

**BLUEBERRY HILL ELEMENTARY SCHOOL
BOILER SHUT DOWN SCHEMATIC**

E316 REV

LOAD TAG	STARTER LOCATION	LOAD										STARTER				POWER SOURCE		CONNECTION					BRANCH CIRCUIT	REMARKS			
		HP	FLA	KVA	VOLT	PH	NEMA SIZE	TYPE	OVERCURRENT			PB	HOA	INDICATING LIGHTS	AUXILIARY		PANEL	C/B	FLEX	JB	REC	DISC					
									CB	RK1 FUSE	MCP				R	G						A			CPT	NO	NC
B-1A-B.01	PACKAGED CONTROLLER	-	6.9	2.5	208	3											BRP-1	20A/3P	X	-	-	-	30	-	1	4#10 & 1#10G. - 3/4"C.	REFER TO NOTES 11 & 12

NOTES:
1. NOTES 2-5 APPLY TO ALL APPLICABLE LOADS.
2. PROVIDE THERMAL OVERLOAD UNITS FOR ALL STARTERS SIZED TO MATCH LOAD NAMEPLATE AND NEC REQUIREMENTS.
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.
5. RACEWAY SIZES ARE BASED UPON GRSC AND LMC WITH THWN CONDUCTORS.
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.

KEY:
FVNR FULL VOLTAGE NON-REVERSING
FVR FULL VOLTAGE REVERSING
2S1W TWO SPEED SINGLE WINDING
2S2W TWO SPEED TWO WINDING
RVAT REDUCED VOLTAGE AUTOTRANSFORMER
RVPW REDUCED VOLTAGE PART WINDING
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
VFD/B VARIABLE FREQUENCY DRIVE W/ BYPASS
CNTCR CONTACTOR - NO THERMAL OVERLOAD

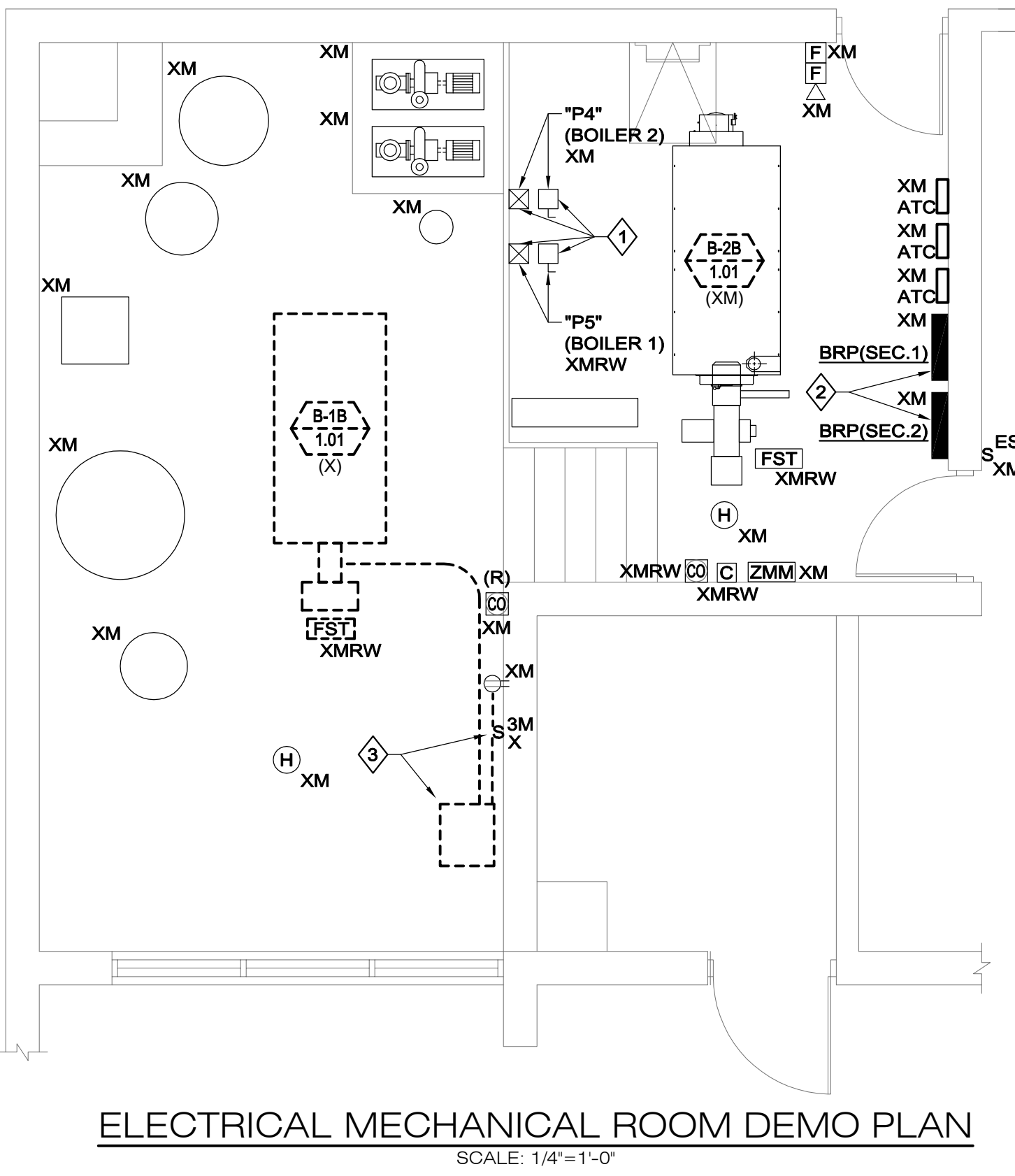
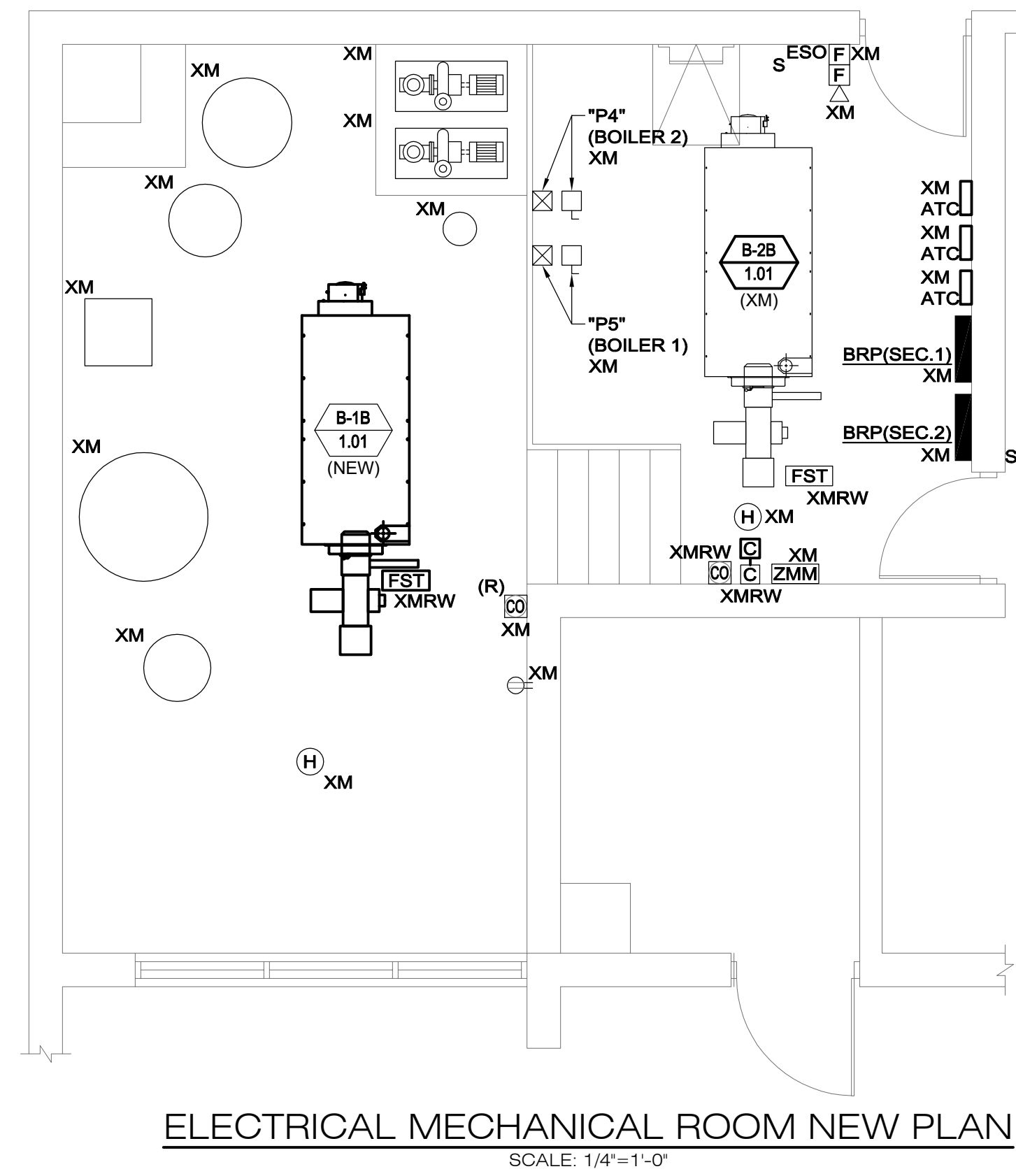
PANEL: BRP (SEC. 1 OF 2)		VOLTS: 208Y/120	MOUNT: SURFACE	GROUND BUS: Y				
MAIN: 400A MLO		AMPS: 400A	A/C: 10.000	ISOLATED GROUND BUS: N				
		PH/WIRE: 3/4	LOC.: BOILER RM	200% NEUTRAL: N				
CIR.	AMPS/POLES	DESCRIPTION OF LOAD	LOAD KVA	LOAD BY PHASE, KVA	LOAD KVA	DESCRIPTION OF LOAD	AMPS/POLES	CIR.
1				A B C				2
3	20/3	BOILER BURNER #2		0.83	0.83	0.83	BOILER BURNER #1	20/3
5								4
7				0.00	0.00	0.83		6
9	20/3	BOILER CIRC PUMP "P4"					BOILER CIRC PUMP "P5"	20/3
11								8
13	20/1	TEMP. CONTROL PANEL		0.00	0.00		TEMP. CONTROL HEAT TIMER	20/1
15	SPACE						BOILER #1 BURNER CONTROL	20/1
17	SPACE				0.00	0.00	SPARE(BOILER #2 CONTROLS)	20/1
19	SPACE			0.00				20
21	SPACE				0.00		PUMP	20/3
23	SPACE							22
25	SPACE			0.00				24
27	SPACE				0.00			26
29	SPACE							28
31	SPACE			0.00				30
33	SPACE				0.00			32
35	SPACE							34
37				0.00				36
39	150/3	PANELS P1 & P2			0.00			
41								
TOTAL KVA BY PHASE				0.83	0.83	0.83		
TOTAL KVA				2.49				
TOTAL AMPERES				6.91				

* REUSE EXISTING CIRCUIT BREAKER MADE AVAILABLE THROUGH DEMOLITION

PANEL: BRP (SEC. 2 OF 2)		VOLTS: 208Y/120	MOUNT: SURFACE	GROUND BUS: Y				
MAIN: 150A MCB		AMPS: 400A	A/C: 10.000	ISOLATED GROUND BUS: N				
		PH/WIRE: 3/4	LOC.: BOILER RM	200% NEUTRAL: N				
CIR.	AMPS/POLES	DESCRIPTION OF LOAD	LOAD KVA	LOAD BY PHASE, KVA	LOAD KVA	DESCRIPTION OF LOAD	AMPS/POLES	CIR.
39				A B C				40
41	20/3	SPARE		0.00	0.00		SPARE (FUEL OIL PUMPS)	20/3
43								42
45	20/1	CIRC. PUMP #3 (HT WTR)		0.00		0.00		44
47	20/1	CIRC. PUMP #1 (WTR HEATER)			0.00		CIRC. PUMP #6	20/3
49	20/1	GAS WATER HEATER				0.00		46
51	20/1	UNDERGROUND LEAK DETECT.		0.00			UNIT HEATER BOILER RM	20/1
53	20/1	BOILER RM REC.			0.00			52
55	20/1	SPARE				0.00		54
57	20/1	SPARE		0.00				56
59	SPACE				0.00		SPARE	45/3
61	SPACE					0.00		58
63				0.00				60
65	45/3	SPARE			0.00		SPARE	62
67						0.00		64
TOTAL KVA BY PHASE				0.00	0.00	0.00		66
TOTAL KVA				0.00				68
TOTAL AMPERES				0.00				70
								72
								74

EXISTING PANELBOARD NOTES:

- 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.



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

1	EXISTING MECHANICAL EQUIPMENT STARTERS AND DISCONNECTS TO REMAIN (TYPICAL).
2	EXISTING PANELBOARD SERVING BOILER ROOM EQUIPMENT TO BE MODIFIED AS REQUIRED TO SERVE NEW BOILER.
3	EXISTING DUAL FUEL OIL PUMPS, CONTROLLER, DISCONNECT, AND ASSOCIATED WIRING SHALL BE DEMOLISHED.

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

CONSTRUCTION DOCUMENTS
07-18-2019

REVISIONS

DATE	CHK	DESCRIPTION

SEAL

PROJECT

NUMBER: 0190327
DATE: 07/18/2019
BLUEBERRY HILL SCHOOL BOILER REPLACEMENT

DRAWING

DRAWN BY: JP
CHECKED BY: KEG
SCALE: 1/4" = 1'-0"
ELECTRICAL MECHANICAL ROOM PART PLANS