

ELECTRICAL GENERAL NOTES:

GENERAL
THESE GENERAL NOTES PRESENT AND/OR SUMMARIZE KEY PRODUCT INFORMATION FOR THE PLAN READER'S CONVENIENCE. SEE PLANS AND SPECIFICATIONS FOR FURTHER REQUIREMENTS.

WORK COVERED BY THIS DOCUMENT SHALL INCLUDE ALL LABOR, MATERIAL, PRODUCTS, AND SERVICES FOR, AND INCIDENTAL TO, INSTALLATION OF COMPLETE AND OPERATING ELECTRICAL SYSTEMS DRAWN OR SPECIFIED.

ALL WORK SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES INCLUDING, BUT NOT LIMITED TO, THE NATIONAL ELECTRICAL CODE (NFPA 70-2020). ALL MATERIALS SHALL BE NEW AND UL LISTED/LABELED AS APPROPRIATE. FINAL LOCATIONS FOR ROUGH-INS SHALL BE VERIFIED WITH ACTUAL EQUIPMENT BEING CONNECTED. SUPPORT AND ATTACH ELECTRICAL EQUIPMENT IN ACCORDANCE WITH SEISMIC CONDITIONS AS DETERMINED BY THE STRUCTURAL ENGINEER/BUILDING DESIGNER AND THE INTERNATIONAL BUILDING CODE. AFTER COMPLETING INSTALLATION, REMOVE BURRS, DIRT, AND CONSTRUCTION DEBRIS FROM ALL ELECTRICAL WORK.

COORDINATE OUTLET LOCATIONS WITH ARCHITECTURAL PLANS, ELEVATIONS AND DETAILS.

COORDINATE SITE LIGHTING AND SITE UTILITIES WITH LANDSCAPING/CIVIL PLANS AND DETAILS.

CONTRACTOR TO COORDINATE SERVICE AND METERING INSTALLATION REQUIREMENTS, AIC RATING, AND PANEL SCOR WITH UTILITY COMPANY PRIOR TO BID AND INSTALLATION.

CONSULT MANUFACTURERS' SHOP DRAWINGS FOR REQUIREMENTS AND EXACT LOCATION OF ELECTRICAL CONNECTIONS FOR EQUIPMENT FURNISHED BY OTHERS. BRANCH-CIRCUIT WIRING SHALL MEET ALL REQUIREMENTS OF THE EQUIPMENT MANUFACTURER.

SIZE DISCONNECT SWITCHES AND OVERCURRENT PROTECTION IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURERS' RECOMMENDATIONS AND THE N.E.C.

SIZE FUSES IN ACCORDANCE WITH THE EQUIPMENT MANUFACTURERS' RECOMMENDATIONS AND THE N.E.C.

INSTALL JUNCTION BOXES, CONDUIT BODIES, AND HANDHOLE ENCLOSURES SUCH THAT WIRING WITHIN IS ACCESSIBLE IN ACCORDANCE WITH NEC 314.29.

MOUNTING HEIGHT DIMENSIONS FOR WIRING DEVICES ARE FROM THE FINISHED FLOOR UP TO THE CENTER OF THE OUTLET BOX.

CENTER OUTLETS HORIZONTALLY IN ARCHITECTURAL FEATURES.

DO NOT SCALE DRAWINGS. DEVICE LOCATIONS ARE APPROXIMATE UNLESS DIMENSIONED. ACTUAL DEVICE LOCATIONS SHALL BE FIELD COORDINATED WITH ALL OTHER TRADES AND APPLICABLE CODES.

ORIENT PHOTOCELL(S) TO NORTHERN EXPOSURE AND SHIELD FROM EXTRANEOUS LIGHT.

DO NOT USE COMMON NEUTRALS FOR MULTI-WIRE CIRCUITS. INSTALL A NEUTRAL FOR EACH PHASE.

ALL CONDUCTORS SHALL BE NO SMALLER THAN #12.

ALL RACEWAYS SHALL BE 3/4" DIA. MIN. UNLESS OTHERWISE NOTED. CONDUCTORS

INSULATION SHALL COMPLY WITH NEMA WC 5. CONDUCTORS #8 AWG AND LARGER SHALL BE CONCENTRIC STRANDED. CONDUCTORS #10 AND SMALLER SHALL BE SOLID.

TYPE AND INSULATION (SERVICE): COPPER, TYPE THWN
TYPE AND INSULATION (FEEDER): COPPER, TYPE THHN/THWN
TYPE AND INSULATION (BRANCH): COPPER, TYPE THHN/THWN
COPPER, TYPE MC

COLOR CODING (208/120 V, 3Ø): A-BLACK, B-RED, C-BLUE, N-WHITE, G-GREEN

RACEWAYS
CONDUIT BODIES AND FITTINGS FOR RIGID METAL CONDUIT SHALL BE CAST THREADED TYPE. CONDUIT FITTINGS FOR ELECTRICAL METALLIC TUBING SHALL BE COMPRESSION TYPE. INSTALL 200 lb NYLON PULL CORD IN ALL EMPTY RACEWAYS FOR FUTURE USE. APPLY FIRESTOPPING TO ELECTRICAL PENETRATIONS OF FIRE-RATED FLOOR AND WALL ASSEMBLIES TO RESTORE ORIGINAL FIRE-RESISTANCE RATING OF ASSEMBLY.

OUTDOORS EXPOSED: RIGID GALVANIZED STEEL CONFORMING TO ANSI C80.5
OUTDOORS UNDERGROUND: RIGID NONMETALLIC CONDUIT (SCHEDULE 40 PVC) CONFORMING TO NEMA TC 2
OUTDOORS CONNECTED TO VIBRATING OR MOTORIZED EQUIPMENT: LIQUIDTIGHT FLEXIBLE METAL CONDUIT CONFORMING TO UL 360
INDOORS CONCEALED: ELECTRICAL METALLIC TUBING CONFORMING TO ANSI C80.3
INDOORS EXPOSED: ELECTRICAL METALLIC TUBING CONFORMING TO ANSI C80.3
INDOORS CONNECTED TO VIBRATING OR MOTORIZED EQUIPMENT: FLEXIBLE METALLIC CONDUIT CONFORMING TO UL 1

OUTLET BOXES
BOXES SHALL COMPLY WITH NEMA FB 1 AND SHALL BE CAST METAL TYPE FD WITH GASKETED COVER IN DAMP OR WET LOCATIONS.

PULL AND JUNCTION BOXES
BOXES SHALL BE HOT-DIPPED GALVANIZED STEEL. BOX COVERS SHALL BE GASKETED TYPE WITH SCREWED OR BOLTED FASTENERS.

WIRING DEVICES
DEVICES SHALL COMPLY WITH NEMA WD 1 AND WD 6. DEVICES SHALL BE COMMERCIAL SPECIFICATION GRADE OR BETTER. ALL DEVICES SHALL BE OF THE GROUNDING TYPE. DEVICES SHALL BE MOUNTED FLUSH WITH THE LONG DIMENSION VERTICAL AND GROUNDING TERMINAL OF RECEPTACLES ON TOP. SWITCHES SHALL BE QUIET TYPE, RATED 20 AMPERES AT 120/277 VOLTS. GROUND FAULT CIRCUIT INTERRUPTERS SHALL BE FEED-THROUGH TYPE. WEATHERPROOF COVERS SHALL BE PROVIDED IN DAMP OR WET LOCATIONS. PROGRAM OCCUPANCY SENSORS FOR FIFTEEN MINUTES WITH MEDIUM SENSITIVITY. TRAIN OWNER TO ADJUST TIME AND SENSITIVITY.

DEVICE COLOR: SELECTED BY ARCHITECT.
DEVICE COVER: WEATHERPROOF.

ELECTRICAL IDENTIFICATION
IN ADDITION TO CODE-REQUIRED LABELING, ALL PANELBOARDS, ELECTRICAL ENCLOSURES, TRANSFORMERS, AND DISCONNECT SWITCHES SHALL BE IDENTIFIED WITH AN ENGRAVED PLASTIC LAMINATED NAMEPLATE. LETTERING SHALL BE 1/2" INCHES HIGH AND SHALL BE WHITE ON A BLACK BACKGROUND. NAMEPLATES SHALL BE ATTACHED TO EQUIPMENT WITH STAINLESS STEEL SELF-TAPPING SCREWS. CONTRACTOR TO COORDINATE WITH THE UTILITY COMPANY TO DETERMINE THE AVAILABLE FAULT CURRENT AT THE PANEL LOCATION SHOWN ON THE DRAWINGS. CONTRACTOR TO PROVIDE ELECTRICAL EQUIPMENT WITH AIC RATING OVER THE CALCULATED FAULT CURRENT. CALCULATED FAULT CURRENT SHALL BE LISTED ON EACH PIECE OF ELECTRICAL EQUIPMENT. CONTRACTOR TO PROVIDE AND AFFIX ARC FLASH WARNING LABELS ON ALL ELECTRICAL SWITCHBOARDS, PANELBOARDS, MOTOR CONTROL CENTERS, LOAD CENTERS, DISCONNECTS AND ENCLOSED CIRCUIT BREAKERS PER 2020 NEC ARTICLE 110.16.

GROUNDING
GROUNDING AND BONDING COMPONENTS SHALL COMPLY WITH UL 467. AN INSULATED EQUIPMENT-GROUNDING CONDUCTOR SHALL BE INSTALLED WITH CIRCUIT CONDUCTORS FOR ALL FEEDER AND BRANCH CIRCUITS. EXOTHERMIC-WELDED CONNECTIONS SHALL BE USED FOR ATTACHMENT TO STRUCTURAL STEEL AND UNDERGROUND CONNECTIONS. GROUNDING ELECTRODES SHALL BE 3/4" x 10' COPPERWELD TYPE.

PANELBOARDS
PANELBOARDS SHALL COMPLY WITH NEMA PB 1. SHOP DRAWINGS FOR EACH PANELBOARD SHALL BE SUBMITTED AND SHALL INCLUDE BUS CONFIGURATION AND CURRENT RATINGS, OVERCURRENT DEVICE ARRANGEMENT AND SETTINGS, AND PANELBOARD SHORT CIRCUIT RATING. PHASE AND NEUTRAL BUSES SHALL BE COPPER. AN EQUIPMENT GROUND BUS SHALL BE PROVIDED AND SHALL BE BONDED TO THE PANEL BOX. PANELBOARDS WITH A MAIN SERVICE DISCONNECT SHALL BE LISTED FOR USE AS SERVICE EQUIPMENT. PANELBOARD TRIM SHALL BE BOLT-ON TYPE. CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE. CIRCUIT BREAKERS SHALL BE LISTED FOR SWD, HID OR HACR USE AS APPROPRIATE. MULTIPLE CIRCUIT BREAKERS SHALL HAVE A COMMON TRIP. TANDEM CIRCUIT BREAKERS SHALL NOT BE USED. FILLER PLATES SHALL BE INSTALLED IN UNUSED SPACES. A TYPED CIRCUIT DIRECTORY SHALL BE INSTALLED ON THE INSIDE OF THE PANELBOARD DOOR.

FUSES
FUSES SHALL BE NEMA FU 1 CARTRIDGE TYPE. VOLTAGE RATING SHALL BE CONSISTENT WITH CIRCUIT VOLTAGE. ARRANGE FUSES IN FUSIBLE DEVICES SO FUSE RATINGS ARE READABLE WITHOUT REMOVING FUSE. INSTALL TYPEWRITTEN LABELS ON INSIDE DOOR OF EACH FUSIBLE DEVICE TO INDICATE FUSE REPLACEMENT INFORMATION.

MOTOR FEEDER AND BRANCH CIRCUITS: UL CLASS RK5, TIME DELAY
OTHER FEEDER AND BRANCH CIRCUITS: UL CLASS RK1, NON-TIME DELAY

DISCONNECT SWITCHES
SWITCHES SHALL BE FUSED OR NONFUSED NEMA KS 1 TYPE HD. SWITCHES SHALL BE HANDLE LOCKABLE AND INTERLOCKED WITH COVER IN CLOSED POSITION. ENCLOSURES SHALL BE NEMA TYPE 1 IN INDOOR LOCATIONS AND NEMA TYPE 3R IN OUTDOOR LOCATIONS. HVAC EQUIPMENT DISCONNECTS ARE TO BE CONSIDERED ELECTRICAL EQUIPMENT AND SHALL BE INSTALLED TO MAINTAIN WORKING SPACE PER 2020 NEC ARTICLE 110.26.

ELECTRICAL SYMBOLS

- ⊙₁ SPECIAL OUTLET - SEE SCHEDULE
- ☆ EXISTING STREET LIGHT
- ⊙ BOLLARD LIGHT. SEE SCHEDULE
- ⊕ WP QUADRUPEX CONVENIENCE OUTLET IN BOLLARD GROUND FAULT INTERRUPTER TYPE WITH WEATHERPROOF COVER
- ⊕ WP DUPEX CONVENIENCE OUTLET WEATHERPROOF GROUND FAULT INTERRUPTER TYPE

LOCATION		ELECTRICAL EQUIPMENT ROOM		MAIN AMPS		400		VOLTAGE		120/208V		PHASE		3 WIRE 4		S.C.C. SEE NOTE 1 MIN., FULLY-RATED		PANEL OVERCURRENT PROTECTION 100% RATED		RECEPTACLE VA		A		B		C		TOTAL		DEMAND	
RECEPTACLE VA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
KITCHEN VA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
LIGHTING VA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
OTHER VA	52,276	47,612	46,372	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	
VA/P	52,276	47,612	46,372	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	146,260	
A/P	436	397	386																												
DEMAND A/P	436	397	386																												

MIN. WIRE/CONDUIT SIZE	VA	SERVING	BREAKER AMPS	P	CKT	PHASE	CKT	BREAKER P	AMPS	SERVING	VA	MIN. WIRE/CONDUIT SIZE
EXISTING	3,900	220V. MIDWEST PNL #1	50	2	1	A	2	1	20	LIGHTS	1,000	EXISTING
EXISTING	3,900	220V. MIDWEST PNL #2	50	2	3	B	4	1	20	LIGHTS	1,000	EXISTING
EXISTING	3,900	220V. MIDWEST PNL #3	50	2	5	C	6	1	20	LIGHTS	1,000	EXISTING
EXISTING	3,900	220V. MIDWEST PNL #4	50	2	7	A	8	1	20	LIGHTS	1,000	EXISTING
EXISTING	3,900	220V. MIDWEST PNL #5	50	2	9	B	10	1	20	LIGHTS	1,000	EXISTING
EXISTING	3,900	220V. MIDWEST PNL #5	50	2	11	C	12	1	20	BOLLARD LIGHTS	432	1 SET OF 2#12, #12G, 3/4"C.
EXISTING	3,900	220V. MIDWEST PNL #5	50	2	13	A	14	1	20	BOLLARD LIGHTS	336	1 SET OF 2#12, #12G, 3/4"C.
EXISTING	3,900	220V. MIDWEST PNL #5	50	2	15	B	16	1	20	BOLLARD LIGHTS	432	1 SET OF 2#12, #12G, 3/4"C.
EXISTING	3,900	220V. MIDWEST PNL #5	50	2	17	C	18	1	20	BOLLARD LIGHTS	480	1 SET OF 2#12, #12G, 3/4"C.
EXISTING	1,200	FOUNTAIN	30	3	19	A	20	1	20	SPARE		
EXISTING	1,200	~			21	B	22	1	20	SPARE		
EXISTING	1,200	~			23	C	24	1	20	SPARE		
EXISTING	1,200	~			25	A	26	1	20	SPARE		
1 SET OF 2#10, #10G, 3/4"C.	360	CHRISTMAS TREE NORTH	20	1	27	B	28	1	20	SPARE		
1 SET OF 2#10, #10G, 3/4"C.	360	CHRISTMAS TREE SOUTH	20	1	29	C	30	1	20	SPARE		
1 SET OF 3#1/0, #3G, 2"C.	6,000	STAGE POWER VLT 1 NORTH*	100	3	31	A	32	1	20	SPARE		
1 SET OF 3#1/0, #3G, 2"C.	6,000	~			33	B	34	1	20	SPARE		
1 SET OF 3#1/0, #3G, 2"C.	6,000	~			35	C	36	1	20	SPARE		
1 SET OF 3#1/0, #3G, 2"C.	6,000	STAGE POWER VLT 2 NORTH*	100	3	37	A	38	3	100	PANEL "B"	8,640	EXISTING
1 SET OF 3#1/0, #3G, 2"C.	6,000	~			39	B	40			~	7,920	"
1 SET OF 3#1/0, #3G, 2"C.	6,000	~			41	C	42			~	7,200	"
1 SET OF 3#1/0, #3G, 2"C.	6,000	STAGE POWER VLT 1 SOUTH*	100	3	43	A	44	1	20	SPARE		
1 SET OF 3#1/0, #3G, 2"C.	6,000	~			45	B	46	1	20	SPARE		
1 SET OF 3#1/0, #3G, 2"C.	6,000	~			47	C	48	1	20	SPARE		
1 SET OF 3#1/0, #3G, 2"C.	6,000	STAGE POWER VLT 2 SOUTH*	100	3	49	A	50	1	20	SPARE		
1 SET OF 3#1/0, #3G, 2"C.	6,000	~			51	B	52	1	20	SPARE		
1 SET OF 3#1/0, #3G, 2"C.	6,000	~			53	C	54	1	20	SPARE		

REMARKS: *ONLY ONE PAIR OF STAGE POWER CIRCUITS TO BE USED AT A TIME AT FULL DESIGN CAPACITY.

LOCATION		ELECTRICAL ROOM		MAIN AMPS		100		VOLTAGE		120/208V		PHASE		3 WIRE 4		S.C.C. SEE NOTE 1 MIN., FULLY-RATED		PANEL OVERCURRENT PROTECTION 100% RATED		RECEPTACLE VA		A		B		C		TOTAL		DEMAND	
RECEPTACLE VA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
KITCHEN VA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
LIGHTING VA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
OTHER VA	8,640	7,920	7,200	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	
VA/P	8,640	7,920	7,200	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	23,760	
A/P	72	66	60																												
DEMAND A/P	72	66	60																												

MIN. WIRE/CONDUIT SIZE	VA	SERVING	BREAKER AMPS	P	CKT	PHASE	CKT	BREAKER P	AMPS	SERVING	VA	MIN. WIRE/CONDUIT SIZE
1 SET OF 2#10, #10G, 3/4"C.	720	BOLLARD RECEPTACLES	20	1	1	A	2	1	20	BOLLARD RECEPTACLES	720	1 SET OF 2#10, #10G, 3/4"C.
1 SET OF 2#10, #10G, 3/4"C.	720	BOLLARD RECEPTACLES	20	1	3	B	4	1	20	BOLLARD RECEPTACLES	720	1 SET OF 2#10, #10G, 3/4"C.
1 SET OF 2#10, #10G, 3/4"C.	720	BOLLARD RECEPTACLES	20	1	5	C	6	1	20	BOLLARD RECEPTACLES	720	1 SET OF 2#10, #10G, 3/4"C.
1 SET OF 2#10, #10G, 3/4"C.	720	BOLLARD RECEPTACLES	20	1	7	A	8	1	20	BOLLARD RECEPTACLES	720	1 SET OF 2#10, #10G, 3/4"C.
1 SET OF 2#10, #10G, 3/4"C.	720	BOLLARD RECEPTACLES	20	1	9	B	10	1	20	BOLLARD RECEPTACLES	720	1 SET OF 2#10, #10G, 3/4"C.
1 SET OF 2#10, #10G, 3/4"C.	720	BOLLARD RECEPTACLES	20	1	11	C	12	1	20	BOLLARD RECEPTACLES	720	1 SET OF 2#10, #10G, 3/4"C.
1 SET OF 2#10, #10G, 3/4"C.	720	BOLLARD RECEPTACLES	20	1	13	A	14	1	20	BOLLARD RECEPTACLES	720	1 SET OF 2#10, #10G, 3/4"C.
1 SET OF 2												