ELECTRICAL SYMBOLS LEGEND SURFACE MOUNTED PANELBOARD

DISCONNECT SWITCH

CONDUITS IN/OUT OF EQUIPMENT

ABOVE GRADE EXPOSED CONDUIT

CABLE/CIRCUIT TAG

- - - - UNDEGROUND CONDUIT

ONE-LINE SYMBOLS LEGEND

ELECTRICAL ABBREVIATIONS LIST

CCTV CKT CLG COMB

CMPR CONN

CONST

CONTR

CONV

CP CRT

CT

CTR

CONT

CLOSED CIRCUIT TELEVISION

CIRCUIT

CEILING

COMBINATION

COMPRESSOR

CONNECTION

CONSTRUCTION

CONTINUOUS

CONTRACTOR

CENTER

COPPER

CONVECTOR

CONTINUATION OR

CIRCULATING PUMP

CATHODE-RAY TUBE

CURRENT TRANSFORMER

GAUGE

GEC GFCI

GRS

GYP

HORIZ

GALLON

GALVANIZED

INTERRUPTER

GROUND

(CONDUIT)

HANDHOLE

HORIZONTAL

HORSEPOWER

BD GYPSUM BOARD

HIGH POWER FACTOR

GENERAL CONTRACTOR

GROUND FAULT CIRCUIT

GROUND FAULT PROTECTOR

GALVANIZED RIGID STEEL

GROUNDING ELECTRODE CONDUCTOR MFS

	LOW VOLTAGE FIXED CIRCUIT BREAKER
$\triangle \prec$	DELTA-Y CONNECTION
•	CONNECTION DOT
_ 🔲	LOW VOLTAGE FUSED SWITCH
	DISCONNECT SWITCH
Ī	GROUND CONNECTION
Ţ	GROUNDED Y CONNECTION
38	POWER TRANSFORMER
	EXISTING EQUIPMENT
	NEW EQUIPMENT

CABLE/CIRCUIT TAG

1P	1 POLE (2P, 3P, 4P, ETC.)	DC	DIRECT CURRENT	HT	HEIGHT	N.C.	NORMALLY CLOSED	SWBD	SWITCHBOARD
17	1 POLE (2P, 3P, 4P, ETC.)	DCP	DOMESTIC WATER	HTG	HEATING	N.C. NEC	NATIONAL ELECTRICAL CODE	SYM	SYMMETRICAL
Α	AMPERE	DCF	CIRCULATING PUMP	HTR	HEATER	NEMA	NATIONAL ELECTRICAL CODE NATIONAL ELECTRICAL	SYS	SYSTEM
AC	ABOVE COUNTER OR AIR	DEPT	DEPARTMENT	HV	HIGH VOLTAGE	NEMA	MANUFACTURER'S ASSOCIATION	TEL	TELEPHONE
AC	CONDITIONER	DET	DETAIL	HVAC	HEATING, VENTILATING AND	NFDS	NON-FUSED SAFETY		TELEPHONE/DATA
ACLG	ABOVE CEILING	DIA	DIAMETER	TIVAC	AIR CONDITIONING	NI DS	DISCONNECT SWITCH	TERM	TERMINAL
ADO	AUTOMATIC DOOR OPENER	DISC	DISCONNECT	HWP	HYDRONIC WATER PUMP	NIC	NOT IN CONTRACT	TL	TWIST LOCK
AF	AMP FRAME	DIST	DISTRIBUTION		THE ROLLE WALLET OF II	NL	NIGHT LIGHT	TR	TAMPER RESISTANT
AFF	ABOVE FINISHED FLOOR	DN	DOWN	IC	INTERRUPTING CAPACITY	N.O.	NORMALLY OPEN	T-STAT	THERMOSTAT
AFG	ABOVE FINISHED GRADE	DPR	DAMPER	IG	ISOLATED GROUND	NPF	NORMAL POWER FACTOR	TTC	TELEPHONE TERMINAL CABINET
AFCI	ARC FAULT CIRCUIT	DS	SAFETY DISCONNECT SWITCH	IMC	INTERMEDIATE METAL CONDUIT	NTS	NOT TO SCALE	TV	TELEVISION
	INTERRUPTER	DT	DOUBLE THROW	INCAND	INCANDESCENT			TVTC	TELEVISION TERMINAL CABINET
AHU	AIR HANDLING UNIT	DWG	DRAWING	IR	INFRARED	OH	OVERHEAD	TWPR	TWISTED PAIR
AL	ALUMINUM			I/W	INTERLOCK WITH	OL	OVERLOADS	TYP	TYPICAL
ALT	ALTERNATE	EC	ELECTRICAL CONTRACTOR					UC	UNDER COUNTER
AMP	AMPERE	ELEC	ELECTRIC, ELECTRICAL	J-BOX	JUNCTION BOX	PA	PUBLIC ADDRESS	UE	UNDERGROUND ELECTRICAL
AMPL	AMPLIFIER	EGC	EQUIPMENT GROUNDING CONDUCTOR	KCMIL	ONE THOUSAND CIRCULAR MILS	PB	PULL BOX OR PUSHBUTTON	UG	UNDERGROUND
ANNUN	ANNUNCIATOR	EM	EMERGENCY	KV	KILOVOLT	PE	PNEUMATIC ELECTRIC	UH	UNIT HEATER
APPROX	APPROXIMATELY	EMS	ENERGY MANAGEMENT SYSTEM	KVA	KILOVOLT-AMPERE	PED	PEDESTAL	UT	UNDERGROUND TELEPHONE
AQ-STAT	AQUASTAT	EMT	ELECTRICAL METALLIC TUBING	KVAR	KILOVOLT-AMPERE REACTIVE	PF	POWER FACTOR	UTIL	UTILITY
ARCH	ARCHITECT, ARCHITECTURAL	EP	ELECTRIC PNEUMATIC	KW	KILOWATT	PH	PHASE	UV	UNIT VENTILATOR OR
ARMS	ARCHFLASH REDUCTION	EQUIP	EQUIPMENT	KWH	KILOWATT HOUR	PIV	POST INDICATING VALVE		ULTRAVIOLET
	MAINTENANCE SYSTEM	ERMS	ENERGY REDUCTION			PM	POWER METER		
AS	AMP SWITCH		MAINTENANCE SWITCH	LOC	LOCATE OR LOCATION	PNL	PANEL	V	VOLT
AT	AMP TRIP	EWC	ELECTRIC WATER COOLER	LSI	LONG TIME + SHORT TIME +	PP	POWER POLE	VA	VOLT-AMPERES
ATS	AUTOMATIC TRANSFER SWITCH	EX	EXISTING		INSTANTANEOUS PROTECTION	PR	PAIR	VDT	VIDEO DISPLAY TERMINAL
AUTO	AUTOMATIC	EXH	EXHAUST	LSIG	LONG TIME + SHORT TIME +	PRI	PRIMARY	VERT	VERTICAL
AUX	AUXILIARY	EXP	EXPLOSION PROOF		INSTANTANEOUS + GROUND	PROJ	PROJECTION	VFD	VARIABLE FREQUENCY DRIVE
AV	AUDIO VISUAL				FAULT PROTECTION	PRV	POWER ROOF VENTILATOR	VOL	VOLUME
AWG	AMERICAN WIRE GAUGE	FA	FIRE ALARM	LT	LIGHT	PT	POTENTIAL TRANSFORMER		
		FABP	FIRE ALARM BOOSTER POWER	LTG	LIGHTING	PVC	POLYVINYL CHLORIDE	W	WATT
BATT	BATTERY		SUPPLY PANEL	LTNG	LIGHTNING		(CONDUIT)	W/	WITH
BD	BOARD	FACP	FIRE ALARM CONTROL PANEL	LV	LOW VOLTAGE	PWR	POWER	WG	WIRE GUARD
BLDG	BUILDING	FCU	FAN COIL UNIT			CHAN	OLIANITITY/	WH	WATER HEATER
BMS	BUILDING MANAGEMENT	FIXT	FIXTURE	MAX	MAXIMUM	QUAN	QUANTITY	W/O	WITHOUT
	SYSTEM	FLR	FLOOR	MAG.S	MAGNETIC STARTER			WP	WEATHERPROOF
		FLUOR	FLUORESCENT	M/C	MOMENTARY CONTACT	RCPT	RECEPTACLE		
CND	CONDUIT	FO	FIBER OPTIC	MC	MECHANICAL CONTRACTOR	REQD	REQUIRED	XFMR	TRANSFORMER
CAB	CABINET	FU	FUSE	MCB	MAIN CIRCUIT BREAKER	RM	ROOM	XFR	TRANSFER
CAT	CATALOG	FUDS	FUSED SAFETY DISCONNECT	MCCB	MOLDED CASE CIRCUIT	RSC	RIGID STEEL CONDUIT		
CATV	CABLE TELEVISION		SWITCH	1466	BREAKER	RTU	ROOF TOP UNIT		
CB CCTD (CIRCUIT BREAKER	CA.	CALICE	MCC	MOTOR CONTROL CENTER	SC	SURFACE CONDUIT		

MOTOR CIRCUIT PROTECTOR

MAIN DISTRIBUTION CENTER

MAIN DISTRIBUTION PANEL

MAIN FUSED DISCONNECT

MANUAL MOTOR STARTER

MULTIOUTLET ASSEMBLY

MANUAL TRANSFER SWITCH

MAIN SWITCHBOARD

MOTOR, MOTORIZED

MOTOR STARTER PANELBOARD

MANUFACTURER

MISCELLANEOUS

MAIN LUGS ONLY

EMPTY CONDUIT

MANHOLE

MINIMUM

MOUNT

MICROPHONE

SCH

SPKR

SPD

SSW S/S

STA

STD

SUSE

SCHEDULE

SECONDARY

SOLID NEUTRAL

SPECIFICATION

SURFACE RACEWAY

STAINLESS STEEL

SELECTOR SWITCH

SURFACE MOUNTED

SUITABLE FOR USE AS

SERVICE EQUIPMENT

SURGE PROTECTION DEVICE

STOP/START PUSHBUTTONS

∠ ANGLE

INCHES

△ DELTA

NUMBER

CENTER LINE

Ø PHASE

PL PLATE

SHEET

SIMILAR

SPEAKER

STATION

SWITCH

STANDARD

SPARE

MCP

MDC MDP

MFR

MIC

MISC

MLO

MOA

MSP

MSBD

MT.C

MTS

MTR

NOTES

- 1. THE ELECTRICAL INSTALLATION SHALL MEET THE MINIMUM REQUIREMENTS OF THE 2017 NATIONAL ELECTRIC CODE AS ADOPTED BY THE STATE OF IDAHO AND LOCAL BUILDING CODES.
- 2. ALL ELECTRICAL EQUIPMENT SHALL BE LISTED AND APPROVED AND SUITABLE FOR THE INSTALLATION.
- 3. DRAWINGS ARE DIAGRAMMATIC ONLY AND SHOW THE GENERAL INTENT OF LOCATIONS AND INSTALLATION REQUIREMENTS OF EQUIPMENT. EXACT LOCATIONS AND INSTALLATION MATERIALS REQUIRED SHALL BE VERIFIED IN FIELD WITH ACTUAL INSTALLED EQUIPMENT.
- 4. ALL EXISTING CONDITIONS SHALL BE VERIFIED AT THE JOB SITE PRIOR TO BID SUBMITTALS.
- 5. ALL WALL AND CEILING PENETRATIONS SHALL BE SEALED WITH MATERIALS APPROVED TO MAINTAIN FIRE RATINGS.
- 6. EQUIPMENT GROUNDING CONDUCTORS SHALL BE INSTALLED IN CONDUIT, UNLESS NOTED OTHERWISE.
- 7. MULTIWIRED BRANCH CIRCUITS (SHARED NEUTRALS) SHALL NOT BE USED.
- 8. PROVIDE PVC40 CONDUIT WITH PVC80 FITTINGS FOR ALL UNDERGROUND CONDUIT.
- 9. PROVIDE EMT CONDUIT FOR ALL INDOOR AND OUTDOOR ABOVEGROUND CONDUIT
- PAINTED TO MATCH THE EXISTING CONDITIONS. 10. PROVIDE THWN/THHN COPPER CONDUCTORS FOR ALL POWER CONDUCTORS. ALL CONDUCTORS #10 AND SMALLER SHALL BE SOLID; CONDUCTORS #8 AND LARGER
- SHALL BE STRANDED. TYPE NM CABLE IS NOT PERMITTED. 11. ALL CABLE TERMINATIONS AND FITTINGS SHALL BE RATED FOR A MINIMUM OF 75C.
- 12. PROVIDE BARE COPPER CONDUCTORS FOR BONDING. EQUIPMENT GROUNDING CONDUCTORS SHALL BE COPPER WITH GREEN INSULATION.
- 13. ALL OUTDOOR EQUIPMENT SHALL BE NEMA TYPE-3R.
- 14. PROVIDE CURRENT LIMITING FUSES FOR ALL FUSES IN ACCORDANCE WITH UL-4248.
- 15. ELECTRICAL SWITCHBOARDS SHALL HAVE A NEMA TYPE-1 RATINGS WITH COPPER BUSSING. THE CIRCUIT BREAKERS SHALL BE THE BOLT-ON TYPE.
- 16. GROUND RODS SHALL BE CONE POINTED COPPER, 10' IN LENGTH, WITH A 3/4" DIAMETER; SECTIONAL RODS ARE PERMITTED.
- 17. PROVIDE A TRANSFORMER PAD AS REQUIRED BY IDAHO POWER.
- 18. LOCATE EXISTING UNDERGROUND UTILITIES IN THE THE PROPOSED AREA FOR THE NEW SECONDARY CONDUITS FOR UNDERGROUND UTILITIES PRIOR TO DIGGING.
- 19. THIS FACILITY IS IN SEISMIC ZONE 2B, CONTRACTOR SHALL ADHERE TO THE LOCAL CODES WHEN INSTALLING AND MOUNTING EQUIPMENT AND RACEWAYS.

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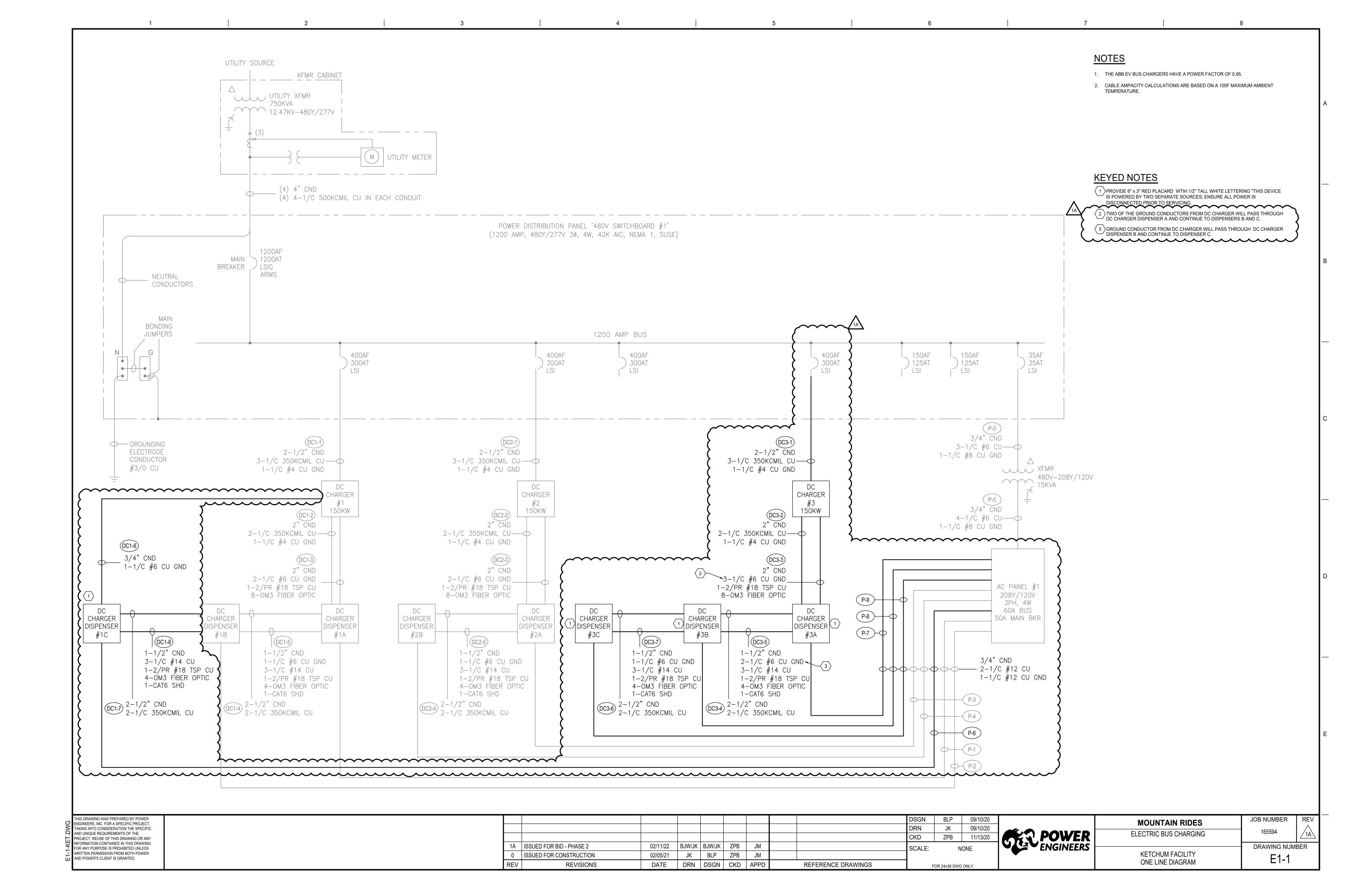
1A	ISSUED FOR BID - PHASE 2	02/11/22	BJW/JK	BJW/JK	ZPB	JM	
0	ISSUED FOR CONSTRUCTION	02/05/21	JK	BLP	ZPB	JM	
REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD	REFERENCE DRAWINGS



ZPB

FOR 24x36 DWG ONLY

	MOUNTAIN RIDES	JOB NUMBER	REV
			\wedge
POWER	ELECTRIC BUS CHARGING	165594	<u>∕1A</u>
ENGINEERS		DRAWING NUMI	BER
ENGINEEKS	KETCHUM FACILITY COVER SHEET & LEGEND	E0-1	



PANEL: 480V SWITCHBOARD #1 LOCATION: BUS REPAIR BAYS MOUNTING: SURFACE MOUNT VOLTAGE: 480Y/277V 3-PHASE, 4-WIRE BUS: 1200 A COPPER REMARKS: BOLT-ON BREAKERS MAIN: 1200A 3P MAIN CIRCUIT BREAKER 42 KAIC FULLY-RATED FEEDER: UTILITY XFMR TYPE: 24 NEMA 1 POW-R-LINE PRL4 PANELBOARD SERVES: ELECTRIC DC CHARGERS CKT CODE CIRCUIT NAME CABLE AMP POLE KVA PHASE CKT CODE CIRCUIT NAME CABLE AMP POLE KVA 52.60 A 2 C 3 C DC CHARGER #1 52.60 **B** 4 C DC CHARGER #2 DC2-1 52.60 52.60 **C** 6 52.60 5 C 9 SPARE 400AF BREAKER B 10 C DC CHARGER #3 52.60 DC3-1 0.00 B 16 SPARE 150AF BREAKER 15 SPARE 150AF BREAKER 17 0.00 **C** 18 0.00 19 C 5.00 A 20 EMPTY SPACE 0.00 **KEYED NOTES** 0.00 21 C AC PANEL #1 5.00 **B** 22 EMPTY SPACE 23 C 5.00 **c** 24 EMPTY SPACE 0.00 (1) BREAKER SHALL COME EQUIPPED WITH A 30mA GFCI. PHASE A CONNECTED LOAD (KVA): 162.80 PHASE B CONNECTED LOAD (KVA): 162.80 PHASE C CONNECTED LOAD (KVA): TOTAL CONNECTED 3PH LOAD (KVA): 488.40 162.80 DF CALCULATIONS TOTAL DEMAND LOAD TYPE CONNECT LIGHTING 0.00 NON CONT RECEPTACLES 0.00 10+(X-10)*.5 0.00 MOTORS 100% LRGST MOTOR 0.00 0.00 25% CONTINUOUS (MISC) 488.40 125% 610.50 NON-CONTINUOUS (MISC) 0.00 100% A B C 0.00 TOTAL DEMAND LOAD (KVA): 204 204 204 611 TOTAL DEMAND 3PH AMPERES: 735 735 735 LOCATION: ELECTRICAL ROOM PANEL: AC PANEL #1 VOLTAGE: 208Y/120V 3-PHASE, 4-WIRE MOUNTING: SURFACE MOUNT 60 A COPPER REMARKS: BOLT-ON BREAKERS 50A 3P MAIN CIRCUIT BREAKER 10 KAIC FULLY-RATED FEEDER: 480V SWITCHBOARD #1 TYPE: 12 NEMA 1 LTG. & APPL. BRANCH PANELBOARD SERVES: ELECTRIC BUS CHARGING CABLE AMP POLE KVA PHASE SKT CODE SURGUIT VANG CABLE AMP POLE KVA CKT CODE CIRCUIT NAME 1 C DC CHARGER DISPENSER #1A P-1 15 1 A 2 C DC CHARGE DISPENSER 1C P-6 | 15 | B 4 C DC CHARGE DISPENSER 3A 3 C DC CHARGER DISPENSER #1B P-2 15 1 5 C DC CHARGER DISPENSER #2A C 6 C DC CHARGE DISPENSER 3B P-3 P-8 15 15 | 1 | 7 C DC CHARGER DISPENSER #2B P-4 15 1 A 8 C DC CHARGE DISPENSER 3C P-9 15 BHO LINE SPACE OF THE SPACE OF 9 EMPTY SPACE 11 EMPTY SPACE 0.00 **12** 24 EMPTY SPACE PHASE A CONNECTED LOAD (KVA): 2.00 PHASE B CONNECTED LOAD (KVA): 1.00 PHASE C CONNECTED LOAD (KVA): 1.00 TOTAL CONNECTED 3PH LOAD (KVA): CODE LOAD TYPE CONNECT DF CALCULATIONS TOTAL DEMAND LIGHTING 0.00 125% NON CONT RECEPTACLES 0.00 10+(X-10)*.5 **MOTORS** 0.00 100% LRGST MOTOR 0.00 25% CONTINUOUS (MISC) 4.00 125% NON-CONTINUOUS (MISC) 0.00 100% A B C TOTAL DEMAND LOAD (KVA): 3 1 1 TOTAL DEMAND 3PH AMPERES:

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AND POWER'S CLIENT IS GRANTED.

TAKING INTO CONSIDERATION THE SPECIFIC

CKD 1A ISSUED FOR BID - PHASE 2 02/11/22 | BJW/JK | BJW/JK | ZPB | JM SCALE: 02/05/21 JK BLP ZPB JM 0 ISSUED FOR CONSTRUCTION DATE DRN DSGN CKD APPD REFERENCE DRAWINGS REVISIONS FOR 24x36 DWG ONLY

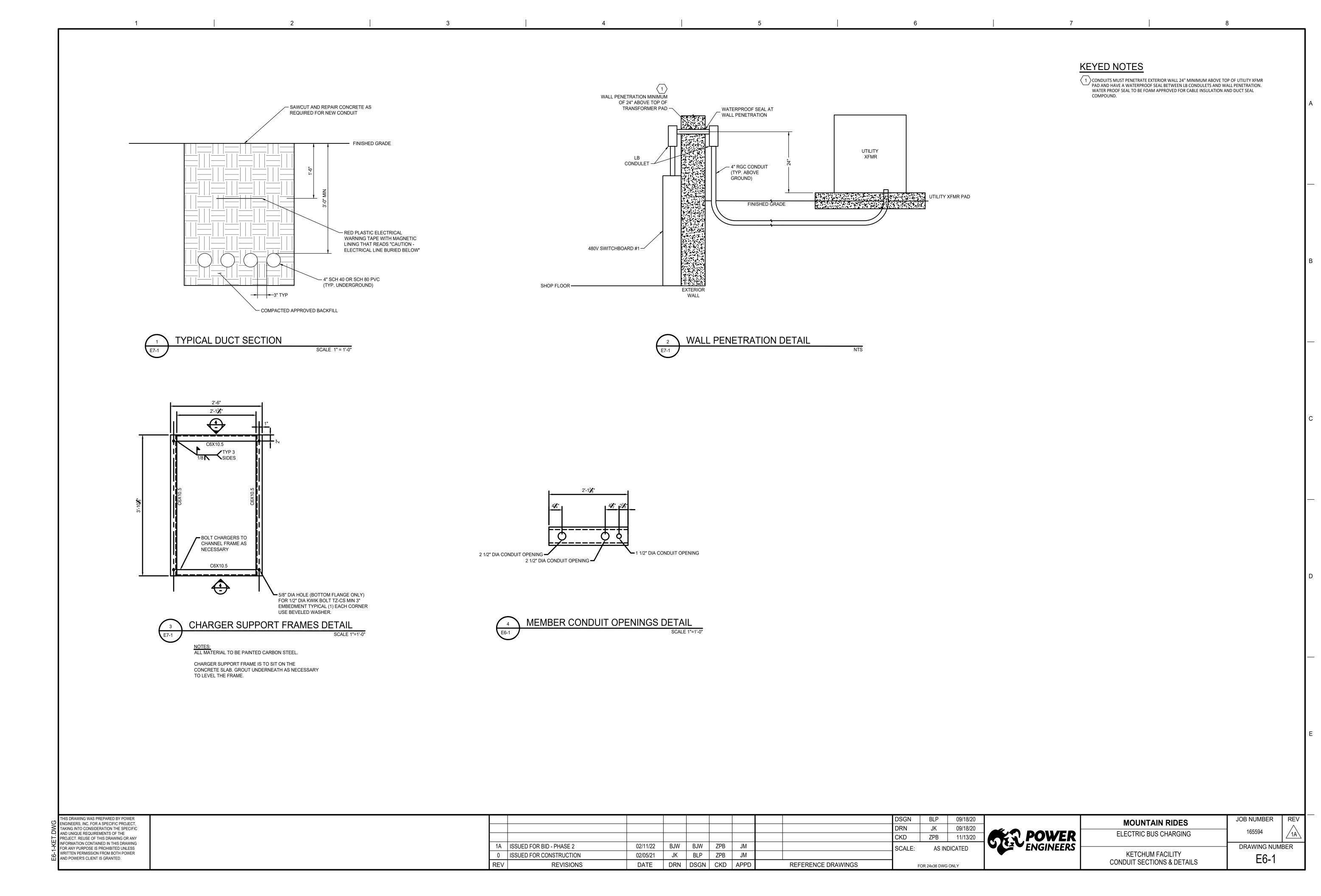
REV

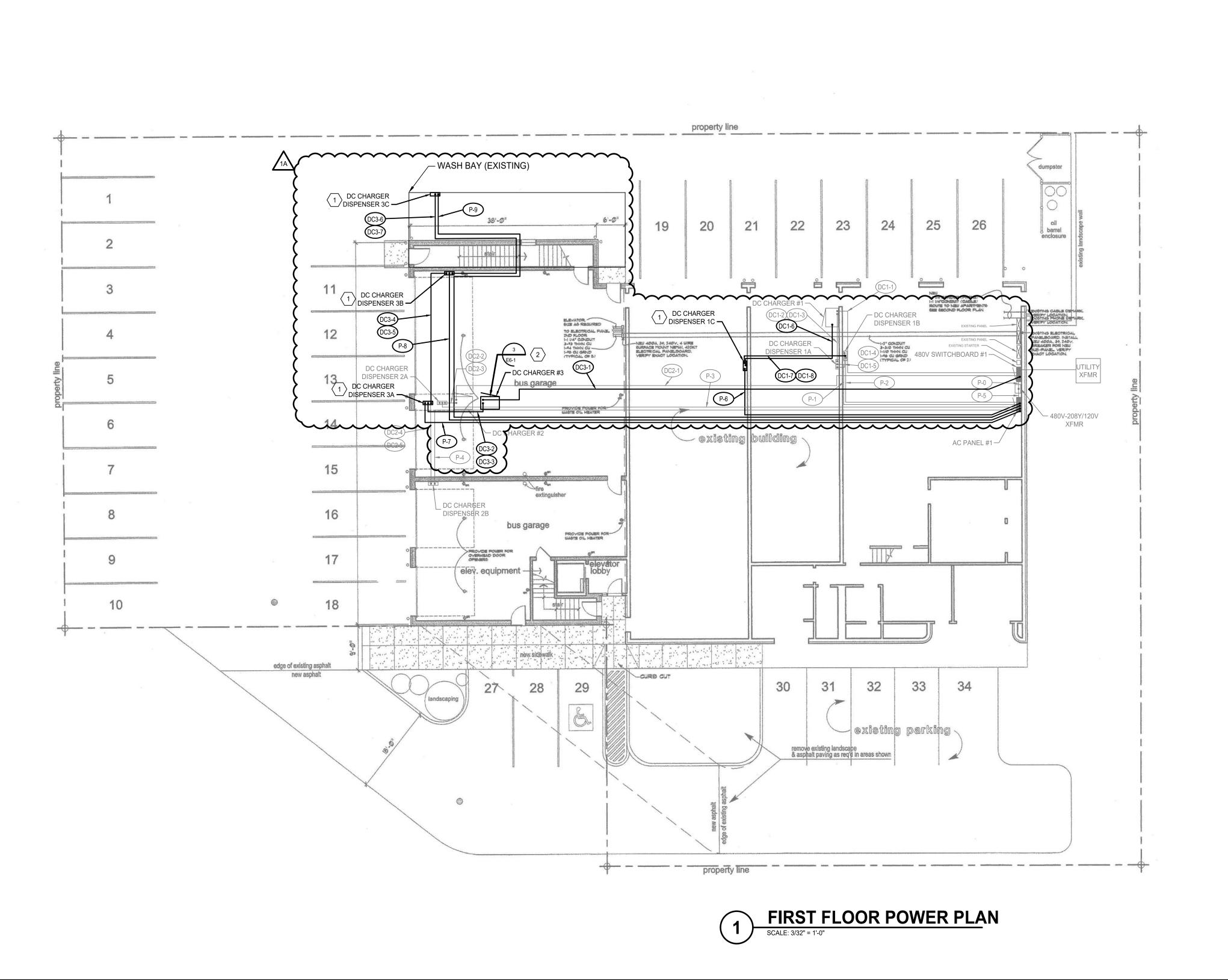
JK 09/14/20 11/13/20

BLP | 09/14/20

ZPB

MOUNTAIN RIDES ELECTRIC BUS CHARGING KETCHUM FACILITY ELECTRICAL PANEL SCHEDULES JOB NUMBER REV 165594 DRAWING NUMBER E3-1





1A ISSUED FOR BID - PHASE 2

REV

0 ISSUED FOR CONSTRUCTION

REVISIONS

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- REFER TO ONE-LINE DIAGRAM DRAWING E1-1 FOR CONDUIT & CABLE REQUIREMENTS.
- 2. CONTRACTOR TO PROVIDE EQUIPMENT, CONDUITS, & TERMINATE POWER & COMMUNICATION CABLES. REFER TO ONE LINE DIAGRAM FOR CABLE SIZING.
- 3. CONDUIT ROUTING IS SHOWN FOR REFERENCE ONLY. CONTRACTOR TO DETERMINE THE BEST CONDUIT ROUTE IN THE FIELD.

KEYED NOTES

- 1 PROVIDE 6" x 3" RED PLACARD WTIH 1/2" TALL WHITE LETTERING "THIS DEVICE IS POWERED BY TWO SEPARATE SOURCES; ENSURE ALL POWER IS DISCONNECTED PRIOR TO SERVICING."
- PROVIDE CUSTOM FABRICATED STEEL SUPPORT STAND WITH A 6" C-CHANNEL BASE FOR ABOVEGROUND CONDUIT ENTRY TO THE BOTTOM OF THE EV

0 5

						DSGN	BLP	09/14/20	
						DRN	JK	09/14/20	
						CKD	ZPB	11/13/20	
02/11/22	BJW/JK	BJW/JK	ZPB	JM		SCALE:	3/32	2"=1'-0"	
02/05/21	JK	BLP	ZPB	JM			5,5-		•
DATE	DRN	DSGN	CKD	APPD	REFERENCE DRAWINGS] F	OR 24x36 DWG	ONLY	

_	
POWER ENGINEERS	
ENGINEERS	
•	

MOUNTAIN RIDES	JOB NUMBER	REV
WIOUNTAIN RIDES		\land
ELECTRIC BUS CHARGING	165594	/1A\
	_	
	DRAWING NUM	BER
KETCHUM FACILITY	F7-1	
FIRST FLOOR POWER PLAN		

20 FEET

3/32" = 1'-0"