

BLUEBERRY HILL ELEMENTARY SCHOOL

BOILER SHUT DOWN SCHEMATIC

											M	IECHANICAL EQ	UIPMENT SCHED	ULE									
LOAD TAG		LOAD						STARTER							POWER SOURCE			CONNI	ECTION				
	STARTER LOCATION				VOLT	РН	NEMA		OVERCURRENT			INDICATING LIGHTS	AUXILIARY						DISC			BRANCH CIRCUIT	REMARKS
	LOCATION	HP	FLA	KVA			SIZE		CB RK1 MCP	PB	HOA	R G A	CPT CONTACTS NO NC	PANEL C/B	FLEX	JB	REC	AS	AF	NEMA			
B-1A-B.01	PACKAGED CONTROLLER	-	6.9	2.5	208	3		PACKAGED CONTROLLER FURNISHED WITH EQUIPMENT							20A/3P	х	-	-	30	-	1	4#10 & 1#10G 3/4"C.	REFER TO NOTES 11 &12
NOTES:												KEY									_		

NOTES:	KEY
	FVNR FULL VOLTAGE NON-REVERSING
1. NOTES 2-5 APPLY TO ALL APPLICABLE LOADS.	FVR FULL VOLTAGE REVERSING
2. PROVIDE THERMAL OVERLOAD UNITS FOR ALL STARTERS SIZED TO MATCH LOAD NAMEPLATE AND NEC REQUIREMENTS.	2S1W TWO SPEED SINGLE WINDING
A REALIGH CIRCUIT WIRING METHODS CHALL BE AS NOTED ON THE REALINGS AND/OR OREGIFICATIONS FOR THE ARRIVABLE	COOM TWO ODEED TWO MINIDING

3. BRANCH CIRCUIT WIRING METHODS SHALL BE AS NOTED ON THE DRAWINGS AND/OR SPECIFICATIONS FOR THE APPLICABLE LOCATION. THE FINAL THREE FEET (MAXIMUM) SHALL BE FLEXIBLE METAL OR LIQUIDTIGHT FLEXIBLE METAL CONDUIT. 4. COPPER BRANCH CIRCUIT CONDUCTOR SIZING BASED UPON NEC TABLE 310.16. MAKE ADJUSTMENTS TO CONDUCTORS FOR TEMPERATURE OR VOLTAGE DROP THAT EXCEED NEC AND SPECIFICATION CRITERIA.

6. REQUIRED DISCONNECT IS PROVIDED INTEGRAL/PREWIRED TO MECHANICAL EQUIPMENT. 7. REQUIRED STARTER IS PROVIDED INTEGRAL/PREWIRED TO MECHANICAL EQUIPMENT.

8. DISCONNECT FOR 2S1W AND 2S2W MOTORS SHALL BE SIX POLE. 9. PROVIDE NEUTRAL FROM SOURCE TO STARTER ONLY FOR 120V CONTROL POWER OF 208V 3PH UNITS.

10. FUSES FOR DISCONNECT SWITCHES SHALL BE CLASS RK5. 11. BOILER PROVIDED WITH INTEGRAL STEP-DOWN TRANSFORMER FOR CONTROL CIRCUIT.

12. CONTRACTOR SHALL RE-USE EXISTING 20A-3P CIRCUIT BREAKER (MADE AVAILABLE THROUGH DEMOLITION) TO SERVE NEW BOILER.

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	STARTER LOCATION	LOAD						STARTER								POWER	SOURCE	CONNECTION										
AD TAG							NEMA		OVERCURRENT	NT			L	ICATIN	AUXILIARY							DISC			BRANCH CIRCUIT	REMARKS		
		HP	FLA	KVA	VOLT	PH	SIZE	TYPE	СВ	RK1 FUSE	МСР	PB HOA	HOA	R	G	Α (CPT I	NO NC	PANEL	NEL C/B	FLEX	JB	REC	AS	AF	NEMA		
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ES:																KEY FVNR	FULL '	VOLTAGE N	ON-REVER	RSING								

RVYDOT REDUCED VOLTAGE WYE DELTA OPEN TRANSITION RVYDCT REDUCED VOLTAGE WYE DELTA CLOSED TRANSITION MMS MANUAL MOTOR STARTER CB CIRCUIT BREAKER MCP MOTOR CIRCUIT PROTECTOR PB START AND STOP PUSH BUTTON HOA HAND-OFF-AUTOMATIC SELECTOR SWITCH CPT CONTROL POWER TRANSFORMER VFD VARIABLE FREQUENCY DRIVE W/O BYPASS

RVAT REDUCED VOLTAGE AUTOTRANSFORMER

RVPW REDUCED VOLTAGE PART WINDING

VFD/B VARIABLE FREQUENCY DRIVE W/ BYPASS CNTCR CONTACTOR - NO THERMAL OVERLOAD

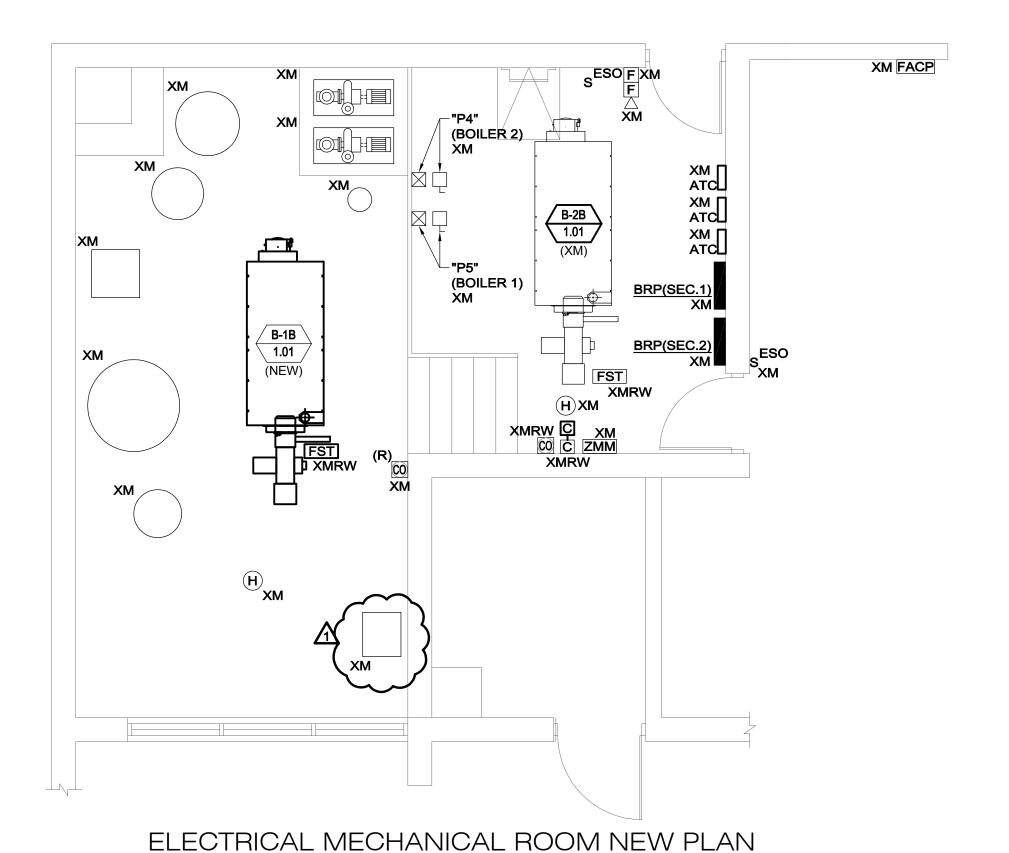
2S2W TWO SPEED TWO WINDING

	PANEL:	BRP (SEC. 1 OF 2)	VOLTS:	208Y/120		MOUNT:	SURFACE	GROUND BUS:	Υ	
	MAIN:	400A MLO	AMPS:	400A	•	AIC:	10,000	ISOLATED GROUND BUS:	N	•
			PH/WIRE:	3/4		LOC.:	BOILER RM	200% NEUTRAL:	N	_
	AMPS/		LOAD	D BY PHASE	, kVA		LOAD		AMPS/	Т
IR.	POLES	DESCRIPTION OF LOAD	kVA	Α	В	С	kVA	DESCRIPTION OF LOAD	POLES	CII
1				0.83			0.83			2
3	20/3	BOILER BURNER #2			0.83		0.83	BOILER BURNER #1	20/3	4
5						0.83	0.83			6
7				0.00						8
9	20/3	BOILER CIRC PUMP "P4"			0.00			BOILER CIRC PUMP "P5"	20/3	10
11						0.00				12
13	20/1	TEMP. CONTROL PANEL		0.00				TEMP. CONTROL HEAT TIMER	20/1	14
15	SPACE				0.00			BOILER #1 BURNER CONTROL	20/1	10
17	SPACE					0.00	0.00	SPARE(BOILER #2 CONTROLS)	20/1	18
19	SPACE			0.00						20
21	SPACE				0.00			PUMP	20/3	2
23	SPACE					0.00				2
25	SPACE			0.00					SPACE	20
27	SPACE				0.00				SPACE	2
29	SPACE					0.00			SPACE	3
31	SPACE			0.00					SPACE	32
33	SPACE				0.00				SPACE	34
35	SPACE					0.00			SPACE	3
37	4.50/0	 		0.00						
39	150/3	PANELS P1 & P2			0.00					
41						0.00				_
		TOTAL kVA BY PHASE -		0.83	0.83	0.83		TOTAL KVA-	2.49	_
								TOTAL AMPERES-	6.91	1

	PANEL:	BRP (SEC. 2 OF 2)	VOLTS:	208Y/120		MOUNT:	SURFACE	GROUND BUS:	Υ	
	MAIN:	150AMCB	AMPS:	400A	•	AIC:	10,000	ISOLATED GROUND BUS:	N	-
			PH/MRE:	3/4		LOC.:	BOILER RM	200% NEUTRAL:	N	-
	AMPS/		LOAD	LOAD	BY PHASE	, kVA	LOAD		AMPS/	
CIR.	POLES	DESCRIPTION OF LOAD	kVA	Α	В	С	kVA	DESCRIPTION OF LOAD	POLES	CIR
39				0.00					} /1\	40
41	20/3	SPARE			0.00		S	FUEL OIL PUMPS	20/3	42
43						0.00)	44
45	20/1	CIRC. PUMP #3 (HT WTR)		0.00						46
47	20/1	CIRC. PUMP #1 (WTR HEATER)			0.00			CIRC. PUMP #6	20/3	48
49	20/1	GAS WATER HEATER				0.00				50
51	20/1	UNDERGROUND LEAK DETECT.		0.00				UNIT HEATER BOILER RM	20/1	52
53	20/1	BOILER RMREC.			0.00				SPACE	54
55	20/1	SPARE				0.00			SPACE	56
57	20/1	SPARE		0.00						58
59	SPACE				0.00			SPARE	45/3	60
61	SPACE					0.00				62
63				0.00						64
65	45/3	SPARE			0.00			SPARE	60/3	66
67						0.00				68
				0.00						70
					0.00			SPARE	150/3	72
						0.00				74
		TOTAL kVA BY PHASE -		0.00	0.00	0.00		TOTAL KVA-	0.00	
]	TOTAL AMPERES-	0.00	I

EXISTING PANELBOARD NOTES:

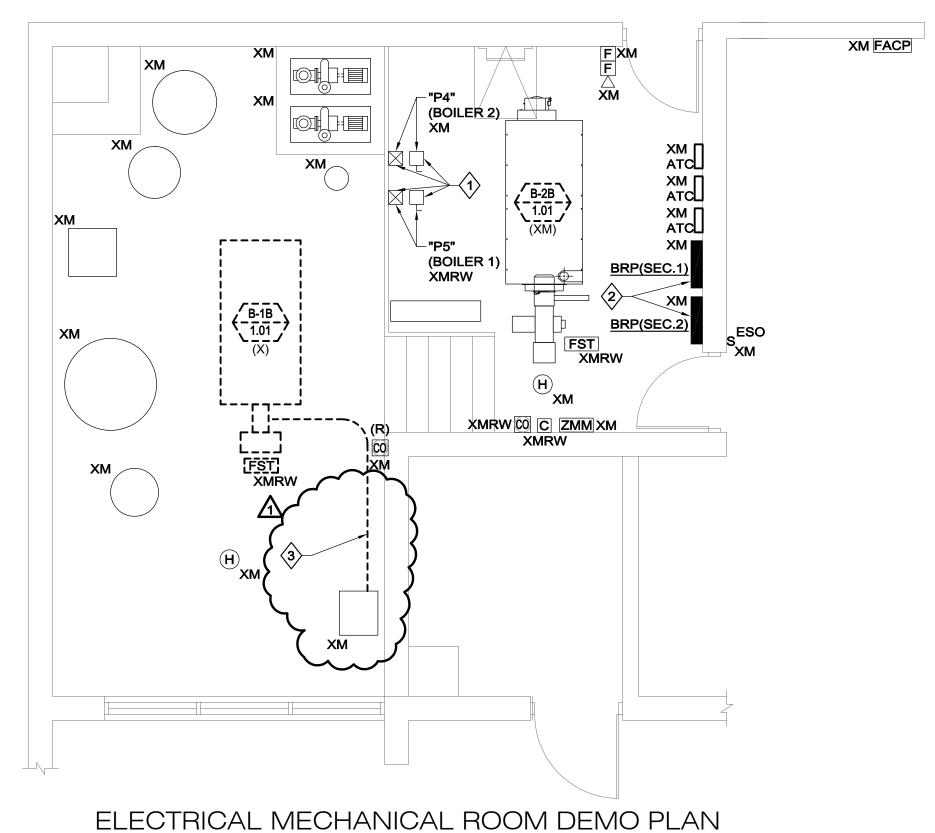
- 1. PANELBOARD INFORMATION BASED ON FIELD SURVEY AND AVAILABLE SITE INFORMATION.
- CONTRACTOR TO CIRCUIT TRACE AND METER ALL EXISTING CIRCUITS TO DETERMINE WHETHER THEY ARE ACTIVE/IN-USE PRIOR TO COMMENCEMENT OF WORK. CONTRACTOR TO WORK WITH SCHOOL FACILITIES STAFF.
- CONTRACTOR TO PROVIDE NEW TYPE WRITTEN PANEL DIRECTORY IN EACH PANELBOARD WITH UPDATED LOAD DESCRIPTION INFORMATION.



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

E316

REV



POWER NOTES:

1. REFER TO DRAWING E0.00 FOR LEGEND, SYMBOLS AND GENERAL NOTES.

		ELECTRICAL BOILER ROOM KEYNOTES
	1>	EXISTING MECHANICAL EQUIPMENT STARTERS AND DISCONNECTS TO REMAIN (TYPICAL).
٨	2	EXISTING PANELBOARD SERVING BOILER ROOM EQUIPMENT TO BE MODIFIED AS REQUIRED TO SERVE NEW BOILER.
1	3	EXISTING FUEL OIL PUMP CONTROL WIRING TO BE DEMOLISHED
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GENERAL NOTES:

CONTRACTOR TO COORDINATE WORK SCHEDULE WITH OWNER;

- ACCEPTABLE HOURS OF WORK ARE AS FOLLOWS: NOISY WORK I.E. CUTTING, DRILLING, HAMMERING, ETC. TO BE PERFORMED MON-FRI AFTER 3PM OR ON WEEKENDS
- ALL OTHER WORK CAN BE PERFORMED MON-FRI 7AM-3PM COORDINATE ALL SYSTEM SHUTDOWNS WITH OWNER. EXISTING HEATING AND CHILLED WATER SYSTEMS ARE TO REMAIN IN OPERATION DURING CONSTRUCTION WHILE BUILDING IS OCCUPIED

ADDENDUM #1 07-25-2019

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380 Russell Street Hadley, MA 01035

REVISIONS DATE CHK DESCRIPTION 1\ 07/25/19 JP ADDENDUM #1

PROJECT 0190327

DATE-07/18/2019

BLUEBERRY HILL SCHOOL BOILER REPLACEMENT

JP
CHECKED BY
KEG
SCALE-

DRAWING

1/4" = 1'-0"

ELECTRICAL MECHANICAL ROOM PART PLANS