

**KANSAS DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION TO THE
STANDARD SPECIFICATIONS, 2007 EDITION**

SECTION 102

BIDDING REQUIREMENTS AND CONDITIONS

Page 100-14, subsection 102.8, add the following:

k. Contractor Construction Staking Electronic Design Files. The Electronic Design Files referenced in subsection 802.3c.(1)(b) consist of the following files:

- Base file (plan view of entire project length);
- Cross Section Stack files (vertical layout of cross sections);
- Existing Ground Survey (Geopak Tin File format);
- Plan & Profile Sheets (sheets as shown in plans);
- Cross Section Sheet Files (final cross section sheets)

These files are not considered Contract Documents or Exploratory Documents under this subsection.

SECTION 802

CONTRACTOR CONSTRUCTION STAKING

Page 800-3, subsection 802.3a.(3), delete the second bullet and replace with the following:

- Finish Staking (grade hubs, blue tops, string lines, etc) and Structures: Horizontal = ± 0.05 feet; Vertical = ± 0.01 feet (per KDOT Construction Manual – Finishing Stakes 3.09.01 and 3.09.02). For Horizontal, use a GPS system or a Total Station. For Vertical, use a Level.

Page 800-4, subsection 802.3c.(1). Add the following after the last bullet:

- Construction of ditches and other planned excavation and embankment designated in the Contract Documents may be performed by Global Positioning System (GPS) controlled grading equipment, according to the Contract Documents and this specification. GPS controlled grading equipment does not eliminate the need for finish staking or blue top staking. Once a week, provide the Engineer with documentation (on a preapproved form) verifying machine calibration to monitor, verify, adjust and compensate for the wearing surface of the cutting edge of the machine being utilized.
(a) GPS Equipment and Training. Use GPS controlled grading equipment capable of meeting the end results specified in the Contract Documents.

Make available a GPS Rover (same brand and type being used on the project) to the Engineer for review of the work, as needed during normal working hours. This GPS Rover will be stored and maintained by the Contractor.

In addition, provide a minimum of 8 hours of formal training on the use of the Contractor's GPS systems to the Engineer, prior to beginning any GPS controlled machine grading. Conduct training to provide the Engineer with an understanding of the equipment, software and electronic data being used by the Contractor. For multi-year projects, the Engineer may require informal refresher-training on the use of the GPS Rover.

(b) Electronic Design Files/GPS Model. When available, KDOT will provide Electronic Design Files for the project. Convert the files provided by KDOT into the format required by the Contractor's system and equipment. Conform to the typical sections. Notify KDOT Design and the Field Office administering the contract, in writing, of any errors, omissions, ambiguities, or perceived inadequacies found in the Electronic Design Files provided by KDOT.

Make no claim on the contract under **subsection 104.8**, for additional money, additional time or both because the KDOT produced plans differ from drawings generated from the Electronic Design Files, even if the

Contractor did not manipulate the Electronic Design Files before generating the GPS Model. Accept sole responsibility for the adequacy and accuracy of all Contractor-generated, subcontractor-generated, or supplier-generated documents or GPS Models used on the project. Assume the risk of errors and omissions resulting from software conversions, Electronic Design File manipulation or other Electronic Design File creation used by the Contractor, subcontractors, suppliers or any combination thereof.

The GPS Model the Contractor generates from the Electronic Design Files may differ from the Contract Documents. The Contractor assumes the risk of such discrepancies.

KDOT printed plans controls over the related Electronic Design File(s) which controls over the Contractor's GPS Model.

(c) GPS 3D TIN Model. Before beginning any GPS controlled machine grading, provide the KDOT Field Office and KDOT Design with an electronic copy of the GPS 3D TIN Model created for that use.

In addition to the GPS machine control, provide centerline stakes, slope stakes and grade stakes from the beginning thru the end of the project, at 500 foot intervals on straight runs, and at 250 foot intervals on curves, transitions, intersections, interchanges and break points. GPS controlled machine grading does not eliminate the need for finish staking or blue top staking.

The Engineer may review the Contractor's GPS machine control grading results, surveying calculations, records, field procedures and actual staking at any time. If the Engineer determines the work is not meeting the required horizontal and vertical tolerances, see **subsection 105.5d. Unacceptable Work.**

Contractor delays or errors due to operating the GPS machine control system will not result in any adjustment under **subsection 104.8**, for additional money, additional time or both.

Page 800-4, delete subsection 802.3c.(2), and replace with the following:

(2) Bridge. Prior to construction, set project control points and Critical Bridge Element control points for the horizontal and vertical location of the Critical Bridge Element features under the supervision of a Licensed Professional Land Surveyor. Critical Bridge Elements include, but are not limited to the features listed in **TABLE 802-1a**.

Prior to construction, provide an independent survey performed under the supervision of a different Licensed Professional Land Surveyor to check the accuracy of the original survey of project control points and locations of the Critical Bridge Elements features.

Report any differences or discrepancies to the Project Engineer.

Resolve any differences or discrepancies, prior to construction of the Critical Bridge Elements.

After the Critical Bridge Elements have been constructed, provide a survey under the supervision of a Licensed Professional Land Surveyor to verify the locations and elevations of the Critical Bridge Elements.

All surveys shall be within the tolerances for that bridge element allowed in the Contract Documents. Report any discrepancies in excess of the tolerances to the Project Engineer.

TABLE 802-1a: CRITICAL BRIDGE ELEMENTS	
Critical Element	Critical Component(s)
Spread Footing	Location & Elevation of CL
Pile Cap Footing	Location & Elevation of CL
Drilled Shaft	Location & Elevation of Center
Drilled Shaft Cap	Location & Elevation of CL
Column	Location & Elevation of Center
Pile Bent with Web Wall	Location & Elevation of CL
Abutment Beam/Bearing Seat	Location & Elevation of CL
Pier Beam/Bearing Seat	Location & Elevation of CL
Bearing Devices	Location & Elevation of CL, Temp. Offset
Bearing Stiffener	Location & Elevation of CL, Temperature Offset
Girder/Beam	Location of CL
Anchor Bolts/Preformed Holes	Location of CL
Expansion Device	Gap (Corrected for Temp) and Alignment
Fillets (Tenth Points)	Elevation
Surface of Forms (Slab Bridge Tenth Points)	Elevation
Post-tensioning Duct	Location & Elevation
Bolted Field Splice	Elevation

Page 800-5, subsection 802.3c.(5), second paragraph, replace the third bullet and replace with the following:

- A benchmark disc set in the top of a concrete footing (6 inch diameter x 4 foot deep into the ground, minimum) cast in place.

Page 800-6, delete subsection 802.4 and replace with the following:

802.4 MEASUREMENT AND PAYMENT

The Engineer will measure each right-of-way survey monument, benchmark monument (concrete cylinder) and monument box as a unit. Contractor construction staking will be measured by the lump sum.

The Engineer will make partial payments according to **TABLE 802-1**. The Engineer may adjust the **TABLE 802-1**, based on Contractor's progress and project complexity.

TABLE 802-1: CONSTRUCTION STAKING PAYMENT SCHEDULE*	
Percent of Original Contract Amount Completed	Percent of Bid Item Paid
Work Started	25%
5%	40%
25%	60%
50%	80%
70%	95%
All field books, As-Built construction plans (subsection 802.3g.) and records have been submitted to the Engineer.	100%

*Until all appropriate information is received, and the bid item is 100% paid, the work is considered incomplete and subject to **subsection 108.8**.

The Percent of Original Contract Amount Completed = the amount earned by the Contractor divided by the total dollar value of the original contract (all bid items).

Payment for "Contractor Construction Staking", "Right-of-Way Survey Monument", "Benchmark Monument (Concrete Cylinder)" and "Monument Box" at the contract unit prices is full compensation for the specified work.

02-25-11 C&M, Typographical Corrections.

09-23-10 C&M

Mar-11 Letting