

ELECTRICAL NOTES

CODE IN EFFECT –  
NEC 2017 (EFFECTIVE DATE 12/31/20)

1. THE ENTIRE INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC) AND THE LATEST EDITIONS OF ALL LOCAL CODES, RULES AND ORDINANCES HAVING JURISDICTION.
2. AS A MINIMUM, ALL EQUIPMENT SHALL MEET APPLICABLE STANDARDS FOR TYPE OF EQUIPMENT AND INTENDED USE OF THE FOLLOWING:

a. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

b. ILLUMINATING ENGINEERS' SOCIETY (IES)

c. AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM)

d. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NOTE: THESE STANDARDS ARE SUBORDINATE TO CODES AND STANDARDS SET BY U.L.
3. IT SHALL BE UNDERSTOOD THAT ALL WORK PERFORMED SHALL BE BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. SAID CONTRACTOR SHALL MEET ALL REQUIREMENTS SET FORTH BY ANY LOCAL ORDINANCE AND GOVERNING AUTHORITIES.
4. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED INSURANCE FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK.
5. THE CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN (1) YEAR FROM DATE ACCEPTANCE, UNLESS OTHERWISE NOTED.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING TO ORIGINAL CONDITIONS, ANY AND ALL DAMAGES TO BUILDING SURFACES, EQUIPMENT, ETC. CAUSED DURING THE PERFORMANCES DURING THE WORK.
7. THE CONTRACTOR SHALL VISIT THE JOB SITE AND VERIFY ALL CONDITIONS, LOCATIONS, DIMENSIONS AND QUANTITIES AS SHOWN OR NOTED ON THE DRAWINGS, PRIOR TO SUBMITTING BID.
8. THE CONTRACTOR SHALL NOT SCALE THE ELECTRICAL DRAWINGS. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS OF ALL EQUIPMENT UNLESS OTHERWISE NOTED.
9. THE CONTRACTOR SHALL KEEP ALL AREAS WHERE WORK IS BEING PERFORMED FREE FROM DEBRIS AT ALL TIMES AND SAID AREAS SHALL LEFT BROOM CLEAN AT THE END OF EACH WORKING DAY.
10. ALL CONDUCTORS SHALL BE COPPER, TYPE THHN/THWN EXCEPT WHERE OTHERWISE REQUIRED BY U.L. OR CODES. MINIMUM WIRE SIZE SHALL BE #12 AWG, EXCLUDING CONTROL WIRING.
11. ALUMINUM CONDUCTORS ARE NOT PERMITTED ANYWHERE.
12. ALL CONDUCTORS SHALL BE IN CONDUITS. ALL CONDUITS SHALL BE GALVANIZED RIGID STEEL (GRS) EXCEPT FOR THE FOLLOWING:

a. PVC CONDUITS MAY BE USED UNDERGROUND PROVIDED ELBOWS AND RISERS ARE GRS, WHERE SUBJECT TO PHYSICAL DAMAGE.

b. ELECTRICAL METALLIC TUBING (EMT) ANY BE USED IN OR ON WALLS OR CEILINGS WHERE NOT SUBJECT TO MECHANICAL DAMAGE, DAMP OR CORROSIVE CONDITIONS.

c. LIQUID TIGHT FLEXIBLE CONDUIT WHERE REQUIRED.

d. FLEXIBLE METALLIC CONDUIT (MC CABLE W/ GROUNDING CONDUCTOR), WHERE REQUIRED IN DRY LOCATIONS ONLY.

NOTE: ALL CONDUITS IN HAZARDOUS AREAS (PER NEC) SHALL MEET THE REQUIREMENTS OF NEC CHAPTER 5.
13. ALL CONDUIT ARE SHOWN DIAGRAMATICALLY. THE EXACT ROUTING SHALL BE DETERMINED IN THE FIELD, UNLESS OTHERWISE NOTED.
14. WHERE CORE DRILLING OF FLOORS/WALLS IS REQUIRED, THE CONTRACTOR SHALL SEAL OPENINGS WATERTIGHT AFTER UTILITIES HAVE BEEN INSTALLED. LOCATION OF CORED HOLES SHALL COORDINATE WITH LOCATION OF EQUIPMENT IN A MANNER THAT IS CLEAN AND FUNCTIONAL. THE CONTRACTOR SHALL INSTALL ONLY ONE CONDUIT PER HOLE AND SEAL THE OPENING AROUND THE CONDUIT.
15. PROVIDE FIRE RETARDANT U.L. APPROVED SEALANT ON ALL PENETRATIONS, WALLS AND STRUCTURAL SLABS. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO VERIFY PRIOR TO SUBMITTING BID, THE LOCATIONS OF ALL SUCH FIRE RATED PARTITIONS, WALLS AND STRUCTURAL SLABS.
16. UNLESS NOTED AS EXISTING, ALL EQUIPMENT, WIRING, DEVICES, ETC. SHALL BE NEW.
17. ALL DISCONNECT SWITCHES SHALL BE SIZED BY NEC REQUIREMENTS TO ACCOMMODATE EQUIPMENT SERVED, INCLUDING REQUIRED FUSES U.O.N. SWITCHES SHALL BE HORSEPOWER RATED FOR MAX. HORSEPOWER HEAVY DUTY TYPE.
18. THE CONTRACTOR SHALL VERIFY CIRCUIT PROTECTIVE DEVICE RATINGS FOR EQUIPMENT PRIOR TO INSTALLATION.
19. ALL FUSES SHALL BE CURRENT LIMITING, PER U.L. RATED 600V. OR 250V. AS REQUIRED WITH:

a. NON TIME DELAY FUSES IN AMIN SWITCHES AND SWITCHES FEEDING PANEL.

b. TIME DELAY FOR MOTOR AND HVAC CIRCUITS
20. WIRWAYS SHALL BE SIZED AS REQUIRED, PER NEC, UNLESS OTHERWISE NOTED.
21. ALL CIRCUIT BREAKERS SHALL BE INVERSE TIME TYPE (THERMAL-MAGNETIC). TWO AND THREE POLE CIRCUIT BREAKERS SHALL BE COMMON TRIP. TIE HANDLES ARE NOT PERMITTED.
22. ALL ELECTRICAL EQUIPMENT SHALL BE RAIN/TIGHT (NEMA 3R) WHERE EXPOSED TO THE WEATHER. ALL FLEX CONDUITS CONNECTED TO SUCH EQUIPMENT SHALL BE LIQUIDTIGHT.
23. OUTLET BOXES SHALL BE PRESSED STEEL IN DRY LOCATIONS, CAST ALLOY WITH THREADED HUBS IN DAMP OR WET LOCATIONS AND SPECIAL ENCLOSURES AS REQUIRED FOR OTHER CLASSIFIED AREAS, U.O.N.
24. ALL CONNECTIONS TO GROUND RODS SHALL BE MADE WITH U.L. APPROVED WELDED CONNECTIONS, UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL FORM A GROUNDING ELECTRODE SYSTEM AS PER NEC 250-50.
25. PROPER PLASTER RINGS SHALL BE USED WITH OUTLET BOXES. PLASTER SHALL BE A MAXIMUM OF 1/8" FROM THE FINISHED SURFACE OF THE DRYWALL. AFTER THE DRYWALL IS INSTALLED, PROPER COORDINATION BETWEEN THE ELECTRICAL CONTRACTOR AND THE GENERAL CONTRACTOR FOR RING INSTALLATION IS REQUIRED. NO "GOOFS" RINGS WILL BE ALLOWED. ALL OUTLET BOXES SHALL BE SECURELY FASTENED.
26. FOR TELEPHONE SYSTEM:

a. PROVIDE GROUNDING FOR ALL TELEPHONE OUTLETS AND EQUIPMENT PER REQUIREMENTS OF THE TELEPHONE COMPANY.

b. COORDINATE INSTALLATION OF ALL TELEPHONE OUTLETS, RACEWAYS, ENCLOSURES AND BACKBOARDS WITH TELE. COMPANY.

c. VERIFY LOCATION OF TELEPHONE SERVICE WITH TELEPHONE COMPANY. PROVIDE SERVICE CONDUIT TO BLDG. FROM SERVICE POINT PER TELE. CO.

d. MARK TERMINATIONS OF TELEPHONE CONDUIT AS DIRECTED BY THE TELEPHONE COMPANY.

e. VERIFY LOCATION OF TELEPHONE SERVICE WITH TELEPHONE COMPANY PRIOR TO SUBMITTING BID.

f. USE EXTERIOR GRADE 3/4" PLYWOOD BACKBOARDS FOR MOUNTING TELEPHONE EQUIPMENT AND TERMINAL STRIPS. PAINT BOARD ON ALL SIDES AND EDGES WITH TWO COATS OF FLAT BLACK ASPHALT PAINT.
27. FOR EMERGENCY LIGHTING, THE BRANCH CIRCUIT FEEDING THE UNIT EQUIPMENT SHALL BE THE SAME BRANCH CIRCUIT AS THAT SERVING THE NORMAL LIGHTING IN THE AREA AND CONNECTED AHEAD OF ANY LOCAL SWITCHES.

ELECTRICAL SYMBOLS

	FLUORESCENT 2'x2' LIGHT FIXTURE		COMBINATION EXIT LIGHT AND EMERGENCY LIGHT WITH 90 MINUTE BATTERY BACKUP
	FLUORESCENT 2'x2' LIGHT FIXTURE WITH 24 HR. NIGHT LIGHT CIRCUIT		L.E.D. EXIT LIGHT SIGN WITH 90 MINUTE BATTERY BACKUP
	FLUORESCENT 2'x4' LIGHT FIXTURE		EMERGENCY LIGHT WITH 90 MINUTE BATTERY BACKUP
	FLUORESCENT 2'x4' LIGHT FIXTURE WITH 24 HR. NIGHT LIGHT CIRCUIT		JUNCTION BOX
	L.E.D. 2'x4' LIGHT FIXTURE		EXHAUST FAN
	L.E.D. 2'x4' LIGHT FIXTURE WITH 24 HR. NIGHT LIGHT CIRCUIT		LIGHT SWITCH
	TRACK LIGHTING		DIMMER LIGHT SWITCH
	DUPLEX RECEPTACLE 20 AMP		3-WAY LIGHT SWITCH
	DUPLEX RECEPTACLE 20 AMP W/ GROUND FAULT CIRCUIT INTERRUPTER		LIGHT SWITCH WITH OCCUPANCY SENSOR CONTROL DEVICE THAT TURNS OFF LIGHT WHEN ROOM IS UNOCCUPIED FOR 30 MINUTES (MOUNT AT +48" A.F.F.)
	DEDICATED DUPLEX RECEPTACLE		VERRIDE LIGHT SWITCH TO TIME-SWITCH CONTROL DEVICE
	QUADRAPLEX 20 AMP		CEILING MOUNTED LIGHT
	DEDICATED QUADRAPLEX RECEPTACLE		RECESSED HI-HAT LIGHT
	SINGLE RECEPTACLE 20 AMP		WALL MOUNTED SCONCE (MOUNT +6"-0" A.F.F.)
	RECESS FLOOR MOUNTED DUPLEX RECEPTACLE 20 AMP		DISCONNECT SWITCH
	TELEPHONE JACK		INFRARED OCCUPANCY SENSOR WITH AUTOMATIC SETTING PROGRAMMED TO TURN LIGHTING OFF WITHIN 30 MINUTES OF AN OCCUPANT LEAVING THE AREA (CEILING MOUNTED)
	COMMUNICATIONS/DATA JACK		
	GROUND FAULT INTERRUPTER		EXISTING
	VAPOR AND MOISTURE PROOF		RELOCATE
	WEATHER RESISTANT		NEW
			REMOVE

EXISTING ELECTRICAL PANEL 'A'

MAIN : 200 AMPS M.L.O. SERVICE : 120/208V 3 PHASE 4 WIRE				AIC : 22K MOUNTING : FLUSH						
WIRING	LOAD	TRIP POLE	REMARKS	OR.	PH.	OR.	REMARKS	TRIP POLE	LOAD	WIRING
# 12	540W	20-1	EXISTING SHOW WINDOW	1		2				
# 12	360W	20-1	EXIST. GENERAL RECEPTACLES	3		4	EXISTING A/C RTU	40-3	12,600W	# 8
# 12	360W	20-1	EXIST. GENERAL RECEPTACLES	5		6				
# 12	1,000W	20-1	EXISTING RESTROOM	7		8	NEW WIDE FORMAT PRINTER	20-1	1,500W	# 12
# 12	180W	20-1	EXISTING RESTROOM GFI RECEPT.	9		10	NEW PRINT PRODUCTION/FAX	20-1	1,500W	# 12
# 12	1,200W	20-1	EXISTING SIGNAGE	11		12	NEW COPY MACHINE	20-1	900W	# 12
# 10	4,160W	20-1	EXISTING INSTA-HOT	13		14	NEW GENERAL RECEPTACLES	20-1	900W	# 12
				15		16	NEW GENERAL RECEPTACLES	20-1	1,080W	# 12
# 12	140W	20-1	NEW L.E.D. 24 HR. LIGHTING	17		18	NEW GENERAL RECEPTACLES	20-1	1,080W	# 12
# 12	148W	20-1	NEW GENERAL L.E.D. LIGHTING	19		20	NEW GENERAL RECEPTACLES	20-1	540W	# 12
# 12	429W	20-1	NEW GENERAL L.E.D. LIGHTING	21		22	SPACE			
# 12	333W	20-1	NEW GENERAL L.E.D. LIGHTING	23		24	SPACE			
			SPACE	25		26	SPACE			
			SPACE	27		28	SPACE			
			SPACE	29		30	SPACE			
			SPACE	31		32	SPACE			
			SPACE	33		34	SPACE			
			SPACE	35		36	SPACE			
			SPACE	37		38	SPACE			
			SPACE	39		40	SPACE			
			SPACE	41		42	SPACE			
TOTAL		8,850W	20,100W							
TOTAL CONNECTED LOAD =				28,950 WATTS						
GENERAL LIGHTING (1,125W) X 125%				1,406 WATTS						
HVAC (12,600W) X 100%				12,600 WATTS						
LARGEST MOTOR (500W) X 125%				625 WATTS						
SHOW WINDOW (540W) X 125%				675 WATTS						
SIGNAGE (1,200W) X 125%				1,500 WATTS						
INSTA-HOT (4,160W) X 125%				4,160 WATTS						
SUBTOTAL				20,966 WATTS						
REMAINDER AT 100 %				8,825 WATTS						
TOTAL DEMAND LOAD =				29,791 WATTS = 83 AMPS						

LIGHTING FIXTURE SCHEDULE						
SYMBOL	DESCRIPTION	LAMPS				MOUNTING
		NO.	TYPE	WATT	EFFICACY	LUMEN OUTPUT
	COMBINATION EXIT/EMERGENCY LIGHT, BATTERY PACK WITH CHARGER AND TEST SWITCH, U.L. LISTED 90 MINUTE EMERGENCY SERVICE	2	L.E.D. EXIT ARRAY, (2) L.E.D. EMERGENCY LAMPS			120
	EMERGENCY LIGHT, BATTERY PACK WITH CHARGER AND TEST SWITCH, U.L. LISTED 90 MINUTE EMERGENCY SERVICE	2	(2) L.E.D. EMERGENCY LAMPS			120

REVISIONS

TENANT IMPROVEMENT FOR  
THE UPS STORE POSTAL SERVICES

PROJECT NO. 7433  
DATE: 09.08.2021  
DESIGN KSG  
DRAWN KSG

SHEET NO.

E-2.1