-2	CLASSROOM 36	TRANE	TPEFYP018MA144A	18,000	20,000	75.0	62.5	70.0	208	1	60	2.94	15	SEE NOTES 1-4
HP-12	CU-2	CLASSROOM 35	TRANE	TPEFYP018MA144A	18,000	20,000	75.0	62.5	70.0	208	1	60	2.94	15	SEE NOTES 1-4
HP-13	CU-2	CLASSROOM 34	TRANE	TPEFYP018MA144A	18,000	20,000	75.0	62.5	70.0	208	1	60	2.94	15	SEE NOTES 1-4
HP-14	CU-2	CLASSROOM 16	TRANE	TPEFYP018MA144A	18,000	20,000	75.0	62.5	70.0	208	1	60	2.94	15	SEE NOTES 1-4
HP-15	CU-2	CLASSROOM 15	TRANE	TPEFYP018MA144A	18,000	20,000	75.0	62.5	70.0	208	1	60	2.94	15	SEE NOTES 1-4
HP-16	CU-2	CLASSROOM 14	TRANE	TPEFYP018MA144A	18,000	20,000	75.0	62.5	70.0	208	1	60	2.94	15	SEE NOTES 1-4
HP-17	CU-3	CLASSROOM 1A	TRANE	TPEFYP024MA144A	24,000	27,000	75.0	62.5	70.0	208	1	60	2.88	15	SEE NOTES 1-4
HP-18	CU-3	CLASSROOM 2A	TRANE	TPEFYP024MA144A	24,000	27,000	75.0	62.5	70.0	208	1	60	2.88	15	SEE NOTES 1-4
HP-19	CU-3	CLASSROOM 3A	TRANE	TPEFYP024MA144A	24,000	27,000	75.0	62.5	70.0	208	1	60	2.88	15	SEE NOTES 1-4
HP-20	CU-3	CLASSROOM 4A	TRANE	TPEFYP024MA144A	24,000	27,000	75.0	62.5	70.0	208	1	60	2.88	15	SEE NOTES 1-4
HP-21	CU-3	CLASSROOM 5A	TRANE	TPEFYP024MA144A	24,000	27,000	75.0	62.5	70.0	208	1	60	2.88	15	SEE NOTES 1-4
HP-22	CU-4	CLASSROOM 6A	TRANE	TPEFYP015MA144A	15,000	17,000	75.0	62.5	70.0	208	1	60	2.88	15	SEE NOTES 1-4
HP-23	CU-4	CLASSROOM 7	TRANE	TPEFYP015MA144A	15,000	17,000	75.0	62.5	70.0	208	1	60	2.88	15	SEE NOTES 1-4
HP-24	CU-4	CLASSROOM 8A	TRANE	TPEFYP015MA144A	15,000	17,000	75.0	62.5	70.0	208	1	60	2.88	15	SEE NOTES 1-4
HP-25	CU-4	CLASSROOM 9A	TRANE	TPEFYP015MA144A	15,000	17,000	75.0	62.5	70.0	208	1	60	2.88	15	SEE NOTES 1-4
HP-26	CU-4	CLASSROOM 10	TRANE	TPEFYP018MA144A	18,000	20,000	75.0	62.5	70.0	208	1	60	2.94	15	SEE NOTES 1-4
HP-27	CU-4	MEAL PREP	TRANE	TPEFYP018MA144A	18,000	20,000	75.0	62.5	70.0	208	1	60	2.94	15	SEE NOTES 1-4
HP-28	CU-2	CORRIDOR 33	TRANE	TPLFYP015FM140A	15,000	17,000	75.0	62.5	70.0	208	1	60	0.35	15	SEE NOTES 1-4
HP-29	CU-2	CORRIDOR 33	TRANE	TPLFYP015FM140A	15,000	17,000	75.0	62.5	70.0	208	1	60	0.35	15	SEE NOTES 1-4
HP-30	CU-3	CORRIDOR 3	TRANE	TPLFYP012FM140A	12,000	13,500	75.0	62.5	70.0	208	1	60	0.35	15	SEE NOTES 1-4
HP-31	CU-2	LOUNGE	TRANE	TPKFYP012LM140A	12,000	13,500	75.0	62.5	70.0	208	1	60	0.35	15	SEE NOTES 1-4

NOTES:
1. PROVIDE CONDENSATE PUMPS FOR ALL UNITS. (CEILING CASSETTE'S AND DUCTED UNITS HAVE INTEGRAL CONDENSATE PUMPS)
2. VRF City-Multi Standard Warranty is 1 year parts, 7 year compressor from the time of startup. VRF City-Multi Extended 10-Year Parts/Compressor Warranty will be applied if the following requirements are met:Installing Contractor completes a certified Trane-Mitsubishi 3-day City-Multi Installation/Service Course, and documents attendees and date of completion. The system is designed by a certified Diamond Designer using Diamond System Builder™
The contractor generates a complete and approved METUS Extended Warranty Process Report from the Diamond System Builder software.(See Trane-Mitsubishi Warranty Policy for details.)
3. PROVIDE CN-24REALY kits for existing hot water radiation control integration.
4. PROVIDE MA CONTROLLER Model TAR-41MAAU
5. SUBMITTAL PACKAGE SHALL INCLUDE A COMPLETE CONTROL DIAGRAM, LIST OF FACTORY HARD-WIRED POINTS, LIST OF INSTALLED BACNET POINTS AND ANY CONTROL REQUIRED BY A 3RD PARTY BMS SYSTEM TO ACCOMMODATE ALL CONTROL SEQUENCES ON CONTRACT DOCUMENTS.

VANZELM ENGINEERS
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CONSULTANTS:

PROJECT NAME:
Juliet W. Long School
1854 Route 12
Gales Ferry, CT 06335

KEYPLAN

REVISIONS

REV. NO.	DATE	DESCRIPTION

DRAWING TITLE:
MECHANICAL SCHEDULES

DRAWING NUMBER:
M500

DATE: 08/05/24
DRAWN BY: JDP/SPM
CHECKED BY: RSM
SCALE: N.T.S.
PROJ #: 2024087.00

GENERAL ELECTRICAL DEMOLITION NOTES

A. REMOVE ALL EXISTING ELECTRICAL EQUIPMENT WITHIN DESIGNATED AREA, EXCEPT WHERE MARKED OTHERWISE, i.e. LIGHTING, SWITCHES, OUTLETS, PANELBOARDS, ASSOCIATED WIRING BACK TO SOURCE OR TO LAST ACTIVE DEVICE, CONDUIT, ETC. IN PREPARATION FOR NEW WORK. THIS WORK INCLUDES COMPLETE DEMO AND IS NOT LIMITED TO THE EQUIPMENT SHOWN ON DEMO PLANS.

B. REMOVE ALL EXISTING LOW VOLTAGE SYSTEMS AND EQUIPMENT WITHIN DESIGNATED AREA, INCLUDING BUT NOT LIMITED TO, TELEPHONE, DATA, TV, A/V, P.A., CLOCK AND SECURITY SYSTEMS (INCLUDING OUTLETS, ETC. AND ASSOCIATED WIRING) BACK TO SOURCE OR TO LAST ACTIVE DEVICE.

C. REMOVE EXISTING FIRE ALARM SYSTEM IN AREA DESIGNATED INCLUDING BUT NOT LIMITED TO, FIRE ALARM DEVICES, WIRING, CONDUIT, BOXES, PANELS, ETC. COORDINATE REMOVAL WORK WITH INSTALLATION OF NEW FIRE ALARM SYSTEM SUCH THAT AN OPERATIONAL FIRE ALARM SYSTEM IS MAINTAINED THROUGHOUT PERIODS OF BUILDING OCCUPATION. COORDINATE ANY SERVICE SHUT-DOWN WITH LOCAL FIRE OFFICIAL AND OWNER. PROVIDE FIRE WATCH AS REQUIRED.

D. DISCONNECT AND REMOVE EXISTING WIRING, CONDUIT, BOXES, ETC. SERVING ALL EQUIPMENT BEING REMOVED BY MECHANICAL AND OTHER TRADES. REFER TO PLUMBING, MECHANICAL AND ARCHITECTURAL DRAWINGS FOR COORDINATION OF REQUIRED WORK. REMOVALS SHALL BE BACK TO SOURCE PANEL COMPLETE.

E. EXISTING ELECTRICAL ITEMS THAT ARE BEING DISCONNECTED AND REMOVED AND NOT BEING REUSED SHALL BE DISPOSED OF PROPERLY.

F. ALL ABANDONED ELECTRICAL WIRING AND DEVICES SHALL BE REMOVED.

G. IF CONTINUITY OF WIRING TO EXISTING ELECTRICAL ITEMS IS INTERRUPTED BY REMOVAL OF DEVICES, CONTRACTOR SHALL INSTALL ALL NECESSARY WIRING AND RACEWAY TO ENSURE THE CONTINUITY OF CIRCUITRY IN OTHER AREAS.

H. WIRING FOR ITEMS BEING REMOVED SHALL BE REMOVED BACK TO POWER SOURCE OR LAST DEVICE TO REMAIN ACTIVE UNLESS NOTED OTHERWISE.

I. NOTIFY CONSTRUCTION MANAGER OR GENERAL CONTRACTOR OF OPENINGS CAUSED BY REMOVAL OF EXISTING EQUIPMENT NOT BEING REPLACED. ENSURE THE PATCHING IS COMPLETE.

J. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL RELATED WORK.

K. ALL EXISTING EXPOSED RACEWAY THAT IS SERVING DEVICES IN FINISHED AREAS THAT ARE TO REMAIN SHALL BE REMOVED AND REPLACED WITH NEW CONCEALED CONDUIT/RACEWAY AND CONDUCTORS TO SERVE DEVICES.

L. INSTALL BLANK COVER PLATES ON RECESSED OUTLET BOXES ABANDONED UNDER THIS CONTRACT IN WALLS THAT ARE TO REMAIN.

M. WHERE POWER AND TEL/DATA OUTLETS EXIST ON WALLS TO BE FURRED OUT, THE ELECTRICAL CONTRACTOR SHALL REMOVE AND REINSTALL DEVICES AND PLATES AND PROVIDE BOX EXTENSIONS AS NECESSARY TO EXTEND THE OUTLETS TO THE NEW SURFACES.

N. REMOVE DEVICE PLATES (AND DEVICES WHERE NECESSARY) TO ACCOMMODATE NEW WALL FINISHES. REINSTALL COVER PLATES AND DEVICES AFTER NEW FINISHES ARE COMPLETE.

O. THE BUILDING WILL BE OCCUPIED DURING DEMOLITION. COORDINATE PHASING OF DEMO WORK WITH CONSTRUCTION MANAGER OR GENERAL CONTRACTOR. EXISTING PANELS MAY NEED TEMPORARY RE- FEED. ENSURE CONTINUITY OF SERVICES.

181102

GENERAL ELECTRICAL NOTES

A. ALL HOMERUNS/CIRCUITS TO BE 2#12, 1#12G,, 3/4"C TO A 20A-1P CIRCUIT BREAKER IN DESIGNATED PANEL, UNLESS NOTED OTHERWISE. NUMBERS SHOWN AT EACH DEVICE/HOMERUN REPRESENT CIRCUIT NUMBER IN PANELBOARD.

B. WIRE AND RACEWAY SIZES INDICATED ON HOMERUNS/CIRCUITS SHALL BE CONTINUOUS FOR ENTIRE LENGTH, UNLESS NOTED OTHERWISE.

C. ALL WIRING (CONDUITS, ETC.) TO BE CONCEALED. NO SURFACE WIRING SHALL BE INSTALLED IN FINISHED AREAS. THIS CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL CHANNELING REQUIRED OF EXISTING WALLS AND FLOORS TO ACCOMMODATE NEW WIRING. SEE PATCHING SPECIFICATIONS, FLOOR PLANS AND ELEVATIONS FOR ADDITIONAL INFORMATION ON ARCHITECTURAL AND WIRING ROUTING.

D. ALL WIRING ABOVE CEILING THAT IS NOT IN CONDUIT AND IS LOCATED IN A PLENUM SPACE SHALL BE PLENUM RATED. REFER TO MECHANICAL PLANS FOR PLENUM AREAS.

E. ELECTRICAL CONDUITS, WIRING, BOXES, ETC. SHALL NOT PENETRATE STAIR ENCLOSURE, UNLESS THEY ARE FEEDING DEVICES LOCATED WITHIN THE STAIR ENCLOSURE.

F. PROVIDE ELECTRICAL OUTLET PLATE GASKET SEALS AT RECEPTACLES, SWITCHES AND OTHER ELECTRICAL BOXES ON EXTERIOR WALLS AND INTERIOR WALLS BETWEEN CONDITIONED AND NON-CONDITIONED SPACES.

G. ALL INDIVIDUAL OR GENERAL PURPOSE BRANCH 120 VOLT CIRCUITS OVER 100'-0" IN CONDUCTOR LENGTH SHALL BE INCREASED ONE WIRE SIZE (i.e. FROM #12AWG TO #10AWG) AND CIRCUITS OVER 170'-0" IN CONDUCTOR LENGTH SHALL BE INCREASED TWO WIRE SIZES (i.e. FROM #12AWG TO #8AWG) UNLESS NOTED OTHERWISE.

H. ALL INDIVIDUAL OR GENERAL PURPOSE BRANCH 277 VOLT CIRCUITS OVER 230'-0" IN CONDUCTOR LENGTH SHALL BE INCREASED ONE WIRE SIZE (i.e. FROM #12AWG TO #10AWG) AND CIRCUITS OVER 380'-0" IN CONDUCTOR LENGTH SHALL BE INCREASED TWO WIRE SIZES (i.e. FROM #12AWG TO #8AWG.) UNLESS NOTED OTHERWISE.

I. SEAL ALL CONDUITS AT THE LAST STRUCTURE PRIOR TO CONDUITS ENTERING A BUILDING PER SPECIFICATIONS AND DETAILS. ALL SPARE CONDUITS SHALL HAVE NYLON PULL STRING AND FOOTAGE TAPE.

J. RACEWAY AND WIRING INDICATED ON DRAWINGS ARE RECOMMENDATIONS FOR SPECIFIC ROUTES OR SPECIAL CONDITIONS. CONTRACTOR IS RESPONSIBLE FOR DETERMINING ACTUAL ROUTING.

K. ALTHOUGH ALL FEEDER AND BRANCH CIRCUIT WIRE AND CONDUIT IS NOT SPECIFICALLY SHOWN, IT IS THE INTENT OF THESE DOCUMENTS THAT A COMPLETE FEEDER AND BRANCH CIRCUIT WIRING SYSTEM BE INSTALLED.

L. ENSURE THAT NO PIPING, DUCTWORK, LEAK PROTECTION APPARATUS OR OTHER EQUIPMENT FOREIGN TO THE ELECTRICAL TRADE PASSES THROUGH THE SPACE EQUAL TO THE WIDTH AND DEPTH OF THE ELECTRICAL DISTRIBUTION EQUIPMENT AND EXTENDING FROM THE FLOOR TO THE STRUCTURAL CEILING.

M. IN COMPOUNDING ROOMS #WING 132 AND MNG 136, SEAL AND GASKET ALL WALL PENETRATIONS WITH SILICONE CAULKING TO BE AIR/WATER TIGHT INCLUDING LIGHT FIXTURES, WALL SWITCHES, RECEPTACLES, DATA OUTLETS, FIRE ALARM DEVICES, ETC.

181102

GENERAL LIGHTING NOTES

A. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN DRAWINGS FOR FINAL LOCATION OF ALL CEILING MOUNTED LIGHT FIXTURES.

B. REFER TO ARCHITECTURAL ELEVATIONS AND DETAILS FOR FINAL LOCATION OF WALL MOUNTED LIGHTING FIXTURES AND TASK LIGHTING.

C. SWITCHING SHOWN ON PLANS DOES NOT SHOW SWITCH LEG/TRACER WIRE BETWEEN SWITCHES. PROVIDE ALL REQUIRED WIRING FOR SWITCHING OF LIGHTING.

D. CONNECT UNDER CABINET LIGHTING TO LOCAL NON-COMPUTER BRANCH RECEPTACLE CIRCUIT.

E. A SWITCH IN A SPACE SHALL CONTROL LIGHTING IN THAT SPACE UNLESS OTHERWISE INDICATED.

F. ALL EXIT SIGNS SHALL BE WIRED TO LINE SIDE OF THE LIFE SAFETY (EMERGENCY) LIGHT CIRCUIT SERVING THE SAME AREA FOR CONTINUOUS ILLUMINATION.

160200

GENERAL POWER NOTES

A. COORDINATE EXACT LOCATION OF ELECTRICAL DEVICES SUCH AS RECEPTACLES, SWITCHES, FIRE ALARM DEVICES, ETC. WITH ARCHITECTURAL PLANS, ELEVATIONS AND DETAILS PRIOR TO START OF WORK, REQUEST CLARIFICATIONS FROM ARCHITECT PRIOR TO INSTALLATION.

B. ANY RECEPTACLE LOCATED WITHIN 6'-0" OF EDGE OF SINK SHALL BE A GFI RECEPTACLE OR PROTECTED BY A GFI CIRCUIT BREAKER.

C. UNLESS OTHERWISE INDICATED, REFER TO MOTOR CIRCUIT SCHEDULE FOR ELECTRICAL REQUIREMENTS OF ALL MECHANICAL (HVAC, PLUMBING, FIRE PROTECTION, ETC.) EQUIPMENT. REFER TO DRAWINGS FOR EACH TRADE FOR EXACT LOCATION OF EQUIPMENT.

D. DO NOT INSTALL OUTLETS BACK TO BACK. PROVIDE MINIMUM 24 INCH HORIZONTAL SPACING IN FIRE RATED WALLS. MOUNT LOW VOLTAGE AND POWER OUTLETS IN DIFFERENT STUD WALL CAVITIES.

E. WHEN THE COMBINING OF CIRCUITS OR HOMERUNS IS PERMITTED ELSEWHERE IN THE CONTRACT DOCUMENTS, RACEWAYS SHALL BE LIMITED TO SIX CURRENT CARRYING CONDUCTORS (THREE PHASE AND THREE NEUTRALS) PLUS GROUNDING CONDUCTORS UNLESS OTHERWISE INDICATED. PROVIDE A DEDICATED NEUTRAL FOR EACH SINGLE PHASE CIRCUIT, UNLESS "OVERSIZED" NEUTRAL IS PROVIDED AS PART OF MANUFACTURED ASSEMBLY. IF MANUFACTURED ASSEMBLIES ARE PROVIDED WITH "OVERSIZED" NEUTRALS, PROVIDE MATCHING "OVERSIZED" NEUTRALS FROM SOURCE PANEL TO MANUFACTURED ASSEMBLY.

F. PROVIDE NYLON PULL STRING IN ALL EMPTY CONDUIT SYSTEMS FOR USE IN INSTALLING SYSTEM WIRING.

G. REFER TO TELECOMMUNICATION, SECURITY AND AUDIO/VISUAL DRAWINGS FOR EXACT LOCATION OF ALL TELECOMMUNICATION OUTLETS, SECURITY DEVICES, VIDEO OUTLETS, AMPLIFIERS, SPEAKERS, ETC. NOT SHOWN. ALL REQUIRED RACEWAY FOR THESE SYSTEMS FOR A COMPLETE INSTALLATION. SEE ELECTRICAL, TELECOMMUNICATION, SECURITY AND AUDIO/VISUAL SPECIFICATIONS AND DRAWINGS FOR ADDITIONAL REQUIREMENTS.

H. COORDINATE EXACT LOCATION OF JUNCTION BOX FOR EQUIPMENT WHICH IS FURNISHED BY OWNER OR OTHERS WITH EQUIPMENT SUPPLIER PRIOR TO CONSTRUCTION. PROVIDE WIRING FROM JUNCTION BOX TO EQUIPMENT CONNECTION AS REQUIRED.

I. WIRING INDICATED BY CIRCUIT NUMBER SYMBOL SHALL INCLUDE A NEUTRAL WHEN THE LOAD SERVED HAS PROVISIONS FOR, OR REQUIRES A NEUTRAL, TYPICALLY, ALL FEEDERS AND BRANCH CIRCUITS WILL REQUIRE A NEUTRAL, EXCEPT MOST MOTOR CIRCUITS.

160200

GENERAL FIRE ALARM NOTES - RENO

A. THE EXISTING BUILDING FIRE ALARM SYSTEM SHALL REMAIN IN PLACE AND ACTIVE FOR FULL SYSTEM COMPATIBILITY. ALL NEW FIRE ALARM DEVICES SHALL BE MANUFACTURED BY SAME MANUFACTURER AS THE EXISTING SYSTEM. THERE ARE NO SUBSTITUTIONS OF FIRE ALARM DEVICES.

B. EXISTING FIRE ALARM CONDUIT AND BOXES MAY BE REUSED IF THEY SUIT THE PURPOSE. EXISTING FIRE ALARM CONDUIT AND BOXES NOT REUSED FOR NEW WIRING AND DEVICES SHALL BE REMOVED.

C. SHUTDOWNS OF A PORTION OF THE BUILDING FIRE ALARM SYSTEM MAY BE REQUIRED TO REMOVE AND REINSTALL FIRE ALARM DEVICES. COORDINATE THE TIME AND DURATION OF ANY FIRE ALARM SYSTEM SHUTDOWNS WITH OWNER. UNDER NO CIRCUMSTANCES WILL ANY UNATTENDED AREAS BE LEFT WITHOUT FIRE ALARM SYSTEM PROTECTION.

D. FIRE ALARM SYSTEM WIRING SHALL BE IN ACCORDANCE WITH NEC ARTICLE 760, AND AS RECOMMENDED BY THE MANUFACTURER OF THE FIRE ALARM SYSTEM. ALL WIRES SHALL BE COLOR CODED. NUMBER AND SIZE OF CONDUCTORS SHALL BE AS RECOMMENDED BY THE FIRE ALARM SYSTEM MANUFACTURER, BUT NOT LESS THAN #18 AWG FOR INITIATING DEVICE CIRCUITS AND #14 AWG FOR NOTIFICATION DEVICE CIRCUITS.

E. FIRE ALARM WIRING SHALL BE RUN IN 3/4" EMT MINIMUM; CONDUIT FILL SHALL NOT EXCEED 40% FILL. NEW DEVICES SHALL BE SECURELY AFFIXED TO BUILDING SURFACES.

F. NEW JUNCTION BOXES, PULL BOXES AND OUTLET BOXES IN THE FIRE ALARM SYSTEM SHALL BE PAINTED RED AND SHALL BE IDENTIFIED WITH WHITE MARKINGS AS "FA" FOR JUNCTION BOXES. LETTERING SHALL BE A MINIMUM OF 3/4 INCH HIGH.

G. AS PART OF THE FIRE ALARM EQUIPMENT SUBMITTAL PACKAGE THE ELECTRICAL CONTRACTOR SHALL FURNISH BATTERY CALCULATIONS INDICATING ADDITIONAL BATTERY CAPACITY REQUIRED TO POWER ALL NEW FIRE ALARM SYSTEM DEVICES INCLUDED AS PART OF THIS PROJECT.

H. THE MODIFICATIONS TO THE FIRE ALARM SYSTEM DESCRIBED SHALL BE INSTALLED, TESTED AND DELIVERED TO THE OWNER IN FULLY OPERATIONAL AND FIRST-CLASS CONDITION BY AN AUTHORIZED MANUFACTURER'S FIRE ALARM SYSTEM AGENT ONLY. WORK ON THE FIRE ALARM SYSTEM SHALL INCLUDE ALL HARDWARE, RACEWAYS, INTERCONNECTING WIRING, SOFTWARE AND PROGRAMMING TO ACCOMPLISH THE REQUIREMENTS OF THIS CONTRACT. THE FIRE ALARM EQUIPMENT SUPPLIER SHALL HAVE A MINIMUM OF TEN (10) YEARS PREVIOUS EXPERIENCE WITH FACILITY OPERATIONS AND REQUIREMENTS.

I. REFER TO ELECTRICAL SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

160200

SWITCHES

SYMBOL	DESCRIPTION
$	SINGLE-POLE SWITCH
$2	DOUBLE-POLE SWITCH
$3	3-WAY SWITCH
$D	SINGLE-POLE DIMMER SWITCH
$T	MANUAL STARTER WITH THERMAL OVERLOAD PROTECTION
OPS,F,U	CEILING MOUNTED OCCUPANCY SENSOR; SUB-LETTER INDICATES TYPE
PAK	POWER PACK FOR OCCUPANCY SENSOR
LMM	LIGHTING CIRCUIT MONITOR CONTROL MODULE
LMT	LIGHTING CIRCUIT TRANSFER CONTROL MODULE
WSP,F,U	WALL MOUNTED OCCUPANCY SENSOR; SUB-LETTER INDICATES TYPE

POWER DEVICES

SYMBOL	DESCRIPTION
	ELECTRICAL PANEL 208 / 120 VOLT
F	FUSED DISCONNECT SWITCH
M	ELECTRIC MOTOR
VFD	VARIABLE FREQUENCY DRIVE
J	JUNCTION BOX

LEGEND NOTE

THESE LEGENDS AND ABBREVIATIONS DEFINE ITEMS INDICATED ON DRAWINGS. NOT ALL SYMBOLS OR ABBREVIATIONS DEFINED ARE NECESSARILY USED ON THIS PROJECT.

NORMAL LIGHTING

SYMBOL	DESCRIPTION (SUB-LETTER INDICATES FIXTURE TYPE)
	CEILING MOUNTED 2'x2' LIGHT FIXTURE
	SINGLE-FACED CEILING OR WALL MOUNTED, EXIT SIGN WITH CHEVRONS AS INDICATED ON PLANS

SPECIAL SYSTEMS

SYMBOL	DESCRIPTION
	COMBINATION DATA / TELEPHONE OUTLET WITH BACKBOX AND EMPTY CONDUIT STUBBED UP TO ABOVE FINISHED CEILING, INCLUDING DRAG LINE
	TELEPHONE OUTLET WITH BACKBOX AND EMPTY CONDUIT, STUBBED UP TO ABOVE ACCESSIBLE FINISHED CEILING, INCLUDING DRAG LINE
	DATA OUTLET WITH BACKBOX AND EMPTY CONDUIT STUBBED UP TO ABOVE FINISHED CEILING, INCLUDING DRAG LINE
x	DATA OUTLET WITH BACKBOX AND EMPTY CONDUIT STUBBED UP TO ABOVE FINISHED CEILING, INCLUDING DRAG LINE. SUBLETTER "x" INDICATES OUTLET TO BE MOUNTED 6" ABOVE COUNTER TOP OR AT 48" AFF
WA	CEILING MOUNTED DATA OUTLET WITH BACKBOX AND EMPTY CONDUIT STUBBED TO ACCESSIBLE CEILING, INCLUDING DRAG LINE (WA INDICATES WIRELESS POINT)
C	DATA OUTLET WITH BACKBOX AND EMPTY CONDUIT TO ACCESSIBLE CEILING, INCLUDING DRAG LINE. SUBLETTER "C" INDICATES CEILING MOUNTED
S	CEILING MOUNTED SOUND SYSTEM SPEAKER

RECEPTACLES

SYMBOL	DESCRIPTION
S	SUBLETTER "S" ADJACENT TO DEVICE INDICATES RECEPTACLE ON STANDBY SOURCE. RECEPTACLE AND COVER PLATE SHALL BE RED IN COLOR
	DUPLEX RECEPTACLE. COORDINATE LOCATION WITH ARCHITECT
x	DUPLEX RECEPTACLE; SUBLETTER "x" INDICATES RECEPTACLE TO BE MOUNTED 6" ABOVE COUNTER TOP OR 48" AFF
b	DUPLEX RECEPTACLE; SUBLETTER "b" INDICATES MOUNTED IN ARCHITECTURAL MILLWORK
	DUPLEX RECEPTACLE; CEILING MOUNTED
	DOUBLE DUPLEX RECEPTACLE. COORDINATE LOCATION WITH ARCHITECT
x	DOUBLE DUPLEX RECEPTACLE; SUBLETTER "x" INDICATES RECEPTACLE TO BE MOUNTED 6" ABOVE COUNTER TOP OR 48" AFF
b	DOUBLE DUPLEX RECEPTACLE; SUBLETTER "b" INDICATES MOUNTED IN ARCHITECTURAL MILLWORK
	DOUBLE DUPLEX RECEPTACLE; CEILING MOUNTED
	SINGLE RECEPTACLE. COORDINATE LOCATION WITH ARCHITECT
x	SINGLE RECEPTACLE; SUBLETTER "x" INDICATES RECEPTACLE TO BE MOUNTED 6" ABOVE COUNTER TOP OR 48" AFF
b	SINGLE RECEPTACLE; SUBLETTER "b" INDICATES MOUNTED IN ARCHITECTURAL MILLWORK
	SINGLE RECEPTACLE; CEILING MOUNTED
x	DUPLEX RECEPTACLE-ONE OUTLET SWITCHED
c	DUPLEX RECEPTACLE CONTROLLED BY AUTOMATIC DEVICE; PROVIDE ANNOTATION ENGRAVED ON RECEPTACLE BODY
	FLUSH FLOOR MOUNTED DUPLEX RECEPTACLE
	FLUSH FLOOR MOUNTED DOUBLE DUPLEX RECEPTACLE
	SPECIAL-PURPOSE OUTLET; AMPERAGE AND VOLTAGE AS INDICATED ON PLANS. CONTRACTOR TO VERIFY CONNECTION / NEMA CONFIGURATION REQUIREMENTS WITH EQUIPMENT BEING FURNISHED
CH	DUPLEX RECEPTACLE WITH USB CHARGER PORT
WP	DUPLEX RECEPTACLE WITH WEATHER-PROOF IN-USE HOUSING
TR	DUPLEX RECEPTACLE; SUB-LETTER "TR" INDICATES TAMPER RESISTANT
GFI	GROUND FAULT CIRCUIT INTERRUPTER-STYLE DUPLEX RECEPTACLE
AFI	ARC FAULT CIRCUIT INTERRUPTOR-STYLE DUPLEX RECEPTACLE
IG	ISOLATED GROUND DUPLEX RECEPTACLE
SS	SURGE SUPPRESSION STYLE DUPLEX RECEPTACLE
TV	DUPLEX RECEPTACLE FOR TELEVISION. COORDINATE MOUNTING HEIGHT AND LOCATION WITH ARCHITECTURAL ELEVATIONS
	WALL CLOCK

NORMAL LIGHTING

SYMBOL	DESCRIPTION (SUB-LETTER INDICATES FIXTURE TYPE)
	CEILING MOUNTED 2'x2' LIGHT FIXTURE
	SINGLE-FACED CEILING OR WALL MOUNTED, EXIT SIGN WITH CHEVRONS AS INDICATED ON PLANS

SECURITY / ACCESS CONTROL

SYMBOL	DESCRIPTION
CRR	CARD READER / PROXIMITY READER

FIRE ALARM

SYMBOL	DESCRIPTION
	FIRE ALARM SMOKE DETECTOR
F	FIRE ALARM VISUAL INDICATING UNIT SUB-LETTER "F" INDICATES SPECIAL CANDELA RATING
FH	FIRE ALARM AUDIO / VISUAL INDICATING UNIT WITH SPEAKER. SUB-LETTER "H" INDICATES HORN
D	DUCT MOUNTED SMOKE DETECTOR
RAR	REMOTE DUCT SMOKE DETECTOR TEST SWITCH / INDICATOR
AAM	ADDRESSABLE INTERFACE MODULE
FACP	FIRE ALARM CONTROL PANEL
SDR	SMOKE DAMPER OR FIRE / SMOKE DAMPER

ABBREVIATIONS

SYMBOL	DESCRIPTION
ER	EXISTING TO REMAIN
GFI / GFCI	GROUND FAULT INTERRUPTER
NE	NEW LOCATION OF EXISTING RELOCATED
NL	NIGHT LIGHT
NR	NEW TO REPLACE EXISTING
P	POLE (SPACE IN PANELBOARD)
RE	REMOVE EXISTING
RL	RELOCATE EXISTING
TYP	TYPICAL
UNV	UNIVERSAL
VAC	VOLTS AC
WM	SURFACE MOUNTED RACEWAY

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CONSULTANTS:

PROJECT NAME:

Juliet W. Long School
1854 Route 12
Gales Ferry, CT 06335

KEYPLAN

N

REVISIONS

REV. NO.	DATE	DESCRIPTION

DRAWING TITLE:

ELECTRICAL LEGENDS AND GENERAL NOTES

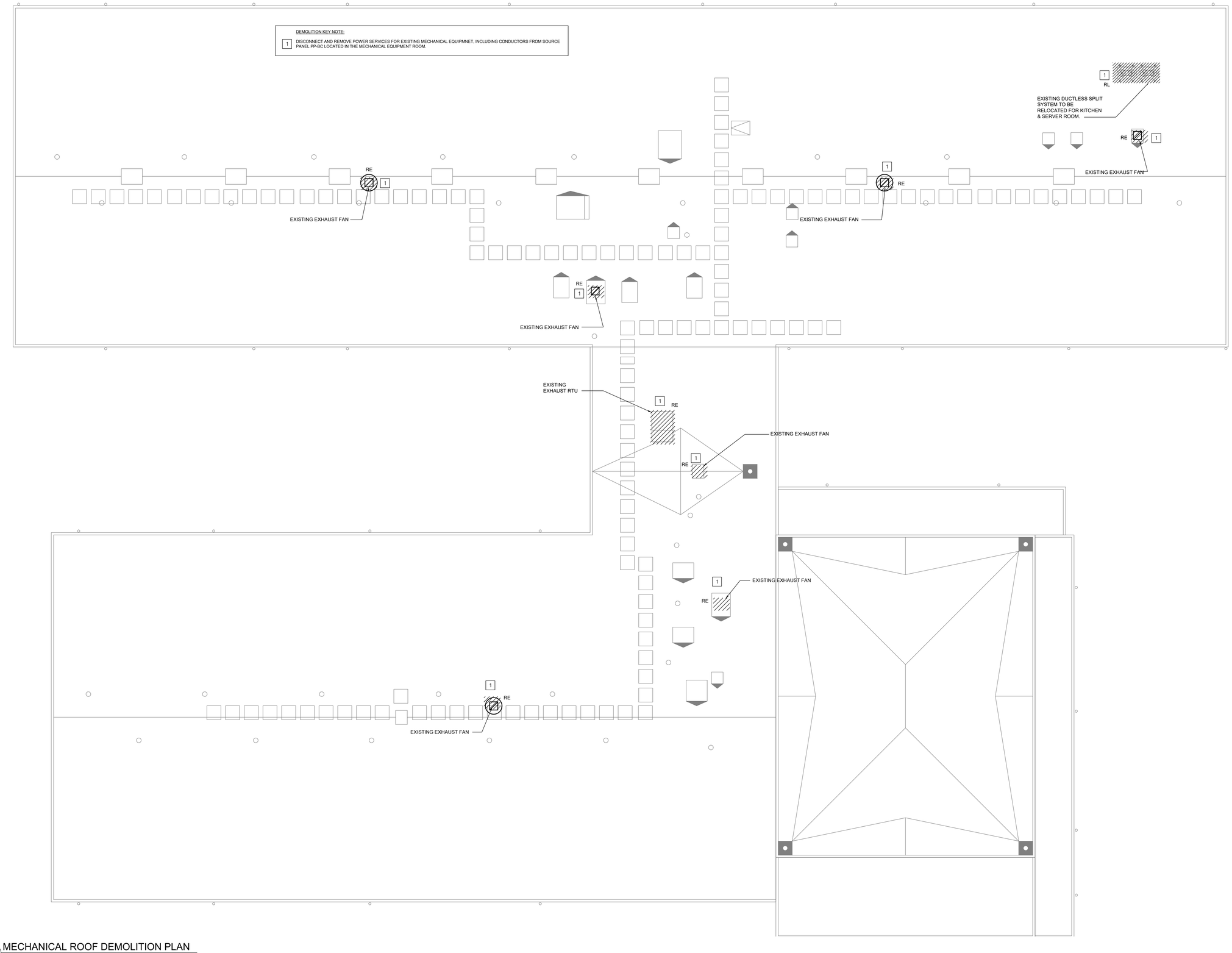
DATE: 08/05/24
DRAWN BY: RZP
CHECKED BY: RSM
SCALE: N.T.S.
PROJ #: 2024087.00

DRAWING NUMBER:

E000

DEMOLITION KEY NOTE:

1 DISCONNECT AND REMOVE POWER SERVICES FOR EXISTING MECHANICAL EQUIPMNET, INCLUDING CONDUCTORS FROM SOURCE PANEL PP-BC LOCATED IN THE MECHANICAL EQUIPMENT ROOM.



1 MECHANICAL ROOF DEMOLITION PLAN
SCALE: 1/8"=1'-0"

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File Path: \\vz14\projects\2024\2024087.00\BIM\CAD\Electrical 3:38:50 PM User ID: McKenna, Sean P

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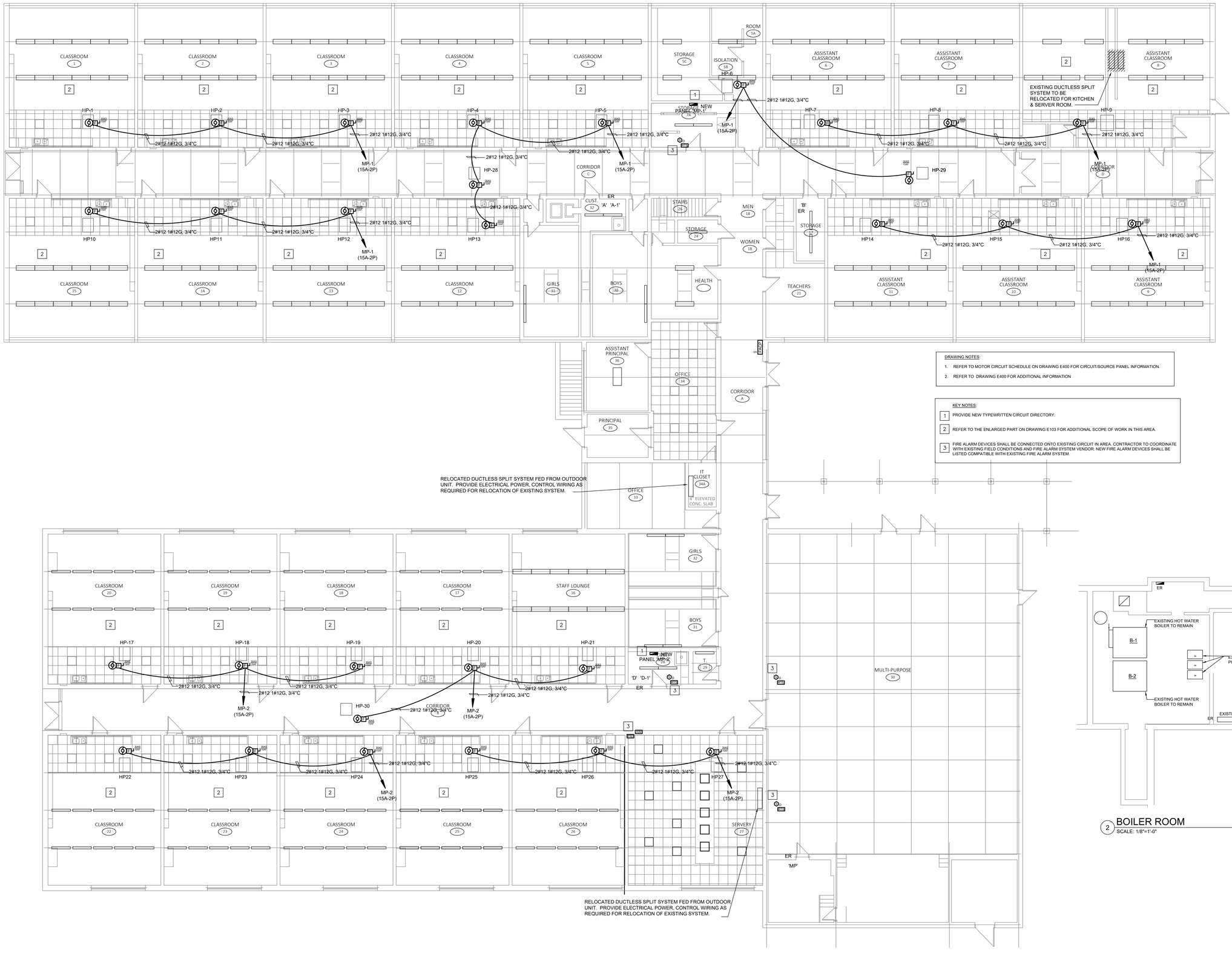
REV. NO.	DATE	DESCRIPTION

DRAWING TITLE:
ELECTRICAL ROOF DEMOLITION PLAN

DATE: 08/05/24
DRAWN BY: RZP
CHECKED BY: RSM
SCALE: 1/8"=1'-0"
PROJ #: 2024087.00

DRAWING NUMBER:
ED101



1 ELECTRICAL POWER FLOOR PLAN
SCALE: 1/8"=1'-0"

DRAWING NOTES:

1. REFER TO MOTOR CIRCUIT SCHEDULE ON DRAWING E400 FOR CIRCUIT/SOURCE PANEL INFORMATION.
2. REFER TO DRAWING E400 FOR ADDITIONAL INFORMATION

KEY NOTES:

1. PROVIDE NEW TYPEWRITTEN CIRCUIT DIRECTORY.
2. REFER TO THE ENLARGED PART ON DRAWING E103 FOR ADDITIONAL SCOPE OF WORK IN THIS AREA.
3. FIRE ALARM DEVICES SHALL BE CONNECTED ONTO EXISTING CIRCUIT IN AREA. CONTRACTOR TO COORDINATE WITH EXISTING FIELD CONDITIONS AND FIRE ALARM SYSTEM VENDOR. NEW FIRE ALARM DEVICES SHALL BE LISTED COMPATIBLE WITH EXISTING FIRE ALARM SYSTEM.

2 BOILER ROOM
SCALE: 1/8"=1'-0"

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KEYPLAN

REVISIONS

REV. NO.	DATE	DESCRIPTION

DRAWING TITLE:
ELECTRICAL POWER FLOOR PLAN

DRAWING NUMBER:
EP101

DATE: 08/05/24
DRAWN BY: RZP
CHECKED BY: RSM
SCALE: 1/8"=1'-0"
PROJ #: 2024087.00

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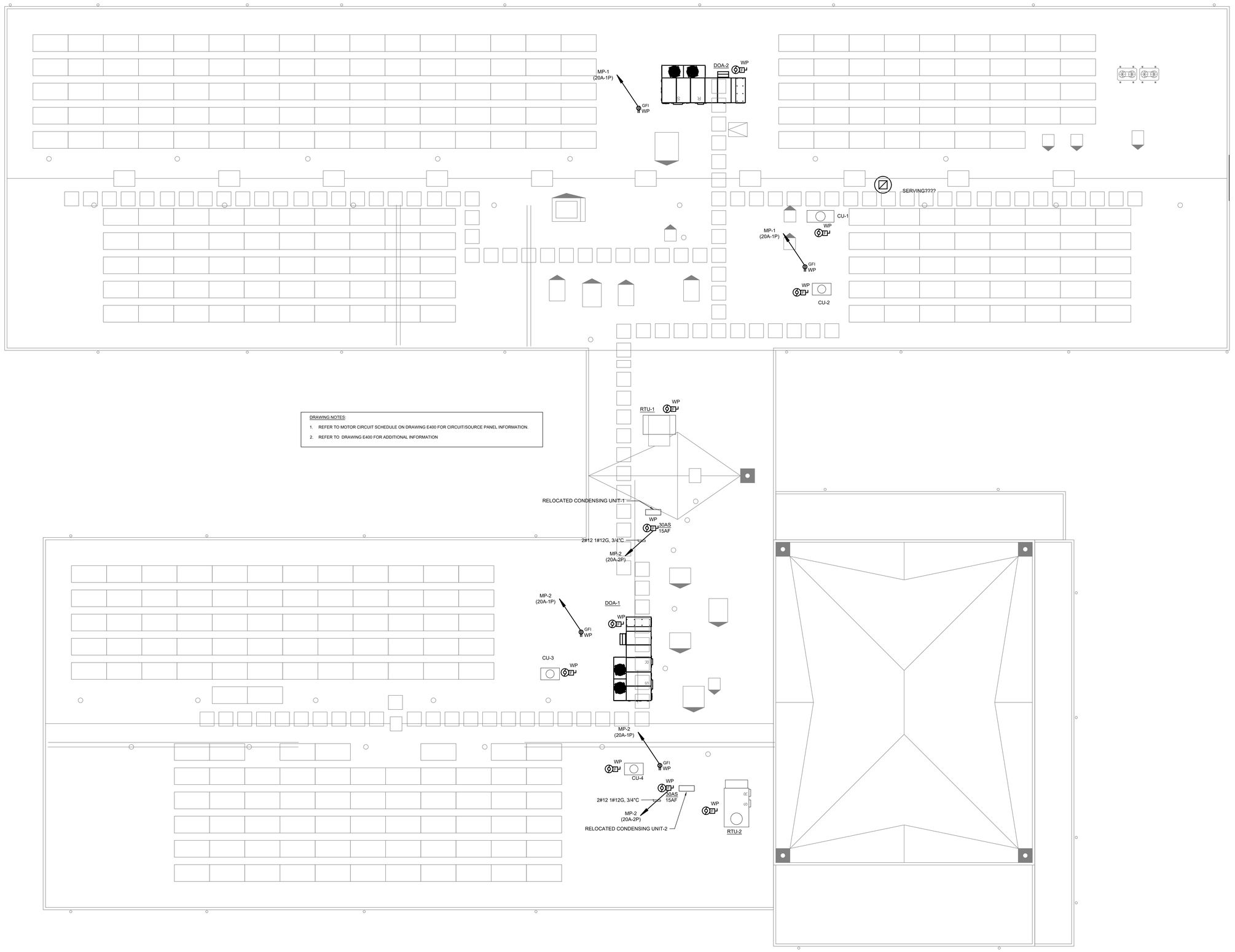

DRAWING NOTES:

1. REFER TO MOTOR CIRCUIT SCHEDULE ON DRAWING E400 FOR CIRCUIT/SOURCE PANEL INFORMATION.
2. REFER TO DRAWING E400 FOR ADDITIONAL INFORMATION

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REV. NO.	DATE	DESCRIPTION

DRAWING TITLE:
ELECTRICAL ROOF
NEW WORK PLAN

DATE:	08/05/24
DRAWN BY:	RZP
CHECKED BY:	RSM
SCALE:	1/8"=1'-0"
PROJ #:	2024087.00

DRAWING NUMBER:
EP102

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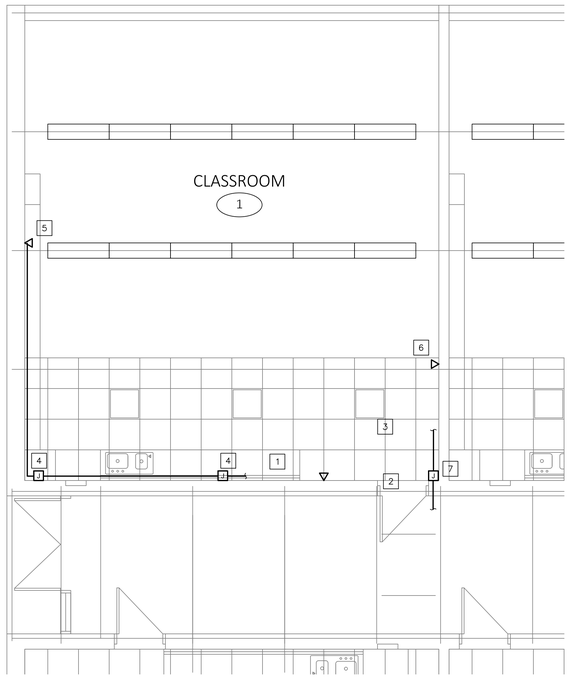
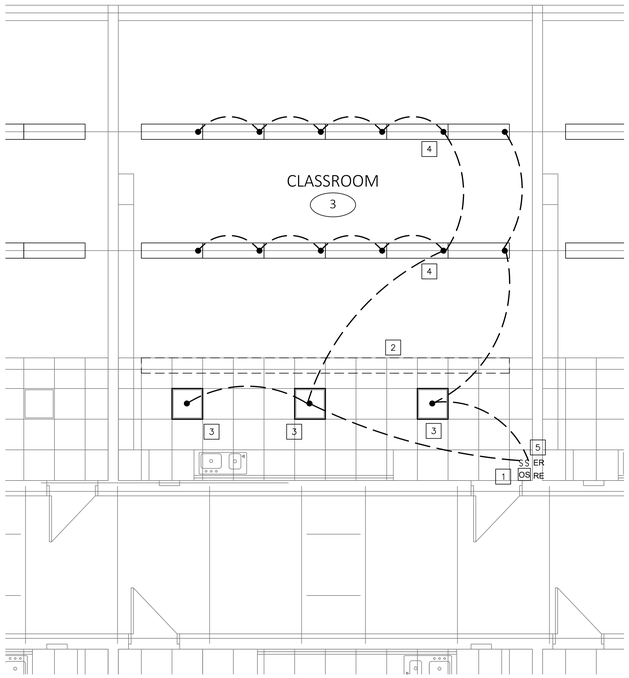


1 ELECTRICAL POWER PLAN
SCALE: 1/4" = 1'-0"

POWER PLAN-KEY NOTES:

1. RELOCATED EXISTING WALL-MOUNTED CLOCK . THE EXISTING WALL CLOCK SHALL BE MOUNTED ON THE SIDE OF THE NEW SOFFIT. EXTEND 120VAC CIRCUIT AS REQUIRED. COORDINATE WITH THE ARCHITECT AND OWNER'S REPRESENTATIVE ACTUAL LOCATION PRIOR TO INSTALLATION.
2. REMOVE EXISTING SPEAKER ON WALL. EXISTING WIRING TO REMAIN.
3. FURNISH AND INSTALL NEW CEILING MOUNT 25-VOLT SPEAKER, NEW SPEAKER SHOULD BE COMPATIBLE WITH THE EXISTING BOGEN CONTROL PANEL MODEL NUMBER MCP35A. EXTEND WIRING AS REQUIRED.
4. RELOCATE EXISTING JUNCTION BOX PART OF DATA RACEWAY. RE-ROUTED CONDUIT BELOW NEW DUCTWORK IN THE AREA WHERE A NEW CEILING IS INSTALLED.
5. EXISTING DATA DROP TO REMAIN. COORDINATE WITH THE OWNER'S REPRESENTATIVE IF THE DATA DROP WILL BE REMOVED IN SOME SPECIFIC CLASSROOM PRIOR TO RE-ROUTE THE CONDUIT IN THE AREA WHERE A NEW DROP CEILING IS INSTALLED.
6. SHIFT EXISTING DATA DROP TO THE LEFT TO CLEAR NEW CEILING. EXTEND CAT WIRE AS REQUIRED.
7. RELOCATE EXISTING JUNCTION BOX PART OF POWER WIRING.



1 ELECTRICAL LIGHTING PLAN
SCALE: 1/4" = 1'-0"

LIGHTING PLAN- KEY NOTES:

1. RELOCATE EXISTING WALL- MOUNTED OCCUPANCY SENSOR. MOUNT OCCUPANCY SENSOR AT 7' A.F.F. EXTEND CONTROL WIRING AS REQUIRED. REFER TO EACH ROOM FOR ACTUAL LOCATION.
2. REMOVE EXISTING LIGHT FIXTURES. EXISTING LED LIGHTS AT STEEL BEAM TO BE SALVAGED AND RETURNED TO OWNER FOR RE-USE.
3. FURNISH AND INSTALL NEW 2x2 LIGHT FIXTURE. COORDINATE LIGHT FIXTURE TYPE/SPECIFICATIONS WITH THE OWNER. EXTEND POWER AND CONTROL WIRING AS REQUIRED.
4. EXISTING LIGHT FIXTURES TO BE REMAIN.
5. EXISTING SINGLE POLE LIGHT SWITCHES TO BE REMAIN. COORDINATE LIGHTING CONTROL APPROACH WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. REFER TO EACH ROOM FOR ACTUAL LOCATION.

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KEYPLAN

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REVISIONS

REV. NO.	DATE	DESCRIPTION

DRAWING TITLE:
ELECTRICAL POWER AND LIGHTING ENLARGED CLASSROOM FLOOR PLAN TYPICAL

DATE: 08/05/24
DRAWN BY: RZP
CHECKED BY: RSM
SCALE: AS NOTED
PROJ #: 2024087.00

DRAWING NUMBER:
E103

File Name:E103 Enlarged Classroom Floor Plan.dwg 8/5/2024 3:39:01 PM User ID: McKenna, Sean P
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ELECTRICAL MASTER STANPAT SPECIFICATION

ELECTRICAL SPECIFICATION

PART 1 - GENERAL

1.1 GENERAL

A. ARCHITECT'S GENERAL CONDITIONS ARE A PART OF THIS DIVISION. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS OF LOCAL AND STATE AGENCIES AND UTILITY COMPANIES. THIS CONTRACTOR SHALL BEAR THE COST OF ALL FEES, PERMITS, LICENSES AND TAXES AND ANY UTILITY COMPANY CHARGES IN CONNECTION WITH THE WORK. ALL EQUIPMENT INSTALLED SHALL BE UL LISTED.

B. AIA DOCUMENT A201-CURRENT VERSION, "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION" IS HEREBY MADE PART OF THESE SPECIFICATIONS.

C. THIS PROJECT WILL BE COMMISSIONED. REFER TO COMMISSIONING SPECIFICATION SECTIONS FOR COMMISSIONING INFORMATION AND RESPONSIBILITIES. THE COMMISSIONING PROCESS WILL REQUIRE ADDITIONAL LABOR, MATERIAL AND/OR OTHER COSTS WHICH MUST BE PROVIDED BY THE CONTRACTOR AS PART OF THIS PROJECT.

1.2 SCOPE

A. DEMOLITION:

1. THE CONTRACTOR SHALL REFERENCE ARCHITECTURAL AND ELECTRICAL PLANS AND REMOVE OR RELOCATE EXISTING ELECTRICAL MATERIALS AS SHOWN OR WHICH EXIST ON WALLS AND PARTITIONS BEING REMOVED. ADDITIONALLY, THE CONTRACTOR SHALL REMOVE ALL ELECTRICAL FEEDS TO EXISTING FURNITURE PARTITIONS TO BE REMOVED. REMOVAL OF WIRING THAT IS NO LONGER IN SERVICE SHALL BE COMPLETE BACK TO SOURCE. EXISTING CONDUIT MAY BE REUSED WHEN IN SUITABLE CONDITION. WIRING FOR BRANCH CIRCUITS SHALL NOT BE REUSED UNLESS OTHERWISE NOTED. CIRCUITS THAT REMAIN SHALL BE LEFT IN OPERATING CONDITION.

2. THE CONTRACTOR SHALL REMOVE ALL UNUSED TELEPHONE AND DATA CABLES COMPLETE FROM OUTLET TO PATCH PANEL.

3. EXISTING ELECTRICAL MATERIALS SHALL NOT BE REUSED UNLESS SO INDICATED ON THE DRAWINGS. EXISTING FLUSH-MOUNTED BOXES IN GOOD CONDITION MAY BE REUSED IF LOCATED AS SHOWN FOR NEW BOXES ON DRAWINGS. FLUSH-MOUNTED BOXES NOT BEING REUSED SHALL BE COVERED WITH SUITABLE COVER PLATES, SURFACE BOXES AND RACEWAYS SHALL BE REMOVED.

4. ALL MATERIALS REMOVED UNDER THIS DIVISION AND NOT SCHEDULED FOR REUSE OR REQUESTED BY THE OWNER, SHALL BE DISPOSED OF OFF SITE.

B. NEW WORK:

1. PROVIDE COMPLETE ELECTRICAL LIGHTING, POWER, FIRE ALARM AND SPECIAL SYSTEMS AS INDICATED ON THE CONTRACT DRAWINGS.

2. PROVIDE ALL ELECTRICAL WORK NECESSARY TO POWER OWNER-SUPPLIED EQUIPMENT. PROVIDE ALL RECEPTACLES, POWER WIRING, UNDERFLOOR DISTRIBUTION SYSTEM ACTIVATION FITTINGS, CORE DRILLS, ETC., NECESSARY FOR A COMPLETE INSTALLATION.

3. REFER TO ARCHITECTURAL SPECIFICATIONS FOR SECURITY SYSTEM REQUIREMENTS.

4. SYSTEMS SHALL BE COMPLETE IN ALL RESPECTS, TESTED, APPROVED AND READY FOR OPERATION.

5. MAINTAIN EXISTING RECEPTACLES ON EXISTING WALLS TO REMAIN, RECONNECT CIRCUITS THAT ARE INTERRUPTED.

C. WORK BY OTHERS:

1. OTHER TRADE CONTRACTORS AND OWNER'S EQUIPMENT VENDORS SHALL INSTALL ALL MOTORS FOR EQUIPMENT PROVIDED UNDER THEIR TRADE WORK CONTRACTS; MOTORS SHALL BE READY FOR WIRING BY THE ELECTRICAL CONTRACTOR.

2. OTHER TRADE CONTRACTORS AND OWNER'S EQUIPMENT VENDORS SHALL FURNISH AND DELIVER TO THE ELECTRICAL CONTRACTOR WIRING DIAGRAMS FOR ALL ELECTRICALLY OPERATED EQUIPMENT. OTHER TRADE CONTRACTORS SHALL FURNISH RELAYS AND CONTROL EQUIPMENT TO THE ELECTRICAL CONTRACTOR WHO SHALL INSTALL AND WIRE THESE DEVICES. THE ELECTRICAL CONTRACTOR SHALL PROVIDE MOTOR STARTERS AND DISCONNECT SWITCHES.

3. THE GENERAL CONTRACTOR SHALL PROVIDE EXCAVATION, BACKFILL, CHASES, OPENINGS, CUTTING, PATCHING, PAINTING AND FINISH WORK.

4. THE GENERAL CONTRACTOR SHALL INSTALL ALL ACCESS DOORS WHERE REQUIRED; DOORS NEEDED FOR ACCESS TO ELECTRICAL SYSTEMS SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR.

1.3 SHOP DRAWING SUBMITTALS

A. SUBMIT SHOP DRAWINGS ON EQUIPMENT AND MATERIALS, IN SEXTUPLET (6 COPIES), TO THE ARCHITECT FOR APPROVAL. THE DRAWINGS SHALL INCLUDE RATINGS, PERFORMANCE INFORMATION, OPERATING DATA AND WIRING DIAGRAMS. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR WORK PERFORMED OR EQUIPMENT SUPPLIED THAT IS NOT IN AGREEMENT WITH APPROVED SHOP DRAWINGS.

B. THE FOLLOWING LIST OF ELECTRICAL ITEMS MUST BE SUBMITTED BY THIS CONTRACTOR FOR APPROVAL:

1. CIRCUIT BREAKERS

2. WIRING DEVICES AND PLATES

3. FIRE ALARM SYSTEM COMPONENTS

C. SUBMIT FOR RECORD AN ITEMIZED LIST DETAILING ELECTRICAL SYSTEMS AND COMPONENTS TO BE SEISMICALLY RESTRAINED AND ASSOCIATED SEISMIC RESTRAINT SYSTEM TO BE USED.

1.4 RECORD DRAWINGS

A. NEATLY AND ACCURATELY RECORD ALL CHANGES TO CONTRACT DOCUMENTS ON RECORD SET OF DRAWINGS FURNISHED BY THE GENERAL CONTRACTOR. THESE RECORD "AS-BUILT" DRAWINGS SHALL INCLUDE LOCATIONS OF SPECIFIC ITEMS AS LISTED IN THE VARIOUS SPECIFICATION DIVISIONS. UPON PROJECT COMPLETION, THESE RECORD DRAWINGS SHALL BE TURNED OVER TO THE ENGINEER.

1.5 DEFINITION

A. AS USED ON CONTRACT DRAWINGS, THE TERM "TO PROVIDE" SHALL MEAN "TO FURNISH, INSTALL AND CONNECT COMPLETELY IN THE SPECIFIED OR APPROVED MANNER THE ITEM OR MATERIAL DESCRIBED."

1.6 GUARANTEE

A. MATERIALS, EQUIPMENT AND WORKMANSHIP SHALL HAVE STANDARD WARRANTY AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP. FAILURES DUE TO DEFECTIVE OR IMPROPER MATERIAL, EQUIPMENT, WORKMANSHIP OR DESIGN SHALL BE MADE GOOD, FORTHWITH, BY AND AT THE EXPENSE OF THE CONTRACTOR, INCLUDING DAMAGE DONE TO AREAS, MATERIALS AND OTHER SYSTEMS RESULTING FROM SUCH FAILURES. GUARANTEE PERIOD SHALL EXTEND FOR ONE YEAR FROM THE DATE OF ACCEPTANCE.

1.7 INSPECTION

A. CONTRACT DRAWINGS ARE DIAGRAMMATIC AND DO NOT SHOW EVERY REQUIRED FITTING, ETC. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH EXISTING SITE CONDITIONS PRIOR TO SUBMITTING A BID, AND SHALL INCLUDE ALL EQUIPMENT AND ACCESSORIES NECESSARY FOR COMPLETE AND OPERATIONAL SYSTEMS.

1.8 INSURANCE

A. FURNISH INSURANCE CERTIFICATES REQUIRED BY THE OWNER.

1.9 PERMITS, LAWS, ORDINANCES, CODES AND STANDARDS

A. OBTAIN AND PAY FOR PERMITS, INSPECTIONS, LICENSES AND CERTIFICATES REQUIRED. WORK OF THIS CONTRACT SHALL MEET CURRENT ACCEPTED EDITIONS OF THE STATE BUILDING CODE, STATE FIRE SAFETY CODE AND OTHER LAWS, RULES AND REGULATIONS OF LOCAL, STATE AND FEDERAL AUTHORITIES INCLUDING, BUT NOT LIMITED TO: NATIONAL FIRE PROTECTION ASSOCIATION #13; NATIONAL FIRE PROTECTION ASSOCIATION #90A; NATIONAL FIRE PROTECTION ASSOCIATION #90B; NATIONAL FIRE PROTECTION ASSOCIATION #99; INTERNATIONAL PLUMBING CODE; INTERNATIONAL MECHANICAL CODE; NATIONAL FIRE PROTECTION ASSOCIATION #70 (NATIONAL ELECTRICAL CODE); AND LOCAL UTILITY COMPANY REQUIREMENTS. PAY UTILITY COMPANY BACKCHARGES. EQUIPMENT, MATERIALS AND COMPONENTS LISTED IN UL PRODUCT DIRECTORIES, SHALL BEAR UL LABELS.

1.10 ARRANGEMENT OF WORK

A. WORK SHALL BE COORDINATED BETWEEN TRADES TO PREVENT INTERFERENCE. WORK SHALL PRESENT A NEAT COORDINATED APPEARANCE. INSTALL WORK AS NECESSARY TO PROVIDE MAXIMUM POSSIBLE HEADROOM, ADEQUATE CLEARANCE AND READY ACCESS FOR INSPECTION, OPERATION, SAFE MAINTENANCE AND REPAIR AND CODE CONFORMANCE. WHERE SPACE APPEARS INADEQUATE, CONSULT THE ARCHITECT BEFORE PROCEEDING WITH INSTALLATION.

1.11 WORKMANSHIP

A. EQUIPMENT AND MATERIALS SHALL BE NEW, OF FIRST QUALITY, SELECTED AND ARRANGED TO FIT PROPERLY INTO SPACES INDICATED. INSTALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

1.12 COORDINATION WITH OWNER

A. WORK SHALL BE SCHEDULED WITH THE OWNER. INTERRUPTIONS IN OWNER'S ACCESS TO THE SITE SHALL BE SUBJECT TO OWNER LIMITATIONS OF DATE AND DURATION.

1.13 OPERATION OF SERVICES AND UTILITIES

A. SHUTDOWN OF EXISTING SERVICES AND UTILITIES SHALL, WITHOUT EXCEPTION, BE COORDINATED WITH THE PROPER UTILITY AND WITH THE OWNER AS TO DATE, TIME OF DAY, AND DURATION BEFORE ANY SERVICE IS INTERRUPTED. NOTIFY THE OWNER OF ESTIMATED DURATION OF SHUTDOWN PERIOD AT LEAST TEN DAYS IN ADVANCE OF PROPOSED SHUTDOWN.

1.14 PROTECTION

A. CLOSE OPEN ENDS OF WORK WITH TEMPORARY COVERS OR PLUGS DURING CONSTRUCTION TO PREVENT ENTRY OF FOREIGN MATERIAL. PROTECT EXISTING PROPERTY, EQUIPMENT AND FINISHES FROM DAMAGE. REPAIR, TO ORIGINAL CONDITION, EXISTING PROPERTY THAT HAS BEEN DAMAGED DURING EXECUTION OF THE WORK.

B. TEMPORARY HEATING: APPLY TEMPORARY HEAT TO ELECTRICAL EQUIPMENT INCLUDING BUT NOT LIMITED TO SWITCHGEAR, SWITCHBOARDS, TRANSFORMERS AND MOTOR CONTROL CENTERS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS, THROUGHOUT PERIODS WHEN ENVIRONMENT IS NOT CONTROLLED FOR TEMPERATURE AND HUMIDITY WITHIN MANUFACTURER'S STIPULATED SERVICE CONDITIONS.

1.15 CLEANING

A. WORK SITE MUST BE KEPT CLEAN. RUBBISH, DEBRIS AND LEFTOVER OR EXCESS MATERIALS SHALL BE REMOVED DAILY.

1.16 LUBRICATION

A. NO EQUIPMENT SHALL BE OPERATED FOR TEMPORARY SERVICE OR TESTING WITHOUT PROPER LUBRICATION. ITEMS REQUIRING LUBRICATION SHALL BE LEFT FRESHLY AND FULLY LUBRICATED AT TIME OF SUBSTANTIAL COMPLETION. FURNISH OWNER WITH ONE COMPLETE NEW SET OF ANY SPECIAL LUBRICATION DEVICES REQUIRED FOR SERVICING, E.G., GREASE GUNS, FITTINGS AND ADAPTERS.

1.17 PAINTING

A. EQUIPMENT AND MATERIALS SHALL HAVE STANDARD MANUFACTURER'S FINISH EXCEPT WHERE OTHERWISE NOTED.

1.18 CUTTING AND PATCHING

A. CUTTING AND PATCHING TO BE PERFORMED BY (GENERAL CONTRACTOR) (THIS CONTRACTOR). PAINTING OF FINISHED SURFACES AFTER PATCHING SHALL BE AS SPECIFIED BY ARCHITECT OR SHALL MATCH ADJACENT FINISHES.

1.19 WATERPROOFING

A. PROVIDE NECESSARY SLEEVES, CAULKING AND FLASHING REQUIRED TO MAKE OPENINGS WATERPROOF.

1.20 FIREPROOFING

A. AT CLOSING OF EACH WORKING DAY, OPENING CUT BETWEEN FLOORS AND THROUGH FIRE-RATED PARTITIONS SHALL BE PROVIDED WITH UL APPROVED, CLASS A "NONCOMBUSTIBLE", FIRESTOPPING WITH RATINGS EQUAL TO THAT OF ADJACENT CONSTRUCTION.

1.21 BASES AND SUPPORTS

A. PROVIDE NECESSARY SUPPORTS, PADS, BASES AND PIERS FOR EQUIPMENT. EQUIPMENT SHALL BE SECURELY ATTACHED TO BUILDING STRUCTURE IN ACCEPTABLE MANNER. ATTACHMENTS SHALL BE OF STRONG AND DURABLE NATURE, AS DETERMINED BY THE OWNER.

1.22 ACCESS

A. PROVIDE ADEQUATELY SIZED ACCESS DOORS, FOR ACCESS TO CONCEALED EQUIPMENT AND COMPONENTS REQUIRING SERVICING OR INSPECTION. DOORS SHALL HAVE FIRE RATINGS EQUAL TO CONSTRUCTION IN WHICH THEY ARE LOCATED.

1.23 TESTS

A. PERFORM TESTS REQUIRED BY THE OWNER, LEGAL AUTHORITIES AND AGENCIES. EACH PIECE OF EQUIPMENT, INCLUDING MOTORS AND CONTROLS, SHALL BE OPERATED CONTINUOUSLY FOR MINIMUM ONE-HOUR TEST. CORRECT ALL DEFECTS APPEARING DURING TESTS, AND REPEAT TESTS UNTIL NO DEFECTS ARE DISCLOSED. FINAL TESTS SHALL BE MADE IN THE OWNER'S PRESENCE.

1.24 SYSTEMS OPERATION AND MAINTENANCE

A. UPON COMPLETION OF THE WORK AND AT A TIME DESIGNATED BY THE ENGINEER, THE CONTRACTOR SHALL FURNISH INSTRUCTION MANUALS INCLUDING DATA, WARRANTIES, ETC., AND SHALL INSTRUCT THE OWNER OR HIS REPRESENTATIVE AS TO THE ARRANGEMENT, LOCATION AND OPERATION OF ALL EQUIPMENT AND SYSTEMS FURNISHED AND INSTALLED UNDER THE ELECTRICAL CONTRACT.

1.25 SEISMIC REQUIREMENTS

A. SUBMIT SIX (6) COPIES OF A FINAL INSPECTION REPORT WHICH INCLUDES: SEALED CERTIFICATION BY A STRUCTURAL ENGINEER WITH P.E. REGISTRATION IN THE STATE IN WHICH THE PROJECT IS LOCATED, THAT:

1. ENGINEER HAS REVIEWED THE PROJECT.

2. ENGINEER HAS APPROVED THE USE OF THE DEVICES FOR THE PARTICULAR APPLICATIONS.

3. THE DEVICES SATISFY SPECIFICATION- AND CODE-MANDATED SEISMIC CRITERIA.

B. APPLICATION OF SEISMIC RESTRAINT REQUIREMENTS IS GOVERNED BY THE 2005 STATE OF CONNECTICUT BUILDING CODE WITH REFERENCE TO A.S.C.E. 7-05, SECTION 9.6. REFER TO ARCHITECTS CODE SHEET FOR THE SEISMIC DESIGN CATEGORY FOR THIS PROJECT.

C. SEISMIC RESTRAINT FOR ALL TRADES SHALL BE PROVIDED AS REQUIRED, BASED ON THE BUILDING SEISMIC DESIGN CATEGORY AND MATERIAL IMPORTANCE FACTORS. REFER TO INDIVIDUAL TRADE SECTIONS FOR ADDITIONAL REQUIREMENTS.

PART 2 - PRODUCTS

2.1 WIRE CABLE AND RACEWAYS

A. ELECTRICAL METALLIC TUBING (EMT) SHALL BE USED FOR FEEDERS RUN ABOVE GROUND IN DRY AREAS. CONNECTORS AND COUPLINGS SHALL BE GALVANIZED STEEL, EITHER COMPRESSION TYPE OR HEAVY-DUTY SET SCREW-TYPE, LISTED FOR EMT USE. INDENT OR CRIMP-TYPE CONNECTORS ARE NOT ALLOWED.

B. EMT OR RGS SHALL BE USED FOR ALL CIRCUIT HOMERUNS.

C. MINIMUM SIZES SHALL BE AS FOLLOWS:

1. CONDUIT AND EMT: 3/4" UNLESS OTHERWISE NOTED.

2. FLEXIBLE METAL CONDUIT: ½"

3. WIREWAY: 4" X 4".

D. TYPE MC METAL-CLAD CABLE MAY BE USED FOR BRANCH WIRING TO LIGHT FIXTURES, RECEPTACLES AND SWITCHES. WHEREVER MC CABLE IS USED FOR LIGHT FIXTURE WIRING, LEAVE SUFFICIENT SLACK FOR FUTURE REMOVAL OR SERVICING OF FIXTURES IN FINISHED CEILINGS. THE MC CABLE SHALL BE UL LISTED, 600V, 90 DEGREE C RATED, METAL CLAD WITH THHN INSULATION AND GREEN INSULATED GROUND WIRE. CONNECTORS AND FITTINGS SHALL BE GALVANIZED STEEL, LISTED FOR MC CABLE USE. ALL CABLES SHALL BE RIGIDLY SUPPORTED FROM THE BUILDING STRUCTURE AT LEAST 4' O.C. AND WITHIN 12" FROM EVERY FITTING AND SHALL RUN IN LINES PARALLEL OR PERPENDICULAR TO BUILDING STRUCTURAL MEMBERS. CABLE SHALL NOT REST ON THE CEILING STRUCTURE. TYPE MC CABLE SHALL NOT BE USED FOR HOMERUNS. CABLE SHEATH OF INTERLOCKED ALUMINUM IS NOT ACCEPTABLE. TYPE AC ARMORED CABLE SHALL NOT BE PERMITTED ON THE JOB.

E. FLEXIBLE METALLIC CONDUIT (FMC) OR LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LFMC) SHALL BE USED FOR CONNECTIONS TO VIBRATING EQUIPMENT AND FURNITURE PARTITIONS. CONNECTORS, FITTINGS AND CLAMPS FOR FMC SHALL BE GALVANIZED STEEL, LISTED FOR FMC USE. CONNECTORS AND COUPLINGS FOR LFMC SHALL BE ZINC PLATED MALLEABLE IRON OR STEEL, WITH ENGAGEMENT WINDOW LOCKNUT AND SEALING RING: LIQUID, OIL, AND RAIN-TIGHT; SUITABLE FOR WET LOCATIONS, LISTED FOR LFMC USE: ACCEPTABLE EQUIVALENT TO O-Z/GEDNEY "TYPE 4Q".

1. BLUE TYPE LA LIQUID-TIGHT FLEXIBLE METAL CONDUIT (LFMC) SHALL BE USED FOR ALL WIRING BENEATH RAISED FLOOR.

2. GREY/TAN TYPE LA LIQUID-TIGHT FLEXIBLE METAL CONDUIT (LFMC) SHALL BE USED FOR FINAL CONNECTIONS TO VIBRATING EQUIPMENT AND TO FURNITURE PARTITIONS FROM UNDERFLOOR DUCT ACTIVATION FITTINGS.

F. WIRING THAT MUST BE RUN ALONG THE SURFACE OF THE EXISTING WALLS SHALL BE RUN IN WIREMOLD #500 SURFACE METAL RACEWAY, WIREMOLD #2100 SURFACE METAL RACEWAY OR AS OTHERWISE SPECIFIED ON THE DRAWINGS.

G. CONDUCTORS SHALL BE NEW COPPER WITH 600 VOLT CODE GAUGE INSULATION CONFORMING TO NEC REQUIREMENTS. WIRE #10 AND SMALLER SHALL BE SOLID CONDUCTOR WITH THWN/THHN INSULATION, SIZE #8 AND LARGER SHALL BE STRANDED CONDUCTORS WITH THWN/THHN INSULATION. SIZE #3 AND LARGER SHALL BE STRANDED CONDUCTORS WITH XHHW INSULATION. MINIMUM SIZE WIRE FOR LIGHT AND POWER CIRCUITS SHALL BE #12 AWG. THE CONTRACTOR SHALL INCLUDE AN INDIVIDUAL CODE SIZED GREEN INSULATED GROUND CONDUCTOR FOR ALL CIRCUITS; THE USE OF THE CONDUIT SYSTEM OR CABLE COVERING AS THE SOLE MEANS OF GROUNDING WILL NOT BE PERMITTED.

H. COMMON NEUTRALS SHALL NOT BE USED FOR RECEPTACLE CIRCUITS, UNLESS OTHERWISE NOTED ON PLANS. WHEN USED, COMMON NEUTRAL CONDUCTOR AMPERE RATING SHALL BE DOUBLE THE PHASE CONDUCTOR RATING.

I. ALL CONDUITS AND WIRING SHALL BE RUN CONCEALED INSIDE WALLS WHERE POSSIBLE. EXPOSED CONDUITS WHERE ALLOWED SHALL BE RUN NEATLY IN LINES PARALLEL OR PERPENDICULAR TO BUILDING WALLS.

J. ALL SPLICES FOR #10 OR SMALLER SHALL BE MADE WITH "SCOTCHLOK" SPRING CONNECTORS OR EQUAL. SPLICES FOR #8 OR LARGER SHALL BE MADE WITH UL APPROVED COMPRESSION CONNECTORS.

K. PROVIDE NYLON PULL LINES FOR ALL EMPTY CONDUITS.

2.2 GROUNDING AND BONDING

A. EQUIPMENT GROUNDS

1. GROUNDING SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH NFPA 70 (NEC) AND TO SATISFACTION OF LOCAL ELECTRICAL INSPECTOR AND ARCHITECT.

2. PROVIDE GREEN THHN INSULATED COPPER EQUIPMENT GROUNDING CONDUCTOR BETWEEN THE GROUND BUS OF THE SOURCE DISTRIBUTION PANEL OR SWITCHBOARD AND EACH LOAD BEING SERVED. CONDUCTOR SHALL BE SIZED ACCORDING TO NEC TABLE 250.122. PROVIDE SEPARATE GROUNDING CONDUCTOR FOR EACH BRANCH CIRCUIT, UNLESS OTHERWISE INDICATED ON CONTRACT DRAWINGS.

3. MAINTAIN ELECTRICAL CONTINUITY OF RACEWAYS.

B. GROUND FAULT PROTECTION

1. IF EXCESSIVE GROUND CURRENT FLOWS, MAIN BREAKERS AND/OR CIRCUIT BREAKERS WITH GROUND FAULT SENSING SHALL TRIP TO PROTECT AGAINST ARCING GROUND FAULTS.

2. PROVIDE GROUND FAULT CIRCUIT INTERRUPTER PROTECTION FOR RECEPTACLES LOCATED WITHIN SIX FEET OF SINK OR FAUCET AND AS REQUIRED AND INDICATED.

C. MATERIALS

1. ABOVE-GRADE AND EXPOSED CONNECTIONS SHALL BE BURNDY OR ACCEPTABLE EQUIVALENT.

2. WIRE SHALL BE STRANDED BARE COPPER OR INSULATED COPPER, AS INDICATED ON CONTRACT DRAWINGS.

3. BUS SHALL BE COPPER BAR, AS INDICATED ON CONTRACT DRAWINGS.

4. BUSHINGS AND PRESSURE LUGS SHALL BE BY T&B, O.Z./GEDNEY OR ACCEPTABLE EQUIVALENT.

5. PIPE CLAMPS SHALL BE BY O.Z./GEDNEY OR ACCEPTABLE EQUIVALENT.

2.3 SAFETY SWITCHES

A. SAFETY SWITCHES SHALL BE FUSED, 600 VAC, HEAVY-DUTY TYPE IN NEMA ENCLOSURES SUITABLE FOR THE ENVIRONMENT IN WHICH THEY SHALL BE INSTALLED. SWITCHES SHALL BE SQUARE D, GENERAL ELECTRIC OR CUTLER-HAMMER EQUIVALENT TO THE FOLLOWING SQUARE D TYPES:

1. FUSED DISCONNECT 2- AND 3-POLE: "TYPE H"

2. FUSED, RAINTIGHT (WP) DISCONNECT SWITCHES IN NEMA 3R ENCLOSURES: "TYPE H-R".

2.4 FUSES

A. FUSES FOR CIRCUIT PROTECTION SHALL BE UL LISTED, NON-RENEWABLE, LOW PEAK, DUAL-ELEMENT, TIME DELAY FUSES. BUSSMAN TYPE FRN-RK (250 VOLT) OR FRS-RK (460 VOLT) UL CLASS RK5 OR APPROVED EQUAL.

2.5 OUTLET AND JUNCTION BOXES

A. SWITCH AND RECEPTACLE OUTLET BOXES IN PARTITIONS WHERE WIRING IS CONCEALED SHALL BE STANDARD 4 INCHES SQUARE, 1-1/2 INCHES DEEP, HOT-DIPPED, GALVANIZED STEEL, WITH DEVICE RING FOR BOXES INSTALLED IN SHEETROCK WALLS. USE 1-1/2 INCH DEEP SQUARE CORNER TILE WALL EXTENSION FOR BOXES INSTALLED IN TILE, EXPOSED BRICK OR EXPOSED BLOCK MASONRY WALLS.

B. BOXES SHALL BE SECURELY FASTENED TO THE BUILDING STRUCTURE. SUITABLE MEANS SHALL BE PROVIDED TO SUPPORT OUTLET BOXES TO TAKE THE WEIGHT OF FIXTURES. RECESSED OUTLET BOXES OR THEIR EXTENSION COVERS SHALL BE SET FLUSH WITH FACE OF FINISHED WALL, BUT IN NO CASE SET GREATER THAN 1/4 INCH BEHIND FINISHED FACE OF WALL. THE CONTRACTOR SHALL CHECK WITH THE ARCHITECTURAL DRAWINGS FOR POSSIBLE BOX INTERFERENCE.

C. JUNCTION BOXES SHALL BE SIZED IN ACCORDANCE WITH CODE REQUIREMENTS.

D. JUNCTION AND OUTLET BOXES WHERE EXPOSED TO THE WEATHER AND WET LOCATIONS SHALL BE THREADED HUB TYPE AND PROVIDED WITH WATERTIGHT SCREW-ON COVERS AND GASKETS.

2.6 SWITCHES, RECEPTACLES AND PLATES

A. SWITCHES AND RECEPTACLES SHALL BE AS MANUFACTURED BY HUBBELL, ARROW-HART, LEVITON OR PASS AND SEYMOUR AND EQUIVALENT TO THE FOLLOWING SPECIFICATION GRADES, WITH COLOR MATCHING BUILDING STANDARD:

1. SINGLE-POLE SWITCHES SHALL BE HUBBELL #1221.

2. 3-WAY SWITCHES SHALL BE HUBBELL #1223.

3. MOMENTARY CONTACT SWITCHES SHALL BE SINGLE-POLE, DOUBLE-THROW EQUIVALENT TO HUBBELL #1557.

4. DUPLEX GROUNDING TYPE RECEPTACLES SHALL BE 20 AMPERE HUBBELL #5362.

5. ISOLATED GROUND TYPE RECEPTACLES SHALL BE 20 AMPERE HUBBELL #IG5362.

6. GROUND FAULT TYPE RECEPTACLES SHALL BE HUBBELL #GFRSTS20.

B. PROVIDE WALL PLATES EQUAL TO BUILDING STANDARD ON ALL SWITCHES AND RECEPTACLES. WHEN NO STANDARD EXISTS PROVIDE SPECIFICATION GRADE STAINLESS STEEL (TYPE 302).

C. WHERE THERE ARE MULTIPLE DEVICES IN ONE LOCATION, DEVICES SHALL BE GANGED UNDER ONE COVER PLATE. ALL WALL SWITCHES SHALL BE FLUSH MOUNTED, WHERE APPLICABLE.

D. RECEPTACLES SHALL BE MOUNTED 18 INCHES ABOVE FINISHED FLOOR WITH U GROUND UP UNLESS OTHERWISE INDICATED.

E. WALL SWITCHES SHALL BE MOUNTED 48 INCHES ABOVE FINISHED FLOOR, ON STRIKE SIDE OF DOOR, UNLESS OTHERWISE INDICATED.

F. EXISTING FIXTURES IN THE SPACE SHALL BE REUSED WHERE NOTED ON THE DRAWINGS. THE FIXTURES SHALL BE DISCONNECTED, REMOVED AND STORED BY THE ELECTRICAL CONTRACTOR AND THEN BE CLEANED AND REPLACED PRIOR TO REINSTALLATION. THE ELECTRICAL CONTRACTOR SHALL DOCUMENT, IN WRITING, ANY DAMAGE NOTED ON THE FIXTURES PRIOR TO REMOVING THEM AND SUBMIT A COPY TO THE GENERAL CONTRACTOR AND THE ENGINEER. THE ELECTRICAL CONTRACTOR SHALL BE HELD RESPONSIBLE FOR DAMAGE CAUSED BY WORK UNDER THIS PROJECT.

G. FIXTURES NOT NOTED AS BEING REUSED WILL BE TURNED OVER TO THE BUILDING OWNER, OR DISPOSED OF PER THE OWNER'S DIRECTION DURING CONSTRUCTION.

H. INSTALLATION OF LIGHTING FIXTURES:

1. FIXTURES SHALL BE SECURELY ATTACHED TO THE BUILDING STRUCTURE BY MECHANICAL MEANS AND BY SAFETY WIRE. PROVIDE BOX-MOUNTED STUDS AND ADDITIONAL STRUCTURAL SUPPORTS AS REQUIRED. PROVIDE TWO SAFETY WIRES PER FIXTURE. EACH SAFETY WIRE SHALL BE CAPABLE OF SUPPORTING FOUR TIMES THE WEIGHT OF THE FIXTURE. SAFETY WIRE SHALL BE ADJUSTED TO BE IN SLACK TENSION.

2. INSTALL SEISMICALLY RATED CLIPS TO SECURE RECESSED GRID-SUPPORTED LUMINAIRES IN PLACE. PROVIDE FOUR CLIPS PER FIXTURE.

2.7 FIRE ALARM

A. FIRE ALARM COMPONENTS SHALL BE COMPATIBLE WITH EXISTING BUILDING SYSTEM. PROVIDE ADDITIONAL CARDS AS REQUIRED TO CONTROL ADDITIONAL INITIATION DEVICES. PROVIDE ADDITIONAL AMPLIFIERS, ETC. REQUIRED TO POWER ADDITIONAL DEVICES REQUIRED TO COMPLY WITH A.D.A. ALL DEVICES AND MOUNTING HEIGHTS SHALL CONFORM TO CURRENT A.D.A. STANDARDS. STROBE UNITS SHALL BE XENON STROBE TYPE.

1. COMBINATION FIRE SPEAKER/STROBE UNITS SHALL BE MULTI-TAP SPEAKER, INITIALLY SET APPROPRIATE TAP TO PROVIDE PROPER SOUND LEVELS AND SYNCHRONIZED VISUAL UNIT WITH APPROPRIATE MODULE ADAPTER MOUNTED ON COMMON MOUNTING PLATE.

2. SMOKE DETECTORS SHALL BE ADDRESSABLE, PHOTOELECTRIC OR IONIZATION TYPE WITH TWIST LOCK BASE.

3. DUCT SMOKE DETECTORS SHALL BE ADDRESSABLE, PHOTOELECTRIC TYPE, WITH TWIST LOCK BASE, HOUSING, SAMPLING TUBES AND RELAY OUTPUT WITH REMOTE LED INDICATOR/TEST SWITCH AND APPROPRIATE SAMPLING TUBES.

4. ADDRESSABLE INTERFACE MODULES SHALL BE PROVIDED FOR MONITORING OF NON-ADDRESSABLE DEVICES AND FOR CONTROL PURPOSES.

5. PROVIDE AND INSTALL ONE MONITOR MODULE PER SMOKE DAMPER - FIRE SYSTEM SHALL MONITOR STATUS OF LIMIT SWITCH MOUNTED ON SMOKE DAMPER.

6. CONTRACTOR SHALL INSTALL CABLE IN A CLASS A CONFIGURATION. THIS SHALL BE IN ACCORDANCE WITH MANUFACTURES INSTRUCTIONS AND SHALL INCLUDE A SPECIAL EVACUATION APPLIANCE CABLE SCHEME. ALL EVACUATION APPLIANCES SHALL BE CABLED IN AN ALTERNATING FASHION BACK TO SEPARATE AMPLIFIER / POWER SUPPLY CABINETS SO THAT FAILURE OF ONE CIRCUIT WILL NOT EFFECT OCCUPANT NOTIFICATION. THERE SHALL BE AT LEAST TWO SEPARATE AMPLIFIER / POWER SUPPLY CIRCUITS FOR THIS FLOOR.

B. INITIATING CIRCUIT WIRING SHALL BE TYPE FPLP CABLE, SINGLE PAIR, TWISTED SHIELDED, SOLID THHN WITH GROUND (DRAIN) WIRE, RUN IN EMT CONDUIT, WITH MAXIMUM 6' LENGTH OF FMC WHERE REQUIRED.

C. NOTIFICATION CIRCUIT WIRING SHALL BE TYPE FPLP CABLE, SINGLE PAIR, TWISTED SHIELDED, SOLID THHN WITH GROUND (DRAIN) WIRE, AND 2 #12, 1 #12G THHN, RUN IN EMT CONDUIT, WITH MAXIMUM 6' LENGTH OF FMC WHERE REQUIRED.

D. NOTIFICATION CIRCUIT WIRING FROM THE POINT IT LEAVES THE FIRE ALARM SYSTEM NODE AND/OR TRANSPONDER TO THE POINT THE CIRCUIT ENTERS THE NOTIFICATION ZONE IT SERVES SHALL BE TYPE MI CABLE, SINGLE PAIR, TWISTED SHIELDED, SOLID AND SEPARATE (2) #12 SOLID. CABLES SHALL BE BUNDLED TOGETHER WITH STAINLESS STEEL STRAPS 2'-0" O.C.

E. WIRING FOR NETWORKING CABLING BETWEEN FIRE ALARM SYSTEM NODES AND/OR TRANSPONDERS SHALL BE TYPE MI CABLE, EIGHT (8) RUNS OF SINGLE PAIR, TWISTED SHIELDED, SOLID. CABLES SHALL BE BUNDLED TOGETHER WITH STAINLESS STEEL STRAPS 2'-0" O.C.

2.8 CIRCUIT BREAKERS

A. ALL NEW CIRCUIT BREAKERS SHALL MATCH EXISTING IN STYLE, MANUFACTURER AND INTERRUPTING RATING FOR PANEL IN WHICH THEY ARE BEING INSTALLED, UNLESS NOTED OTHERWISE.

PART 3 - EXECUTION

3.1 GENERAL

A. THE ELECTRICAL CONTRACTOR SHALL ENSURE THAT NO PIPING, DUCTWORK, LEAK PROTECTION APPARATUS OR OTHER EQUIPMENT FOREIGN TO THE ELECTRICAL TRADE PASSES THROUGH THE SPACE EQUAL TO THE WIDTH AND DEPTH OF THE ELECTRICAL DISTRIBUTION EQUIPMENT AND EXTENDING FROM THE FLOOR TO THE STRUCTURAL CEILING.

3.2 LOAD BALANCE

A. THE ELECTRICAL CONTRACTOR SHALL BALANCE THE LOADS ON THE THREE PHASES IN THE ELECTRICAL PANELBOARD IN WHICH HE DOES WORK INSOFAR AS PHYSICALLY POSSIBLE, AND REPORT EACH PANEL LOADING TO THE ENGINEER.

3.3 CIRCUIT BREAKER TESTING/SETTING

A. FEEDER CIRCUIT BREAKERS SHALL BE TESTED BY AN INDEPENDENT TESTING FIRM WITH 10 YEARS EXPERIENCE, PRIOR TO INSTALLATION.

B. TESTS SHALL BE PERFORMED AT SPECIFIED TRIP SETTING TO ENSURE PROPER OPERATION.

C. RESULTS OF TEST SHALL BE FURNISHED TO OWNER FOR RECORD.

D. VERIFY FINAL TRIP SETTINGS FOR ADJUSTABLE OR INTERCHANGEABLE CIRCUIT BREAKER ELEMENTS. INSTANTANEOUS SETTINGS SHALL BE MINIMUM UNLESS NOTED OTHERWISE.

3.4 GENERAL WIRING TESTS

A. AT THE TIME OF FINAL INSPECTION AND TEST, ALL WIRING AND CONNECTIONS THROUGHOUT THE RENOVATION AREAS MUST BE COMPLETED, DEVICES AND EQUIPMENT PROPERLY OPERATING, LIGHTING FIXTURES INSTALLED, AND POWER AND LIGHTING CIRCUIT AND CONTROL WIRING CLEARLY IDENTIFIED WITH APPROVED TAGS READY FOR ACCEPTANCE. EACH SYSTEM SHALL TEST FREE FROM SHORT CIRCUIT AND GROUNDS.

B. INSULATION RESISTANCE FOR LOW VOLTAGE CABLES AND WIRING SHALL BE PERFORMED AT 1000 VOLT D.C. FOR ONE (1) MINUTE. WHEN INSULATION RESISTANCE MUST BE DETERMINED, SWITCHBOARDS, PANELBOARDS, FUSE HOLDERS, SWITCHES AND OVERCURRENT DEVICES SHALL BE IN PLACE, AND THE INSULATION RESISTANCE WHEN TESTED AT 1000 VOLTS D.C. SHALL BE NO LESS THAN 100,000 OHMS FOR #14 AND #12 WIRE AND 250,000 OHMS FOR #10 WIRE AND LARGER.

3.5 GROUNDING SYSTEM TESTS

A. TEST AND INSPECT THE MAIN GROUNDING ELECTRODE SYSTEM IN ACCORDANCE WITH SECTION 7.13 OF THE NETA HANDBOOK FOR ELECTRICAL TESTING PROCEDURES. PERFORM A RESISTANCE TO GROUND TEST AND INSURE THAT RESISTANCE IS NO GREATER THAN 5 (FIVE) OHMS. INVESTIGATE AND SUPPLEMENT GROUNDING SYSTEM WHERE RESISTANCE EXCEEDS RECOMMENDED VALUES AND RE-TEST AS REQUIRED.

B. GROUND FAULT CIRCUIT INTERRUPTION SHALL BE TESTED AFTER INSTALLATION BY RANDOM CONNECTION OF PLUG-IN TESTER TO VARIOUS PROTECTED RECEPTACLES, AS DIRECTED BY ARCHITECT.

3.6 OPERATIONAL TESTS

A. EACH PIECE OF ELECTRICAL EQUIPMENT, INCLUDING LIGHTING FIXTURES, MOTORS AND CONTROLS SHALL BE OPERATED CONTINUOUSLY FOR MINIMUM TEST PERIOD OF ONE HOUR.

B. DEMONSTRATE BY OPERATING EQUIPMENT THAT CIRCUITS AND DEVICES ARE IN GOOD OPERATING CONDITION. EACH ITEM OF CONTROL EQUIPMENT SHALL BE OPERATED MINIMUM OF FIVE TIMES. DEMONSTRATION SHALL BE PERFORMED AFTER WIRING TESTS.

3.7 MECHANICAL SYSTEM ADJUSTMENT AND TESTING

A. BE PRESENT DURING ADJUSTMENT PERIOD AND FINAL TESTING OF MECHANICAL SYSTEMS. TAKE READINGS NECESSARY TO ENSURE THAT ELECTRICAL SYSTEMS ARE OPERATING PROPERLY. TESTS FOR MECHANICAL WORK ARE DETAILED UNDER DIVISION 15, MECHANICAL WORK.

B. TAKE AMPERE READINGS WITH TRUE RMS READING AMMETER AT EACH ELECTRICAL COMPONENT, SUCH AS MOTOR AND HEATING COIL, TO DETERMINE PROPER OPERATION.

C. RECORD READINGS AND SUBMIT THEM IN TRIPLICATE TO THE ENGINEER FOR REVIEW.

3.8 FIRE ALARM SYSTEM INSTALLATION AND TESTING

A. FIRE ALARM WIRING SHALL BE RUN IN EMT; DEVICES SHALL BE SECURELY AFFIXED TO BUILDING SURFACES.

B. JUNCTION BOXES, PULL BOXES, OUTLET BOXES AND COVERS IN THE FIRE ALARM RACEWAY SYSTEM SHALL BE PAINTED RED.

C. TEST EVERY DEVICE AND OPERATION, INCLUDING TEST BY SIMULATION OF TROUBLE, IN PRESENCE OF THE OWNER AND THE ARCHITECT. NOTIFY THE OWNER, THE ARCHITECT AND INTERESTED PARTIES OF TESTING 72 HOURS IN ADVANCE.

D. THE SYSTEM AS DESCRIBED SHALL BE INSTALLED, TESTED AND DELIVERED TO THE OWNER IN FULLY OPERATIONAL AND FIRST-CLASS CONDITION. THE SYSTEM SHALL INCLUDE ALL REQUIRED HARDWARE, RACEWAYS INTERCONNECTING WIRING AND SOFTWARE TO ACCOMPLISH THE REQUIREMENTS OF THIS CONTRACT. THE FIRE ALARM EQUIPMENT SUPPLIER WILL HAVE HAD TEN (10) YEARS PREVIOUS EXPERIENCE WITH FACILITY OPERATIONS AND REQUIREMENTS.

3.9 LABELING

A. LABEL ALL NEW DISCONNECTS, STARTERS, MOTORS, FURNITURE FEEDER BOXES, IN A MANNER ACCEPTABLE TO THE ARCHITECT. PROVIDE UPDATED PANEL SCHEDULES IN ALL PANELBOARDS WITHIN THE SCOPE OF WORK.

B. ALL MANUFACTURER'S NAMEPLATES SHALL BE KEPT CLEAN AND FREE OF PAINT.

C. DATA/COMMUNICATIONS WIRING DONE UNDER THIS CONTRACT SHALL BE RECORDED ON CABLE MANAGEMENT DRAWINGS. EACH OUTLET SHALL BE ASSIGNED A NUMBER WHICH SHALL BE KEYED TO ITS PUNCHDOWN LOCATION.

D. PROVIDE PRINTED, COLORED, ADHESIVE LABELS FOR ALL ELECTRICAL EQUIPMENT, SUCH AS BUT NOT LIMITED TO SWITCHBOARDS, PANELBOARDS, MOTOR CONTROL CENTERS, DISCONNECT SWITCHES, METER SOCKET ENCLOSURES, ETC. TO WARN QUALIFIED PERSONNEL OF POTENTIAL ELECTRIC ARC FLASH HAZARDS. LABEL SHALL BE A MINIMUM OF 4" X 5" AND READ AS FOLLOWS:

WARNING

ARC FLASH HAZARD
APPROPRIATE PPE REQUIRED
FAILURE TO COMPLY CAN RESULT IN DEATH OR INJURY
REFER TO NFPA 70E

END OF SECTION

VANZELM
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KEYPLAN

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REVISIONS		
REV. NO.	DATE	DESCRIPTION

DRAWING TITLE:

ELECTRICAL SPECIFICATIONS

DATE: 08/05/24
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MOTOR CIRCUIT SCHEDULE

EQUIPMENT	LOCATION	SUPPLY FROM	WIRE	O.C.P. DEVICE	DISC SIZE	DISC FUSE	STARTER TYPE	STARTER SIZE	HP	VOLT/PH	NOTES
RTU-1	ROOF	MP-2	3#8, 1#8G, 1"C	40	60	40	VFD		7.5	208 3Ø	NOTES 1 AND 2
RTU-2	ROOF	MP-2	3#4, 1#6G, 1 1/4"C	90	100	90	VFD		7.5	208 3Ø	NOTES 1 AND 2
DOA-1	ROOF	MP-2	3#2, 1#4G, 1 1/2"C	200	200	125	VFD		91.5 FLA	208 3Ø	NOTES 1 AND 3
DOA-2	ROOF	MP-1	3#1, 1#4G, 2"C	200	200	125	VFD		104.7 FLA	208 3Ø	NOTES 1 AND 3
CU-1	ROOF	MP-1	3#2, 1#6G, 1 1/2"C	125	100	80	FWE		64 FLA	208 3Ø	NOTES 1
CU-2	ROOF	MP-1	3#4, 1#6G, 1 1/4"C	100	60	60	FWE		48 FLA	208 3Ø	NOTES 1
CU-3	ROOF	MP-2	3#4, 1#6G, 1 1/4"C	90	60	60	FWE		44 FLA	208 3Ø	NOTE 1
CU-4	ROOF	MP-2	3#6, 1#6G, 1"C	70	60	45	FWE		35.2 FLA	208 3Ø	NOTE 1

MOTOR CIRCUIT SCHEDULE REFERENCED NOTES:

1. REFER TO FLOOR PLANS FOR CIRCUIT/SOURCE PANEL INFORMATION.
2. VFD FURNISHED BY DIVISION 23 AND INSTALLED BY DIV. 26.POWER WIRING FROM SOURCE TO VFD BY DIV. 26. POWER WIRING BETWEEN VFD AND MOTORS BY DIV. 26. CONTROL WIRING BY DIVISION 23.
3. SINGLE POINT POWER CONNECTION UNIT WITH INTEGRAL VFDs.

MOTOR CIRCUIT SCHEDULE GENERAL NOTES:

A. REFER TO SPECIFICATIONS FOR STANDARD FEATURES.

B. ABBREVIATIONS:
VFD - VARIABLE FREQUENCY DRIVE
FVNR - FULL VOLTAGE, NON-REVERSING
RVNR - REDUCED VOLTAGE, NON-REVERSING
FHMS - FRACTIONAL HORSEPOWER MOTOR STARTER
2 SPD - TWO-SPEED, NON REVERSING
MAN - MANUAL STARTER (TOGGLE SWITCH WITH THERMAL OVERLOADS)
FWE- FURNISHED WITH EQUIPMENT.

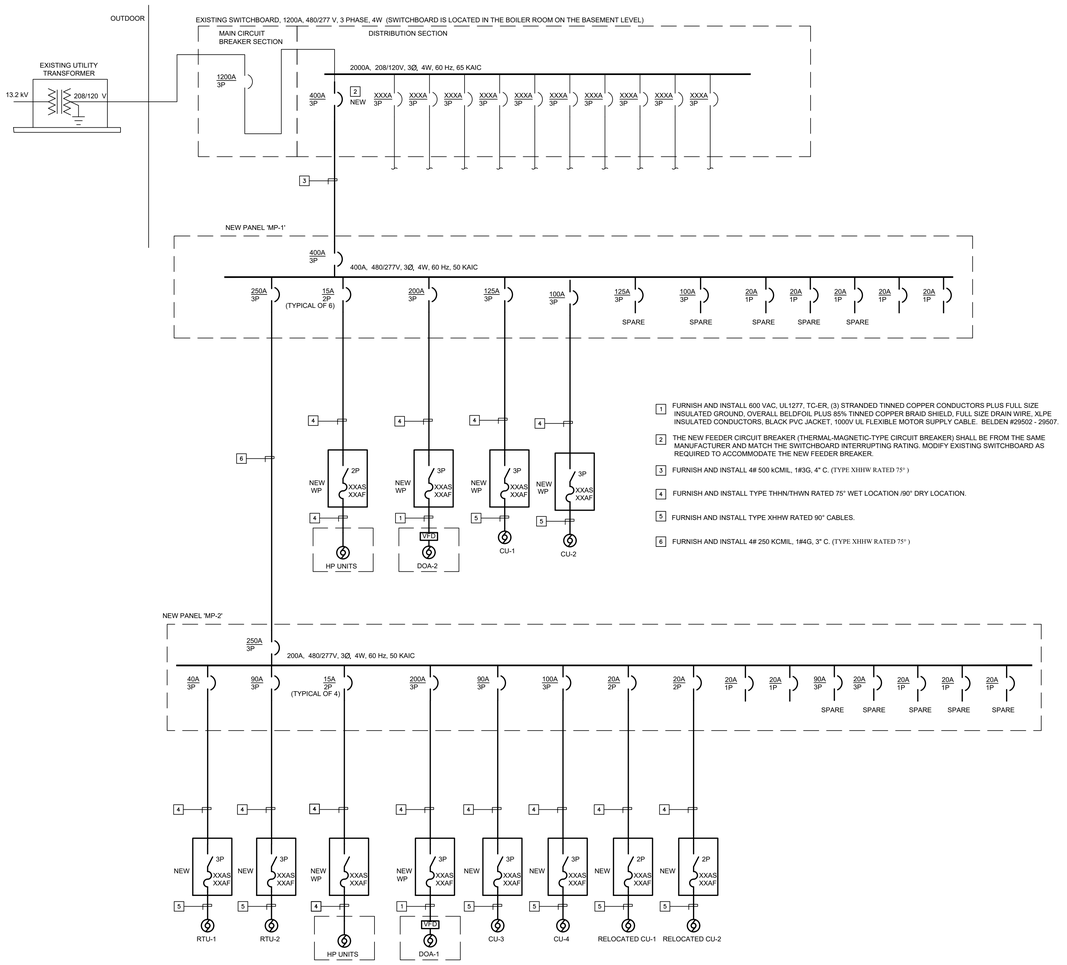
C. O.C.P. DEVICES AND LOCAL DISC. SWITCHES ARE THREE POLE UNLESS OTHERWISE NOTED.

D. LOCAL DISCONNECT SWITCH SIZE INDICATES SWITCH FRAME FOLLOWED BY FUSE SIZE (I.E. 30A/20A REPRESENTS A 30A FRAME SWITCH WITH 20A FUSES).

E. PROVIDE WEATHERPROOF FUSED DISCONNECT SWITCHES WHERE LOCATED OUTSIDE OR IN WET LOCATIONS.

F. STARTERS, DISCONNECT SWITCHES, CIRCUIT BREAKERS, BRANCH CIRCUIT WIRING, ETC. INDICATED IN THE MOTOR CIRCUIT SCHEDULE SHALL BE FURNISHED AND INSTALLED BY DIVISION 26 UNLESS OTHERWISE NOTED.

G. THE "O.C.P. DEVICE" SHALL BE A CIRCUIT BREAKER UNLESS OTHERWISE NOTED.



1. FURNISH AND INSTALL 600 VAC, UL1277, TC-ER, (3) STRANDED TINNED COPPER CONDUCTORS PLUS FULL SIZE INSULATED GROUND, OVERALL BELDFOIL PLUS 85% TINNED COPPER BRAID SHIELD, FULL SIZE DRAIN WIRE, XLPE INSULATED CONDUCTORS, BLACK PVC JACKET, 1000V UL FLEXIBLE MOTOR SUPPLY CABLE. BELDEN #29502 - 29507.
2. THE NEW FEEDER CIRCUIT BREAKER (THERMAL-MAGNETIC-TYPE CIRCUIT BREAKER) SHALL BE FROM THE SAME MANUFACTURER AND MATCH THE SWITCHBOARD INTERRUPTING RATING. MODIFY EXISTING SWITCHBOARD AS REQUIRED TO ACCOMMODATE THE NEW FEEDER BREAKER.
3. FURNISH AND INSTALL # 500 kCMIL, 1#3G, 4" C. (TYPE XHHW RATED 75°)
4. FURNISH AND INSTALL TYPE THHN/THWN RATED 75° WET LOCATION /90° DRY LOCATION.
5. FURNISH AND INSTALL TYPE XHHW RATED 90° CABLES.
6. FURNISH AND INSTALL # 250 KCMIL, 1#4G, 3" C. (TYPE XHHW RATED 75°)

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CONSULTANTS:

PROJECT NAME:

Juliet W. Long School
1854 Route 12
Gales Ferry, CT 06335

KEYPLAN

REVISIONS

REV. NO.	DATE	DESCRIPTION

DRAWING TITLE:

ELECTRICAL SCHEDULES AND ONE-LINE RISER DIAGRAM

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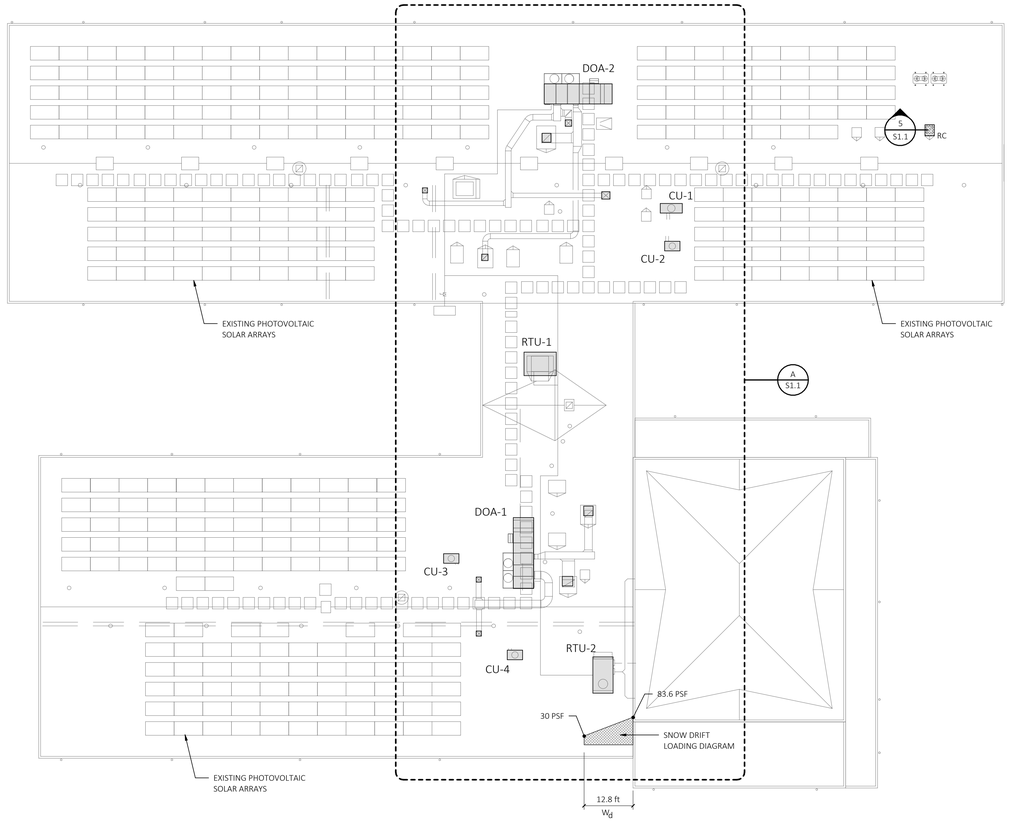
File Name:E400_Schedules and one-line Riser Diagrams.dwg, 8/5/2024 3:39:10 PM User ID: McKenna, Sean P
File Path: \\vz14\projects\2024\2024087.00\BIM\CAD\Electrical



ROOF FRAMING KEY PLAN

1/16" = 1'-0"

S T R U C T U R A L N O T E S

A. G E N E R A L

A1. UNLESS OTHERWISE NOTED WITHIN THE STRUCTURAL DRAWINGS, THE SECTIONS AND DETAILS SHOWN SHALL BE CONSIDERED TYPICAL AND CONTIGUOUS AND SHALL BE APPLICABLE TO SIMILAR CONDITIONS WITHIN THE PROJECT SCOPE.

A2. THE STRUCTURAL DRAWINGS, INCLUDING ALL PLANS, SECTIONS, DETAILS AND SPECIFICATIONS, SHALL BE USED IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS, SITE/CIVIL/LANDSCAPE DRAWINGS, MECHANICAL/ELECTRICAL/PLUMBING DRAWINGS AND VENDOR CERTIFIED DIMENSION DRAWINGS TO PREPARE SHOP DRAWINGS WITH SUFFICIENT DETAIL AND DIMENSIONS TO COMPLETE THE WORK.

A3. PRIOR TO THE START OF CONSTRUCTION THE CONTRACTORS SHALL VERIFY ALL EXISTING CONDITIONS THAT WILL EFFECT THE LAYOUT AND SEQUENCING OF THE WORK.

A4. EXISTING BUILDING INFORMATION, DIMENSIONS AND ELEVATIONS ARE TAKEN FROM OWNER PROVIDED DRAWINGS AND SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTORS. INCONSISTENCIES BETWEEN EXISTING CONDITIONS AND THE INFORMATION PROVIDED IN THESE DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR INTERPRETATION AND DIRECTION.

A5. ATTACHMENT AND SUPPORT OF MECHANICAL EQUIPMENT SHALL FOLLOW THE MANUFACTURER INSTALLATION INSTRUCTIONS.

A6. THE STRUCTURE HAS BEEN ENGINEERED TO BE SELF SUPPORTING ONCE THE WORK IS COMPLETE. THE CONTRACTOR HAS SOLE RESPONSIBILITY FOR THE STRUCTURES STABILITY DURING CONSTRUCTION INCLUDING MEANS METHODS OF ERECTION, TEMPORARY SHORING AND TEMPORARY BRACING.

A7. THE CONTRACTOR SHALL PROVIDE AND BE RESPONSIBLE FOR FOLLOWING ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF THE WORK.

A8. INSPECTION AND MATERIALS TESTING SHALL BE AS SPECIFIED IN THE DRAWINGS AND THE "SCHEDULE OF SPECIAL INSPECTIONS" DOCUMENT.

A9. ALL MECHANICAL OR ADHESIVE ANCHORS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS WRITTEN INSTALLATION REQUIREMENTS.

A10. CONTRACTOR SHALL VERIFY SIZE AND LOCATION OF ALL ROOF AND FLOOR OPENINGS WITH ARCHITECTURAL AND MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS.

B. D E S I G N I N F O R M A T I O N

B1. ALTERATIONS TO THE BUILDING STRUCTURE HAVE BEEN ENGINEERED IN ACCORDANCE WITH THE APPLICABLE STRUCTURAL PROVISIONS IN THE BUILDING CODE LISTED IN THE DESIGN DATA TABLE.

B2. REFER TO THE DESIGN DATA TABLE FOR THE APPLICABLE CODES AND DESIGN REFERENCES USED IN THE ENGINEERING OF WORK PRESENTED IN THESE DOCUMENTS.

B3. REFER TO THE DESIGN DATA TABLE FOR LIVE LOADS, SNOW LOADS, WIND LOADS, SEISMIC LOADS AND RELATED DESIGN PARAMETERS.

B4. THE ALLOWABLE SOIL BEARING CAPACITY HAS BEEN ASSUMED TO BE AS LISTED WITHIN DESIGN DATA TABLE FOR SHALLOW FOUNDATION DESIGN. THIS BEARING CAPACITY SHALL BE VERIFIED IN THE FIELD BY A QUALIFIED GEOTECHNICAL ENGINEER ENGAGED BY THE OWNER. FOOTINGS SHALL NOT BE PLACED WITHOUT APPROVAL FROM THE GEOTECHNICAL ENGINEER.

B5. THE DESIGN LOADING FOR MECHANICAL EQUIPMENT SPECIFIED IN THE WORK IS BASED ON THE OPERATIONAL WEIGHT AND DYNAMIC FORCES PUBLISHED IN MANUFACTURERS CUT SHEET DATA AT THE TIME OF THE DESIGN.

C. B U I L D I N G E A R T H W O R K

C1. NOT IN PROJECT SCOPE

D. F O O T I N G S

D1. NOT IN PROJECT SCOPE

E. C O N C R E T E

E1. NOT IN PROJECT SCOPE

F. S T R U C T U R A L S T E E L

F1. ALL CONNECTIONS SHALL BE DETAILED BY THE STEEL FABRICATOR TO SUPPORT THE UNIFORM LOAD TABLE'S MAXIMUM UNIFORM LOAD AS CALLED FOR IN THE A.I.S.C. UNLESS THE REACTIONS ARE INDICATED ON THE PLANS.

F2. WELDING TO EXISTING STEEL SURFACES SHALL BE CONDUCTED IN ACCORDANCE WITH AWS D1.1 REQUIREMENTS. WHEN WELDING SURFACE PREPARATION REQUIRES THE REMOVAL OF PAINT THE OWNER SHALL PROVIDE APPROPRIATE DOCUMENTATION AS TO THE IDENTIFICATION OF ANY LEAD BASED PAINT AND SHALL PROVIDE THE REMOVAL OR ABATEMENT OF LEAD BASED PAINT IN THE AREA TO BE WELDED. REMOVAL AND DISPOSAL OF LEAD BASED PAINT SHALL BE IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS.

F3. ALL BOLTED CONNECTIONS SHALL USE HIGH STRENGTH A325 OR A490 BOLTS

F4. ALL WELDED CONNECTIONS SHALL USE E70-XX ELECTRODES

F5. STAIR FRAMING ARRANGEMENT SHOWN FOR GENERAL LOAD PATH ONLY. SEE SPECIFICATIONS FOR ENGINEERING REQUIREMENTS. REFER TO ARCHITECTS DRAWINGS FOR RAILINGS, STRINGERS, RISERS, TREADS, HANDRAILS, MISCELLANEOUS STEEL.

F6. ALL STEEL AND CONNECTING HARDWARE EXPOSED TO THE WEATHER SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123, ASTM 153, OR ASTM A653 AS APPLICABLE.

G. U N I T M A S O N R Y

G1. CONCRETE MASONRY CONSTRUCTION WORK SHALL CONFORM TO : BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES ACI 530/530R-14 SPECIFICATIONS FOR MASONRY STRUCTURES ACI 530.1/530.1R-14

G2. CONCRETE MASONRY STRENGTH F'm SHALL BE NOT LESS THAN 1,500 PSI.

G3. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90, TYPE 1

G4. MORTAR FOR REINFORCED CMU SHALL CONFORM TO ASTM C270, TYPE S.

G5. GROUT SHALL CONFORM TO ASTM C476, FINE TYPE WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 2,500 PSI. CONCRETE MASONRY WALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH LOW LIFT GROUTING METHOD.

G6. HORIZONTAL JOINT REINFORCING SHALL CONFORM TO ASTM A82, # 9 WIRE SPACED AT 16" o.c. VERTICALLY.

G7. VERTICAL REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60 DEFORMED BARS.

G8. HOT-DIP GALVANIZED LINTELS SHALL BE PROVIDED IN ALL NEW OPENINGS IN EXISTING MASONRY. PROVIDE ONE- L 4 x 3 1/2 x 3/8 FOR EVERY 4" OF MASONRY WALL THICKNESS. PROVIDE 4" BEARING AT EACH END. MAXIMUM MASONRY OPENING 48".

H. R O U G H C A R P E N T R Y

H1. SAWN LUMBER SHALL BE SPRUCE-PINE-FIR (SPF) NO. 2 OR BETTER GRADE.

H1. WOOD EXPOSED TO WEATHER OR IN CONTACT WITH CONCRETE FOUNDATIONS SHALL BE PRESSURE TREATED SOUTHER PINE NO 2. OR BETTER .

H1. ENGINEERED LUMBER REFERENCED IN THESE PLANS ARE BASED ON WEYERHAEUSER MANUFACTURER PRODUCT LINES. MANUFACTURER SUBSTITUTIONS SHALL BE EQUAL IN MATERIAL AND SECTION PROPERTIES FOR THE WEYERHAEUSER SIZES INDICATED.

H1. NAILING OF WOOD MEMBERS SHALL BE IN ACCORDANCE WITH IBC 2015 TABLE 2304.10.1 FASTENING SCHEDULE. UNLESS OTHERWISE NOTED.

H1. FLOOR SHEATHING SHALL BE A MINUMUM OF 3/4" EXTERIOR GRADE PLYWOOD NAILED TO FLOOR FRAMING WITH 10d COMMON NAILS AT 6" o.c. ALONG PANEL EDGES AND 12" IN THE FIELD, UNBLOCKED.

i. COLD FORMED LIGHT GAGE METAL FRAMING

i1. SYSTEM COMPONENTS: MANUFACTURER'S STANDARD LOAD-BEARING STEEL STUDS AND JOISTS OF TYPE, SIZE, AND SHAPE AS INDICATED IN THE DRAWINGS. WITH EACH TYPE OF METAL FRAMING REQUIRED, PROVIDE MANUFACTURER'S STANDARD STEEL RUNNERS (TRACKS), BLOCKING, LINTELS, CLIP ANGLES, SHOES, REINFORCEMENTS, FASTENERS, AND ACCESSORIES FOR APPLICATIONS INDICATED AS NEEDED TO PROVIDE A COMPLETE METAL FRAMING SYSTEM.

i2. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS OF ONE OF THE FOLLOWING:

1. DALE INDUSTRIES, INC.
2. DIETRICH INDUSTRIES, INC.
3. MARINO INDUSTRIES, INC.

i3. MATERIALS AND FINISHES OF COLD FORMED METAL FRAMING SHALL BE AS FOLLOWS:

1. FOR 16 GAGE AND HEAVIER UNITS, FABRICATE METAL FRAMING COMPONENTS OF STRUCTURAL QUALITY STEEL SHEET WITH A MINIMUM YIELD POINT OF 40,000 P.S.I.; A.S.T.M. A-570 OR A-611.
2. FOR 18 GAGE AND LIGHTER UNITS, FABRICATE A METAL FRAMING COMPONENTS OF COMMERCIAL QUALITY STEEL SHEET WITH A MINIMUM YIELD POINT OF 33,000 P.S.I.; A.S.T.M. A-446, A-570, OR A-611.
3. PROVIDE GALVANIZED FINISH TO METAL FRAMING COMPONENTS COMPLYING WITH A.S.T.M. A-653 FOR MINIMUM G60 COATING.
4. FASTENERS; PROVIDE NUTS, BOLTS, WASHERS, SCREWS, AND OTHER FASTENERS WITH CORROSION-RESISTANT PLATED FINISH.
5. GALVANIZING REPAIR; WHERE GALVANIZED SURFACES ARE DAMAGED, PREPARE SURFACES AND REPAIR IN ACCORDANCE WITH PROCEDURES SPECIFIED IN A.S.T.M. A-780.

i4. ATTACH SIMILAR COMPONENTS BY WELDING OR SCREWING. ATTACH DISSIMILAR COMPONENTS BY WELDING, BOLTING, OR SCREW FASTENERS, AS STANDARD WITH MANUFACTURER.

i5. FABRICATION AND INSTALLATION OF CFMF SHALL COMPLY WITH AISI'S "NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" AND ITS "STANDARD FOR COLD-FORMED STEEL FRAMING - GENERAL PROVISIONS."

A B B R E V I A T I O N S

ARCH.	ARCHITECTURAL
B.	BOTTOM
B.F.	BOTTOM OF FOOTING
BP	BEARING PLATE
C.C.	CENTER TO CENTER
C.J.	CONTROL JOINT
CANTIL.	CANTILEVER
CONC.	CONCRETE
DIA.	DIAMETER
do.	DITO/SAME
DWG.	DRAWING
EA.	EACH
E.J.	EXPANSION JOINT
ELEV.	ELEVATION
F.P.	FIREPROOFING
HD	HOLD DOWN
HKP	HOUSEKEEPING PAD
k	KIP
K*Ft	KIP-FOOT
LBS.	POUNDS
LGMF	LIGHT GAGE METAL FRAMING
LSL	LAMINATED STRAND LUMBER
LVL	LAMINATED VENEER LUMBER
MEP	MECHANICAL ELECTRICAL PLUMBING
NP	NEW PENETRATION
O.C.	ON CENTER
O.F.	OUTSIDE FACE
P.A.F.	POWDER ACTUATED FASTENER
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSL	PARALLEL STRAND LUMBER
P/C	PRE-CAST
RC	REMOVE AND CAP
REINF.	REINFORCED
S.F.	STEP FOOTING
SIM.	SIMILAR
STL.	STEEL
SW	SHEAR WALL
T.	TOP
T.P.	TOP OF PIER
T.S.	TOP OF SHELF
T.W.	TOP OF WALL
TYP.	TYPICAL
U.O.N.	UNLESS OTHERWISE NOTED
W.W.F.	WELDED WIRE FABRIC
WD.	WOOD
WF	WIDE FLANGE

D E S I G N D A T A

CODES USED

2022 CONNECTICUT STATE BUILDING CODE
2021 INTERNATIONAL BUILDING CODE
2021 INTERNATIONAL EXISTING BUILDING CODE
ACI 318-19
ANSI/AISC 360-16
ASCE/SEI 7-16

DESIGN STRESSES USED

STRUCTURAL STEEL SHAPES	ASTM - A992 F_y = 50 ksi
MISC. ANGLES AND PLATES	ASTM - A36 F_y = 36 ksi
HOLLOW STRUCTURAL STEEL - RECT.	ASTM - A500 GRADE B
CONCRETE	f'_c AT 28 DAYS 3,500 psi
REINFORCING STEEL	ASTM - GRADE 60
CONCRETE MASONRY	f'_m 1,500 psi
GROUT COMPRESSIVE STRENGTH	2,000 psi
MORTAR FOR BLOCK	TYPE S
SOIL BEARING CAPACITY	2,000 PSF

LIVE LOADS

ROOFS	20 PSF

SNOW LOADS

GROUND SNOW LOAD	P_g = 30.0 PSF
SNOW THERMAL FACTOR	C_t = 1.0
SNOW EXPOSURE FACTOR	C_e = 1.0
BUILDING CATEGORY	CATEGORY III
SNOW IMPORTANCE FACTOR	I_s = 1.1

WIND LOADS

BASIC WIND SPEED	140 MPH
BUILDING RISK CATEGORY	CATEGORY III
WIND EXPOSURE CATEGORY	C
INTERNAL PRESSURE COEFFICIENT	GC_{pi} = +/- 0.18

SEISMIC DATA

ANALYSIS PROCEDURE	EQUIVALENT LATERAL FORCE
BUILDING RISK CATEGORY	CATEGORY III
SEISMIC IMPORTANCE FACTOR	I_E = 1.25
MAPPED SPECTRAL RESPONSE ACCELERATION, SHORT	S_S = 0.190
MAPPED SPECTRAL RESPONSE ACCELERATION, 1-sec	S_1 = 0.053
SITE CLASS	D
DESIGN SPECTRAL RESPONSE ACCELERATION, SHORT	S_{DS} = 0.203
DESIGN SPECTRAL RESPONSE ACCELERATION, 1-sec	S_{D1} = 0.085
SEISMIC DESIGN CATEGORY	B
RESPONSE MODIFICATION FACTOR	R = 1.5
SEISMIC RESPONSE COEFFICIENT	C_S = 0.161
DESIGN BASE SHEAR	UNCHANGED FROM EXISTING
BASIC SEISMIC FORCE-RESISTING SYSTEM	EXISTING UNALTERED

VANZELM ENGINEERS
VAN ZELM HEYWOOD & SHADFORD, INC.
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CONSULTANTS:
STRUCTURAL ENGINEER:
GIRARD & CO. ENGINEERS, LLC
10 Waterchase Drive
Rocky Hill, CT
(860) 563-3820

PROJECT NAME:
HVAC Upgrades
Juliet W. Long School
1854 Route 12
Gales Ferry, CT 06335

KEYPLAN

ISSUED FOR BID

REVISIONS

REV No	DATE	DESCRIPTION

DRAWING TITLE:
DESIGN DATA AND ROOF KEY PLAN

DATE: 2/2/2024
DRAWN BY: KB/KA
CHECKED BY: KA
SCALE: As indicated
PROJ #: 24001

DRAWING NUMBER:
S1.0

6/3/2024 2:27:31 PM
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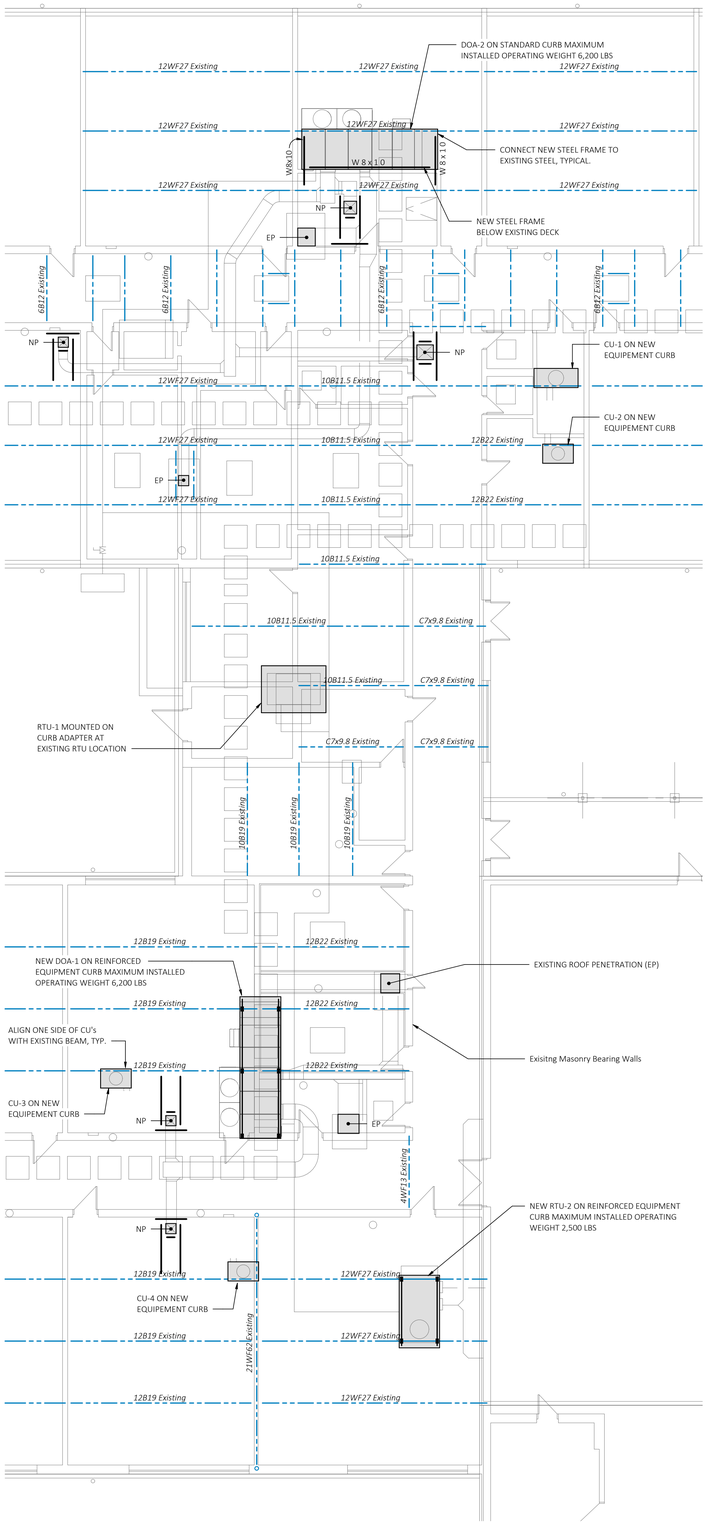
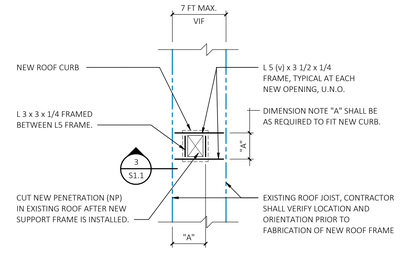


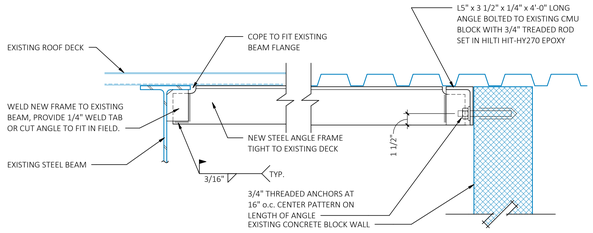
PARTIAL ROOF FRAMING PLAN
1/8" = 1'-0"
A S1.1



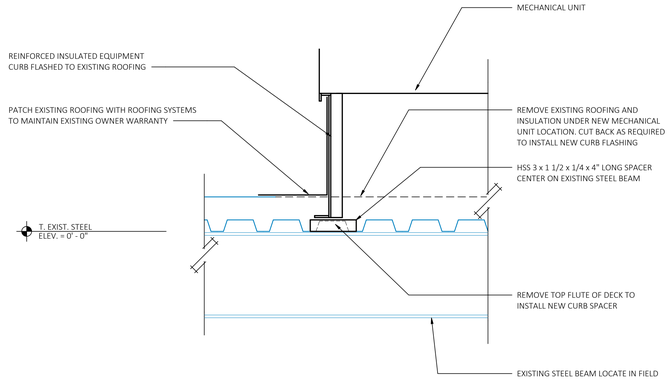
TYPICAL STEEL DECK PENETRATION SUPPORT FRAME
NOT TO SCALE
1 S1.1

NOTES:

1. THE GENERAL CONTRACTOR SHALL COORDINATE DIMENSIONS NOTED AS "A" WITH THE MECHANICAL CONTRACTOR AND THE FIELD CONDITIONS.
2. FASTEN EXISTING METAL DECK TO THE NEW STEEL FRAME WITH SELF-TAP SCREWS AT 6" o.c. AROUND THE PERIMETER OF THE NEW OPENING.

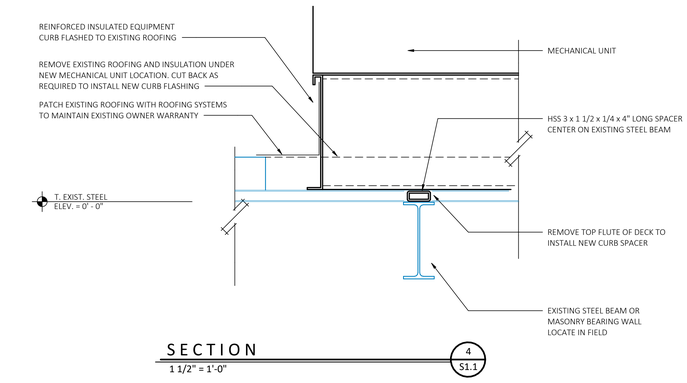


TYPICAL ROOF FRAME CONNECTION DETAIL
1 1/2" = 1'-0"
3 S1.1

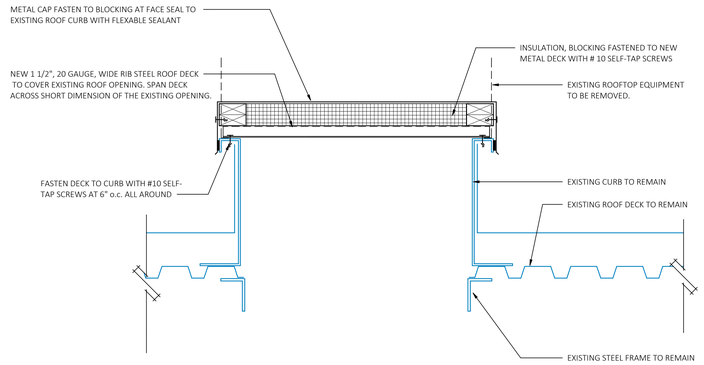


SECTION
1 1/2" = 1'-0"
2 S1.1

NOTE:
CURB DEPTH VARRIES TO ACCOMODATE EXISTING ROOF PITCH. SET TOP OF PREFABRICATED CURB LEVEL.



SECTION
1 1/2" = 1'-0"
4 S1.1



TYPICAL EXHAUST FAN CAP DETAIL
1 1/2" = 1'-0"
5 S1.1

NOTES:

1. ROOF CAP SHALL BE PROVIDED FOR ALL EXISTING ROOF OPENINGS TO BE INFILLED. REFER TO MECHANICAL DRAWINGS FOR MECHANICAL UNITS TO BE REMOVED AND OTHER AREAS TO BE INFILLED.
2. MAXIMUM OPENING DIMENSION 36" CLEAR

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Gales Ferry, CT 06335

KEYPLAN

ISSUED FOR BID

REVISIONS

REV No	DATE	DESCRIPTION

DRAWING TITLE:
FRAMING PLANS

DATE: 6/3/24
DRAWN BY: KB/KA
CHECKED BY: KA
SCALE: As indicated
PROJ #: 24001

DRAWING NUMBER:
S1.1