

Project: US 6 over Garrison Street

Project Sub Acct. No: 19478

July 31, 2014

## **Technical Requirements**

### **Section 9 – Survey**

#### **Administrative Requirements**

##### **Standards**

The Contractor shall comply with the requirements of the Contract Documents and shall meet all applicable federal, state, and local requirements related to surveys, records, and monuments.

##### **Project Survey Coordinator**

The Contractor shall designate a Colorado Registered Professional Land Surveyor as the Project Survey Coordinator. The Project survey coordinator shall be in responsible charge of all Contractor survey Activities on the Project. The Project Survey Coordinator shall direct and review all survey Work and shall be the point of contact for all survey related Activities. Contractor survey staff shall perform Work under the direct supervision of the Project Survey Coordinator.

##### **CDOT Supplied Survey Data**

The full extent of survey and mapping information to be supplied by the Colorado Department of Transportation (CDOT) is available and is for the Contractor's use. The Contractor shall be responsible for any supplemental survey and mapping necessary to complete the work.

Any discrepancies in information provided shall be reported to the CDOT Project Engineer.

The survey and mapping information including DGN and DTM data is included in the Contract Documents.

##### **Contractor Supplied Survey Data**

Except as provided by CDOT above; the Contractor shall provide all other survey required for completion of the work.

##### **Preservation of Survey Monuments**

The preservation of survey markers and monuments is mandatory and affects all governmental agencies. The Contractor shall notify the agency affected as soon as it becomes known that a marker is in a position that will interfere with new construction or with Contractor operations. The marker position shall be accurately preserved prior to disturbing any such marker.

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#### **CDOT Monuments**

If any survey monuments are at risk of being destroyed at any time within the Right-of-Way (ROW), the Contractor shall immediately notify the CDOT Project Engineer. The Contractor shall coordinate with the affected agency for a replacement marker disk, which has been properly stamped together with instructions for establishment of the new marker. The Contractor shall have the new marker set in accordance with the provided instructions and the requirements of the Contract. The new marker shall be set under the direct supervision, and responsible charge of the Project Survey Coordinator or other Colorado Registered Professional Land Surveyor, and where required by Colorado statute shall bear the registration number of the responsible Professional Land Surveyor.

#### **Other Agency Monuments**

The Contractor shall coordinate with all other agencies with monuments on the Project to protect and restore their monuments as required to complete the Work.

#### **Survey Records**

The Contractor shall prepare and maintain supporting documentation, including but not limited to field notes, drawings, and calculations for all survey Work on the Project.

All survey records shall conform to the formats shown in the CDOT Survey Manual. Such records shall be neat, legible, accurate, and maintained by the Contractor in a neat and orderly manner.

The Contractor's Project Survey Coordinator shall be required to sign and seal all survey documentation in accordance with state law. All such documentation shall be transmitted to the CDOT Project Engineer at the completion of the Work.

#### **Design Requirements**

##### **Design Control Surveys**

The Contractor shall plan, schedule, and perform all surveys and monumentation necessary to maintain and supplement the Project control network for the design of the Project.

The Contractor shall submit to the CDOT Project Engineer a revised Project control diagram showing all modifications to the Project control network.

##### **Design Surveys**

The Contractor shall arrange for all supplemental survey information and utility locations necessary to complete the design. Design surveys shall provide sufficient detail to verify actual field locations of existing drainage improvements as well as for the final design of drainage improvements.

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Surveying shall be performed in accordance with the CDOT Survey Manual. Traffic control and permits necessary to complete the survey shall be the responsibility of the Contractor. The Contractor shall deliver the data (in InRoads TMOSS survey format) and field notes to the CDOT Project Engineer for review upon completion of the survey. Errors and omissions found by the CDOT Project Engineer shall be corrected by the Contractor and resubmitted.

#### **Construction Control Surveys**

The Contractor shall plan, schedule, and perform all surveys and monumentation necessary to maintain and supplement the Project control network for the construction layout of the Work.

#### **Construction Layout Surveys**

The Contractor shall plan, schedule and perform all staking and construction layout required for the Work in accordance with the conventional staking requirements as described in the CDOT Survey Manual.

#### **As-Built Surveys**

The Contractor shall plan, schedule and perform all surveys required to document the location of as-built features on the Project.

The Contractor shall deliver the data (in InRoads TMOSS survey format) and field notes to CDOT for review upon completion of the survey. Errors and omissions found by CDOT shall be corrected by the Contractor and resubmitted. All work in completing the As-Built survey shall be at the responsibility of the Contractor and shall be completed in accordance with the CDOT Survey Manual.

#### **ROW Monumentation**

The Contractor shall replace all ROW monumentation lost or destroyed during the progression of the Work.

The Contractor shall submit to the CDOT Project Engineer for acceptance a revised ROW monumentation sheet listing all ROW monumentation reset by the Contractor.

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At a minimum, the Contractor shall submit the following to CDOT for review, Approval, and/or Acceptance:

<b>Deliverable</b>	<b>Acceptance or Approval</b>	<b>Schedule</b>
Any discrepancies in control point information provided that is reported to CDOT	review	Within 60 Days of NTP
All Survey Records and Files	Acceptance	Prior to Final Acceptance
Documentation for the preservation or re-monumentation of any survey monument	Approval by the affected agency	Submit with As-Built Documents
Revised ROW Monumentation Sheet	Acceptance	Prior to Final Acceptance
Documentation/date of the location of As-Built features on the Project (in InRoads TMOSS survey format) and field notes	Acceptance	Prior to Final Acceptance

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#### **Project Special Provisions**

#### **REVISION OF SECTION 629 SURVEY MONUMENTATION**

Section 629 of the Standard Specifications is hereby revised for this project as follows:

In subsection 629.09 delete the fourth paragraph and replace with the following:

Before final payment is made, the following three items shall be completed, bear the seal and signature of the PLS in responsible charge, and have copies submitted to the Engineer for review prior to being deposited with the county in accordance with Section 38-51-107, CRS:

- (1) All survey records.
- (2) The Control and Monumentation sheet of the R/W plans.
- (3) The Survey Control Diagram.