ELECTRICAL SPECIFICATIONS

SECTION 26 05 00 - COMMON WORK RESULTS FOR ELECTRICAL

1. PROVIDE MATERIALS AND EQUIPMENT THAT ARE PRODUCTS OF MANUFACTURERS REGULARLY ENGAGED IN THE PRODUCTION OF SUCH PRODUCTS. ALL MATERIALS SHALL BE LISTED AND LABELED FOR THE APPLICATION WITH A NATIONALLY RECOGNIZED TESTING LABORATORY IN ACCORDANCE WITH NFPA 70.
2. MATERIALS AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH ALL REQUIREMENTS OF THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE, STATE, MUNICIPAL, AND FEDERAL LAWS, AND AMENDMENTS GOVERNING THE PROJECT. INSTALLATION OF EQUIPMENT SHALL BE ACCORDANCE WITH THE WRITTEN INSTRUCTIONS RECOMMENDATIONS OF THE MANUFACTURER.
3. THE CONTRACTOR SHALL BECOME FAMILIAR WITH ALL DETAILS OF WORK AND VERIFY ALL DIMENSIONS IN THE FIELD SO THAT ALL OUTLETS AND EQUIPMENT ARE PROPERLY LOCATED AND READILY ACCESSIBLE.
4. LIGHTING FIXTURES, OUTLETS, AND OTHER EQUIPMENT AND MATERIALS SHALL BE COORDINATED WITH STRUCTURAL FEATURES AND ALL OTHER TRADES PRIOR TO INSTALLATION. IF ANY CONFLICTS OCCUR NECESSITATING DEPARTURES FROM THE DRAWINGS, DETAILS OF, AND REASONS FOR DEPARTURES SHALL BE SUBMITTED AND ACCEPTED PRIOR TO IMPLEMENTING ANY CHANGE.
5. THE LISTED PUBLICATIONS BELOW ESTABLISH MINIMUM REQUIREMENTS FOR MATERIALS, SYSTEMS AND EXECUTION THAT MAY BE SPECIFIED IN THIS SECTION AND UTILIZED FOR THIS PROJECT.
   A. NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION (NECA): NECA 1 - STANDARD PRACTICES FOR GOOD WORKMANSHIP IN ELECTRICAL CONSTRUCTION
   B. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA): NFPA 70 NATIONAL ELECTRICAL CODE, NFPA 70E STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE.

SECTION 26 05 19 - POWER CONDUCTORS AND CABLES

1. PROVIDE WIRING, CABLES AND ASSOCIATED SPLICES, CONNECTORS, AND TERMINATIONS FOR WIRING SYSTEMS RATED 600 VOLTS AND LESS. CONDUCTOR AMPACITY SHALL BE BASED ON TABLE 310-16 OF THE NEC UTILIZING THE 60-DEGREE C. RATING COLUMN FOR CIRCUITS TERMINATING ON DEVICES RATED BELOW 100 AMPS AND THE 75-DEGREE C RATING COLUMN FOR CIRCUITS TERMINATING ON DEVICES AND IN ENCLOSURES RATED 100 AMPS AND GREATER.
2. ALL CONDUCTORS SHALL BE COPPER UNLESS NOTED OTHERWISE. ALL CONDUCTORS INSTALLED IN UNHEATED SPACES WITHIN THE BUILDING, UNDERGROUND, OR LOCATED OUTSIDE OF THE BUILDING SHALL HAVE TYPE XHHW 90 DEGREE C INSULATION. ALL CONDUCTORS INSTALLED WITHIN HEATED SPACES MAY HAVE XHHW OR THHN 90 DEGREE C INSULATION.
3. CONDUCTORS NO. 8 AWG AND LARGER DIAMETER SHALL BE STRANDED. CONDUCTORS NO. 12 AWG AND SMALLER SHALL BE SOLID, EXCEPT THAT CONDUCTORS FOR REMOTE CONTROL, ALARM, AND SIGNAL CIRCUITS, CLASSES 1, 2, AND 3 SHALL BE STRANDED.
4. BRANCH CIRCUITS: CONDUCTORS SHALL BE NOT SMALLER THAN NO. 12 AWG. CONDUCTORS FOR BRANCH CIRCUITS OF 120 VOLTS MORE THAN 100 FEET LONG AND OF 277 VOLTS MORE THAN 200 FEET LONG FROM PANEL TO FARTHEST DEVICE OR LOAD, SHALL BE NO SMALLER THAN NO. 10 AWG. CONDUCTORS FOR BRANCH CIRCUITS OF 120 VOLTS MORE THAN 150 FEET LONG AND OF 277 VOLTS MORE THAN 300 FEET LONG FROM PANEL TO FARTHEST DEVICE OR LOAD, SHALL BE NO SMALLER THAN NO. 8 AWG.
5. INSTALL CONDUCTORS IN COMPLIANCE WITH NEC REQUIREMENTS FOR TEMPERATURE AND CONDUIT FILL DERATING AND BOX FILL LIMITATIONS.
6. COLOR CODE CONDUCTORS AS FOLLOWS:
   A. 120/208 VOLT, 3 PHASE, 4 WIRE: BLACK, RED, BLUE, WHITE
7. GROUNDING CONDUCTORS: PROVIDE A GREEN EQUIPMENT GROUNDING CONDUCTOR IN EACH NEW RACEWAY, SIZED IN ACCORDANCE WITH NFPA 70, REGARDLESS OF THE TYPE OF CONDUIT.

SECTION 26 05 33 - RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

1. PROVIDE RACEWAYS AND BOXES LISTED AND SUITABLE FOR THE PROPOSED APPLICATION. PROVIDE AN EFFICIENTLY LAID OUT SYSTEM THAT ALLOWS FOR FUTURE GROWTH. COORDINATE RACEWAYS WITH THE WORK OF OTHER TRADES, AND COORDINATE LAYOUT AND CONSTRUCTION WITH OTHER CONSTRUCTION ELEMENTS TO ENSURE MAXIMUM HEADROOM, WORKING CLEARANCE, AND ACCESS.
2. UTILIZE RACEWAY SYSTEMS LISTED AND SUITABLE FOR THE ENVIRONMENT INSTALLED AS DEFINED BELOW:
   A. OUTDOORS (EXPOSED): WEATHERPROOF RIGID STEEL CONDUIT OR EMT SYSTEM.
   B. INDOORS (NOT SUBJECT TO PHYSICAL DAMAGE): EMT OR TYPE MC CABLE.
   C. CONNECTION TO VIBRATING EQUIPMENT: FLEXIBLE METAL CONDUIT, LIQUID-TIGHT IN DAMP AND WET LOCATIONS.

SECTION 26 27 26 - WIRING DEVICES

1. PROVIDE RECEPTACLES, CONNECTORS, SWITCHES, AND FINISH PLATES OF TYPES AND QUANTITIES SUITABLE FOR THE PROJECT AND INTENDED USE. WIRING DEVICES SHALL MEET NEMA WD 1 AND NEMA WD 6. WIRING TERMINALS SHALL BE OF THE SCREW TYPE OR OF THE SOLDERLESS PRESSURE TYPE HAVING SUITABLE CONDUCTOR-RELEASE ARRANGEMENT. WIRING DEVICES SHALL BE IMPACT RESISTANT NYLON WITH WHITE COLOR UNLESS NOTED OTHERWISE.
2. DEVICE PLATES ON UNFINISHED WALLS MAY BE OF ZINC-COATED SHEET STEEL, OR CAST METAL HAVING ROUNDED OR BEVELED EDGES. DEVICE PLATES ON FINISHED WALLS SHALL BE STAINLESS STEEL OR MATCH DEVICE COLOR, COORDINATE WITH ARCHITECT. SCREWS SHALL BE OF METAL WITH COUNTERSUNK HEADS, IN A COLOR TO MATCH THE FINISH OF THE PLATE.
3. SINGLE AND DUPLEX RECEPTACLES SHALL BE RATED 20 AMPERES, 125 VOLTS, 2-POLE, 3-WIRE, GROUNDING TYPE WITH POLARIZED PARALLEL SLOTS, BACK AND SIDE WIRED.
4. TOGGLE SWITCHES SHALL BE RATED 120-277 VOLT AC GROUNDING TYPE, TOTALLY ENCLOSED, GENERAL USE.

ELECTRICAL ABBREVIATIONS

AC	ABOVE COUNTER
AFF	ABOVE FINISHED FLOOR
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AIC	AMPERES INTERRUPTING CAPACITY
AMP, A	AMPERE
ARCH	ARCHITECTURAL
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
AW	ABOVE WINDOW
C	CONDUIT
°C	CELSIUS
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLG	CEILING
CO	CONDUIT ONLY
COMM	COMMUNICATIONS
DW	DISH WASHER
EF	EXHAUST FAN
E.Ex, EXIST	EXISTING
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FLA	FULL LOAD AMPS
G, GRD	GROUND
GFCI	GROUND FAULT CURRENT INTERRUPTER
GF	GROUND FAULT PROTECTION
HP	HORSE POWER
IN, "	INCHES
K	DEGREE KELVIN
KCMIL, MCM	THOUSAND CIRCULAR MILS
KVA	KILOVOLT AMPERES
KW	KILOWATT
LC	LIGHTING CONTACTOR
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MECH	MECHANICAL
MLO	MAIN LUGS ONLY
MW	MICROWAVE
N	NEUTRAL
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NO., #	NUMBER
OFCI	OWNER FURNISHED/ CONTRACTOR INSTALLED
PA	PUBLIC ADDRESS
PC	PHOTO CELL
PH, Ø	PHASE
RECPT, REC	RECEPTACLE
REF	REFRIGERATOR
REQ, REQD	REQUIRED
Re	RELOCATED
TELECOM	TELECOMMUNICATIONS
TV	TELEVISION
TYP	TYPICAL
UC	UNDER COUNTER
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTP	UNSHIELDED TWISTED PAIR
V	VOLTS
VA	VOLT AMPERES
VFD	VARIABLE FREQUENCY DRIVE
W	WATT
WAP	WIRELESS ACCESS POINT
WP	WEATHERPROOF
WR	WEATHER RESISTANT
XFMR	TRANSFORMER

ELECTRICAL SYMBOLS

POWER DEVICES AND EQUIPMENT

- DUPLEX RECEPTACLE / QUADRAPLEX RECEPTACLE
- GFCI PROTECTED RECEPTACLE
- SPLIT WIRED RECEPTACLE
- SIMPLEX RECEPTACLE
- SPECIAL PURPOSE RECEPTACLE, 3Ø & 1Ø AS NOTED
- JUNCTION BOX
- ELECTRIC MOTOR
- ELECTRIC MOTOR WITH STARTER SWITCH
- SURFACE MOUNT ELECTRICAL PANEL - 208V & 480V
- NON-FUSED DISCONNECT SWITCH
- FUSED DISCONNECT SWITCH
- COMBINATION MOTOR/STARTER DISCONNECT SWITCH
- VFD DISCONNECT
- PB AC — PUSH BUTTON OR ACCESS CONTROL BOX

CIRCUITRY NOMENCLATURE

- P- ## — PANEL & CIRCUIT #

GENERAL

- DASHED SYMBOL = DEVICE TO BE REMOVED
- DASHED LINE = EQUIPEMENT TO BE REMOVED

EXISTING PANEL CP1

VOLTAGE : 120/208V,3PH,4W | AMPERE RATING: 100 A
MOUNTING: SURFACE | MAIN CIRCUIT BREAKER RATING: MLO
SUPPLIED FROM: MDP | SHORT CIRCUIT CURRENT RATING (SCCR): EXISTING

	CKT	AMP	POLE	LOAD DESCRIPTION	PHASE A VA	PHASE B VA	PHASE C VA	LOAD DESCRIPTION	POLE	AMP	CKT	
	1	15						SPARE	1	20	2	S
S	3			SPARE				SPARE	1	20	4	S
	5		3					SPARE	1	20	6	S
S	7	20	1	SPARE				SPARE	1	20	8	S
	9									15	10	
E	11			AIR HANDLER				SPARE			12	E
	13		3						3		14	
	15	15						SPARE	1	20	16	E
E	17			SPARE				CAB WALL HEATER	1	20	18	E
	19		3							15	20	
E	21	20	1	LTG - HALLWAY				SPARE			22	E
E	23	20	1	LTG - MECH RM					3		24	
E	25	20	1	REC - MECH RM				LTG - EXIT & EMERGENCY	1	20	26	E
E	27	20	1	LTG - ELEVATOR PIT				REC - MECH RM	1	20	28	E
E	29	20	1	REC - ELEVATOR PIT & ROOF				REC - MAINTENANCE SHOP	1	20	30	E
E	31	20	1	ROOF VENT FANS				LTG - ELEVATOR CAB		15	32	
S	33	20	1	SPARE				SPARE			34	E
S	35	20	1	SPARE				SPARE	3		36	
E	37	20	1	REC - MAINTENANCE SHOP				COMPRESSOR	1	20	38	E
E	39	20	1	HOT WATER HEATER				EXHAUST FAN	1	20	40	E
E	41	20	1	REC - MAINTENANCE SHOP				MAG STARTER CIRC	1	20	42	E
	CONNECTED LOAD (VA)				0	0	0		0 VA			
	CONNECTED LOAD (AMPERES)				0	0	0		0 A			
	DEMAND LOAD (VA) *				0	0	0		0 VA			
	DEMAND LOAD (AMPERES) *				0	0	0		0 A			

E - EXISTING CIRCUIT BREAKER & LOAD TO REMAIN, R - RECONFIGURED LOAD ON EXISTING CIRCUIT BREAKER, N - NEW CIRCUIT BREAKER & LOAD, S - NEW SPARE AS A RESULT OF THIS PROJECT
* - DEMAND LOAD CALCULATED WITH LIGHTING & LARGEST MOTOR LOAD AT 125%

EXISTING PANEL CP4

VOLTAGE : 120/208V,3PH,4W | AMPERE RATING: 100 A
MOUNTING: SURFACE | MAIN CIRCUIT BREAKER RATING: MLO
SUPPLIED FROM: MDP | SHORT CIRCUIT CURRENT RATING (SCCR): EXISTING

	CKT	AMP	POLE	LOAD DESCRIPTION	PHASE A VA	PHASE B VA	PHASE C VA	LOAD DESCRIPTION	POLE	AMP	CKT	
N	1	25		CP-1A	1,248			CP-1B		25	2	N
	3		2			1,248			2		4	
S	5	-	1	SPACE				SPACE	1	-	6	S
	7	70		TRAM				ELEVATOR		20	8	
E	9										10	E
	11		3						3		12	
N	13	25		CP-2A	1,248			CP-2B		25	14	N
	15		2			1,248			2		16	
S	17	-	1	SPACE				SPACE	1	-	18	S
E	19	20	1	SPARE				LTG - MECH ROOM	1	15	20	E
R	21	20	1	CP-3, DCP-1		645		REC - MECH ROOM	1	15	22	E
E	23	20	1	LTG - ELEVATOR				LTG - EM	1	15	24	E
E	25	20	1	COMPRESSOR - MECH RM				MAG STARTER CONTROL	1	15	26	E
E	27	20	1	GENERATOR BATTERY CHARGER						20	28	
E	29	20	1	GENERATOR BLOCK HEATER				SPARE			30	S
N,SH	31	20	1	BOILER & BOILER CIRC PUMP 1	1,246				3		32	
N,SH	33	20	1	BOILER & BOILER CIRC PUMP 2		1,246		LTG - ELEVATOR PIT	1	20	34	E
N,SH	35	20	1	BOILER & BOILER CIRC PUMP 3			1,246	REC - ELEVATOR PIT	1	20	36	E
N,SH	37	20	1	BOILER & BOILER CIRC PUMP 4	1,246			LTG - ELEVATOR CAB	1	20	38	E
N,SH	39	20	1	BOILER & BOILER CIRC PUMP 5		1,246		ELEVATOR ROOM	1	20	40	E
E	41	20	1	SPARE				LTG - INTERIOR & EXTERIOR	1	20	42	E
	CONNECTED LOAD (VA)				7,484	8,129	1,246		16,859 VA			
	CONNECTED LOAD (AMPERES)				62	68	10		47 A			
	DEMAND LOAD (VA) *				7,484	8,129	1,246		16,859 VA			
	DEMAND LOAD (AMPERES) *				62	68	10		47 A			

E - EXISTING CIRCUIT BREAKER & LOAD TO REMAIN, R - RECONFIGURED LOAD ON EXISTING CIRCUIT BREAKER, N - NEW CIRCUIT BREAKER & LOAD, S - NEW SPARE AS A RESULT OF THIS PROJECT
GF - PROVIDE CLASS A GFI TYPE CIRCUIT BREAKER (5mA), GP - PROVIDE CLASS B EPD TYPE CIRCUIT BREAKER (30mA), SH - PROVIDE SHUNT TRIP TYPE CIRCUIT BREAKER
* - DEMAND LOAD CALCULATED WITH LIGHTING & LARGEST MOTOR LOAD AT 125%

EXISTING PANEL CP7

VOLTAGE : 120/208V,3PH,4W | AMPERE RATING: A
MOUNTING: SURFACE | MAIN CIRCUIT BREAKER RATING: MLO
SUPPLIED FROM: MDP | SHORT CIRCUIT CURRENT RATING (SCCR): A

	CKT	AMP	POLE	LOAD DESCRIPTION	PHASE A VA	PHASE B VA	PHASE C VA	LOAD DESCRIPTION	POLE	AMP	CKT	
	1	15								70	2	
S	3			SPARE				TRAMWAY MOTOR #26			4	E
	5		3						3		6	
	7	35								20	8	
E	9			BOILERS				SPARE			10	E
	11		3						3		12	
	13	15								15	14	
E	15			PH 2 CIRC PUMP				SPARE			16	E
	17		3						3		18	
	CONNECTED LOAD (VA)				0	0	0		0 VA			
	CONNECTED LOAD (AMPERES)				0	0	0		0 A			
	DEMAND LOAD (VA) *				0	0	0		0 VA			
	DEMAND LOAD (AMPERES) *				0	0	0		0 A			

E - EXISTING CIRCUIT BREAKER & LOAD TO REMAIN, R - RECONFIGURED LOAD ON EXISTING CIRCUIT BREAKER, N - NEW CIRCUIT BREAKER & LOAD, S - NEW SPARE AS A RESULT OF THIS PROJECT
* - DEMAND LOAD CALCULATED WITH LIGHTING & LARGEST MOTOR LOAD AT 125%

LOAD CALCULATION - PANEL CP1	
LOAD REMOVED	5,380 VA
LOAD ADDED	0 VA
NET LOAD REMOVED	(5,380) VA

LOAD CALCULATION - PANEL CP4	
LOAD REMOVED	24,300 VA
LOAD ADDED	16,214 VA
NET LOAD REMOVED	(8,086) VA

LOAD CALCULATION - PANEL CP7	
LOAD REMOVED	6,300 VA
LOAD ADDED	0 VA
NET LOAD REMOVED	(6,300) VA

STATE OF ALASKA — 49TH — SAMANTHA V. REDICK — EE-117987 — 07/03/24 — REGISTERED PROFESSIONAL ENGINEER

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SALAMATOF HEIGHTS
BOILER ROOM REMODEL

COOK INLET HOUSING AUTHORITY
9131 Centennial Circle, Anchorage, Alaska 99517

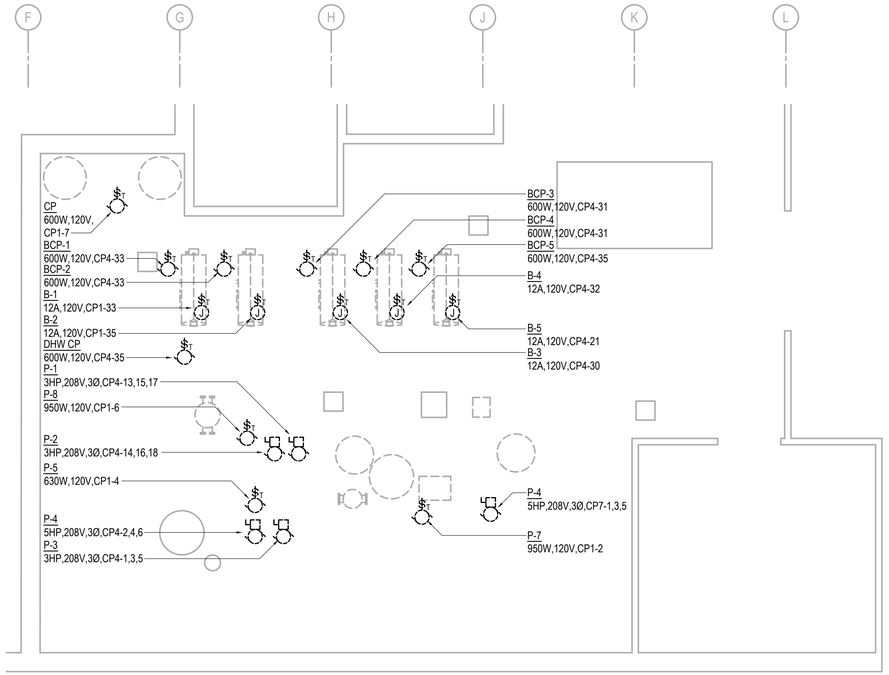
Revision Schedule

No.	Description	Date

Drawn:	SVR
Reviewed:	TCA
Date:	2024-07-03
Job No:	2024.052.0

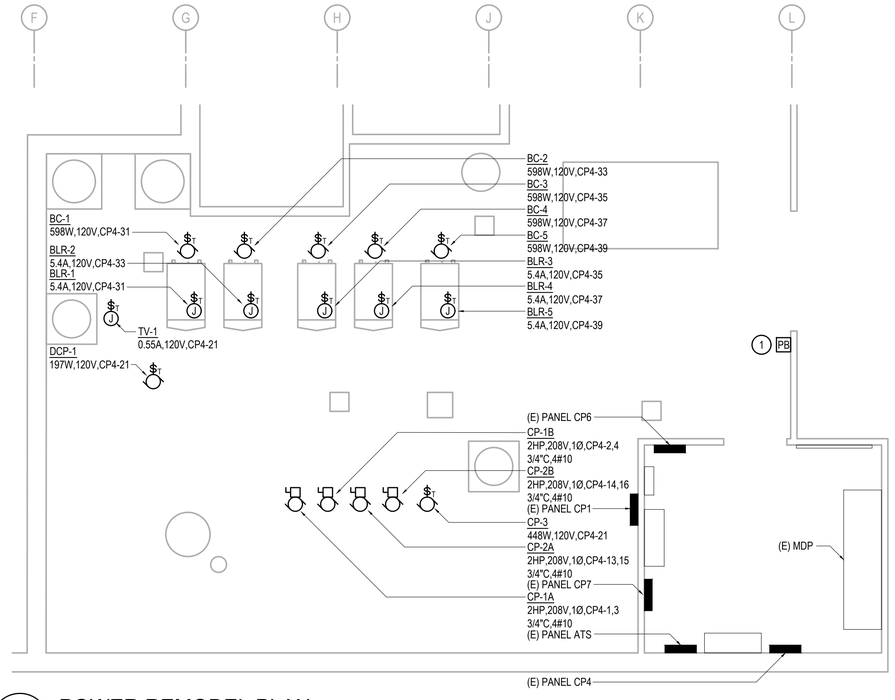
Sheet Contents
ABBREVIATIONS, LEGENDS, SPECIFICATIONS, & PANEL SCHEDULES

Drawing No.
E1
1 of 2E



1 POWER DEMOLITION PLAN

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



2 POWER REMODEL PLAN

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

GENERAL NOTES

1. EXISTING POWER EQUIPMENT & CIRCUITRY INFORMATION IS BASED ON RECORD DRAWINGS, EXISTING PANEL SCHEDULES, AND A NON-DESTRUCTIVE WALK THROUGH OF THE FACILITY ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS PRIOR TO THE START OF WORK.
2. DASHED SYMBOLS INDICATE DEVICES TO BE DEMOLISHED. REMOVE BRANCH CIRCUIT WIRING BACK TO SOURCE OR UPSTREAM DEVICE TO REMAIN.
3. UPDATE EXISTING PANEL SCHEDULES TO IDENTIFY REVISED LOADS, NEW LOADS, AND NEW SPARES AS A RESULT OF THIS PROJECT.
4. DEVICES NOTED 'E' ARE EXISTING TO REMAIN AND ARE SHOWN FOR CLARITY ONLY. MAINTAIN EXISTING LOCATION, CIRCUITRY, & CONTROL SCHEME UNLESS NOTED OTHERWISE.

SHEET NOTES

INDICATED BY: (#)

1. BOILER EMERGENCY SHUTOFF PUSHBUTTON, CONNECT TO BOILER SHUNT TRIP CIRCUIT BREAKERS.

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Sheet Contents
POWER DEMOLITION & REMODEL PLANS

Drawing No.
E2
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