

STANDARD ELECTRICAL ABBREVIATIONS			
AC	ALTERNATING CURRENT	MCB	MAIN CIRCUIT BREAKER
ALX	AUXILIARY CONTACTS	MC	MECHANICAL CONTRACTOR
AF	ABOVE FINISH FLOOR	MCC	MOTOR CONTROL CENTER
AFG	ABOVE FINISH GRADE	MR	MANUFACTURER
AHU	AIR HANDLING UNIT	MH	MANHOLE
AMP	AMPERE	MLO	MAIN LUGS ONLY
ATS	AUTOMATIC TRANSFER SWITCH	MMS	MANUAL MOTOR STARTER
BFG	BELOW FINISHED GRADE	MS	MAGNETIC STARTER
C	CONDUIT	MTS	MANUAL TRANSFER SWITCH
CCT	CONTROL CIRCUIT TRANSFORMER	NF	NON-FUSED
CCTV	CLOSED CIRCUIT TELEVISION	NL	NIGHT LIGHT
CB	CIRCUIT BREAKER	NLS	NOT TO SCALE
COMB	COMBINATION MAGNETIC STARTER	N/L	UNSWITCHED NIGHT LIGHT
CONF	CONTRACTOR	OL	OVERLOADS
CP	CONTROL PACKAGE	OP	OVERCURRENT PROTECTION
CJ	CONDENSING UNIT	PB	PUSHBUTTON
CUH	CABINET UNIT HEATER	PE	PNEUMATIC-ELECTRIC SWITCH
DC	DIRECT CURRENT	PL	PILOT LIGHT
DISC	DISCONNECT SWITCH	PUH	PROPPELLER UNIT HEATER
EC	ELECTRICAL CONTRACTOR	PVC	POLYVINYLCHLORIDE CONDUIT
EF	EXHAUST FAN	#	PHASE
EMERG	EMERGENCY	QUAN	QUANTITY
EMT	ELECTRICAL METALLIC TUBING	R	EXISTING TO BE RELOCATED
EP	ELECTRO-PNEUMATIC SWITCH	RA	RIGID ALUMINUM CONDUIT
EMC	ELECTRIC WATER COOLER	RECEPT.	RECEPTACLE
EX	EXISTING TO REMAIN	RF	RETURN FAN
EXST.	EXISTING	RGS	RIGID GALVANIZED STEEL CONDUIT
EXR	EXISTING TO BE REMOVED	SF	SUPPLY FAN
F	FUSED	SN	SOLID NEUTRAL
FA	FIRE ALARM	SW	SWITCH
FMS	FLEXIBLE METAL CONDUIT	SW & F	SWITCH & FUSE
G	GROUND WIRE	T	THERMOSTAT
GC	GENERAL CONTRACTOR	TC	TIME CLOCK
GI	GROUND FAULT INTERRUPTER	TCC	TEMPERATURE CONTROL CONTRACTOR
HOA	HAND-OFF-AUTO SELECTOR SWITCH	TB	TELEPHONE TERMINAL BOARD
HP	HORSEPOWER	TTC	TELEPHONE TERMINAL CABINET
Hz	HERTZ	TX	POWER TRANSFORMER
IC	INTERLOCKING CURRENT	V	VOLT
INT	INTERMEDIATE METAL CONDUIT	W	WIRE OR WATT
INTL	INTERLOCK	WM	WIREMOLD
KEC	KITCHEN EQUIPMENT CONTRACTOR	WP	WEATHER PROTECTED
KW	KILOWATT	W/P	WITH
LT	LIGHT	Δ	WIRING CONNECTED (DELTA)
LTS	LIGHTS	Y	WIRING CONNECTED (WYE)
MATV	MASTER ANTENNA TELEVISION		

ELECTRICAL SYMBOL SCHEDULE			
MOUNTING	DESCRIPTION	MOUNTING	DESCRIPTION
CEL	FLUORESCENT FIXTURE	CEL	CONTACTOR
CEL	RECESSED DOWNLIGHT	CA	CAPACITOR
CEL	H. I. D. FIXTURE	ATS	AUTOMATIC TRANSFER SWITCH
CEL	INCANDESCENT FIXTURE-DIRECTIONAL	MS	MANUAL STARTER (P - PILOT LIGHT)
CEL	LIGHT FIXTURE ON EMERGENCY CIRCUIT	MS	MAGNETIC MOTOR STARTER
CEL	EXIT LIGHT, LINE INDICATES FACE	MS	COMBINATION MAGNETIC MOTOR STARTER
CEL	ARROW INDICATES FACE WITH ARROW	MS	PUSHBUTTON STATION AS NOTED
CEL	SURFACE MOUNTED INCANDESCENT FIXTURE	MS	CIRCUIT BREAKER IN ENCLOSURE
CEL	BATTERY PACK LIGHTS	MS	DISCONNECT SWITCH (NON-FUSED)
CEL	SINGLE RECEPTACLE	MS	DISCONNECT SWITCH (FUSED)
CEL	SINGLE RECEPTACLE (+44" AFF)	S	SWITCH - SINGLE POLE
CEL	DUPLEX CONVENIENCE OUTLET	S <sub>2</sub>	SWITCH - 2 POLE
CEL	DUPLEX CON. OUTLET - GFI PROTECTED	S <sub>3</sub>	SWITCH - 3 WAY
CEL	DUPLEX CON. OUTLET (TOP HALF SWITCHED)	S <sub>4</sub>	SWITCH - 4 WAY
CEL	RECEPTACLE (+44" AFF)	S <sub>P</sub>	SWITCH WITH PILOT LIGHT (ANY TYPE SW)
CEL	QUADRUPLX OUTLET	S <sub>WP</sub>	SWITCH - WEATHERPROOF
CEL	QUADRUPLX OUTLET (+44" AFF)	LS	LIGHTING CONTROL STATION AS NOTED ON DRAWING
CEL	SAFETY TYPE CONVENIENCE OUTLET	J	DOOR JUNCTION PANEL
CEL	DUPLEX CONVENIENCE OUTLET (EMERGENCY)	EL	ELECTROMAGNETIC LOCK
CEL	WEATHERPROOF CONVENIENCE OUTLET (GFI)	EL	ELECTROMAGNETIC LOCK, DELAYED EGRESS
CEL	WEATHERPROOF CONVENIENCE OUTLET (GFI) (+44" AFF)	*	SECURITY DOOR CONTACTS
CEL	208/240V OUTLET (SIZE AS NOTED)	□	AUDIBLE DOOR VIOLATION OR DURESS ALARM
CEL	208/240V OUTLET (SIZE AS NOTED)	□	CARD READER
CEL	EXPLOSION PROOF CONVENIENCE OUTLET	□	FULL STATION DURESS ALARM
CEL	SPECIAL OUTLET (AS NOTED)	□	FULL STATION DURESS ALARM WITH WEATHERPROOF COVER
CEL	ABOVE COUNTER VOICE/DATA OUTLET (+44")	□	KEY SWITCH
CEL	VOICE/DATA OUTLET	□	REQUEST TO EXIT TOUCH SENSE BAR
CEL	TELEPHONE OUTLET (VOICE ONLY)	□	DOOR POWER SUPPLY
CEL	TELEPHONE OUTLET (VOICE ONLY) +8"	□	POWER SUPPLY MONITOR
CEL	PUBLIC TELEPHONE OUTLET (VOICE ONLY) +4"	□	MOTOR - SINGLE PHASE
CEL	DATA OUTLET (DATA ONLY)	□	MOTOR - 3 PHASE
CEL	SOUND SYSTEM AMPLIFIER	□	PLUGMOLD RACEWAY
CEL	CAMERA	□	WIREMOLD RACEWAY
CEL	VOLUME CONTROL	□	CONDUIT CONCEALED IN OR ABOVE CEILING
CEL	PROJECTOR OUTLET (SYS. INPUTS)	□	CONDUIT EXPOSED
CEL	SPEAKER	□	CONDUIT CONCEALED IN OR BELOW FLOOR
CEL	SPEAKER (HORN TYPE)	□	HOMERUN
CEL	T.V. ANTENNA OUTLET	□	CONDUIT TURNED UP
CEL	CABLE TELEVISION OUTLET	□	CONDUIT TURNED DOWN
CEL	INTERCOM STATION	□	DIRECT BURIED CABLE
CEL	INTERCOM MASTER STATION	□	TWISTED PAIR CABLE
CEL	MICROPHONE OUTLET	□	CONDUIT STUBBED OUT & CAPPED
CEL	HANDICAP DOOR PUSH PLATE	□	CONDUIT STUBBED OUT WITH BUSHING
CEL	EMERGENCY PANIC BUTTON	□	JUNCTION BOXES
CEL	FIRE ALARM CONTROL CABINET	□	GROUND ROD & CONNECTION
CEL	FIRE ALARM ANNUNCIATOR (REMOTE)	□	THERMOSTAT
CEL	FIRE ALARM ANNUNCIATOR (REMOTE AND GRAPHIC)	□	TRANSFORMER
CEL	DIGITAL DIALER	□	TIME CLOCK
CEL	FIRE ALARM PULL STATION	□	ELECTRICAL DISTRIBUTION PANEL
CEL	FIRE ALARM HEAT DETECTOR (RATE OF RISE)	□	APPLIANCE PANEL
CEL	FIRE ALARM SMOKE DETECTOR (PHOTO-ELECTRIC)	□	SPECIAL PANEL AS NOTED (ELECT.)
CEL	FIRE ALARM SMOKE DETECTOR (PHOTO-ELECTRIC WITH DUCT-PROBE)	□	DETAIL REFERENCE
CEL	FIRE ALARM SMOKE DETECTOR (IONIZATION WITH DUCT-PROBE)	□	SECTION REFERENCE
CEL	FLAME DETECTOR		
CEL	FIRE ALARM SMOKE DETECTOR (IONIZATION)		
CEL	FIRE ALARM TAMPER SWITCH		
CEL	FIRE ALARM FLOW SWITCH		
CEL	FIRE ALARM MAGNETIC DOOR HOLDER		
CEL	FIRE ALARM DOOR HOLDER ROUGH-IN (ON HYDRAULIC DOOR CLOSER)		
CEL	FIRE ALARM BELL/STROBE COMBINATION		
CEL	FIRE ALARM STROBE		
CEL	FIRE ALARM SPEAKER/STROBE COMBINATION		
CEL	FIRE ALARM SPEAKER		

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**PROJECT ELECTRICAL GENERAL NOTES**

- VERIFY EXISTING CONDITIONS IN THE FIELD PRIOR TO BIDDING AND BEFORE BEGINNING WORK.
- REVIEW THE WORK OF OTHER TRADES. COORDINATE AND PLAN WORK WITH THE OTHER TRADES. ADJUST AS A RESULT OF COORDINATION. REVIEW COORDINATED EFFORTS WITH ENGINEER FOR APPROVAL.
- REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF ALL CEILING MOUNTED ITEMS.
- STORE EQUIPMENT AND COMPONENTS IN A CLEAN, DRY LOCATION UNTIL READY FOR INSTALLATION. PROTECT FROM WEATHER, THEFT, DIRT, FUMES, WATER, CONSTRUCTION DEBRIS, ETC. AT ALL TIMES. ANY DAMAGED EQUIPMENT OR COMPONENT SHALL BE RESTORED AS NEW OR REPLACED.
- ELECTRICAL DRAWINGS SHOW THE INTENDED ARRANGEMENT AND ROUTING OF ALL CONDUIT AND DEVICES. THEY SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING CONSTRUCTION AND WORK OF OTHER TRADES WILL PERMIT.
- PERFORM ALL WORK IN A SKILLED, PROFESSIONAL, MANNER MEETING THE ACCEPTANCE OF THE ENGINEER, ARCHITECT AND OWNER.
- LABEL ALL RECEPTACLE DEVICES AS TO WHICH PANEL AND OVERCURRENT DEVICE FEEDS THE DEVICE WITH AN INDELIBLE MARKER ON THE BACK SIDE OF THE COVER PLATE. DEVICE WITH PLASTIC ENGRAVED PLATE ON THE FRONT SIDE OF THE COVER PLATE.
- SMALLEST CONDUIT SIZE ALLOWABLE IS 3/4", AND SMALLEST WIRE SIZE ALLOWABLE IS #12 AWG COPPER UNLESS SPECIFICALLY NOTED OTHERWISE. GROUND ALL CONVENIENCE OUTLETS WITH GREEN GROUND WIRE.
- MOUNTING HEIGHTS OF DEVICES SHALL FOLLOW THE LISTING BELOW UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS. ALL HEIGHTS ARE TO CENTERLINE OF THE DEVICE.
 

CONVENIENCE OUTLET	+18" AFF
TELEPHONE WALL OUTLET	+18" AFF
TELEPHONE WALL OUTLET	+60" AFF
DATA OUTLET	+18" AFF
DATA OUTLET OR DIMMER	+48" AFF
DEVICES ABOVE COUNTERTOP	+44" AFF
EXIT LIGHT	+98" AFF
FIRE ALARM PULL STATION	+48" AFF
FIRE ALARM HORN	+98" AFF
FIRE ALARM STROBE	+98" AFF
FIRE ALARM COMBINATION HORN/STROBE	+98" AFF
- CLEAN ALL EQUIPMENT TO PRESENT A "LIKE NEW" CONDITION AT PROJECT COMPLETION. VACUUM CLEAN INTERNAL AREAS OF EQUIPMENT AND PANELS.
- CLEAN ALL MECHANICAL AND ELECTRICAL AREAS AND ROOMS OF DEBRIS AND UNUSED MATERIALS. VACUUM FLOORS.
- THE MOUNTING POSITION FOR ALL STRAIGHT BLADE, VERTICALLY ORIENTED, NEMA 5, 6, 7, 14 AND 15 RECEPTACLES SHALL BE SUCH THAT THE GROUND PIN IS UP (ABOVE PHASE AND NEUTRAL BLADES). THE MOUNTING POSITION FOR ALL STRAIGHT BLADE, HORIZONTALLY ORIENTED, NEMA 5 AND 7 RECEPTACLES SHALL BE SUCH THAT THE NEUTRAL BLADE IS UP (ABOVE THE PHASE BLADE).
- ALL ABOVE COUNTER DEVICES, LIGHT SWITCHES, RECEPTACLES AND TELE/DATA ROUGH-INS, TO BE MOUNTED AT THE SAME ELEVATION. COORDINATE WITH ARCHITECTURAL CASEWORK ELEVATIONS, SECTIONS AND WALL TYPES.

**CERTIFICATION**  
**CONSTRUCTION DOCUMENTS**

**CARDINAL PARK NATATORIUM**

**UNIVERSITY OF LOUISVILLE**

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Drawn	LARRY STUFFLE
Checked	JEFF WYLLIE
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**SYMBOLS, ABBREV. AND GENERAL NOTES ELECTRICAL**

**E001**