

## 9.0 Survey

### 9.1 Administrative Requirements

#### 9.1.1 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. All survey shall conform to the formats shown in the CDOT Survey Manual.

### 9.2 Design and Construction Requirements

#### 9.2.1 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.

A Pre-Survey Conference shall be held in conjunction with the Pre-Construction Conference.

All survey crew chiefs shall carry business cards that include their name, title, business address, and phone number while engaged in performing survey Activities on the Project. These cards shall be offered to any public contacts made during the performance of survey Activities as a means of introduction and point of contact.

#### 9.2.2 CDOT Supplied Survey Data

The full extent of survey and mapping information to be supplied by the Colorado Department of Transportation (CDOT) is provided in Book 5 – Reference Documents.

The Contractor shall verify and confirm the accuracy of all survey and mapping information provided to the Contractor prior to NTP2, regardless of the source of the information. The Contractor shall document all data verification. A signed letter of verification by the project survey coordinator shall be submitted to CDOT for Acceptance prior to NTP2. Any discrepancies in information provided shall be reported to CDOT **within 24 hours of discovery.**

The Contractor acknowledges and agrees that changes in conditions at all project segments may occur after the Proposal Due Date, and that the Contractor shall not be entitled to any Change Order.

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

The survey and mapping information is included in Book 5 – Reference Documents.

The Contractor shall provide CDOT current calibration documents for survey equipment for Acceptance, per the CDOT Survey Manual, Section 2.2.

**9.2.3 Contractor Supplied Survey Data**

The Contractor shall provide all other surveys required for completion of the Work to CDOT for Acceptance prior to Final Acceptance.

**9.2.4 Preservation of Survey Monuments**

The preservation of survey markers and monuments is mandatory and affects all governmental agencies, including CDOT. 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. The Contractor shall submit documentation for the preservation or re-monumentation of any survey monument for Acceptance by the agency affected.

**9.2.5 CDOT Monuments**

In the event that any survey monuments are at risk of being destroyed at any time within the project segments, the Contractor shall immediately notify CDOT. The Contractor may assume that CDOT will provide the new monument materials, which have been properly stamped together with instructions for establishment of the new marker. The Contractor shall set the new marker in accordance with those instructions and the requirements of the Contract.

**9.2.6 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.

**9.2.7 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 become the property of CDOT at the completion of the Work and Final Acceptance.

**9.2.8 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 CDOT a revised Project control diagram showing all modifications to the Project control network.

**9.2.9 Design Surveys**

The Contractor shall plan, schedule, and perform all supplemental surveys required for design of the Project.

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.

**9.2.10 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.

**9.2.11 Construction Layout Surveys**

The Contractor shall plan, schedule and perform all staking and construction layout required for the Work.

**9.2.12 As-Built Surveys**

The Contractor shall plan, schedule and perform all surveys required to document the location of as-built features on the Project as required in Section 3 - Quality.

**9.2.13 ROW Monumentation**

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

The Contractor shall submit to CDOT for Acceptance revised ROW monumentation sheets listing all ROW monumentation reset by the Contractor prior to Final Acceptance.

**9.3 Deliverables**

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

<b>Deliverable</b>	<b>review, Acceptance or Approval</b>	<b>Schedule</b>
Documentation for the preservation or re-monumentation of any survey monument	Acceptance by agency affected	Per agency affected.
Letter of verification	Acceptance	Prior to NTP2
Current calibration documents	Acceptance	Per CDOT Survey Manual, Section 2.2
All other surveys and documentation	Acceptance	Prior to Final Acceptance
Revised ROW monumentation sheets	Acceptance	Prior to Final Acceptance

All deliverables shall also conform to the requirements of Section 3 - Quality Management.