**Lee County**

**Department of Transportation**

**Lighting Plans**

Gateway Boulevard at Griffin Drive
Intersection Control (Roundabout)

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**Lighting Plans**

Engineer of Record:
David Allen, P.E.
P.E. No. 58540
Cardno, Inc.
3905 Crescent Park Dr.
Riverview FL 33578
(813) 257-0005
Certificate of Authorization No.: 29915

County Project Manager:
Alejandro J. Slaibe, P.E.

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60% Plans
March 2020
(Not for Construction)
## Tabulation of Quantities

<table>
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<tr>
<th>PAY ITEM NO.</th>
<th>DESCRIPTION</th>
<th>UNIT</th>
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**PAY ITEM FOOTNOTES**

1. PAY ITEM 630-2-2: The conduits shall be fitted with bell ends or equivalent fittings prior to the pulling of any wire into the conduits.

2. PAY ITEM 630-2-3: The conduits shall be fitted with bell ends or equivalent fittings prior to the pulling of any wire into the conduits. All directional boxes under roadway shall include a spare conduit containing a pull wire and sealed with a water tight cap.

3. PAY ITEM 630-2-5: Pull boxes designated with (LCB) shall be for the proposed lighting system maintained by Lee County. These pull boxes shall have "LOGO STREET LIGHTING" stamped on raised lettering on the pull box covers and include a concrete apron. The pull box shall be 12" x 30" and 12" deep. This pull box shall follow Section 635 in FDOT Specifications.

4. PAY ITEM 630-3-2: Pull boxes designated with (GS) shall be for the adjusted gateway service community development district existing light system. These pull boxes shall have "USCD STREET LIGHTING" stamped on raised lettering on the pull box covers. The pull box and cover shall be concrete with the size of 12" x 24" and 12" deep.

5. PAY ITEM 640-2-12: Concrete service pole for the power service assemblies shall be 12 feet.

6. PAY ITEM 715-1-6: At locations where existing lighting conductors are to be removed, the conduit shall remain below grade and be filled with grout. All conduit remaining above final grade shall be cut below grade. This is covered under this pay item.

7. PAY ITEM 715-4-2: This pay item includes the luminaire optional 7 pin photocontrol receptacle and the cost of furnishing and installing the field installed houseside shield (ATB2HS40) and road side shield accessories (ATB2SS40) for each luminaire. The house side shields shall be installed on all luminaires. The contractor shall install the road side shields only on specified luminaires as directed by the engineer to help reduce glare to local businesses and residents. However, the lighting criteria and uniformity ratio must still be met if using the road side shields. All shields not field installed shall be delivered to the location determined by Lee County Department of Transportation. See pole data and legend for the specifications for the two luminaires.

8. PAY ITEM 715-4-3: Includes the removal of pole, bracket arm, luminaire, transformer base, foundation, associated wiring and all restoration.

9. PAY ITEM 715-1-1: This pay item for the load center shall include but not limited to NEMA 4X pole mount cabinet, additional enclosures, panel boards, main breaker, circuit breakers, lighting protection, photo-electric assembly, contactor, GFCI, switch, conduit and feeder conductors from the power service assembly to the lighting control panel, and all miscellaneous hardware for a complete installation. Two type P-11 concrete service pedestals for the load center assembly are paid for separately.

The load center shall be a three wire, single phase 120/240V power service assembly.
ROADWAY LIGHTING GENERAL NOTES

1. ADHERENCE TO REQUIREMENTS IN "LEE COUNTY DEPARTMENT OF TRANSPORTATION PLAN SPECIFICATIONS FOR SIGNAL & STREET LIGHTING" DATE REVISED APRIL 13, 2004, CONTACT LEE COUNTY DEPARTMENT OF TRANSPORTATION FOR ADDING EQUIPMENT OR INSTALLATION REQUIREMENTS THAT FOLLOW THE CIRCULAR GOVERNMENT STANDARDS AND SPECIFICATIONS FOR ALL ITEMS NOT COVERED BY LEE COUNTY SPECIFICATIONS.

2. SPOKE CONDUIT AT PAVEMENT CROSSINGS WILL BE CAPED AT BOTH ENDS.

3. PRIOR TO ANY EQUIPMENT ORDER, THE CONTRACTOR SHALL SUBMIT, FOR APPROVAL, EQUIPMENT SPECIFICATION OR DESIGN SHEET, ALONG WITH SHOP DRAWINGS FOR THE PROJECT, TO THE SHOP DRAWINGS AND DESIGN DATA FOR ROADWAY LIGHTING EQUIPMENT SHALL BE SUBMITTED TO THE ENGINEER OF RECORD IN ACCORDANCE WITH THE SPECIFICATIONS.

4. PROVIDE SHOP DRAWINGS OF THE PHOTOEMITTING CALCULATIONS FOR LUMINAIRES OTHER THAN THE BASIS OF DESIGN. THE LUMINAIRE BASIS OF DESIGN IS THE FOLLOWING:
   - AMERICAN ELECTRIC LIGHTING AUTBAHNN 320 WATT LED LUMINAIRE 400K COLOR TEMPERATURE WITH TYPE III DISTRIBUTION AND HOUSSEID SHIELD. PHOTOMETRIC CURVE IS ATB2 404LED70 XXXX R3 HS.
   - AMERICAN ELECTRIC LIGHTING AUTBAHNN 130 WATT LED LUMINAIRE 400K COLOR TEMPERATURE WITH TYPE III DISTRIBUTION AND HOUSSEID SHIELD. PHOTOMETRIC CURVE IS ATB2 404LED70 XXXX R3 HS.

5. TO SELECT EXISTING UTILITIES, AS SHOWN ON THESE PLANS, ARE APPROXIMATE AND BASED ON THE INFORMATION FURNISHED TO THE CONTRACTOR INDIVIDUAL UTILITIES WILL BE MAINTAINED.

6. DAMAGES TO EXISTING LIGHTING SYSTEM WITHIN PROJECT LIMITS SHALL BE COMPLETE WORKING ORDER PRIOR TO FINAL PHASES.

7. BUTTERFLY HOUSING SHALL BE EXERCISED AT ALL TIMES IN PERFORMANCE OF WORK AROUND EXISTING ELECTRICAL SYSTEMS. EXTREME CAUTION SHALL BE EXERCISED IN PERFORMANCE OF WORK AROUND EXISTING ELECTRICAL SYSTEMS.

8. ALL ELECTRICAL WORK SHALL MEET ALL REQUIREMENTS OF THE LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE (NEC), THE NATIONAL ELECTRICAL SAFETY CODE (NESC) AND THE STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. ALL COMPONENTS SHALL BE PROPERLY GROUNDED AND BONDED PER NEC REQUIREMENTS.

9. NOTIFICATIONS, IN ACCORDANCE WITH NEC, IDENTIFY ALL CIRCUIT AND EQUATION WITH "LAMICAD" TAGS. INSTALL SIMILAR TAGS OF STAINLESS STEEL IDENTIFYING THE CIRCUIT FOR EACH LUMINAIRE AT ACCESS HAND HOLE FOR EACH POLE.

10. NO SCREW TYPE BASE FOUNDATIONS SHALL BE USED.

11. THE LOCATION OF THE Poles, CONDUITS, AND JUNCTION BOXES ARE DIAGRAMMATIC ONLY AND MAY BE SHIFTED WITHIN THE RIGHT OF WAY BY THE CONTRACTOR WITH APPROVAL FROM THE ENGINEER TO ACCOMMODATE LOCAL CONDITIONS AND EXISTING UTILITY LOCATIONS. THE MAINTENANCE SLAB ORIENTATION SHALL BE DETERMINED BY THE CONTRACTOR PER INDIVIDUAL POLE LOCATION.

12. OVERHEAD FACILITIES ARE TO REMAIN ENERGIZED AND IN PLACE. TABLE "A", MINIMUM CLEARANCE DISTANCES SPECIFIED IN SUBPART CC OF OSHA REQUIREMENTS FOR WORK IN PROXIMITY TO POWER LINES NOT COVERED IN SUBPART CC OF OSHA RULE 1926 (AS THEY PERTAIN TO CRANE/DERRICK OPERATIONS), AND OR THOSE MINIMUM CLEARANCE DISTANCES SPECIFIED IN 29 CFR 1910.333(C) FOR WORK IN PROXIMITY TO POWER LINES NOT COVERED BY THIS SUBPART CC, ARE TO BE MAINTAINED.

13. THE POWER SERVICE CONDUIT AND CABL shall BE INSTALLED FROM THE PROPOSED LOAD CENTER TO THE LEFT-FRONT SIDE OF THE TRANSFORMER BASES. THIS TRANSFORMER IS LABELED WITH THE NUMBER 8 ON THE UPPER-LEFT CORNER OF THE TRANSFORMER BASE.

14. AT LOCATIONS WHERE THE PROXIMITY OF THE INSTALLATION IS CLOSE TO THE EXISTING OVERHEAD POWER, AS DETERMINED BY THE ENGINEER, A "LOW PROFILE" RIG SHALL BE REQUIRED TO DRILL THE FOUNDATION AND INSTALL THE LIGHT POLES.

15. WIRE PULLING INSTRUCTIONS: CONNECT PULLING DEVICES TO COPPER WIRE AND NOT TO JACKET AND MEET MANUFACTURER REQUIREMENTS. USE PULLING COMPUND PER MANUFACTURER REQUIREMENTS. ALL BENDS SHALL NOT BE LESS THAN RECOMMENDED BY THE NEC OR NESC FOR CABLE USE.

16. NO SCREW TYPE BASE FOUNDATIONS SHALL BE USED.
POLE DATA

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<th>POLE NO.</th>
<th>CIRCUIT</th>
<th>STATION</th>
<th>DIST. OR ARM</th>
<th>LUMINANCE</th>
<th>MOUNTING HEIGHT</th>
<th>POLE SETBACK TO CENTER OF POLE</th>
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LEGEND

- **Existing pole and luminaire to remain.**
- **Existing pole and luminaire to be removed.**
- **Existing conduit and conductors to remain unless noted otherwise.**
  - **Proposed open trench conduit with THWN-2 conductors inside (cable and conduit size as shown on plan sheets).** Run one (1) No. 6 AWG (minimum) copper bond conductor (THWN green insulation) inside conduit with other conductors.
  - **Proposed conduit directional bore with THWN-2 conductors inside (cable and conduit size as shown on plan sheets).** Extent conduit beyond edge of pavement to pull boxes. Run one (1) No. 6 AWG (minimum) copper bond conductor (THWN green insulation) inside conduit with other conductors.
  - **Pull box with concrete apron for the LCDDT maintained proposed lighting system.** For specifications see Section 635 of Standard Specifications For Road And Bridge Construction.
  - **Pull box for the adjusted Gateway Service Community Development District maintained lighting system.** For specifications contact Bill Shaw with Gateway Service Community Development District.
  - **Proposed 120V/240V Load Center.** For requirements see Index No. 639-001 of the FDOT Standard Plans.
  - **Existing FPL Transformer to be used for power source.**
  - **Power service assembly.** For specifications see Section 639 of FDOT Standard Specifications For Road And Bridge Construction.

POLE DATA AND LEGEND

- **POLE = FACE OF CURB, FOS = FRONT OF SIDEWALK, BOS = BACK OF SIDEWALK, EOP = EDGE OF PAVEMENT**

ROUNDBOAT

LIGHTING DESIGN CRITERIA

- **Average Horizontal Initial Intensity:** 3.0 Foot Candles
- **Average Vertical Initial Intensity:** 2.0 Foot Candles
- **Uniformity Ratio Avg./Min.:** 0.89 Or Less
- **Max./Min.:** 1.05 Or Less
- **Veiling Luminance Ratio:** 0.10 Or Less
- **Wind Speed:** 170 MPH

SYMBOLS

- Designed for a American Electric Lighting Autobahn ATB2 133 watt LED luminaire with 3000k color temperature, Roadway Type III distribution and houseside shields. See pay item footnotes for additional luminaire information. Luminaire shall be wired for 480 volt operation. Pole mounting height is 35 feet with a 15-foot arm length mounted on a standard light pole. No tilt. Lighting basis of design used AEL Autobahn ATB2 photometric curve number ATB2.40BLED070 XXXXX_R3_3k_HSS with output lumens of 11,000.

- Designed for a American Electric Lighting Autobahn ATB2 88 watt LED luminaire with 3000k color temperature, Roadway Type III distribution and houseside shields. See pay item footnotes for additional luminaire information. Luminaire shall be wired for 480 volt operation. Pole mounting height is 35 feet with a 15-foot arm length mounted on a standard light pole. No tilt. Lighting basis of design used AEL Autobahn ATB2 photometric curve number ATB2.40BLED063 XXXXX_R3.3k_HSS with output lumens of 8,000.

- Existing pole and luminaire to remain.

- Existing pole and luminaire to be removed.

- Proposed open trench conduit with THWN-2 conductors inside (cable and conduit size as shown on plan sheets). Run one (1) No. 6 AWG (minimum) copper bond conductor (THWN green insulation) inside conduit with other conductors.

- Proposed conduit directional bore with THWN-2 conductors inside (cable and conduit size as shown on plan sheets). Extend conduit beyond edge of pavement to pull boxes. Run one (1) No. 6 AWG (minimum) copper bond conductor (THWN green insulation) inside conduit with other conductors.

- Pull box with concrete apron for the LCDDT maintained proposed lighting system. For specifications see Section 635 of Standard Specifications For Road And Bridge Construction.

- Pull box for the adjusted Gateway Service Community Development District maintained lighting system. For specifications contact Bill Shaw with Gateway Service Community Development District.

- Proposed 120V/240V Load Center. For requirements see Index No. 639-001 of the FDOT Standard Plans.

- Existing FPL Transformer to be used for power source.

- Power service assembly. For specifications see Section 639 of FDOT Standard Specifications For Road And Bridge Construction.
NOTES:

1. THE POWER SERVICE FOR THE GATEWAY EXISTING LIGHTING CIRCUIT IS LOCATED APPROXIMATELY 3,000 FEET TO THE SOUTH. THE SERVICE IS BY 115 KV TRANSFORMER IN THE SOUTHWEST CORNER OF GATEWAY BOULEVARD AND VILLA GRAND.

2. EXISTING LIGHT POLE IS TO REMAIN. A PROPOSED GS PULL BOX IS TO BE INSTALLED ADJACENT TO THE NORTH SIDE OF THE LIGHT POLE. IT SHALL INTERCEPT THE EXISTING GATEWAY LIGHTING CONDUIT. THE EXISTING CONDUCTORS SHALL BE CUT. THE CONDUCTORS FROM THE PULL BOX ADJACENT TO THE POLE AND CONTINUING SOUTH SHALL REMAIN. THE CONDUCTORS GOING NORTH FROM THE PROPOSED PULL BOX TO THE END OF THE LIGHTING CIRCUIT AT THE EXISTING LIGHT POLE (APPROXIMATE STATION 148+50) SHALL BE REMOVED.

GATEWAY BOULEVARD

INTERSECTION CONTROL (ROUNDABOUT)

LIGHTING PLAN (1)

COUNTRY: Lee County

PROJECT NO.: 200672

SHT. NO.: L-5
NOTE:
1. EXISTING LIGHT POLE IS TO REMAIN. A PROPOSED 155+30.00 LIGHT POLE IS LOCATED APPROXIMATELY 1,950 FEET TO THE NORTH. THE SERVICE IS BY THE FPL TRANSFORMER IN THE NORTHWEST CORNER OF GATEWAY BOULEVARD AND GIRL SCOUT LANE/GATEWAY GREENS DRIVE.

2. THE POWER SERVICE FOR THE GATEWAY LIGHTING PLAN (3) IS TO BE PROVIDED TO THE EXISTING LIGHT POLE (APPROXIMATE STATION 155+30.00) FROM THE PROPOSED PULL BOX TO THE END OF THE LIGHTING CIRCUIT AT THE EXISTING LIGHT POLE (APPROXIMATE STATION 155+30.00) SHALL BE REMOVED.
NOTES:

1. EXISTING LIGHT POLE IS TO BE REMOVED. THE EXISTING PULL BOX SHALL BE REPLACED WITH A PROPOSED PULL BOX. THE CONDUCTORS DROP TO THE PROPOSED PULL BOX. THE EXISTING FAIRWAY LAKES LIGHTING CONDUCTORS FROM BOTH THE WEST AND EAST SHALL BE REMOVED AND SPliced TO MAINTAIN POWER TO THE EXISTING DOWNSTREAM LIGHT POLES TO THE WEST.

2. DURING THE LIGHTING DESIGN FOR THIS PROJECT, GATEWAY SERVICE COMMUNITY DISTRICT STATED THE LIGHTING AONG FAIRWAY LAKES DRIVE IS NOT WORKING.

EXISTING 3-#6 FAIRWAY LAKES LIGHTING CONDUCTORS TO REMAIN

POLE NO. 15, CID. A-3
STA 313+46.60

SEE NOTE 1

EXISTING 3-#6 FAIRWAY LAKES LIGHTING CONDUCTORS TO REMAIN

3 CONDUIT RUN (LC)
3-# # REG
1-# # AWG GRND

BEGIN LIGHTING STA 313+46.60
FAIRWAY LAKES LIGHTING
CONDUCTORS TO REMAIN

SEE NOTE 1

EXISTING 3-#6 FAIRWAY LAKES LIGHTING CONDUCTORS TO REMAIN

EXISTING 3-#6 FAIRWAY LAKES LIGHTING CONDUCTORS TO REMAIN

SEE NOTE 1

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EXISTING 3-#6 FAIRWAY LAKES LIGHTING CONDUCTORS TO REMAIN
1. EXISTING LIGHT POLE IS TO REMAIN. A PROPOSED GS PULL BOX IS TO BE INSTALLED ADJACENT TO THE WEST SIDE OF THE LIGHT POLE. IT SHALL CONTINUE ALONG GRIFFIN LIGHTING CONDUIT. THE EXISTING CONDUCTORS SHALL BE CUT. THE CONDUCTORS FROM POLE NO. 19, CKT. A-2 TO THE PULL BOX AT THE END OF THE LIGHTING CIRCUIT AT THE EXISTING LIGHT POLE (APPROXIMATE STATION 319+67) SHALL BE REMOVED.

2. THE POWER SERVICE FOR THE GRIFFIN EXISTING LIGHTING CIRCUIT IS LOCATED APPROXIMATELY 2,275 FEET TO THE EAST. THE SERVICE IS NEAR THE FPL TRANSFORMER ON THE SOUTH SIDE OF GRIFFIN DRIVE EAST OF PINEDOWN LAKES DRIVE.
KEYED NOTES

1. 120/240V SINGLE PHASE 3-WIRE FPL ELECTRIC DISTRIBUTION UNDERGROUND SERVICE FROM FPL TRANSFORMER.

2. INSULATED #2 COPPER FEEDER CONDUCTORS IN RIGID GALVANIZED STEEL CONDUIT.

3. METER SOCKET BY CONTRACTOR, METER BY FPL.

4. SERVICE MAIN DISCONNECT: 600V, 2-POLE HEAVY DUTY NEMA 3R WITH ENCLOSED BREAKER.

5. POST-MOUNTED 4X CABINET WITH LOCKABLE HINGED DOOR, SIZE PER EQUIPMENT REQUIREMENT.

6. 12' PEDESTAL CONCRETE POLE.

7. ELECTRICAL PANEL, 120/240V, SINGLE PHASE 3-WIRE WITH GROUND BAR AND CIRCUIT BREAKERS. SEE PANEL SCHEDULE FOR MORE INFORMATION.

8. COPPER CLAD GROUND ROD ½-INCH DIA, 40 FEET LONG.

9. FPL REQUIRED SIZED INSULATED COPPER GROUND WIRE IN 1-INCH RIGID GALVANIZED STEEL. BOND THE SERVICE NEUTRAL TO GROUND AT SERVICE MAIN DISCONNECT.

10. LIGHTNING ARRESTER MOUNTED ON OUTSIDE OF ENCLOSURE.

11. MAIN CIRCUIT BREAKER 2-POLE, 120/240V. SEE DISTRIBUTION POINT DESCRIPTION ON LIGHTING PLAN SHEETS FOR SIZE.

12. 2-POLE, ELECTRICALLY HELD CONTACTOR WITH SAME AMPACITY RATING AS MAIN CIRCUIT BREAKER.

13. PHOTO ELECTRIC CELL SWITCH - 120V RATED, INSIDE ENCLOSURE.

14. 'HAND-OFF-AUTOMATIC' SELECTOR SWITCH (PART OF LIGHTING CONTACTOR).

15. UNDERGROUND FEEDER CONDUIT INSULATED #2 COPPER FEEDER CONDUCTORS.

16. 12' CONCRETE PEDESTAL POLES WITH GALVANIZED UNISTRUT TO SUPPORT ELECTRICAL EQUIPMENT.

17. CONDUIT(S) WITH CONDUCTORS FOR THE LIGHTING CIRCUITS. THE CONTRACTOR SHALL DETERMINE THE NUMBER OF NECESSARY CONDUIT DROPS.

RISER DIAGRAM (NTS)

18. POWER SERVICE ASSEMBLY (639-1-22)

19. INSTALL PE SWITCH INSIDE ENCLOSURE WITH A 2 INCH BY 2 INCH SQUARE PLEXIGLASS WINDOW.

20. 120/240V SINGLE PHASE 3-WIRE FPL ELECTRIC DISTRIBUTION UNDERGROUND SERVICE FROM FPL TRANSFORMER.

21. INSULATED #2 COPPER FEEDER CONDUCTORS IN RIGID GALVANIZED STEEL CONDUIT.

22. METER SOCKET BY CONTRACTOR, METER BY FPL.

23. SERVICE MAIN DISCONNECT: 600V, 2-POLE HEAVY DUTY NEMA 3R WITH ENCLOSED BREAKER.

24. POST-MOUNTED 4X CABINET WITH LOCKABLE HINGED DOOR, SIZE PER EQUIPMENT REQUIREMENT.

25. 12' PEDESTAL CONCRETE POLE.

26. ELECTRICAL PANEL, 120/240V, SINGLE PHASE 3-WIRE WITH GROUND BAR AND CIRCUIT BREAKERS. SEE PANEL SCHEDULE FOR MORE INFORMATION.

27. COPPER CLAD GROUND ROD ½-INCH DIA, 40 FEET LONG.

28. FPL REQUIRED SIZED INSULATED COPPER GROUND WIRE IN 1-INCH RIGID GALVANIZED STEEL. BOND THE SERVICE NEUTRAL TO GROUND AT SERVICE MAIN DISCONNECT.

29. LIGHTNING ARRESTER MOUNTED ON OUTSIDE OF ENCLOSURE.

30. MAIN CIRCUIT BREAKER 2-POLE, 120/240V. SEE DISTRIBUTION POINT DESCRIPTION ON LIGHTING PLAN SHEETS FOR SIZE.

31. 2-POLE, ELECTRICALLY HELD CONTACTOR WITH SAME AMPACITY RATING AS MAIN CIRCUIT BREAKER.

32. PHOTO ELECTRIC CELL SWITCH - 120V RATED, INSIDE ENCLOSURE.

33. 'HAND-OFF-AUTOMATIC' SELECTOR SWITCH (PART OF LIGHTING CONTACTOR).

34. UNDERGROUND FEEDER CONDUIT INSULATED #2 COPPER FEEDER CONDUCTORS.

35. 12' CONCRETE PEDESTAL POLES WITH GALVANIZED UNISTRUT TO SUPPORT ELECTRICAL EQUIPMENT.

36. CONDUIT(S) WITH CONDUCTORS FOR THE LIGHTING CIRCUITS. THE CONTRACTOR SHALL DETERMINE THE NUMBER OF NECESSARY CONDUIT DROPS.
## PANEL "A" SCHEDULE

Panel ID: ____________________________  Main Breaker: 100 A  
Location: ____________________________  Voltage: 120/240 V  
Mounting: Surface  Single Phase, 3-wire

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<tr>
<th>Circuit Description</th>
<th>Load (KVA)</th>
<th>Breaker</th>
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**TOTAL DEMAND**  
**TOTAL DEMAND AMPS**  
**NO. OF POLES**

**TO BE COMPLETED IN NEXT SUBMITTAL**