

ELECTRICAL SYMBOLS LEGEND

ALL SYMBOLS INDICATED IN THE LEGEND MAY NOT NECESSARILY BE USED ON PLANS.

CROUTING		POWER SYMBOLS		FIRE ALARM SYMBOLS		ONE LINE DIAGRAM SYMBOLS		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	
	CROUTING - DESIGNATION - OPEN TRIANGLE, SOLID TRIANGLE CROUTING - RUN CONCEALED IN WALL OR CEILING CROUTING - RUN CONCEALED IN FLOOR OR GRADE CONDUIT RISER - TURNED UP, TURNED DOWN CROUTING - CONTINUED AS DESIGNATED CROUTING - END CAP		JUNCTION BOX, JBOX WITH BLANK COVER SIMPLEX RECEPTACLE DUPLEX RECEPTACLE COMBINATION DUPLEX RECEPTACLE HALF SWITCHED DUPLEX RECEPTACLE DEDICATED DUPLEX RECEPTACLE CEILING MOUNTED DUPLEX RECEPTACLE FOURPLEX RECEPTACLE DEDICATED FOURPLEX RECEPTACLE C.L.G. MOUNTED RECEPTACLE SPECIAL RECEPTACLE - SEE DRAWING NOTES FLOOR MOUNTED POWER FLOOR BOX DEVICE FLOOR COMBINATION PARSATA FLOOR BOX NON FUSED DISCONNECT SWITCH FUSED DISCONNECT SWITCH VARIABLE FREQUENCY DRIVE MOTOR ONE, TWO AND THREE BUTTON PUSH SWITCH POWER POLE TIME CLOCK CONTACTOR GROUND BAR EMERGENCY POWER OFF PUSH BUTTON		CEILING MOUNTED FIRE HORN/STROBE CEILING MOUNTED STROBE CEILING MOUNTED FIRE SPEAKER REMOTE INDICATOR LAMP MANUAL PULL STATION FLOW SWITCH TAMPER SWITCH PRESSURE SWITCH WALL MOUNTED STROBE WALL MOUNTED FIRE HORN WALL MOUNTED FIRE HORN/STROBE MAGNETIC DOOR HOLD OPEN FIRE ALARM CONTROL PANEL FIRE ALARM ANNUNCIATOR PANEL FIRE ALARM GRAPHIC MAP DUCT DETECTOR HEAT DETECTOR SMOKE DETECTOR FIREFIGHTER PHONE JACK / WALL PHONE TWO-WAY COMMUNICATION STATION		PANEL BOARD CURRENT TRANSFORMER ENCLOSURE PULL BOX FUSED DISCONNECT SWITCH NON-FUSED DISCONNECT SWITCH TRANSFORMER TRANSFER SWITCH OVERHEAD POLE MOUNTED TRANSFORMER BANK	FUSED DISCONNECT SWITCH WITHIN SWITCHBOARD SPARE SWITCH WITHIN SWITCHBOARD SPACE WITHIN SWITCHBOARD CIRCUIT BREAKER SERVICE WEATHER HEAD CURRENT TRANSFORMER GROUNDING CONNECTION MISCELLANEOUS SYMBOLS CARE READER, DOUBLE GANG BOX 3/4" CONDUIT STUB TO ACCESSIBLE CEILING INTERCOM PULL BUTTON, DOUBLE GANG BOX 3/4" CONDUIT STUB TO ACCESSIBLE CEILING BELL 1/2" CONDUIT STUB TO ACCESSIBLE CEILING DOOR BUZZER 1/2" CONDUIT STUB TO ACCESSIBLE CEILING SECURITY CAMERA, DOUBLE GANG BOX 3/4" CONDUIT STUB TO ACCESSIBLE CEILING WALL SECURITY MOTION SENSOR, DOUBLE GANG 1/2" CONDUIT STUB TO ACCESSIBLE CEILING DOOR CONTACT - SEE DRAWING NOTES 1/2" CONDUIT STUB TO ACCESSIBLE CEILING INBUSH DOORING SPEAKER, DOUBLE GANG 1/2" CONDUIT STUB TO ACCESSIBLE CEILING PHOTOCELL THERMOSTAT, LINE VOLTAGE MICROPHONE JACK REMOTE TEST SWITCH LOCK COMBINATION CLOCK/SPEAKER BOX
NOTES AND TAGS		LIGHTING CONTROL SYMBOLS		ABBREVIATIONS				
REVISION DELTA DRAWING NOTE MECHANICAL EQUIPMENT KITCHEN EQUIPMENT LIGHTING CONTROL NOTE		SWITCHED S1 SWITCH, SINGLE POLE S2 SWITCH, DOUBLE POLE S3 SWITCH, THREE WAY S4 SWITCH, FOUR WAY S5 SWITCH DIMMER SK SWITCH, KEYPAD SP SWITCH, WITH PILOT LIGHT SPO SWITCH, THERMAL OVERLOAD SVO SWITCH, VARIABLE SPEED CONTROL SWS SWITCH, WITH TYPE 9 FUSE HOLDER (INCLUDE FUSE) SC LTG SCENE CONTROLLER-SEE DRAWING NOTES		WALL VACUANCY SENSOR, DUAL TECH, SINGLE ZONE, INTEGRAL OVERRIDE SWITCH WALL VACUANCY SENSOR, DUAL TECH, SINGLE ZONE, INTEGRAL OR SWITCH DIMMING WALL VACUANCY SENSOR, DUAL TECH, DUAL ZONE, INTEGRAL OVERRIDE SWITCH CEILING VACUANCY SENSOR, DUAL TECH, SINGLE ZONE, POWER PACK, LV OVERRIDE SWITCHES CEILING VACUANCY SENSOR, DUAL TECH, DUAL ZONE, 9P POWER PACK, LV OVERRIDE SWITCHES CEILING VACUANCY SENSOR, SINGLE ZONE, EXTERIOR RATED, EXTENDED RANGE, PIR INTERIOR DAYLIGHT SENSOR		A/AMP AMPERE AC ABOVE COUNTER A/CI ARC FAULT CIRCUIT INTERRUPTER AFF ABOVE FINISHED FLOOR AFG ABOVE FINISHED GRADE AL ALUMINUM BLDG BUILDING CB CIRCUIT BREAKER CTV CLOSED CIRCUIT TELEVISION CT CURRENT TRANSFORMER CU COPPER CLG CEILING (CEILING MOUNTED) CWP COLD WATER PIPE D EXISTING TO BE DEMOLISHED Ds DECIBEL E EXISTING TO REMAIN ELEC ELECTRICAL CONTRACTOR EPO EMERGENCY POWER OFF EM EMERGENCY POWER CIRCUIT FA FIRE ALARM FC FOOT CABLES GC GENERAL CONTRACTOR GD GROUNDING DISPOSITION GND GROUND HP HORSEPOWER IS ISOLATED GROUND DEVICE LV LOW VOLTAGE MC MECHANICAL CONTRACTOR MCB MAIN CIRCUIT BREAKER MFR MANUFACTURER M.I.D. MAIN USES ONLY MV MEDIUM VOLTAGE MW MICROWAVE (N) NEW N NEUTRAL N.C. NORMALLY CLOSED N.O. NORMALLY OPEN N.E.C. NATIONAL ELECTRIC CODE NF NON-FUSED NIC NOT IN CONTRACT NL NIGHT LIGHT NOT TO SCALE (PART) PARTIAL CIRCUIT REF EXISTING TO BE RELOCATED RFL REMOTE TEST SWITCH TBB TELEPHONE PLYWOOD BACKBOARD UC UNDER COUNTER UG UNDER GROUND W.P. WEATHERPROOF - NEMA 3R XP EXPLOSION PROOF		

APPLICABLE CODE STANDARDS

2021 INTERNATIONAL BUILDING CODE	2021 INTERNATIONAL MECHANICAL CODE	2021 INTERNATIONAL ENERGY CONSERVATION CODE	2023 NATIONAL ELECTRIC CODE
2021 INTERNATIONAL FIRE CODE	2021 INTERNATIONAL PLUMBING CODE	2021 INTERNATIONAL FUEL GAS CODE	

ISC CALCULATION - 3 PHASE

Point #1 - At The Utility Transformer

isc = 16,900

Point #2 - At The Main Distribution System "MDC"

isc = 3,091

Point #3 - At The Main Distribution Center "MDC"

isc = 16,413

Point #4 - At Panel "EMCC"

isc = 15,196

Point #5 - At Panel "EMCC"

isc = 12,597

Point #6 - Through The Transformer, 3-phase

isc = 1,122

Point #7 - At Panel "ELP1"

isc = 1,061

Point #8 - At Panel "HP"

isc = 11,625

Point #9 - At 100A ATS

isc = 10,701

Point #10 - At Panel "GEN1"

isc = 10,425

Point #11 - At 450VA Transformer

isc = 9,934

Point #12 - Through The Transformer, 3-phase

isc = 3,091

Point #13 - At Panel "GEN1A"

isc = 3,047

Point #14 - At Ph-1 Supply Fans

isc = 0,911

Point #15 - At Ph-1 Exhaust Fans

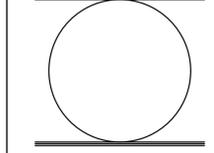
isc = 6,367

MECHANICAL EQUIPMENT SCHEDULE

DESIGNATION	DESCRIPTION	VOLTAGE	PH	HP	kVA	FLA (MCA)	AIC (A)	ISC (A)	DATE	CONDUCTORS	CONDUIT	SWITCH	CB	FUSE SIZE/TYPE	REMARKS
B-1	BOILER	480	3	1.0	-	2.1	10,000	7,085	10/17/23	(3#12 CU 1#12 GND)	3/4"	303	203	25A FR8-R	-
EVAP-1	EVAPORATIVE COOLER	120	1	1.0	-	-	-	-	-	(#12 CU 1#12 GND)	3/4"	SPST	201	-	2.3
EFPH-1	EXHAUST FAN PENTHOUSE	120	1	1/4	-	-	-	-	-	(#12 CU 1#12 GND)	3/4"	SPST	201	-	4
FCU-1	FAN COIL UNIT	120	1	20	-	-	-	-	-	(#12 CU 1#12 GND)	3/4"	STO	201	-	-
P-1	PUMP	480	3	2	-	-	-	-	-	(#412 CU 1#12 GND)	3/4"	303	203	25A FR8-R	-
P-6	PUMP	480	3	2	-	-	-	-	-	(#412 CU 1#12 GND)	3/4"	303	203	25A FR8-R	-
PH-1	PENTHOUSE AIR HANDLER (SUPPLY FAN)	480	3	(3) 25	-	(78.0)	10,000	6,311	10/27/23	(3#1 CU 1#6 GND)	1-1/2"	2003	1253	125A FR8-R	1.2
	PENTHOUSE AIR HANDLER (EXHAUST FAN)	480	3	(3) 10	-	(39.0)	10,000	6,367	10/27/23	(3#6 CU 1#10 GND)	3/4"	603	503	50A FR8-R	1.2
LVR-1	MOTORIZED LOUVER	120	1	-	500 W	-	-	-	-	(#12 CU 1#12 GND)	3/4"	HARD WIRE	201	-	-
WS-1	WATER SOFTENER	120	1	-	500 W	-	-	-	-	(#12 CU 1#12 GND)	3/4"	HARD WIRE	201	-	-

REMARKS:

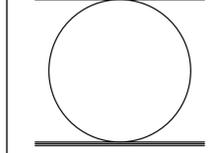
- PROVIDE DUCT DETECTOR WITH FIRE ALARM SYSTEM INTERFACE FOR EQUIPMENT SHUT DOWN.
- UNIT CONTROLLED VIA AIR HANDLER CONTROL PANEL.
- PROVIDE POWER FOR (3) SEPARATE EVAPORATIVE COOLERS
- CONTROL WITH BAS SYSTEM. INTERLOCK WITH FCU-1. SEE MECHANICAL FOR SEQUENCE REQUIRED.



ISSUE	DATE
100% CD	10/06/2023
Issued for Construction	10/27/2023
100% Permit Comment	11/06/2023
ADDENDUM #1	11/14/2023

MEP JOB: 22318
DESIGNED: CMM
CHECKED: RCC

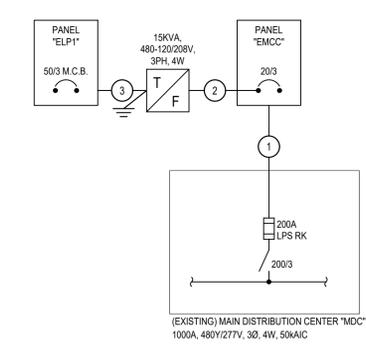
ELECTRICAL ONE-LINE DIAGRAM



PANEL "EMCC" (DEMO)		VOLTAGE 277 / 480 V 3 PH 4 W						
FLUSH	MAIN	M.L.O	X					
SURFACE X	BUS 200A	FEED THRU	A.I.C. 22,000A					
TYPE	DESCRIPTION	BKR	CR	LOAD (VA/PHASE)	CR	BKR	DESCRIPTION	TYPE
1	P-1: HEAT PUMP	30	1	0 0 0	2	125	PH-1 FAN/LIGHT CNTRL	2
-	-	3	5	0 0 0	4	3	-	-
2	P-6: FEEDWATER PUMP	30	7	0 0 0	8	30	B-1	2
-	-	9	-	0 0 0	10	-	-	-
2	P-4: PH-1 CIRC PUMP	30	13	0 0 0	14	20	PANEL "ELP1"	2
-	-	15	-	0 0 0	16	-	-	-
-	-	17	-	0 0 0	18	-	-	-
-	SPARE	30	19	0 0 0	20	-	SPACE	-
-	-	21	-	0 0 0	22	-	SPACE	-
-	-	23	-	0 0 0	24	-	SPACE	-
1	IT COMPRESSOR	30	25	0 0 0	26	-	SPACE	-
-	-	27	-	0 0 0	28	-	SPACE	-
-	-	29	-	0 0 0	30	-	SPACE	-

LOAD TYPE	CONNECTED KVA	TOTAL	FACTOR	DEMAND KVA	TOTAL
	A B C ALL			A B C ALL	
LIGHTING/CONTINUOUS	0.0 0.0 0.0 0.0	0.0	125%	0.0 0.0 0.0 0.0	0.0
RECEPTACLE (10KVA OR LESS)	0.0 0.0 0.0 0.0	0.0	100%	0.0 0.0 0.0 0.0	0.0
RECEPTACLE (OVER 10KVA)	0.0 0.0 0.0 0.0	0.0	100%	0.0 0.0 0.0 0.0	0.0
HVAC/MOTOR	0.0 0.0 0.0 0.0	0.0	100%	0.0 0.0 0.0 0.0	0.0
MOTOR(LARGEST)	0.0 0.0 0.0 0.0	0.0	125%	0.0 0.0 0.0 0.0	0.0
KITCHEN EQUIPMENT	0.0 0.0 0.0 0.0	0.0	100%	0.0 0.0 0.0 0.0	0.0
MISCELLANEOUS	0.0 0.0 0.0 0.0	0.0	100%	0.0 0.0 0.0 0.0	0.0
TOTAL KVA	0.0 0.0 0.0 0.0	0.0		0.0 0.0 0.0 0.0	0.0

1 EXISTING LOAD TO BE RECONNECTED IN NEW "EMCC" PANEL. REFER TO SHEET E-0.3 FOR NEW PANEL INFORMATION.
2 EXISTING LOAD TO BE REMOVED AND REPLACED. REFER TO SHEETS E-0.1 AND E-0.3 FOR ADDITIONAL INFORMATION.



PARTIAL ELECTRICAL ONE-LINE DIAGRAM (DEMO)
NOT TO SCALE

PANEL "ELP1" (DEMO)		VOLTAGE 120 / 208 V 3 PH 4 W						
FLUSH	MAIN 500	M.L.O	X					
SURFACE X	BUS 100A	FEED THRU	A.I.C. 10,000A					
TYPE	DESCRIPTION	BKR	CR	LOAD (VA/PHASE)	CR	BKR	DESCRIPTION	TYPE
1	FIRE PANEL	20	1	0 0 0	2	20	SWAMPER TC	1
1	BOILER T.C. CNTRL PAN	20	3	0 0 0	4	20	PS PUMP	1
1	RM 127	20	5	0 0 0	6	20	P7	1
1	RM 139	20	7	0 0 0	8	20	P8	1
1	SURG. LTG 127,132,136	20	9	0 0 0	10	20	T.C.-152	1
1	SURG. LGT 139	20	11	0 0 0	12	20	REFREG. DRYER	1
1	SURG. LGT 139	20	13	0 0 0	14	20	FACP	1
1	RECEPT SVL LGT SWITCH	20	15	0 0 0	16	20	SPARE	1
1	LTG P. HOUSE 111,152	20	17	0 0 0	18	20	SPARE	1
1	BOILER ALARM CKT	20	19	0 0 0	20	20	SPARE	1
1	SPARE	20	21	0 0 0	22	20	WALL HEATER	1
1	SPARE	20	23	0 0 0	24	20	-	1

LOAD TYPE	CONNECTED KVA	TOTAL	FACTOR	DEMAND KVA	TOTAL
	A B C ALL			A B C ALL	
LIGHTING/CONTINUOUS	0.0 0.0 0.0 0.0	0.0	125%	0.0 0.0 0.0 0.0	0.0
RECEPTACLE (10KVA OR LESS)	0.0 0.0 0.0 0.0	0.0	100%	0.0 0.0 0.0 0.0	0.0
RECEPTACLE (OVER 10KVA)	0.0 0.0 0.0 0.0	0.0	100%	0.0 0.0 0.0 0.0	0.0
HVAC/MOTOR	0.0 0.0 0.0 0.0	0.0	100%	0.0 0.0 0.0 0.0	0.0
MOTOR(LARGEST)	0.0 0.0 0.0 0.0	0.0	125%	0.0 0.0 0.0 0.0	0.0
KITCHEN EQUIPMENT	0.0 0.0 0.0 0.0	0.0	100%	0.0 0.0 0.0 0.0	0.0
MISCELLANEOUS	0.0 0.0 0.0 0.0	0.0	100%	0.0 0.0 0.0 0.0	0.0
TOTAL KVA	0.0 0.0 0.0 0.0	0.0		0.0 0.0 0.0 0.0	0.0

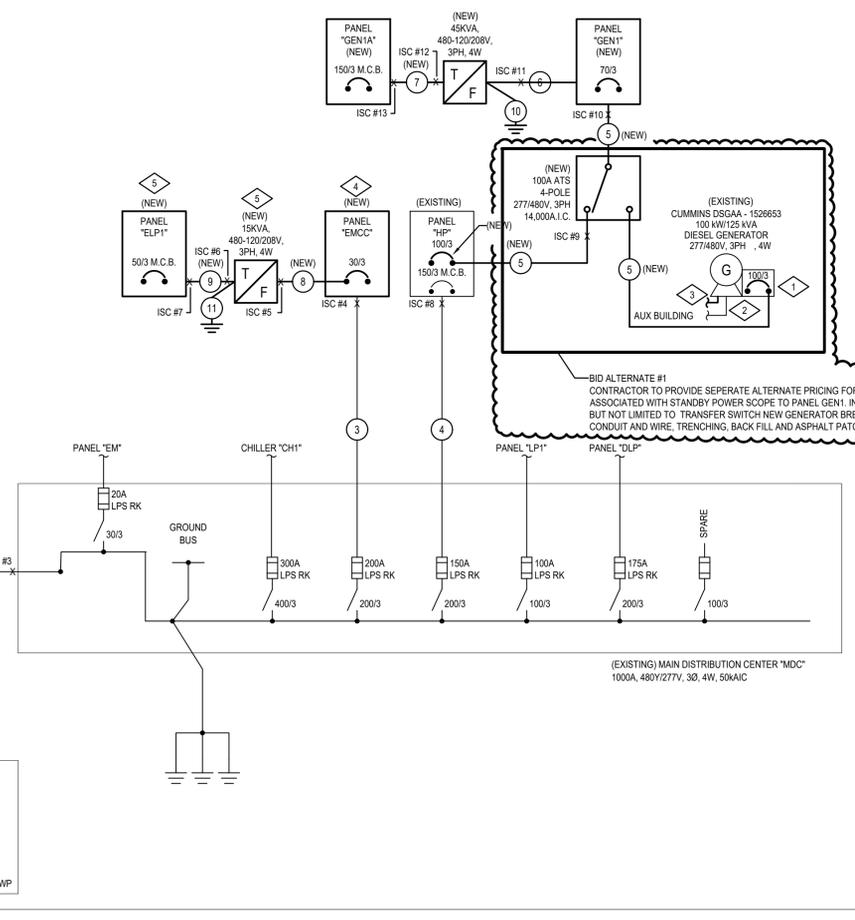
1 EXISTING LOADS TO BE CONNECTED IN NEW "ELP1" PANEL. REFER TO SHEET E-0.3 FOR NEW PANEL INFORMATION.

LOAD CALCULATION

LOAD ON 125KVA GENERATOR	
PEAK DEMAND	26.7 KVA
PEAK DEMAND AT 125%	33.4 KVA
LOAD ADDED	19.4 KVA
TOTAL LOAD	52.8 KVA

DEMO FEEDER SCHEDULE:

- (4-#3/0 CU, 1-#6 CU GND) 2-1/2" C
- (3-#12 CU, 1-#12 CU GND) 3/4" C
- (4-#6 CU, 1-#10 CU GND) 1" C



EXISTING ELECTRICAL ONE-LINE DIAGRAM
NOT TO SCALE

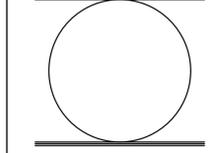
DRAWING NOTES

- DEMOLISH AND REPLACE EXISTING SPARE CIRCUIT BREAKER IN EXISTING GENERATOR. REPLACE 175A, 3-POLE BREAKER WITH 100A, 3-POLE BREAKER.
- EXISTING GENERATOR FED FROM SEPARATE AUX BUILDING SYSTEM. GENERATOR AND EXISTING FEEDS TO REMAIN AS IS, ONLY UTILIZE EXISTING SPARE CIRCUIT BREAKER FROM GENERATOR.
- PROVIDE 1" CONDUIT FROM EXISTING GENERATOR TO NEW ATS FOR NEW CONTROL WIRING.
- DEMOLISH AND REPLACE EXISTING PANELBOARD "EMCC" WITH NEW 200A, 3PH, 4W, 22,000AIC RATED PANELBOARD. SEE SHEET E-0.3 FOR MORE INFORMATION.
- DEMOLISH AND REPLACE EXISTING PANELBOARD "ELP1" AND EXISTING 15KVA TRANSFORMER. BOTH TO BE FED OUT OF NEW PANELBOARD "EMCC". SEE SHEET E-0.3 FOR MORE INFORMATION.

FEEDER SCHEDULE:

- 6(4-400 KCMIL CU) 3" C
- 2(4-500 KCMIL CU, 1-#1 CU GND) 3-1/2" C
- (4-#3/0 CU, 1-#6 CU GND) 2-1/2" C
- (4-#1/0 CU, 1-#6 CU GND) 2" C
- (4-#1 CU, 1-#8 CU GND) 1-1/2" C
- (4-#4 CU, 1-#8 CU GND) 1-1/2" C
- (4-#1/0 CU, 1-#6 CU SSB) 2" C
- (3-#10 CU, 1-#10 CU GND) 3/4" C
- (4-#6 CU, 1-#8 CU SSB) 1" C
- (1-#6 CU GND) 3/4" C
- (1-#8 CU GND) 3/4" C

GROUND LEVEL



PANEL "MDC" (EXISTING)		VOLTAGE 277 / 480 V 3 PH 4 W									
FLUSH MAIN		MLO X									
SURFACE X BUS 2000A		FEED THRU A.I.C. 85,000A									
TYPE	DESCRIPTION	BKR	CIR	LOAD (VA/PHASE)	CIR	BKR	DESCRIPTION	TYPE			
				A B C							
1	LMG "MDC"	800	1	169433	177280		2 800 "MDC1"	G			
1	LRMG	3	3		169937 177280		4	G			
1	LMG	3	5		169005 177280		6 3	G			
	SPARE	400	7	0	44320		8 200 AUX ANIMAL HOUSE	G			
			9		0 44320		10	G			
			3 11		0 44320		12 3	G			
LOAD TYPE		CONNECTED KVA		TOTAL		FACTOR		DEMAND KVA		TOTAL	
		A	B	C	ALL	A	B	C	ALL		
	LIGHTING/CONTINUOUS	1.0	0.5	1.0	2.5	125%	1.3	0.6	1.3	3.1	
	RECEPTACLE (10KVA OR LESS)	0.0	0.7	0.0	0.7	100%	0.0	0.7	0.0	0.7	
	RECEPTACLE (OVER 10KVA)	0.0	0.0	0.0	0.0	100%	0.0	0.0	0.0	0.0	
	HVAC/MOTOR	0.9	1.7	0.5	3.1	100%	0.9	1.7	0.5	3.1	
	MOTOR(LARGEST)	0.0	0.0	0.0	0.0	125%	0.0	0.0	0.0	0.0	
	KITCHEN EQUIPMENT	0.0	0.0	0.0	0.0	100%	0.0	0.0	0.0	0.0	
	MISCELLANEOUS	389.2	388.6	389.1	1166.9	100%	389.2	388.6	389.1	1166.9	
	TOTAL KVA	391.0	391.5	390.6	1173.2		391.3	391.7	390.9	1173.8	
		TOTAL AMPERES			1412.6	1413.9	1411.0	1413.9			
LEGEND		L = LIGHTING		R = RECEPTACLE		M = HVAC / MOTOR		K = KITCHEN		G = MISCELLANEOUS	

1. CIRCUIT REVISED THIS CONTRACT.

PANEL "MDC" (EXISTING)		VOLTAGE 277 / 480 V 3 PH 4 W									
FLUSH MAIN		MLO X									
SURFACE X BUS 1000A		FEED THRU A.I.C. 50,000A									
TYPE	DESCRIPTION	FUSE	CIR	LOAD (VA/PHASE)	CIR	FUSE	DESCRIPTION	TYPE			
				A B C							
G	CHILLER "OH1"	400	1	88640	6477	2	100 PANEL "LPI"	G			
G			3		88640 6477	4		G			
G			3 5		88640 6477	6	3	G			
1	LMG "EMCC"	200	7	45629	4987	8	200 PANEL "DLP"	G			
1	LRMG				46133 4987	10		G			
1	LMG		3 11		45201 4987	12	3	G			
1	G PANEL "HP"	200	13	23700	0	14	100 SPARE	G			
1	G		15		23700 0	16		G			
1	G		3 17		23700 0	18	3	G			
LOAD TYPE		CONNECTED KVA		TOTAL		FACTOR		DEMAND KVA		TOTAL	
		A	B	C	ALL	A	B	C	ALL		
	LIGHTING/CONTINUOUS	1.0	0.5	1.0	2.5	125%	1.3	0.6	1.3	3.1	
	RECEPTACLE (10KVA OR LESS)	0.0	0.7	0.0	0.7	100%	0.0	0.7	0.0	0.7	
	RECEPTACLE (OVER 10KVA)	0.0	0.0	0.0	0.0	100%	0.0	0.0	0.0	0.0	
	HVAC/MOTOR	0.9	1.7	0.5	3.1	100%	0.9	1.7	0.5	3.1	
	MOTOR(LARGEST)	0.0	0.0	0.0	0.0	125%	0.0	0.0	0.0	0.0	
	KITCHEN EQUIPMENT	0.0	0.0	0.0	0.0	100%	0.0	0.0	0.0	0.0	
	MISCELLANEOUS	167.6	167.0	167.5	502.1	100%	167.6	167.0	167.5	502.1	
	TOTAL KVA	169.4	169.9	169.0	508.4		169.7	170.1	169.3	509.0	
		TOTAL AMPERES			612.6	613.9	611.0	613.9			
LEGEND		L = LIGHTING		R = RECEPTACLE		M = HVAC / MOTOR		K = KITCHEN		G = MISCELLANEOUS	

1. CIRCUIT REVISED THIS CONTRACT.

PANEL "ELP1" (NEW)		VOLTAGE 120 / 208 V 3 PH 4 W									
FLUSH MAIN 50/3		MLO X									
SURFACE X BUS 100A		FEED THRU A.I.C. 10,000A									
TYPE	DESCRIPTION	BKR	CIR	LOAD (VA/PHASE)	CIR	BKR	DESCRIPTION	TYPE			
				A B C							
1,2	G FIRE PANEL	20	1	100	100	2	20 SWAMPERT TC	G			
1,2	G BOILER T.C. CNTL PAN	20	3		100 300	4	20 P5 PUMP	G			
1,2	G RM 127	20	5		500 300	6	20 P7	G			
1,2	G RM 139	20	7	500	300	8	20 P8	G			
1,2	L SURG. LTG 127,132,136	20	9		500 100	10	20 T.C.152	G			
1,2	L SURG. LGT. 139	20	11		500 500	12	20 REFREG DRYER	G			
1,2	L SURG. LGT. 139	20	13	500	100	14	20 FACP	G			
1,2	R RECEPT PH	20	15		360 864	16	20 EVAP-1	G			
1,2	L LTG. P. HOUSE 111 152	20	17		500 500	18	20 TC PANEL	G			
1,2	G BOILER ALARM CKT	20	19	100	500	20	20 AIR HANDLER LIGHTS	L			
1,2	R EXISTING EQUIP	20	21		380 1000	22	20 WALL HEATER	G			
	SPARE	20	23		0 1000	24	2	G			
	G WS-1	20	25	864	864	26	20 EVAP-1	M			
	G LVR-1, LVR-2	20	27		100 864	28	20 EVAP-1	M			
	G EPD	20	29		200 480	30	20 FC1-1	M			
	G HEAT TRACE	20	31	500	480	32	20 CT1-1	G			
	SPACE				0 864	34	20 EFPH-1	M			
	SPACE				0 0	36		G			
	SPACE				0 0	38		G			
	SPACE				0 0	40		G			
	SPACE				0 0	42		G			
LOAD TYPE		CONNECTED KVA		TOTAL		FACTOR		DEMAND KVA		TOTAL	
		A	B	C	ALL	A	B	C	ALL		
	LIGHTING/CONTINUOUS	1.0	0.5	1.0	2.5	125%	1.3	0.6	1.3	3.1	
	RECEPTACLE (10KVA OR LESS)	0.0	0.7	0.0	0.7	100%	0.0	0.7	0.0	0.7	
	RECEPTACLE (OVER 10KVA)	0.0	0.0	0.0	0.0	100%	0.0	0.0	0.0	0.0	
	HVAC/MOTOR	0.9	1.7	0.5	3.1	100%	0.9	1.7	0.5	3.1	
	MOTOR(LARGEST)	0.0	0.0	0.0	0.0	125%	0.0	0.0	0.0	0.0	
	KITCHEN EQUIPMENT	0.0	0.0	0.0	0.0	100%	0.0	0.0	0.0	0.0	
	MISCELLANEOUS	3.0	2.5	3.0	8.5	100%	3.0	2.5	3.0	8.5	
	TOTAL KVA	4.9	5.4	4.5	14.8		5.2	5.5	4.7	15.4	
		TOTAL AMPERES			43.0	46.1	39.4	46.1			
LEGEND		L = LIGHTING		R = RECEPTACLE		M = HVAC / MOTOR		K = KITCHEN		G = MISCELLANEOUS	

1. RECONNECT EXISTING CIRCUITRY TO NEW REPLACEMENT PANELBOARD. EXTEND WIRING AND CONDUIT AS NECESSARY.
 2. CONTRACTOR TO VERIFY CIRCUIT REUSE UPON INSTALLATION. TURN OFF ANY UNUSED CIRCUITS AND RELABEL AS SPARE.
 3. PROVIDE 30MA GFCI BREAKER FOR CONNECTION TO HEAT TRACE.

PANEL "HP" (EXISTING)		VOLTAGE 277 / 480 V 3 PH 4 W									
FLUSH MAIN 150/3		MLO X									
SURFACE X BUS 225A		FEED THRU A.I.C. 22,000A									
TYPE	DESCRIPTION	BKR	CIR	LOAD (VA/PHASE)	CIR	BKR	DESCRIPTION	TYPE			
				A B C							
	1ST FLR LIGHTING	20	1	0	0	2	20 DUC-1	G			
	1ST FLR LIGHTING	20	3		0 0	4	20 SPARE	G			
	1ST FLR LIGHTING	20	5		0 0	6	20 SPARE	G			
	1ST FLR LIGHTING	20	7	0	0	8	20 SPARE	G			
	RM 118,119 LTGS	20	9		0 0	10	15 SPARE	G			
	SPARE	20	11		0 0	12		G			
	PH-2	30	13	0	0	14	3	G			
			15		0 0	16	20 SPARE	G			
	SPACE		3 17		0 0	18		G			
	SPACE		19	0	0	20	3	G			
	EXISTING LOAD		20	21		22	30 WASHER	G			
	OUTSIDE LIGHTS		20	23		24		G			
	SPACE		25	0	0	26	3	G			
	SPACE		27		0 0	28	30 HUMIDIFIER	G			
	SPACE		29		0 0	30		G			
	SPACE		31	0	0	32	3	G			
	SPACE		33		0 0	34	SPACE	G			
	SPACE		35		0 0	36	SPACE	G			
	SPACE		37	0	7689	38	100 ATS FOR GEN1	G			
	SPACE		39		0 5444.2	40		G			
	SPACE		41		0 6276.2	42	3	G			
LOAD TYPE		CONNECTED KVA		TOTAL		FACTOR		DEMAND KVA		TOTAL	
		A	B	C	ALL	A	B	C	ALL		
	LIGHTING/CONTINUOUS	0.0	0.0	0.0	0.0	125%	0.0	0.0	0.0	0.0	
	RECEPTACLE (10KVA OR LESS)	0.0	0.0	0.0	0.0	100%	0.0	0.0	0.0	0.0	
	RECEPTACLE (OVER 10KVA)	0.0	0.0	0.0	0.0	100%	0.0	0.0	0.0	0.0	
	HVAC/MOTOR	0.0	0.0	0.0	0.0	100%	0.0	0.0	0.0	0.0	
	MOTOR(LARGEST)	0.0	0.0	0.0	0.0	125%	0.0	0.0	0.0	0.0	
	KITCHEN EQUIPMENT	0.0	0.0	0.0	0.0	100%	0.0	0.0	0.0	0.0	
	MISCELLANEOUS	7.7	5.4	6.3	19.4	100%	7.7	5.4	6.3	19.4	
	TOTAL KVA	7.7	5.4	6.3	19.4		7.7	5.4	6.3	19.4	
		TOTAL AMPERES			27.8	19.7	22.7	27.8			
LEGEND		L = LIGHTING		R = RECEPTACLE		M = HVAC / MOTOR		K = KITCHEN		G = MISCELLANEOUS	

1. PROVIDE NEW CIRCUIT BREAKER ON EXISTING PANELBOARD. MATCH EXISTING TYPE AND AIC RATING.
 2. LOAD ADDED TO PANEL THIS CONTRACT. SEE LOAD CALCULATION THIS SHEET FOR TOTAL LOAD ON PANEL.

LOAD CALCULATION	
LOAD ON PANEL "HP"	36.9 KVA
EXISTING LOAD	48.1 KVA
LOAD ADDED	19.4 KVA
TOTAL LOAD	65.5 KVA

PANEL "GEN1" (NEW)		VOLTAGE 277 / 480 V 3 PH 4 W						
FLUSH MAIN 70/3		MLO X						
SURFACE X BUS 100A		FEED THRU A.I.C. 14,000A						
TYPE	DESCRIPTION	BKR	CIR	LOAD (VA/PHASE)	CIR	BKR	DESCRIPTION	TYPE
				A B C				
G	PANEL "GEN1A"	70	1	7689	0	2	SPACE	G
G			3		5444.2 0	4	SPACE	G
G			3 5		6276.2 0	6	SPACE	G
	SPACE		7	0	0	8	SPACE	G
	SPACE	</						



MEP
ENGINEERING INC.
CLIENT CENTRIC CONSULTING

6402 S. Troy Circle, Suite 100 (M) 303.936.1633
Centennial, CO 80111 (F) 303.934.3299
info@mep-eng.com www.mep-eng.com

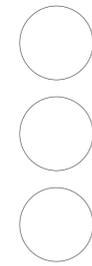
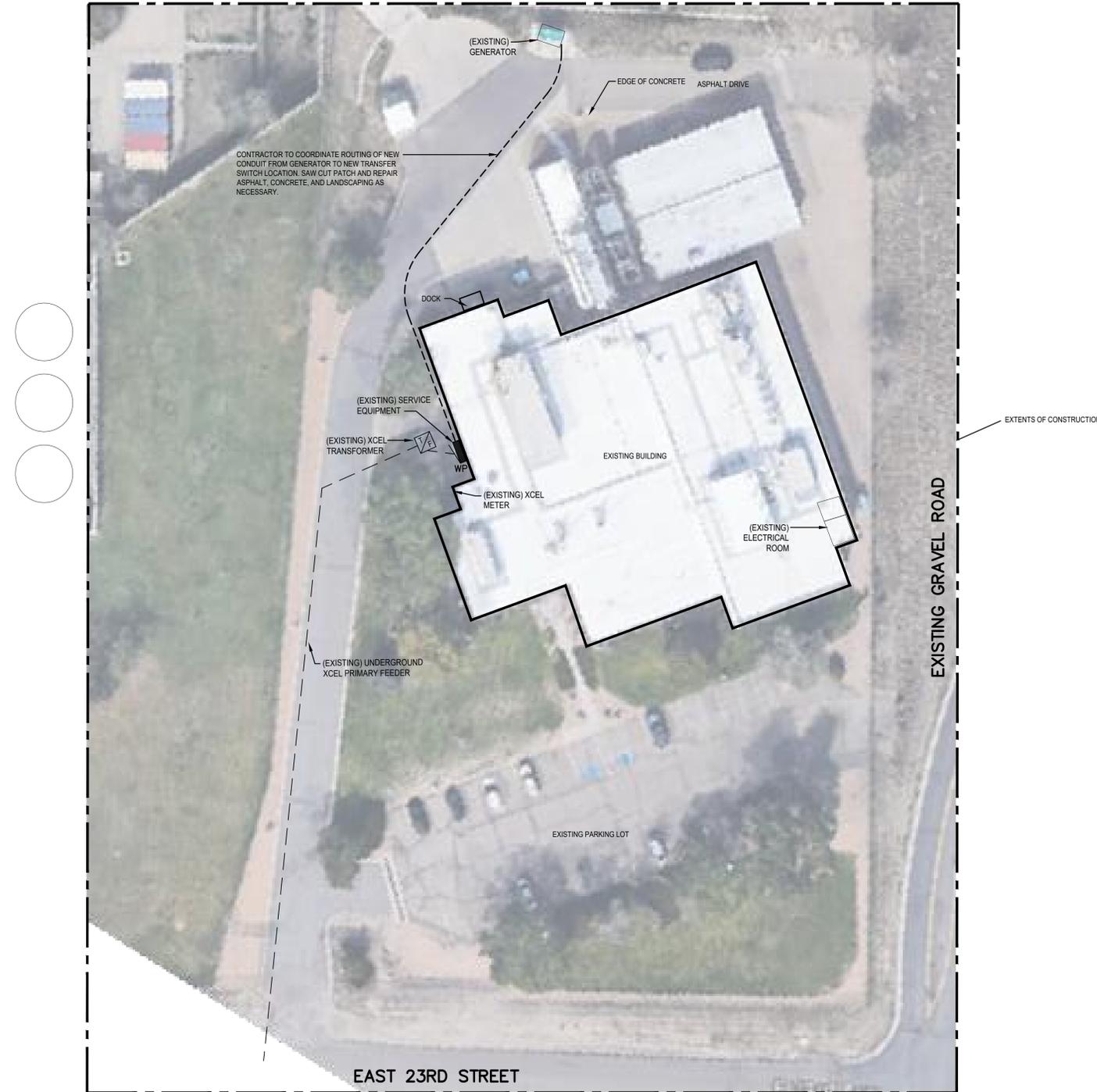
**University of Colorado - Anschutz Medical Campus
Perinatal Research Facility**

13243 East 23rd Avenue
Aurora, CO 80045

PRF - Power HVAC Boiler Upgrades

GENERAL NOTES

1. SITE PLAN SHOWN FOR INFORMATION ONLY.



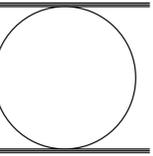
ELECTRICAL SITE PLAN

SCALE: 1" = 30'-0"

ISSUE	DATE
100% CD	10/06/2023
Issued for Construction	10/27/2023
100% Permit Comment	11/06/2023
ADDENDUM #1	11/14/2023

MEP JOB: 22318
DESIGNED: CMM
CHECKED: RCC

**ELECTRICAL
SITE PLAN**





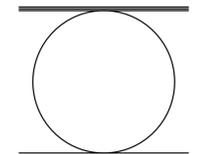
6402 S. Troy Circle, Suite 100 (W) 303.936.1633
 Centennial, CO 80111 (F) 303.934.3299
 info@mep-eng.com www.mep-eng.com

University of Colorado - Anschutz Medical Campus
Perinatal Research Facility
 13243 East 23rd Avenue
 Aurora, CO 80045
 PRF - Power HVAC Boiler Upgrades

ISSUE	DATE
100% CD	10/06/2023
Issued for Construction	10/27/2023
100% Permit Comment	11/06/2023
ADDENDUM #1	11/14/2023

MEP JOB: 22318
 DESIGNED: CMM
 CHECKED: RCC

ELECTRICAL DEMO ROOF PLAN



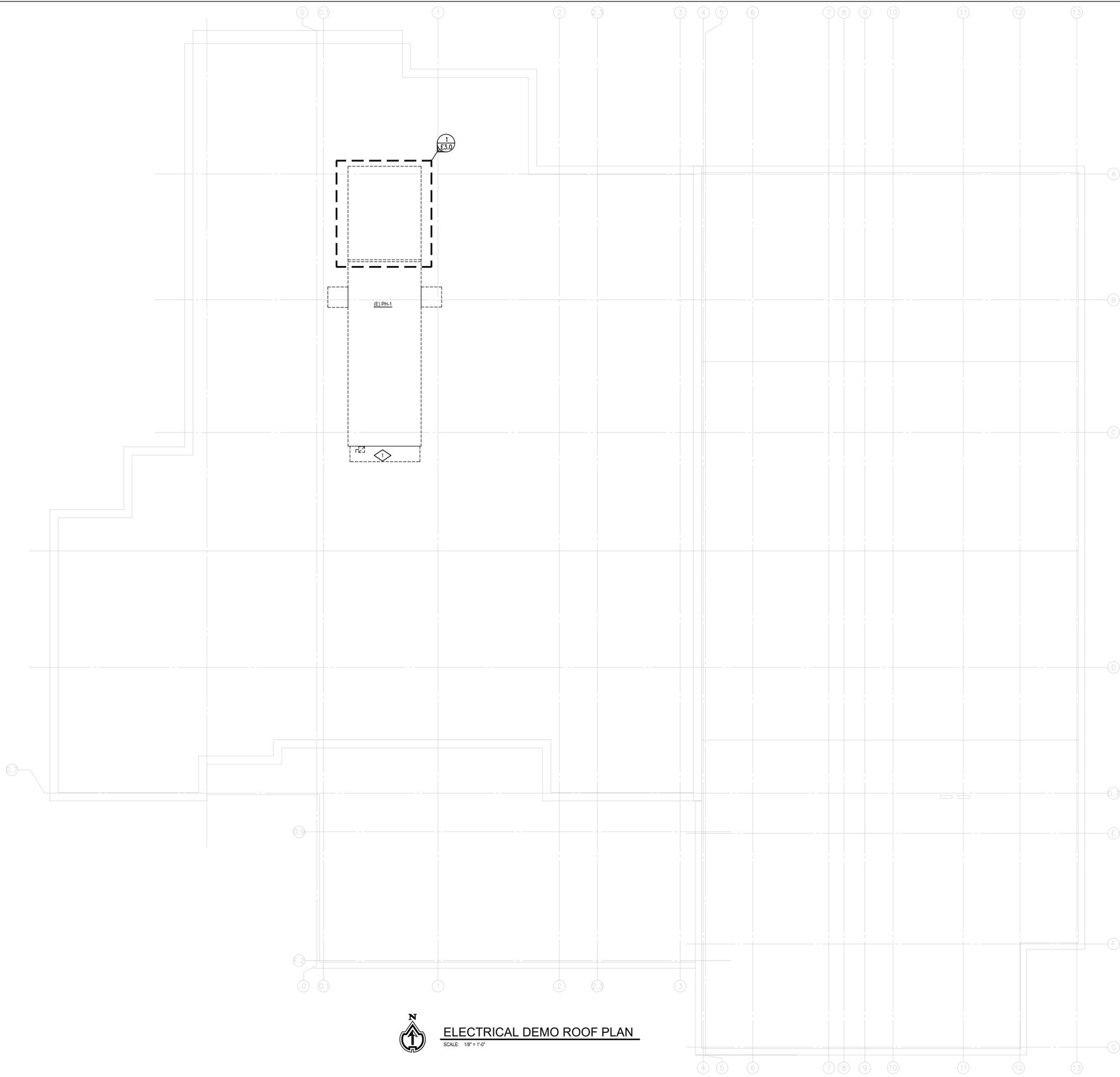
ED-2.0

GENERAL NOTES

- EXISTING DEVICES, CIRCUITS, AND CONDUITS SHOWN TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY BACK TO NEAREST DEVICE TO REMAIN. MAINTAIN CIRCUIT CONTINUITY OF ALL EXISTING DEVICES TO REMAIN.
- ELECTRICAL CONTRACTOR SHALL REMOVE ALL SPARE AND UN-USED CIRCUITS FOUND DURING CONSTRUCTION. PROVIDE UPDATED TYPED PANEL SCHEDULES.
- DEMOLITION OR ABANDONING ANY ELECTRICAL AND COMMUNICATIONS CONDUIT, WIRING, CABLING, OR DEVICE MEANS TO REMOVE IN ITS ENTIRETY. REMOVE UNUSED CONDUITS FROM CEILING SPACES IN AREAS OF WORK. ABANDONED OUTLET JUNCTION BOXES ARE TO BE REMOVED AND COVERED WITH NEW GYPSUM BOARD. ABANDONED POKE THRU OUTLETS SHALL HAVE COVER PLATES AND BE FILLED WITH FIRE RATED FOAM SEALANT TO MAINTAIN FIRE RATING OF FLOOR. RETURN UNUSED ELECTRICAL EQUIPMENT AND LIGHT FIXTURES TO BUILDING MANAGEMENT FOR STORAGE AND/OR REMOVAL FROM SITE AS DIRECTED BY OWNERS.

DRAWING NOTES

- ELECTRICAL CONTRACTOR TO COORDINATE DEMO OF EXISTING AIR HANDLER POWER CONNECTION, VFDS AND LIGHTING. VFDS TO BE RETURNED TO OWNER.



ELECTRICAL DEMO ROOF PLAN

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



MEP ENGINEERING INC.
CLIENT CENTRIC CONSULTING

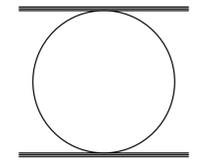
6402 S. Troy Circle, Suite 100 (M) 303.936.1633
Centennial, CO 80111 (F) 303.934.3299
info@mep-eng.com www.mep-eng.com

University of Colorado - Anschutz Medical Campus
Perinatal Research Facility
 13243 East 23rd Avenue
 Aurora, CO 80045
 PRF - Power HVAC Boiler Upgrades

ISSUE	DATE
100% CD	10/06/2023
Issued for Construction	10/27/2023
100% Permit Comment	11/06/2023
ADDENDUM #1	11/14/2023

MEP JOB: 22318
DESIGNED: CMM
CHECKED: RCC

POWER FLOOR PLAN



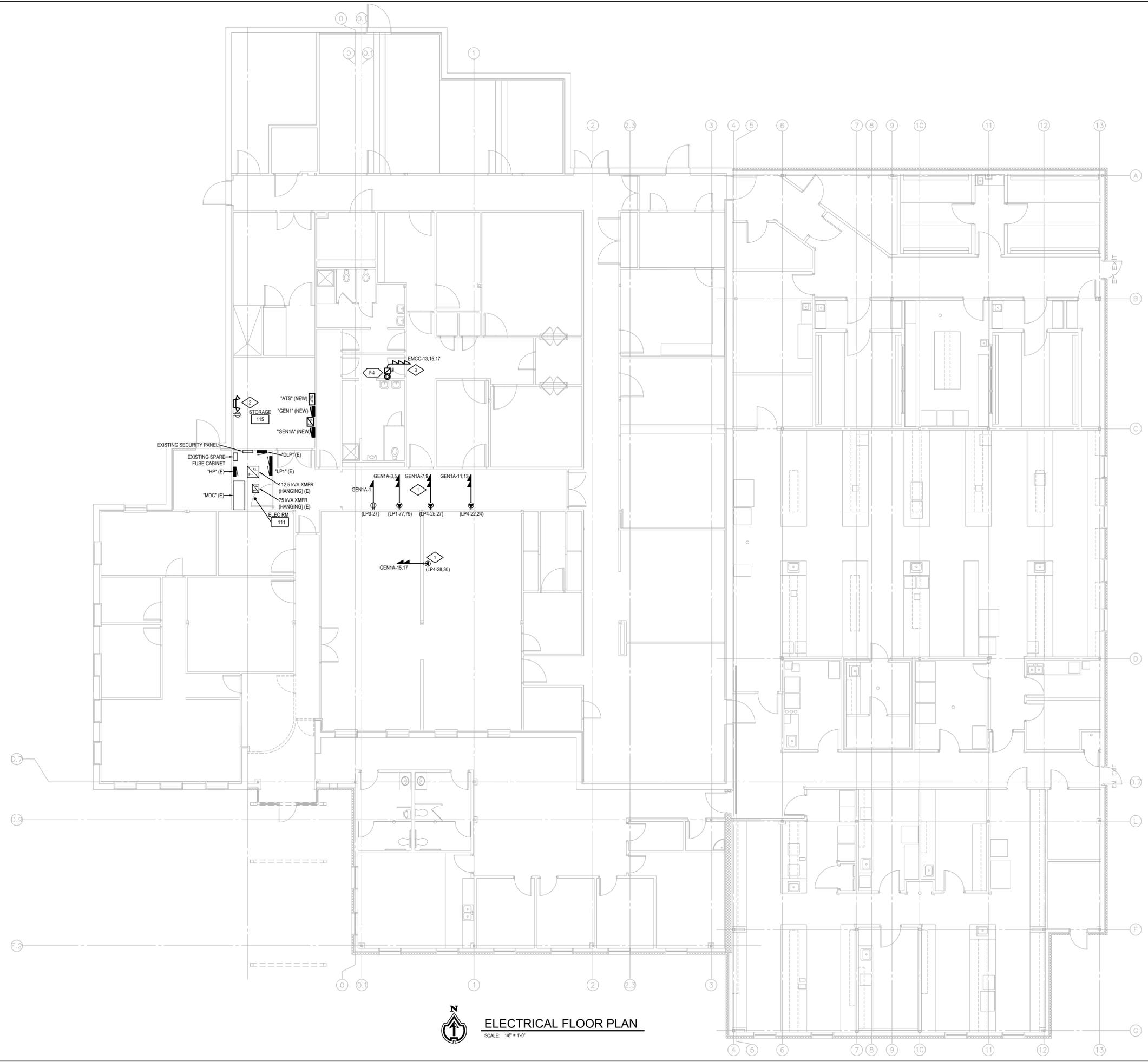
E-1.0

GENERAL NOTES

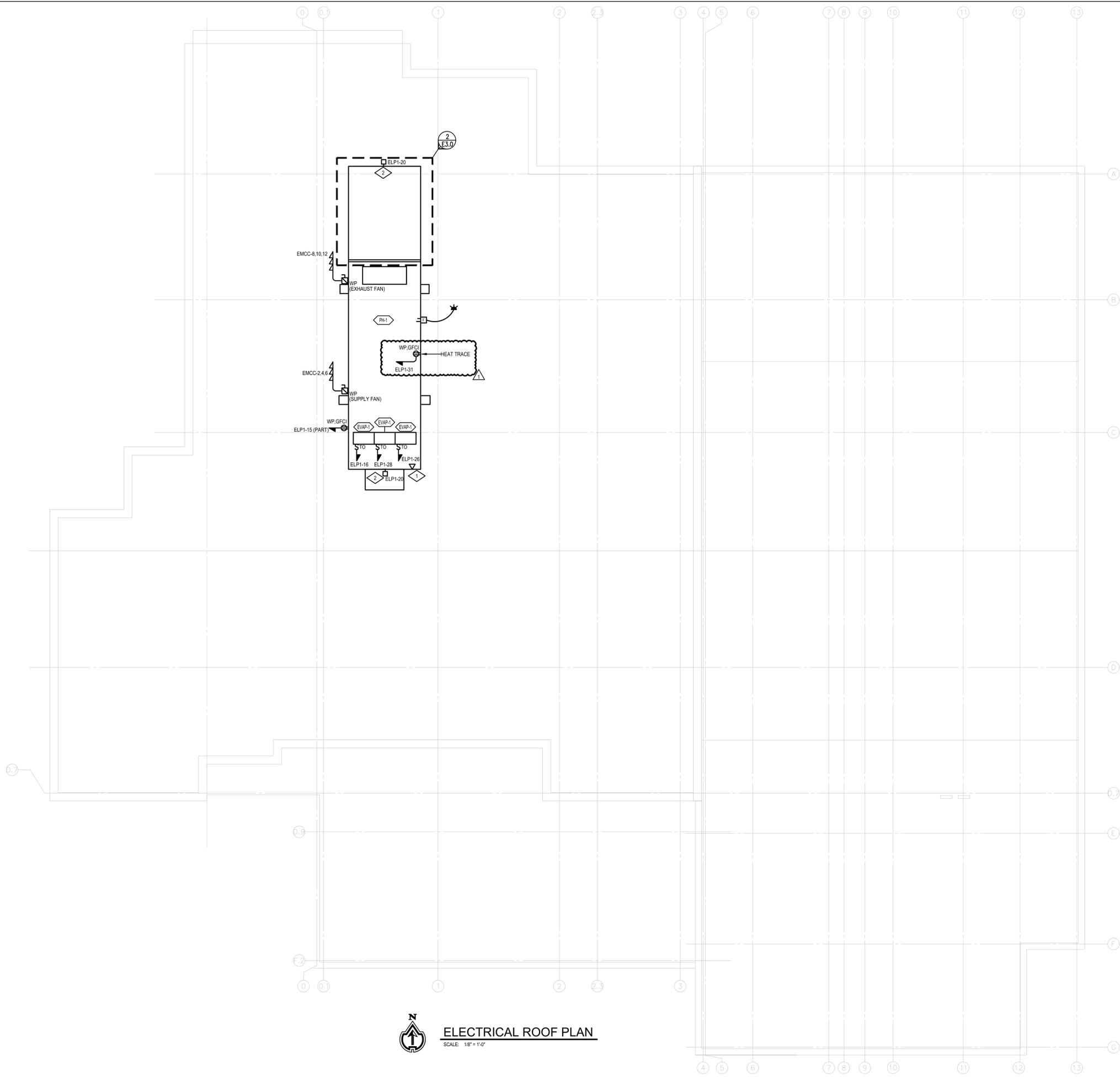
- ELECTRICAL CONTRACTOR SHALL REMOVE ALL SPARE AND UN-USED CIRCUITS FOUND DURING CONSTRUCTION. PROVIDE UPDATED TYPED PANEL SCHEDULES.
- ELECTRICAL CONTRACTOR TO LABEL ALL SWITCHES AND RECEPTACLES. NEW AND EXISTING WITH CIRCUIT NUMBERS AND PANEL NAME. CIRCUIT NUMBERS AND PANEL NAMES SHALL BE CLEAR AND LEGIBLE ON COVER PLATES. ELECTRICAL CONTRACTOR SHALL COORDINATE COLOR OF COVER PLATES WITH BUILDING MANAGEMENT.
- CONTRACTOR TO VERIFY THAT MAINTENANCE RECEPTACLE IS LOCATED WITHIN 25'-0" OF EQUIPMENT.
- PROVIDE EMERGENCY LIGHT SPECIFICATION: LITHONIA ELM6L-UVOLT-LTP. CONNECT BATTERY TO UNCONTROLLED LEG OF LOCAL LIGHTING CIRCUIT.

DRAWING NOTES

- CONTRACTOR TO LOCATE AND VERIFY EXISTING FREEZER CIRCUITS AND CONNECTIONS. INTERCEPT EXISTING NORMAL POWER CIRCUIT AND EXTEND TO NEW STANDBY POWER CIRCUIT AS INDICATED.
- PROVIDE EMERGENCY LIGHT SPECIFICATION: LITHONIA ELM6L-UVOLT-LTP. CONNECT BATTERY TO UNCONTROLLED LEG OF LOCAL LIGHTING CIRCUIT.
- NEW PUMP P-4 TO REPLACE EXISTING PUMP AT SAME LOCATION. CONNECT TO CIRCUIT AS SHOWN. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.



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



GENERAL NOTES

- ELECTRICAL CONTRACTOR SHALL REMOVE ALL SPARE AND UN-USED CIRCUITS FOUND DURING CONSTRUCTION. PROVIDE UPDATED TYPED PANEL SCHEDULES.
- ELECTRICAL CONTRACTOR TO LABEL ALL SWITCHES AND RECEPTACLES, NEW AND EXISTING WITH CIRCUIT NUMBERS AND PANEL NAME. CIRCUIT NUMBERS AND PANEL NAMES SHALL BE CLEAR AND LEGIBLE ON COVER PLATES. ELECTRICAL CONTRACTOR SHALL COORDINATE COLOR OF COVER PLATES WITH BUILDING MANAGEMENT.
- PROVIDE 'IN-USE' COVER FOR ALL EXTERIOR RECEPTACLES.

DRAWING NOTES

- PROVIDE DATA CONNECTION FOR TEMPERATURE CONTROLS. ROUTE DATA CABLING FROM FIRST FLOOR MECHANICAL ROOM. COORDINATE WITH CONTROLS CONTRACTOR.
- PROVIDE NEW EXTERIOR LIGHTING FIXTURE WITH INTEGRAL PHOTOCELL ON/OFF. EQUAL TO WPX0-LED-ALC-SHW2400K-4WVOLT-PE-020810. PROVIDE MANUAL OVERRIDE TOGGLE SWITCH AT BOILER ROOM PORTION OF AIR HANDLER FOR MANUAL OFF FUNCTIONALITY.

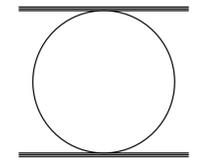


University of Colorado - Anschutz Medical Campus
Perinatal Research Facility
 13243 East 23rd Avenue
 Aurora, CO 80045
 PRF - Power HVAC Boiler Upgrades

ISSUE	DATE
100% CD	10/06/2023
Issued for Construction	10/27/2023
100% Permit Comment	11/06/2023
ADDENDUM #1	11/14/2023

MEP JOB: 22318
 DESIGNED: CMM
 CHECKED: RCC

ELECTRICAL ROOF PLAN

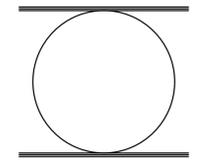


E-2.0

ISSUE	DATE
100% CD	10/06/2023
Issued for Construction	10/27/2023
100% Permit Comment	11/06/2023
ADDENDUM #1	11/14/2023

MEP JOB: 22318
DESIGNED: CMM
CHECKED: RCC

ELECTRICAL ENLARGED PLAN

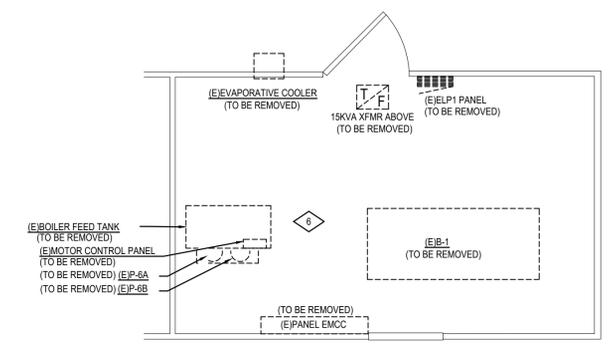


GENERAL NOTES

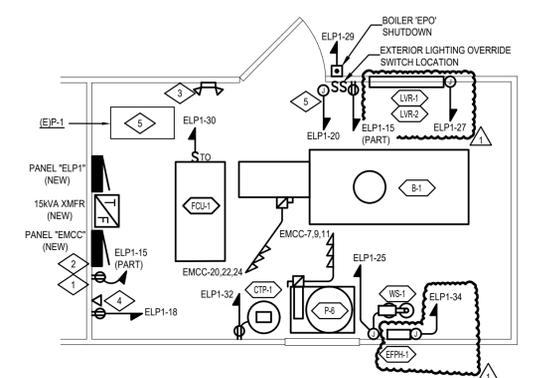
- EXISTING DEVICES, CIRCUITS, AND CONDUITS SHOWN TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY BACK TO NEAREST DEVICE TO REMAIN. MAINTAIN CIRCUIT CONTINUITY OF ALL EXISTING DEVICES TO REMAIN.
- ELECTRICAL CONTRACTOR SHALL REMOVE ALL SPARE AND UN-USED CIRCUITS FOUND DURING CONSTRUCTION. PROVIDE UPDATED TYPED PANEL SCHEDULES.
- DEMOLITION OR ABANDONING ANY ELECTRICAL AND COMMUNICATIONS CONDUIT, WIRING, CABLING, OR DEVICE MEANS TO REMOVE IN ITS ENTIRETY. REMOVE UNUSED CONDUITS FROM CEILING SPACES IN AREAS OF WORK. ABANDONED OUTLET JUNCTION BOXES ARE TO BE REMOVED AND COVERED WITH NEW GYPSUM BOARD. ABANDONED POKE THRU OUTLETS SHALL HAVE COVER PLATES AND BE FILLED WITH FIRE RATED FOAM SEALANT TO MAINTAIN FIRE RATING OF FLOOR. RETURN UNUSED ELECTRICAL EQUIPMENT AND LIGHT FIXTURES TO BUILDING MANAGEMENT FOR STORAGE AND/OR REMOVAL FROM SITE AS DIRECTED BY OWNERS.
- ELECTRICAL CONTRACTOR TO LABEL ALL SWITCHES AND RECEPTACLES, NEW AND EXISTING WITH CIRCUIT NUMBERS AND PANEL NAME. CIRCUIT NUMBERS AND PANEL NAMES SHALL BE CLEAR AND LEGIBLE ON COVER PLATES. ELECTRICAL CONTRACTOR SHALL COORDINATE COLOR OF COVER PLATES WITH BUILDING MANAGEMENT.
- CONNECT ALL EXIT SIGN BATTERIES TO THE UNCONTROLLED LEG OF LOCAL LIGHTING CIRCUIT SERVING THIS AREA. CONNECT ALL LUMINAIRE'S BATTERY PACKS TO THE UNCONTROLLED LEG OF LOCAL LIGHTING CIRCUIT AND DRIVER TO THE SWITCHED LEG AS INDICATED. PROVIDE NINETY MINUTE BATTERY PACK.

DRAWING NOTES

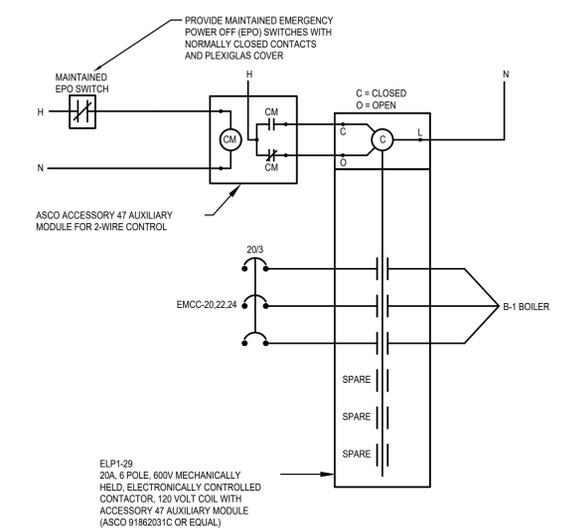
- RECONNECT ALL EXISTING BRANCH CIRCUITRY TO NEW PANELBOARD 'EMCC'. EXTEND BRANCH CIRCUITRY AND PROVIDE NEW CONDUIT, CONDUCTORS AND JUNCTION BOXES FOR RECONNECTION AS NECESSARY.
- NEW LIGHTING IN SPACE IS TO BE FACTORY INSTALLED AND PREWIRED BY CUSTOM AIR HANDLING MANUFACTURER FOR PH-1. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION. NEW LIGHTING TO BE FED FROM PANEL 'EMCC'. SEE SHEET E.03 FOR MORE INFORMATION.
- PROVIDE EMERGENCY LIGHT SPECIFICATION: LITHONIA ELM-UL-VOLT-LTP. CONNECT BATTERY TO UNCONTROLLED LEG OF LOCAL LIGHTING CIRCUIT.
- DATA JACK CONNECTION FOR TC PANEL. CABLING TO ROUTE FROM FIRST FLOOR MECHANICAL ROOM. COORDINATE WITH CONTROLS CONTRACTOR.
- COORDINATE CONNECTION OF NEW AIR HANDLER MANUFACTURER PROVIDED LIGHTS. PROVIDE TOGGLE SWITCH FOR CONTROLS IF REQUIRED.
- CONTRACTOR TO PREPARE ALL ELECTRICAL DEVICES/EQUIPMENT/CIRCUITS/FEEDERS FOR COMPLETE DEMOLITION OF EXISTING AIR HANDLER. PREPARE PANEL FEEDER FOR RE-FEED AS NECESSARY TO ALLOW FOR DEMO.



1 PENTHOUSE BOILER DEMOLITION PLAN
SCALE: 1/4" = 1'-0"



2 PENTHOUSE BOILER NEW PLAN
SCALE: 1/4" = 1'-0"



BOILER SHUT DOWN DIAGRAM
SCALE: N.T.S.