



**GENERAL NOTES**

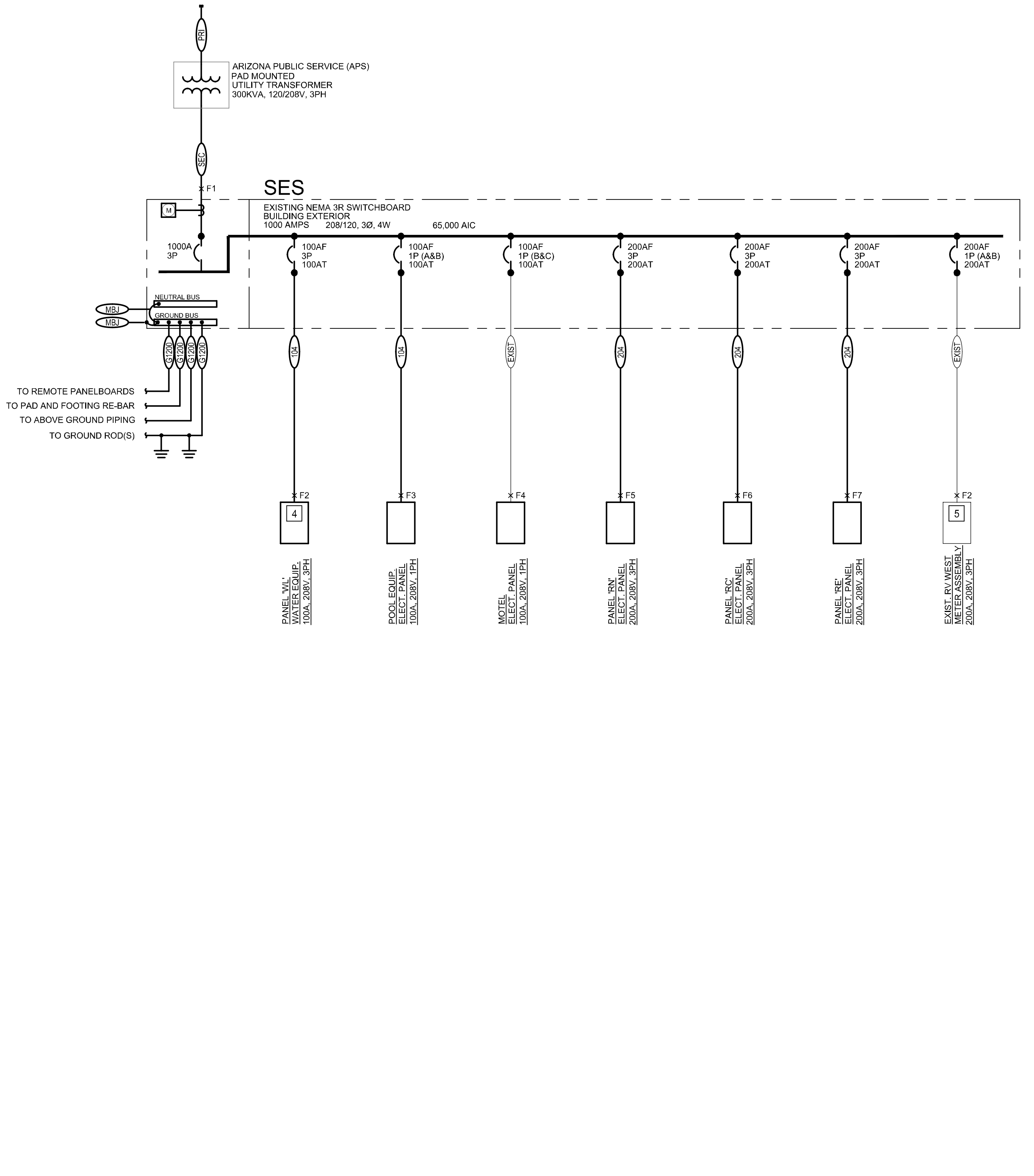
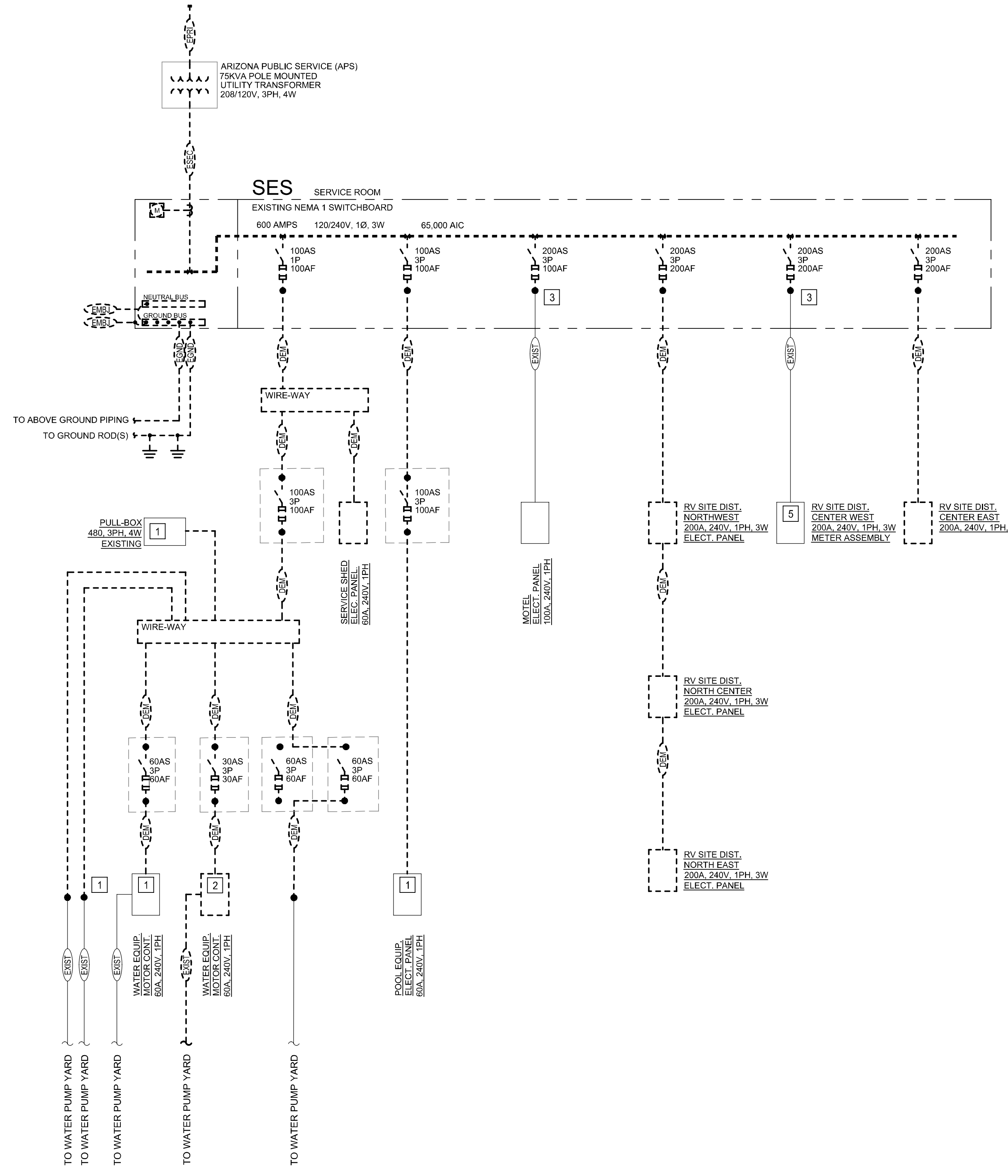
- A. ALL TERMINATIONS SHALL BE RATED FOR THE SAME TEMPERATURE AS THE CONDUCTOR INSULATION.
- B. REFER TO E0.0 ELECTRICAL SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES FOR ADDITIONAL INFORMATION BEFORE ESTIMATING OR CONSTRUCTION FROM THIS SHEET.
- C. SEE SHEET E3.1 FOR PANELBOARD SCHEDULES, AND LOAD CALCULATIONS.
- D. PROTECT EXISTING BUILDINGS AND EQUIPMENT FROM HARM AND/OR UNAUTHORIZED ACCESS WITH TEMPORARY CONSTRUCTION BARRIERS DURING WORK.
- E. COMPLY WITH ALL SPECIFICATIONS OUTLINED ON SHEET E5.1, E5.2, AND E5.3.
- F. WHEN OBTAINING PRICING FROM VENDORS PROVIDE A FULL SET OF DISCIPLINE DOCUMENTS. DO NOT LIMIT AVAILABLE INFORMATION.
- G. FIELD VERIFY ELECTRICAL REQUIREMENTS (VOLTAGE, PHASE, AMPACITY, LOAD, MOPP, PLA, ETC.) OF ALL MECHANICAL EQUIPMENT WITH SHOP DRAWING SUBMITTALS. NOTIFY ENGINEER OF ANY CONFLICTS BETWEEN EQUIPMENT SUBMITTALS AND ELECTRICAL DRAWINGS.
- H. PROVIDE ALL NECESSARY ITEMS TO MEET THE INSTALLATION REQUIREMENTS AND PROVIDE A FULLY OPERATIONAL SYSTEM.

**FEEDER LEGEND**

- (EPRI) EXISTING UTILITY PRIMARY SERVICE LATERAL TO BE DISCONNECTED AND REMOVED
- (ESEC) EXISTING UTILITY SECONDARY SERVICE LATERAL TO BE DISCONNECTED AND REMOVED
- (F2) EXISTING FEEDER TO BE REMOVED
- (EXIST) EXISTING FEEDER TO REMAIN
- (MB) EXISTING MAIN BONDING JUMPER TO BE REMOVED
- (G200) EXISTING GROUNDING ELECTRODE TO BE REMOVED
- (PB) NEW UTILITY PRIMARY CONNECTION PER UTILITY COMPANY STANDARDS
- (SES) NEW UTILITY SECONDARY SERVICE LATERAL PROVIDE (3) 4" SCHEDULE 40 PVC CONDUITS
- (10) 100A - (4) #3 CU, (1) #8 CU GROUND, 1-1/4" SCHEDULE 40 PVC CONDUIT
- (20) 200A - (4) #3/0 CU, (1) #6 CU GROUND, 2" SCHEDULE 40 PVC CONDUIT
- (MB) #3/0 MAIN BONDING JUMPER
- (G200) #3/0 GROUNDING ELECTRODE CONDUCTOR

**KEYED NOTES**

1. CONTRACTOR SHALL FIELD INVESTIGATE AND VERIFY WITH OWNER AND MAINTENANCE STAFF THAT THIS EXISTING EQUIPMENT IS FUNCTIONING, ABANDONED, AND/OR REQUIRED. IF REQUIRED CONTRACTOR SHALL BACK-FEED EQUIPMENT AS INDICATED IN PANELBOARD SCHEDULE 'EQ' AND NEW ONE-LINE DIAGRAM IN DETAIL 2 ON THIS SHEET.
2. PREVIOUSLY ABANDONED EQUIPMENT, DEMOLISH AND DISPOSE OF PROPERLY.
3. CONTRACTOR SHALL DISCONNECT EXISTING FEEDER CONDUCTORS AT EXISTING ELECTRICAL SERVICE INTERCEPT, AND EXTEND TO NEW ELECTRICAL SERVICE PER NEW ONE-LINE DIAGRAM IN DETAIL 2 ON THIS SHEET.
4. CONTRACTOR SHALL INSTALL TWO SECTIONS OF UNIVERSAL MOUNTING CHANNEL (UNI-STRUT) TO ONE END OF THE ELECTRICAL SERVICE EQUIPMENT AND INSTALL NEW PANELBOARD, REINSTALL OR REPLACE ANY MOTOR CONTROLLERS REQUIRED BY OWNER TO REMAIN OPERATIONAL ON UNI-STRUT. SEE PANELBOARD SCHEDULE 'WL' FOR ADDITIONAL INFORMATION.
5. CONTRACTOR SHALL VERIFY VOLTAGE RATING OF ALL EXISTING ELECTRICAL EQUIPMENT, RECEPTACLE PEDESTALS, AND EXISTING MOBILE HOME UNITS WEST OF RESTROOM BUILDING. PRIOR TO START-UP OF NEW ELECTRICAL SERVICE CONTRACTOR SHALL ENSURE THAT EQUIPMENT WILL ACCEPT THE VOLTAGE CHANGE FROM 240V, 1PH, TO 208V, 1PH. IF ANY CONCERNS ARISE, COORDINATE WITH OWNER AND REPLACE ALL EXISTING METER DISTRIBUTION EQUIPMENT.



**1 EXISTING ONE-LINE DIAGRAM**  
 N.T.S.

**2 NEW ONE-LINE DIAGRAM**  
 N.T.S.

### Short-Circuit and Voltage Drop Calculations

Distances are for calculation purposes only and shall not be used for contractor takeoffs nor bidding - Contractor shall notify Engineer of any field condition that results in a change of 10% or greater circuit distance

The following calculations are based on the "Point-by-Point" method where:

ISC<sub>(1)</sub> = ISC<sub>(1)</sub> x M<sub>(1)</sub>      M = 1/(1+f)

ISC<sub>(1)</sub> = short circuit current at fault point 1

ISC<sub>(2)</sub> = short circuit current at fault point 2

Feeder:  $f_{(30)} = 1.732 \times L \times I_{sc}$       C x E

Feeder:  $f_{(10)} = 2 \times L \times I_{sc}$       C x E

XFMR:  $f_{(30)} = \frac{I^2 \times L \times V_p \times 1.73 \times \%Z}{100,000 \times KVA}$

XFMR:  $f_{(10)} = \frac{I^2 \times L \times V_p \times \%Z}{100,000 \times KVA}$

IS<sub>(30)}</sub> =  $\frac{V_p \times M \times I_{P(30)}}{V_s}$

VOLTAGE DROP (30):  
 %VD =  $(R \times \cos(\arccos(pf)) + X \times \sin(\arccos(pf))) \times L \times I \times 1.73 / E$

VOLTAGE DROP (10):  
 %VD =  $(R \times \cos(\arccos(pf)) + X \times \sin(\arccos(pf))) \times 2 \times L \times I \times 1 / E$

%VD CUM= Cumulative Voltage Drop from Fault Point 1 to Fault Point #  
 R= resistance in ohms per LF  
 X= reactances in ohms per LF

Fault Point (#)	Bus/Feeder Description	Source (Fault Point)	Phase	Source Isc (amps)	Conduit Type/TX	Material	Feeder Quantity of Parallel Sets and Bus/Phase & Neutral Size	Conductor 'C' Value	Busway 'C' Value	L-L Voltage (E)	Circuit Length (L)	Load Power Factor (pf)	Circuit Load (Amperage)	Conductor			Transformer				f	M	Fault Current (amps)	Voltage Drop (%VD)	Cumulative Voltage Drop (%VD)	Fault Point (#)		
														Resistance (R)	Reactance (X)	Arccos (pf) (Radians)	Type	Degree Rise	kVA	New Xmr Z							Existing Xmr Z	Secondary Voltage
1	Utility Service Point			53,011			The connected full load motor amps (includes compressors) on the system																			1		
2	PANEL 'WL' (WATER EQUIP.)	1	3	56611	M	CU	1 Set(s) of 3 AWG	4774	--	208	10	0.9	30	0.000250	0.000059	0.451027							0.987	0.50	28484	-0.06%	-0.06%	2
3	PANEL 'R' (POOL EQUIP.)	1	1	56611	NM	CU	1 Set(s) of 3 AWG	4811	--	208	80	0.9	50	0.000250	0.000047	0.451027							6.789	0.13	7288	-0.71%	-0.71%	3
4	PANEL 'M' (MOTEL)	1	1	56611	NM	CU	1 Set(s) of 1 AWG	7483	--	208	250	0.9	80	0.000150	0.000046	0.451027							18.162	0.05	2954	-2.98%	-2.98%	4
5	PANEL 'RN' (RV NORTH)	1	3	56611	NM	CU	1 Set(s) of 3/0 AWG	13923	--	208	100	0.9	132	0.000077	0.000042	0.451027							3.386	0.23	12908	-0.96%	-0.96%	5
6	PANEL 'RC' (RV CENTER)	1	3	56611	NM	CU	1 Set(s) of 3/0 AWG	13923	--	208	70	0.9	160	0.000077	0.000042	0.451027							2.370	0.30	16798	-0.82%	-0.82%	6
7	PANEL 'RE' (RV EAST)	1	3	56611	NM	CU	1 Set(s) of 3/0 AWG	13923	--	208	225	0.9	160	0.000077	0.000042	0.451027							7.618	0.12	6569	-2.63%	-2.63%	7
8	EXISTING RV WEST	1	1	56611	NM	CU	1 Set(s) of 3/0 AWG	13923	--	208	135	0.9	160	0.000077	0.000042	0.451027							5.278	0.16	9017	-1.82%	-1.82%	8

NM - Non Magnetic Conduit, M - Magnetic Conduit, FB - Feeder Busway, PB - Plug-in Busway, TX - Transformer