

**Boiler Replacement Project**  
**East Windsor Middle School**  
**38 Main St, Broad Brook, CT 06016**

GENERAL SYMBOLS	
	THICK, DARK SOLID LINES INDICATE NEW OR RELOCATED ITEMS OR NEW RACEWAY AND WIRING
	THIN, LIGHT LINES INDICATE EXISTING ITEMS OR RACEWAY TO REMAIN IN PLACE AND BE REUSED
	THICK, DASHED LINES INDICATE EXISTING ITEMS TO BE REMOVED
	POINT OF NEW TO EXISTING CONNECTION, INCLUDING TRANSITIONS
EX	SUB LETTERS "EX" INDICATES EXISTING EQUIPMENT TO REMAIN INTACT
RE	SUB LETTER "RE" INDICATES EXISTING EQUIPMENT TO BE DISCONNECTED AND REMOVED
RL	SUB LETTER "RL" INDICATES EXISTING EQUIPMENT TO BE DISCONNECTED, REMOVED AND RELOCATED
NL	SUB LETTER "NL" INDICATES NEW LOCATION OF RELOCATED EQUIPMENT
NR	SUB LETTER "NR" INDICATES NEW EQUIPMENT TO REPLACE EXISTING
RR	SUB LETTER "RR" INDICATES REMOVE EQUIPMENT AND REPLACE ON NEW SURFACE
*	* a, b, d, dg, AF, GF, IG OR TP, WHEN TAGGED IN THE ELECTRICAL SYMBOL LIST, REFER TO THE ABBREVIATION LIST
FITTINGS AND VALVES	
	BACKFLOW PREVENTER
	BLIND FLANGE
	PIPE TEE DOWN
	PIPE ELBOW UP OR PIPE TEE UP
	PIPE ELBOW DOWN
	COMPANION FLANGE
	PIPE CAP OR CAPPED END OF PIPE
	TAKEOFF FROM TOP OF MAIN PIPE
	TAKEOFF FROM BOTTOM OF MAIN PIPE
	DIRECTION OF FLUID FLOW
	PIPE DROP WITH VALVE
	3-WAY CONTROL VALVE
	BALL VALVE
	CALIBRATED BALANCING VALVE
	SHUT-OFF VALVE (SEE SPECIFICATIONS FOR APPLICATION TYPE)
	BUTTERFLY VALVE
	CHECK VALVE
	GATE VALVE
	PRESSURE REDUCING VALVE
	OS&Y VALVE
	FUSOMATIC VALVE (FIREMATIC)
	PRESSURE RELIEF SAFETY VALVE
	PRESSURE GAUGE
HVAC SYMBOLS	
	RECTANGULAR OR ROUND AIR DUCT
	DIRECTION OUTDOOR AIRFLOW
	DIRECTION OF EXHAUST AIRFLOW
XXX	SUPPLY PIPING. REFER TO ABBREVIATION LIST FOR DESIGNATION (XXX)
XXX	RETURN PIPING. REFER TO ABBREVIATION LIST FOR DESIGNATION (XXX)
DUCT SIZING	
20x12	RECTANGULAR DUCT
200	ROUND DUCT

ELECTRICAL SYMBOLS	
S	SINGLE-POLE SWITCH
3 S	3-WAY SWITCH
4 S	4-WAY SWITCH
P S	SINGLE-POLE SWITCH (TOGGLE LIGHTED - LOAD ON)
E S	EMERGENCY OFF SWITCH
K S	SINGLE-POLE KEYSWITCH
	DUPLEX RECEPTACLE
	SPECIAL PURPOSE RECEPTACLE; VERIFY NEMA CONFIGURATION WITH EQUIPMENT
	SURFACE MOUNTED RACEWAY. SEE PLANS OR SCHEDULE FOR QUANTITY OF DEVICES
EHC	ELECTRICAL HEATING CABLE
	POWER WIRING
	SWITCH LEG WIRING
	CONTROL WIRING
XXX	WIRING - REFER TO ABBREVIATION LIST (XXX)
	CIRCUIT BREAKER SIZE
(1) 20A-1P	HOME RUN
LV-1	PANEL DESIGNATION
LV-1	PANEL DESIGNATION 20A-1P HOME RUN (TYPICAL)
LV-1	HOME RUN
LV-1	PANEL DESIGNATION POLES/AMPERAGE
XP/XXX	HOME RUN
LV-1	PANEL DESIGNATION CIRCUIT NUMBERS
LV-1, 1,2,3	HOME RUN
	FEEDER TAG
	SURFACE ELECTRICAL PANEL, 480Y/277 OR 480 VOLT
	SURFACE ELECTRICAL PANEL, 208Y/120 OR 208 VOLT
	SURFACE SPECIAL-PURPOSE PANEL OR CABINET
	FLUSH ELECTRICAL PANEL, 208Y/120 VOLT
	FLUSH SPECIAL-PURPOSE PANEL OR CABINET
	TRANSFORMER
	ENCLOSED SWITCH
	ELECTRIC MOTOR
	JUNCTION BOX
	HEAT DETECTOR
	CARBON MONOXIDE SENSOR

**MECHANICAL AND ELECTRICAL ABBREVIATIONS**

AIAMP	AMPERE	RE	EXISTING EQUIPMENT TO BE DISCONNECTED AND REMOVED
AC	ALTERNATING CURRENT	RGS	RIGID GALVANIZED STEEL CONDUIT
AF	ABOVE FINISHED FLOOR	RL	EXISTING EQUIPMENT TO BE DISCONNECTED, REMOVED AND RELOCATED
AIC	AMPS INTERRUPTING CURRENT	ROOM	ROOM
AMB	AMBIENT	RPM	REDUCED PRESSURE DEVICE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	RPL	REVOLUTIONS PER MINUTE
AS	AIR SEPARATOR	RWL	RAIN WATER LEADER
ATC	AUTOMATIC TEMPERATURE CONTROL	S&R	SUPPLY AND RETURN
AVG	AVERAGE	SP	STATIC PRESSURE
AWG	AMERICAN WIRE GAUGE	SPDT	SINGLE POLE DOUBLE THROW
AWT	AVERAGE WATER TEMPERATURE	SPEC	SPECIFICATION
BTU	BRITISH THERMAL UNITS	SPECT	SINGLE POLE SINGLE THROW
BTUH	BRITISH THERMAL UNITS/HOUR	SO	SQUARE
C	CONDUIT(S)	SS	STAINLESS STEEL
C/B	CIRCUIT BREAKER	STD	STANDARD
CI	CAST IRON	SW	SWITCH
CKT	CIRCUIT	SWBD	SWITCHBOARD
CU FT	CUBIC FEET	TAG	IDENTIFICATION OF EQUIPMENT
CW	COLD WATER	TD	TEMPERATURE DIFFERENCE
D	DEPTH	TEMP	TEMPERATURE
DC	DIRECT CURRENT	TSP	TOTAL STATIC PRESSURE
DCV	DOUBLE CHECK VALVE	TYP	TYPICAL
DEG or °	DEGREE	U	UNUSED
DIA or Ø	DIAMETER	V	VOLTAGE
DN	DOWN	VA	VOLT AMPERE
DWG	DRAWING	VEL	VELOCITY
EAT	ENTERING AIR TEMPERATURE	VF	VERIFY IN FIELD
ELEC	ELECTRICAL	VOL	VOLUME
EM	EMERGENCY	W	WATT
EMT	ELECTRICAL METALLIC TUBING	WG	WIREGUARD
ET	EXPANSION TANK (HVAC)	WI	WIDTH
EWT	ENTERING WATER TEMPERATURE	WPD	WATER PRESSURE DROP
EXP	EXPANSION	WTR	WATER
F	FAHRENHEIT		
FD	FLOOR DRAIN		
FMC	FLEXIBLE METALLIC TUBING		
FOR	FUEL OIL RETURN		
FOS	FUEL OIL SUPPLY		
FT	FOOT OR FEET		
GA	GAUGE		
GAL	GALLONS		
GF	GROUND FAULT		
GND	GROUND		
GPM	GALLONS PER MINUTE		
H	HEIGHT		
HP	HORSEPOWER		
HVAC	HEATING, VENTILATION AND AIR CONDITIONING		
HW	HOT WATER		
HWR	HOT WATER RETURN		
HWS	HOT WATER SUPPLY		
Hz	FREQUENCY (CYCLES PER SECOND)		
ID	INSIDE DIAMETER		
IN	INCHES		
IN WG	INCHES OF WATER GAUGE (PRESSURE)		
IW	INDIRECT WASTE		
JB	JUNCTION BOX		
KVA	KILOVOLT AMPERE		
KW	KILOWATT		
L	LENGTH		
LF	LINEAR FEET		
LWT	LEAVING WATER TEMPERATURE		
MA	MILLIAMPERE		
MAX	MAXIMUM		
MBH	BTU PER HOUR (THOUSAND)		
MC	METAL CLAD CABLE		
MECH	MECHANICAL		
MFR	MANUFACTURER		
MIN	MINIMUM		
MLO	MAIN LUGS ONLY		
N.C.	NORMALLY CLOSED		
N.O.	NORMALLY OPEN		
NEC	NATIONAL ELECTRICAL CODE		
NIC	NOT IN CONTRACT		
NTS	NOT TO SCALE		
OA	OUTSIDE AIR		
OD	OUTSIDE DIAMETER		
P	POLE		
PD	PRESSURE DROP		
PF	POWER FACTOR		
PH / Ø	PHASE		
PNL	PANELBOARD		
PRESS	PRESSURE		
PRV	PRESSURE REDUCING VALVE		
PSI	POUNDS PER SQUARE INCH		
QTY	QUANTITY		

**MECHANICAL & ELECTRICAL GENERAL NOTES**

- GENERAL**
- THE PROJECT DRAWINGS AND SPECIFICATIONS ARE BASED ON THE CONSTRUCTION SPECIFICATIONS INSTITUTE (CSI) DOCUMENTATION FORMAT. SPECIFICATION AND DRAWING CONTENTS ARE ARRANGED BY TOPIC AND CATEGORY AND ARE NOT INTENDED TO AWARD DIVISION OF WORK.
  - THE INTENT OF THESE DOCUMENTS IS FOR THE MEP TRADES TO FURNISH AND INSTALL COMPLETE MECHANICAL AND ELECTRICAL SYSTEMS. THE SPECIFIED HVAC AND ELECTRICAL SYSTEMS SHALL BE COMPLETE IN ALL RESPECTS, OPERATIONAL, TESTED, ADJUSTED, CALIBRATED, APPROVED BY THE AUTHORITIES HAVING JURISDICTION AND READY FOR BENEFICIAL USE BY THE OWNER.
  - DIFFERENCES BETWEEN THE DESIGN INTENT AND/OR ACTUAL INSTALLATION LOCATION, MEANS AND METHODS ARE INCLUDED IN THIS CONTRACT AND SHALL NOT CONSTITUTE A CHANGE ORDER ON THE BASIS OF DRAWING, ENGINEERING AND/OR COORDINATION TIME.
  - THE TRADES SHALL OBTAIN AND REVIEW ALL CONTRACT DOCUMENTS BEFORE SUBMITTING A BID. INFORMATION IS PROVIDED ON THE VARIOUS DRAWINGS, SCHEDULES, SPECIFICATIONS AND ALL OF THE VARIOUS DOCUMENTS IN THE BIDDING PACKAGE. THE CONTRACT DOCUMENTS ARE COMPLEMENTARY AND FORM A TOTAL PROJECT DESIGN AND INFORMATION SOURCE FOR CONSTRUCTION PURPOSES.
  - THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. COORDINATE LOCATIONS OF EQUIPMENT WITH OTHER TRADES BEFORE AND DURING CONSTRUCTION. ANY MODIFICATION TO THE EQUIPMENT LAYOUT, REQUIRED FOR INSTALLATION, IS TO BE PERFORMED UNDER THE CONTRACT AGREEMENT, AT NO ADDITIONAL COST.
  - PERFORM ALL WORK IN COMPLIANCE WITH THE SPECIFICATIONS, APPLICABLE CODES, ORDINANCES AND THE REGULATORY AGENCIES HAVING JURISDICTION. THE SPECIFICATIONS MAY EXCEED THE REQUIREMENTS OF THE CODE, IN WHICH CASE, THE SPECIFICATION MUST BE FOLLOWED.
  - WHERE A CONFLICT OCCURS BETWEEN THE DOCUMENTS, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. CARRY AS PART OF THE BID THE LARGER QUANTITY AND/OR MORE EXPENSIVE ITEM(S).
  - PROVIDE THE REQUIRED/SPECIFIED SLEEVES AND SEALS FOR PIPES OR CONDUIT PENETRATING INTERIOR WALLS OR FLOOR SLABS.
  - INSTALL FLOOR-MOUNTED EQUIPMENT ON A CONCRETE HOUSEKEEPING PAD.
  - ENCLOSED CONTROLLERS SHALL BE PROVIDED BY THE CONTRACTOR PROVIDING THE EQUIPMENT REQUIRING AN ENCLOSED CONTROLLER. REQUIREMENTS ARE SPECIFIED UNDER DIVISION 26 "ENCLOSED CONTROLLERS". MOTOR EFFICIENCIES SHALL BE AS INDICATED IN THE SPECIFICATIONS.
  - PROVIDE PIPING, CONDUIT AND ALL OTHER ACCESSORIES AS REQUIRED FOR PROPER AND PROFESSIONAL SYSTEMS INSTALLATION.
  - TEST AND BALANCE ALL MECHANICAL AND ELECTRICAL SYSTEMS. PROVIDE ADDITIONAL TESTS AS REQUIRED BY THE SPECIFICATIONS.
  - DO NOT INSTALL PIPING OR DUCTWORK OVER ELECTRICAL PANELS, OR TRANSFORMERS.
  - PROVIDE ADDITIONAL TRANSITIONS AND OFFSETS IN ALL PIPING, OR CONDUIT FOR COORDINATION WITH BUILDING STRUCTURE AND CONSTRUCTION.
- RENOVATION**
- THIS PROJECT INVOLVES THE RENOVATION OF AN EXISTING FACILITY; BEFORE SUBMITTING THE BID, CONTRACTORS SHALL VISIT THE SITE AND BECOME THOROUGHLY FAMILIAR WITH THE EXISTING CONDITIONS UNDER WHICH THE PROJECT IS TO BE COMPLETED.
  - CONTRACTORS SHALL BE HELD RESPONSIBLE FOR ASSUMPTIONS, OMISSIONS OR ERRORS MADE AS A RESULT OF FAILURE TO BECOME FULLY FAMILIAR WITH THE EXISTING CONDITIONS.
  - IT IS NOT THE INTENT OF THESE DOCUMENTS TO SHOW EVERY DEVICE, APPURTENANCE, PIPE, WIRE OR CONDUIT TO BE REMOVED. MEP EQUIPMENT, UNITS, AND SYSTEMS NOT BEING REUSED, SHALL BE REMOVED IN THEIR ENTIRETY INCLUDING ASSOCIATED HANGERS, SUPPORTS, BASES, PADS, PIPES, CONDUITS, WIRES, INSULATION, AND CONTROLS BACK TO THE POINT OF ORIGIN.
  - EQUIPMENT, PIPING, OR CONDUIT SHALL NOT BE ABANDONED IN-PLACE UNLESS SPECIFICALLY SO NOTED.
  - PROPERLY DISPOSE OF DEMOLISHED EQUIPMENT IN COMPLIANCE WITH CODES, REGULATIONS, AND DEP STANDARDS. TURN OVER TO THE OWNER EQUIPMENT SO INDICATED.
  - RELOCATE EXISTING EQUIPMENT, DEVICES, PIPING, WIRING, AND RELATED SYSTEMS AS REQUIRED FOR CONSTRUCTION PURPOSES. ALL EXISTING SYSTEMS SHALL BE FULLY OPERATIONAL, INCLUDING RECONNECTION TO SERVICES AND UPGRADED SYSTEMS. ALL RELOCATED EQUIPMENT SHALL BE PROTECTED DURING CONSTRUCTION.
  - REBALANCE NEW AND EXISTING MECHANICAL AND ELECTRICAL SYSTEMS ASSOCIATED WITH THE RENOVATION, INCLUDING RENOVATED AREAS AND AREAS AFFECTED BY SYSTEM MODIFICATIONS. SYSTEMS REQUIRING TO REMAIN IN OPERATION DURING DEMOLITION SHALL BE CAREFULLY PROTECTED FROM DAMAGE AND CONTAMINATION BY THE CONSTRUCTION PROCESS.
- HVAC**
- PROVIDE THROTTLING VALVES AND SHUT-OFF VALVES AS SPECIFIED IN ADDITION TO THOSE INDICATED ON THE DOCUMENTS.
  - PIPING SHALL BE SUPPORTED FROM STRUCTURE ABOVE. TO MAXIMIZE HEAD ROOM, INSTALL TIGHT TO BOTTOM OF BEAMS WHEN RUNNING PERPENDICULAR TO BEAM. INSTALL PIPING TIGHT TO FLOOR SLAB WHEN RUNNING PARALLEL TO BEAM. PROVIDE ALL NECESSARY FITTINGS AND TRANSITIONS. PROVIDE AIR VENTS AT ALL HIGH POINTS AND DRAINS AT ALL LOW POINTS.
- ELECTRICAL**
- IT IS NOT THE INTENTION TO SHOW EVERY FITTING, WIRE, OR DEVICE. ALL SUCH ITEMS SHALL BE FURNISHED AND INSTALLED AS NECESSARY FOR A COMPLETE SYSTEM.
  - DO NOT INSTALL CONDUIT IN CONCRETE SLABS, UNLESS SPECIFICALLY APPROVED BY THE STRUCTURAL ENGINEER.
  - EACH INDIVIDUAL ELECTRICAL HOMERUN SHOWN ON FLOOR PLANS, DETAILS, OR SCHEDULES SHALL BE PROVIDED IN A DEDICATED RACEWAY.
  - PROVIDE POWER TO MECHANICAL EQUIPMENT SHOWN ON MECHANICAL PLANS, RISERS, SCHEDULES, OR IN SPECIFICATIONS. MECHANICAL EQUIPMENT IS NOT NECESSARILY SHOWN ON ELECTRICAL PLANS. REFER TO MECHANICAL PLANS AND SCHEDULES ON MEP DRAWINGS FOR LOCATIONS AND SPECIFIC ELECTRICAL REQUIREMENTS. COORDINATE EXACT LOCATION AND ORIENTATION OF EQUIPMENT WITH OTHER TRADES.
- CODES LISTED BELOW APPLY TO ALL DRAWINGS AND SPECIFICATIONS ON THIS PROJECT**
- 2016 CONNECTICUT STATE BUILDING CODE
  - 2016 CONNECTICUT STATE FIRE SAFETY CODE
  - THE FOLLOWING AS REFERENCED BY THE ABOVE CODES AND AMENDMENTS:
    - 2012 INTERNATIONAL BUILDING CODE (IBC)
    - 2012 INTERNATIONAL MECHANICAL CODE (IMC)
    - 2012 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)
    - 2015 CONNECTICUT STATE FIRE PREVENTION CODE
    - NFPA 70 - NATIONAL ELECTRICAL CODE (NEC), 2014

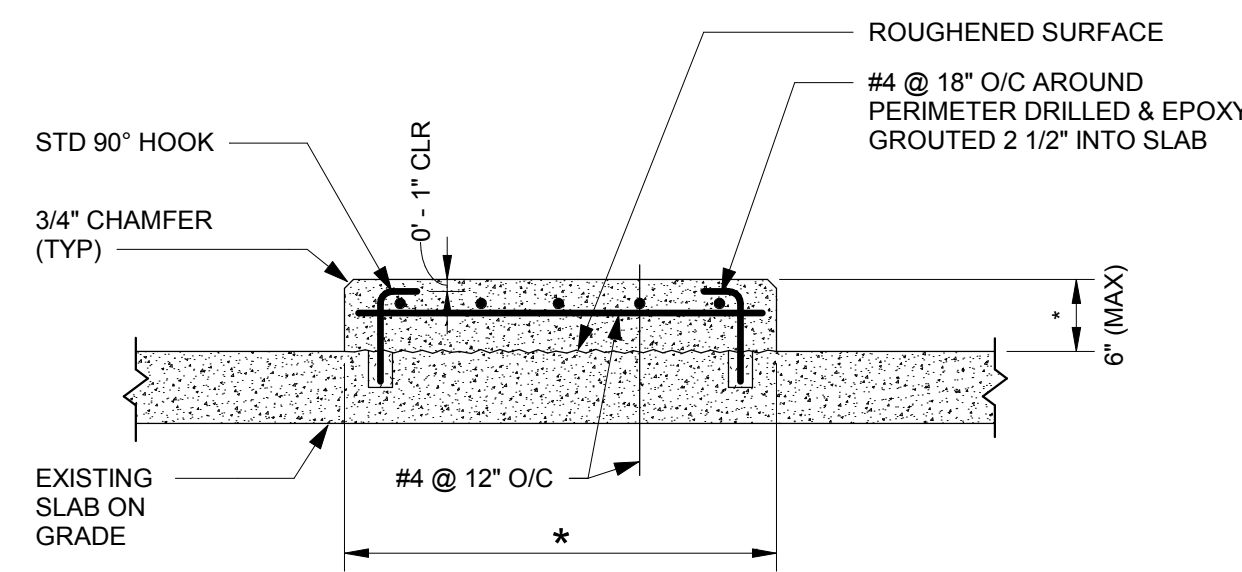
**CONSTRUCTION SET**  
04.04.2018

KEY PLAN		
REVISIONS		
NO.	DATE	ISSUE

DATE: 04.04.2018  
SCALE: 1/8" = 1'-0"  
DRAWN: MEL / JCK  
CHECKED: ARA  
JOB NO.: 21-18-024

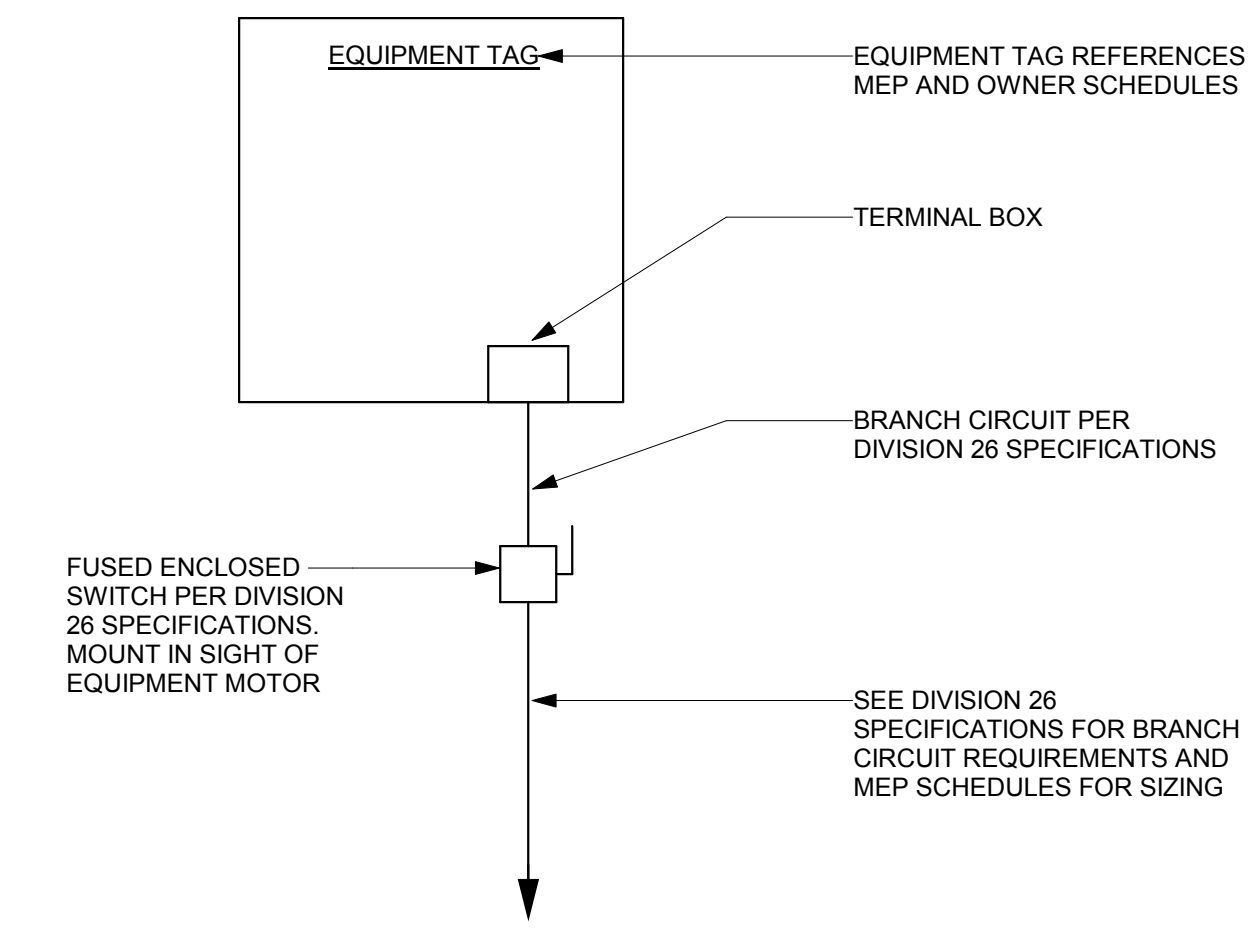
SHEET TITLE:  
**MECH. & ELEC. GENERAL NOTES, ABBREVIATIONS & SYMBOL LIST**

DRAWING NO:  
**ME-001**



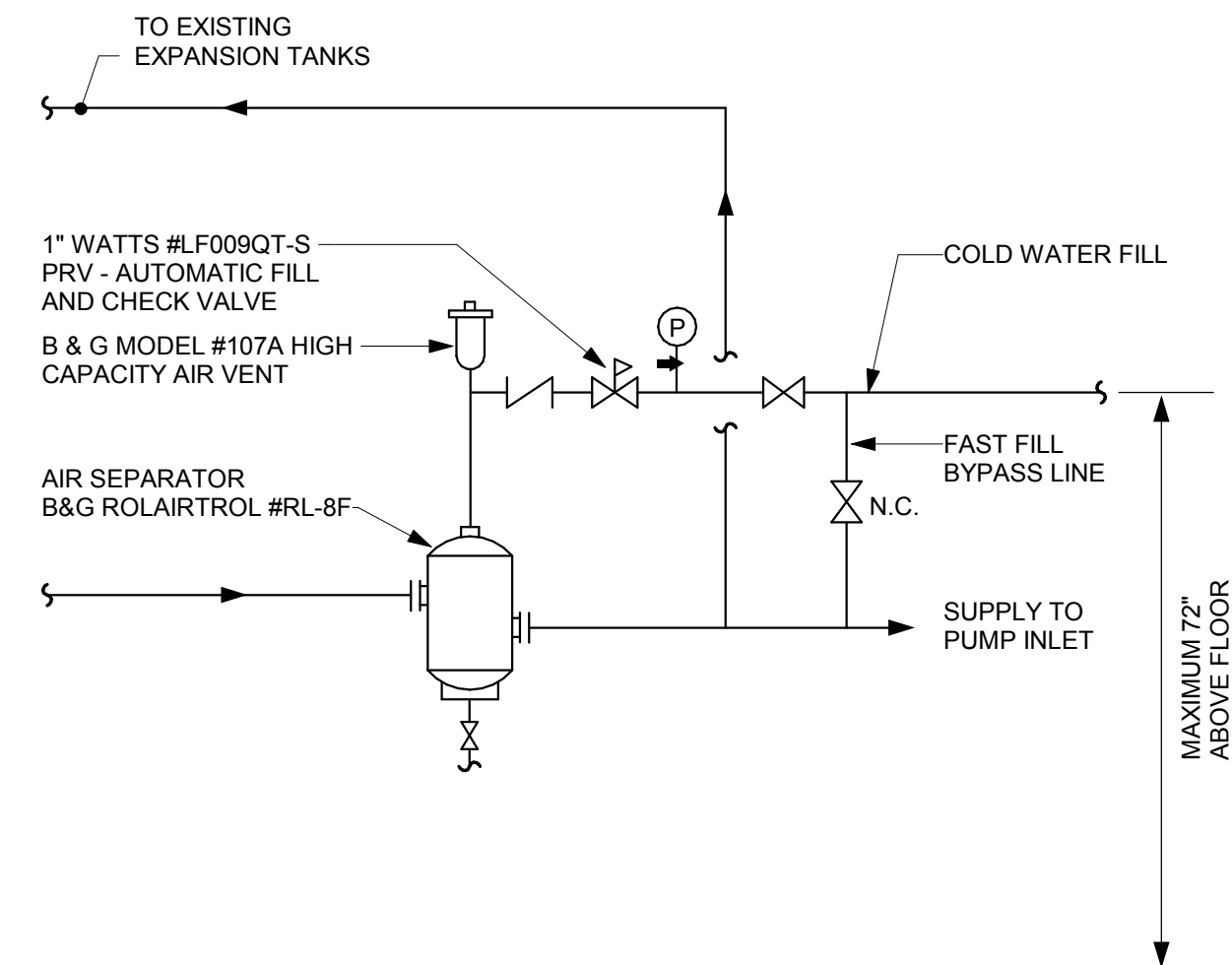
\* INDICATES CONTRACTOR TO COORDINATE QUANTITY, SIZE, AND LOCATION OF ALL MECHANICAL HOUSEKEEPING PADS WITH MECHANICAL DRAWINGS AND MECHANICAL EQUIPMENT SUPPLIERS.

**TYPICAL HOUSEKEEPING PAD SECTION**  
NOT TO SCALE

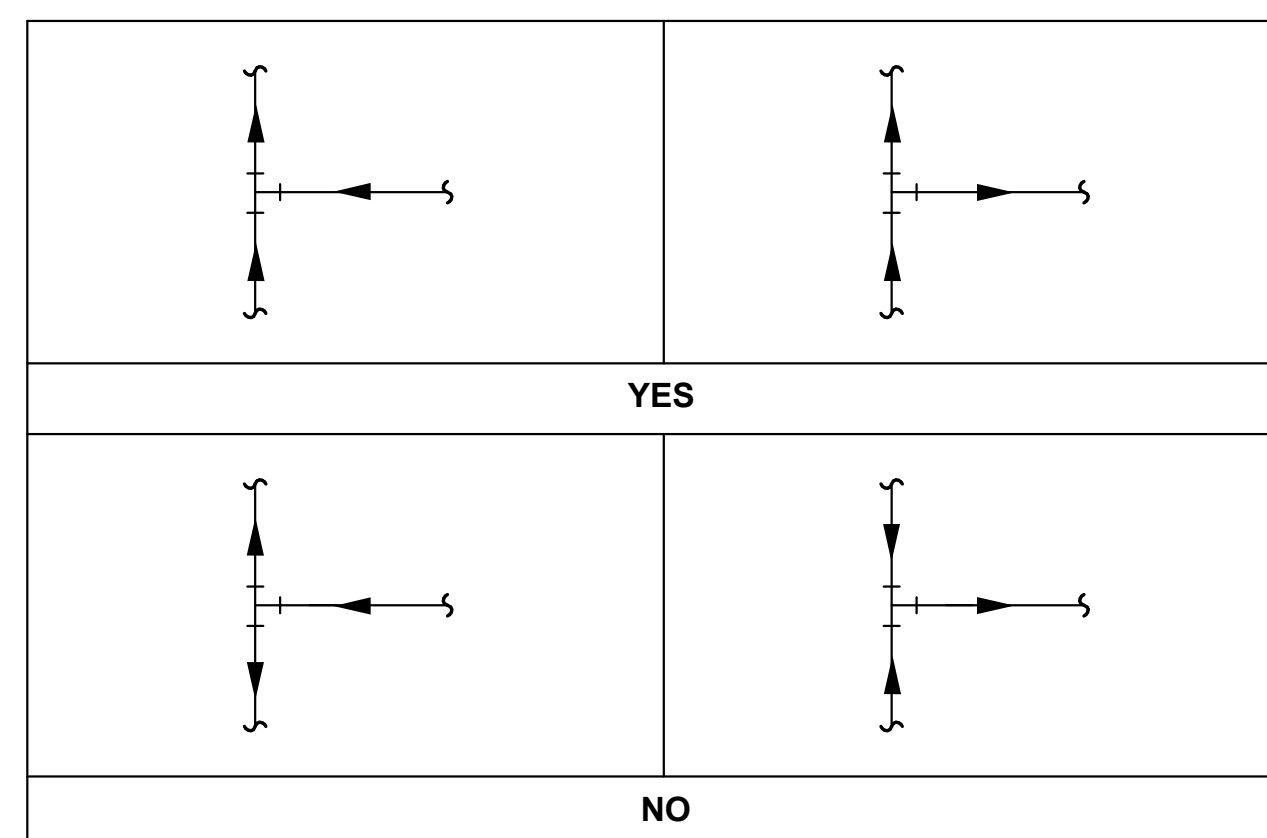


NOTE:  
THIS DETAIL IS FOR ALL EQUIPMENT WHERE EQUIPMENT REQUIRES POWER AND WHERE THERE ARE NO MOTORS INVOLVED OR WHERE SPECIFICATIONS OR SCHEDULES FOR MULTIPLE MOTOR EQUIPMENT SPECIFICALLY INDICATE ONE POINT POWER CONNECTION. CONTRACTOR TO PROVIDE WIRING BETWEEN REMOTE DISCONNECTS, STARTERS AND MOTORS. SEE EQUIPMENT SCHEDULES AND SPECIFICATIONS.

**TYPICAL EQUIPMENT CONNECTION DETAIL**  
NOT TO SCALE



**AIR SEPARATOR AND MAKE-UP WATER ASSEMBLY DETAIL**  
NOT TO SCALE



**ALLOWABLE FLOW CONFIGURATIONS IN PIPING TEES - HVAC SYSTEMS**  
NOT TO SCALE

*****BASE BID*****CAST IRON BOILER SCHEDULE (HOT WATER)*****BASE BID*****									
TAG	MFR	MODEL	I-B-R MBH		FUEL OIL		POWER FLAME MODEL	BLOWER MOTOR HP	BLOWER MOTOR RPM
			GROSS	NET	GPH	TYPE			
B-1	SMITH	LO28RTS-HE-W-9	2249	1956	18.8	#2	C2-0B	1 1/2	3450
B-2	SMITH	LO28RTS-HE-W-9	2249	1956	18.8	#2	C2-0B	1 1/2	3450
B-3	SMITH	LO28RTS-HE-W-9	2249	1956	18.8	#2	C2-0B	1 1/2	3450

TAG	WORKING PRESSURE (PSIG)	RELIEF VALVE (PSIG)	EWT (°F)	LWT (°F)	WATER CONTENT (GAL)	MAX. WPD (PSIG)	FLUE SIZE (IN)
B-1	80	40	160	200	257.9	2.0	14
B-2	80	40	160	200	257.9	2.0	14
B-3	80	40	160	200	257.9	2.0	14

ELECTRICAL					
TAG	VOLTS / PHASE	HOME RUN	BRANCH CIRCUIT SIZE		SW / FUSE
B-1	208/3	20A-3P LLP-BURNER	3/4" - 3 #12 & 1 #12 GND		30 / 15
B-2	208/3	20A-3P LLP-BURNER	3/4" - 3 #12 & 1 #12 GND		30 / 15
B-3	208/3	20A-3P LLP-BURNER	3/4" - 3 #12 & 1 #12 GND		30 / 15

NOTES:  
1. EACH BOILER TO BE BALANCED TO 200 GPM

*****ALTERNATE*****CAST IRON BOILER SCHEDULE (HOT WATER)*****ALTERNATE*****									
TAG	MFR	MODEL	I-B-R MBH		FUEL OIL		POWER FLAME MODEL	BLOWER MOTOR HP	BLOWER MOTOR RPM
			GROSS	NET	GPH	TYPE			
B-1	SMITH	GO28RTS-HE-W-9	2249	1956	18.8	#2	C2-GO-208	1 1/2	3450
B-2	SMITH	GO28RTS-HE-W-9	2249	1956	18.8	#2	C2-GO-208	1 1/2	3450
B-3	SMITH	GO28RTS-HE-W-9	2249	1956	18.8	#2	C2-GO-208	1 1/2	3450

TAG	WORKING PRESSURE (PSIG)	RELIEF VALVE (PSIG)	EWT (°F)	LWT (°F)	WATER CONTENT (GAL)	MAX. WPD (PSIG)	FLUE SIZE (IN)
B-1	80	40	160	200	257.9	2.0	14
B-2	80	40	160	200	257.9	2.0	14
B-3	80	40	160	200	257.9	2.0	14

ELECTRICAL					
TAG	VOLTS / PHASE	HOME RUN	BRANCH CIRCUIT SIZE		SW / FUSE
B-1	208/3	20A-3P LLP-BURNER	3/4" - 3#12 & 1 #12 GND		30 / 15
B-2	208/3	20A-3P LLP-BURNER	3/4" - 3#12 & 1 #12 GND		30 / 15
B-3	208/3	20A-3P LLP-BURNER	3/4" - 3#12 & 1 #12 GND		30 / 15

NOTES:  
1. EACH BOILER TO BE BALANCED TO 200 GPM.  
2. I-B-R BURNER CAPACITY GAS MBH: 2718

PANELBOARD SCHEDULE													
<b>GENERAL NOTES:</b>													
1. SEE SPECIFICATION SECTION "PANELBOARDS" FOR FEATURES OF PANELBOARDS													
2. VERIFY SIZE, QUANTITY AND TYPES OF CIRCUIT BREAKERS IN PANELBOARDS WITH PLANS, RISERS, SCHEDULES AND SPECIFICATION.													
3. ALL PANELBOARDS ARE LIGHTING AND APPLIANCE BRANCH CIRCUIT PANELBOARDS UNLESS LISTED OTHERWISE.													
<b>NOTES:</b>													
A. NEW PANELBOARD REPLACING EXISTING.													
B. DISTRIBUTION PANELBOARD.													
C. PROVIDE PANELBOARD WITH ISOLATED EQUIPMENT GROUND BUS BAR.													
D. PROVIDE PANELBOARD WITH STAINLESS STEEL TRIM AND DOOR.													
E. PROVIDE PANELBOARD WITH INTEGRAL LIGHTING CONTACTOR.													
F. PROVIDE PANELBOARD WITH AUXILIARY GUTTER.													
G. PROVIDE 30 MA GROUND FAULT CIRCUIT INTERRUPTER CIRCUIT BREAKERS.													
H. PROVIDE 5 MA GROUND FAULT CIRCUIT INTERRUPTER CIRCUIT BREAKERS.													
I. PROVIDE PANELBOARD WITH NEMA 4X ENCLOSURE.													
J. LIGHTING CONTROL PANEL WITH ABILITY TO TAKE INPUT FROM LOW VOLTAGE DEVICES (SWITCHES, OCCUPANCY SENSORS, ETC.).													
PANELBOARD NAME	VOLTAGE	MAIN OCPD SIZE	MAIN BUS SIZE	MOUNTING SURFACE	POLE CAPACITY	MIN. AISC RATING	NOTES	CIRCUITS					
								AMPS	POLES	BRANCH	FEEDER	SPARE	NOTES
LLP-BURNER	208/120	MLO	125A	SURFACE	24	10,000		20	3		3	1	
								20	1	1		4	

**Boiler Replacement Project**  
**East Windsor Middle School**  
**38 Main St, Broad Brook, CT 06016**

**CONSTRUCTION SET**  
04.04.2018

KEY PLAN

REVISIONS		
NO.	DATE	ISSUE

DATE: 04.04.2018  
SCALE: As indicated  
DRAWN: MEL / JCK  
CHECKED: ARA  
JOB NO.: 21-18-024

SHEET TITLE:  
**MECHANICAL AND ELECTRICAL DETAILS & SCHEDULES**

DRAWING NO.

**ME-002**

**Boiler Replacement Project**  
**East Windsor Middle School**  
38 Main St, Broad Brook, CT 06016

**CONSTRUCTION SET**  
04.04.2018

KEY PLAN

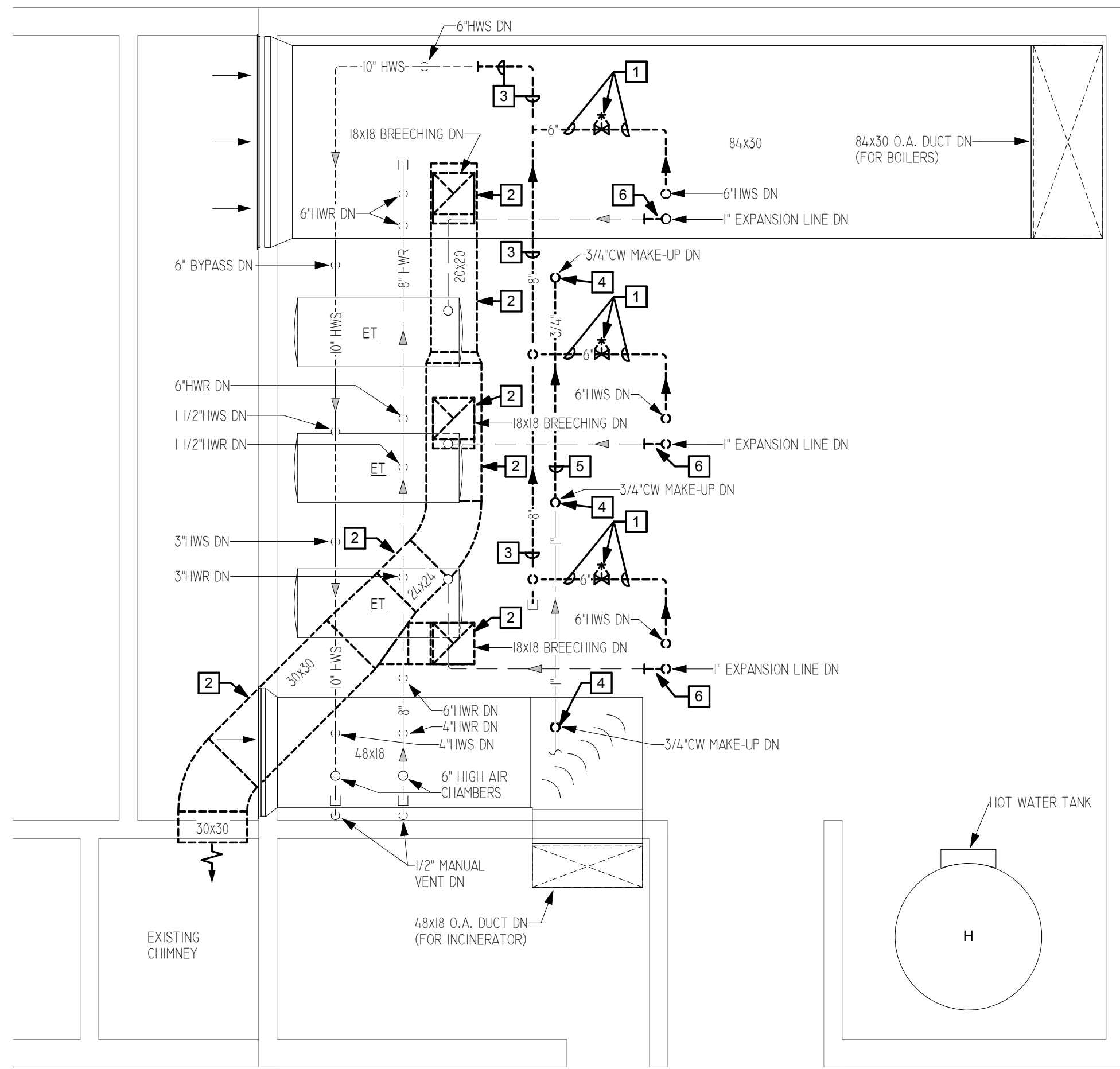
REVISIONS		
NO.	DATE	ISSUE

DATE	04.04.2018
SCALE	1/4" = 1'-0"
DRAWN	MEL
CHECKED	ARA
JOB NO.	21-18-024

SHEET TITLE:  
**BOILER ROOM 207  
MECHANICAL PLANS**

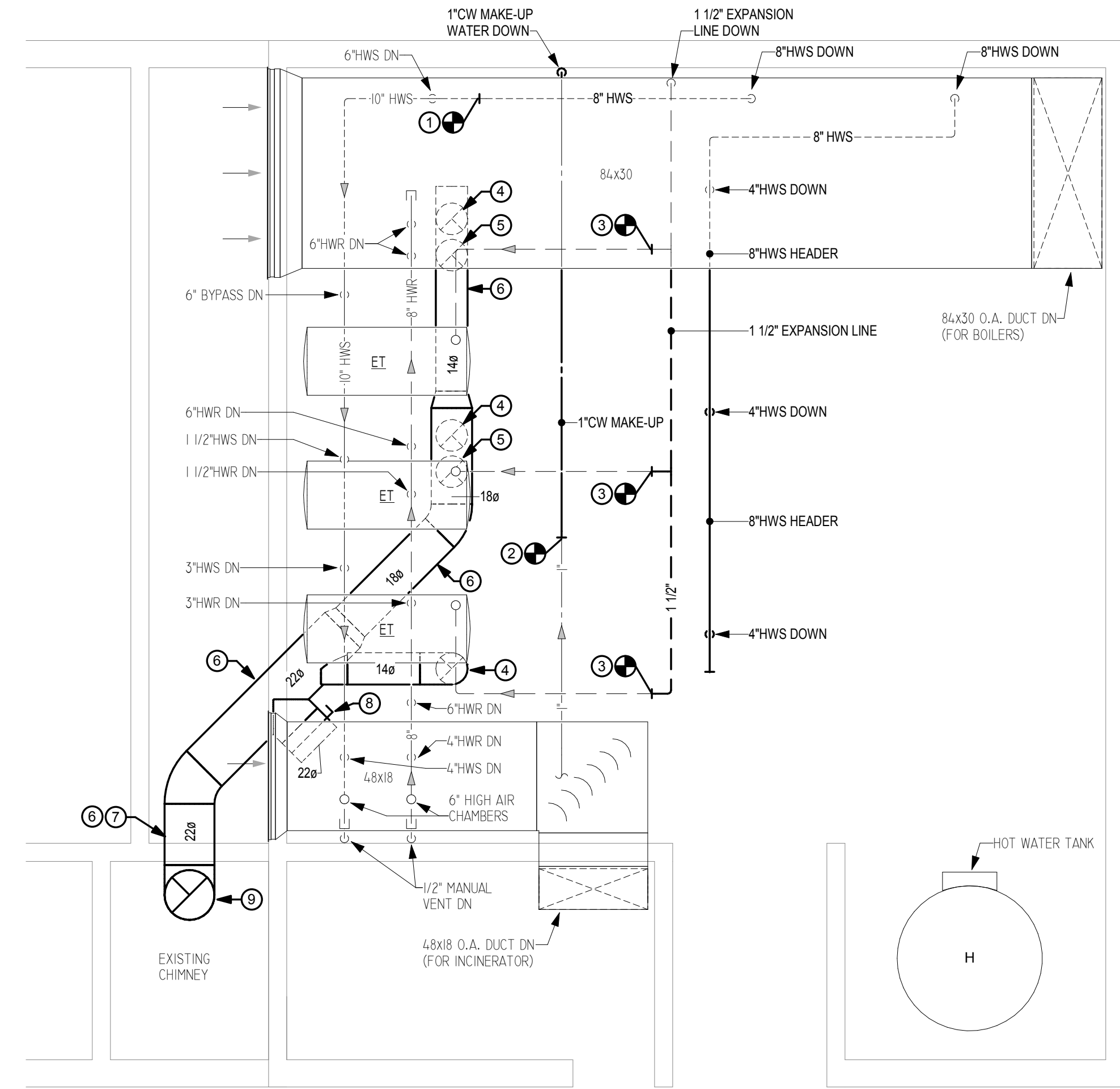
DRAWING NO.

**M-101**



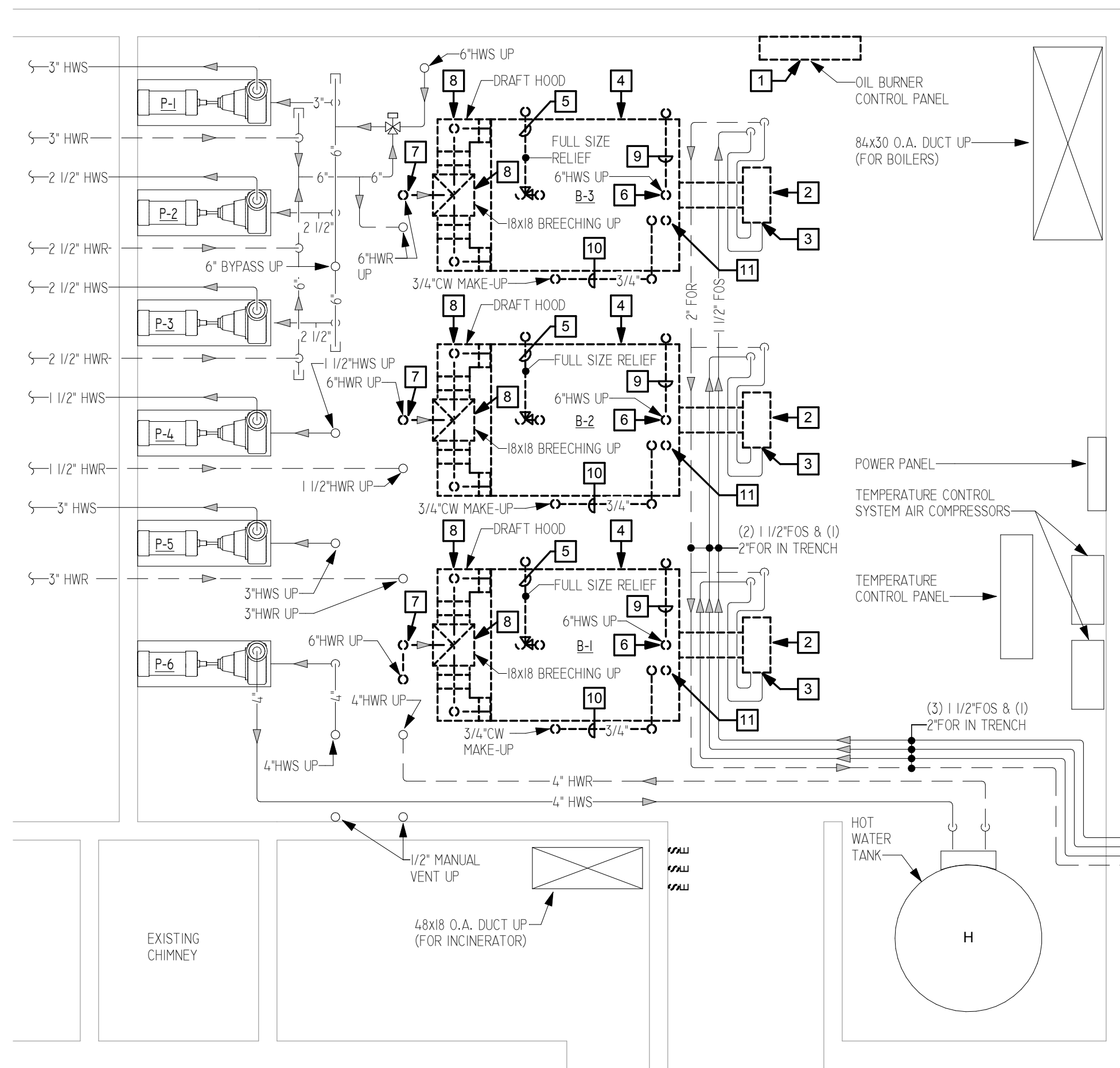
1 UPPER LEVEL MECHANICAL DEMOLITION PLAN  
1/4" = 1'-0"

- UPPER LEVEL DEMOLITION NOTES**
- 1 REMOVE HOT WATER SUPPLY PIPING INCLUDING OS&Y VALVE.
  - 2 REMOVE BREECHING.
  - 3 REMOVE HOT WATER SUPPLY HEADER TO LIMIT SHOWN.
  - 4 REMOVE COLD WATER MAKE-UP PIPING TO BOILER.
  - 5 REMOVE COLD WATER MAKE-UP HEADER PIPING TO LIMIT SHOWN.
  - 6 REMOVE EXPANSION LINE PIPING TO LIMIT SHOWN.



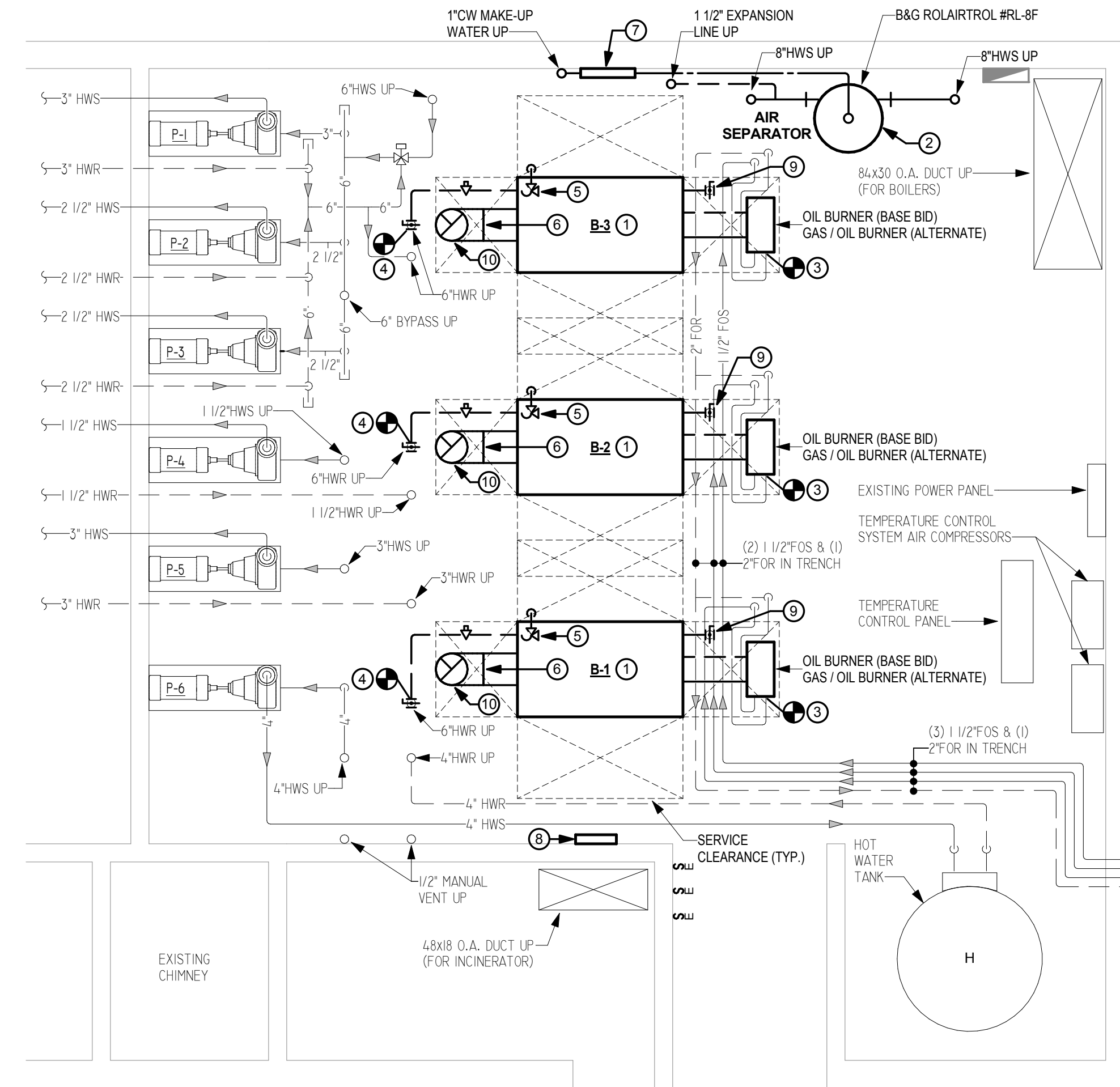
3 UPPER LEVEL MECHANICAL PLAN  
1/4" = 1'-0"

- UPPER LEVEL DRAWING NOTES**
- 1 CONNECT NEW 8" HOT WATER SUPPLY PIPING TO EXISTING HOT WATER SUPPLY PIPING. ADAPT TO EXISTING 10" PIPING.
  - 2 CONNECT NEW 1" CW MAKE-UP PIPING TO EXISTING CW MAKE-UP PIPING.
  - 3 CONNECT NEW EXPANSION LINE PIPING TO EXISTING 1" EXPANSION LINE PIPING.
  - 4 14"Ø BREECHING DOWN.
  - 5 14"Ø BREECHING WITH 45° OFFSET.
  - 6 BREECHING AT APPROXIMATELY 9'-8" A.F.F. TO CENTERLINE.
  - 7 STUB BREECHING INTO EXISTING CHIMNEY. (BASE BID) PATCH AND REPAIR BRICK WORK.
  - 8 BAROMETRIC DAMPER.
  - 9 22"Ø CHIMNEY LINER. (ALTERNATE) TERMINATE AT 2'-10" ABOVE EXISTING BRICK CHIMNEY WITH RAIN CAP.



2 LOWER LEVEL MECHANICAL DEMOLITION PLAN  
1/4" = 1'-0"

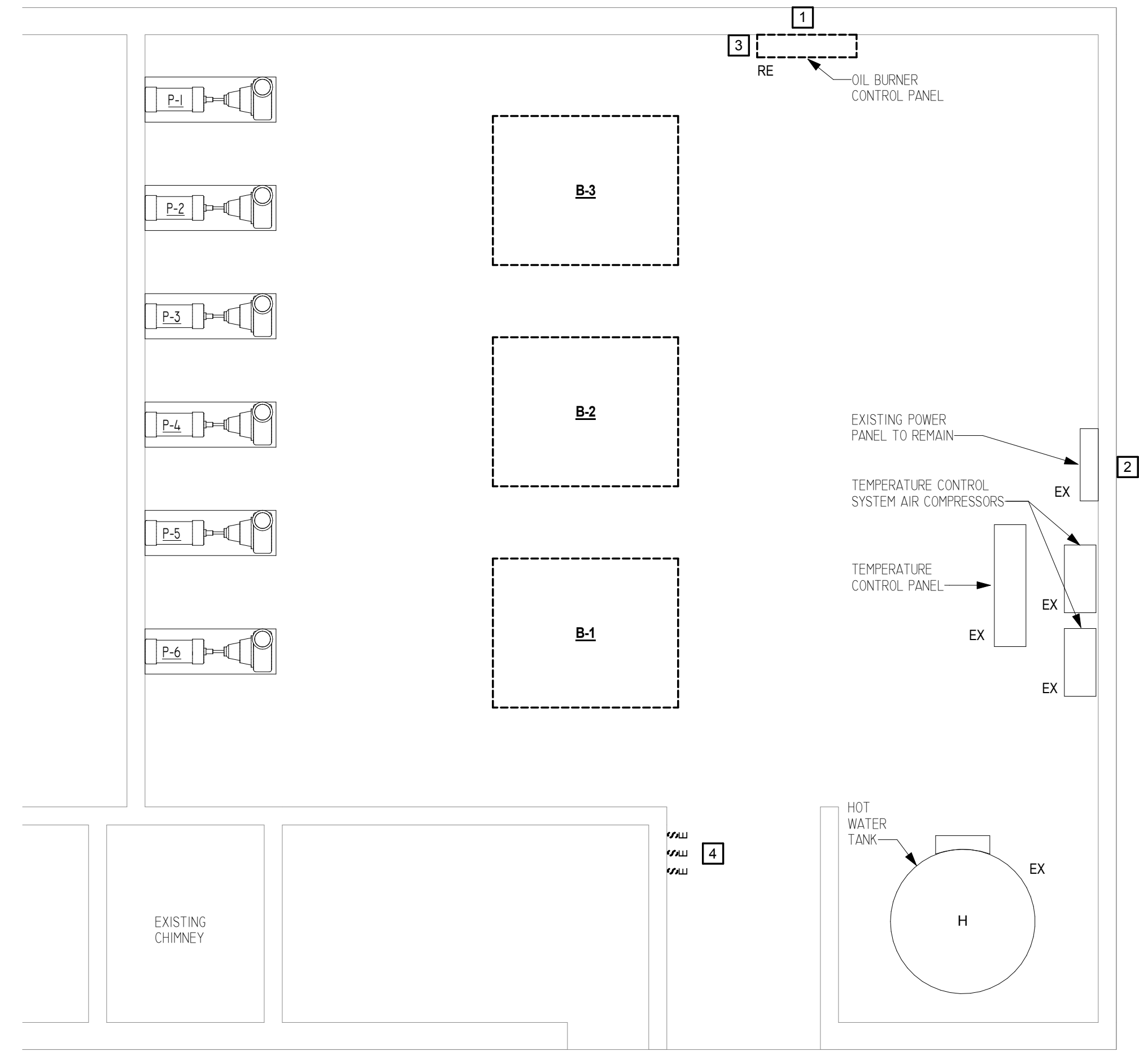
- LOWER LEVEL DEMOLITION NOTES**
- 1 REMOVE OIL BURNER CONTROL PANEL AND ALL ASSOCIATED CONTROLS.
  - 2 REMOVE OIL BURNER AND ASSOCIATED CONTROLS.
  - 3 REMOVE FUEL OIL SUPPLY AND RETURN PIPING CONNECTIONS TO OIL BURNER. PIPING TO REMAIN.
  - 4 REMOVE BOILER AND BRICK BASE.
  - 5 REMOVE BOILER RELIEF VALVE AND ALL ASSOCIATED PIPING.
  - 6 REMOVE HOT WATER SUPPLY PIPING.
  - 7 REMOVE HOT WATER RETURN PIPING TO, AND INCLUDING OS&Y VALVE. REMOVE ADDITIONAL HOT WATER RETURN PIPING IF REQUIRED.
  - 8 REMOVE BREECHING.
  - 9 REMOVE LOW WATER CUT-OFF PIPING.
  - 10 REMOVE COLD WATER MAKE-UP PIPING ASSEMBLY AND PIPING TO BOILER.
  - 11 REMOVE EXPANSION LINE PIPING TO BOILER.



4 LOWER LEVEL MECHANICAL PLAN  
1/4" = 1'-0"

- LOWER LEVEL DRAWING NOTES**
- 1 BOILER TO BE MOUNTED ON 6" HIGH CONCRETE HOUSEKEEPING PAD. SEE DETAIL ON DWG #ME-002.
  - 2 AIR SEPARATOR TO BE MOUNTED ON 6" HIGH CONCRETE HOUSEKEEPING PAD. SEE DETAIL ON DWG #ME-002.
  - 3 CONNECT EXISTING FUEL OIL SUPPLY AND RETURN PIPING TO NEW OIL BURNER.
  - 4 CONNECT NEW 4" HOT WATER RETURN PIPING WITH BUTTERFLY VALVE TO EXISTING HOT WATER RETURN PIPING. ADAPT TO EXISTING 6" PIPING.
  - 5 RELIEF VALVE AND FULL SIZE PIPING. TERMINATE AT 6" A.F.F.
  - 6 14"Ø BREECHING CONNECTION.
  - 7 COLD WATER MAKE-UP ASSEMBLY. SEE DETAIL ON DWG #ME-002. LOCATE A MAXIMUM OF 8'-0" A.F.F.
  - 8 \*TEKMAR\* CONTROLLER #284 OR "HEAT-TIMER" EQUIVALENT. TIE INTO EXISTING "BMS". COORDINATE WITH OWNERS REPRESENTATIVE. JEFF HAMMICK SNE BUILDING SYSTEMS 860-653-5095.
  - 9 4" HOT WATER SUPPLY UP WITH BUTTERFLY VALVE.
  - 10 14"Ø BREECHING UP.

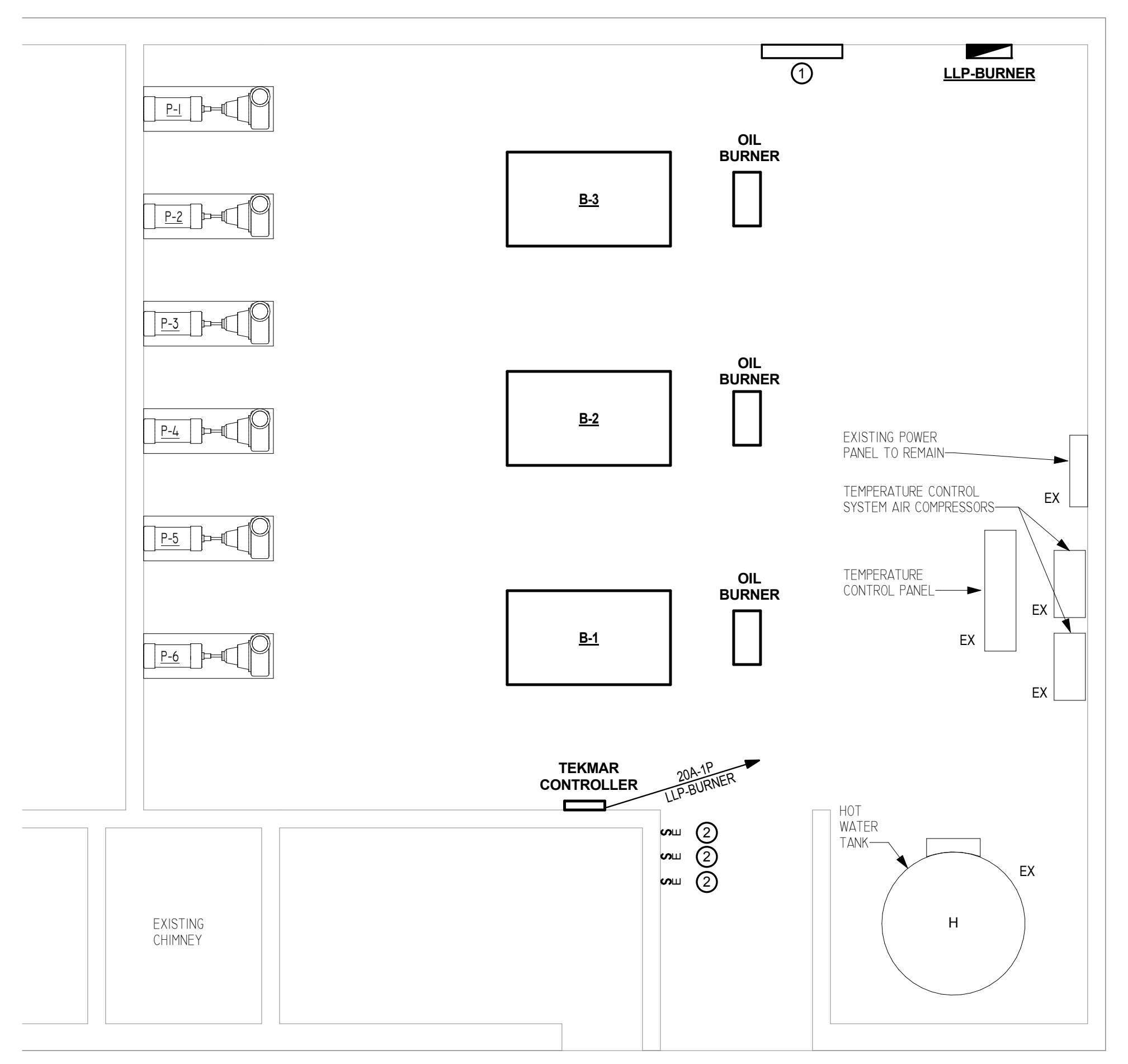
**Boiler Replacement Project  
East Windsor Middle School  
38 Main St, Broad Brook, CT 06016**



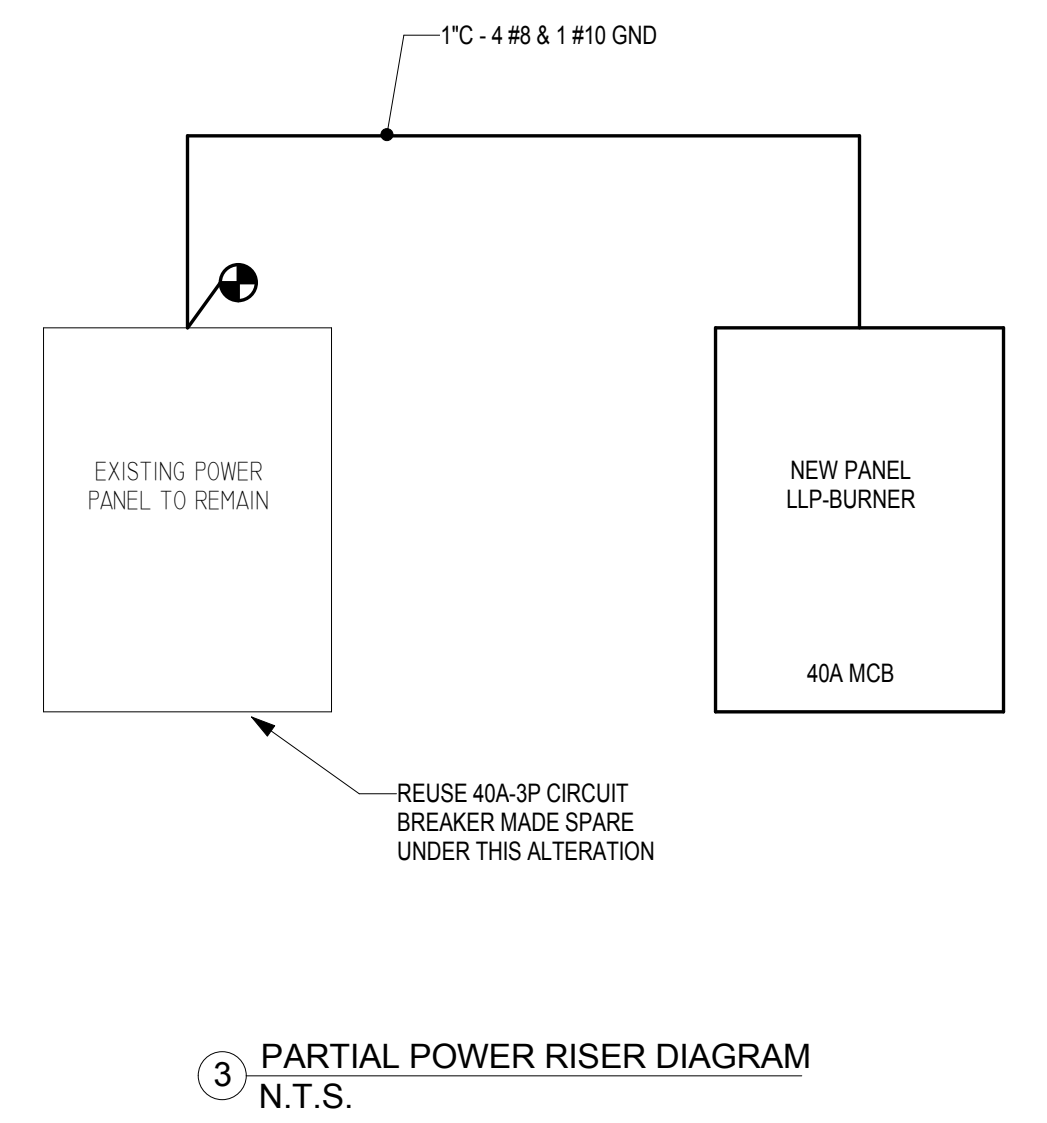
1 ELECTRICAL DEMOLITION PLAN  
1/4" = 1'-0"

**DEMOLITION NOTES**

- 1 EXISTING OIL BURNER CONTROL / POWER PANEL TO BE DISCONNECTED AND REMOVED WITH ASSOCIATED FEEDER BACK TO EXISTING POWER PANEL.
- 2 EXISTING CIRCUIT BREAKER FEEDING OIL BURNER CONTROL PANEL BEING REMOVED SHALL REMAIN AND BE REUSED TO FEED NEW PANEL LLP-BURNER.
- 3 EXISTING CONDUITS FROM PANEL TO BURNERS SHALL REMAIN AND BE REUSED.
- 4 EXISTING EMERGENCY SHUT-OFF SWITCHES FOR BOILERS SHALL BE DISCONNECTED AND REMOVED.



2 ELECTRICAL PLAN  
1/4" = 1'-0"



3 PARTIAL POWER RISER DIAGRAM  
N.T.S.

**DRAWING NOTES**

- 1 NEW WIRE TROUGH TO INTERSECT EXISTING CONDUITS TO BURNER LOCATIONS.
- 2 NEW BOILER EMERGENCY SHUT-OFF SWITCH. INTERFACE WITH BURNER CONTROLS.

**CONSTRUCTION SET**  
04.04.2018

KEY PLAN

REVISIONS		
NO.	DATE	ISSUE

DATE: 04.04.2018  
SCALE: As indicated  
DRAWN: JCK  
CHECKED: ARA  
JOB NO.: 21-18-024

SHEET TITLE:  
**BOILER ROOM 207  
ELECTRICAL  
PLANS**

DRAWING NO.  
**E-101**