



DEVELOPMENT SERVICES

PLAN REVIEW COMMERCIAL

ELECTRICAL CHECKLIST

This checklist is provided as a reference tool and is not intended to be exhaustive of all possible requirements. It may also include more items than a specific set of plans may encompass.

Referenced Codes:

- 2023 National Electrical Code (NFPA 70)
- 2024 International Building Code ([IBC](#))
- COSA Chapter 10 Amendments ([Chapter 10](#))

#	GENERAL ELECTRICAL REQUIREMENTS	✓	N/A
1.	Registered design professional's licenses to be listed per IB 103		

#	SITE PLAN	✓	N/A
2.	Identify power poles, overhead and underground lines external to the building.		
3.	Identify service equipment locations, pad mount transformers and generators external to the building.		
4.	Identify electrical signs and pole lights.		
5.	Identify the service location for the building. If on the interior, verify that it is nearest the point of entrance of the service conductors.		

#	RISER DIAGRAM (ONE LINE DIAGRAM)	✓	N/A
6.	Provide verification of the type of service: Overhead-to-overhead, overhead- to-underground, pad-mount transformer, or primary metering.		
7.	Verify voltages; verify if single-phase or 3-phase.		
8.	List conduit and conductor sizes, types, and number of conductors.		
9.	Indicate ampacities of equipment and ratings of over current protection devices.		
10.	Indication of ground fault protection of equipment where required.		
11.	Identify fire pumps, generators, and UPS systems.		
12.	Identify proper working clearance and egress within electrical rooms.		
13.	Verify grounding and bonding locations.		

#	LOAD ANALYSIS	✓	N/A
14.	Breakdown connected loads into proper NEC categories (lighting, receptacles, motors, HVAC, etc.)		
15.	NEC demand factor applied to each category of load.		
16.	Total connected load in VA or KVA, and amps.		
17.	Total demand load in VA or KVA, and amps.		

#	GROUNDING DETAILS	✓	N/A
18.	Identify grounding electrode system, including concrete encased electrode, connection to metal underground water pipe, structural steel, metal support structure, and minimum 5/8" x 8' ground rod.		
19.	Size of main bonding jumper.		
20.	Sizes of all grounding electrode conductors.		
21.	Sizes of equipment grounding conductors. Verify correct sizing for conductors in parallel.		
22.	Size of transformer grounding electrode conductor.		
23.	Verify grounding electrode system for separate structures served by feeders/branch circuits.		
24.	Verify location of establishment of grounding electrode system.		
25.	Verify no equipment grounding conductors are run through meter or extend back through service laterals.		

#	POWER PLAN	✓	N/A
26.	Verify the locations of all switchboards, switchgear, panelboards, and load centers.		
a.	Verify working clearances, door swing, and panic hardware, if applicable.		
27.	Verify the locations of all required receptacles and their circuiting.		
28.	Verify locations of transformers.		
a.	Transformers over 50 kva not permitted in hollow spaces of buildings, 450.13(B).		
b.	Transformers over 112.5 kva shall be in rated rooms or Class 155 or higher insulation rating, 450.21(B).		
29.	Verify locations of all GFCI protected receptacles.		
a.	Verify GFCI protection is readily accessible.		
30.	Verify all exterior receptacles are weather-resistant.		
31.	Verify local disconnecting means for all HVAC and refrigeration equipment (unit or independently mounted).		
a.	Verify required service receptacles within 25[ft].		
32.	Verify locations of tamper resistant receptacles in required occupancies.		

#	LIGHTING PLAN	✓	N/A
33.	Verify plans indicate all lighting fixture types, locations, and circuiting.		
34.	Verify plans indicate lighting controls.		
35.	Verify circuiting of fixtures.		
36.	Verify exterior lighting is compliant with the MLOD Ordinance		
a.	Submit supporting documentation showing (photometric plan, fixture B.U.G. ratings, fixture mounting heights, total lumens for the site, and letter of certification from lighting designer, electrical engineer, landscape architect, etc.).		
37.	All light fixtures and light fixture assemblies shall be listed.		
38.	Verify emergency lighting is clearly denoted on the plans.		
39.	Verify method of emergency supply (unit batteries, generator, inverters, etc.).		

#	PANEL SCHEDULES	✓	N/A
40.	Verify panelboard/switchboard/switchgear, load center enclosure rating and buss rating is indicated.		
41.	Verify main breaker or main lug only.		
42.	Verify that all branch circuit overcurrent device ampacities are indicated, and a description of the load is indicated.		
43.	For electrical rooms having equipment with overcurrent device(s) rated at 800[A] or higher, shall have personnel door(s) within 25[ft] of working space, <i>be equipped with listed panic hardware or listed fire exit hardware.</i>		
44.	For electrical rooms having equipment with overcurrent device(s) rated at 800[A] or higher, shall have personnel door(s) within 25[ft] of working space, <i>open in the direction of egress.</i>		
45.	Verify arc-energy reduction method for equipment with overcurrent protection device(s) rate 1200[A] or higher.		
46.	Verify that panelboards fed from transformers or taps are provided with secondary overcurrent protection. Verify conductor length and ampacity.		
47.	Identify connected and demand loads in VA/KVA or amps. Verify that loads do not exceed capacity of panels.		

#	LIGHTING FIXTURE SCHEDULE	✓	N/A
48.	Verify that all fixture types are indicated, with lamp types, number of lamps, and maximum wattages.		
49.	Verify that custom fixtures are listed.		

#	PATIENT CARE FACILITIES	✓	N/A
50.	Verify that area uses are clearly defined.		
51.	List the type of patient care to be administered and if an essential system is required.		
	a. Verify amount of load required.		
	b. Verify number of transfer switches, and loads supported by those transfer switches.		
52.	Verify that the one-line diagram indicates separate transfer switches for equipment system, life safety branch and critical branch for systems in excess of 150kVA.		
53.	Verify non-magnetic metal conduits are used for MRI Environment.		
54.	Verify wiring methods for patient care areas. Assure redundant grounding is indicated for ALL patient care areas.		
55.	For Category 2 (General Care) spaces, verify GFCI protection for receptacles at patient bathroom and toilet rooms (517.21).		
56.	Verify required number of receptacles for patient bed locations and operating rooms.		

#	HAZARDOUS LOCATIONS	✓	N/A
57.	Verify that the classified location is clearly defined.		
58.	Verify that the correct wiring method (type of conduit system) is correct for the classified location.		

59.	Verify that the correct sealing fittings for the classified location are identified in the correct locations.		
60.	Verify that all equipment is listed for the classified location.		

#	EMERGENCY/LEGALLY REQUIRED OR OPTIONAL STANDBY SYSTEMS	✓	N/A
61.	Verify generator, UPS, or other back-up system voltage and ampacity.		
62.	Verify that the system is properly size for the loads.		
63.	Verify that emergency system transfer switches serve no other loads, and that emergency wiring is kept entirely independent of all other wiring.		
64.	Verify method of protection of emergency feeders for assembly occupancies over 1000 persons, buildings over 75 ft. in height, health care occupancies where persons are not capable of self-preservation, educational occupancies over 300 persons.		
65.	Verify that correct loads are protected by emergency and legally required standby systems per Building and Fire codes.		
66.	Verify that rooms housing generators meet required construction types.		
67.	Verify that natural gas generators comply with the requirements of the local fire amendments.		

#	FIRE PUMPS/PRESSURE MAINTENCE PUMPS	✓	N/A
68.	Verify selective coordination of overcurrent devices by a licensed, professional engineer, 695.3(C)(3).		
69.	Verify that the fire pump is supplied by a separate service or by a connection ahead of the main service disconnect in a separate listed enclosure from the service disconnecting means.		
70.	Verify that multiple sources of power are provided for fire pumps where required (high rise buildings, multi-building campus style facilities with no direction connection to utility, etc.).		
71.	Verify that disconnect (if utilized) is sized for locked rotor, is service rated, lockable in the closed position, separate from all other loads and located sufficiently remote from all other disconnecting means.		
72.	Verify that the service conductors installed in a wiring method compliant with methods for service entrance conductors.		
73.	Verify that the fire pump supply conductors on the load side of the final disconnecting means is encased in 2' of concrete, protected by a 2-hour fire rated assembly or installed with a 2-hour fire rated electrical circuit protective system.		
74.	Verify rating of room housing the fire pump (2-hour fire high rise buildings; 1 hour for all others). Verify no other equipment is located in the fire pump room, other than domestic water pumps.		
75.	Annotate the horsepower voltage and ampacity of the fire pump in Accela on the Comments section for verification by the sprinkler plan's examiner.		

#	CPS STANDARDS	✓	N/A
76.	Verify number and location of services. If compliant, verify that areas separately served are divided by minimum 2-hour fire barriers.		

77.	More than one service lateral fed from a pad-mount transformer will require a tap box, CPSE Standard 1002.5(D).		
78.	Verify exterior service disconnect for overhead-to-underground services.		
79.	Verify, for service of 277/480[V] and 200[A] or less, non-fused disconnect online-side and fused disconnect on load-side of the meter (CPSE Standard 408).		

#	PHOTOVOLTAIC SYSTEMS	✓	N/A
80.	Verify that site plan indicates the location of all PV associated equipment.		
81.	Verify roof design (if applicable) is sufficient to support the additional live load of the equipment. If roof mounted array systems exceed 6lbs./sq. ft. engineered drawings are required for 1 and 2 family dwellings. All other occupancies are required to be engineered.		
82.	Verify that the fastening method proposed is listed for use with the roof type and array system proposed		
83.	Verify, per IFC, the fire fighter access pathways.		
84.	Verify that all conductor types and sizes are correct for the system.		
85.	Verify that all over current protective devices are sized appropriately for the system.		
86.	Verify that all system grounding/bonding is identified and correct.		
87.	Verify that all disconnecting devices (AC and DC) are in the correct locations for the system.		
88.	Verify that all equipment is listed and being used as per its listing.		
89.	Verify that batteries (if applicable) are installed in a listed racking system and the location for the battery storage is ventilated in accordance the manufacturers installation instructions.		