DIVISION 16 – ELECTRICAL

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.
   d. All wiring shall be concealed and all outlets shall be flush mounted in finished spaces except as noted otherwise.
   e. All systems wiring in return air plenums shall be in conduit or be plenum rated.

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(b).

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.
   f. Provide Robroy, Perma-Core or Korkop PVC coated steel ells and risers. (typical)

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 "IT" or "ITF" 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 pockets.

3. Grounding:
   a. Provide system ground as required by N.E.C. and utility company if not already existing.
   b. Bond mechanical equipment frames.
   c. Bond all service entrance equipment and conduit system.
   d. 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.

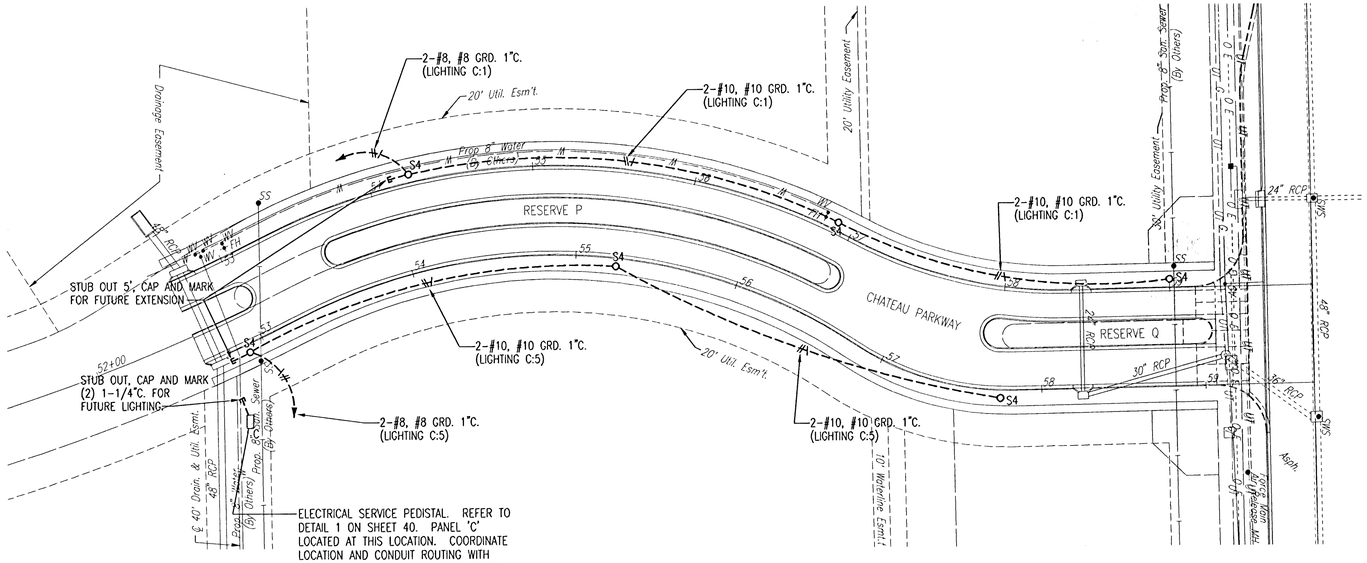
4. Photo Electric Controls:
   a. Photo Electric Controls by Tork, Intermatic and Paragon equal to those indicated below and approved by the Engineer will be acceptable.

PBE

SCALE: 1"=40'

PLAN NOTES:

1. MINIMUM CONDUIT SIZE SHALL BE 1".
2. PVC COATED STEEL ELLS AND RISERS AS MANUFACTURED BY ROBROY, PERMA-COLE OR KORKAP SHALL BE USED FOR ALL LOCATIONS.
3. MAXIMUM UNDERGROUND BRANCH CIRCUIT CONDUCTOR PULL/INSTALLATION LENGTH SHALL NOT EXCEED 300'. PROVIDE AND INSTALL PULL BOXES PULL PER DETAIL 3 SHEET 40 FOR ALL BRANCH CIRCUITS INSTALLED WHERE THE PULL/INSTALLATION DISTANCE WILL EXCEED 300'. CONTRACTOR TO DETERMINE PULL BOX LOCATIONS IN THE FIELD.
4. CONDUIT ROUTING SHOWN ON PLANS IS SCHEMATIC ONLY. COORDINATE ROUTING WITH OTHER UTILITIES.



No.	Revision	By	Date

OAK CREEK – PHASE 1

LIGHT POLES LAYOUT PLAN

JAMES L. ARMOUR, P.E.– CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-84209

Professional Engineering Consultants, P.A.
303 S. TOPEKA • WICHITA, KANSAS 67202
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Designed by	DCG	Job No.	20-04688-000
Drawn by	MDB	Date	August 2004

Sheet 43 of 86

JOSEPH D. BUSSE — 17113 — 12-31-05 — KANSAS — PROFESSIONAL ENGINEER

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