



City of Auburndale

Electrical Plan Review Checklist

Revised September 2021

All permit application packages must be complete prior to acceptance. You must check each box to the left or indicate N/A on this submittal. For questions, please email permit@auburndalefl.com

Professional Engineers Stamp and Signature

Professional Engineers stamp and signature shall be on all plan sheets for the following types of facilities; Educational, Hospitals, Nursing Homes, and other medical facilities that require review by the Department of Health.

Plan Sheet Requirements

- Minimum scale 1/8" (except site plan)
- Minimum font size "9"
- Symbol legends
- Circuit connecting lines with home runs shown for all equipment, lighting, receptacle symbols; or other methods by permission.
- Schedules with electrical specifications for Luminaires, Mechanical/Equipment, Kitchen, Shop, and all other equipment items listed on the switchboard and panel schedules.
- Show the location of all items on the One-Line/Riser diagrams.
- Plan sheets need to reflect current as-built conditions.
- Plan sheets "specifically" identified as something other than the "Construction Set", cannot be approved.

One-line/Riser Diagrams

- Service point (NEC 100 Definitions)
- Conductor size, type, and number of
- Equipment grounding conductor size, type, and number of, or identify if metallic raceway
- Conduit sizes, type, and number of
- Identifiers for distribution equipment such as switchboards, panelboards, transformers, etc.
- Overcurrent protection devices

- System (Voltage, phase, wire)
- Bus ratings (the true value)
- AIC ratings
- Transformer primary/secondary voltages, KVA size, and source marking.
- Clearly indicate if system is fully rated or series rated for the available fault current.
- Locations with fault calculation values greater than 10,000 AIC need to be identified
- Additional items that maybe required shall be indicated, such as: Ground Fault Protection, 2nd Level Ground Fault Protection, etc.

Fault Current Calculations

The one line/riser diagram shall show the AIC value at all locations that are equal to or greater than 10,000 amperes. Fault calculations are required for new installations or existing installations when requested by Plan Review.

Panel Schedules

Panel schedules for switchboards, distributions, and panels must be provided on the plan sheets and one set of panel schedules on 8½" × 11" sheets for use during the review process. The following information is required to be shown on the panel schedule.

- System voltage, phase, wire, bus rating, bus available interrupting current rating.
- Overcurrent protection device size with available interrupting current rating, circuit number, phase identification, total phase load.
- Load values in VA or KVA. If using KVA the value needs to be expressed out to two decimal places. (Example: 1237 VA = 1.24 KVA)
- Each circuit shall indicate the type of load category.
- Load summary by type of category provided at the bottom of the panel schedule with the connected and calculated load values and NEC demand factor(s) shown.
- Single panels and multi-section panels shall indicate Main breaker size or lug configuration: Main lug only, Double lugs, Feed thru lugs.
- A separate panel schedule and calculation which includes downstream loads is required for each section of a multi-section panel design.
- A "Before and After" panel schedule presentation, must be located side by side on the same plan sheet.

Generator or Alternate Power System

- Where generator unit(s) or alternate power system(s) are existing, or going to be installed, the locations are required to be provided on the plan sheets and clearly identified.
- Identification of generator or alternate power system type is required, such as...
- NEC-517 *Essential Electrical System,
- NEC-700 *Emergency System,
- NEC-701 Legally Required Standby System,
- NEC-702 Optional Standby System,
- NEC-705 Interconnected Electrical Power Production Sources,
- NEC-708 Critical Operations Power Systems (COPS).
- NEC-517, NEC-700, NEC-701 System Generator's. All the generator accessory loads shall be connected to the same system the generator supplies to maintain the integrity of the system. (Examples; battery chargers, block heaters, fuel pumps, dampers, equipment lighting)

***Only NEC-517 Essential Electrical System(s) and NEC-700 Emergency System(s) can supply Emergency load(s).**

Documentation on System Coordination

The documentation needs to clearly indicate that the Professional Engineer takes full responsibility that the installation, when installed as designed, shall comply with the requirements of NEC-700.28 Selective Coordination for Emergency System, or NEC-701.27 Selective Coordination for Legally Required Standby System, or NEC-517.26 Selective Coordination of Life Safety Branch of the Essential Electrical System, and Coordination of the Critical Branch, Equipment Branch of the Essential Electrical System. Provide documentation on plan sheet(s) or the professional engineer's company letterhead. Statement needs to include Professional Engineer's stamp and signature whether on plan sheet or company letterhead.

Metered Demand Data

- Copy of the current last 12 months of utility demand.
- Complete calculations for all metered data shall be in KVA.
- Use of utility KW demand shall be converted to KVA using an appropriate power factor adjustment.
- Metered load studies shall include a minimum of 30 days, continuously recorded.
- Provide the ampere value of each phase at the beginning of the study.

- The current transformer (CT) shall be connected to the highest ampere phase at the beginning of the study when all phase conductors are not being recorded.
- Where multiple load studies are conducted at different locations on the distribution system the recording of all phases at that metered location will be required.
- The one-line diagram shall indicate the metered point location for each load study. The following information is also required.
- Graph of the study with time periods, ampere values, and ampere maximum peak clearly identified.
- Make/model of recording equipment, make/model of current transformers.
- Where equipment is not or cannot be set to record a 15-minute demand mode (average value over a 15-minute period continuously recorded), contact plan review concerning acceptability of your alternate recording method before starting load study.
- Calculations provided shall be based on the ampere maximum peak value shown on the graph.
- Existing loads included in metered load data and removed or altered shall not be subtracted from the demand data or demand calculation.

Medium or High Voltage Systems (over 1000 volts)

- Service point
- Conductor size, type, and number of
- Equipment conductor size, type, and number of
- Conduit sizes
- Overcurrent protection devices
- System (Voltage, phase, wire)
- Bus ratings
- AIC ratings
- Transformer primary/secondary voltages and KVA size
- Locations with fault calculation values greater than 10,000 AIC need to be identified.

Hazardous Locations (classified)

The boundary lines for any area classified as Class I, Division 1/Class I, Division 2/Class I, Zone 0/Class I, Zone 1/Class I, Zone 2/Class II, Division 1/Class II, Division 2/Class III, Division 1/Class III, Division 2/any combination thereof shall be clearly indicated on the floor plan sheets and indicate the Classification of this area.