

802 - CONTRACTOR CONSTRUCTION STAKING

802.1 DESCRIPTION

This work shall be performed in accordance with Section 802 of the Standard Specifications as amended herein. The Contractor shall set construction stakes establishing all lines, slopes, continuous profile-grades, centerlines, and benchmarks necessary to control and perform the work.

802.2 CONSTRUCTION REQUIREMENTS

a. Vertical Control

Prior to construction Johnson County Bench Marks that will be damaged or removed by construction shall be replaced by a benchmark outside of construction area. New benchmarks shall be an aluminum cap (caps will be furnished by the County) set in a rigid concrete structure. A hole shall be drilled into concrete and the cap grouted into place. The preferred locations are traffic signal bases, culvert headwalls and bridge handrails. A standard monument record sheet shall be completed for each permanent benchmark. Elevations shall be determined with a double rod level run using digital level and bar code rods and shall tie into Johnson County vertical control network at each end of the level run. Level runs shall close within 0.1 ft. per 4 miles. Level run data shall be furnished in digital and paper format. Mapping grade state plane coordinates shall also be provided. This effort shall be coordinated with the Johnson County Public Works Department County Surveyor.

b. Horizontal Control

Prior to construction Section Corner and quarter section corners shall be referenced to points outside construction and a Land Corner Endangerment Report submitted to the Kansas State Historical Society and the County Engineer within 30 days of the survey as required by state law. During construction the surveyor will coordinate with contractor on the placement of the monument box. After construction the surveyor shall use his previous reference ties and preliminarily mark the aluminum cap. This location shall be checked with coordinates from the design survey to insure that the ties match the previous coordinates. If within tolerance the aluminum cap shall be punched at the proper location. New Land Corner Reference Reports with updated references shall be submitted to the Kansas State Historical Society and the County Engineer within 30 days of the survey as required by state law.

c. Property Corners

The Contractor shall locate all existing property corners within the project limits prior to commencing construction. All existing property corners shall be marked and protected. Property corners anticipated to be disturbed during construction shall be located by ties and shall be reset by the Contractor at the termination of construction activities. All property surveying shall be performed by a qualified land surveyor registered in the State of Kansas.

d. KCP&L Conduits

A stamped sealed survey shall be provided by the Contractor for all conduit installed as part of the contract.

e. Swale Staking

The Contractor shall set cut stakes for all rough swale grading and shall maintain or reset such stakes for checking of the grade as required by the Engineer. Final grade for the swales and berms shall be established by "blue top" surveying or other approved method, and grade devices shall be maintained for inspection by the Engineer prior to sodding.

f. Bridge Staking

Contractor Construction Staking for bridges requires two independent surveys.

Bridge control points (alignment and elevation references and offsets for abutments and pier bents) will be set by, or under the supervision of, a Professional Land Surveyor licensed in the State of Kansas. The Contractor shall stake the control points for critical bridge elements (piling, drilled shafts, and spread footings). The Contractor shall employ a Professional Land Surveyor, licensed in the State of Kansas, from another surveying company to perform an independent check of the location of the control

points for critical bridge elements. That independent Surveyor shall utilize the original design control points or other monumentation, as approved by the Engineer. The Contractor shall report any discrepancies to the Engineer, and shall resolve all discrepancies before constructing the bridge elements. After the critical bridge elements have been constructed, the independent Surveyor will verify the locations and elevations of the critical bridge elements. The original survey and the check survey must agree within the tolerances for that bridge element allowed in the Contract Documents. The Contractor shall report any discrepancies in excess of the tolerances to the Engineer.

802.3 MEASUREMENT AND PAYMENT

The Engineer will measure contractor construction staking by the lump sum.

Payment for "Contractor Construction Staking" at the contract lump sum price bid is full compensation for the specified work, which shall include all staking, establishing vertical and horizontal control points and property corner resetting.

Resetting of any vertical and horizontal control monuments or property corners that are disturbed that are not shown in the plans are subsidiary to Contractor Construction Staking.