

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

SPECIAL PROVISION

FOR

STATE PROJECT NUMBER: _____
FEDERAL PROJECT NUMBER: _____

FOR

SECTION 639

**CONSTRUCTION LAYOUT STAKES
FOR
ELECTRONIC DATA**

639.1 – DESCRIPTION:

DELETE THE SUB-SECTION AND REPLACE WITH THE FOLLOWING:

639.1 – DESCRIPTION:

When this item is included in the Proposal, it shall consist of furnishing, reviewing, and maintaining all necessary electronic data records for the proper prosecution of the work with the use of electronic grading under the Contract. This work shall conform to all provisions as outlined in the Specifications.

639.3 - CONSTRUCTION METHODS:

DELETE THE SECOND AND THIRD PARAGRAPHS AND REPLACE WITH THE FOLLOWING:

The Contractor shall be responsible for having the layout staking work conform to the lines, grades, elevations, and dimensions called for on the Plans. The Contractor shall furnish a copy of their survey records and, if applicable as per 639.3.1, an electronic copy of the Constructed Terrain Model.

ADD THE FOLLOWING TO THE END OF THE SECTION:

639.3.1 – Terrain Models and Control Data – The contractor shall use electronic stake out procedures as described in this section. The software utilized by the Contractor shall perform the volume computations as per section 109.

For the purposes of these specifications a terrain model is a digital representation of a ground surface or terrain as defined more clearly below:

- a. **Existing Terrain Model:** A digital representation of the ground elevations for the project prior to prosecution of the work.
- b. **Plan Terrain Model:** A digital representation of the grading shown in the contract plans.
- c. **Constructed Terrain Model:** A digital representation of the project construction grading at a given time during the prosecution of work.
- d. **Final Constructed Terrain Model:** A digital representation of the final cross sections for the project.
- e. **Control Data:** A digital file containing the Point Name and the XYZ values of any ground control points and a digital file representing the geometric alignment of the project centerline(s).

639.3.2 – Review of Terrain Models and Control Data: At the “Notice to Proceed” , the Division will provide the Contractor a copy of the Existing Terrain Model, Plan Terrain Model, Horizontal and Vertical alignments, and a copy of the project control in ASCII format for evaluation. The Contractor shall evaluate this information as to its accuracy and submit to the Engineer for evaluation noting discrepancies relative to its representation of existing contours and other possible errors or issues with the electronic data. The Division will review and respond to the Contractor within seven days. Any corrections to the electronic data will be performed by the Division and any time extensions due the Contractor for this corrective action shall be in accordance with Section 108. The Contractor may request in writing that a “Conditional Notice to Proceed” be issued to allow work to begin on items not affected by the Excavation.

During excavation operations the Contractor will perform field survey checks, to verify the tops and toes of slopes, fronts and backs of benches and bench grades, ditch line elevations, the limits of fill benches, transition benches, other planned undercuts and tops of select embankment, or as directed by the engineer, to ensure that the project is constructed reasonably close to the lines and grades shown on the original x-sections.

Any delays attributed to the contractor will not be eligible for time extensions as per section 108.6.2.

639.3.2.1 – Partial Review of Terrain Models and Control Data: The Contractor may review the Electronic Data defined above in partial segments of the project to allow work to begin sooner. If reviewing the data in partial segments the Contractor will submit in writing to the Engineer noting what section of the roadway data is being reviewed. This information will detail the areas being evaluated by noting the Plan Station numbers ie: STA XXX+XX to STA YYY+YY. All the time constraints and review process will be in accordance with section 639.3.2 before any work is done on this section. Future project sections will be reviewed in this manner.

639.3.3 – Submittals - All submissions of any records in an electronic medium must be in such a format that it is directly compatible with current software products used by the Department as per Section 639.3.4. These records shall be furnished as they are completed during the progress of the work for review and payment by the Engineer. Any inspection or checking of the Contractor's layout by the Engineer and the acceptance of all or any part of it shall not relieve the Contractor of his/her responsibility to secure the proper dimensions, grades, and elevations of any part of the work.

639.3.4 - Software Requirements - All required spreadsheets must be submitted in electronic format such as Microsoft Excel or other applicable formats. The software utilized in preparation of the various Terrain Models must be compatible with the current Bentley Systems© software products used by the Department.