

ELECTRICAL NOTES

PART 1: GENERAL

A. DESCRIPTION

Provide all requirements and criteria for safety and reliability to furnish and install complete operating electrical system, including materials, labor, necessary equipment as herein specified. Comply with local codes, National Electrical Code, IDOT, and all applicable codes and standards. The equipment and installation shall conform with the standard specifications for road and bridge construction of the Illinois Department Of Transportation including latest revision and supplemental specifications, as well as the special Provisions.

B. Scope of Work

- Contractor shall furnish, instal, and test complete street lighting system with all lighting poles, luminaries, foundations, lighting control cabinet, conduits, hangers, supports, devices, wiring, etc., required for a complete and operational installation. After installation, contractor shall completely test all components in compliance with IDOT standards to ensure complete functional installation.
- The work shall be performed in accordance with the rules and regulations set forth in the local governing code. The work shall also meet the laws and ordinance required by those agencies having jurisdiction.
- Contractor shall visit the site and make himself thoroughly familiar with existing conditions. Prior to submitting the proposal, include any relocation and/or alternations to the existing electrical system, components or equipment required to accommodate the new construction.
- Contractor shall obtain all permits required to perform his work. Prepare and submit to the authorities any and all data, drawings and details required for approval before commencing the installation.
- Maintain existing street lighting system operation during construction until new construction of street lighting system is completed. Maintain existing lighting as temporary lighting during the construction period. Remove same upon completion of the project.
- Contractor shall coordinate work with all trades and avoid conflicts and delays.
- Notify the engineer in writing of any discrepancies between the existing conditions and the new work. Lack of notification shall indicate that no discrepancies or conflicts exist.
- All light poles shall be non-breakaway type.
- Contractor shall coordinate work with utility companies, including electric, water, gas, sewer, cable, etc.
- Rigid Steel Conduit shall be pushed under street or driveway and extended 3'-0" on each side.
- As part of this work Owner shall have first salvage rights to any item removed as part of this project. Dispose of all others. Any unused equipment or wiring will not be allowed to be abandoned in place.
- Red tape or marking shall be 10" below grade to mark electrical conduit routing.
- After construction of new system remove old lighting poles, foundation and wiring. Abandon in place the conduit system.
- The contractor shall be responsible for damage incurred by him in any area of the project such as pavement, driveways, and sidewalks and shall restore them to their original condition as directed by the engineer. Landscaped areas shall be restored and damaged plant materials replaced to the satisfaction of the engineer.
- Lighting poles shall be located to provide unobstructed access to pedestrians meeting ADA requirements.
- Contractor is responsible to identify all underground and overhead utility conflicts and ensure adequate clearances between utilities and new lighting system.
- Ground rod material and installation is included as part of the electrical equipment and/or pole foundation systems. Refer to electrical details of cabinets and/or pole foundation for more information.

C. Guarantee

- Guarantee in writing all electrical equipment for a period of one year following date of substantial completion. State the additional amount for a five year full guarantee and full maintenance contract of electrical system.
- All apparatus shall be built and installed so as to deliver its full rated capacity at the efficiency for which it was designed.

D. Construction Phase Submittals

Submit: shop drawings to the engineer for approval. Prepare and provide the engineer with a complete set of circuted "record" drawings at project completion. Such drawings shall be submitted on a clear and legible reproducible form.

PART 2: PRODUCTS

A. Quality Level

All material and equipment used for this project shall be UL listed and approved for the intended applications unless otherwise noted.

B. Material

- Unit duct shall be Type MC 600 volt, EPR rated insulation, PVC jacket, Steel interlock armor, copper conductors and color coded.
- Site lighting branch circuits shall be #4 AWG minimum, unless otherwise noted. Control wiring shall be #14 AWG minimum.

PART 3: EXECUTION

- Provide a complete properly operating system for each item of equipment called for under this notes. Install in accord with the equipment manufacturer's instructions, the best industry practices and under competent supervision at all time.
- Prior to inspection to determine substantial completion the contractor shall operate all electrical system to demonstrate that the installation and performance of the system conform to the requirements specified above and on the drawings.

LEGEND

- ☒ Existing street light
- ☐ Proposed handhole
- Proposed 27'-0" street light 250W Metal Halide at 240V with 3' pedant arm at 27' high for roadway, & 70W Metal Halide at 240V with 1' pedant arm at 15' high for sidewalk.
- ☒ Proposed 30'-0" street light 250W Metal Halide at 240V with 3' pedant arm at 30' high for roadway, & 70W Metal Halide at 240V with 1' pedant arm at 15' high for sidewalk.
- ☒ Controller, 100A, 240/480V, 1PH, 3W
- P— Conduit, pushed, rigid galvanized steel 3'-0" below grade, extend 3'-0" on each side of the curb
- 3" galvanized steel conduit 3'-0" below grade
- Unit duct (Refer to plan for exact size)
- ☒ Existing street light to be removed (light pole and foundation)
- F1 Fixture type
- ☐ Proposed vandal proof receptacle (Weatherproof and Ground Fault Interrupter)
- ☐ UL listed, corrosion resistant and cover NEC 406.8.B.2a compliant
- ||— Ground Rod
- ☐ Weatherproof, corrosion resistant cabinet. Refer to detail for more information.

| ELECTRICAL LOAD SCHEDULE | | | | | | | RED PH. (AT 240V) | BLACK PH. (AT 240V) |
|--|----------------|-----------------|---|--|--|----------------|----------------------|------------------------|
| PANEL | CIRCUIT NUMBER | SIZE OF BREAKER | NO. OF LTG FIXTURE | | | | | |
| A1 (BERWYN) 100A, 240/480V, 1PH, 3W | A | 50A, 240V | (5) 340W | | | 1700VA | | |
| | B | 50A, 240V | (5) 340W | | | 1700VA | | |
| | C | 50A, 240V | (6) 340W | | | 2040VA | 2040VA | |
| | D | 50A, 240V | (6) 340W | | | | 2040VA | |
| | E,F,G,H | 50A, 240V | SPARE | | | | | |
| SUBTOTAL | | | | | | 3740VA | 3740VA | |
| CABINET A1 TOTAL LOAD (480V, 1PH) | | | | | | 7480VA*, 15.6A | | |
| A2 (BERWYN) 100A, 240/480V, 1PH, 3W | A | 50A, 240V | (6) 340W | | | 2040VA | | |
| | B | 50A, 240V | (5) 340W | | | 1700VA | | |
| | C | 50A, 240V | (10) 340W | | | 3400VA | | |
| | D | 50A, 240V | (11) 340W | | | | 3740VA | |
| | E,F,G,H | 50A, 240V | SPARE | | | | | |
| SUBTOTAL | | | | | | 5440VA | 5440VA | |
| CABINET A2 TOTAL LOAD (480V, 1PH) | | | | | | 10880VA, 22.7A | | |
| B1 (CICERO) 100A, 240/480V, 1PH, 3W | B | 50A, 240V | SERVE EXISTING LIGHTING (EAST OF AUSTIN) | | | | 2700VA | |
| | C | 50A, 240V | (4) 340W | | | 1360VA | | |
| | D | 50A, 240V | (5) 340W | | | | 1700VA | |
| | A,E,F,G,H | 50A, 240V | SPARE | | | | | |
| SUBTOTAL | | | | | | 1360VA | 4400VA | |
| CABINET B1 TOTAL LOAD (480V, 1PH) | | | | | | 5760VA, 12A | | |
| C1 (OAK PARK) 100A, 240/480V, 1PH, 3W | A | 50A, 240V | (5) 340W | | | 1700VA | | |
| | B | 50A, 240V | (6) 340W | | | 2040VA | | |
| | C | 50A, 240V | (6) 340W | | | 2040VA | | |
| | D | 50A, 240V | (6) 340W | | | | 2040VA | |
| | E,F,G,H | 50A, 240V | SPARE | | | | | |
| SUBTOTAL | | | | | | 3740VA | 4080VA | |
| CABINET C1 TOTAL LOAD (480V, 1PH) | | | | | | 7820VA*, 16.3A | | |
| C2 (OAK PARK) 100A, 240/480V, 1PH, 3W | A | 50A, 240V | (7) 340W | | | 2380VA | | |
| | B | 50A, 240V | (6) 340W | | | 2040VA | | |
| | C | 50A, 240V | (4) 340W | | | 1360VA | | |
| | D | 50A, 240V | (4) 340W | | | | 1360VA | |
| | E,F,G,H | 50A, 240V | SPARE | | | | | |
| SUBTOTAL | | | | | | 3740VA | 3400VA | |
| CABINET C2 TOTAL LOAD (480V, 1PH) | | | | | | 7140VA*, 14.9A | | |
| C3 (OAK PARK) 100A, 240/480V, 1PH, 3W | A | 50A, 240V | (5) 340W | | | 1700VA | | |
| | B | 50A, 240V | (5) 340W | | | 1700VA | | |
| | C | 50A, 240V | (5) 340W | | | 1700VA | | |
| | D | 50A, 240V | (5) 340W | | | | 1700VA | |
| | E,F,G,H | 50A, 240V | SPARE | | | | | |
| SUBTOTAL | | | | | | 3550VA | 3400VA | |
| CABINET C3 TOTAL LOAD (480V, 1PH) | | | | | | 6950VA, 14.5A | | |

*120V RECEPTACLE LOAD IS INCLUDED

Pole Identification

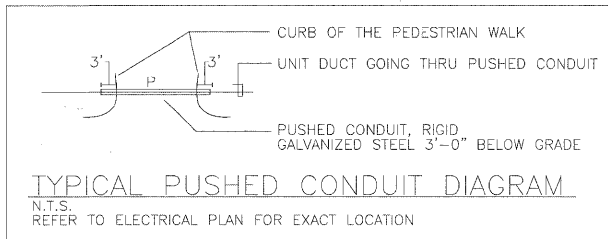
- ☐ C1 Control cabinet number
- ☐ B Circuit number
- ☐ T Pole number of the circuit

*All poles shall be offset 1.9 ft from back of curb to centerline of pole, unless roadway has bump-outs.

*All poles in bump-outs areas shall be offset from back of curb to centerline of pole as required to be inline with other poles.

*All poles shall have the same offset from the roadway centerline to maintain visual alignment.

New foundation and poles shall be located away from any existing utilities. Contractor shall identify all utilities and dig by hand to expose utility lines. Final exact location of foundation and pole shall be coordinated and approved prior to installation.



LIGHTING UNIT SCHEDULE

| TAG | DESCRIPTION | MANUFACTURER | CATALOG NUMBER | LAMPS | | INPUT WATTS | INPUT AMPS (240V) | POLE & BASE | MOUNTING | BALLAST | VOLT. | REMARKS |
|-----|---|-----------------|--|-------|----------------------------------|-------------|-------------------|---|--|---------|-------|---|
| | | | | NO. | TYPE | | | | | | | |
| F1 | METAL HALIDE FIXTURE ON 27 FT. POLE WITH PEDESTRIAN ARM | STERNBERG-OMEGA | 2-1527RFG/OD/70MHP/RO2H-L/OF/250MHP240/RO3H-L/MHP250/MOG/ED28-MHP70/MED/BK | 1 | 250W METAL HALIDE (STREET LIGHT) | 340 | 1.42 | STRATFORD 22/30/A/RSS/DBA/RSB4/BK WITH STRATFORD BASE | (REFER TO DETAIL FOR EXACT MOUNTING OF FIXTURES) | CWA | 240 | OD SINGLE ARM FOR PEDESTRIAN OF SINGLE ARM FOR STREET |
| | | | | 1 | 70W METAL HALIDE (PEDESTRIAN) | | | | | | | |
| F2 | METAL HALIDE FIXTURE ON 30 FT. POLE WITH PEDESTRIAN ARM | STERNBERG-OMEGA | 2-1527RFG/OD/70MHP/RO2H-L/OF/250MHP240/RO3H-L/MHP250/MOG/ED28-MHP70/MED/BK | 1 | 250W METAL HALIDE (STREET LIGHT) | 340 | 1.42 | STRATFORD 22/32/A/RSS/DBA/RSB4/BK WITH STRATFORD BASE | (REFER TO DETAIL FOR EXACT MOUNTING OF FIXTURES) | CWA | 240 | OD SINGLE ARM FOR PEDESTRIAN OF SINGLE ARM FOR STREET |
| | | | | 1 | 70W METAL HALIDE (PEDESTRIAN) | | | | | | | |

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STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

ELECTRICAL NOTES, LEGEND AND ELECTRICAL LOAD SCHEDULE

FILE NAME = DIRTE38-shr-light01.dgn

USER NAME = IDOT

DESIGNED - EE

REVISED - 04/09/2010

PLOT SCALE = 28,0000' / IN.

DRAWN - PY

REVISED -

PLOT DATE = 4/8/2010

CHECKED - JB

REVISED -

DATE -

REVISED -

SCALE: 1" = 20' SHEET NO. 1 OF 29 SHEETS STA. TO STA.

F.A.P. RTE. 347

SECTION 09-00248-00-RS

COUNTY COOK

TOTAL SHEETS 274 SHEET NO. 221

CONTRACT NO. 63432

ILLINOIS FED. AID PROJECT

092-08801 LICENSED PROFESSIONAL ENGINEER
Exp 11/30/2011
For Elec. Sheets 221 to 249