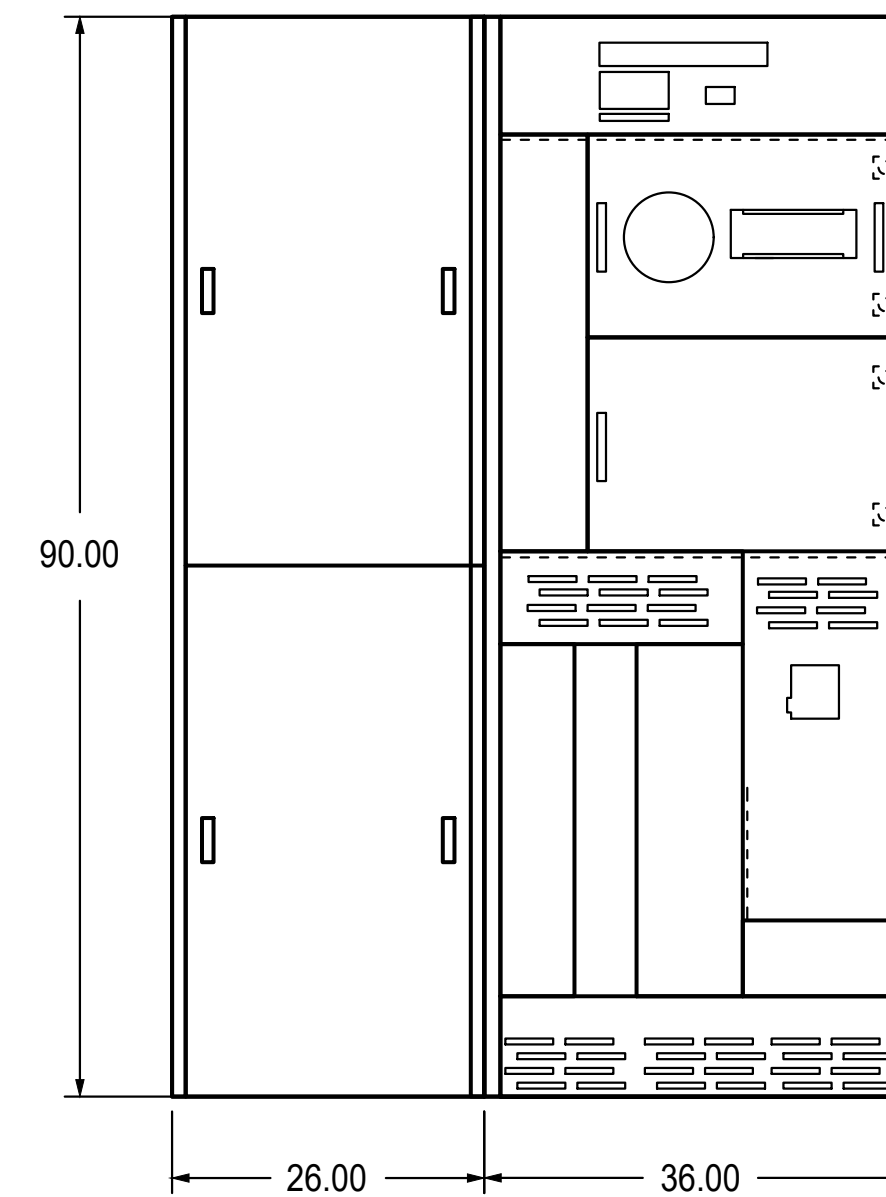
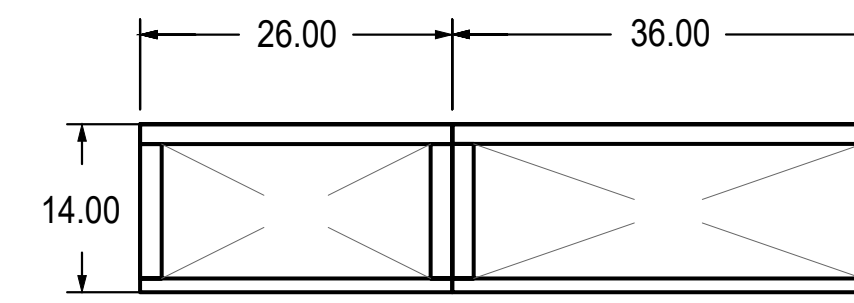


SINGLE-LINE DIAGRAM KEYED NOTES

1. VERIFY WITH SERVICE PLANNER FOR AIC RATING AND ELECTRICAL INFORMATION BEFORE ISSUING ANY BID. NOTIFY ENGINEER IMMEDIATELY IF MAJOR DISCREPANCIES OCCURS.
2. STUB UP CONDUIT FOR PV SYSTEM. PV SYSTEM SHALL BE SUBMITTED UNDER A SEPARATE PERMIT. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH PV CONSULTANT FOR THE EXACT SIZE OF CONDUIT AND ALL ELECTRICAL REQUIREMENTS.
3. REFER TO UTILITY PLAN FOR LAYOUT AND EXACT CONDUIT AND WIRE SIZE.
4. THE SWITCHGEAR SHOP DRAWING SHALL BE APPROVED BY PG&E.

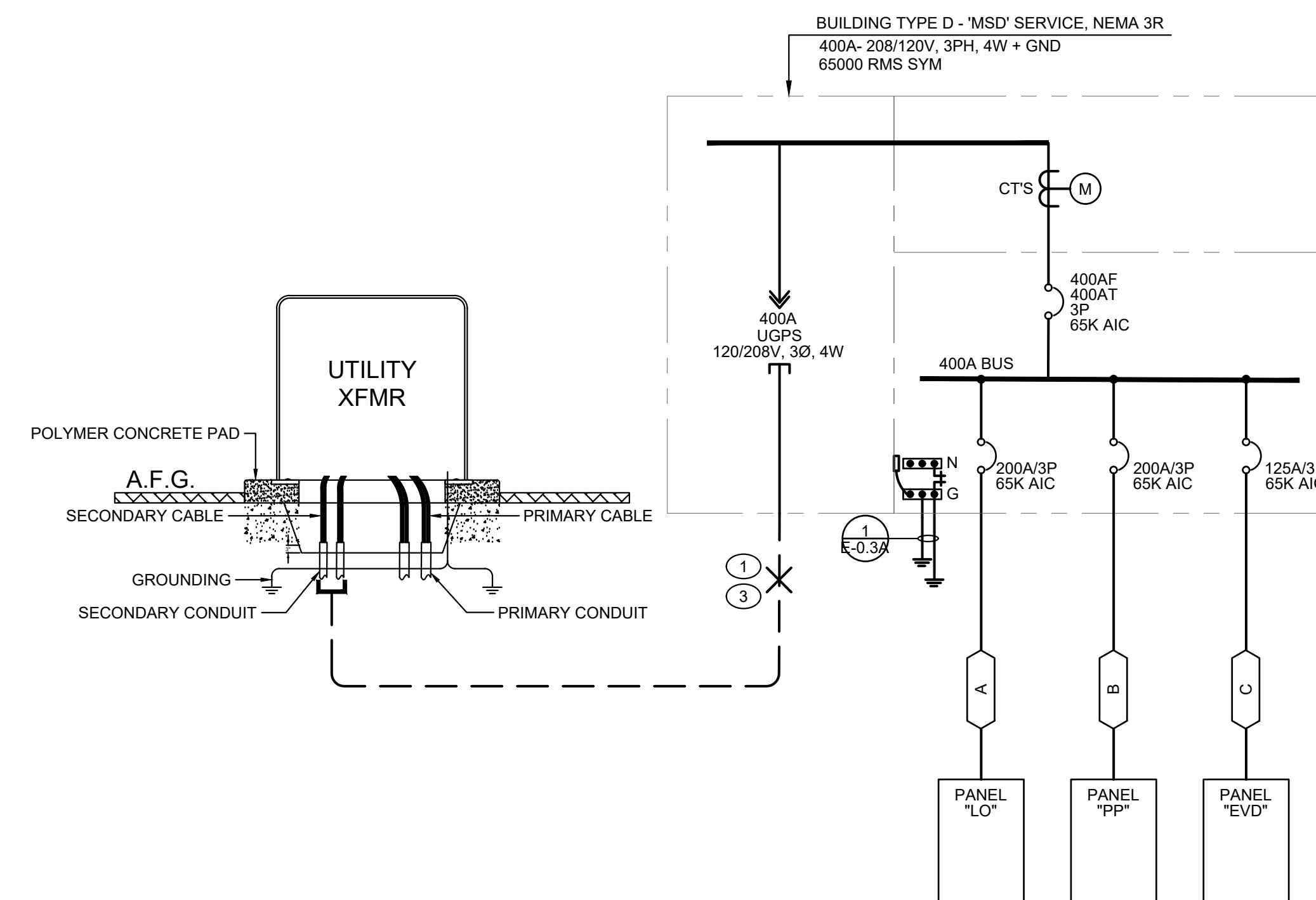
SINGLE-LINE DIAGRAM GENERAL NOTES

1. THE MAXIMUM AVAILABLE FAULT CURRENT IS BASED ON WORST CASE FAULT CURRENT PUBLISHED BY THE UTILITY COMPANY. CONTRACTOR TO OBTAIN FAULT CURRENT LETTER FROM UTILITY COMPANY FOR EACH SERVICE BEFORE ORDERING SWITCHBOARD. IF AVAILABLE FAULT CURRENT IS HIGHER THAN SHOWN IN THE DRAWINGS, CONTACT ELECTRICAL ENGINEER IMMEDIATELY. PROVIDE A PERMANENT PLAQUE OR STICKER AT SERVICE EQUIPMENT THAT INDICATES THE AVAILABLE FAULT CURRENT AND THE DATE THE STUDY WAS PERFORMED SHALL BE PROVIDED.
2. LETTER FOR SHORT CIRCUIT CURRENT VALUE FROM UTILITY COMPANY SHALL BE AVAILABLE AT THE JOB SITE FOR INSPECTION.
3. ELECTRICAL EQUIPMENT SHALL BE LISTED BY THE CITY, WHERE THE PROJECT IS LOCATED, RECOGNIZED ELECTRICAL TESTING LABORATORY OR APPROVED BY THE DEPARTMENT.
4. ALL NEW CIRCUIT BREAKERS, FUSIBLE SWITCHES AND ELECTRICAL EQUIPMENT SHALL BE FULLY RATED HAVING A SHORT-CIRCUIT (AIC) RATING EXCEEDING THE AVAILABLE SHORT-CIRCUIT CURRENT AT THE EQUIPMENT. SERIES RATING OF EQUIPMENT IS NOT ALLOWED.
5. ALL SWITCHBOARDS AND DISTRIBUTION BOARDS SHALL HAVE:
 - 5.1. TIN-PLATED ALUMINUM BUSSING WITH RECTANGULAR CROSS SECTION. HORIZONTAL AND VERTICAL BUSSING SHALL BE FULL LENGTH AND SHALL HAVE PROVISIONS FOR FUTURE EXTENSIONS. ALL BUSSING SHALL HAVE MINIMUM WITHSTAND RATING EQUAL TO THE AVAILABLE FAULT CURRENT INDICATED. ALL VERTICAL AND HORIZONTAL BUSSING SHALL BE RATED AT FULL CAPACITY IN ALL SWITCHBOARD AND DISTRIBUTION BOARD SECTIONS. PROVIDE 100% NEUTRAL BUSSING MINIMUM UNLESS OTHERWISE NOTED. PROVIDE FULL LENGTH GROUND BUS AND, WHERE INDICATED ON PLANS, ISOLATED GROUND BUSSING. PROVIDE REAR WIRE WAY IN ALL SWITCHBOARD SECTIONS.
 - 5.2. LUGS SUITABLE FOR USE WITH COPPER OR ALUMINUM CONDUCTORS LISTED FOR USE WITH 75 DEGREE CELSIUS AMPACITY CONDUCTORS.
 - 5.3. PERMANENT PLACARD(S) MARKED PER THE SPECIFICATIONS AND PER NEC SECTIONS 225.37, 230.2(E), 690.56, 692.56, 700.7, 701.7, 702.7, AND 705.10 DENOTING THE PRESENCE OF ADDITIONAL SERVICES, PHOTOVOLTAIC SYSTEMS, FUEL CELLS, EMERGENCY OR STAND-BY POWER SOURCES AS APPLICABLE.
 - 5.4. SINGLE LINE DIAGRAM SHOWN IS A "FULLY RATED SYSTEM" UNLESS NOTED, OTHERWISE.
 - 5.5. THE MAXIMUM COMBINED VOLTAGE DROP ON BOTH INSTALLED FEEDER CONDUCTORS AND BRANCH CONDUCTORS TO THE FARTHEST CONNECTED LOAD OR OUTLET SHALL NOT EXCEED 5 PERCENT.
 - 5.6. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED, LISTED, OR CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LABORATORY ACCREDITED BY THE "UNITED STATES OCCUPATIONAL SAFETY HEALTH ADMINISTRATION".
6. ALL SWITCHBOARDS, PANEL BOARDS, INDUSTRIAL CONTROL PANELS, AND MOTOR CONTROL CENTERS SHALL BE FIELD MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ARC FLASH HAZARDS PER CEC 110.6 & NFPA 70E.
7. SERVICE EQUIPMENT IS TO BE LEGIBLY MARKED WITH THE MAXIMUM AVAILABLE FAULT CURRENT. THE MARKING SHALL BE DURABLE AND MUST INCLUDE THE DATE FAULT CURRENT CALCULATION WAS PERFORMED CEC 110.244.
8. SWITCHBOARDS MUST BE SEISMIC QUALIFIED AND BE MARKED AS SUCH BY THE MANUFACTURER; DETAILS OF THE ATTACHMENT AND ANCHORING TO THE SUPPORTING STRUCTURE MUST BE PROVIDED PER CEC 110.3, 110.13, AND ASCE 7-10, 13.6.4 13.6.5.



BASIS OF DESIGN: SQUARE D

A ELECTRICAL EQUIPMENT ELEVATION - BUILDING D
SCALE: 3/4" = 1'-0"



Voltage Drop and Short Circuit Calculation																			
CABLE NAME	PANEL NAME	UNIT/ CIRCUIT	VOLTS	PHASE	FEEDER					CONDUIT					FAULT CURRENT				
					DEMAND AMPS	AMPS	PARALLEL RUNS	PHASE CONDUCTOR	EQUIPMENT GROUNDING CONDUCTOR	CONDUCTOR MATERIAL	CONDUCTOR INSULATION	CONDUIT TYPE	CONDUIT SIZE	FILL % (<40%)	DISTANCE (FT) 'L'	%VD	FAULT CURRENT	Isc	AIC
A	LO	LO	208	3	200	200	1	250	4	ALUM	THHN	EMT	2 1/2	28.51%	20	0.33	65000	34337	42000
B	PP	PP	208	3	80	200	1	300	3	ALUM	THHN	EMT	2 1/2	33.13%	220	1.29	65000	6799	10000
C	EVD	EVD	208	3	125	125	1	2/0	4	ALUM	THHN	EMT	2	28.95%	20	0.33	65000	25936	42000

NOTE: THE VOLTAGE DROP IN THE ABOVE TABLE IS AN ESTIMATED LENGTH. THE CONTRACTOR SHALL REVISE THE FEEDER SCHEDULE BASED ON THE ACTUAL LENGTH IN THE FIELD, AND INCREASE OR DECREASE THE FEEDER SIZE TO ACCOMMODATE THE VOLTAGE DROP. ELECTRICAL CONTRACTOR SHALL INFORM THE ENGINEER OF RECORD IN EVENT FIELD CONDITIONS THAT CAUSE A SUBSTANTIAL INCREASE IN OVERALL FEEDER LENGTH. THE FEEDER SHALL BE SIZED TO PREVENT VOLTAGE DROP FROM EXCEEDING 3%, AND TOTAL VOLTAGE DROP FOR BRANCH CIRCUIT AND FEEDER SHALL NOT EXCEED 5% PER NEC 210.19.215.2.

CA

REVISIONS		
NO.	DATE	DESCRIPTION
△	04/07/23	PLAN CHECK
△	06/22/23	PLAN CHECK
△	08/15/23	PLAN CHECK
△	12/07/23	RFI 50
△	04/02/24	CLIENT REV.
△	06/19/24	EV REVISION
△	08/02/24	PLAN CHECK

SHEET NAME:
SINGLE LINE DIAGRAM
BUILDING D

PROJECT NUMBER:
66139

ENGINEER:
DRAFTER:

SHEET NUMBER:
E-0.7