

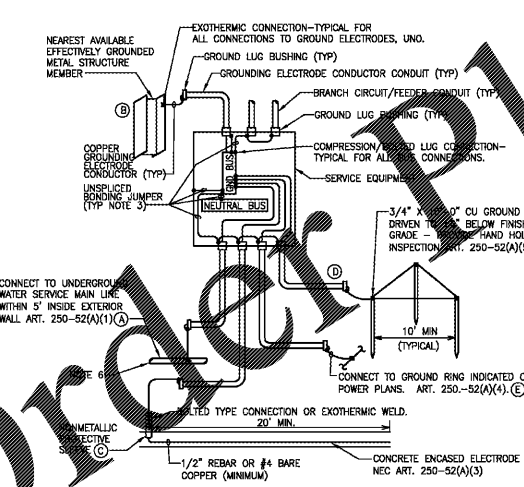
ELECTRICAL SPECIFICATIONS

- DRAWINGS ARE DIMENSIONAL AND INTENDED TO SHOW APPROXIMATE LOCATIONS. ELECTRICAL WORK SHALL NOT INTERFERE WITH CLEARANCES REQUIRED FOR GENERAL AND MECHANICAL CONSTRUCTION. ANY CORRECTIONS WILL BE MADE BY THE ELECTRICAL CONTRACTOR AT NO COST TO THE OWNER.
- ALL WORK SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH THE NEC AND THE NATIONAL ELECTRICAL CODE, LATEST EDITIONS, AND ALL APPLICABLE STATE AND LOCAL CODES. ALL WORK SHALL BE ACCOMPLISHED IN A NEAT AND PROFESSIONAL MANNER.
- ALL MATERIALS SHALL BE NEW AND SHALL BEAR THE U/I LABEL.
- CONTRACTOR SHALL CONFIRM BRANCH CIRCUIT SIZING, LOCATIONS AND CONNECTION REQUIREMENTS FOR ALL MECHANICAL EQUIPMENT PRIOR TO INSTALLATION. REFERENCE MECHANICAL DRAWINGS FOR EQUIPMENT LOCATIONS AND VERIFICATION OF CIRCUIT SIZE. ANY ADJUSTMENTS REQUIRED SHALL BE MADE BY THE ELECTRICAL CONTRACTOR. SUBSTANTIAL CHANGES TO THESE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER.
- ALL TERMINALS SHALL BE RATED FOR 75 DEGREES CELSIUS COPPER WIRE.
- RECEPTACLES SHALL BE OF THE GROUNDING TYPE WITH GROUND CONNECTION MADE THROUGH AN EXTRA POLE WHICH SHALL BE PERMANENTLY CONNECTED TO THE RACEWAY AND GROUNDING SYSTEMS. COLOR OF DEVICES AND MATERIAL AND COLOR OF ALL COVERPLATES FOR ALL WIRING DEVICES TO BE DETERMINED BY THE ARCHITECT.
- LIGHTING FIXTURES SHALL BE FURNISHED COMPLETE IN ALL RESPECTS PER FIXTURE SCHEDULE. VERIFY CEILING FINISHES AND SUSPENSION SYSTEMS FOR SELECTION OF PROPER TRIM AND SUPPORT ARRANGEMENTS. INSTALL ALL LIGHT FIXTURES WITH LAMPS AS REQUIRED.
- RECESSED FIXTURES MOUNTED IN GRID CEILING SHALL BE SECURELY FASTENED TO THE GRID BY A MECHANICAL MEANS THAT COMPLIES WITH REQUIREMENTS FOR SEISMIC EVENTS PER ALL CODES. THE GRID SHALL BE ABLE TO SUPPORT THE WEIGHT OF THE FIXTURE, AND SHALL BE SECURED TO TRUE STRUCTURE AS REQUIRED. ALL SURFACE MOUNTED EMERGENCY AND EXIT FIXTURES SHALL BE SECURELY FASTENED TO THE BUILDING STRUCTURE BY A MECHANICAL MEANS THAT COMPLIES WITH THE SAME STIPULATIONS AS ABOVE.
- ALL WIRING SHALL BE CONCEALED WHERE POSSIBLE AND INSTALLED IN SUITABLE RACEWAYS. EMT SHALL BE USED (3/4" MIN) FOR LIGHTING AND POWER BRANCH CIRCUITRY. EMT SHALL BE USED FOR EQUIPMENT FEEDERS. SCHEDULE 40 PVC SHALL BE USED UNDERGROUND.
- OPENINGS AROUND ELECTRICAL PENETRATIONS THROUGH FIRE RATED WALLS, PARTITIONS, FLOORS OR CEILINGS SHALL BE SEALED USING APPROVED MATERIALS AND METHODS TO MAINTAIN THE ORIGINAL FIRE-RESISTANCE RATING.
- RECEPTACLES INSTALLED BACK TO BACK IN FIRE RATED WALLS SHALL BE A MINIMUM OF 24" APART AND SHALL NOT OCCUPY THE SAME STUD CAVITY.
- DISCONNECT SWITCHES SHALL BE FURNISHED AS SHOWN ON THE DRAWINGS WITH VOLTAGE RATING, AMPERAGE RATING AND NUMBER OF POLES AS INDICATED. PROVIDE NEMA 3R TYPE WHERE EXPOSED TO WEATHER. PROVIDE HEAVY DUTY TYPE SWITCHES.
- FUSES FOR FUSIBLE SWITCHES SHALL BE OF THE DUAL ELEMENT, REACTION TYPE.
- DISCONNECT SWITCHES SHALL HAVE EXTERNAL SWITCH HANDLE. SWITCH AND DOOR SHALL BE INTERLOCKED SUCH THAT THE DOOR CAN NOT BE OPENED UNLESS THE SWITCH IS IN THE OPENED POSITION.
- ALL WIRE SHALL BE SINGLE CONDUCTOR STRANDED, COPPER SIZED AS INDICATED ON THE DRAWINGS. MINIMUM SIZE SHALL BE #12 AWG.
- SOLID WIRE MAY BE USED FOR #12 AND #10 AWG WIRE USED ON LIGHTING FIXTURES, RECEPTACLES AND SWITCHES ONLY.
- INSULATION OF WIRE SHALL BE 75 DEGREES CELSIUS (THHN, THWN), 600 VOLT.
- UNLESS INDICATED ON THE DRAWINGS, ALL WIRING SHALL BE #12 AWG. CONTRACTOR SHALL CONFIRM AND ROUTE THE PROPER QUANTITY OF WIRES AND SIZE OF CONDUIT TO FIT THE APPLICATION AND THE CIRCUITRY INDICATED.
- CONTRACTOR SHALL PROVIDE A PROPERLY SIZED, GREEN COLORED INSULATED GROUNDING CONDUCTOR IN ALL CONDUITS. THIS CONDUCTOR IS NOT INDICATED IN THE HASH MARKS ON THE CONDUIT RUNS ON THE PLANS.
- INSTALL A COMPLETE GROUNDING SYSTEM IN ACCORDANCE WITH NEC ARTICLE 250 AND THESE SPECIFICATIONS. GROUNDING SYSTEM SHALL BE ELECTRICALLY CONTINUOUS THROUGHOUT.
- CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE LOCAL POWER AND TELEPHONE UTILITY COMPANIES FOR ALL COST REQUIREMENTS AND METHODS FOR THE NEW SERVICES INDICATED. PROVIDE ALL MATERIALS AND LABOR AS DIRECTED BY THE LOCAL UTILITY SERVICES FOR A COMPLETE AND OPERABLE INSTALLATION.
- PANELBOARDS SHALL BE PROVIDED WITH DISTRIBUTIVE PHASING AND RATINGS AND BREAKER REQUIREMENTS AS PER SCHEDULES. LABEL ALL PANELS AND PROVIDE TYPED CIRCUIT DIRECTORIES.
- THE SHORT CIRCUIT RATING OF ALL SERVICE EQUIPMENT AND PANELBOARDS SHALL BE NO LESS THAN THAT INDICATED ON THE PANEL SCHEDULES UNLESS BEFORE PURCHASING EQUIPMENT, THE ELECTRICAL CONTRACTOR CONTACTS THE LOCAL UTILITY COMPANY PROVIDING SERVICE AND OBTAIN IN WRITING THE MAXIMUM SHORT CIRCUIT CURRENT SUPPLIED TO THE SERVICE EQUIPMENT. ALL EQUIPMENT SHALL BE RATED AND COORDINATED TO NO LESS THAN THAT SUPPLIED.

PANELBOARD: "MPA"		VOLTAGE: 208/120V, 3Ø, 4W		MAINS: MCB		MIN. AIC RATING: 42,000A		PHASE LOAD VA		
LOAD	DESCRIPTION	OKT.	TRIP	LOAD	L1	L2	L3			
5942	VRF-2A	1	70	2	VRF-2B	5280	11122	L2	L3	
5942		3	70	4		5280	11122			
13083	PANEL "LA"	7	200	20	EH-1	1500	15393			
15041		9	200	20		1500	16541			
14481		11	15	12	BS-2-2; 2-3	105		14566		
	SPACE	13	20	14		105		105		
2250	WATER HEATER WH-2	17	30	18	W-2-2 THRU 2-6	1030		1030		
2250		19	15	20	W-2-11 THRU 2-13	749	2999			
37501	PANEL "MPB"	21	400	22		749	38250			
38313		23	30	24	OVEN	2000		40313		
38210		25	30	26		2000	40210			
7667	COOKTOP	27	80	28	SHUNT TRIP FOR ABOVE			7667		
7667		29	30	30	OVEN	2000		9667		
950	EF-5	36	20	38	COOKTOP	7667		8627		
950		37	30	38		7667	8627			
950		39	40	38		7667	8627			
720	MUAF-1	41	15	42	SHUNT TRIP FOR ABOVE			720		
720		43	100	44	SPARE			720		
720		45	48	46				720		
720		47	50	48				720		
● PROVIDE BREAKER LOCK ○ SHUNT TRIP BREAKER										
					TOTAL L1	88843				
					TOTAL L2	83957				
					TOTAL L3	86255				
					TOTAL VA	261085				
					725 AMPS CONNECTED					
					● 208V, 3PH					

PANELBOARD: "MPB"		VOLTAGE: 208/120V, 3Ø, 4W		MAINS: MLD		MIN. AIC RATING: 22,000A		PHASE LOAD VA		
LOAD	DESCRIPTION	OKT.	TRIP	LOAD	L1	L2	L3			
3744	AHU-1	1	40	100	2	PANEL "LB"	12157	15901		
3744		3	11	4		10740		14484		
3744		5	11	4		10679		14423		
7584	AHU-2	7	80	70	8	VRF-1	5280	12864		
7584		9	10	10		5280		12864		
7584		11	12	12		5280		12864		
1832	HP-1	13	25	15	14	BS-1-1; 1-2; 2-1	126	1758		
1832		15	15	16		126		1758		
1832		17	15	18	W-1-1; 2; 3 & W-2-1	1155		2787		
4032	HP-2	19	50	20		1155	5187			
4032		21	15	22	W-1-4; 2-7; 2-8	1134		5168		
4032		23	15	24		1134		5168		
	SPACE	25	15	26	W-1-5; 6; 7 & W-2-9; 10	1071	1071			
	SPACE	27	15	28		1071		1071		
	SPACE	29	30	30	SPACE					
	SPACE	31	30	32	SPACE					
2250	WATER HEATER WH-1	33	30	34	SPACE			2250		
2250		35	30	36	SPACE			2250		
	SPACE	37	30	38	SPACE					
	SPACE	39	40	40	SPACE					
	SPACE	41	42	42	SPACE					
● PROVIDE BREAKER LOCK ○ SHUNT TRIP BREAKER										
					TOTAL L1	1701				
					TOTAL L2	362				
					TOTAL L3	1140				
					TOTAL VA	3160				
					3160 AMPS CONNECTED					
					● 208V, 3PH					

ELECTRICAL LOAD CALCULATIONS				
LOAD DESCRIPTION	REQUIREMENT	PERCENT	CONVA	DEMAND VA
HVAC EQUIPMENT	CONTINUOUS CONNECTED LOAD	100	119282	119282
LIGHTING	ACTUAL LOAD	125	1338	11679
WATER HEATER	CONTINUOUS CONNECTED LOAD	100	9000	8202
OTHER	CONTINUOUS CONNECTED LOAD	100	1000	1000
GENERAL RECEPTACLES	FIRST 10 KVA	100	5000	10000
GENERAL RECEPTACLES	OVER 10 KVA	75	49310	24655
KITCHEN EQUIPMENT	N/A - CONTINUOUS CONNECTED LOAD	65	58802	38221
TOTALS			268055	218864



TYPICAL GROUNDING DETAIL - SERVICE EQUIPMENT
SCALE: NONE

- NOTES:
- THIS DETAIL RELIES TO A COMPLETELY INDICATED ON THE SERVICE GROUNDING SCHEDULE.
 - SEE GROUNDING SCHEDULE CONDUCTOR SCHEDULES FOR PANELBOARDS, SWITCHBOARDS, CONDUCTOR SIZES, RELATED CIRCUIT TYPES AND APPLICABLE GROUNDING ELECTRODE CONNECTIONS ((A)(B)(C)(D)(E)).
 - BONDING JUMPERS INDICATED SHALL BE SIZED PER NEC AND NO LESS THAN GROUND AND GROUNDING ELECTRODE CONDUCTORS INDICATED FOR EQUIPMENT, OR PROVIDE BUS LINK ACCESSORY BY EQUIPMENT MANUFACTURER FOR NEUTRAL/GROUND CONNECTION.
 - PHASE, NEUTRAL, AND ISOLATED GROUND CONDUCTORS FOR LOADS SERVED BY EQUIPMENT INDICATED ARE NOT SHOWN FOR CLARITY.
 - WORK INDICATED ON THIS DETAIL IS IN ADDITION TO GROUNDING WORK INDICATED ON OTHER DRAWINGS.
 - PROVIDE BONDING JUMPER ACROSS METERS AND NON-CONDUCTIVE SECTIONS OF ALL METALLIC PIPING SYSTEMS. CONNECT ALL METALLIC PIPING SYSTEMS TO SERVICE EQUIPMENT ENCLOSURE WITH BONDING JUMPER.
 - GROUNDING ELECTRODE CONDUCTORS SHALL BE COPPER AND CONTINUOUS WITH NO SPICES UNLESS NOTED OTHERWISE. CONNECTIONS TO GROUNDING ELECTRODES SHALL BE EXOTHERMIC TYPE, UNLESS NOTED OTHERWISE.

PANELBOARD: "LA"		VOLTAGE: 208/120V, 3Ø, 4W		MAINS: MLD		MIN. AIC RATING: 42,000A		PHASE LOAD VA		
LOAD	DESCRIPTION	OKT.	TRIP	LOAD	L1	L2	L3			
1080	R-COMP LAB 156, CORR.	1	20	20	2	CONF. ROOM 138	540	1620	L2	L3
720	R-COMPUTER LAB 156	3	20	20	4	R-ARTS & CRAFTS 136	1080			
900	R-COMPUTER LAB 156	5	20	20	6	R-ARTS & CRAFTS 136	360			1260
720	R-COMPUTER LAB 156	7	20	20	8	R-ARTS & CRAFTS 136	360	1080		
900	R-COMPUTER LAB 156	9	20	20	10	R-ARTS & CRAFTS 136	900			1800
1260	R-CLASSROOM 154	11	20	12	R-WELLNESS 144					2340
1080	R-CLASSROOM 154	13	20	14	R-OFFICE					2340
1080	R-CLASSROOM 154	15	20	16	R-WELLNESS, CULINARY					2340
1080	R-CLASSROOM 153	17	20	18	R-CULINARY, CORRIDOR					2340
1080	R-CLASSROOM 153	19	20	20	R-CLASSROOM 154					2160
1440	R-CLASSROOM 153	21	20	22	R-CLASSROOM 154					2160
1260	R-CLASSROOM 152	23	20	24	SPARE					1260
1080	R-CLASSROOM 152	25	20	26	L-CLASSROOM LAB	845	2025			
1080	R-CLASSROOM 152	27	20	28	L-CONF. ROOM, CRAFTS	1508				2588
720	R-MED. INT. STOR. 148	29	20	30	L-CONF. ROOM	590				1310
900	R-OFFICE 156, ELEC.	31	20	32	L-CONF. ROOM	548				1448
1080	CONF. ROOM 139	33	20	34	L-ELEC. MECH. STOR.	727				1807
1080	CONF. ROOM 139	35	20	36	L-CULINARY, WELLNESS	1449				2529
540	CONF. ROOM PROJECTORS	37	20	38	L-CORR., COMP. LAB	1380	1900			
540	CONF. ROOM SCREENS	39	20	40	L-CLASSROOMS	846				1386
900	CONF. ROOM 139, CORR.	41	20	42	L-EXTERIOR	462				1362
1080	R-CLASSROOM 153	43	20	44	REFRIGERATOR	1200	2280			
720	R-CLASSROOM 153	45	20	46	MICROWAVE	1200				1920
1080	R-CLASSROOM 152	47	20	48	DISHWASHER	1200				2280
720	R-CLASSROOM 152	49	20	50	DISPOSAL	1200	1920			
	SPACE	51	20	52	R-CULINARY	180				180
	SPACE	53	20	54	R-CULINARY	360				360
	SPACE	55	20	56	HOOD CONTROLS					
	SPACE	57	20	58	HOOD LIGHTS					
	SPACE	59	20	60	SHUNT TRIP FOR ABOVE					
	SPACE	61	20	62	SPACE					
	SPACE	63	20	64	SPACE					
	SPACE	65	20	66	SPACE					
	SPACE	67	20	68	SPACE					
	SPACE	69	20	70	SPACE					
	SPACE	71	20	72	SPACE					
	SPACE	73	20	74	SPACE					
	SPACE	75	20	76	SPACE					
	SPACE	77	20	78	SPACE					
	SPACE	79	20	80	SPACE					
	SPACE	81	20	82	SPACE					
	SPACE	83	20	84	SPACE					
● PROVIDE BREAKER LOCK ○ SHUNT TRIP BREAKER										
					TOTAL L1	1701				
					TOTAL L2	362				
					TOTAL L3	1140				
					TOTAL VA	3160				
					3160 AMPS CONNECTED					
					● 208V, 3PH					

PANELBOARD: "LB"		VOLTAGE: 208/120V, 3Ø, 4W		MAINS: MLD		MIN. AIC RATING: 22,000A		PHASE LOAD VA		
LOAD	DESCRIPTION	OKT.	TRIP	LOAD	L1	L2	L3			
180	R-BREAK ROOM	1	20	20	R-ADMIN, WORK RM.	1260	1440			
180	R-BREAK ROOM	3	20	20	R-WORK ROOM	1080				1260
180	R-BREAK ROOM	5	2							