February 18, 2016

REVISION OF SECTION 625

CONSTRUCTION SURVEYING

**NOTICE**

This is a standard special provision that revises or modifies CDOT’s *Standard Specifications for Road and Bridge Construction.* It has gone through a formal review and approval process and has been issued by CDOT’s Project Development Branch with formal instructions for its use on CDOT construction projects. It is to be used as written without change. Do not use modified versions of this special provision on CDOT construction projects, and do not use this special provision on CDOT projects in a manner other than that specified in the instructions unless such use is first approved by CDOT’s Standards and Specifications Unit. The instructions for use on CDOT construction projects appear below.

Other agencies which use the *Standard Specifications for Road and Bridge Construction* to administer construction projects may use this special provision as appropriate and at their own risk.

**Instructions for use on CDOT construction projects:**

Use in projects when 3D modeling data in electronic format is available as stated in the Revision of Section 102, Project Plans and Other Data.

February 18, 2016

REVISION OF SECTION 625

 CONSTRUCTION SURVEYING

Section 625 of the Standard Specifications is hereby revised for this project as follows:

###### Subsection 625.01 shall include the following:

If the Revision of Section 102 Project Plans and Other Data states 3D modeling data is available, the Contractor may choose to perform 3D Engineered Construction Surveying (3DECS).

3DECS is the use of global positioning and or robotic instruments to guide construction equipment operations by comparing 3D model information in real time. For 3DECS, either the construction equipment is fed modeling information and makes automatic adjustments (machine control) or the equipment operator is fed the information and makes manual adjustments.

In subsection 625.04, delete the first paragraph and replace with the following:

The Contractor shall perform all construction surveying and staking necessary for construction of the project. Construction surveying and staking shall be based on the Primary Horizontal and Vertical Control established by the Department. Bid items which require stakes to be set by the Contractor’s Surveyor are shown on the Surveyor Tabulation Sheet of the plans and shall be in accordance with the CDOT Survey Manual Chapter 6.

For projects in which the Contractor uses 3D Engineered Surveying the following applies:

1. All surveying shall be based on the Primary Horizontal and Vertical Control established by the Department.
2. The Contractor shall provide construction stakes for the control points of the project centerline or Engineer approved offset line (i.e. POT, POC, PCC, PC, PT, TS, ST, SC, CS per the Survey Manual) and angle points, all of which shall be established from primary control monuments and their assigned coordinates as shown on the plans.
3. Staking for the project centerline or offset, shall be established from the project centerline control points as shown on the plans in order to provide a method of machine control equipment checks, inspection, and field verification.
4. The maximum staking interval for the project centerline shall be 500 feet on tangents and 100 feet on curves or as specified on the survey tabulation sheet. All project centerline control points as shown on the plans shall be staked.
5. Within the first week of the Contractor utilizing 3DECS, the Contractor shall check their 3DECS system and verify on writing to CDOT that the accuracy of the system complies with the contract requirements.

At no cost to the Department, the Contractor shall revert to traditional surveying and disband using 3DECS should the Engineer determine the existence of contractor quality or accuracy issues related to 3DECS.

Subsection 625.06 shall include the following:

3D Engineered surveying accuracy and tolerances shall be the same as the staking accuracy and tolerances stated in the CDOT Survey Manual.

Subsection 625.13 shall include the following:

All costs associated with 3DECS surveying will not be measured and paid for separately, but shall be included in the work.