

A. General Instructions:

1. Codes, Permits and Inspections:
 - a. Wiring shall be in accordance with latest edition National Electrical Code (NEC), NFPA, and/or applicable local, state, and Utility Company rules, laws, codes, and ordinances.
 - b. Secure all permits and inspections required for the installation of the electrical work.
 - c. All work shall comply with the latest edition of the Americans With Disabilities Act (ADA).
 - d. Pay all fees associated with new utility services.
 2. Verifications:
 - a. Verify mounting heights and locations of electrical equipment before installation or rough-in.
 - b. Verify exact location of electrical service entrance including point of service and system characteristics.
 3. Wiring Methods:
 - a. The Electrical Contractor shall cooperate with other Contractors and install equipment in proper sequence so as not to interfere with the progress of other Contractors.
 - b. All materials shall be new and carry the Underwriter's Label or be "listed" by that group, and be fully equal to makes specified.
 - c. Use only insulated copper conductors in conduit. Use flexible conduit for connections to motors and similar equipment.
 4. Tests:
 - a. This Contractor shall be responsible for performing all tests necessary to prevent concealment of defective or improper work.
 - b. Upon completion of work, test the installation thoroughly and render it free from shorts, grounds or improper connections.
 5. Guarantee - This Contractor shall guarantee that all defective items of workmanship, material, labor or mechanical operation developing within one (1) year from the date of final acceptance of completed installation shall be replaced to the complete satisfaction of the Owner.
 6. Workmanship - Electrical equipment shall be installed in a neat and workmanlike manner. Unsightly installations shall be removed or reworked at no additional expense to the Owner.
 7. Identification of disconnecting means - Provide a permanent nameplate for each disconnect switch indicating its purpose. The marking shall be of sufficient durability to withstand the environment it is installed in as required by N.E.C. Section 110-22 and 230-72(a).
- B. Electrical Equipment:
1. Conduits:
 - a. All conduit installed in earth, concrete, below concrete on earth, or exposed to weather shall be rigid steel or intermediate metal conduit. Electrical metallic tubing for all dry interior runs. Fittings shall be fully approved in accordance with N.E.C.
 - b. Flexible or P.V.C. conduit may be used where not exposed to damage and approved by N.E.C. and local codes.
 - c. Provide a ground wire sized per N.E.C. Art. 250-122 in all conduits, both metallic and nonmetallic.
 - d. Conduit shall be installed and sized according to code requirements and protected from damage during construction.
 - e. Conduit may be re-routed where such action does not adversely affect the intended design or circuiting.
 2. Conductors:
 - a. Conductors shall be copper, generally with 600 volt rated insulation. Branch circuit wiring min. size #12 Type "THW" or "THWN/THHN" as required. Service entrance, feeder conductors Type "THWN/THHN" or "XHHW". Low voltage wire shall be Type "TF" or "TFF" minimum #18 gauge unless noted otherwise. All other types shall be as required by N.E.C.
 - b. All conductors shall be color coded with type and size marking. Connections to service equipment, feeder panels shall be made with solderless lugs. All splices, taps, connections to service entrance conductors shall be made by bronze solderless lugs. All other splices, connections shall be pressure type connectors.
 - c. Insulate joints, splices with Scotch #33 plastic tape or plastic molded jackets.
 3. Lighting Fixtures and Lamps:
 - a. Install lighting fixtures. Provide lamps as indicated on the drawings.
 - b. No substitutions on lighting fixtures except as approved by Engineer prior to bidding.
 - c. Ballasts - by "Advance" or equal, internally or externally fused, high power factor, V.L.H, fully compatible with lamps and shall carry UL label, E.T.L and CBM certifications of compliance, even though indicated fixture number may indicate otherwise.
 - d. Furnish all fixtures with lamps as scheduled and/or required by final fixture selection. Lamps equal to G.E.

4. Grounding:
 - a. Provide system ground as required by N.E.C. and utility company if not already existing.
 - b. An equipment grounding conductor sized per N.E.C. Art. 250-122 shall be provided in all conduits. The ground wire is required for both metallic and nonmetallic conduit installations.

5. Equipment Supplied By Others Contactors And/Or The Owner
 - a. The Electrical Contractor shall furnish, install and connect all wiring, conduit, boxes, toggle switches, thermal switches, disconnect switches, remote pushbutton stations, etc., for all equipment requiring electrical power that is either furnished or specified by other contractors and/or the Owner, shown on drawings or listed below. The E.C. shall receive, install and connect all magnetic starters and controllers, capacitors, power factor correction devices, transformers, alarms, bells, horns, relays, remote switches for equipment supplied by others (i.e. starters or capacitors or power factor correction devices for Mechanical Equip., etc.). In general, all major equipment will be specified to be factory wired with only service and interconnecting required at the site by the Electrical Contractor; however, the E.C. shall check all Divisions of the specification to verify whether the equipment is specified to be factory wired. If not, then it shall be the responsibility of the Electrical Contractor to provide the complete wiring of the equipment in accordance with wiring diagrams provided by other Contractors and/or Owner to the Electrical Contractor. All interconnecting of equipment shall be by the Electrical Contractor.
 - b. All line and low voltage wiring and connections required to control the equipment are a part of this section. All wiring shall be in conduit.
 - c. It shall be assumed the Contractor is familiar with the equipment to be furnished by the other Contractors and/or the Owner in connection with this work and that provisions for such connections and work have been included in the Contractor's price. In no case will extra remuneration be allowed for such work.
 - d. Connections to all equipment have been designed from units as specified on the drawings or in the specifications. In the event equipment or control differs on approved mechanical shop drawings it shall be the responsibility of the supplying contractor to coordinate the electrical connections to the units and reimburse electrical contractor for any changes in the electrical system design. These changes shall not involve additional cost to the Owner.

6. Contactors And Relays
 - a. Shall be as manufactured by Cutler-Hammer, Allen Bradley, G.E. or Square D. They shall be as sized on the drawings.
 - b. All contactors and relays shall be Tungsten rated.

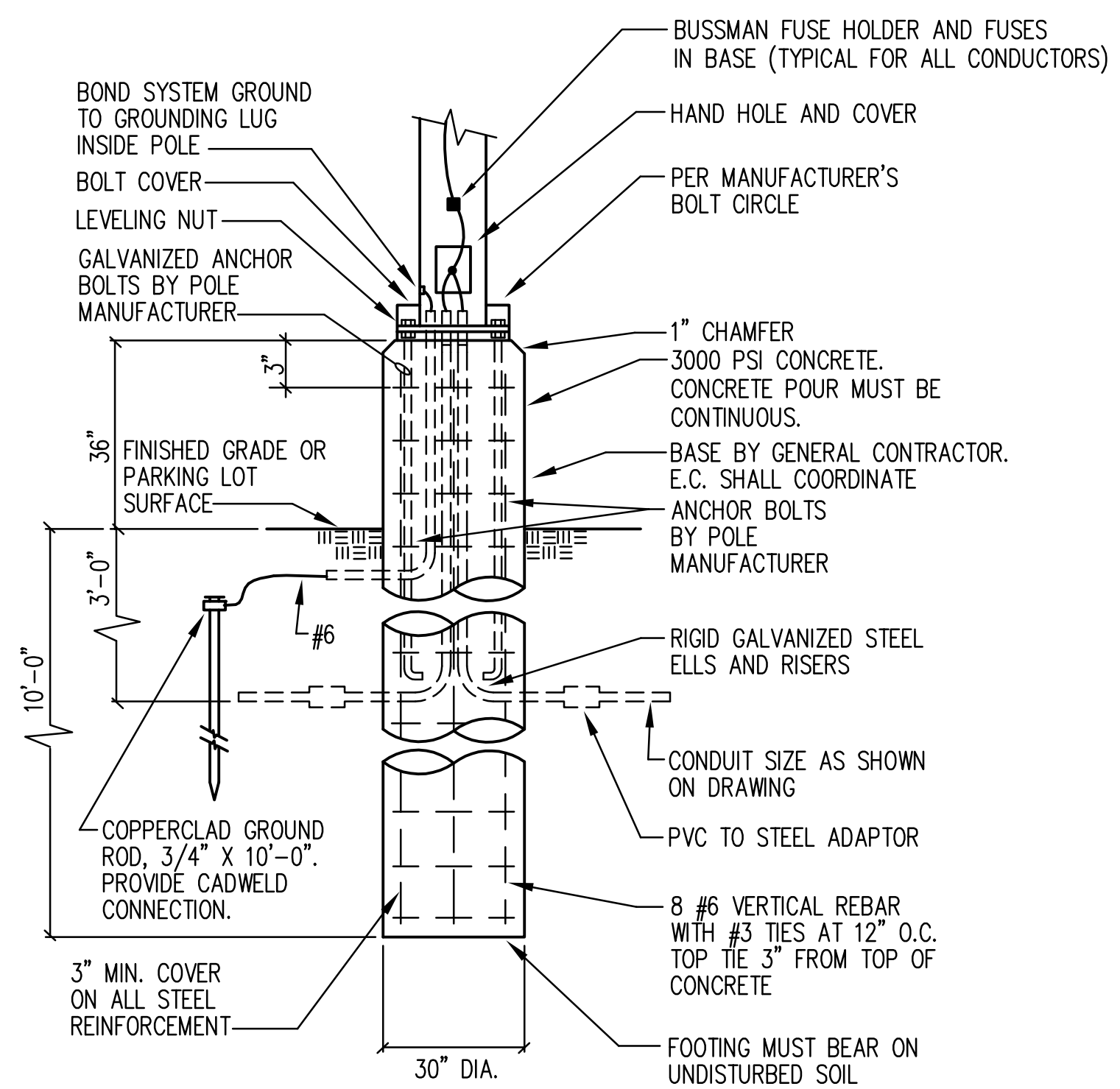
7. Time Switches:
 - a. Time switches by Tork, Intermatic, or Paragon equal to those indicated below and approved by the Engineer will be acceptable.
 - b. Exterior lighting or interior time switches shall be 7 day with carry-over.
 - c. All time switches shall be provided with momentary contacts if required.
 - d. All time switches shall be provided with manual bypass switches and spring wound carry over mechanisms.

8. Photo Electric Controls:
 - a. Photo Electric Controls by Tork, Intermatic and Paragon equal to those indicated below and approved by the Engineer will be acceptable.
 - b. Photo Electric Controls (Photo Switches; Photo Cells) shall be rated at 1800W, 120 volts, weatherproof. Mount on roof and orient photo electric controls to the north.
 - c. Photoelectric controls supplied as a part of a fixture assembly shall be as provided by Fixture Manufacturer.

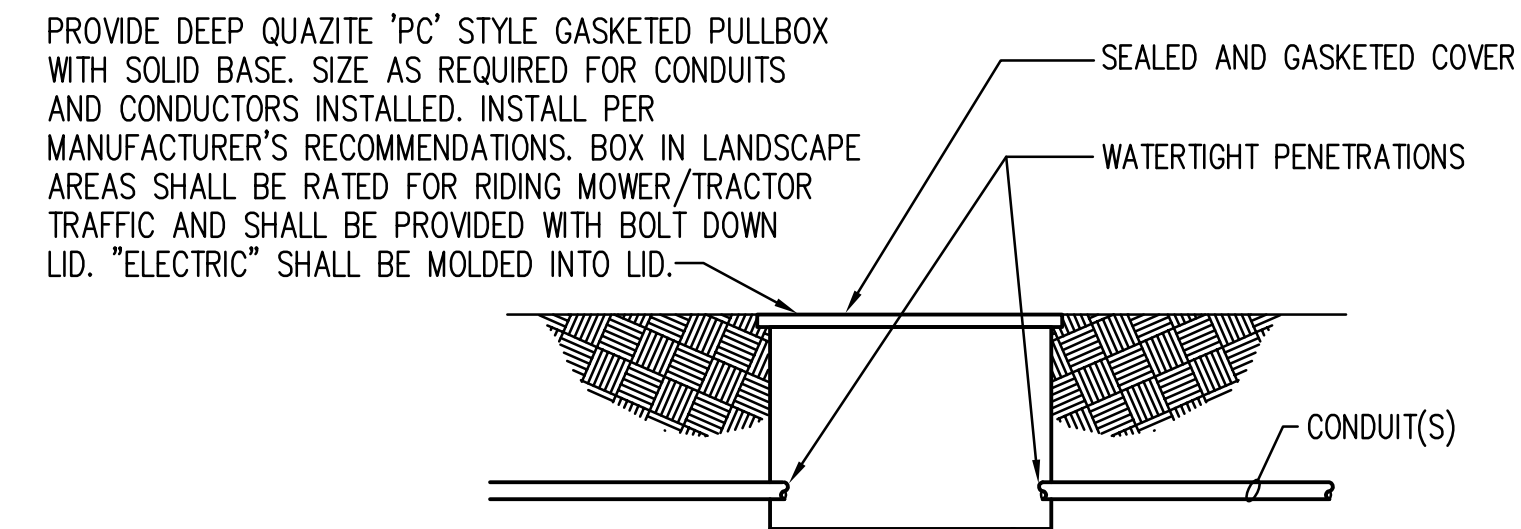
| ① ② LIGHTING FIXTURE SCHEDULE (P.E.C.) | | | | | | | | | | | |
|---|------------------------------------|-----------------------------|-----------------------------|-----------------------------|--|-----------------------------------|-----------------|--------------------|---|---|---|
| FIXT. LTR. | MANUFACTURER CATALOG NUMBER | MANUFACTURER CATALOG NUMBER | MANUFACTURER CATALOG NUMBER | MANUFACTURER CATALOG NUMBER | DESCRIPTION | LAMP TYPE NO. | LAMP TYPE VOLTS | LENS\LOUVER\FINISH | W | L | D |
| A | HOLOPHANE (V-175MH-MT-L-B-4-N-N-U) | | | | SITE LTG | 175W MH | 208 | BLACK | | | |
| | | | | | W/ NY12F5/20-CA/BK POLE AND PCP36/4-CA/BK ARMS & BRACKET | W/ 4 POLE MOUNTED FIXTURES AT 90° | | | | | |
| ① MANUFACTURERS LISTED IN THIS SCHEDULE OR APPROVED BY WRITTEN ADDENDUM WILL BE THE ONLY APPROVED MANUFACTURERS TO BID THE LIGHTING FIXTURES FOR THIS PROJECT. CONTRACTORS AND SUPPLIERS USING PRICING FROM MANUFACTURERS NOT LISTED ON SCHEDULE OR BY ADDENDUM DO SO AT THEIR OWN RISK. | | | | | | | | | | | |
| ② LIGHT FIXTURE SELECTIONS ARE BASED ON THE MANUFACTURER IN THE LEFT MOST COLUMN AS LISTED IN THE SCHEDULE. FIXTURES APPROVED AS EQUALS IN THIS SCHEDULE OR BY ADDENDUM SHALL BE EQUAL TO THE UNIT SPECIFIED IN THE LEFT MOST COLUMN, IE: SPRING LOADED LATCHES, POST PAINTED FINISH, AND PHOTOMETRICS. | | | | | | | | | | | |

| SYMBOL LIST | | |
|-------------|---------------------------------|-------------|
| SYMBOL | DESCRIPTION | MOUNTING |
| | SITE LIGHTING FIXTURE | POLE |
| | CONDUIT RUN | EARTH/FLOOR |
| | PULLBOX. SEE GENERAL NOTE 4 & 5 | |

- ### GENERAL NOTES
1. ALL ELECTRICAL WORK SHALL COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC) & THE AMERICANS WITH DISABILITIES ACT (ADA).
 2. REFER TO RELATED CIVIL DRAWINGS FOR RELATED INFORMATION.
 3. REFER TO THE SPECIFICATIONS FOR DATA NOT ON THE DRAWINGS.
 4. CONDUIT RUN W/CONDUCTORS AS INDICATED & GROUND WIRE SIZED PER N.E.C. 250-122 (2002). CONDUIT SIZE AS REQUIRED.
 5. WHEN INCREASED CONDUCTOR SIZES ARE SHOWN ON THE PLANS, THE LARGER CONDUCTOR SIZE SHALL BE USED THROUGHOUT THE LENGTH OF THE CIRCUIT, INCLUDING NEUTRAL AND GROUND.



① POLE BASE DETAIL (40' MANUFACTURE)



② PULLBOX DETAIL (NO SCALE)

PROVIDE DEEP QUAZITE 'PC' STYLE GASKETED PULLBOX WITH SOLID BASE. SIZE AS REQUIRED FOR CONDUITS AND CONDUCTORS INSTALLED. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. BOX IN LANDSCAPE AREAS SHALL BE RATED FOR RIDING MOWER/TRACTOR TRAFFIC AND SHALL BE PROVIDED WITH BOLT DOWN LID. "ELECTRIC" SHALL BE MOLDED INTO LID.

NOTE: ELECTRICAL CONTRACTOR SHALL PROVIDE A PULLBOX WHERE NECESSARY SO NO RUN OF CONDUIT BETWEEN POLES OR HOMERUNS EXCEED 300'. ALL CONNECTIONS IF REQUIRED IN PULL BOX SHALL BE WATERTIGHT.

| No. | Revision | By | Date |
|---|----------|---------|---------------|
| NEWMARKET OFFICE 2ND PAVING AND INCIDENTAL DRAINAGE IMPROVEMENTS ELECTRICAL SCHEDULES AND SPECIFICATIONS GARY JANZEN, P.E. - CITY ENGINEER CITY OF WICHITA PROJ. NO. 472-84990 | | | |
| PROFESSIONAL ENGINEERING CONSULTANTS, P.A. 303 SOUTH TOPEKA WICHITA, KS 67202 316-262-2691 www.pec1.com | | | |
| Designed by | DCG | Job No. | 35-11114-000 |
| Drawn by | MDB | Date | July 2011 |
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