

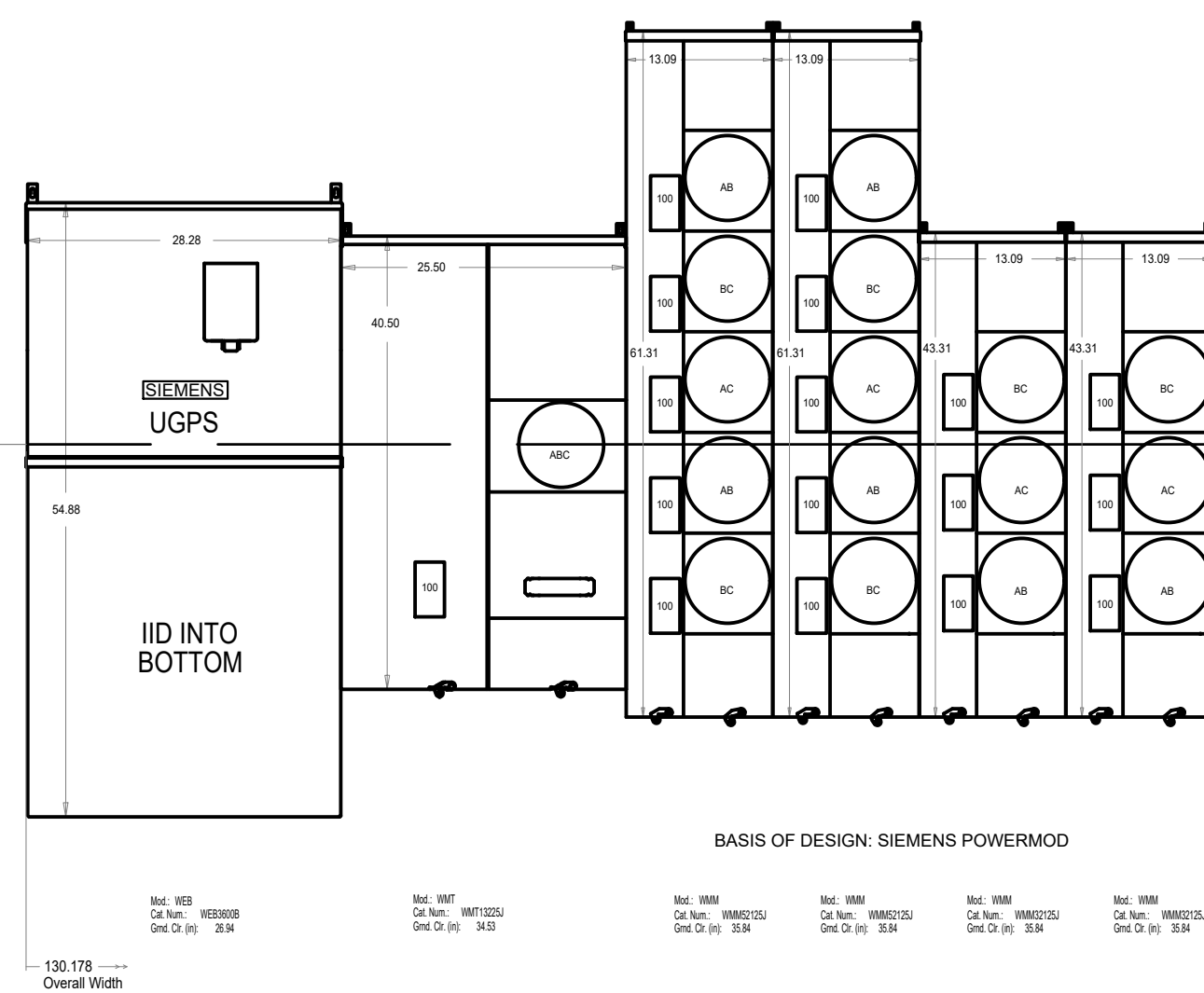
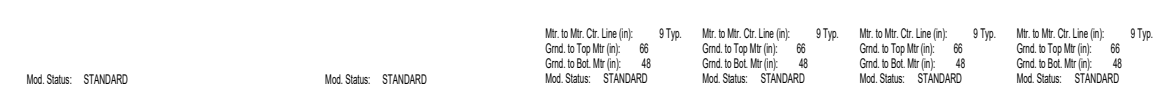
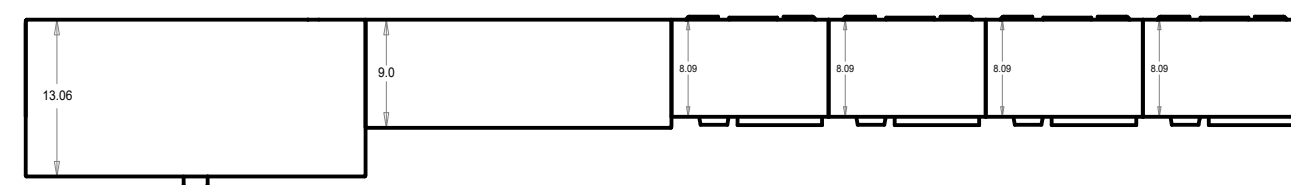
**KEYED NOTES**

1. VERIFY WITH SERVICE PLANNER FOR AIC RATING AND ELECTRICAL INFORMATION BEFORE ISSUING ANY BID. NOTIFY ENGINEER IMMEDIATELY IF MAJOR DISCREPANCIES OCCURS.
2. ALL SERVICES SUPPLYING DWELLING UNITS SHALL BE PROVIDED WITH A SURGE-PROTECTIVE DEVICE (SPD) IN ACCORDANCE WITH NEC 230.67. PROVIDE SIEMENS BOLT SHIELD SPD OR EQUAL FOR ALL TENANT LOAD CENTERS.

**GENERAL NOTES**

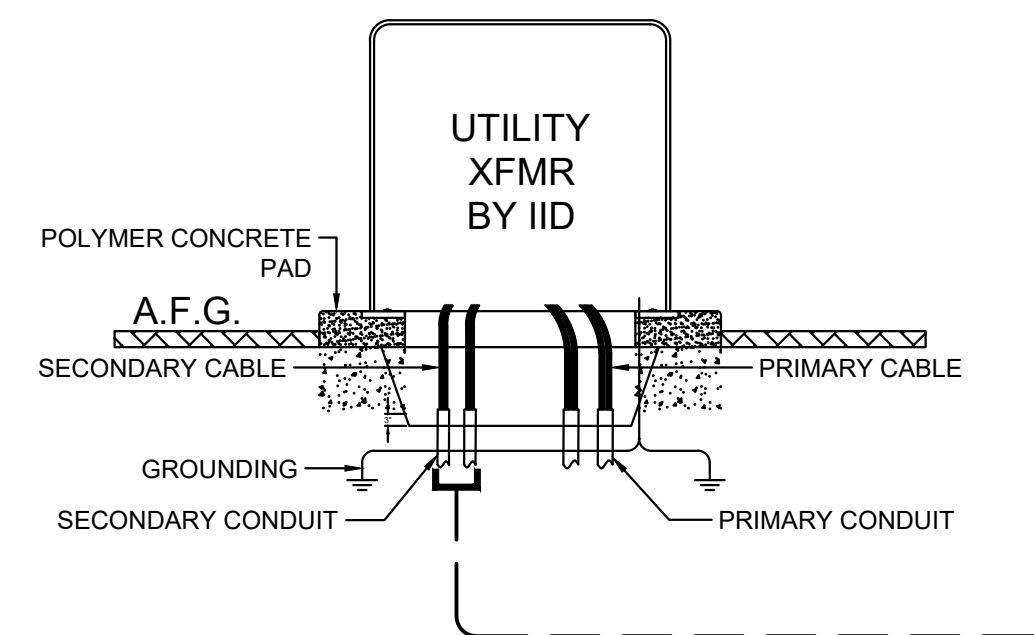
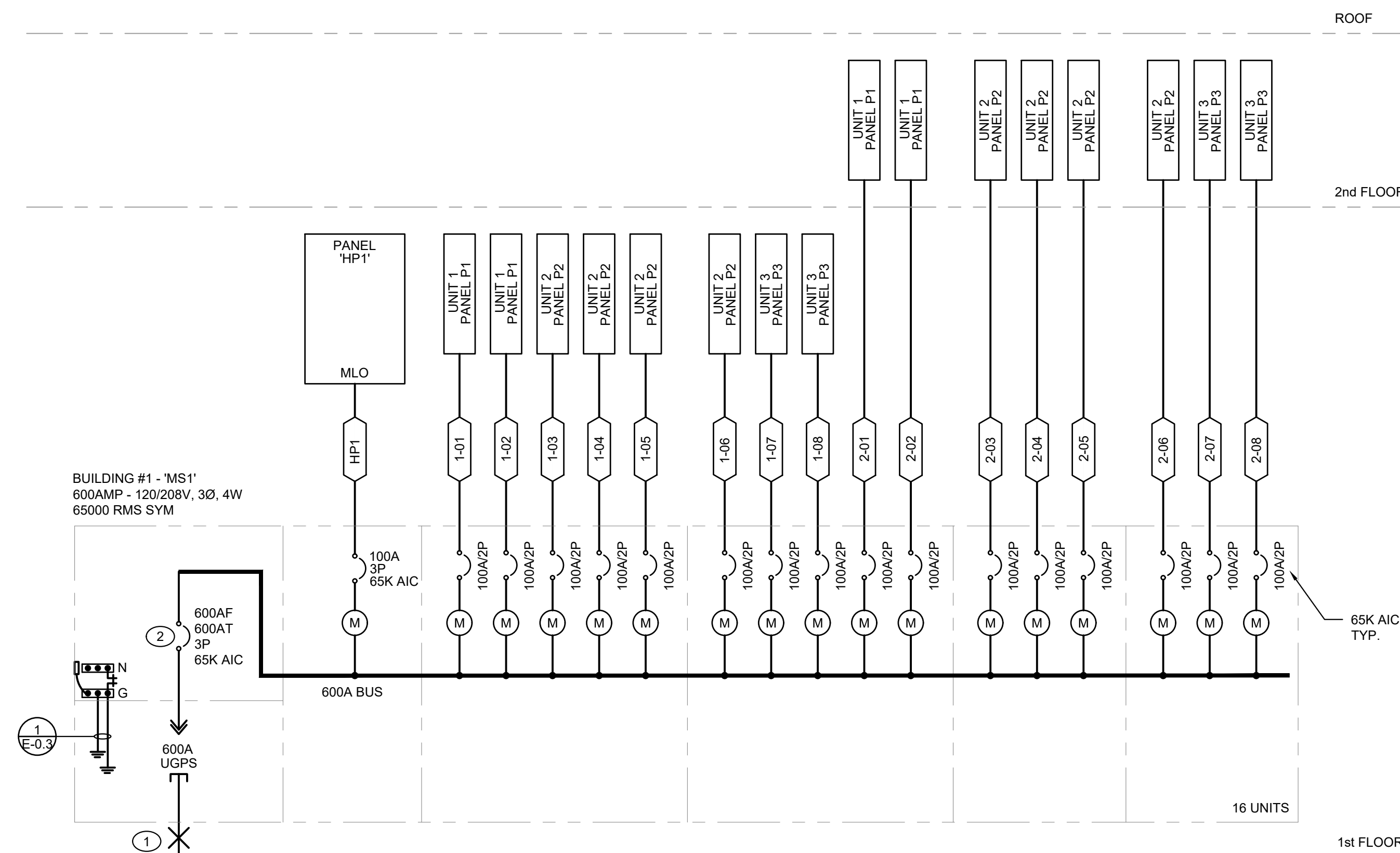
1. THE MAXIMUM AVAILABLE FAULT CURRENT IS BASED ON WORST CASE FAULT CURRENT PUBLISHED BY THE UTILITY COMPANY. CONTRACTOR TO OBTAIN FAULT CURRENT LETTER FROM UTILITY COMPANY FOR EACH SERVICE BEFORE ORDERING SWITCHBOARD. IF AVAILABLE FAULT CURRENT IS HIGHER THAN SHOWN IN THE DRAWINGS, CONTACT ELECTRICAL ENGINEER IMMEDIATELY.
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 (OR CEC-WHERE ADOPTED) SECTIONS 225.37, 230.2(E), 390.56, 492.56, 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".

**BUILDING #1 - 'MS1'**  
600AMPS, MAIN BREAKER, THREE PHASE SWITCHBOARD 16 UNITS & 1 HOUSE METER



**ELECTRICAL EQUIPMENT ELEVATION - BUILDING #1 - 'MS1'**

SCALE: 3/4" = 1'-0"



Voltage Drop and Short Circuit Calculation																			
CABLE NAME	PANEL NAME	UNIT/ CIRCUIT	VOLTS	PHASE	DEMAND AMPS	AMPS	FEEDER			CONDUIT				FAULT CURRENT					
							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
1-01	P1	1	208	1	80	100	1	1/0	4	ALUM	THHN	SER	NaN	-	23	0.35	65000	18634	22000
1-02	P1	1	208	1	80	100	1	1/0	4	ALUM	THHN	SER	NaN	-	48	0.74	65000	10496	22000
1-03	P2	2	208	1	80	100	1	1/0	4	ALUM	THHN	SER	NaN	-	71	1.09	65000	7487	10000
1-04	P2	2	208	1	80	100	1	1/0	4	ALUM	THHN	SER	NaN	-	96	1.48	65000	5709	10000
1-05	P2	2	208	1	80	100	1	1/0	4	ALUM	THHN	SER	NaN	-	93	1.43	65000	5876	10000
1-06	P2	2	208	1	80	100	1	1/0	4	ALUM	THHN	SER	NaN	-	118	1.82	65000	4722	10000
1-07	P3	3	208	1	80	100	1	1/0	4	ALUM	THHN	SER	NaN	-	160	2.46	65000	3550	10000
1-08	P3	3	208	1	80	100	1	1/0	4	ALUM	THHN	SER	NaN	-	186	2.86	65000	3077	10000
2-01	P1	1	208	1	80	100	1	1/0	4	ALUM	THHN	SER	NaN	-	33	0.51	65000	14223	22000
2-02	P1	1	208	1	80	100	1	1/0	4	ALUM	THHN	SER	NaN	-	58	0.89	65000	8935	10000
2-03	P2	2	208	1	80	100	1	1/0	4	ALUM	THHN	SER	NaN	-	81	1.25	65000	6658	10000
2-04	P2	2	208	1	80	100	1	1/0	4	ALUM	THHN	SER	NaN	-	106	1.63	65000	5213	10000
2-05	P2	2	208	1	80	100	1	1/0	4	ALUM	THHN	SER	NaN	-	103	1.58	65000	5353	10000
2-06	P2	2	208	1	80	100	1	1/0	4	ALUM	THHN	SER	NaN	-	128	1.97	65000	4378	10000
2-07	P3	3	208	1	80	100	1	1/0	4	ALUM	THHN	SER	NaN	-	170	2.62	65000	3352	10000
2-08	P3	3	208	1	80	100	1	2/0	3	ALUM	THHN	SER	NaN	-	196	2.41	65000	3602	10000
HP1	HP1	HOUSE	208	1	100	100	1	1/0	4	ALUM	THHN	SER	NaN	-	20	0.38	65000	20545	22000

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.

**FEEDER SCHEDULE NOTES**

1. ELECTRICAL CONTRACTOR TO DETERMINE EXACT FEEDER LENGTH FOR EACH UNIT PANEL BASED ON PROPOSED AS-BUILT CONDUIT ROUTING METHODS AND FURNISH CABLE SIZE AS REQUIRED PER THIS TABLE. FEEDER LENGTH SHOWN FOR VOLTAGE DROP CALCULATIONS ONLY - INCLUDE IN BID ALLOWANCE TO COVER PROPOSED ROUTING LENGTHS.
2. DUE TO VOLTAGE DROP, THERE WILL BE OVERSIZED CONDUCTORS TERMINATING AT BOTH MAIN BREAKER IN RESIDENTIAL SERVICE AND LOAD CENTERS. ELECTRICAL CONTRACTOR TO MAKE PROVISIONS FOR THESE OVERSIZED CONDUCTORS AND INCLUDE LUG KITS AS REQUIRED, OR 200AMP LOAD CENTERS.
3. SERVICE - ENTRANCE CABLE (SE) SHALL NOT BE USED WHERE SUBJECT TO PHYSICAL DAMAGE UNLESS PROTECTED IN ACCORDANCE WITH CEC 230.50(B).