

SPECIFICATIONS

- GENERAL
- FOR ITEMS NOT COVERED BY THIS SPECIFICATION, REFER TO LATEST VERSION OF MASTERSPEC FOR REQUIREMENTS.
 - COORDINATION OF WORK: THE ELECTRICAL CONTRACTOR SHALL PLAN ALL WORK SUCH THAT IT PROCEEDS WITH A MINIMUM OF INTERFERENCE WITH OTHER TRADES. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE THE INSTALLATION OF WORK WITH LIGHTING PLANS, REFLECTED CEILING PLANS, STRUCTURAL, AND ALL OTHER TRADES. THE INSTALLATION OF ALL EQUIPMENT, DEVICES AND MATERIALS REQUIRING ACCESS SHALL BE MADE IN SUCH A MANNER AS TO MAKE THE EQUIPMENT, DEVICES AND MATERIALS READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIRS.
 - SUBSTITUTIONS FOR MATERIAL SPECIFIED: MATERIAL AND ITEMS OF EQUIPMENT FURNISHED MUST MEET THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AS TO QUALITY, PERFORMANCE, SUITABILITY, AND APPEARANCE. THIS IS AN "OR EQUAL" SPECIFICATION. ALTERNATE MATERIALS AND EQUIPMENT MAY BE SUPPLIED SIMILAR OR EQUAL TO THE PRODUCT OF THE MANUFACTURER SPECIFIED, GIVEN PRIOR APPROVAL OF THE DESIGN ENGINEER, AND SHALL BE SUPPLIED AT NO ADDITIONAL COST.
 - ALL MATERIALS SHALL BE NEW, UNUSED, AND THE BEST OF THEIR RESPECTIVE KINDS AND FREE OF DEFECTS.
 - DRAWINGS ARE DIAGRAMMATIC ONLY, INTENDING TO SHOW GENERAL ROUTING AND LOCATIONS OF THE WORK AND ARE NOT INTENDED TO BE RIGID IN SPECIFIC DETAIL.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR EXAMINING THE SITE IN RELATION TO THEIR WORK PRIOR TO INSTALLATION. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR LACK OF COORDINATION DURING THE COURSE OF THIS CONTRACT.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL MEASUREMENTS AT THE SITE.
 - ALL WORK WITHIN THE CONTRACT AREA FURNISHED AND INSTALLED UNDER THE CONTRACT SHALL BE CLEANED TO THE SATISFACTION OF THE OWNER PRIOR TO TURNING OVER TO THE OWNER.
 - CONNECT NEW WORK TO EXISTING IN A NEAT AND WORKMAN LIKE MANNER.
 - PROVIDE ALL NECESSARY FLASHING AND COUNTER FLASHING TO MAINTAIN THE INTEGRITY OF THE BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF PIPES, DUCTS, CONDUIT, AND EQUIPMENT.

ELECTRICAL

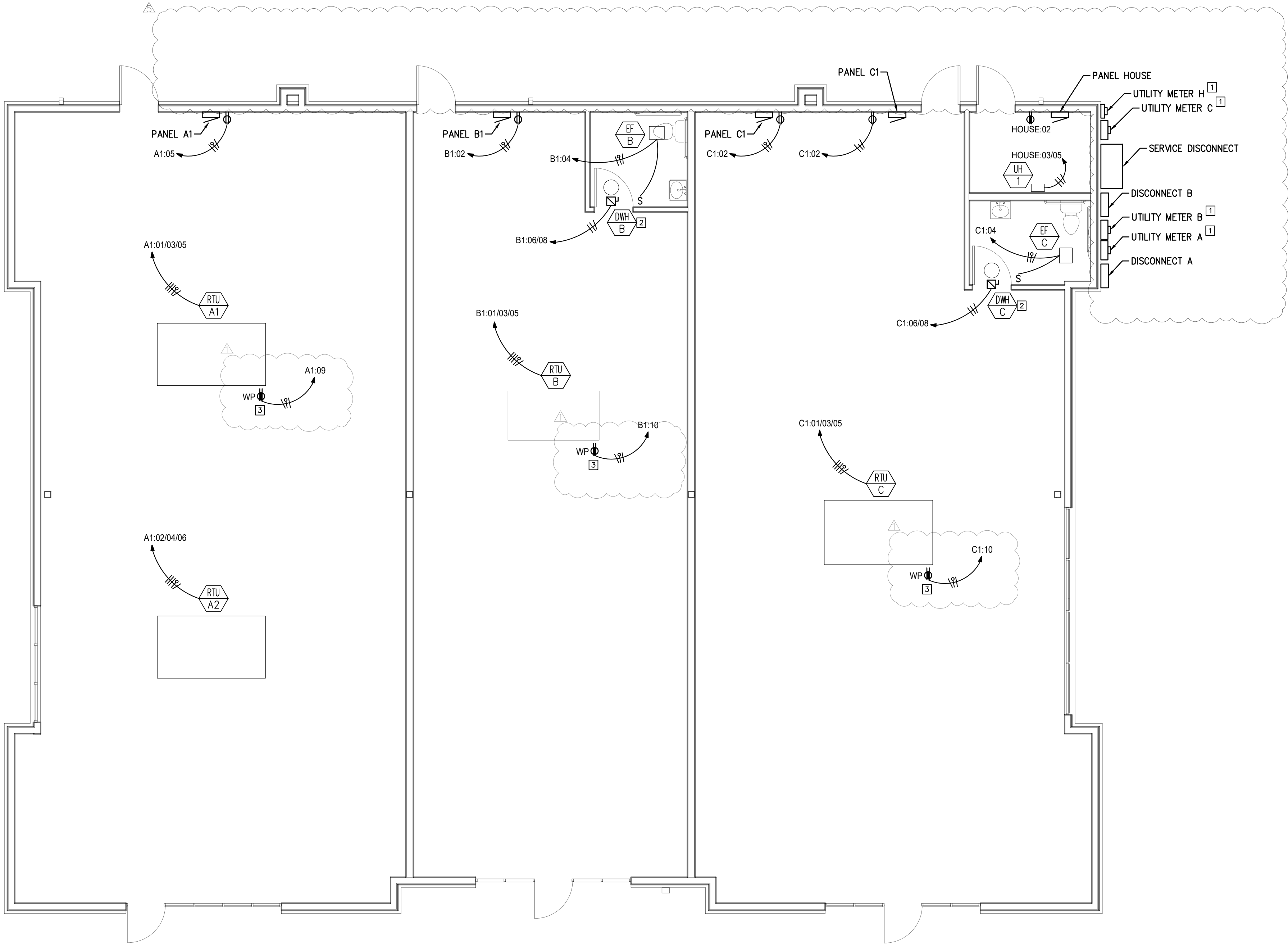
- GENERAL:
 - CODES AND PERMITS: ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL AND STATE CODES AND UTILITY COMPANY REGULATIONS. ALL FEES AND PERMITS SHALL BE PAID FOR BY THE CONTRACTOR.
 - WORKMANSHIP: ALL MATERIALS SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND IN ACCORDANCE WITH ACCEPTED GOOD PRACTICE OF THE INDUSTRY.
 - PROVIDE ACCESS PANELS IN HARD CEILINGS BELOW EQUIPMENT THAT REQUIRES ACCESS.
 - FIELD VERIFY AVAILABLE SPACE ABOVE CEILING BEFORE FABRICATION AND INSTALLATION OF DUCTWORK.
 - REFER TO ARCHITECTURAL PLANS AND INTERIOR ELEVATIONS FOR FINAL RECEPTACLE AND DEVICE PLACEMENT. COORDINATE ALL RECEPTACLE MOUNTING LOCATIONS WITH FIXTURES, APPLIANCES, FURNITURE, CABINETRY, AND OTHER EQUIPMENT PRIOR TO ROUGH-IN.
 - REFER TO MECHANICAL EQUIPMENT SCHEDULE FOR CIRCUIT, DISCONNECT, AND CONDUCTORS FOR MECHANICAL EQUIPMENT.
 - ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR FIELD COORDINATING THE LOCATION OF ELECTRICAL EQUIPMENT JUNCTION BOXES, DISCONNECTS, ETC. EC SHALL BE RESPONSIBLE FOR COORDINATION AND THE ROUTING OF FEEDERS, AND BRANCH CIRCUITS. COORDINATE POWER CONNECTIONS FOR OWNER-PROVIDED EQUIPMENT AND APPLIANCES, AND ALL OTHER EQUIPMENT PROVIDED BY OTHER DIVISIONS WITH SUBMITTAL DATA CUT SHEETS, WIRING DIAGRAMS, AND MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.
 - FIELD COORDINATE FINAL LOCATIONS OF EQUIPMENT AND POWER CONNECTIONS WITH GENERAL CONTRACTOR AND OTHER DIVISIONS/CONTRACTORS PRIOR TO ROUGH-IN.
 - PROVIDE READILY ACCESSIBLE GROUND-FAULT CIRCUIT-INTERRUPTER (GFCI) PROTECTION FOR RECEPTACLES FOR APPLIANCES LISTED AND IN LOCATIONS REQUIRED IN NEC 210.8.
 - ELECTRICAL CONTRACTOR SHALL SIZE BRANCH CIRCUIT WIRING TO ACCOMMODATE FOR VOLTAGE DROP.
- LIGHTING:
 - CIRCUIT ALL EMERGENCY LIGHTING AND EXIT SIGNS TO THE NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF LOCAL SWITCH LEG.
 - LIGHT FIXTURES THAT APPEAR TO BE CENTERED IN A SPACE OR CEILING PANEL SHALL BE CENTERED UNLESS OTHERWISE NOTED.
 - CONTRACTOR IS RESPONSIBLE FOR PROVIDING MOUNTING HARDWARE AND TRIMS REQUIRED FOR INSTALLING ALL LIGHT FIXTURES.
 - VERIFY ALL CEILING FINISHES, CEILING TYPES, AND CEILING THICKNESS PRIOR TO FINAL FIXTURE PURCHASE AND PROCUREMENT.
 - ALL CONDUIT SHALL BE CONCEALED IN WALLS, FLOOR SLAB, OR ABOVE CEILING, WHERE POSSIBLE. ROUTE CONDUIT AS CLOSE TO STRUCTURAL SLAB OR DECK AS POSSIBLE, AND SUPPORT CONDUIT AND JUNCTION BOXES DIRECTLY FROM THE STRUCTURAL SLAB, DECK OR FRAMING PROVIDED FOR THAT PURPOSE.
 - CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF ALL EXPOSED CONDUIT WITH ARCHITECT PRIOR TO ROUGH-IN.
 - REFER TO ARCHITECTURAL AND INTERIORS PACKAGE FOR FIXTURE INSTALLATION REQUIREMENTS, INCLUDING MOUNTING HEIGHTS AND MILLWORK DETAILS.
 - INTERRUPT POWER SUPPLY TO DEMONSTRATE PROPER OPERATION OF ALL EMERGENCY LIGHTING PRIOR TO JOB COMPLETION.
 - ALL DIMMED LIGHTING CIRCUITS ARE TO RECEIVE DEDICATED NEUTRALS. DO NOT SHARE NEUTRALS ON DIMMED LIGHTING CIRCUITS.
 - CONTRACTOR TO PROVIDE OWNER WITH A COMPLETE LISTING OF ALL LAMPS UTILIZED ON THE PROJECT INCLUDING MANUFACTURER (MFR) CATALOG INFORMATION. PROVIDE A SUGGESTED SOURCE, INCLUDING CONTACT NAME AND PHONE NUMBER, FOR RE-ORDERING.
 - ALL LIGHT SWITCHES SHALL BE SPECIFICATION GRADE, QUIET OPERATION RATED 120/277VOLT, 20 AMPS, UNLESS OTHERWISE NOTED.
 - ALL CONCEALED FIXTURES AND ASSOCIATED WIRING MUST BE CONCEALED FROM VIEW.
 - FOR TRACK LIGHTING FIXTURES AND LINEAR LED SYSTEMS, ELECTRICAL CONTRACTOR MUST PROVIDE ALL NECESSARY COMPONENTS FOR A FULLY FUNCTIONING SYSTEM.
 - EXIT SIGNS SHALL HAVE INTEGRAL EMERGENCY BATTERY BACK-UP.
 - PROVIDE LUMINAIRES SHOWN WITH EM INDICATOR WITH EMERGENCY BATTERY BALLASTS/DRIVERS.
 - EMERGENCY LUMINAIRES SHALL SENSE UNSWITCHED POWER TO THE SPACE AND OPERATE AUTOMATICALLY UPON LOSS OF NORMAL POWER.
 - ALL EMERGENCY LUMINAIRES SHALL HAVE ONE (1) 90 MINUTE EMERGENCY BALLAST.
 - ALL EMERGENCY LUMINAIRES SHALL HAVE INTEGRAL TEST SWITCHES AND VISIBLE INDICATING LIGHTS. CONNECT THE EMERGENCY BATTERY BALLAST TO THE UN-SWITCHED LEG OF THE LIGHTING CIRCUIT INDICATED.

LEGEND

SYMBOL	DESCRIPTION
	DEMOLITION
	20 AMP, 120V, NEMA 5-20R, DUPLEX RECEPTACLE
	20 AMP, 120V, NEMA 5-20R, QUAD RECEPTACLE
	20 AMP, 120V, GFCI RECEPTACLE
	50 AMP, 240V, SIMPLEX RECEPTACLE
	20 AMP, 120V, DEDICATED DUPLEX RECEPTACLE
	UTILITY METER
	DISCONNECT SWITCH, NON-FUSED, 250V, U.N.O.
	FUSED DISCONNECT, SEE NOTATION
	JUNCTION BOX, WALL MOUNTED
	JUNCTION BOX, CEILING MOUNTED
	TRANSFORMER
	SURFACE MOUNTED ELECTRICAL PANEL
	RECESSED ELECTRICAL PANEL
	SURFACE-MOUNTED DOWNLIGHT
	WALL-MOUNTED LUMINAIRE
	EXIT SIGN, DIRECTIONAL ARROWS SHOW DIRECTION
	EMERGENCY LIGHT FIXTURE
	CEILING-MOUNTED OCCUPANCY SENSOR
	SINGLE POLE SWITCH
	THREE WAY SWITCH
	SWITCH: OCCUPANCY SENSOR
	SWITCH: COMPATIBLE DIMMER
	2' X 4' LUMINAIRE, DIAGONAL INDICATES EM FUNCTION
	LUMINAIRE TYPE (REFERENCE LUMINAIRE SCHEDULE) WATTAGE, IF SHOWN, REFERENCES ADJUSTABLE OUTPUT LOWER CASE ID, IF SHOWN, REF. WALL SWITCH/CONTROL
	SLD: ELECTRICAL PANEL
	SLD: TRANSFORMER, RATING AS SHOWN
	SLD: METER
	SLD: CURRENT TRANSFORMER
	SLD: SWITCH, RATING AS SHOWN
	SLD: CIRCUIT BREAKER, RATING AS SHOWN
	SLD: SAFETY SWITCH, NON-FUSED, 250V, U.N.O.
	SLD: FUSED DISCONNECT
	EQUIPMENT TAG
	CIRCUIT HOMERUN - PANEL NAME: CIRCUIT NUMBER
	CONDUIT AND WIRE CONCEALED U.N.O.
	CONDUIT AND WIRE BELOW GRADE
	STRAIGHT HASH MARKS: CURRENT-CARRYING CONDUCTORS
	EMPTY DOT: GROUNDED CONDUCTOR (NEUTRAL)
	ANGLED HASH: EQUIPMENT GROUNDING CONDUCTOR
	KEY NOTE DESIGNATOR
	CONTINUED, BUT NOT SHOWN

GENERAL NOTES

- THE FOLLOWING NOTES APPLY TO ELECTRICAL DRAWINGS TO THE EXTENT APPLICABLE.
- NOT ALL CONDUCTORS, CONDUIT, EQUIPMENT, AND ACCESSORIES ARE SHOWN ON PLANS. REFER TO ALL PLANS, SECTION DETAILS, SCHEDULES, AND SPECIFICATIONS FOR COMPLETE SYSTEM REQUIREMENTS.
- CONTRACTOR SHALL PROVIDE ALL REQUIRED OFFSETS, TRANSITIONS, AND FITTINGS TO COMPLETE THE SYSTEMS.
- MANY AREAS OF CONSTRUCTION WILL BE VERY CONGESTED. INSTALLATION OF MATERIALS AND EQUIPMENT SHALL BE COORDINATED WITH ALL OTHER TRADES AND EXISTING CONDITIONS TO ENSURE THAT THERE IS ADEQUATE ROOM FOR ALL OTHER MATERIALS AND EQUIPMENT TO BE INSTALLED UNDER THIS CONTRACT. INSTALLATION OF MATERIALS AND EQUIPMENT WHICH DOES NOT ALLOW FOR INSTALLATION OF REMAINING MATERIALS AND EQUIPMENT WILL BE REMOVED AND RELOCATED AT NO COST TO THE OWNER OR DESIGN TEAM.
- COORDINATE LOCATION OF ALL CONDUIT, EQUIPMENT, LUMINAIRES, SWITCHES, AND ACCESSORIES WITH ALL OTHER TRADES BEFORE FABRICATION OR INSTALLATION.
- CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS BEFORE ORDERING MATERIALS OR PERFORMING WORK. DEVIATIONS FROM CONDITIONS SHOWN ON PLANS SHALL BE REPORTED TO THE A/E AND A RESOLUTION SHALL BE FOUND BEFORE BEGINNING ASSOCIATED WORK. SITE CONDITIONS DIFFERING FROM THOSE SHOWN ON THESE PLANS WILL NOT GENERALLY BE CONSIDERED A BASIS FOR CONTRACT MODIFICATIONS AS THE CONTRACTOR SHALL TAKE INTO ACCOUNT WORST CASE SITE CONDITIONS.
- UNLESS INDICATED OTHERWISE, BRANCH CIRCUITS ARE SINGLE-POLE, 120V, 20A.
- ALL PENETRATIONS THROUGH FIRE/SMOKE RATED CONSTRUCTION SHALL BE SEALED TO MEET THE REQUIREMENTS OF THE FIRE RATING. PROVIDE FIRE AND/OR SMOKE DAMPERS AT PENETRATIONS PER CODE.
- PRODUCTS LISTED ON THE SCHEDULE SHEETS ARE TO BE CONSIDERED BASIS OF DESIGN. OTHER MATERIALS MAY BE ALLOWED AS SUBSTITUTIONS PROVIDED THEY MEET OR EXCEED ALL PERFORMANCE/SPECIFICATION CHARACTERISTICS AND RECEIVE APPROVAL FROM THE DESIGN ENGINEER.
- FINAL PRODUCT SHALL BE A COMPLETE AND FUNCTIONING SYSTEM, AND SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES.
- ROOF MOUNTED EQUIPMENT SHALL BE A MINIMUM 10' FROM EDGE OF ROOF.
- PROVIDE SLEEVES AND/OR OPENINGS TO RUN PIPES AND DUCTS THROUGH FOUNDATIONS, FLOORS, WALLS, AND ROOF.
- MAINTAIN CLEAR ACCESS TO SERVICE EQUIPMENT AND OTHER ACCESSORIES REQUIRING SERVICE. VISUAL INSPECTION OR HAND OPERATION, WHERE INDICATED OR REQUIRED, PROVIDE ACCESS PANELS.
- INSTALL ALL EQUIPMENT IN ACCORDANCE WITH THE RESPECTIVE MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.
- INSTALL EXPOSED PIPING AND CONDUIT AS HIGH AS PRACTICAL IN ROOMS WITHOUT CEILINGS.
- PRIOR TO STARTING WORK, SUBMIT SHOP DRAWINGS FOR ALL ELECTRICAL EQUIPMENT.
- CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND SHALL ARRANGE FOR ALL INSPECTIONS AS REQUIRED.
- PROVIDE LIQUIDTITE OR FLEXIBLE METAL CONDUIT FOR CIRCUITS CONNECTED TO VIBRATING EQUIPMENT.
- LOCATIONS OF ITEMS SHOWN ON DRAWINGS ARE APPROXIMATE. DO NOT SCALE DRAWINGS.
- RUNS OF FLEXIBLE CONDUIT SHALL NOT EXCEED 6 FEET.
- HVAC CIRCUITS SHALL PENETRATE THE ROOF INSIDE THE EQUIPMENT CURB IF POSSIBLE.
- SLEEVE AND SEAL EXTERIOR WALL AND ROOF PENETRATIONS TO A WEATHER TIGHT CONDITION. SLEEVE AND SEAL INTERIOR FLOOR PENETRATIONS TO A WATER TIGHT CONDITION.
- PROVIDE 4" HOUSEKEEPING PAD FOR FLOOR/GRADE MOUNTED EQUIPMENT.



ELECTRICAL FLOOR PLAN
SCALE: 3/16" = 1'-0" (36"x24" SHEET)

ELECTRICAL POWER KEYNOTES

- CONSULT LOCAL UTILITY FOR METER CAN REQUIREMENTS.
- DWH AND DISCONNECT MOUNTED OVERHEAD.
- INSTALL WEATHERPROOF GFCI RECEPTACLE FOR HVAC EQUIPMENT MAINTENANCE PER NEC 210.63.

GENERAL POWER NOTES

- CONTRACTOR SHALL INSPECT SITE THOROUGHLY TO FAMILIARIZE THEMSELVES WITH THE AREA OF WORK. ANY DISCREPANCIES BETWEEN THESE DOCUMENTS AND ACTUAL CONDITIONS SHALL BE REPORTED TO THE GC/ENGINEER FOR RESOLUTION PRIOR TO BID PRICING.
- COORDINATE EQUIPMENT INSTALLATION WITH PLUMBING, MECHANICAL, FIRE PROTECTION, AND STRUCTURAL CONDITIONS. DUCTWORK AND REFRIGERATION LINE LOCATIONS SHALL TAKE PRECEDENCE OVER ELECTRICAL CONDUIT/CABLE TRAYS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A COMPLETE AND WORKING SYSTEM.

NEW BUILDING FOR

SUMMIT ORCHARDS

LEES SUMMIT, MO

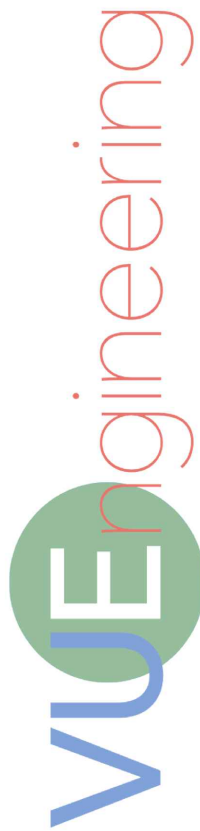


No.	Description	Date
Revision Schedule		

- 7-2-25 REVISION
- 7-22-25 REVISION
- 2-26-26 REVISION
- 3-12-26 REVISION
- 3-17-26 REVISION

Project number	2491
Date	05.08.2025

E101



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NEW BUILDING FOR

SUMMIT ORCHARDS

LEES SUMMIT, MO

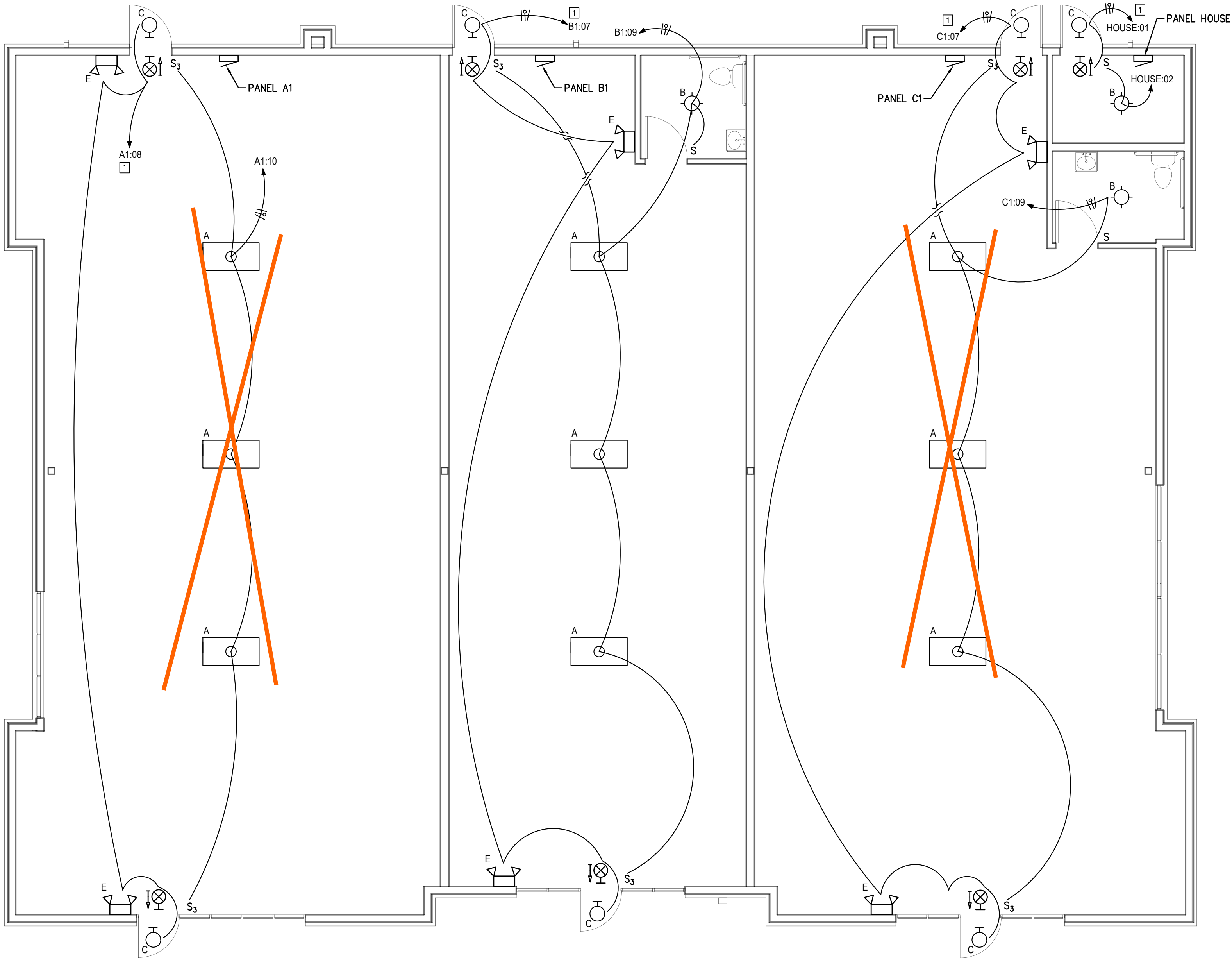


No.	Description	Date
Revision Schedule		

7-2-25 REVISION

Project number 2491
Date 05.08.2025

E201



 LIGHTING PLAN
SCALE: 3/16" = 1'-0" (36"x24" SHEET)

LIGHTING SCHEDULE

ID	DESCRIPTION	MANUFACTURER	MODEL	LUMENS	WATTS	CCT	REQUIRED ACCESSORIES
A	2X4' RECESSED LED - HIGH OUTPUT	RAB	EZPANFA2X4/D10	6,104	50W	4000K	NONE
B	SURFACE-MOUNT CEILING LIGHT	RAB	CRVFAS-11R-16-9CCT-120-W	1,150	16W	4000K	NONE
C	EXTERIOR DOOR LIGHT	INVUE	*ENT-SA1A-740-U-T4FT-BZ-EBP/BPC	1,924	20.1W	4000K	EBP = BATTERY PACK; BPC = PHOTOCELL
E	EMERGENCY LIGHT	ISOLITE	ELP-6V100-WH-MB-2-L66	N/A	100W	N/A	MR16 LAMP
X	RED LED EXIT SIGN	DUAL-LITE	EVEURWE	N/A	2.01W	N/A	NONE

*INCLUDES BUTTON-TYPE PHOTOCELL AND BATTERY PACK. SUBSTITUTIONS REQUIRE INTEGRAL PHOTOCELL AND BATTERY PACK.

LIGHTING KEYNOTES

1. INSTALL AS UNSWITCHED CIRCUIT FOR EXIT AND EMERGENCY LIGHTING. EXTERIOR DOOR EGRESS LIGHTING TO BE CONTROLLED BY PHOTOCELL.

GENERAL LIGHTING NOTES

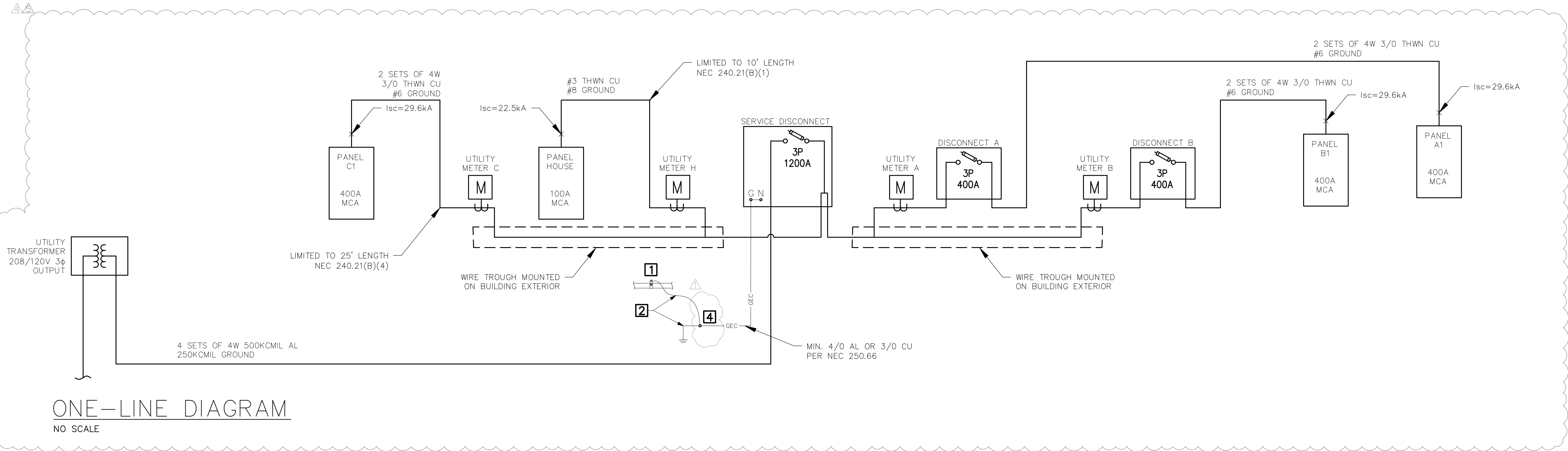
- A. CONTRACTOR SHALL INSPECT SITE THOROUGHLY TO FAMILIARIZE THEMSELVES WITH THE AREA OF WORK. ANY DISCREPANCIES BETWEEN THESE DOCUMENTS AND ACTUAL CONDITIONS SHALL BE REPORTED TO THE GC/ENGINEER FOR RESOLUTION PRIOR TO BID PRICING.
- B. COORDINATE EQUIPMENT INSTALLATION WITH PLUMBING, MECHANICAL, FIRE PROTECTION, AND STRUCTURAL CONDITIONS. DUCTWORK AND REFRIGERATION LINE LOCATIONS SHALL TAKE PRECEDENCE OVER ELECTRICAL CONDUIT/CABLE TRAYS.
- C. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A COMPLETE AND WORKING SYSTEM.

ELECTRICAL KEYNOTES

1. BOND TO METAL WATER PIPING PER NEC 250.104
2. GROUNDED CONDUCTORS SHALL BE #3AWG OR LARGER
3. NOT USED
4. BOND ALL STRUCTURAL STEEL, METAL IN-GROUND SUPPORT STRUCTURES, AND OTHER GROUNDING ELECTRODES PRESENT IN THE BUILDING ACCORDING TO NEC 250.50.

GENERAL ELECTRICAL NOTES

- A. CONTRACTOR SHALL INSPECT SITE THOROUGHLY TO FAMILIARIZE THEMSELVES WITH THE AREA OF WORK. ANY DISCREPANCIES BETWEEN THESE DOCUMENTS AND ACTUAL CONDITIONS SHALL BE REPORTED TO THE ARCHITECT/ENGINEER FOR RESOLUTION PRIOR TO BID PRICING.
- B. COORDINATE ELECTRICAL INSTALLATION WITH PLUMBING, MECHANICAL, FIRE PROTECTION, AND STRUCTURAL CONDITIONS.
- C. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A COMPLETE AND WORKING SYSTEM.



ONE-LINE DIAGRAM

NO SCALE

PANEL: A1									
SUPPLIED FROM: UTILITY			VOLTS/PHASE: 208Y/120V, 3PH, 4W + G			LOCATION: UNIT A			
BUS RATING: 400A MCB			FAULT CURRENT (Isc):			SERVES: GENERAL POWER			
MAIN SIZE/PHASE: 400A-3P			MIN AIC RATING:			ENCL.: NEMA 1			

CKT	DESCRIPTION	CB AMP	P	VOLTSAMPS/PHASE						P	CB AMP	DESCRIPTION	CKT
				A	B	C	A	B	C				
1	RTU-A1	50	3	4,744			4,744			3	50	RTU-A2	2
3	---				4,744			4,744				---	4
5	---					4,744			4,744			---	6
7	RECEPTACLE	20	1	180			142			1	20	EMERGENCY LIGHTING	8
9	ROOFTOP MAINT. RECPT.	20	1		180			150		1	20	AMBIENT LIGHTING	10
11	SPACE	0	1			0			0	1	0	SPACE	12
13	SPACE	0	1	0			0			1	0	SPACE	14
15	SPACE	0	1		0			0		1	0	SPACE	16
17	SPACE	0	1			0			0	1	0	SPACE	18
19	SPACE	0	1	0			0			1	0	SPACE	20
21	SPACE	0	1		0			0		1	0	SPACE	22
23	SPACE	0	1			0			0	1	0	SPACE	24
25	SPACE	0	1	0			0			1	0	SPACE	26
27	SPACE	0	1		0			0		1	0	SPACE	28
29	SPACE	0	1			0			0	1	0	SPACE	30
31	SPACE	0	1	0			0			1	0	SPACE	32
33	SPACE	0	1		0			0		1	0	SPACE	34
35	SPACE	0	1			0			0	1	0	SPACE	36
37	SPACE	0	1	0			0			1	0	SPACE	38
39	SPACE	0	1		0			0		1	0	SPACE	40
41	SPACE	0	1			0			0	1	0	SPACE	42
SUBTOTAL				4,924	4,924	4,744	4,886	4,894	4,744	SUBTOTAL			

TOTAL PHASE A - VA: 9,809	LOAD TYPE	CONN. VA	DF	LOAD TYPE	CONN. VA	DF
AMPS: 27	COOLING	28,461	1.00	REFRIGERATION	0	1.00
TOTAL PHASE B - VA: 9,817	HEATING	0	1.00	SIGN/DISPLAY	0	1.25
AMPS: 27	LIGHTING	292	1.25	KITCHEN	0	1.00
TOTAL PHASE C - VA: 9,487	RECEPTACLES	360	1.00/0.50	EXISTING	0	1.00
AMPS: 26	MOTORS	0	1.00	LARGE MOTOR	0	1.25
TOTAL PNLBRD - VA: 29,113	SUPP HEAT	0	1.00	SHOW WINDOW	0	1.25
CALCULATED AMPS: 81	MISC EQUIP	0	1.00	LTG TRACK	0	1.25
TOTAL DEMAND						
29,186 VA						
81 A						

PANEL: B1									
SUPPLIED FROM: UTILITY			VOLTS/PHASE: 208Y/120V, 3PH, 4W + G			LOCATION: UNIT B			
BUS RATING: 400A MCB			FAULT CURRENT (Isc):			SERVES: GENERAL POWER			
MAIN SIZE/PHASE: 400A-3P			MIN AIC RATING:			ENCL.: NEMA 1			

CKT	DESCRIPTION	CB AMP	P	VOLTSAMPS/PHASE						P	CB AMP	DESCRIPTION	CKT
				A	B	C	A	B	C				
1	RTU-B	40	3	2,906			180			1	20	RECEPTACLE	2
3	---				2,906			18		1	15	EXHAUST FAN EF-B	4
5	---					2,906			1,500	2	20	WATER HEATER DHW-B	6
7	EMERGENCY LIGHTING	20	1	142			1,500			1	20	ROOFTOP MAINT. RECPT.	8
9	AMBIENT LIGHTING	20	1		166			180		1	20	ROOFTOP MAINT. RECPT.	10
11	SPACE	0	1			0			0	1	0	SPACE	12
13	SPACE	0	1	0			0			1	0	SPACE	14
15	SPACE	0	1		0			0		1	0	SPACE	16
17	SPACE	0	1			0			0	1	0	SPACE	18
19	SPACE	0	1	0			0			1	0	SPACE	20
21	SPACE	0	1		0			0		1	0	SPACE	22
23	SPACE	0	1			0			0	1	0	SPACE	24
25	SPACE	0	1	0			0			1	0	SPACE	26
27	SPACE	0	1		0			0		1	0	SPACE	28
29	SPACE	0	1			0			0	1	0	SPACE	30
31	SPACE	0	1	0			0			1	0	SPACE	32
33	SPACE	0	1		0			0		1	0	SPACE	34
35	SPACE	0	1			0			0	1	0	SPACE	36
37	SPACE	0	1	0			0			1	0	SPACE	38
39	SPACE	0	1		0			0		1	0	SPACE	40
41	SPACE	0	1			0			0	1	0	SPACE	42
SUBTOTAL				3,048	3,072	2,906	1,680	198	1,500	SUBTOTAL			

TOTAL PHASE A - VA: 4,728	LOAD TYPE	CONN. VA	DF	LOAD TYPE	CONN. VA	DF
AMPS: 13	COOLING	8,718	1.00	REFRIGERATION	0	1.00
TOTAL PHASE B - VA: 3,270	HEATING	0	1.00	SIGN/DISPLAY	0	1.25
AMPS: 9	LIGHTING	308	1.25	KITCHEN	0	1.00
TOTAL PHASE C - VA: 4,406	RECEPTACLES	360	1.00/0.50	EXISTING	0	1.00
AMPS: 12	MOTORS	0	1.00	LARGE MOTOR	0	1.25
TOTAL PNLBRD - VA: 12,404	SUPP HEAT	0	1.00	SHOW WINDOW	0	1.25
CALCULATED AMPS: 34	MISC EQUIP	3,018	1.00	LTG TRACK	0	1.25
TOTAL DEMAND						
12,481 VA						
35 A						

PANEL: C1									
SUPPLIED FROM: UTILITY			VOLTS/PHASE: 208Y/120V, 3PH, 4W + G			LOCATION: UNIT A			
BUS RATING: 400A MCB			FAULT CURRENT (Isc):			SERVES: GENERAL POWER			
MAIN SIZE/PHASE: 400A-3P			MIN AIC RATING:			ENCL.: NEMA 1			

CKT	DESCRIPTION	CB AMP	P	VOLTSAMPS/PHASE						P	CB AMP	DESCRIPTION	CKT
				A	B	C	A	B	C				
1	RTU-C	80	3	6,521			180			1	20	RECEPTACLE	2
3	---				6,521			18		1	15	EXHAUST FAN EF-C	4
5	---					6,521			1,500	2	20	WATER HEATER DHW-C	6
7	EMERGENCY LIGHTING	20	1	142			1,500			1	20	ROOFTOP MAINT. RECPT.	8
9	AMBIENT LIGHTING	20	1		166			180		1	20	ROOFTOP MAINT. RECPT.	10
11	SPACE	0	1			0			0	1	0	SPACE	12
13	SPACE	0	1	0			0			1	0	SPACE	14
15	SPACE	0	1		0			0		1	0	SPACE	16
17	SPACE	0	1			0			0	1	0	SPACE	18
19	SPACE	0	1	0			0			1	0	SPACE	20
21	SPACE	0	1		0			0		1	0	SPACE	22
23	SPACE	0	1			0			0	1	0	SPACE	24
25	SPACE	0	1	0			0			1	0	SPACE	26
27	SPACE	0	1		0			0		1	0	SPACE	28
29	SPACE	0	1			0			0	1	0	SPACE	30
31	SPACE	0	1	0			0			1	0	SPACE	32
33	SPACE	0	1		0			0		1	0	SPACE	34
35	SPACE	0	1			0			0	1	0	SPACE	36
37	SPACE	0	1	0			0			1	0	SPACE	38
39	SPACE	0	1		0			0		1	0	SPACE	40
41	SPACE	0	1			0			0	1	0	SPACE	42
SUBTOTAL				6,663	6,687	6,521	1,680	198	1,500	SUBTOTAL			

TOTAL PHASE A - VA: 8,343	LOAD TYPE	CONN. VA	DF	LOAD TYPE	CONN. VA	DF
AMPS: 23	COOLING	19,562	1.00	REFRIGERATION	0	1.00
TOTAL PHASE B - VA: 6,884	HEATING	0	1.00	SIGN/DISPLAY	0	1.25
AMPS: 19	LIGHTING	308	1.25	KITCHEN	0	1.00
TOTAL PHASE C - VA: 8,021	RECEPTACLES	360	1.00/0.50	EXISTING	0	1.00
AMPS: 22	MOTORS	0	1.00	LARGE MOTOR	0	1.25
TOTAL PNLBRD - VA: 23,248	SUPP HEAT	0	1.00	SHOW WINDOW	0	1.25
CALCULATED AMPS: 65	MISC EQUIP	3,018	1.00	LTG TRACK	0	1.25
TOTAL DEMAND						
23,325 VA						
65 A						

SHORT-CIRCUIT FAULT 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:

$ISC(2) = ISC(1) \times M(1)$ $M = 1/(1+f)$ $Feeder: f(3\Phi) = \frac{1.732 \times L \times I_{sc}}{C \times E}$ $XFMR: f(3\Phi) = \frac{I_p(sca) \times V_p \times 1.732 \times \%Z}{100,000 \times kVA}$ $I_s(sca) = \frac{V_p \times M \times I_p(sca)}{V_s}$

Where:
 $ISC(1)$ - short circuit current at fault point 1
 $ISC(2)$ - short circuit current at fault point 2

L - Length of Conductor
 C - "C" Factor from Bussman table where "C" = 1 / impedance per lineal foot

I_p - Primary short circuit current
 V_p - Primary voltage
 I_s - Secondary short circuit current
 V_s - Secondary voltage

Feeder Types:
NM - Non Magnetic Conduit, M - Magnetic Conduit, FB - Feeder Busway, PB - Plug-in Busway, HI - High Impedance Busway, TX - Transformer

Fault Point	Bus/Feeder	Source (Fault Pnt)	Phase	Source Isc (Amps)	FEEDER Circuit Type	Material CU or AL	Wires # / Φ	Bus/Wire Size	Conductor C Value	Busway C Value	L-L Volts E	Circuit Lenth L (ft)	Load Power Factor (PF)	Circuit Load A	CONDUCTOR Resistance R	Reactance X	Conductor Impedence Z / Φ	TRANSFORMER	kVA	Z	Sec. Voltage V sec	f	M	Isc	Isc sym RMS	Fault Point (F#)	
(F#)	Description	∞	3		TX						208	-	-	416	-	-	-	Type			208Y/120V, 3PH						
0	Utility Service Point																		150	1.07				93.46	38,912	38,912	0
1	Main Service Disconnect	0	3	38,912	NM	AL	4	Set(s) of #500	21391	N/A	208	100	0.9	188	0.000043	0.000039	0.45103	-	N/A	N/A	N/A	0.379	0.73	28,224	28,224	1	
2	Disconnect H	0	1	38,912	M	CU	1	Set(s) of #3/0	12844	N/A	208	10	0.9	14	0.000079	0.000052	0.45103	-	N/A	N/A	N/A	0.146	0.87	33,965	33,965	2	
3	Disconnect A	0	3	38,912	M	CU	2	Set(s) of #3/0	12844	N/A	208	25	0.9	64	0.000079	0.000052	0.45103	-	N/A	N/A	N/A	0.315	0.76	29,583	29,583	3	
4	To Panel A1	0	3	38,912	M	CU	1	Set(s) of #3/0	12844	N/A	208	50	0.9	81	0.000079	0.000052	0.45103	-	N/A	N/A	N/A	1.261	0.44	17,207	17,207	4	
5	To Panel B1	0	3	38,912	M	CU	2	Set(s) of #3/0	12844	N/A	208	25	0.9	34	0.000079	0.000052	0.45103	-	N/A	N/A	N/A	0.315	0.76	29,583	29,583	5	
6	To Panel C1	0	3	38,912	M	CU	2	Set(s) of #3/0	12844	N/A	208	25	0.9	64	0.000079	0.000052	0.45103	-	N/A	N/A	N/A	0.315	0.76	29,583	29,583	6	
7	To Panel H	0	1	38,912	M	CU	1	Set(s) of #3/0	12844	N/A	208	50	0.9	14	0.000079	0.000052	0.45103	-	N/A	N/A	N/A	0.728	0.58	22,515	22,515	7	