



## **ELECTRICAL**

### **Secondary Service**

A single metering switchboard service will be provided for each building. Service will be 208/120 volt, 3 phase, 4 wire, and fed underground from a utility company provided pad-mounted transformer including primary feeds, conduit and trenching. Secondary conduit, wire, and grounding are included. Spare capacity will be included at the service equipment.

### **Metering**

Each building will be metered separately. A meter will be located on the exterior of each building. The meter will meet FP&L requirements, manufactured by Square D or approved equal. Current transformers for metering shall be installed in transformer secondary compartment.

### **Panels**

Panels shall be full size, minimum 20" wide x 5-3/4" deep with aluminum busses using full size, bolt-on quick-make, quick-break circuit breakers of the thermal magnetic type. Mains shall be lugs only or main breakers as required. Panels surface mounted in closets. All panels to have separate equipment ground bar and typewritten directories.

### **Raceway**

All wiring shall be installed in appropriate raceway systems of rigid galvanized conduit, electric metallic tubing, flexible steel conduit and liquid-tight flexible conduit as conditions and codes dictate. EMT shall be joined with steel compression type fittings.

All conduit shall have an insulated copper equipment grounding conductor throughout the entire length of the circuit within the conduit.

### **Wires and Cables**

All branch circuits shall be copper with THHN or THWN insulation. Minimum size #12 AWG.

Feeders and subfeeders size #4 and larger shall be XHHW copper.

Color coding shall comply with the National Electric Code. Phase conductors of each voltage system must be of a different color. Neutrals shall be white for 120/208V. Equipment grounding conductors shall be green insulated.



**Wiring Devices**

All receptacles shall be 20 amp, 125 volt grounding type, specification grade and mounted at 18" AFF. Switches shall be 20 amp, 125V silent type, specification grade, and mounted at 48" AFF. Receptacles supplying electronic equipment shall have isolated ground tied directly to main system ground. Receptacles located where water or wet conditions exist shall be on ground fault circuits. Receptacles supplying remote computer terminals and specially sensitive equipment shall be supplied through specially regulated power supplies. Device plates shall be smooth nylon. Device colors shall be ivory. Emergency receptacles shall be red.

**Interior lighting**

Lighting shall be designed for type of task involved and in general shall be utilize 3500EK fluorescent, recessed with acrylic prismatic lens. T8, biax, and compact fluorescent lamps.

All incandescent lamps shall be rated 130V.

Interior lighting for Common Area spaces will generally be follows:

<u>Space</u>	<u>Average Foot-candles</u>	<u>Fixture</u>
Elec/Mech/ Equip Rms.	20	Florescent strip with T-8 lamps and electronic ballast
Elevator Lobby	20	Wall Sconces and Surface mounts with florescent 13 W PL lamps
Corridor	20	Wall Sconce and surface mounted florescent 13W PL lamps
Stairs	30	Wall Fixtures with Florescent lamp 13 PL
Exit lights	--	1.8 watt or less LED type



Dining and Kitchen Area	30	Wall sconces and surface mounted fluorescents
Resident Room	30	Residential style surface mounted compact fluorescents.
Toilet and Bathing Facilities	30	Surface mounted fluorescents

**Exterior Lighting**

Exterior lighting shall be utilize metal halide HID lamps.  
 HID ballasts shall be high power factor type protected by in-line fuses.

Exterior lighting for Common Area spaces will generally be follows:

<u>Space</u>	<u>Average Foot-candles</u>	<u>Fixture</u>
Exterior Parking	1	30' high shoebox with Metal Halide Lamps (250 watt) on concrete pole

Exterior lighting is controlled by photocells, timeclocks, and contactors.

**Exit Signs**

Exit sign will be installed to clearly direct occupants to the exit ways in case of an emergency. Sign units will be polycarbonate construction with red letters. The letters will be illuminated with a back-lit LED array and will contain an internal battery back up and charger.

**Fire Alarm System**

Fire Alarm and Detection: An electrically supervised, fully addressable, 24V D.C. fire alarm system shall be provided and shall including the following:

1. Detection generally from duct located photoelectric type detectors with special and area ceiling photoelectric detectors.



2. Ionization detectors in trash chutes.
3. Fire alarm, double action manual pull stations.
4. Sprinkler system water flow switch and valve alarm.
5. Alarm signals from horns (flush) with flashing lights. (ADA compliant.)
6. Alarm and trouble indication annunciators within building.
7. Fan shut down, smoke door closure, and smoke damper control, where required.
8. Connection to Life Safety Branch of the essential distribution system.

**Telephone/Data System**

Conduit, outlet boxes and terminal boards located in telephone equipment closets shall be provided. Computer terminal line, locations shall be reviewed and provisions made for data lines and terminations.

**Cable Television**

In a similar manner to the installation of the telephone service described above, cable television will be installed to the building and to each unit.

**Nurse Call System**

Complete, stand-alone, audio-visual nurse call systems, including control consoles, equipment cabinets, patient stations, toilet and shower stations, conduit, cable and connections, shall be provided.

Nurse call system cabling shall be run in conduit within each suite.

**Equipment Connections**

Equipment connections will be provided for all HVAC equipment, plumbing equipment, elevators, and 120V control power and condominium unit kitchen equipment.

**Surge Suppression Protection**

Surge suppression equipment shall be specified for all selected distribution equipment. It shall be installed on the main electrical service, all distribution panels and selected sub-panels, power supplies of special systems, and on circuits feeding selected major items that have a sensitive electrical nature. A bonding and single point grounding system shall be provided to interconnect the



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Riverside Cottages – Assisted Living Facility  
St. Johns County, Florida

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main electric service ground, lightning protection system grounds and all special electronic system isolated grounds.

**Lightning Protection System**

Lightning Protection System: System shall be installed to protect entire building . All conductors and air terminals shall be copper or aluminum. A master label or LPI certification shall be required.