



Colorado Department of Transportation & Contractor

Book 2

Technical Requirements

US 160 Elmore's Corner to Dry Creek Design-Build

Request for Proposal

June 16, 2026

Project No.: NHPP 1602-157 & FBR 1602-193
NO.: 20980 - COMBO

Book 2 Table of Contents

Section 01 General	
Exhibit 1-A US 160 Basic Configuration.....	
Exhibit 1-B Basic Configuration Typical Sections.....	
Section 02 Project Management.....	
Exhibit 2-A Work Breakdown Structure.....	
Exhibit 2-B DCS File Structure.....	
Section 03 Civil Rights.....	
Attachment 3A Subcontractor and Supplier Report.....	
Attachment 3B Certified Payroll Escalation Report.....	
Attachment 3C Certified Payroll Review Checklist.....	
Attachment 3D CRICQC Audit Report.....	
Attachment 3E ESB Performance Plan Schedule.....	
Section 04 Quality Management.....	
Section 05 Public Information.....	
Section 06 Environmental.....	
Exhibit 6-A Environmental Mitigation Tracking Form.....	
Section 07 Third Party Agreements	
Exhibit 7-A.01 Executed PSA Florida Consolidated Ditch Company.....	
Exhibit 7-A.02 Executed PSA Mach Natural Resources.....	
Exhibit 7-B Basis of Design Recommendation Florida Consolidated Ditch Company Infrastructure.....	
Exhibit 7-C Final Acceptance.....	
Section 08 Utility Relocations.....	
Exhibit 8-A No-Conflict Form	
Exhibit 8-B Utility Work Order	
Exhibit 8-C DRAL	
Exhibit 8-D CRAL	
Exhibit 8-E Preliminary Utility Relocation Schedule	
Section 09 Right-of-Way	
Exhibit 9-A ROW Schedule	
Exhibit 9-B Schedule of Unique Acquisition Terms and Conditions	
Exhibit 9-C Schedule of Improvements to be Demolished.....	
Exhibit 9-D Tasks of the CDOT ROW Acquisition Process	
Exhibit 9-E Tasks of the CDOT Relocation Process	

Section 10 Survey	
Section 11 Geotechnical and Roadway Pavement.....	
Section 12 Earthwork.....	
Section 13 Drainage	
Exhibit 13-A Pipe Table	
Exhibit 13-B Irrigation Table.....	
Section 14 Roadways	
Exhibit 14-A Roadway Design Criteria	
Exhibit 14-B Minor Roadway Design Criteria.....	
Exhibit 14-C Local Roadway Design Criteria.....	
Exhibit 14-D CDOT Design Exception Variance Request Form.....	
Exhibit 14-E CDOT Design Exception Variance - Elmore's Segment Vertical Exception	
Exhibit 14-F CDOT Design Exception Variance - Valley Segment Vertical Exception	
Section 15 Signing, Striping, Signals and Lighting.....	
Section 16 Structures.....	
Section 17 Transportation Management Plan	
Section 18 Landscaping	
Section 19 Maintenance During Construction	
Section 20 Intelligent Transportation System.....	
Section 21 Modifications to Standard Specifications.....	

1.0 General

1.1 Project Description

The Project consists of a Regional Highway (R-A) for United States Highway 160 (US 160) from State Highway 172 (CO 172) (approximate MP 91.5) to Dry Creek (approximate MP 97.5). The Project limits are within the NEPA Documents and are more fully described below.

The Preferred Alignment for the Project limits from CO 172 to Dry Creek was defined in the US 160 Environmental Impact Statement (EIS)/Record of Decision (ROD) and subsequent reevaluations. This Project will reconstruct the existing two-lane facility on US 160 between approximate Mile Post (MP) 91.5 just east of CO 172 and approximate MP 97.5. The Work for this Project is defined in Book 2 and generally consists of the reconfiguration of the US 160 corridor with a five-lane section from approximately MP 91.5 to MP 93.9 (Elmore's Segment), reconstruction of the existing CR 225 intersection with a roundabout intersection at CR 225 from approximately MP 93.9 to 94.3 (225 Segment), and alternating passing lanes from approximately MP 94.3 to MP 97.5 (Valley Segment). The Project will include the replacement of the Florida River Bridge, two large wildlife underpasses, small mammal crossings, wildlife appurtenances, improvements to existing local accesses, and improvements to roadway geometry.

1.2 CDOT Project Values

CDOT holds values for all of its projects, and this Project incorporates values that drive its execution. The Values should be maintained throughout the Project in decision-making. CDOT seeks to improve US 160 for the residents, travelers, and freight users of this important corridor by:

1. Maximizing safety by reducing vehicular crashes and minimizing conflicts with wildlife.
2. Maximizing travel efficiency and mobility by meeting the future demand for highway capacity.
3. Improving access management along the US 160 Corridor.

1.3 Project Goals

The Project goals are the basis for evaluation of the Technical Proposal. CDOT has established the following goals for the Project:

1. Improve Safety, Mobility, and Efficiency:

CDOT's goal is to construct as much of US 160 as possible within the financial constraints of the Project.

- i. Maximize safety, mobility, and travel efficiency improvements for US 160.
 - ii. Enhance the corridor by adding or extending passing and climbing lanes, improving intersections, widening shoulders, and upgrading roadway elements to current design standards.
 - iii. Decrease the number and severity of crashes.
- #### 2. Minimize Impacts to Highway Users:

The Project is an important corridor for all highway users, including commuters, recreational users, and the movement of freight. As such, the Contractor is encouraged to develop an approach that will minimize the impacts on the traveling public. This goal includes:

- i. Minimize the impacts on traffic during construction.
- ii. Minimize impacts to the surrounding Roadway network during construction.
- iii. Minimize environmental impacts of earth-moving operations during construction and mitigate impacts after earth-moving operations are complete.

3. Maintain Effective Partnerships throughout:

CDOT is seeking a strong, committed, and organized design-build team that brings the necessary skills and resources to achieve success for CDOT, the Stakeholders, and the design-build team. This strong team shall:

- i. Provide effective coordination throughout design and construction.
- ii. Ensure that CDOT's goals, values, and Technical Criteria are fully integrated into Work.
- iii. Develop and foster a trusted partnership with CDOT and encourage collaboration among all team members.
- iv. Commitment of Key Personnel and leadership to project success and meeting project goals.
- v. Promote transparent communication, cooperative relationships, and project-first conflict resolution.
- vi. Provide superior technical and administrative resources to address all Project challenges.
- vii. Develop and commit to a highly organized Project Management Plan.
- viii. Develop an approach to locate and integrate key staff with CDOT, as appropriate, while considering costs and the primary goal of maximizing Project Scope.
- ix. Provide integration of the design staff throughout construction, as required, to assure design intent is carried forward.
- x. Manage design and construction to ensure Project goals, values, and Technical Criteria are upheld throughout the duration of the Project.
- xi. Effectively meet Civil Rights requirements through an integrated and executed plan.
- xii. Leverage local resources.

4. Approach to Project Delivery:

- i. CDOT is seeking a team to provide superior Work, starting with design concept development and continuing through construction completion. Develop thoughtful, well-coordinated, efficient design concepts for all aspects of the Work, including Roadways, Bridge, Structures, walls, drainage systems, geotechnical design, pavements, signing and striping, wildlife features, and all other ancillary parts of the Work.
- ii. Deliver the project on time, within budget, and to the highest quality standards while meeting INFRA Grant milestones and deadlines.

- iii. Apply innovative and cost-effective design and construction methods and ensure durability and long-term performance of the corridor, especially addressing the following:
- iv. Structures and geotechnical design.
- v. Drainage systems.
- vi. Minimize and mitigate environmental impacts of construction activities.
- vii. Develop and maintain a detailed construction schedule that illustrates how the project will be managed.
- viii. Provide a detailed approach to meeting the Project budget and minimizing construction change orders.
- ix. Develop project Innovations that will maximize the scope of the Project.
- x. Develop a Quality Management Plan focused on accountability of the design and construction efforts.

1.4 Environmental Compliance

US 160 within the Project limits has been evaluated in a series of NEPA documents as follows:

- 1. US Highway 160 from Durango to Bayfield La Plata County, Colorado FEIS/ROD (2006)
- 2. US Highway 160 from Durango to Bayfield La Plata County, Colorado FEIS/ROD Reevaluation (June 2025)

This Project and Work shall be in conformance with the NEPA Documents. In addition, the Project and Work shall not preclude anything required as part of these documents. Mitigation measures identified in the Technical Criteria and the NEPA Documents needed in response to Project impacts shall be implemented within the Project and Work. No Project mitigation measure resulting from the Project or Work shall be deferred to a future project.

1.5 Basic Configuration

The Basic Configuration generally is defined as the Work on US 160 from approximately Mile Post (MP) 91.5 just east of CO 172 and to approximately just west of MP 97.5 within the existing or new Right-of-Way (ROW) that is required to construct the following elements to conform to the Technical Criteria set forth in Book 2. The Basic Configuration is an interim condition of the US 160 Environmental Impact Statement (EIS)/Record of Decision (ROD), based on which the Contractor should evaluate the Basic Configuration and verify that the design does not preclude the ultimate configuration set in the US 160 NEPA Documents. All elements of the Project shall be designed to accommodate future maintenance operations.

- 1. Roadways:
 - A. Reconstruct/construct the existing US 160 corridor from the existing two-lane facility on US 160 between Mile Post (MP) 91.5, just east of CO 172, and approximately MP 97.5 as follows:
 - i. Elmore's Segment:

- a. Five-lane Regional Highway with four 12-foot lanes, a variable width two-way left turn lane (TWLTL) the TWLTL shall start at SH 172 as shown in Exhibit 1-A, and 10-foot outside shoulders (8-foot paved and 2-foot with shouldering Material).
 - b. Dedicated left turn auxiliary lanes at a minimum where shown in the Basic Configuration Exhibit 1-A (CR 229, MP 93.63 and MP 93.65).
 - c. Widened outside shoulders to accommodate access and informal chain up operations along the corridor.
 - ii. Frontage road and CR 223 cul-de-sac.
- B. 225 Segment:
 - i. US 160/CR 225 intersection roundabout with two lanes each direction for US 160 and one lane each direction for CR 225.
- C. Valley Segment:
 - i. Construct a minimum of 1 mile of alternating passing lanes in each direction between CR 225 and eastern Project limits, with 12-foot lane width.
 - ii. Construct outside shoulders between CR 225 and eastern Project limits, with 8-foot shoulder (6-foot paved and 2-foot with shouldering Material)
 - iii. Construct and consolidate Narrow Gauge and Englishman mobile home park access.
- 2. Improve access locations as required.
- 3. Structures:
 - A. Reconstruct Bridge over the Florida River Bridge, this is a Bridge and Tunnel Enterprise (BTE) replacement structure with specific requirement in Book 2 Technical Criteria.
 - i. The BTE limits are from the MP 93.7 to MP 93.9.
 - B. The Florida River Bridge BTE replacement Structure includes at a minimum the following elements:
 - i. Structure with a minimum of 87-foot out-to-out dimensions.
 - ii. Approach guard rails.
 - iii. Mouse Mitigation Habitat on the south side as shown in the Basic Configuration Exhibit.
 - iv. Mouse mitigation access roads.
 - v. Landscape restoration.
 - C. Required retaining walls.
 - D. Large wildlife underpasses and associated appurtenances at the following locations:
 - i. MP 92.52 (Mesa Wildlife Underpass)
 - ii. MP 96.05 (Valley Wildlife Underpass)
 - E. Small mammal crossing structures.
- 4. Wildlife Features (defined as deer fence, deer guards, and game ramps):
 - A. Construct deer fencing on both sides of US 160.

- i. Construct deer guards at any access location with direct access to US 160 in line with limits of the deer fencing.
 - ii. Construct game ramps.
- 5. Drainage and Irrigation Features:
 - A. Construct all drainage and irrigation systems required for the Project.

Reference Documents illustrate the Basic Configuration and are provided solely for the Contractor's reference and are without any representation or warranty by CDOT. Regardless of the level of completion or suitability of any portion of the Reference Documents, the Contractor shall be solely responsible for all Project design and construction elements. CDOT shall have no liability or obligation as a result of design work contained in the Reference Documents.

1.6 Additional Requested Elements

The following Additional Requested Elements (AREs) are identified as elements of the Project that may be incorporated into the Proposer's Basic Configuration.

1.6.1. ARE Descriptions

Additionally requested elements could include the following but are not limited to:

- 1.6.1.1 Improve typical section for Elmore's section
- 1.6.1.2 Provide additional length of passing lanes for Valley section
- 1.6.1.3 Improve typical section for Valley section
- 1.6.1.4 Incorporate smart work zones

The Contractor shall be responsible for assessing the environmental clearance requirements of the AREs. The Contractor also shall be responsible for assessing ROW issues, hazardous materials, utility conflicts, third-party agreements, and any other additional permits or requirements to design and construct the AREs. AREs shall conform to all other requirements of the Contract Documents.

1.7 Available ROW of US 160

The ROW plans in Book 4 reflect the available ROW along the US 160 Project Limits.

1.8 Exhibits

Basic Configuration:

Exhibit 1-A: US 160 Basic Configuration

Exhibit 1-B: US 160 Basic Configuration Typical Sections

2.0 Project Management

2.1 Administration

The Contractor shall be responsible for the management, performance, and administration of the Work in conformance with the requirements of the Contract Documents. The Colorado Department of Transportation (CDOT) shall have the right to visit the Site, inspect the Work for quality, and observe the Work to determine that the Work is proceeding in conformance with the requirements of the Contract Documents.

2.2 Project Management Plan

The Contractor shall submit a Project Management Plan (PMP) that encompasses the design, construction, and testing and commissioning phases of the Project, for Acceptance by CDOT prior to the issuance of Notice to Proceed (NTP1), as denoted. The completed PMP, addressing all aspects, shall be submitted for Acceptance prior to the Second Notice to Proceed (NTP2). The PMP shall provide clear detail of the Contractor's overall approach to its team organization, structure, and management processes, and shall describe the scope, goals, and objectives of Project approach and intended results, and be fully compliant with the requirements of the Contract Documents. The PMP shall be approved and signed by the Design-Build Project Manager, Design Manager, Construction Manager, and Quality Control Administrator, who are responsible for planning, reviewing, approving, reporting, monitoring, controlling, implementing, revising, and issuing the PMP, including revisions. At a minimum, the PMP shall include the following (where applicable, relating to both Contractor and its Subcontractors, but also, where applicable, clearly identifying the division of roles and responsibilities between the Contractor and its Subcontractors):

1. NTP1: An organizational chart and description, indicating the Contractor's overall team structure, including all Key Personnel, management staff, and their reporting relationships for all Work. This plan shall include which Key Personnel is designated to be the licensed professional engineer in responsible charge for the observation of the Construction Work;
2. NTP1: A design organizational chart and description, indicating the roles, responsibilities, and structure of the Contractor's design staff, down to and including discipline leads and the staff positions proposed in each discipline;
3. NTP1: A construction organizational chart and description, indicating the roles, responsibilities, and structure of the Contractor's construction staff, down to and including field superintendents and the staff positions proposed under each field superintendent for the Work for all shifts;
4. NTP1: A quality management organizational chart and description, indicating the roles, responsibilities, and structure of the respective quality management, Process Control, and ICQC staff, down to and including field inspection, and testing for the Work for all shifts;
5. NTP1: A management process for the Contract requirements and the commitments made in the Contractor's proposal, including a description of all commitments made and how the Contractor will track and incorporate the commitments made into the Work;
6. NTP1: A design management process, including a description of how design personnel will interface with CDOT, construction, and quality management in accordance with the Quality Management Plan requirements;

A construction management process, including the independence of Process Control (PC) personnel and Activities from ICQC personnel and Activities, interface with the ICQC, and

roles and responsibilities for approvals, Contractor's coordination plan, the Contractor's management approach, the construction management structure, detailed delineation of Work zones.

NTP1 shall identify advanced Work, identification of design and construction packages, and a summary of major Project Phases;

7. NTP1: Process for certifying the design deliverables meet or exceed the Technical Criteria per Book 2.
8. NTP1: Detailed description of the interface between the design and construction resources and the allocation of design and construction staff to implement the Project;
9. NTP1: Process for addressing constructability, durability, maintainability, and environmental compliance in the Work;
10. NTP1: Description of key processes, including a description of how design personnel will interface with Contractor's construction, Process Control, and ICQC in accordance with the Quality Management Plan requirements process for inspections and notifications of issues of non-compliance to CDOT, and process and timeframe for providing applicable cures for nonconformance;
11. NTP1: Description of key processes and their reference location within the Contractor's Quality Management Plan, for control of the Released for Construction Documents (RFC) drawings, including making changes to the design during construction and ensuring engineering review of the new design and compliance with the Contract. Processes shall demonstrate that CDOT and the Contractor's design team are involved in the review and acceptance of deviations from the RFC drawings;
12. Process for construction closeout, including the Contractor's approach to satisfaction of Final Acceptance, and management of Punch Lists;
13. Description of key processes, and their reference location within the Contractor's Safety Management Plan, for employees of Contractor, its Subcontractors, and the public, including the designation of a safety manager, training procedures, accident investigation procedures, and exposure assessment;
14. Description of key processes, and their reference location within the Contractor's Transportation Management Plan, in accordance with Book 2, Section 17 requirements;
15. NTP1: Description of key processes, and their reference location within the Contractor's Environmental Compliance Work Plan, in accordance with Book 2, Section 6 requirements, including interface with CDOT and any Governmental Authority. NTP2 should add to Work Plan and address Compliance during construction;
16. NTP1: Description of key processes, and their reference location within the Contractor's Civil Rights Plan, in accordance with Book 2, Section 3 requirements;
17. Description of the Contractor's processes and approach to managing the Contract Schedule, in accordance with this Section, including Contract Schedule maintenance and required deliverables management; and
18. NTP1: Contractor's approach to non-compliance reporting, evaluation, resolution, and process improvement with each of its Subcontractors and methodology on how this information will be reported to CDOT, in accordance with Book 2, Section 4 requirements.

2.2.1. Project Management Plan Updates

The Contractor shall monitor and improve the effectiveness of its PMP and resubmit the PMP for CDOT Acceptance should any of the following conditions exist:

1. A plan or procedure no longer adequately addresses the matters it was originally intended to address;
2. A plan or procedure does not conform with the Contract;
3. An audit by the Contractor, Independent Construction Quality Control (ICQC), or CDOT identifies a deficiency in the PMP requiring an update;
4. Organizational structure changes require revision to the PMP;
5. The Contractor is undertaking, or about to undertake, Activities that are not covered within the current PMP.

The contractor shall maintain a working copy on the Document Control System. The Contractor shall clearly identify in a cover sheet what changes were made in a PMP update to expedite the review. Also, a redline copy and a final clean copy shall be submitted to CDOT.

2.3 Key Personnel

The Contractor shall provide Key Personnel on the Project. Key Personnel shall include the Design-Build Project Manager, Design Manager, Construction Manager, Quality Control Administrator, Environmental Compliance Manager, Civil Rights Compliance Manager, and Utility Manager. The Contractor shall not replace any Key Personnel for the duration of the Project without prior Approval from CDOT. Personnel replacements must have equal to or better qualifications as the original personnel, as determined by CDOT.

The Key Personnel shall have, at a minimum, the qualifications outlined in the following sections.

2.3.1. Design-Build Project Manager

1. The Design-Build Project Manager shall be in direct charge of the Work and is responsible for the administration and satisfactory completion of the Project under the Contract. This person shall be assigned to the Project full-time and will be required to be on Site as necessary to fulfill their responsibilities, and to ensure an understanding of the Site, the scope, and the Project impacts.
2. Shall have recent design-build experience managing major projects involving major highway construction/reconstruction, including bridge/structure construction, and traffic phasing.
3. Shall not be assigned any other Key Personnel duties or responsibilities on the Project.

2.3.2. Design Manager

1. The Design Manager shall be responsible for ensuring that the overall Project design is completed and design criteria requirements are met. This person shall be assigned to the Project full time during the design phase. The Design Manager will be required to be on Site and available to the Project as necessary, or as required, to facilitate design Work and to address design issues for the duration of the Project. Design Manager shall maintain and coordinate sufficient on Site presence of the design team to ensure an understanding of the Site, the scope, and the design impacts.

2. Responsible for the management of the Construction access, Form 138 Process.
3. The Design Manager shall work under the direct supervision of the Design-Build Project Manager.
4. Shall be a registered Professional Engineer in the State of Colorado prior to the commencement of any design Work on the Project.
5. Shall have a minimum of ten years of design experience including experience managing projects involving major highway construction/reconstruction, bridge/structure construction, and traffic phasing.
6. Shall have the authority and obligation to stop Work if and when he/she knows, or has reason to believe, that any Work does not meet the standards, specifications, or criteria established for the Project.
7. Strongly preferred to have design build experience.
8. Shall not be assigned any other Key Personnel duties or responsibilities on the Project.

2.3.3. Construction Manager

1. The Construction Manager shall be assigned to the Project full time and will be required to be on Site for the duration of the construction Work.
2. Shall have a minimum of ten years of construction experience, including managing the construction of projects involving major highway construction/reconstruction, bridge/structure construction, and traffic phasing.
3. The Construction Manager shall work under the direct supervision of the Design-Build Project Manager.
4. The Construction Manager or Construction Manager's formal delegate shall comply with the requirements per Book 2, Section 5 and Book 2, Section 17 for coordination with CDOT's Public Information Managers.
5. Shall not be assigned any other Key Personnel duties or responsibilities on the Project.
6. Shall have the authority and obligation to stop Work if and when he/she knows, or has reason to believe, that any Work does not meet the standards, specification, or criteria established for the Project.
7. Strongly preferred to have design build experience.

2.3.4. Quality Control Administrator (QCA)

1. The QCA shall not be an employee of the Contractor or any of Contractor's Subcontractors.
2. The Quality Control Administrator shall be assigned to the Project full-time and will be required to be on Site as required for the Work to fulfill their responsibilities.
3. Responsible for the Project's quality program, including Process Control and ICQC, and the coordination of Owner Verification Testing and Independent Assurance Testing.
4. The Quality Control Administrator shall be responsible for certifying on the monthly invoice that the Work has been completed in conformance to the Contract, the Approved Released for Construction Documents (or revisions), and the execution of the Quality Management Plan.

5. Shall have the independent authority and obligation to stop any and all Work that does not meet the standards, specifications, or criteria established for the Project.
6. Shall have recent experience developing, implementing, and overseeing quality programs on design build projects.
7. Shall work under the direct supervision of the Project's Executive Management Team (EMT).
8. Shall not be assigned any other Key Personnel duties or responsibilities on the Project.

2.3.5. Environmental Compliance Manager

1. The Environmental Compliance Manager shall work under the direct supervision of the Design-Build Project Manager. The Environmental Compliance Manager shall be assigned to the Project full-time and will be required to be on Site as needed for the Work to fulfill their responsibilities.
2. Shall have experience developing, implementing, and overseeing environmental compliance programs.
3. Shall have experience with environmental documentation, including Environmental Impact Statements, Environmental Assessments, and all associated documents, and implementation of resulting requirements as required for the Work.
4. Responsible to ensure Environmental Compliance of the Work and that Work complies with all mitigation requirements of the Project.
5. Responsible to ensure the Contractor develops, implements, maintains, and documents control measures for the Project and is in compliance with permit application requirements.
6. It is preferred that the Environmental Compliance Manager has design-build experience.

2.3.6. Civil Rights Compliance Manager

1. Shall be responsible for the day-to-day operational components of, and serve as the primary contact, on behalf of the Contractor, to CDOT for all Civil Rights Requirements per Book 2, Section 3, and will be required to be on Site as necessary to ensure compliance for the duration of the Project.
2. Shall have authority to act on behalf of the Contractor for Civil Rights Requirements regardless of whether this role is staffed by a consultant or an employee of the Contractor.
3. Shall be granted access to the B2GNow and LCPtracker information systems. For B2GNow, access shall include, but not be limited to, accessing Subcontractor and supplier requests and viewing payment audits. For the LCPtracker system, access shall include, but not be limited to, viewing the certified payroll for all Contractors on the Project.
4. Shall have at least three (3) years professional experience in managing, leading, and implementing all Civil Rights Requirements on USDOT-funded transportation construction projects of similar magnitude.
5. Shall report directly to the Design-Build Project Manager.

2.3.7. Utility Manager

1. The Utility Manager will oversee the Third Party coordination and Agreements with Irrigation Ditch Companies, per all requirements specified in Book 2.

2. The Utility Manager shall be responsible for the coordination of Work completed within the floodplain, as well as permitting, unless the PMP states that the Design Manager will assume this responsibility.
3. Responsible for overseeing Third Party approvals required to complete the Work.
4. Responsible for managing commitments for McClean Spring relocation and impacts as set forth in the agreements.
5. Shall coordinate service relocations with the United States Postal Service (USPS), local Fire districts, school bus drop-offs, and waste management companies, and per the requirements of Book 2, Section 14.
6. Responsible to ensure the requirements and commitments are being met in the executed or draft Agreements.
7. The Utility Manager shall work under the direct supervision of the Design-Build Project Manager in close coordination with the Design Manager.
8. The Utility Manager shall be assigned to the Project full-time during the design, coordination, and execution of the Utility and Irrigation Work. The Utility Manager will be required to be on Site and available to the Project as necessary to facilitate coordination and execution of the Utility and Irrigation Work and to address related issues for the duration of the Project.
9. Shall have at least three (3) years professional experience in managing, leading, and implementing irrigation and multi-facility utility relocation on USDOT-funded transportation construction, or shall have accumulated demonstrated experience with managing, leading, and implementing irrigation and multi-facility utility relocation.
10. Shall have authority to act on behalf of the Contractor, regardless of whether this role is staffed by a consultant or an employee of the Contractor.

2.4 Work Breakdown Structure

The Contractor shall submit to CDOT a detailed Work Breakdown Structure (WBS), including proposed Work segments for Acceptance, prior to NTP1. The WBS shall include a detailed, organized hierarchical division to complete each element of the Work. The Accepted WBS shall be the basis for organizing all Work under the Contract Documents and shall be used as a basis for the Contract Schedules and other cost control systems. The Contractor's WBS shall conform to Table 2-1 and Exhibit 2-A, Work Breakdown Structure.

All cost and schedule information shall roll up to Level I from Level VI. Further details shall be provided by the Contractor for Level III, Level IV, Level V, and Level VI to ensure a clear understanding of the Contract and the execution of the Work.

2.4.1. WBS Activities Modifications

When it becomes necessary to add, combine, eliminate, or modify Contract-specified WBS Level Activities defined in Exhibit 2-A, to reflect modifications to the Work, such changes shall be made through a Change Order that has been Approved by CDOT in accordance with the Contract. These changes to the WBS Level Activities shall consequently be reflected in subsequent Contract Schedule submittals, as defined in this Section.

Proposed additions, combination, elimination, or modification of non-contract specified WBS Level Activities would not be the subject of a Change Order; however, the consequent realignment of funds

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Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 2 - Project Management

must be Approved by CDOT in accordance with the Contract and thereafter reflected in the required Contract Schedule submittals.

Table 2-1: WBS Levels

Program Level 0:	US 160 Elmore's Corner to Dry Creek Design-Build Project
Program Level—CDOT use only: The summary of all Design-Build Contract components	
Level I:	Major Program Elements
Major Program Elements: □ Activities of the Contractor. This is the Contractor's highest level.	
Level II:	Contract Components
Design-Build Contract Components: □ Breakdown of all Management, Design, and Construction Components as shown on Exhibit 2-A.	
Level III:	Contract Major Subcomponents*
Design-Build Contract Major Subcomponents: □ Breakdown of all major subcomponents of the Contract as shown on Exhibit 2-A. □ The Contractor to define Construction Segments at this level. □ Additional Requested Elements (ARE). □ See Exhibit 2-A for Contract specified Level III Major Subcomponents. * Basis for Price Proposal to be submitted as identified on Form J.	
Level IV:	Contract Subcomponents*
Design-Build Contract Subcomponents □ Breakdown of all subcomponents of the Contract as shown on Exhibit 2-A and as required to detail and organize in hierarchical division to complete each element of the Work. * Basis for Price Proposal to be submitted as identified on Form J.	
Level V:	Contract Subcomponents and Contractor Work Areas
Breakdown of the Contract Subcomponents and Work Areas □ Breakdown of all subcomponents of the Contract by Work areas as shown on Exhibit 2-A and required to detail and organize in hierarchical division to complete each element of the Work. □ Contractor to define Work Areas at this level for each subcomponent by Construction Segment.	
Level VI:	Contractor Work Activities
Breakdown of Work Activities defined by the Contractor: □ The Contractor to define all Activities at this level as shown on Exhibit 2-A and required to detail and organize in hierarchical division to complete each element of the Work. □ Offices, Laboratories, Sanitary Facilities shall all be shown on this Level □ Basis for all progress payments.	
Schedules—The following Critical Path Method (CPM) schedules shall be cost-loaded and resource-loaded to Level VI: □ Preliminary Baseline Schedule □ Original Baseline Schedule (or Revised Baseline Schedule, if applicable) □ Current Baseline Schedule □ Monthly Progress Schedule □ Recovery Schedule □ As-Constructed Schedule	

2.5 Contract Schedule Management

2.5.1. General

The Work related to Contract Schedule management includes preparing, progressing, revising, and submitting Contract Schedules.

The Contract Schedules shall represent a practical plan to complete the Work within the Completion Deadlines and convey the intent of the execution and progress of the Work.

The Contract Schedules shall include the planned execution of the Work in accordance with the Contract Documents. The Contract Schedules shall include seasonal and weather constraints; involvement and coordination with other Contractors, Utility Owners, Governmental Persons, Engineers, Architects, Subcontractors, and Suppliers; environmental constraints, Right-of-Way (ROW) restrictions, and traffic constraints. All other constraints shall be considered in the development of the Original Baseline Schedule, Revised Baseline Schedule, and updating of subsequent Monthly Progress Schedules. The Contract Schedules shall include delivery dates for critical Materials, submittal and review periods, and dates for no-Work periods. No ambiguous Activities shall be permitted.

The Contract Schedules shall represent the requirements of the Contract Documents, and the Work shall be executed in the sequence and duration indicated in the Contract Schedules.

All Contract Schedules shall be developed consistently with the Accepted WBS and the Completion Deadlines. All Contract Schedules shall be cost-loaded and resource-loaded to WBS Level III through Level VI.

All Work and Activities of the Contractor shall be scheduled and monitored by use of a Critical Path Method (CPM) schedule developed and maintained using Primavera Scheduling software (P6). The Contractor shall provide one license of the scheduling software for use on the Project to CDOT for Acceptance prior to NTP2. All scheduling software settings within the scheduling/ leveling dialog box shall remain default settings unless otherwise Approved by CDOT. In addition, any changes to the scheduling software settings that alter the scheduling calculations shall be clearly identified and provided as part of the Contract Schedule submittals.

The Contractor shall designate a Contractor's scheduler until Final Acceptance. The Contractor's scheduler must have at least 5 years of previous scheduling experience on similarly sized projects in both scope and complexity (with references to be provided to CDOT, upon request). If the Contractor's scheduler is found incapable of performing the schedule management in accordance with this Section 2, CDOT may remove the Contractor's scheduler from the Project at CDOT's discretion. Upon removal or voluntary termination of the Contractor's scheduler from the Project, the Contractor shall provide a qualified replacement within 30 Days.

The Contractor shall conduct a schedule development meeting with CDOT within 10 Days after NTP1. At this meeting, participants shall discuss details and requirements of the submittals for the Original Baseline Schedule. This meeting shall, at a minimum, discuss the Project risks, resource assumptions, Work constraints, and the critical path of the Project.

2.5.2. Contract Schedules

Contract Schedules shall include the Preliminary Baseline Schedule, Original Baseline Schedule, Current Baseline Schedule, Revised Baseline Schedule, Monthly Progress Schedule, Recovery Schedule, and the As-Constructed Schedule.

2.5.2.1 Preliminary Baseline Schedule

The Preliminary Baseline Schedule is defined as the initial schedule for the purpose of initiating Work on the Project. It shall be a CPM schedule with Activities following NTP1 and prior to NTP2.

The Preliminary Baseline Schedule shall be in accordance with the Contract requirements; shall conform to the Accepted WBS; shall be cost-loaded and resource-loaded from WBS Level III through Level VI; shall include all Contractor-defined WBS Level III, IV, V, and VI Activities; and shall include Contractor-defined detail necessary to provide measurable schedule progress.

The Preliminary Baseline Schedule shall be an intermediate schedule during the production of the Original Baseline Schedule and shall establish a payment schedule for the duration between NTP1 and NTP2.

The Contractor shall submit the Preliminary Baseline Schedule to CDOT for Acceptance prior to NTP1.

2.5.2.2 Original Baseline Schedule

The Original Baseline Schedule is defined as the Contractor's original plan for the Project from Contract execution through Final Acceptance. It shall be a detailed CPM Schedule with Work Activities and Completion Deadlines included for the full term of the Project. The Original Baseline Schedule shall be developed from the Accepted Preliminary Baseline Schedule and shall conform to the Accepted WBS and include all Contractor-defined WBS Level III through Level VI Activities.

The Original Baseline Schedule will be Reviewed by CDOT for purposes of determining:

1. Compliance with applicable provisions of the Contract Documents.
2. That the logic of the proposed CPM schedule is sound, consistently developed, and demonstrates a logical sequencing and interdependence of Activities required for the timely and orderly achievement of all Work Activities and milestones, including completion of the Work within the Completion Deadlines.

The Contractor shall submit to CDOT for Approval the Original Baseline Schedule prior to issuance of NTP2. Once Approved, this Contract Schedule shall become the Original Baseline Schedule against which all progress and revisions shall be measured. The Original Baseline Schedule shall not change after Approval.

Upon Approval by CDOT, the Original Baseline Schedule shall be the basis for the Monthly Progress Schedule used by the Contractor in scheduling and performance of the Work.

The Original Baseline Schedule shall be cost-loaded and resource-loaded from WBS Level III through Level VI and summarized for the aggregate costs equal to the WBS Level III through Level IV prices set forth in the Proposal Documents.

The Original Baseline Schedule shall include all Environmental deliverables listed in Book 2, Section 6, including submittal dates. The Original Baseline Schedule shall include all wildlife and vegetation surveys and control measure installation prior to NTP2 through Project Completion.

The Original Baseline Schedule shall show the sequence and interdependence of Activities required for complete performance of the Work, beginning with the date of the NTP1 and concluding with the date of Final Acceptance, and shall comply with all of the following:

3. The actual number of Activities in the Contract Schedule shall be sufficient to ensure adequate planning of the Work and to permit monitoring and evaluation of progress and the analysis of time impacts. Activity durations shall be expressed in full days of Work. The Work calendar shall clearly identify Holidays and other non-Working Days.
4. The Contractor shall schedule deliverable review times by CDOT and Governmental Approvals as separate tasks logically tied to the appropriate Activity. Concurrent review of multiple deliverables by one discipline must be agreed to by CDOT prior to inclusion in the Original Baseline Schedule. The Contractor shall provide a new Activity for review time in the Contract Schedule for every resubmittal required due to the Contractor providing incomplete or nonconforming submittals to CDOT or for Governmental Approvals.
5. A Gantt chart of all Activities necessary to complete the Work shall be provided.
6. All Completion Deadlines set forth in the Contract shall be identified.
7. All required constraints and sequences defined in the Contract shall be included in the Original Baseline Schedule. If the Original Baseline Schedule or any Contract Schedule update does not include these constraints and sequences, Acceptance or Approval of the Contract Schedule will not waive such requirements.

A methods statement shall be prepared for each of the Level VI WBS Activities listed in the Original Baseline Schedule for all Critical Path items, and for any Activity not listed, the Contractor considers a controlling factor for timely completion. The methods statement shall be completed in accordance with CDOT Standard Specifications for Road and Bridge Construction. The methods statements shall be submitted for CDOT's Acceptance prior to NTP2.

2.5.2.3 Current Baseline Schedule

The Current Baseline Schedule is defined as the Original Baseline Schedule with cost and schedule changes from Approved Change Orders incorporated. The Current Baseline Scheduled shall be updated monthly with only Approved cost and Contract Schedule changes. The Current Baseline Schedule shall not show progress but shall maintain the dates from the Original Baseline Schedule. The Current Baseline Schedule shall include a late start cost curve.

The Current Baseline Schedule shall be cost-loaded and resource-loaded from WBS Level III through Level VI and summarized for the aggregate costs equal to the WBS Level III through Level IV prices set forth in the Proposal Documents as adjusted for Approved Change Orders.

The Current Baseline Schedule shall be submitted to CDOT for Acceptance concurrent with each Monthly Invoice.

2.5.2.4 Revised Baseline Schedule

The Revised Baseline Schedule is defined as the Contractor's plan for the Project, which is current with progress to date. This Schedule shall reflect the planned execution of the Work for the

remainder of the Project, along with a reallocation of the remaining resources and quantities to represent the estimate to complete the Work as adjusted for Approved Change Orders.

A Revised Baseline Schedule must be Accepted by CDOT. CDOT Acceptance will only apply to the scheduled Work that is planned after the Revised Baseline Schedule's Acceptance date.

The Revised Baseline Schedule shall be prepared by the Contractor when requested by CDOT. The Contractor may request that CDOT review a Revised Baseline Schedule at any time. However, this review will be undertaken only if CDOT agrees with the need for it.

The Revised Baseline Schedule shall be cost-loaded and resource-loaded to WBS Level VI and summarized for the aggregate costs equal to the WBS Level III through Level IV prices set forth in the Proposal Documents, as adjusted for Approved Change Orders.

2.5.2.5 Monthly Progress Schedule

The Accepted Original Baseline Schedule, Current Baseline Schedule, or Revised Baseline Schedule, as applicable, shall be used as the basis to establish the Monthly Progress Schedule, which shall be updated every month to show the actual progress of Work and the earned value of Work accomplished, including Approved Change Orders.

The Monthly Progress Schedule shall be cost-loaded and resource-loaded to WBS Level VI and summarized for the aggregate costs equal to the WBS Level III through Level IV prices set forth in the Proposal Documents, as adjusted for Approved Change Orders. In addition, the Monthly Progress Schedule shall include WBS Level III through Level VI detail for the upcoming 3 months of design and construction on the Project, except that cost loading to WBS Level VI is not required for the three-month look-ahead.

The Monthly Progress Schedule shall be submitted each month to CDOT for Acceptance, concurrent with the Monthly Invoice submittal. The Monthly Progress Schedule shall include all current information as of the status date.

For the three-month look-ahead portion of the Monthly Progress Schedule that establishes the WBS Level VI Activities, the Contractor shall provide sufficient detail to convey a schedule that provides weekly schedule control and shall specifically identify:

1. Completion Deadlines, if any.
2. Phasing of design, construction, testing, and staging of the Work, as specified, giving particular attention to release for construction dates, Site availability, construction staging, public involvement notifications, and maintenance and protection of traffic requirements of the Contract.
3. Procurement, fabrication, preparation of mock-ups, preparation of prototypes, delivery, installation, and testing of Materials and Equipment, including factory testing and demonstration testing, and any orders for Materials and Equipment with long lead times (more than 30 Days).
4. Interface coordination and dependencies with preceding, concurrent, and follow-on Contractors, and Work to be performed by other Contractors and agencies that may affect the Contract Schedule. Prior to the progress status meeting, the Contractor shall obtain from the design team, Subcontractors, Suppliers, and field staff the information required to

accurately reflect progress to date and verification of the scheduled upcoming Work Activities.

2.5.2.6 Recovery Schedule

The Recovery Schedule is defined as the Contractor's program and proposed plan for the recapture of lost schedule progress and to achieve Final Acceptance by the applicable Completion Deadlines. The Recovery Schedule shall be based on the latest Accepted Monthly Progress Schedule and shall include equivalent detail. The Recovery Schedule shall show the proposed changes to the Schedule, include cost loading and additional details to substantiate the recovery plan, and shall reflect all proposed changes to WBS Level VI Activities through Project Completion.

The Recovery Schedule shall be cost-loaded and resource-loaded to WBS Level VI and summarized for the aggregate costs equal to the WBS Level III through Level IV prices set forth in the Proposal Documents, as adjusted for Approved Change Orders.

If the Work is lagging behind the late start cost curve in the Current Baseline Schedule for a period that exceeds the greater of: (a) 15 Days in the aggregate, or (b) the number of Days in the aggregate that equals 5% of the Days remaining until the Project Completion Deadline, the Contractor shall prepare and submit to CDOT for Approval a Recovery Schedule within 14 Days after the Contractor first becomes aware of this schedule delay.

The Recovery Schedule shall demonstrate the Contractor's program and proposed plan to regain lost schedule progress, as well as demonstrate how Project Completion and Final Acceptance of the Project shall be achieved by the deadlines specified in Book 1, Exhibit B.

CDOT will notify the Contractor within 14 Days after receipt of the Recovery Schedule whether the Recovery Schedule is Approved or will describe changes that CDOT believes should be made to the Recovery Schedule. The Contractor shall incorporate and fully include the Recovery Schedule (including CDOT's comments) into the next scheduled Monthly Progress Schedule (or, if the next scheduled Monthly Progress Schedule is due within 7 Days of Approval of the Recovery Schedule, then the Recovery Schedule shall be incorporated into the subsequent Monthly Progress Schedule), and shall concurrently provide to CDOT a Revised Baseline Schedule.

2.5.2.7 As-Constructed Schedule

The last Monthly Progress Schedule submitted shall be identified by the Contractor as the As-Constructed Schedule. The As-Constructed Schedule shall reflect the exact manner in which the Contractor executed the Work, including start and completion dates, Activities, actual durations, sequences, and logic. The As-Constructed Schedule shall be signed and certified by the Contractor's Engineer and scheduler as being a true reflection of the way in which the Work was executed through Final Acceptance. This certified As-Constructed Schedule must be Accepted by CDOT before the final Retainage is released.

2.5.2.8 Float

Float is defined as the amount of time between the early start date and the late start date, or the early finish date and the late finish date, for each and every Activity in the Contract Schedule. Float shall not be for the exclusive use or benefit of either CDOT or the Contractor, but shall be a jointly owned expiring resource available to both parties, as needed, to meet Contract Deadlines. Suppression or consumption of Float by extended Activity duration, dummy Activities, or preferential sequencing will not be allowed.

2.5.2.9 Near Critical Activities

Near critical Activities shall be defined as Activities with a total Float of less than 10 Days.

2.5.3. Contract Schedule Requirements

2.5.3.1 Scheduling Development

All Contract Schedules shall include the following data:

1. Activity ID;
2. Activity description;
3. Unique Activity code for the portion of the Work funded through the Bridge and Tunnel Enterprise (BTE). This Work is defined by the limits as shown in Book 2, Section 1;
4. Start date (actual start date for started Activities);
5. Finish date (actual finish date for completed Activities);
6. Original duration;
7. Remaining actual duration (for those Activities started but not completed);
8. Variance from Baseline Schedule or Monthly Progress Schedule start dates;
9. Total Float (which shall be separately and clearly identified in respect of the Critical Path and in respect of each Completion Deadline); and
10. Critical Path Activities highlighted in red.

2.5.3.2 General Scheduling Constraints

1. All Contract Schedules shall be in one master data file, including design, submittals, procurement, and construction Activities. These Work Activities shall all tie together logically to present a total Critical Path analysis in the same master data file.
2. All Float shall be shown on the Contract Schedules, with the Float in respect to the Critical Path separately and clearly identified.
3. The Contract Schedules shall divide the Work into Activities with appropriate logic ties to show the Contractor's overall approach to planning, scheduling, and executing the Work. The duration and the logical relationships of the Activities and summaries at Work phase level shall be based on the actual durations and relationships anticipated. The Contractor shall not use calendar dates to logically begin or complete any Activity unless those specified calendar dates are expressly identified in the Contract.
4. The Contractor shall facilitate a workshop session with CDOT during development of the Current Baseline Schedule and the Recovery Schedule.
5. Use of constraints are not allowed unless Approved by CDOT. No intermediate completion constraints or start constraints shall be allowed unless they are included in the Contract or Approved by CDOT. The Contractor shall submit, for CDOT Review, a list of any Contractual constraints, including Contract section references, with the Contract Schedules. Unless Approved by CDOT, all Activities must have at least one predecessor and one successor, except for Contract Execution (no predecessor) and Final Acceptance (no successor). No lead or lag relationships shall be permitted.

6. All Activities that start or complete out of sequence shall be rescheduled (logic corrected) to reflect the actual sequence of events.
7. Shall not use unnecessary logic ties.
8. Identify all design packages intended to be included as Release for Construction (RFC) Documents, which, at a minimum, shall have logical ties to the submittals, review periods, and construction Work anticipated for the respective design package.
9. Show maintenance of traffic Activities.
10. Utilize activities and calendars instead of duration lags, and shall contain no negative lag.
11. Actual start and completion dates shall be accurately entered. The Contractor shall submit to CDOT for Approval a narrative describing any changes or corrections of any previous actual dates or dates required in the Contract prior to any changes or corrections to the schedule dates.
12. If any logic is changed after the Acceptance of the Original Baseline Schedule or Revised Progress Schedule, a narrative by Activity identification code (ID) shall accompany the Monthly Progress Schedule stating the reason the logic changed and the benefit to CDOT. If CDOT does not agree with the reason for the logic change, the Monthly Progress Schedule will not be Accepted.
13. All Activity ID codes for a specific Activity description created in any Contract Schedule shall remain unchanged and connected to its original Activity description through Final Acceptance. An Activity description may be changed only to clarify an Activity's original scope.
14. The Contract Schedules shall appropriately account for weather based on historic data.

2.5.3.3 CPM Requirements

1. The Critical Path shall be determined according to CPM principles and shall be highlighted in red on all Contract Schedules to distinguish the critical path from other Activities.
2. A diamond, flag, or other symbol shall highlight milestones.
3. The CPM shall have all major procurement Activities identified for any item with more than 30 Days lead time for delivery. This includes Shop Drawing submittal and approval, lead times for the fabrication and delivery of Materials and Equipment, and installation of Materials and Equipment.
4. The CPM shall be sufficiently detailed to accurately depict all the Work. Activity durations shall be an estimate in Days of the time required to perform each Activity. No individual Activity will have a duration exceeding 15 Days without prior approval from the Project Director. Activities with durations of less than 5 Days shall be held to the absolute minimum. For an Equipment or Material fabrication item whose duration exceeds 30 Days, several Activities, none exceeding 30 Days, shall be used. Each Activity shall have a detailed description.
5. Contract Completion Deadline dates shall be shown on the CPM.

2.5.3.4 Contract Schedule Output Format

The Contractor shall submit the electronic output files of the Contract Schedule (e.g., XER). Contract Schedule charts and graphs shall be submitted in a format compatible with Adobe Acrobat Reader.PDF, and Microsoft® Excel. These files shall be submitted with the Monthly Progress Schedule.

2.6 Cost Management

2.6.1. Progress Payment and Calculations

CDOT will base progress payments on a mutually agreed estimate of percent of the Work that is complete, not on measured quantities. The Contractor shall progress the Activities identified on the Accepted Original Baseline Schedule or the Accepted Revised Baseline Schedule (if applicable) for determining the Monthly Progress Schedule. The Accepted Monthly Progress Schedule will determine the amount of the Contractor's progress payments. Percent complete shall be calculated using scheduling software that meets the requirements of this Section 2, where progress is measured based on percent complete.

Partial payment for stored Materials shall be made only as allowed in the Contract. The Contractor's Monthly Invoice shall not include a request for payment for Nonconforming Work documented by the Quality Control Administrator or CDOT. The payment to the Contractor will be in the amount shown on the Contractor's Approved invoice, less Retainage and any deductions.

2.6.2. Monthly Invoice Submittals

The Contractor shall submit invoices to CDOT each month. Each Monthly Invoice shall be submitted in draft form to CDOT for Review within 10 Days following the prior month's end, concurrent with progress status meetings. Draft Monthly Invoice submittals shall be made electronically in a format compatible with Microsoft® Excel and Adobe Acrobat Reader.PDF, as approved in the Invoice Format.

The Contractor shall track the progress for the Bridge and Tunnel Enterprise (BTE) Work separately, as defined by the limits shown in Book 2, Section 1, on the Monthly Invoices.

The Contractor shall submit to CDOT for Approval each final Monthly Invoice in accordance with this Section. Final invoice submittals shall be made electronically in an unmodifiable format to prevent editing, such as Adobe Acrobat Reader.PDF.

2.6.3. Invoice Document Content

The Contractor shall consult with CDOT on the requirements for the supporting documents to be included with the invoice form. The Contractor shall submit the invoice format meeting the Contract requirements to CDOT for Approval prior to NTP1. The invoice format shall be similar in nature to the industry standard American Institute of Architects (AIA) Forms G702 and G703. Subsequent to CDOT's Approval of the of the invoice format, the Contractor shall submit any requested variations to the Approved invoice format to CDOT for Approval at least 15 Days prior to the submittal of any potentially affected invoice. Changes to the Approved invoice format shall be highlighted. Once the invoice format has been Approved by CDOT, the format shall not change unless subsequently Approved by CDOT.

The format and detail level required for submittal of the Monthly Progress Report shall be developed by the Contractor and submitted to CDOT for Acceptance within 10 Days after NTP1. The Monthly Progress Report shall be on Contractor 8.5 x 11 letterhead.

No invoice will be reviewed or processed until all invoice documents and certifications, as identified in this Section, are received by CDOT.

The invoice documents shall include all of the following:

1. Invoice Cover Sheet:
 - A. Project number and title.
 - B. Invoice number (numbered consecutively starting with "1").
 - C. Period covered by the invoice (specific calendar dates).
 - D. Total earned to date for the Project.
 - E. Nonconforming Work and amount withheld identified.
 - F. Authorized signature and title of signatory.
 - G. Date the invoice was signed.
2. Monthly Progress Report:
 - A. Brief narrative description of Level VI Activity and progress for the Project as a whole, with maintenance, design, and construction start dates and completion dates identified.
 - B. Update of progress with respect to Utilities and Third Parties.
 - C. Identify whether any completion and deadlines are achieved or revised during the period.
 - D. Quality Status Report.
 - E. Summary of Process Control (PC) and ICQC efforts, including result of design reviews.
 - F. Identification of problems and issues that arose during the period, and remaining problems and issues to be resolved.
 - G. Summary of resolution of problems and issues raised in previous Monthly Progress Reports or resolved during the period.
 - H. Summary of Nonconforming Work generated, resolved, and remaining outstanding.
 - I. Summary of Project accidents (frequency and severity) and corrective actions taken.
 - J. Identification of critical schedule issues and proposed resolution.
 - K. Discussion of schedule variations from Completion Deadlines that have slipped or improved.
 - L. Summary of any required Permits during the period.
 - M. Summary of Environmental Compliance Work Plan (ECWP) Activities during the period.
 - N. Progress photographs, as further described in this Section.
 - O. Three-month look-ahead portion of the Monthly Progress Schedule, as further defined in this Section.
 - P. A predecessor and successor report defining all schedule logic and clearly indicating all logical relationships and constraints (submitted with each CPM schedule).
 - Q. An early start report listing all Activities, sorted by actual/early start (submitted with each CPM schedule).
 - R. A total float report listing all Activities, sorted in ascending order of total float (submitted with each CPM schedule).
 - S. A no-Work Days report listing all legal Holidays and no-work Days that were accounted for in the preparation of the schedule (submitted with each CPM schedule).

- T. A list of all executed and pending Change Orders.
- U. A narrative report listing all changes to the CPM schedule since the last submittal.
- V. Payment Schedule Update as further defined in this Section.
- W. Any other items or documentation as shown on the Invoice Checklist Table 2-2.

3. Monthly Progress Schedule:

No invoice will be Approved for payment if there is not a current Accepted Monthly Progress Schedule and Current Baseline Schedule in place. The status date of the Monthly Progress Schedule, coinciding with the payment invoice date, is the last day of each month, unless otherwise Approved. The data date, unless otherwise Approved, for use in calculating the Monthly Progress Schedule shall be the first Working Day of the following month.

The Contractor shall submit all changes to the logic, calendar, durations, actual starts, actual finishes, constraints, or Activities in the Monthly Progress Schedule or Current Baseline Schedule to CDOT for Acceptance.

The Contractor shall make all corrections to the Monthly Progress Schedule requested by CDOT and resubmit the Monthly Progress Schedule. If the Contractor does not agree with CDOT's comments, the Contractor shall provide written notice of disagreement within 7 Days from the receipt of the comments. The items in disagreement shall be resolved in a meeting held for that purpose, if necessary.

4. Certification by Contractor's Quality Control Administrator:

The Contractor shall submit to CDOT for Review a certification signed by its Quality Control Administrator accompanying each Monthly Invoice request certifying that:

- A. All Contract Work, including that of designers, Subcontractors, Suppliers, and fabricators, has been checked and/or inspected by the Contractor's quality program staff, and that all Work, except as specifically noted in the certification, conforms to the requirements of the Contract Documents.
- B. The Quality Management Plan (QMP) and all of the measures and procedures provided therein are functioning properly and are being followed.
- C. All safety-critical Work in conformance with the Project Safety Management Plan (PSMP), as further described in CDOT Standard Specifications for Road and Bridge Construction, has been reviewed and sealed by the Professional Engineer of responsible charge before construction begins.

No invoice will be Approved (payment made) without completion and implementation of the QMP, as outlined in Book 2, Section 4.

5. Monthly Maintenance Progress Report:

The Contractor shall submit to CDOT for Review the current Monthly Maintenance Progress Report with each Monthly Invoice, as required in Book 2, Section 19.

Table 2-2: Invoice Checklist

Invoice Checklist
Current Baseline Schedule
Monthly Progress Schedule (Recovery Schedule, if needed)
Invoice Document
BTE - Construction Portion and Indirect Portion submitted as discrete cost on invoice
Certifications by QCA
Monthly Maintenance Progress Report
Monthly Photos/Videos
Monthly Safety Report
Civil Rights ICQC Audit Report
Quality Status Report
Summary of Activity - Specific Materials quantities to support MTIP
Materials Documentation and COC/CTR records uploaded to DCS for PC and ICQC
NCR Log
Environmental Compliance Plans ICQC Audit
SWMP Compliance ICQC Audit
As-Constructed Documents ICQC Audit
Utilities Matrix
Proof of Parcel Acquisition, Signed MOA's, Completed MOA's, and Funds expended
Survey Records ICQC Audit
* Any other deliverables within the Contract Documents related to Work within the invoice Period

2.6.4. Progress Status Meetings

The Contractor shall schedule and conduct a Progress Status Meeting 3 Days following draft Monthly Invoice submittals. The meeting shall be used to verify, address, and finalize the following:

1. Actual start dates.
2. Actual and planned Project Completion Deadlines.
3. Earned value of Work that has been Accepted and reported in-place, based on installed quantities and Material on hand (stockpiled Materials).
4. Activity percent complete.
5. Incorporation of Approved Change Orders.
6. Status of outstanding Nonconforming Work.
7. Completion of Value Engineering Change Proposals, if any.

8. Work performance.
9. Monthly Progress Schedule, including changes from the previous month's Monthly Progress Schedule.
10. Critical Path.

Following the Progress Status Meeting, CDOT will have up to 7 Days to Review the draft Monthly Invoice submittal. After reviewing, CDOT will return the draft for the Contractor to revise and correct. The Contractor shall then submit a corrected and final Monthly Invoice to CDOT for Approval. Approval of the final Monthly Invoice will be issued within 7 Days, having satisfactory resolution of CDOT's comments on the draft Monthly Invoice submittal.

2.6.5. Payment Schedule

The Contractor shall submit to CDOT, for Review prior to execution of the Contract, a payment schedule showing the estimated monthly expenditures for the duration of the construction of the Project based on the Accepted Baseline Schedule in MS Excel format and in Adobe Acrobat Reader.PDF within the invoice. The payment estimate shall be based on the early finish dates in the Contractor's Baseline Schedule. Updated payment schedules shall be submitted to CDOT for Acceptance with the Monthly Progress Schedule submittals.

2.7 Meetings

2.7.1. Task Force Meetings

At a minimum, the Contractor shall conduct task force meetings for disciplines to facilitate "over the shoulder" review of the Work. At a minimum, the following discipline reviews shall be undertaken:

1. Quality.
2. Drainage/Irrigation.
3. Roadway/Pavement/Earthwork.
4. Structures/Geotechnical.
5. Traffic Management Plan (TMP)/Traffic/ITS.
6. Utilities.
7. Environmental.
8. Civil Rights.
9. Proposed or pending Design Changes to Released for Construction (RFC) Documents.

Meetings shall continue until they are no longer necessary (i.e. topic has been completed) and/or as Approved by CDOT. Suspended meetings may be resumed as required by CDOT to meet the needs of the project.

The Contractor shall include appropriate Stakeholders in task force meetings. The Contractor shall take minutes, tracking at a minimum actions, decisions, risks, and issues. Minutes shall be in accordance with Book 2, Sections 3 and 4, as applicable.

2.7.2. Weekly Status Meetings

The Contractor shall hold weekly status meetings that include appropriate Stakeholders. At a minimum, the following topics shall be addressed:

1. Three-week look-ahead schedule that shall be derived from the Monthly Progress Schedule.
2. Issues/Risk matrix/Change Orders.
3. Quality.
4. Transportation Management Plan (TMP)/Maintenance of Traffic (MOT).
5. Public Information.
6. Environmental Compliance.
7. Civil Rights.

The Contractor shall take minutes, tracking at a minimum actions, decisions, risks, and issues. Minutes shall be in accordance with Book 2, Sections 3 and 4, as applicable.

2.7.3. Video and Photographs

2.7.3.1 Pre-Construction Videos and Photographs

Immediately after NTP1, the Contractor shall take and label a sufficient number of pre-construction photographs and a high-quality video of the Site in high definition (HD) format that can be used to resolve any disputes that may arise regarding the conditions prior to and subsequent to construction. The photograph and video survey shall show roadways, structures, drainage, existing landscape, and all areas necessary and/or anticipated to be impacted by the Work, including haul and detour routes. This pre-construction photograph and video survey shall be submitted to CDOT for Acceptance prior to NTP2. If a dispute arises where no or insufficient photographic or video evidence of an existing condition is available, the disputed area shall be restored to the extent directed by CDOT at no additional cost to CDOT. Photos shall be sequentially taken. Files shall be individually labeled to describe the Project location, or at a minimum, numerically chronological from one end of the Project limits to the other. File dates should show a date prior to construction.

2.7.3.2 Progress Videos and Photographs

The Contractor shall submit progress photos on a monthly basis for Review in a similar file structure as required for pre-construction photographs. Photos shall document Work as it progresses, capturing before, during, and after conditions. Photos shall have geographical identification data consisting of latitude and longitude coordinates. File dates shall show the actual date that the photo was taken. The Contractor shall provide the photographs to CDOT via CDOT's Document Control System (DCS) each month, at a minimum.

The Contractor shall take aerial video of the Work and the Site monthly with drones that comply with the American Security Drone Act of 2023 (ASDA) and OMB Memorandum M-26-2, effective December 22, 2023. Aerial video shall include all areas under construction, whether temporary or permanent, and all other areas impacted each time they are taken. One video from an oblique angle shall be taken from one direction along the corridor consistently throughout the Project duration. The Contractor shall confirm with CDOT the views to be used during recording and the approximate time at which the video will be obtained.

The Contractor shall provide one compiled set of aerial video. All video shall be provided in high-quality digital format.

The Contractor shall also take a construction time-lapse video of the Project, including structure construction and major excavation Activities.

The Contractor shall provide interior and exterior photographs of each buried Structure just prior to burial. These shall include a minimum of 4 internal views (as applicable) and 4 external views of each Structure. All of the following information shall be provided for each digital photograph:

1. Date photograph was taken.
2. Title of Project.
3. Description and location of Structure and Structure number, if available.
4. Description of view shown in photograph.
5. Identification of photographer.
6. Sequential number of photograph.
7. Geographical identification data consisting of latitude and longitude coordinates.

2.8 Office Facilities

2.8.1. Office

The Contractor and CDOT shall be co-located for the duration of the Project construction. Co-location of the design team is not required. However, it is required that effective face-to-face, which remains essential to Project success, collaboration, and partnering, be achievable through over-the-shoulder design and associated Project actions to complete the Work. The Project may require full-time co-location or part-time co-location, dependent upon the phase, the required Work, and the duties assigned to the individual contributor, Major Participant, or Key Personnel. Project will require designers to understand the Site conditions, which will require sufficient Site visits to support the design development or designer responses.

The Contractor and CDOT offices within the co-located office space shall not be intermingled. The Contractor may consult with CDOT about availability of suitable local sites and office facilities.

The Contractor shall provide office space (the CDOT office) and equipment for 8 CDOT personnel, including at least 3 private offices.

The Contractor shall make available its proposed facilities for inspection and Approval by CDOT prior to CDOT occupying any Contractor-provided facilities. CDOT shall be given access not later than 60 Days after NTP1. The Contractor shall furnish CDOT's staff with offices that are in good and serviceable condition (condition comparable to the Contractor's office space) within 5 miles of the Project, unless otherwise Approved. Both parties shall participate in a facility condition inspection prior to and at the completion of occupancy.

CDOT will return possession of Contractor-provided facilities to the Contractor in essentially the same condition as when CDOT initially occupied the facilities, except for reasonable wear and tear.

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 2 - Project Management

The Contractor shall secure the Site; obtain all Site permits; install, set up, and provide Utility services; and maintain the facilities as part of the Work.

In the event that office spaces or appurtenant facilities are stolen, destroyed, or damaged during the Work, except by fault of CDOT, the Contractor shall at its expense repair or replace those items provided to their original condition within 5 Days. If loss or damage is caused by CDOT personnel, the Contractor shall replace the facilities within 5 Days, except CDOT will be responsible for costs incurred.

The Contractor shall maintain the CDOT Offices until at least 90 Days following the Final Acceptance of the Project unless otherwise agreed to by CDOT. CDOT may, at its option, vary the number of its staff throughout the duration of the Project. However, the Contractor shall maintain the initial number and size of the CDOT Offices, conference rooms, reception area, break room, and filing area (the CDOT Office Facilities) until 90 Days following the Final Acceptance of the Project.

The Contractor shall be responsible for disposal or removal of all CDOT Office facilities and any Site restoration Work required.

The Contractor shall provide all of the following:

1. High-speed Internet connection with a minimum of 100 Mbps download speed and 20 Mbps upload speed for all CDOT staff workstations within the CDOT Office. CDOT will provide a router and switch for all CDOT staff offices.
2. Networking for all CDOT workstations within the CDOT Office.
3. For CDOT staff, 1 networked color laser printer/copier per floor, with additional 11- x 17-inch paper tray, including paper, toner, parts, service, and repairs. The printer shall be capable of scanning documents to 11 x 17-inch size and transmitting the scanned file to multiple email addresses.
4. Overhead lighting meeting Occupational Health & Safety Administration (OSHA) and code requirements for office space.
5. Office space not less than the size indicated below:
 - A. Private offices: 100 square feet of enclosed office space (with lockable door) for the offices.
 - B. Partitioned offices: minimum 36 square feet enclosed office space per office (cubicles/partitions are acceptable, and comparable to Contractor staff space).
 - C. One enclosed conference room with doors capable of accommodating a 20-person meeting, with at least 50% of seating capacity at the conference table. This can be a shared conference room between the Contractor and CDOT. Contractor shall increase the size of the shared conference room to accommodate anticipated meeting attendance beyond specified.
 - D. One enclosed conference room with doors for CDOT's exclusive use, capable of accommodating a 10-person meeting, with a 10-person seating capacity at the conference table. The conference room shall be in an adjacent space to the CDOT Offices.
 - E. Break room: 150 square feet with sink, counter, microwave, 20-cubic-foot refrigerator, and drinking water with dispenser.
 - F. One reception area with common access to the CDOT Office.

- G. Storage room: 100 square feet, enclosed with a lockable door.
- 6. Furnishings, as follows:
 - A. Conference Room:
 - i. Conference table and chairs.
 - ii. Large screen television for video conferencing, with ability to connect to an individual computer, video camera, and conference microphones and speaker.
 - iii. Wastebasket.
 - iv. Hanging, erasable white board that is 6 feet wide minimum.
 - B. Offices:
 - i. Desk that is a minimum size 76 x 36 inches with locking drawers.
 - ii. Computer workstation desk capable of holding a desktop printer, monitor, keyboard, and any accessories.
 - iii. Worktable (private offices only).
 - iv. Ergonomically correct, OSHA-approved chairs.
 - v. Extra office chair.
 - vi. Hanging, erasable white board, 4 feet wide, minimum (private offices only).
 - vii. Bookshelf.
- 7. Indoor restrooms suitable for the office space.
- 8. All-weather parking, 1 space per employee, plus 5 visitor spaces and sufficient spaces for meeting attendees (20 total).
- 9. Weekly janitorial service.
- 10. Maintenance of the exterior area of office, including access to parking and snow removal.
- 11. Facilities that meet the Americans with Disabilities Act (ADA) access requirements and meet all local code requirements for office space.
- 12. Heating, ventilation, and air conditioning/cooling systems adequate for office use.
- 13. 24 hours a day, 7 days a week, secure access after normal working hours.

2.8.2. Design-Build Field Laboratory (Owner Verification Testing)

The Contractor shall provide one Class 2 Field Laboratory per CDOT M&S Standards for CDOT use.

Lab shall be provided with High-speed Internet connection with a minimum of 100 Mbps download speed and 20 Mbps upload. CDOT will provide a router and switch for all CDOT staff offices.

A networked color laser printer/copier shall be provided for the lab in the event that the lab is not located in the vicinity of the shared parking lot.

2.8.3. Project Vehicles

Intentionally left blank.

2.8.4. Project Directory

The Contractor shall maintain and furnish to CDOT a Project directory listing the names, addresses, and telephone numbers (e.g., office, cellular) of the Key Personnel and critical support staff of the Contractor and each Subcontractor. The Project directory shall be submitted to CDOT for Acceptance prior to issuance of NTP2. The Contractor shall update the Project directory as changes arise.

2.9 Available Area for Contractor Use

2.9.1. Park and Ride Facility for Contractor's Use

An existing paved park and ride located on the northeast corner of US 160 and CR 225A is available to the Contractor for use throughout the duration of the Project for offices, Equipment, Material storage, staging, etc.

The Contractor shall notify CDOT and La Plata County three weeks prior to assuming control of the park and ride facility.

The Contractor shall coordinate with CDOT's PIM team for the public notice regarding the closure per Book 2, Section 5.

2.9.2. Park and Ride Facility Re-establishment

When the occupancy of the park and ride facility is no longer needed by the Contractor, and this Site is cleared of all Contractor Equipment and Materials, the Contractor shall reestablish the park and ride facility. See Book 2, Section 11 and Book 2, Section 14 for the re-establishment requirements.

The re-establishment of the park and ride facility must be Accepted prior to Project Completion. CDOT and the County will inspect the park and ride facility prior to Acceptance. The County and CDOT will determine when the park and ride will be opened to the public after Acceptance.

The Contractor shall not occupy the park and ride facility after CDOT Acceptance.

2.10 Safety Management

2.10.1. Project Safety Management Plan

The Contractor's Project Safety Management Plan (PSMP), per CDOT Standard Specifications for Road and Bridge Construction, Section 107.06, shall be submitted for Acceptance prior to NTP2.

The PSMP is a living document and shall be updated when a process, method, chemical, or other Work criterion changes that affect the safety of a person or property. The Contractor shall submit to CDOT for Review any updated portions of the PSMP.

2.10.1.1 Project Safety Management Plan Criteria

The PSMP must answer "who, what, and how" questions based upon the Technical Criteria contained within Book 2 and the 12 elements identified in the CDOT Standard Specifications for Road and Bridge Construction, Section 107.06.

2.10.1.2 Project Safety Management Plan Training and Communication

All Project staff, including CDOT, Contractors, and Subcontractors, must be trained on the elements of the Contractor's Accepted PSMP submittal.

2.10.1.3 Safety Meetings

The Contractor shall conduct regularly scheduled Project Safety Meetings, toolbox talks, etc., as specified in the PSMP and per CDOT's Standard Specifications for Road and Bridge Construction.

2.11 Document Management and Document Control

Document Management and Control also must conform to the requirements of Book 2, Section 4.

All correspondence shall include the Project name and Contract name and number, along with the specific subject of the correspondence. All replies shall refer specifically to prior correspondence to which they relate.

2.11.1. Contractor Document Control System (DCS)

The Contractor shall maintain a Document Control System to store and record all correspondence, drawings, progress reports, technical reports, specifications, Contract Documents, deliverables, calculations, and administrative documents generated under the Contract. The Contractor's DCS shall handle all of the Contractor's Project documents. The DCS may be hosted on a software of the Contractor's choosing excepting Materials documentation. The Materials documentation portion of the DCS shall be contained within CDOT's Bentley ProjectWise. The Contractor shall grant access to the DCS to CDOT and ICQC. The Contractor shall use the DCS folder structure indicated within the Contract Documents, unless otherwise Approved. The Contractor shall utilize the file naming convention and file structure specified within Exhibit 2-B unless otherwise Approved.

The Contractor shall submit for CDOT Consultant Onboarding and have all required licensing in place prior to NTP1. Access shall be requested via: <https://consultonboarding.coawsprod.com/>

2.11.2. CDOT's Document Management System (DMS)

The Contractor shall transmit all required Design Documents and Contract deliverables to CDOT via CDOT's Bentley Deliverables Management System (DMS), excepting Materials documentation.

All deliverables submitted to CDOT's DMS shall be categorized and follow the established file naming convention. The file naming convention for all deliverables shall be in accordance with the file naming convention and file structure specified within Exhibit 2-B.

The Contractor shall maintain a deliverable log of Design Documents and Contract deliverables. The log shall define the packages and subpackages that complete the deliverable, as well as including the status of each package, including resolution of Accepted with comments. The deliverables log shall be submitted to CDOT for Acceptance prior to NTP2 and be maintained through Project Completion on the DCS. The completed deliverable log shall be submitted for Acceptance to CDOT prior to Project Completion.

The Contractor shall maintain a current, combined plan set of all RFC documents throughout the duration of the Project.

The Contractor shall make available within 24 hours through a single point of contact for CDOT Review when requested by CDOT, copies of its logs and a copy of any document requested, including the deliverables log and the current, combined RFC documents.

2.12 Web Map

CDOT is currently maintaining an ArcGIS Online web map of existing and proposed information for the Project. CDOT would like to continue using the web map for Project coordination and for coordination with Third Parties and property owners. The Contractor shall update and maintain the web map content. CDOT will transfer ownership of the web map, web application, and associated data to an ArcGIS Online or Enterprise organizational account provided by the Contractor.

CDOT would like for web map to be updated for the following Project milestones:

- Major changes
- Preliminary Design
- Pre RFC
- RFC

The use of web map does not replace the Contract Document requirements set forth in Book 2, Section 4.

2.13 Submission of Certified Payroll

The Contractor shall use LCPtracker as the designated software and repository for payroll records required for the Project pursuant to Book 2, Section 3.

2.14 Payment Reporting

The Contractor shall use B2GNow as the designated software and repository for Subcontractor and supplier payment records required for the Project pursuant to Book 2, Section 3.

2.15 FHWA Bridge Replacement Cost Report

The Contractor shall provide an FHWA Bridge Replacement Cost Report for all Bridges on the Project. The report shall include element costs of the structure and the unit cost of the Bridge as defined by FHWA on the FHWA website (https://www.fhwa.dot.gov/bridge/nbi/uc_criteria.cfm). The FHWA Bridge Replacement Cost Report shall be submitted for CDOT Acceptance with the RFC Submittal of the Structure.

2.16 Deliverables

The Contractor shall submit the following to CDOT for Review, Acceptance, or Approval:

Table 2-3: Deliverables

Deliverable	Review, Acceptance, or Approval	Schedule
Project Management Plan, as denoted	Acceptance	Prior to NTP1
Project Management Plan (Complete)	Acceptance	Prior to NTP2
Project Management Plan Updates	Acceptance	Annually from initial acceptance
WBS	Acceptance	Prior to NTP1
Primavera Scheduling software license (P6)	Acceptance	Prior to NTP2
Schedule development meeting		Within 10 Days after NTP1
Preliminary Baseline Schedule	Acceptance	Prior to NTP1
Original Baseline Schedule	Approval	Prior to NTP2
Methods Statements	Acceptance	Prior to NTP2
Current Baseline Schedule	Acceptance	Concurrent with Monthly Invoice
Revised Baseline Schedule	Approval	Upon CDOT's or Contractor's request
Monthly Progress Schedule	Acceptance	Concurrent with Monthly Invoice
Recovery Schedule	Approval	Within 14 Days after the Contractor first becomes aware of a schedule delay.
As-Constructed Schedule	Acceptance	Before the final Retainage is released with the last Monthly Invoice
List of Contractual Schedule Constraints	Review	With Original Baseline Schedule, Current Baseline Schedule, Revised Baseline Schedule, and Recovery Schedule
Narrative of changes to previous actual dates or dates required in the Contract	Approval	Prior to any Contract Schedule date revision
Draft Monthly Invoices	Review	Within 10 Days following prior month's end, concurrent with the Progress Status Meeting
Final Monthly Invoices	Approval	Monthly
Invoice format and supporting document requirements	Approval	Prior to NTP1
Updates to the invoice format	Approval	At least 15 Days prior to invoice
Monthly Progress Report format and detail level required	Acceptance	Within 10 Days after NTP1
Certifications by Contractor's Quality Control Administrator	Review	Concurrent with each Monthly Invoice
Monthly Maintenance Progress Report	Review	Concurrent with each Monthly Invoice

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 2 - Project Management

Deliverable	Review, Acceptance, or Approval	Schedule
Payment Schedule	Review	Prior to Contract Execution
Updated Payment Schedule	Acceptance	With each Monthly Progress Schedule
Pre-construction photographs and video	Acceptance	Prior to NTP2
Progress photographs and videos	Review	Progress photos monthly. Aerial video monthly. Photographs of buried Structures just prior to burial
Office facilities	Approval	Prior to CDOT occupying any Contractor provided facilities. CDOT shall be given access not later than 60 Days after NTP1
Project directory	Acceptance	Prior to NTP2, updated as changes arise.
Re-establishment of the park and ride facility	Acceptance	Prior to Project Completion
Project Safety Management Plan (PSMP)	Acceptance	Prior to NTP2
Project Safety Management Plan (PSMP) updates	Review	When a process, method, chemical, or other Work criterion changes that affect the safety of a person or property
CDOT Consultant Onboarding		Prior to NTP1
Document Control System (DCS) software	Acceptance	Prior to NTP1
Deliverables log	Acceptance	Prior to NTP2
Completed Deliverables log	Acceptance	Prior to Project Completion
Current, combined plan set of RFC documents, and current deliverables log	Review	24 hours upon CDOT request
FHWA Bridge Replacement Cost Report	Acceptance	Concurrent with RFC Submittal of each Structure

2.17 Exhibits

Exhibit 2-A Work Breakdown Structure

Exhibit 2-B DCS Folder and File Structure



US 160 Elmore's Corner To Dry Creek Design-Build Program (Level 0)

Construction (Level II)

Utility (Level IV)	Maintenance of Traffic (Level IV)	Roadway (Level IV)	Earthwork (Level IV)	Drainage (Level IV)	Major Structures (Level IV)	Walls (Level IV)	BMP (Level IV)	Pavement Markings, & Lighting	ITS (Level IV)

[illegible]

Exhibit 2-B
DCS Folder and File Structure

20980 Project File Structure (DCS)
XX Contractor Document Control System

* Denotes Folder

- * **1. PROJECT MANAGEMENT**
 - * Project Management Plan
 - * Project Directory and Office Facilities
 - * Schedules
 - * Meetings/Action Tracker
 - * *Pre-Construction Meeting*
 - * *Weekly Progress Meetings*
 - * Monthly Reports
 - * Progress Payment Applications
 - * Safety
 - * *JSA's*
 - * Permits
 - * Pictures/Video
 - * *Pre-Construction Documentation*
 - * *Progress Documentation*
 - * Specifications
 - * "PAR, CAR, & NCR"
 - * RFI's
 - * Change Orders
 - * *Proposed Change Orders*
 - * *Approved Change Orders*
- * **2. ACCEPTED PROJECT DELIVERABLES**
 - * Deliverables Log & Comment Resolution Forms
 - * "RFC's, FDC's, NDC's"
 - * "Plans, Reports, and other Deliverables"
 - * Shop Drawings
 - * *Working Drawings*
 - * *Falsework Drawings*
- * **3. CIVIL RIGHTS**
 - * Bulletin Board Inspections
 - * Certified Payroll Escalation Report
 - * Civil Rights Plan
 - * Civil Rights Task Force Meeting
 - * *CR TF Meeting Agenda*
 - * *CR TF Meeting Minutes*
 - * CRICQC Audits (ICQC and CDOT access only)
 - * *CRICQC Audit Report*
 - * *CRICQC SubSupplier_SuppDocs*
 - * *CRICQC DBRA_LCP_Late_CPR SuppDocs*
 - * *CRICQC DBRA_LCP_CPR SuppDocs*
 - * *CRICQC DBRA_CPR_Escalation_SuppDocs*
 - * *CRICQC B2G Escalation_First Notice_SuppDocs*
 - * *CRICQC B2G Escalation Second Notice_SuppDocs*
 - * *CRICQC B2G Escalation_NCR_SuppDocs*

- * Daily Field Report
- * Daily Trucking Report
- * ESB Requirements
 - * *CDOT DB Commitment Confirmation Forms*
 - * *ESB Performance Plan*
 - * *Good Faith Effort Documentation*
 - * *Joint Check Letters*
- * Good Cause Notices
- * OJT Requirements
 - * *CDOT Form 832*
 - * *CDOT Form 838*
 - * *CDOT Form 1337*
 - * *OJT Achievement Report*
- * Subcontractor and Supplier Report

* **4. QUALITY**

- * Quality Control Administrator Documents
- * Quality Management Plan
- * Quality Task Force Meeting
- * Quality Status Reports
- * **Materials Documentation (Hosted on CDOT ProjectWise)**
 - * **PC**
 - * Equipment Calibration
 - * Core Documents
(473/474/379/Random Sch/QL reports/1324)
 - * Quantities/Form 250
 - * Inspections/Diaries
 - * Item 200
 - * Item 300
 - * Item 400
 - * Item 500
 - * Item 600
 - * Certifications (BABA/COC/CTR)
 - * **ICQC**
 - * Equipment Calibration
 - * Core Documents
(473/474/379/Random Sch/QL reports/1324)
 - * Quantities/Form 250
 - * Inspections/Diaries
 - * Item 200
 - * Item 300
 - * Item 400
 - * Item 500
 - * Item 600
 - * Certifications (BABA/COC/CTR)
 - * **OVT**
 - * Equipment Calibration
 - * Core Documents
(473/474/379/Random Sch/QL reports/1324)
 - * Quantities/Form 250
 - * Inspections/Diaries
 - * Item 200
 - * Item 300
 - * Item 400
 - * Item 500
 - * Item 600
 - * Certifications (BABA/COC/CTR)

- *
 - 5. PUBLIC INFORMATION**
 - * Approved PIP
 - * Public Meetings and Special Events
 - * Contact Tracking
 - * Lane Closure Reports

- *
 - 6. ENVIRONMENTAL**
 - * Environmental Task Force Meetings
 - * Environmental Compliance Work Plan/Other Required Plans
 - * *90 Day EWOP*
 - * *Construction Air Quality Plan and Fugitive Dust Control Plan*
 - * *Construction Noise and Vibration Mitigation Plan*
 - * *Integrated Noxious Weed Management Plan*
 - * *Temporary Construction Access Plan*
 - * *GPD Management Plan*
 - * *SWMP Plan*
 - * *Materials Management Plan*
 - * *Spill Response Plan*
 - * Monthly Status Reports
 - * NEPA Re-evaluations
 - * Design Reports
 - * Design Data

- *
 - 7/8/9. 3rd PARTY AGREEMENTS/UTILITIES/ROW**
 - * Utility Task Force Meeting Agenda/Minutes
 - * "Irrigation Ditch Approvals, Notices, Correspondence"
 - * Executed Utility Agreements
 - * As-Constructed
 - * DRAL/CRAL/Utility Conflict Matrix/Utility Account Matrix
 - * Written Notice to Utility Owners
 - * Irrigation Works Property MOA Owner Acceptance
 - * Property Management Plan
 - * Permission to Enter
 - * Acquisition Documents

- *
 - 10. SURVEY**
 - * Calibrations
 - * Survey Records
 - * As-Constructed Surveys

- *
 - 11. GEOTECHNICAL AND ROADWAY PAVEMENT**
 - * Design/Plans
 - * Reports
 - * Data
 - * Calculations

- *
 - 12. EARTHWORK**
 - * Design/Plans
 - * Reports
 - * Data
 - * Calculations

- * **13. DRAINAGE**
 - * Drainage Task Force Meeting
 - * Design/Plans
 - * Reports
 - * Data
 - * Calculations
- * **14. ROADWAYS**
 - * Roadway Pavement/Earthwork Task Force Meeting
 - * Design/Plans
 - * Reports
 - * Data
 - * Calculations
- * **"15. SIGNAGE, STRIPING, SIGNALS, & LIGHTING"**
 - * Design/Plans
 - * Reports
 - * Data
 - * Calculations
- * **16. STRUCTURES**
 - * Structures/Geotechnical Task Force Meeting
 - * Non-BTE
 - * *Design/Plans*
 - * *Reports*
 - * *Data*
 - * *Calculations*
 - * BTE
 - * *Design/Plans*
 - * *Reports*
 - * *Data*
 - * *Calculations*
- * **17. TRAFFIC MANAGEMENT PLAN**
 - * Approved Traffic Management Plan
 - * Approved Traffic Incident Management Plan
 - * *Incident Reports*
 - * Approved MHT's
 - * Approved TCP's
 - * *Traffic Control Diaries*
 - * TCS & Flagger Cards
- * **18. LANDSCAPING**
 - * Design/Plans
 - * Reports
 - * Data
 - * Calculations
- * **19. MAINTENANCE**
 - * Initial Condition Survey
 - * Monthly Reports
- * **20. ITS**
 - * Design/Plans
 - * Reports
 - * Data
 - * Calculations

File Naming CODES:

DES	Design
CON	Construction
MAT	Materials

File Naming Convention:

Materials Documentation

20980_160_MAT_[Pay Item Number]_[Document Type]_[Form Number (Or Additional Description)]_[Sample/Test #]_[Additional Information]_[Field Sheet#]_[YRMONDATE]

Civil Rights Documentation

20980_160_CODE_[Document Name]_[Description]_[Inspection[DAYMONTHYEAR] or Audit[DAYMONTHYEAR]]

All Other Documentation

20980_160_CODE_[File Name]_[version#]_[DAYMONTHYEAR]

3.0 Civil Rights and Contract Compliance

This Section sets forth the Civil Rights and Contract Compliance requirements for the Elmore's Corner to Dry Creek Design-Build Project (Project). All Work shall be performed in accordance with the Contract Documents.

3.1 Civil Rights Administrative Requirements

3.1.1. Civil Rights Task Force Meeting

The Civil Rights Compliance Manager (CRCM) and the Design-Build Project Manager shall attend the Civil Rights Task Force Meeting, along with design-build team members and support personnel who assist with data collection, reporting, system administration, or documentation related to certified payroll, Subcontractor and Supplier Acceptance, OJT, ESB, and prompt payment. The Civil Rights Task Force Meeting Minutes shall be submitted to CDOT for Acceptance within 48 hours of each Civil Rights Task Force Meeting via CDOT's Document Management System.

The Civil Rights Task Force Meeting Agenda shall include, at a minimum, the following topics:

1. Status of prior Civil Rights Task Force Meeting minutes, including distribution and CDOT Acceptance
2. Project status and upcoming Work
3. Updated estimated Work start date for all Construction Services Subcontractors
4. B2GNow Subcontractor and Supplier approval
5. Civil Rights Deliverables (Book 2, Section 3.6)
6. Jobsite Bulletin Board Inspections
7. Additional wage classification requests
8. Certified payroll issues
9. On-the-Job (OJT) status
10. Civil Rights Nonconformance Reports (NCRs)
11. ESB achievements, outreach efforts, and/or events
12. B2GNow payments and reporting discrepancies
13. Civil Rights Independent Contractor Quality Control (CRICQC) audits

3.1.2. Civil Rights Independent Contractor Quality Control

The Civil Rights Independent Contractor Quality Control (CRICQC) shall be responsible for conducting the CRICQC Audits for Civil Rights Requirements as identified within Book 2, Section 3. The CRICQC function and individual(s) performing the CRICQC role shall meet the following requirements:

1. CRICQC Role Requirements
 - A. The CRICQC shall be independent of the Contractor.
 - B. The CRICQC shall be granted access to the B2GNow and LCPtracker systems.

- i. For B2GNow, access shall include, but not be limited to, Subcontractor and Supplier requests and payment reporting information.
 - ii. For LCPtracker, CRICQC shall have access to accept or reject all certified payrolls submitted in the system.
 - C. CRICQC shall report directly to the Quality Control Administrator.
2. CRICQC Personnel Qualifications
- The individual(s) performing the CRICQC role shall have a minimum of two years of professional experience implementing Civil Rights Requirements on a USDOT-funded transportation construction project of similar magnitude.

3.1.3. Civil Rights Requirements

For purposes of this Contract, "Civil Rights Requirements" shall mean all contractual obligations applicable to the Project related to civil rights compliance, including but not limited to: implementation of the Civil Rights Plan; Subcontractor and Supplier compliance and oversight; compliance with the Davis-Bacon and Related Acts (DBRA); FHWA 1273 provisions; Equal Employment Opportunity (EEO) and nondiscrimination; prompt payment and release of retainage; On-the-Job Training (OJT); Emerging Small Business Enterprise (ESB) Project-Specific Pilot; Colorado overtime and minimum pay standards; and all other applicable federal, state, and local laws, as set forth in Book 1, Section 7 and Book 2, Section 3.

3.2 Civil Rights Plan Requirements

The Civil Rights Plan shall serve as the comprehensive document that integrates and documents all Civil Rights Requirements for both the Project Management Plan (Book 2, Section 2) and the Quality Management Plan (Book 2, Section 4), thereby consolidating the project's civil rights compliance framework into a single, cohesive document. The Civil Rights Plan shall be organized to describe the civil rights processes of both the Project Management Plan and the Quality Management Plan separately, ensuring that the procedures, responsibilities, and documentation requirements for each component are clearly defined and easily distinguishable. The Contractor shall submit the Civil Rights Plan for CDOT Acceptance prior to the issuance of NTP1 and shall revise the Plan within 7 Days upon notification by CDOT of any required revisions or comments. The Contractor shall submit an updated Civil Rights Plan for Acceptance at least annually, and no later than 12 months after NTP1. CDOT may request additional Civil Rights Plan updates due to Nonconforming Work, changes in the Contractor's processes or project staff roles and responsibilities, or as otherwise determined necessary by CDOT. Any such updates shall be submitted by the Contractor within 7 Days of the CDOT request. The Contractor may request additional CRP updates for Acceptance by CDOT.

The Contractor shall maintain a revision history log for the Civil Rights Plan that documents all revisions. The revision history shall, at a minimum, identify the revision number or version, date of revision, description of the change, and the individual or role responsible for the revision. The revision history shall be maintained as part of the Civil Rights Plan and updated with each modification to ensure transparency, traceability, and document control.

The Civil Rights Plan shall be organized in accordance with the layout and order set forth in this section and shall include a discussion of the Contractor's approach to the elements described herein.

3.2.1. Civil Rights Project Management Plan

The Civil Rights Project Management Plan shall describe the processes to be executed and delivered by the Civil Rights Compliance Manager, designated compliance team members, and field personnel, as appropriate. The Civil Rights Project Management Plan shall outline the management, coordination, communication, and Process Control procedures necessary to ensure compliance with Civil Rights Requirements.

3.2.1.1 General Plan Requirements

1. Definitions and Acronyms. A list of Definitions and Acronyms that will be used throughout the Civil Rights Plan including but not limited to:
 - A. Reports, checklists, spreadsheets and logs that will be used to evidence compliance with the Civil Rights Plan requirements.
 - B. Information Technology systems and/or programs that will be used to implement the Civil Rights Plan and provide reporting to CDOT on compliance statuses.
2. Organization Chart. An organizational chart of the roles of the civil rights team members that will implement the Civil Rights Plan and their lines of authority.
3. Roles and Defined Responsibilities. A list of roles and defined responsibilities of the Civil Rights Compliance Manager and other civil rights team members responsible for implementing the Civil Rights Plan, including the name of each team member.
4. Civil Rights Internal Team Meeting. The Civil Rights Compliance Manager shall be required to conduct an internal meeting with all individuals responsible for the Civil Rights Requirements no less than weekly to ensure they understand the Civil Rights Plan and are meeting their responsibilities in a timely manner (an example agenda may include outstanding issues, submittals due, and actions taken to resolve NCRs). Describe the coordination in conducting these meetings, including who will be in attendance.
5. Response Time to CDOT Review Comments. The Contractor shall respond to all CDOT review comments or request for updates related to Civil Rights Requirements within 14 Days of receipt, unless a different response timeframe is specifically identified in the Contract.

3.2.1.2 Subcontractor and Supplier Contract Compliance and Oversight

The Contractor shall provide a description of the processes for the management of Subcontractors and Suppliers (for both construction and non-construction activities). The Civil Rights Compliance Manager shall lead this process in coordination with the Design-Build Project Manager, field staff, and supporting compliance personnel. These processes shall incorporate, at a minimum, the following elements:

1. Coordination and Controls for Subcontractor Work Start Date
 - A. The Contractor shall establish and implement a documented coordination process among the Contractor's designated personnel including the Project Manager, CRCM, field staff, and subcontract coordinator to ensure that no Subcontractor begins Work until all applicable pre-Work Civil Rights Requirements, as outlined in Book 2, Section 3.2.1.2.2, have been satisfied.
 - B. The Contractor's process shall include the identification of an estimated Work start date for each Subcontractor, which shall be reported in B2GNow. For Subcontractors

subject to DBRA reporting, the process shall also include the identification and reporting of any revisions to the estimated Work start date, in accordance with Book 2, Section 3.4.10. The estimated and revised Work start dates shall be communicated among the Contractor's responsible staff sufficiently in advance to allow for the timely completion, review, and validation of all required approvals, documentation, and verifications in accordance with Book 2, Section 3.2.1.2. The coordination process shall also include controls to prevent field authorization of Work, including mobilization, prior to confirmation that all pre-Work Civil Rights Requirements have been met and documented.

2. **Pre-Work Civil Rights Requirements.** For purposes of this Contract, "Pre-Work Civil Rights Requirements" refers to the civil rights compliance activities that shall be completed prior to a Subcontractor's commencement of Work and for a Supplier, shall be completed within 30 Days after the Supplier becomes subject to B2GNow reporting requirements. A rental equipment company shall be reported and treated as a Supplier, except that a rental equipment company that provides labor to operate rental equipment shall be considered a Subcontractor and shall be subject to all requirements applicable to a Subcontractor. The CRCM shall ensure that the following activities have been completed, verified, and documented in the Subcontractor and Supplier Report for each contractual agreement:
 - A. Complete and submit Form E, attached to the ITP, and incorporated herein by this reference concurrently with the submission of either the DB Sublet Permit Application (CDOT DB 205) or Supplier Application Approval Request (CDOT Form 1425) in B2GNow. The Contractor may also perform a debarment and suspension verification in SAM.gov to ensure exclusion of any Subcontractors and Suppliers not eligible to perform Work on federally funded projects.
 - B. An executed subcontract or purchase order, that includes Exhibit C Required Federal Provisions, is received by the Contractor prior to the Contractor's submission of the applicable CDOT DB Form 205 or CDOT Form 1425 in B2GNow. Any subcontract or purchase order initially received by the Contractor without the Exhibit C shall be corrected and resubmitted to the Contractor to include Exhibit C prior to submission by the Contractor of the applicable CDOT DB Form 205 or CDOT Form 1425 in B2GNow.
 - C. For Subcontractors, CDOT approval of the applicable CDOT DB Form 205 shall be received in B2GNow prior to the Subcontractor's actual Work Start Date.
 - D. For Suppliers, the applicable CDOT Form 1425 shall be received in B2GNow, pursuant to Book 1, Section 7.7.3, within 30 Days after the value of the written agreement exceeds \$10,000 or that cumulative payments exceed \$10,000, whichever occurs first.
3. **Subcontractor and Supplier Report.** The Subcontractor and Supplier Report shall be used to monitor and document the following actions for each Subcontractor or Supplier: (1) for a Subcontractor, verification of pre-Work Civil Rights Requirements by the Contractor prior to any Subcontractor beginning Work, as outlined in Book 2, Section 3.2.1.2.1, (2) for a Supplier, verification of pre-Work Civil Rights Requirements by the Contractor within 30 Days after the Supplier becomes subject to B2GNow reporting requirements (3) request for release of retainage to Subcontractors, as outlined in Book 2, Section 3.2.1.8.3 and (4) for timely compliance of EEO officer posting on the Jobsite Bulletin Board.

The Subcontractor and Supplier Report shall be included as an exhibit to the Civil Rights Plan and shall, at a minimum, incorporate all data fields, information, and reporting structure set forth in Attachment 3A. The Contractor may include additional data fields or information, provided that such additions do not replace, alter, or omit any data fields, information, or

reporting structure shown in Attachment 3A unless otherwise agreed upon by CDOT. The Contractor shall provide a description of the process for populating the data in the report, identifying the personnel responsible for data entry, the frequency of data updates, and the Process Control methods that will be implemented to ensure that the final product meets the specified level of quality. The report shall be submitted in DCS, in excel spreadsheet format, by the 10th Day of each month.

4. Actual Work Start Date. For purposes of Book 2, Section 3, the actual Work start date for each Subcontractor shall be verified and documented in the Subcontractor and Supplier Report as evidence of the Contractor's process to ensure that all applicable pre-Work Civil Rights Requirements have been satisfied prior to the commencement of Work. A separate actual Work start date shall be established for each contractual agreement entered into by each Subcontractor in accordance with the applicable category below:
 - A. Construction Services Subcontractor. The actual Work start date for a Subcontractor performing construction services shall be the earliest date of Work reported for that Subcontractor on either a Daily Field Report, Daily Trucking Report, or a Certified Payroll. For purposes of this Book 2, Section 3, Construction Services Subcontractor is defined as any firm that performs onsite construction Work and provides labor or labor and materials for purposes of Work that are incorporated into the Project limits, and is not considered a Design Services Subcontractor, as defined in Section 3.2.1.2.4.B.
 - B. Design Services Subcontractor. The actual Work start date for a Subcontractor providing design or professional services shall be the actual date such services are first performed, as stated on the Subcontractor's invoice; if no specific service start date is stated, the Work start date shall be deemed to be the first day of the invoice service period. For purposes of this Book 2, Section 3, Design Services Subcontractor is defined as any firm that completes services involving the preparation of design-related documents, including but not limited to plans, specifications, estimates, surveys, or other professional services that require licensure under applicable State law and does not perform construction Work incorporated into the Project limits.
5. Daily Field Report. The Contractor shall provide an example, to be included as an exhibit to the Civil Rights Plan, of a Daily Field Report, to include at a minimum the following: (1) date, (2) name of Contractor and Subcontractors onsite, and (3) description of Work activity being performed for each contractor listed in the report. The Contractor shall complete a Daily Field Report for each calendar day (Monday through Sunday), whether or not Work is performed on site. Daily Field Reports shall be made available in DCS to the Prime Approver and the CRICQC as the users, no less frequently than once per week and shall reflect the Project activities for the preceding week. The Daily Field Report shall be used by the Prime Approver and CRICQC to determine DBRA compliance.

The Contractor shall provide a description of the process for populating the data in the Daily Field Report, the method by which the report will be delivered to users, and the Process Control methods that will be implemented to ensure that the final product meets the specified level of quality.

3.2.1.3 Davis-Bacon and Related Acts (DBRA) Monitoring

The Contractor shall describe the processes and controls that will be used to monitor, track, and document compliance with the DBRA, in accordance with Book 2, Section 3.4, and the following elements:

1. **Certified Payroll Escalation Report.** A Certified Payroll Escalation Report shall be utilized, in conjunction with LCPtracker, to monitor compliance with certified payroll reporting in accordance with Book 2, Section 3.4. The Certified Payroll Escalation Report shall capture and track all actions related to late or noncompliant certified payrolls, including required notifications, escalation steps, monitoring of status to resolution, and issuance of an NCR when warranted. Data included in the report shall be populated by both the Prime Approver and the CRICQC and shared across users in a manner that ensures secure data management. The process described shall also identify the Process Control methods that will be implemented to ensure that the final product meets the specified level of quality. The Certified Payroll Escalation Report shall be included as an exhibit to the Civil Rights Plan and shall include, at a minimum, the components identified in Attachment 3B. The report shall be submitted in DCS, in excel spreadsheet format, by the 10th Day of each month.
2. **Certified Payroll Review Checklist.** The Certified Payroll Review Checklist identifies the verification requirements that shall, at a minimum, be applied during the review of certified payrolls conducted by the Contractor's Prime Approver and the Civil Rights Independent Contractor Quality Control prior to approving or accepting, respectively, a certified payroll in LCPtracker. The Certified Payroll Review Checklist shall be included as an exhibit to the Civil Rights Plan and shall include, at a minimum, the components identified in Attachment 3C.
3. **Wage Conformances.** In accordance with the requirements outlined in Book 2, Section 3.4.8, the Contractor shall provide a description of the process to be used to: (1) identify the need to request non-standard wage classifications (USDOL SF 1444, Request for Authorization of Additional Classification and Rate); (2) prepare USDOL SF 1444 with accurate and complete data and (3) submit the form to CDOT via CDOT's Document Management System prior to submission of the applicable contractor's certified payroll requiring the additional classification request. The description shall also identify the Process Control methods that will be implemented to ensure that the final product meets the specified level of quality.

3.2.1.4 Truck Driver Management and Identification

The trucking component of the Civil Rights Plan shall be based on current trucking requirements as outlined in the [CDOT Trucking Compliance Resource Guide for the Preliminary Injunction \(2025\)](#) that can be found on the CDOT website. These requirements may be updated periodically in accordance with applicable regulatory revisions. Should any changes occur during the Project and CDOT modifies the trucking compliance requirements, the Contractor shall promptly update the Civil Rights Plan to ensure continued compliance with all current regulations and reporting procedures. The Contractor shall describe their system for overseeing and managing trucking operations, to include at a minimum the following components:

1. **Categorization of Truck Drivers.** Prior to mobilization and approval in B2GNow, the Contractor shall evaluate each trucking firm or owner-operator to determine whether they are to be classified as a truck driver subcontractor or a truck driver supplier in accordance with the CDOT Trucking Compliance Resource Guide for the Preliminary Injunction (2025). This determination shall be documented within B2GNow "Work Description" field stating the trucking activity being one of the following: (1) offsite hauling only (CDOT Form 1425); (2) onsite to onsite and/or solely hauling material from onsite to offsite (CDOT DB Form 205); or (3) combination of offsite hauling and onsite to onsite and/or solely hauling material from onsite to offsite (CDOT DB Form 205).
2. **Field Monitoring and Identification.** The Contractor shall maintain a truck identification and activity system to track, verify, and document on a Daily Trucking Report all trucks operating as a truck driver subcontractor, as defined in the CDOT Trucking Compliance Resource Guide

for the Preliminary Injunction (2025). Each truck will be assigned a unique identifier (such as a truck number, bar code, or Radio Frequency Identification (RFID) tag linked to the respective trucking firm and contractual relationship. This unique identifier will be used daily by field personnel and compliance staff to confirm the truck's presence on site, verify ESB participation, determine DBRA compliance, and validate that the truck's activity aligns with the designated truck driver subcontractor or truck driver supplier classification. Field observations will be documented in a Daily Trucking Report.

3. Daily Trucking Report. The Daily Trucking Report shall include, at a minimum: (1) date, (2) name of trucking company, and (3) unique truck identifier (that identifies the contractual relationship). The Contractor shall complete a Daily Trucking Report for each calendar day (Monday through Sunday), whether Work is performed on site, and shall make the report available to the CRCM and the CRICQC, as the system users, in DCS no less frequently than weekly, reflecting the prior week's trucking activity on the Project.
4. Process Control. The Process Control methods that will be implemented to ensure that the final product meets the specified level of quality.

3.2.1.5 Jobsite Bulletin Board

The Contractor is responsible for the installation and maintenance of a jobsite bulletin board, which is a fixture that displays all required posters related to workers' rights, protections, and appeals, and is accessible to all workers and potential employment applicants. The CDOT Jobsite Bulletin Board Inspection Checklist, available on the CDOT website, shall be used by the Contractor to document periodic inspections that verify all required current posters are posted and readable at all times. CDOT Form 388, as posted on the job site bulletin board, shall be updated to include Construction Services Subcontractor EEO officer contact information within 30 Days of the Subcontractor starting Work on the Project. The completed CDOT Jobsite Bulletin Board Inspection Checklist, along with pictures of the bulletin board, shall be submitted to CDOT via CDOT's Document Management System within 14 Days following each inspection. Any errors or corrections identified by CDOT or the Contractor shall be corrected within 7 Days of notification.

The jobsite bulletin board shall be located in a prominent, safe, and accessible area within the Project limits where walk-up access to the display is maintained. Depending on the length of the Project and whether a centralized reporting location exists, the Contractor may install multiple bulletin boards; however, all boards must be maintained consistently. The bulletin board shall be installed on or before the first appearance of workers on the Project and shall remain in place until workers are no longer present. The Contractor shall establish an inspection schedule to ensure the bulletin board is inspected no less than once per calendar year quarter (or more frequently, as needed, to ensure current compliance information or to replace damaged or unreadable posters).

The Contractor shall provide a description of:

1. The processes for installing and maintaining the jobsite bulletin boards, including the methods and frequency for conducting periodic inspections and responsible personnel.
2. The procedures for communicating the jobsite bulletin board locations, required postings, prevailing wage decisions, and EEO Officer information to all Contractor and Subcontractor Project personnel.
3. The Process Control methods that will be implemented to ensure that the final product meets the specified level of quality.

3.2.1.6 FHWA-1391 Reporting

In accordance with FHWA 1273, the Contractor and all Subcontractors shall submit an annual report for the duration of the Project reflecting the project workforce on board during all or any part of the last payroll period preceding the end of July. This information shall be reported on FHWA-1391 within LCPtracker. The Contractor shall describe the process for completing and submitting the required FHWA-1391 information and for ensuring that all required Subcontractors also submit their FHWA-1391 reports by the applicable annual due date established by CDOT. The description shall also identify the Process Control methods that will be implemented to ensure that the final product meets the specified level of quality.

3.2.1.7 B2GNow Prompt Payment Reporting

The Contractor shall describe the process used to monitor payments reported by all Sub-Primes in B2GNow in accordance with Book 2, Section 3.5. The description shall identify the personnel responsible for detecting payment reporting deficiencies and shall describe how the Contractor will implement and execute the communication and escalation process through resolution. Identification and Documentation of Unreported Payments.

- A. Within 3 Days after the payment reporting due date as defined in the Deficiency Escalation Communications, as outlined in Section Book 2, Section 3.2.1.7, the Contractor shall identify all Sub-Primes with unreported lower-tier payments by accessing the B2GNow Subcontractor Payments listing for the applicable audit period. The Contractor shall generate at each escalation step, including the First Notification, Second Notification, and NCR, a PDF copy of the listing and retain the document in DCS as supporting documentation which Sub-Primes remained noncompliant at each step of the escalation process.
2. Deficiency Escalation Communications.
 - A. The Contractor shall issue deficiency escalation communications within the B2GNow messaging system, which shall include, at a minimum:
 - i. The name of the Sub-Prime that has not reported payments.
 - ii. The name of the lower-tier Subcontractor or Supplier for which payments have not been reported.
 - iii. The applicable B2GNow audit period.
 - iv. Description of issue to be resolved and the action to be taken for resolution.
 - v. The response deadline, calculated as 7 Days from the date the applicable notice is issued.
 - B. If the Contractor utilizes deficiency communications outside of the required B2GNow messaging system, the Contractor shall document such communications in DCS by the end of the applicable B2GNow reporting month.
3. B2GNow Prompt Payment Discrepancy Review Process

The Contractor shall describe the process and timeline for identifying and resolving prompt payment discrepancies in B2GNow during each monthly B2GNow prompt payment audit. A discrepancy is generated within B2GNow when a higher-tier contractor and lower-tier Subcontractor or Supplier disagree on payment information, which may include the payment amount and/or the date paid for the same audit period.

To resolve a discrepancy, the Contractor or applicable Sub-Prime shall verify the reported payment information and collect supporting documentation necessary to resolve the discrepancy. Acceptable proof may include, but is not limited to, both sides of a redacted canceled check, an electronic funds transfer (EFT) confirmation, or any document that substantiates the payment amount and/or date. The Contractor shall be responsible for ensuring that each Sub-Prime responds timely, provides complete documentation, and resolves all discrepancies as required.

Responsibility for resolving discrepancies shall be as follows:

- A. If the Contractor is the payor, the Contractor shall respond to the discrepancy within B2GNow and provide all necessary documentation.
- B. If a Sub-Prime is the payor, the Sub-Prime shall respond to the discrepancy within B2GNow and provide all documentation, and the Contractor shall oversee and ensure compliance.

3.2.1.8 Prompt Payment and Release of Retainage

1. **Payment Request Requirements.** The Contractor shall provide a description of the payment request requirements for first-tier Subcontractors and Suppliers to include when and where Subcontractors and Suppliers are to submit payment requests, the list of required documents necessary to achieve a satisfactorily complete payment request, and the escalation process and timeline for resolution of invoice discrepancies. The Contractors shall also describe the process used to communicate these payment requirements to Subcontractors and Suppliers prior to beginning Work.
2. **Good Cause Notice.** The Contractor shall provide a description of the Contractor's process and timeline for the issuance and communication of good cause notice, in accordance with Book 1 Section 7.7.6, to first-tier Subcontractors and Suppliers subject to the good cause notice and include an example of the Contractor's format of the good cause notice as an exhibit to the Civil Rights Plan.
3. **Retainage Monitoring.** The Contractor shall provide a description of the process for the release of retainage to Subcontractors upon satisfactorily completed Work. The process shall, at a minimum, comply with the requirements outlined in Section 109.06(f) of CDOT Standard Specifications for Road and Bridge Construction (CDOT Standard Specifications). The retainage release process shall be tracked and documented through the Subcontractor and Supplier Report, Attachment 3A. At a minimum, the report shall include the following components for each retainage request:
 - A. Date Subcontractor retainage release was requested.
 - B. Date written request received was by the Contractor.
 - C. Date the Contractor made a determination of satisfactory completion of Work.
 - D. Date the Contractor issued written notice when satisfactory completion of Work was not achieved.
 - E. Date retainage was paid upon satisfactory completion of Work.

3.2.1.9 On-the-Job Training (OJT)

1. The Contractor shall describe the processes used to report OJT activities in accordance with the CDOT Standard Specifications for Road and Bridge Construction (CDOT Standard

Specifications) On-the-Job Training, the CDOT On-the-Job Training Compliance Manual, and the OJT Forms identified in the Civil Rights Deliverables Table 3-1. All OJT reports and forms shall be submitted via the CDOT's Document Management System for Acceptance. The description shall clearly define roles, responsibilities, and lines of accountability associated with OJT reporting and shall address, at a minimum:

- A. Roles and Accountability. Identification of the individual(s) or position(s) responsible for:
 - i. Collecting and validating OJT data.
 - ii. Preparing and submitting OJT Forms 1337, 838, and 832 (see Civil Rights Deliverables Table 3-1), and the OJT Achievement Report.
 - B. Field Verification and Validation. Procedures for coordinating with field personnel to observe and validate OJT hours reported on CDOT Form 832.
 - C. System Consistency and Data Verification. Procedures for verifying that OJT hours reported on CDOT Form 832 are consistent with the LCPtracker OJT Report-Using Demographics for the applicable reporting month.
 - D. Process Controls and Quality Assurance. The Process Control methods used to monitor, assess, and adjust OJT reporting procedures to ensure accuracy, completeness, and compliance with OJT requirements.
2. OJT Achievement Reporting. The Contractor shall submit an OJT Achievement Report, beginning with the Contractor's first monthly submission of CDOT Form 832 and continuing monthly through the Contractor's final submission of CDOT Form 832 and achievement of the OJT Contract Goal. The OJT Achievement Report shall include, at a minimum:
- A. OJT hours achieved during the reporting month, as supported by CDOT Form 832;
 - B. Cumulative OJT hours achieved to date through the reporting month; and
 - C. Cumulative percentage of the OJT Contract Goal achieved through the reporting month.

The OJT Achievement Report shall be submitted to CDOT in DMS no later than the last Day of the month for the preceding month's reporting period.

3.2.2. Civil Rights Quality Management Plan

The Civil Rights Quality Management Plan shall describe the processes to be executed and implemented by the CRICQC. The Civil Rights Quality Management Plan shall outline the processes, methods, and procedures that will be implemented to ensure consistent quality, accuracy, and compliance across all Civil Rights Requirements.

3.2.2.1 Civil Rights Independent Contractor Quality Control Certified Payroll Review and Escalation Process

Within LCPtracker, the CRICQC shall be responsible for issuing either an acceptance or rejection for 100 percent of all certified payrolls within 7 Days after the Contractor has issued Prime Approval. CRICQC shall apply the criteria outlined in the Certified Payroll Review Checklist, as required by Book 2, Section 3.2.1.3.2 to verify that each certified payroll meets all applicable DBRA requirements. The CRICQC shall document all action taken when a certified payroll review results in a rejection or issuance of an NCR in the Certified Payroll Escalation Report.

3.2.2.1.1 First CRICQC Payroll Review

If a certified payroll satisfies all requirements set forth in the Certified Payroll Review Checklist, CRICQC shall issue an acceptance in LCPtracker. If the certified payroll is determined to be Nonconforming Work, the CRICQC shall reject the payroll and issue an Administrative Notice in accordance with Book 2, Section 3.4.6. Issuance of the Administrative Notice shall constitute completion of the First CRICQC Payroll Review and shall reset the noncompliant certified payroll escalation process, whereby the rejected payroll shall constitute as the First Prime Approver Certified Payroll Review under the escalation process described in Book 2, Section 3.4.7.B.i.

Following the first CRICQC payroll rejection, the Prime Approver shall implement the remaining steps and timelines of the Noncompliant Certified Payroll Escalation Process, beginning with the Second Prime Approver Certified Payroll Review as described in Book 2, Section 3.4.7.B.ii. A Prime Approver review conducted after a CRICQC rejection shall constitute a Prime Approver Post-CRICQC Review and shall be documented and tracked separately from the initial Prime Approver Certified Payroll Review within the Certified Payroll Escalation Report. The Contractor shall resubmit the certified payroll in accordance with the requirements applicable to the restarted escalation process.

3.2.2.1.2 Second CRICQC Payroll Review

Upon the second CRICQC certified payroll review, if a certified payroll satisfies all requirements outlined in the Certified Payroll Review Checklist, CRICQC shall issue an acceptance. If the certified payroll is reviewed by the CRICQC for a second time and determined to be Nonconforming Work, the following actions shall occur: (1) the CRICQC shall reject the certified payroll and issue an additional Administrative Notice in LCPtracker and (2) an NCR shall be issued for the Nonconforming Work.

3.2.2.2 Civil Rights Independent Contractor Quality Control Audits

The CRICQC shall conduct the following eight Civil Rights Independent Contractor Quality Control (CRICQC) audits (collectively, the CRICQC Audits) at the close of each calendar month for the immediately preceding monthly audit period, at the frequency and in the manner described herein:

1. CRICQC Subcontractor Audit
2. CRICQC Supplier Audit
3. CRICQC DBRA Escalation Audit - Late CPR Summary Report
4. CRICQC DBRA Escalation Audit - LCPtracker Certified Payroll Summary Report
5. CRICQC DBRA Escalation Audit - Certified Payroll Escalation Report
6. CRICQC B2GNow Payment Reporting Escalation Audit - First Notification
7. CRICQC B2GNow Payment Reporting Escalation Audit - Second Notification
8. CRICQC B2GNow Payment Reporting Escalation Audit - Nonconformance Report (NCR)

An audit period is defined as a single calendar month. All audit results for a given month shall be documented in a single, stand-alone Civil Rights Independent Contractor Quality Control Audit Report (CRICQC Audit Report) applicable solely to that reporting month. One CRICQC Audit Report shall be prepared and submitted to CDOT in DMS by the 20th Day of each month following the audit period. The CRICQC Audit Report shall include only the audit results for audits conducted during the applicable audit month and shall not include audit results from any prior or subsequent audit period (e.g., only the audits conducted for the month of June shall be included in the CRICQC Audit Report submitted by

July 20th). The CRICQC Audit Report shall be included as an exhibit to the Civil Rights Plan and shall include, at a minimum, the components identified in Attachment 3D.

For each CRICQC audit conducted, an NCR shall be issued when audit results identify Nonconforming Work. No more than one NCR per audit per month shall be issued for each CRICQC audit defined below. Each NCR shall document all instances of Nonconforming Work identified for that specific audit within the applicable audit period. All supporting documentation used to conduct the audits shall be retained electronically in the CRICQC Audit folder in DCS and shall be made available to CDOT at the time the CRICQC Audit Report is submitted in DMS.

3.2.2.2.2 Civil Rights Independent Contractor Quality Control Subcontractor Audit

CRICQC shall conduct a monthly audit of Subcontractors to verify that for all Subcontractors that commenced Work on the project during the applicable audit month, all required pre-Work Civil Rights Requirements (Book 2, Section 3.2.1.2.2) were completed prior to the start of Work. The Contractor shall describe the audit process to be utilized by the CRICQC to verify compliance with CDOT Subcontractor requirements and federal contractual provisions, as follows:

1. Audit Planning

A. Audit Population

At the close of each calendar month, the CRICQC shall identify the audit population to include all Subcontractors that commenced Work during the applicable audit period. The population shall be established based on the Subcontractor actual Work start dates documented in the Subcontractor and Supplier Report described in Book 2, Section 3.2.1.2.4. For purposes of this audit, each Subcontractor contractual agreement shall be reported as a separate item in the Subcontractor and Supplier Report and shall constitute a separate audit population item.

B. Audit Sampling Methodology

A minimum sample size of 20 percent of all Subcontractors included in the monthly audit population shall be selected for review. The calculated sample sizes shall be rounded up to the next whole number, with a minimum of one Subcontractor audited each month. If the audit population is zero, no sampling shall be required.

The CRICQC shall document the sampling methodology used for each sample selection to ensure transparency, consistency, and repeatability. The documented methodology shall clearly describe how the samples were selected (e.g., risk-based or random approach) to ensure that a representative cross-section of Subcontractors are included in the sample selection. The methodology shall be applied uniformly across all audit periods and maintained in the CRICQC Audit Report to demonstrate the objectivity of the selection process.

2. Verification of Audit Requirements. For each Subcontractor included in the audit sample, the CRICQC shall verify the following criteria were met prior to the start of Work:

- A. If the Subcontractor reported on CDOT DB Form 205 that purchases from a Supplier firm(s) will exceed \$10,000, a CDOT Form 1425 was submitted in B2GNow, unless supporting documentation demonstrates that the Subcontractor will no longer utilize the intended Supplier firm(s).**
- B. An executed subcontract, including Exhibit C, was received by the Contractor prior to the submission of the applicable CDOT DB Form 205 in B2GNow. Any subcontract**

initially submitted without Exhibit C shall have been corrected and resubmitted to the Contractor to include all required federal provisions prior to such submission. The CRICQC shall validate this audit requirement by:

- i. Reviewing the executed subcontract to confirm that Exhibit C was included in the agreement as of the reported execution date in the Subcontractor and Supplier Report.
- C. The applicable CDOT DB Form 205 was approved by CDOT in B2GNow prior to the Subcontractor actual Work start date, in accordance with Book 2 Section 3.2.1.2.4. The CRICQC shall validate this audit requirement by:
 - i. Verifying the accuracy of the Subcontractor actual Work start date, in accordance with Book 2, Section 3.2.1.2.4, reported in the Subcontractor and Supplier Report.
 - ii. Verifying the accuracy of the CDOT B2GNow approval date reported in the Subcontractor and Supplier Report.
 - iii. Verifying that the CDOT B2GNow approval date precedes the Subcontractor actual Work start date.

3.2.2.2.3 Civil Rights Independent Contractor Quality Control Supplier Audit

The CRICQC shall conduct a monthly audit of Suppliers to verify that, for all Suppliers that met the B2GNow reporting threshold (Book 1, Section 7.7.3), the applicable Pre-Work Civil Rights Requirements were satisfied in accordance with Book 2, Section 3.2.1.2.2. The Contractor shall describe the audit process to be utilized by the CRICQC to verify compliance with CDOT Supplier B2GNow reporting requirements and applicable federal contractual provisions, as follows:

1. Audit Planning

A. Audit Population

At the close of each calendar month, the CRICQC shall identify the audit population to include all Suppliers that met the B2GNow reporting threshold during the applicable audit period. The audit population shall be established based on the date the Supplier became subject to the B2GNow reporting threshold, as documented in the Subcontractor and Supplier Report and defined as the earlier of (1) the date the value of a written agreement exceeded \$10,000 or (2) the date cumulative payments exceeded \$10,000. For purposes of this audit, each Supplier written agreement or purchase order shall be reported as a separate item in the Subcontractor and Supplier Report and shall constitute a separate audit population item.

B. Audit Sampling Methodology

A minimum sample size of 20 percent of all Suppliers included in the monthly audit population shall be selected for review. The calculated sample sizes shall be rounded up to the next whole number, with a minimum of one Supplier audited each month. If the audit population is zero, no sampling shall be required.

The CRICQC shall document the sampling methodology used for each sample selection to ensure transparency, consistency, and repeatability. The documented methodology shall clearly describe how the samples were selected (e.g., risk-based or random approach) to ensure that a representative cross-section of Suppliers are included in the sample selection. The methodology shall be applied uniformly across all audit periods

and maintained in the CRICQC Audit Report to demonstrate the objectivity of the selection process.

2. Verification of Audit Requirements. For each Supplier included in the audit sample, the CRICQC shall verify compliance with the following requirements:
 - A. An executed written agreement or purchase order, including Exhibit C, was received by the Contractor prior to the submission of the applicable CDOT Form 1425 in B2GNow. Any written agreement or purchase order initially submitted without Exhibit C shall have been corrected and resubmitted to the Contractor to include all required federal provisions prior to submission of the CDOT Form 1425. The CRICQC shall validate this audit requirement by:
 - i. Reviewing the executed written agreement or purchase order to confirm that Exhibit C was included as of the execution date reported in the Subcontractor and Supplier Report.
 - B. The applicable CDOT Form 1425 was submitted in B2GNow within 30 Days after the Supplier met the B2GNow reporting threshold, defined as the earlier of the date the written agreement value or cumulative payments exceeded \$10,000, in accordance with Book 2 Section 3.2.1.2.2. The CRICQC shall validate this audit requirement by:
 - i. If applicable, verifying the accuracy of the date the written agreement exceeded \$10,000, as reported in the Subcontractor and Supplier Report.
 - ii. If applicable, verifying the accuracy of the date cumulative payments exceeded \$10,000, as reported in the Subcontractor and Supplier Report.
 - iii. Verifying the accuracy of the CDOT Form 1425 submission date in B2GNow as reported in the Subcontractor and Supplier Report.
 - iv. Verifying that the CDOT Form 1425 submission date is within 30 Days after the Supplier met the B2GNow reporting threshold.

3.2.2.2.4 Civil Rights Independent Contractor Quality Control DBRA Escalation Audit

The CRICQC shall conduct monthly audits, at the close of each calendar month, of the Contractor's DBRA escalation process consisting of the following three separate audits, to be conducted in the following order: (1) LCPtracker Late CPR Summary Report Audit (2) LCPtracker Certified Payroll Summary Report Audit and (3) Certified Payroll Escalation Report Audit.

The Contractor shall describe the audit process that will be utilized by the CRICQC to verify compliance with the Contractor's DBRA escalation process for late certified payrolls not submitted and noncompliant certified payrolls submitted in LCPtracker, in accordance with Book 2, Section 3.4.7, and shall include, at a minimum, the following components.

1. Civil Rights Independent Contractor Quality Control DBRA Escalation Audits - LCPtracker Late CPR Summary Report

CRICQC shall conduct a monthly audit to verify that the Prime Approver implemented the DBRA escalation process for late certified payrolls that have not been submitted into LCPtracker, as required by Book 2, Section 3.4.7, and as identified in the LCPtracker Late CPR Summary Report.

 - A. Audit Planning
 - i. Audit Population

At the close of each calendar month, the CRICQC shall identify the audit population to include all certified payrolls not submitted into LCPtracker by the required due date, as of the date the audit is initiated, as reflected in the LCPtracker Late CPR Summary Report. For purposes of this audit, a population item shall be defined as each certified payroll, by week ending, for each Subcontractor contractual agreement.

ii. Audit Coverage

The CRICQC shall apply the audit requirements set forth in Book 2, Section 3.2.2.2.1.B, to 100 percent of the audit population.

B. Verification of Audit Requirements. For each late certified payroll included in the audit population, the CRICQC shall verify that:

- i. The Prime Approver implemented the Late Certified Payroll Escalation Process in accordance with Book 2, Section 3.4.7.A. and fully and accurately documented each required escalation action in the Certified Payroll Escalation Report.
- ii. Where a certified payroll appears on the LCPtracker Late CPR Summary Report but the Subcontractor has not commenced Work, such conditions shall not constitute Nonconforming Work. In such instances, the CRICQC shall verify that the Contractor reports an updated estimated Work start date to CDOT in accordance with Book 2, Section 3.4.10.

2. Civil Rights Independent Contractor Quality Control DBRA Escalation Audit - LCPtracker Certified Payroll Summary Report

CRICQC shall conduct a monthly audit to verify the Prime Approver implemented the CPR accept/reject process and DBRA escalation process for late and noncompliant certified payrolls submitted into LCPtracker, as required by Book 2, Section 3.4.7.

A. Audit Planning

i. Audit Population

At the close of each calendar month, the CRICQC shall identify the audit population to include all certified payrolls submitted into LCPtracker during the applicable audit period based on the LCPtracker Certified Payroll Summary Report.

ii. Audit Sampling Methodology

- a. A minimum sample size of 10 percent of the audit population shall be selected for review. The calculated sample sizes shall be rounded up to the next whole number, with a minimum of one certified payroll audited per month. If the audit population is zero, no sampling shall be required.
 - b. The CRICQC shall document the sampling method used for each sample selection to ensure transparency, consistency, and repeatability and shall apply the methodology uniformly across all audits periods.
- B. Verification of Audit Requirements. The CRICQC shall verify that the following criteria were met for each certified payroll included in the audit sample.
- i. For certified payrolls submitted in LCPtracker, the Prime Approver approved or rejected the certified payroll in LCPtracker, within 7 Days after submission, in accordance with Book 2, Section 3.4.4. In instances where the Prime Approver did not take timely action, the Contractor issued an NCR.

- ii. For late certified payrolls, the Prime Approver followed the Late Certified Payroll Escalation Process in accordance with Book 2, Section 3.4.7.A. and fully documented each required escalation action in the Certified Payroll Escalation Report.

For certified payrolls submitted into LCPtracker and determined to be Nonconforming Work, the Prime Approver followed the Noncompliant Certified Payroll Escalation Process in accordance with Book 2, Section 3.4.7.B. and fully documented all required escalation actions in the Certified Payroll Escalation Report.

3. Civil Rights Independent Contractor Quality Control (CRICQC) DBRA Escalation Audit - Certified Payroll Escalation Report

The CRICQC shall conduct a monthly audit to verify that the Prime Approver implemented the DBRA escalation process for late and noncompliant certified payrolls submitted into LCPtracker and reported on the Contractor's Certified Payroll Escalation Report, as required by Book 2, Section 3.4.7.

A. Audit Planning

i. Audit Population

At the close of each calendar month, the CRICQC shall identify the audit population to include all late and noncompliant certified payrolls reported in the Certified Payroll Escalation Report for which the certified payroll week ending is within the applicable audit period. A population item shall be defined as each certified payroll, by week ending, for each Subcontractor contractual agreement.

ii. Audit Sampling Methodology

The audit sample shall be selected from the audit population and shall consist of the following two categories:

a. Current Period Sample Items

For certified payrolls with a week ending date that falls within the audit period, the CRICQC shall select a minimum sample of 5 percent of the population for review. Calculated sample sizes shall be rounded up to the next whole number, with a minimum of one certified payroll audited per month. If the audit population is zero, no sampling shall be required.

The CRICQC shall document the sampling method used for each sample selection to ensure transparency, consistency, and repeatability and shall apply the methodology uniformly across all audit periods.

Following the selection of the sample items, the CRICQC shall review sample items previously selected for the LCPtracker Late CPR Summary Report Audit and the LCPtracker Certified Payroll Summary Report Audit to identify any duplicate sample items. Certified payrolls previously reviewed as sample items in either of these audits shall not be eligible for selection as sample items for the Certified Payroll Escalation Report Audit and shall be excluded from the sample. Any sample item excluded due to duplication shall be replaced with a substitute sample item selected from the applicable audit population in accordance with the Certified Payroll Escalation Report audit sampling methodology.

- b. Prior Period Carry Forward Sample Items. Prior-period audit sample items that remain in noncompliance shall be carried forward and included in each subsequent monthly audit until the certified payroll is determined to be compliant or an NCR is

issued and shall be included in the current audit period sample in addition to newly selected current period sample items.

The audit of prior period carry forward sample items shall be limited to activities, actions, and documentation occurring within the current audit period. Carry forward items shall not be re-audited for activities or conditions previously reviewed and documented in prior audit periods.

- B. Verification of Audit Requirements. The CRICQC shall verify that the following criteria were met for each certified payroll included in the audit sample:
 - i. For certified payrolls submitted in LCPtracker, the Prime Approver approved or rejected the certified payroll in LCPtracker, within 7 Days after submission, in accordance with Book 2, Section 3.4.4. In instances where the Prime Approver did not take timely action the Contractor issued a Nonconforming Work Report.
 - ii. For late certified payrolls, the Prime Approver implemented the Late Certified Payroll Escalation Process in accordance with Book 2, Section 3.4.7.A. and fully documented each required escalation action in the Certified Payroll Escalation Report.
 - iii. For certified payrolls submitted into LCPtracker and determined to be Nonconforming Work, the Prime Approver implemented the Certified Payroll Non-compliance Escalation Process in accordance with Book 2, Section 3.4.7.B. and fully documented all required escalation actions in the Certified Payroll Escalation Report.

3.2.2.2.5 Civil Rights Independent Contractor Quality Control B2GNow Payment Reporting Escalation Process Audit

The CRICQC shall conduct a monthly audit of the Contractor's implementation of the B2GNow payment reporting escalation process in accordance with Book 2, Section 3.2.1.7. This monthly B2GNow Payment Reporting Escalation Audit shall consist of three separate audits for each escalation step to be conducted for payments not reported in B2GNow at the following escalation step: (1) First Notification, (2) Second Notification, (3) Nonconformance Report (NCR). Each payment reporting audit shall verify that all required escalation actions were implemented by the Contractor and documented in the B2GNow messaging system at each escalation step.

1. Audit Planning

A. Audit Population

For each audit, the audit population shall be based on the B2GNow Subcontractor Payments listing generated by the Contractor from B2GNow for the applicable escalation step and shall include only those payments not reported in B2GNow at the time the applicable escalation action was required, in accordance with Book 2, Section 3.2.1.7. The applicable audit population sources for each escalation step are as follows:

- i. First Notification Audit shall be based on payments not reported in B2GNow at the time of the First Notification.
- ii. Second Notification Audit shall be based on payments not reported in B2GNow at the time of the Second Notification.
- iii. NCR Audit shall be based on payments not reported in B2GNow at the time the NCR was required to be issued.

B. Audit Sampling Methodology

For each escalation step audit, a minimum sample size of 20 percent of the audit population shall be selected for review. The calculated sample sizes shall be rounded up to the next whole number, with a minimum of one payment audited each month. If the audit population is zero, no sampling shall be required.

CRICQC shall document the sampling method used for each sample selection to ensure transparency, consistency, and repeatability. The documented sampling method shall clearly describe how the samples were selected (e.g., risk-based or random approach) and shall be applied uniformly across all audit periods and shall be maintained in the CRICQC Audit Report to demonstrate the objectivity of the selection process.

2. **Verification of Audit Requirements.** For each escalation step audit, the CRICQC shall verify that the Contractor implemented the required actions of the B2GNow payment reporting escalation process applicable to that step, as described below:
 - A. **First Notification.** The Contractor issued a first notification for any Sub-Prime that failed to report lower-tier payments within 3 Days after the B2GNow payment reporting due date (15th Day of the month). In the instance the Contractor failed to issue the first required notification, the Contractor self-identified the deficiency and issued an NCR for failure to implement the B2GNow payment reporting escalation process.
 - B. **Second Notification.** The Contractor issued a second notification for any Sub-Prime that failed to report lower-tier payments within 3 Days after the B2GNow payment reporting due date (15th Day of the month). In the instance the Contractor failed to issue the second required notification, the Contractor self-identified the deficiency and issued an NCR for failure to implement the B2GNow payment reporting escalation process.
 - C. **Nonconformance Report (NCR).** The Contractor issued an NCR for any Sub-Prime that failed to report lower-tier payments within 3 Days after the second notification due date. If the Contractor failed to issue the NCR for the Sub-Prime as required, the Contractor self-identified the deficiency and issued an NCR for failure to implement the B2GNow payment reporting escalation process.

3.3 Emerging Small Business (ESB) Project-Specific Pilot Requirements

The Contractor shall implement the ESB Project-Specific Pilot requirements set forth below, including the application of Good Faith Efforts, as a means to achieve the ESB Contract Goal identified in Book 1, Section 7.5.1. NTP1 shall not be issued until CDOT has Accepted the ESB Performance Plan and ESB Performance Plan Schedule.

3.3.1. ESB Performance Plan Schedule

1. The ESB Performance Plan Schedule represents the Contractor's framework of achieving the ESB Contract Goal across the life of the Project and consists of both ESB Participation Targets and ESB Commitments by calendar year. This Schedule is intended to be a living schedule and shall be updated monthly. The ESB Performance Plan Schedule shall be based on the Contractor's planned Work Areas for all calendar years and shall include, at a minimum, the components identified in Attachment 3E, and as further described herein. ESB Participation Targets. ESB Participation Targets represent the planned ESB participation by calendar year across the life of the Project. The ESB Participation Targets shall be presented in the schedule

by scope of Work and the corresponding dollar amount allocated to each scope of Work for each calendar year.

2. ESB Commitments. An ESB Commitment is defined in Book 2, Section 3.3.3. Upon identification of an ESB firm and Acceptance of the CDOT Design-Build ESB Commitment Confirmation Form, all or a portion of the applicable ESB Participation Target by calendar year(s) may be converted to an ESB Commitment. Any remaining portion of the ESB Participation Target for the applicable calendar year(s) that is not converted shall continue to be reflected as an ESB Participation Target in the ESB Performance Plan Schedule.

For each ESB Commitment, the Contractor shall identify the ESB firm name, the associated scope of Work, and the total dollar value of the ESB Commitment in the ESB Performance Plan Schedule and shall allocate the Commitment dollar amount across the applicable ESB Planned Participation calendar years in which the Commitment is anticipated to be achieved. The total ESB Commitment shall equal the sum of the initial ESB Commitment and the cumulative ESB Commitment Modifications.

3. ESB Planned Participation. ESB Planned Participation shall consist of the combined total of ESB Commitments and ESB Participation Targets established for each applicable calendar year. The combined total shall represent the total ESB Planned Participation for that calendar year. The Contractor shall also report the corresponding percentage of total ESB Planned Participation toward achievement of the ESB Contract Goal.
4. Eligible ESB Payments. Eligible ESB Payments are actual payments made to ESB firms that may be counted toward achievement of the ESB Contract Goal. The Contractor shall report the total eligible payments made to each ESB firm, including payment-to-date totals for the current and all prior calendar years, and shall report the corresponding percentage achieved toward the ESB Contract Goal for the current and all prior calendar years.

All reported Eligible ESB Payments shall be based on B2GNow data available at the time of submission of the ESB Performance Plan Schedule.

5. Modifications to ESB Participation Targets. An ESB Participation Target by calendar year may be modified with each submission of the ESB Performance Plan Schedule for Acceptance and shall identify the dollar amount of the modification. If modified, the Contractor shall submit a narrative explaining the basis for the modification and the anticipated effect on achieving the ESB Contract Goal.
6. Actual ESB Achievements. At the end of each calendar year, the ESB Planned Participation amounts reflected in the ESB Performance Plan Schedule for that calendar year shall be adjusted to reflect actual eligible ESB payments made during that calendar year. Eligible payments made to ESB firms shall be reported as actual achievements for the applicable calendar year.

As necessary, the Contractor shall adjust future-year ESB Commitments and ESB Participation Targets to reflect the remaining ESB Planned Participation needed to achieve the ESB Contract Goal across subsequent calendar years after accounting for actual achievements reported for the current calendar year.

3.3.1.1 ESB Performance Plan Schedule Submission Requirements

The ESB Performance Plan Schedule shall be submitted to CDOT via CDOT's Document Management System. After Award, the first ESB Performance Plan Schedule shall be submitted to CDOT and Accepted prior to issuance of NTP1. Thereafter, the ESB Performance Plan Schedule shall be submitted monthly to CDOT for Acceptance no later than the last Day of each month following the reporting

period. Each monthly submission shall include an updated schedule, as defined in Book 2, Section 3.3.1.

3.3.2. ESB Performance Plan

The ESB Performance Plan is the Contractor's framework for achieving, monitoring, supporting, and enhancing the participation and success of the ESB Contract Goal. The ESB Performance Plan shall detail the Contractor's methodology for developing the ESB Performance Plan Schedule and the strategy for achieving the ESB Contract Goal. The ESB Performance Plan shall be submitted for Acceptance in conjunction with the first submission of the ESB Performance Plan Schedule via the CDOT's Document Management System. The first ESB Performance Plan shall be submitted to CDOT and Accepted prior to issuance of NTP1. In the event the Contractor modifies any elements included in the ESB Performance Plan, or upon request by CDOT, the Contractor shall update and resubmit the plan in DMS for Acceptance by CDOT. The ESB Performance Plan shall include, at a minimum:

1. ESB Contract Goal. Identification and acknowledgement of the ESB Contract Goal and the Contractor's commitment to achieving that goal.
2. ESB Reporting. A description of the internal processes, procedures, and responsible roles through which the Contractor shall:
 - A. Complete and update the components of the ESB Performance Plan Schedule.
 - B. Monitor Eligible Participation (lower-tier non-ESB firms).
 - C. Complete ESB forms including: CDOT Design-Build ESB Commitment Confirmation Form and CDOT Design-Build ESB Good Faith Effort Report.
3. Procurement Process. The Contractor's strategic approach to integrating ESB participation into the overall subcontracting strategy, including at a minimum:
 - A. The identification and development of subcontracting opportunities.
 - B. Procurement procedures to engage ESB firms, including identifying available ESB scopes of Work and the ESB firms available to perform such Work.
 - C. The communication of upcoming and active opportunities that may include website postings, email notices of upcoming and specific opportunities, etc.
 - D. Implementation of transparent, fair, and fully documented bidding processes that are open and non-discriminatory.
 - E. The unbundling of Work, where appropriate, to increase opportunities for small businesses.
4. Bonding and Insurance Assistance. A description of any measures the Contractor will implement to assist ESB firms with bonding and insurance requirements while maintaining compliance with this Contract and all applicable Laws.
5. Outreach Efforts. A description of the Contractor's planned ESB outreach and development activities, that may include:
 - A. Conducting outreach events directed at ESB firms, as appropriate, as part of the Contractor's good faith efforts to achieve the ESB Contract Goal.
 - B. Providing Connect2DOT (www.connect2dot.org) with a list of available subcontracting opportunities and events for inclusion in the newsletter.

- C. Implementing additional capacity-building activities, such as participating in small-business organization events and identifying new ESB-eligible firms.
6. Good Faith Efforts. A description of the Good Faith Effort (GFE) activities the Contractor will perform over the course of the Contract to achieve the ESB Contract Goal and how those efforts will be documented. GFE may include, but not be limited to, pre-bid meetings, unbundling of Work, technical assistance and support, negotiating in good faith, alignment of scope of Work with available ESB participation, debriefings with non-awarded firms, efforts to assist with mobilization and early purchase of materials, or any other payment measures that will aid the viability of ESB participation in the Work.

3.3.3. ESB Commitments

An ESB Commitment is defined as the Contractor's commitment for an ESB firm to perform a portion of the Work for a specified dollar amount, as documented in an Accepted CDOT Design-Build ESB Commitment Confirmation Form. The initial submission of the CDOT Design-Build ESB Commitment Confirmation Form shall be submitted prior to, or in conjunction with, CDOT DB Form 205 or CDOT Form 1425 and shall be Accepted prior to the ESB firm commencing Work. An ESB Commitment Modification is defined as a modification (Addition, Termination, and Reduction) to the Contractor's currently Accepted ESB Commitment for the applicable ESB firm.

All ESB Commitments and ESB Commitment Modifications shall be submitted to CDOT for Acceptance via CDOT's Document Management System in order to count toward the ESB Contract Goal. Upon Acceptance, all ESB Commitments and ESB Commitment Modifications shall be reflected in the next submission of the ESB Performance Plan Schedule.

3.3.4. ESB Commitment Modifications

1. ESB Commitment Additions, Terminations, and Reductions. The Contractor shall notify CDOT of all ESB Commitment Additions, Terminations, and Reductions by submitting a modified CDOT Design-Build ESB Commitment Confirmation Form for Acceptance through CDOT's Document Management System at the same time the event giving rise to the modification occurs, and in all cases prior to the performance of any Work affected by the proposed Commitment modification. The modified CDOT Design-Build ESB Commitment Confirmation Form shall be provided to the ESB firm and shall clearly state the reasons for the proposed Commitment modification. If the Contractor does not obtain CDOT Acceptance, the Contractor shall make additional Good Faith Efforts with the ESB.

The ESB firm shall be requested, via CDOT Design-Build ESB Commitment Confirmation Form, to acknowledge the proposed modification and/or provide written comments. The ESB firm shall have at least 5 Days from the date of notice to acknowledge the form and respond in writing, including identifying any objections to the proposed Commitment modification. If the ESB firm fails to acknowledge or otherwise respond within the prescribed timeframe, the Contractor may proceed with submission of CDOT Design-Build ESB Commitment Confirmation Form to CDOT, provided the Contractor submits written documentation demonstrating their written communication with the ESB firm and evidence the ESB firm was afforded at least 5 Days to respond to the proposed modification.

- A. ESB Commitment Addition. An ESB Commitment Addition occurs when the Contractor commits additional Work to an ESB firm beyond the scope of an Accepted ESB Commitment, including, but not limited to, increases resulting from changes in the scope of Work and/or committed dollar amounts.

B. ESB Commitment Terminations and Reductions.

- i. The Contractor shall utilize the specific ESB included on the Accepted ESB Commitment Confirmation Form to perform the Work and supply the Materials for which each ESB is listed unless the Contractor obtains CDOT's Acceptance to Terminate or Reduce the Commitment.
- ii. CDOT cannot Accept a Termination or Reduction unless the Contractor has good cause to Terminate or Reduce the Commitment. Good cause does not exist if the Contractor seeks to Terminate an ESB Commitment in order to self-perform the Work or to Substitute another ESB or non-ESB contractor to perform Work for which the ESB was engaged. Upon Acceptance of a Termination and/or Reduction, the Contractor will be subject to the ESB Commitment Reallocation requirements of Book 2, Section 3.3.4.2. up to the ESB Contract Goal. Good cause includes but is not limited to:
 - a. The ESB fails or refuses to execute a written contract.
 - b. The ESB fails or refuses to perform the Work of its Subcontract consistent with normal industry standards, provided that such failure is not the result of bad faith or discriminatory actions of the Contractor or one of its Subcontractors.
 - c. The ESB fails to meet reasonable, nondiscriminatory bond requirements.
 - d. The ESB becomes bankrupt, insolvent, or exhibits credit unworthiness.
 - e. The ESB is ineligible to work because of suspension or debarment proceedings or other state law.
 - f. The ESB firm is not a responsible contractor capable of performing the committed scope of Work, as demonstrated by its lack of capacity, resources, or ability to independently perform the Work.
 - g. The ESB ceases business operations or otherwise dissolves.
 - h. Or other documented good cause that compels Termination.

2. ESB Commitment Reallocation.

Upon Acceptance of a Terminated or Reduced ESB Commitment (including when an ESB withdraws), the Contractor shall make Good Faith Efforts to reallocate ESB participation by identifying and securing new ESB Commitments. Such Good Faith Efforts shall be directed toward achieving ESB participation in an amount at least equal to the Terminated or Reduced Commitment amount, though not necessarily for the same type of Work, in order to meet the ESB Contract Goal. ESB Commitment Reallocation shall be completed within 7 Days of the Accepted Termination or Reduction.

- A. ESB Commitment Reallocation Methods. To reallocate ESB Commitment that has been Terminated or Reduced, the Contractor shall complete one or more of the following applicable actions by submitting the CDOT Design-Build ESB Commitment Confirmation Form to CDOT for Acceptance, as appropriate to the method used:
 - i. New ESB Commitment for Unperformed Work. Make a new ESB Commitment to an eligible ESB firm for a new, defined scope of unperformed Work on the Contract.
 - ii. Increase to Existing ESB Commitment. Increase the dollar value of an existing ESB Commitment for unperformed Work.
 - iii. Retroactive ESB Commitment for Completed Work. Identify Work already completed under the Contract by an eligible ESB firm and document such Work through a

Commitment that had not previously been submitted by the Contractor to CDOT for Acceptance.

- B. Failure to Reallocate ESB Commitments. If the Contractor has not obtained new ESB Commitments in an amount equal to the Commitment that was Terminated or Reduced, up to the ESB Contract Goal, within 7 Days of an Accepted Termination or Reduction, the Contractor shall take one or more the following applicable actions to revise the ESB Performance Plan Schedule, to be submitted to CDOT for Acceptance as an interim submission prior to the next monthly scheduled submission.
 - i. ESB Participation Target Reallocation. Identify and report any new scopes of Work and associated dollar amounts as an ESB Participation Target in the ESB Performance Plan Schedule.
 - ii. Pending ESB Participation Target. Identify the dollar amount of the Terminated or Reduced Commitment that has not yet been reallocated, up to the ESB Contract Goal, into an ESB Commitment or ESB Participation Target. Such dollar amount shall be shown as a separate line item titled "Pending ESB Participation Target" on the ESB Performance Plan Schedule and reported in the current calendar year.

Additionally, the Contractor shall provide a written explanation describing the efforts undertaken to date to reallocate the pending amount and the reasons such efforts have not yet resulted in an ESB Commitment or ESB Participation Target. This explanation shall include, as applicable:

- a. Communications with identified or named ESB firms regarding available scopes of Work.
- b. Any discussions or negotiations that did not result in an ESB Commitment.
- c. Outreach activities conducted for available scopes of Work, including the reasons participation could not be reallocated.
- d. Continuing efforts to reallocate the pending amount, including anticipated scopes of Work, projected timeframes, and the manner in which the Contractor intends to identify new ESB Participation Targets or ESB Commitments, using the methods described in Book 2, Section 3.3.4.2.A, prior to the end of the Project, in order to achieve, at a minimum, the ESB Contract Goal. In the event the Contractor does not make Good Faith Efforts to reallocate the pending amount, this amount may be subject to a payment disincentive in accordance with Book 2, Section 3.3.7.

3.3.5. Counting ESB Eligible Participation

Work performed by an ESB may be counted as ESB Eligible Participation toward the ESB Contract Goal subject to the requirements, conditions, and limitations set forth below.

- 1. Scope of ESB Certification. ESB certification does not limit an ESB firm to specific scopes of Work or classifications. ESB Eligible Participation may be credited for any Work performed by an ESB firm regardless of scope, provided the firm meets all applicable licensing, insurance, bonding, and Contract requirements.
- 2. ESB Certification Timing for Eligibility. To be counted as ESB Eligible Participation, an ESB firm shall be certified as an ESB by the Colorado Department of Transportation as of the date of CDOT Acceptance of the applicable CDOT DB Form 205 or CDOT Form 1425. Accordingly, the following shall apply:

- A. An ESB firm that is not certified at the time the applicable CDOT DB Form 205 or CDOT Form 1425 is submitted shall not be eligible for ESB Participation credit, even if the firm becomes certified at a later date.
 - B. If an ESB firm is certified at the time the applicable CDOT DB Form 205 or CDOT Form 1425 is Accepted, subsequent changes to the firm's ESB certification status shall not affect the eligibility of the ESB Commitment to count toward the ESB Contract Goal, except in cases involving fraud, misrepresentation, or other material violations related to the ESB program or the performance of the Work.
3. ESB Independent Control Standard (ICS). All ESB firms shall meet the Independent Control Standard for the Work credited toward achievement of the ESB Contract Goal in order for such participation to be considered ESB Eligible Participation. Independent Control Standard means responsibility for the execution of the Work and carrying out such responsibilities by actually performing, managing, and supervising the Work.
 - A. If CDOT determines that an ESB firm has not met the Independent Control Standard for any portion of the Work, no ESB participation credit shall be granted for that portion of the Work. ESB performance on the Contract shall be monitored to ensure compliance with the Independent Control Standard. The ESB firm, the Contractor, and any other involved parties may be subject to enforcement actions in accordance with Book 2, Section 3.3.8.
 - B. In evaluating whether an ESB firm has met the Independent Control Standard, consideration shall be given to the amount of Work subcontracted, industry practices, the amount the ESB firm is paid in relation to the Work performed and eligible participation claimed, and any other relevant factors. With respect to material and supplies used on the Contract, the ESB firm shall be responsible for negotiating price, determining quantity, ordering the material, installing the material, where applicable, and paying for the material in order to satisfy the ESB Independent Control Standard.
 - C. With respect to trucking, an ESB trucking firm shall meet the Independent Control Standard and shall comply with this subsection. At a minimum, the ESB trucking firm shall own and/or lease (as evidenced by a documented lease or rental agreement) at least one fully licensed, insured, and operational truck used on the Project and shall be responsible for the management and supervision of the entire trucking operation on the Project. Work performed by an ESB trucking firm shall count as ESB Eligible Participation only if the Work is performed in one or more of the following manners:
 - i. Trucks are owned and/or leased (as evidenced by a documented lease or rental agreement) and insured by the ESB trucking firm and are driven by the owner of the ESB trucking firm.
 - ii. Trucks are owned and/or leased (as evidenced by a documented lease or rental agreement) and insured by the ESB trucking firm and are driven and operated by drivers employed by the ESB trucking firm.
 - iii. Trucks are owned and/or leased (as evidenced by a documented lease or rental agreement) and insured by the ESB trucking firm and are operated by independent contractors (1099), provided the ESB trucking firm retains responsibility for management and supervision of the Work.
 - iv. The ESB trucking firm subcontracts trucking Work to another ESB firm, including ESB-certified owner-operators.

- D. An ESB shall not be considered to have met the ESB Independent Control Standard when its role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to create the appearance of ESB participation. Comparable transactions involving non-ESBs may be evaluated in order to determine whether an ESB is an extra participant. If a ESB does not perform or exercise responsibility for at least 30 percent of the total cost of its contract using its own work force, or if the ESB subcontracts a greater portion of the Work than would be expected based of normal industry practice for the type of Work involved, CDOT will presume that the ESB has not met the ESB Independent Control Standard. The ESB may present evidence to rebut this presumption.
- 4. Work Performed by ESB.
 - A. The Work shall be performed by the ESB with its own forces. For purposes of this section, Work performed by the ESB with its own forces include:
 - i. Work by temporary employees, provided such employees are under the control of the ESB.
 - ii. The cost of supplies and Materials obtained by the ESB for its Work on the Contract, provided that such supplies are not purchased or leased from the Contractor or a Subcontractor that is subletting to the ESB.
 - iii. The cost of any equipment leased by the ESB, provided that such equipment is not leased from the Contractor or a Subcontractor that is subletting to the ESB.
 - B. When an ESB subcontracts part of the Work, the value of the subcontracted Work shall be counted as Eligible Participation only if the lower-tiered Subcontractor is an ESB and meets the criteria of Book 2, Section 3.3. Performance of subcontracted Work by non-ESB Subcontractors, including non-ESB trucking firms and owner-operators, is not considered to be ESB Eligible Participation and may not be used towards the fulfillment of a Commitment toward the ESB Contract Goal.
- 5. Payment Received for Work. The ESB shall receive payment for Work conducted, in order to count as ESB Eligible Participation.
 - 6. Special Calculations for Suppliers. When an ESB supplies goods or materials for the Project, ESB Eligible Participation shall be determined based on the role the ESB performs on the Project. ESB's role shall be classified by CDOT on a contract-by-contract basis, based on the actual functions performed.
 - A. Manufacturer. When an ESB is determined to be acting as a manufacturer, 100 percent of the ESB Commitment shall count as ESB Eligible Participation.
 - i. For purposes of this Section, a manufacturer is an ESB firm that owns or leases and operates a facility that produces, processes, or substantially alters materials, supplies, or equipment into the product required by the Contract. Manufacturing may include combining, blending, fabricating, assembling, or otherwise modifying raw materials or components to create a product that meets Contract requirements. Minor or incidental modifications that add minimal value shall not be sufficient to qualify as a manufacturer.
 - B. Regular Dealer. When an ESB is determined to be acting as a regular dealer, 60 percent of the ESB Commitment shall count as ESB Eligible Participation.
 - i. For purposes of this Section, a regular dealer is an ESB firm that owns, operates, or maintains a store, warehouse, or other established place of business in which

materials, supplies, or equipment of the type required by the Contract are kept in inventory and regularly sold or leased to the public in the normal course of business.

- C. Distributor. When an ESB is determined to be acting as a distributor, 40 percent of the ESB Commitment shall count as ESB Eligible Participation.
 - i. For purposes of this Section, a distributor is an ESB firm that purchases materials, supplies, or equipment from a manufacturer or dealer and resells them to the Contractor but does not maintain inventory in the normal course of business and does not perform manufacturing or regular dealer functions.
- D. Broker. When an ESB is determined to be acting as a broker, only the reasonable brokerage fee or commission shall count as ESB Eligible Participation.
 - i. For purposes of this Section, a broker is an ESB firm that arranges or facilitates the purchase of materials, supplies, or equipment without taking ownership, possession, or control of the materials and without performing manufacturing, regular dealer, or distributor functions.
 - ii. For materials or supplies purchased from an ESB acting solely as a broker, do not count any portion of the cost of the materials or supplies themselves as ESB Eligible Participation.
- 7. Service Fees. For an ESB firm for providing a bona fide service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of Work, the fees and commissions charged by the ESB shall count as ESB Eligible Participation, provided the fees are not excessive as compared with fees customarily allowed for similar services. In the case of ESB temporary employment agencies, only the placement fee for a temporary employee that will be specifically and exclusively used for Work on the Project shall count as ESB Eligible Participation; the hourly fee does not count toward ESB Eligible Participation unless the firm is also certified in the Work to be performed.
- 8. Joint Checks. All Joint Checks shall be Accepted before they are used in payment to an ESB. Joint Checks used in payments to ESBs will be monitored closely to ensure the ESB is performing an ESB Independent Control Standard and Joint Checks are not being used in a discriminatory manner. The Contractor shall request Acceptance for the use of a Joint Check in a written letter signed by the ESB and the Contractor, stating the reason for the Joint Checks and the approximate number of checks that will be needed. Failure to receive Acceptance of a Joint Check may result in not counting such payment as ESB Eligible Participation.

3.3.6. Good Faith Efforts

- 1. Actions Constituting Good Faith Efforts. The Contractor shall make Good Faith Efforts to achieve the ESB Contract Goal. Good Faith Efforts mean all necessary and reasonable steps taken by the Contractor that, by their scope, intensity, and appropriateness to the objective, could reasonably be expected to achieve the ESB Contract Goal, even if such efforts are not fully successful.

Good Faith Efforts shall include, but are not limited to, the following actions:

- A. Actively soliciting and reaching out to ESBs that could perform subcontracting or supply opportunities on the Contract.

- B. Breaking out Contract work items into economically feasible units (e.g., smaller tasks or quantities) to facilitate ESB participation.
 - C. Unbundling Work that the Contractor would otherwise self-perform to create subcontracting opportunities for ESBs.
 - D. Negotiating in good faith with ESBs and not rejecting an ESB solely on the basis of price.
 - E. Making reasonable efforts to assist interested ESBs in obtaining bonding, lines of credit, or insurance as required by the Contractor.
 - F. Making reasonable efforts to assist interested ESBs in obtaining necessary equipment, supplies, materials, or related services.
 - G. Undertaking other reasonable and documented efforts to obtain ESB participation on the Contract.
2. Documentation of Good Faith Efforts. If the Contractor does not meet the ESB Contract Goal, the Contractor shall submit the CDOT Design-Build ESB Good Faith Effort Report and all supporting documentation to CDOT by Project Completion for Acceptance via CDOT's Document Management System. The Contractor bears the burden of demonstrating that it made adequate Good Faith Efforts to achieve the ESB Contract Goal. The Department may issue an NCR, at any time during the Contract, if it determines that the Contractor is not making adequate Good Faith Efforts. The Contractor's Good Faith Efforts to meet the ESB Contract Goal will be considered when assessing any potential payment disincentives to the Contractor as described in Book 2, Section 3.3.7.

3.3.7. Payment Disincentives

The Contractor's retainage shall not be released until the CDOT has made a final determination as to whether the Contractor is subject to a payment disincentive under this Contract. The Contractor shall not be subject to duplicate disincentives for the same Nonconforming Work. The Contractor may be subject to a payment disincentive for the following reasons:

1. Unaccepted Terminations or Reductions of ESB Commitments.
The Contractor may be subject to a payment disincentive on a dollar-for-dollar basis for any portion of an ESB Commitment that was not fulfilled and for which the Contractor did not receive an Accepted Reduction or Termination, as applicable. Any unaccepted Termination or Reduction of an ESB Commitment shall be deemed a failure to meet the ESB Commitment for purposes of assessing this disincentive.
2. Failure to Meet the ESB Contract Goal.
If the Contractor fails to meet the ESB Contract Goal and does not demonstrate a Good Faith Effort, the Contractor may be subject to a payment disincentive calculated at a dollar-for-dollar basis for the portion of the ESB Contract Goal not achieved. The required ESB participation dollar amount shall be determined by applying the ESB Contract Goal percentage to the applicable Contract value identified in Book 1, Section 7.5.1.

3.3.8. Other Enforcement

1. As necessary, participants may be reviewed or investigated. All participants, including but not limited to ESB firms and applicants for ESB certification, complainants, and contractors using

ESB firms to meet the ESB Contract goal, are required to cooperate fully and promptly with compliance reviews, certification reviews, investigations, and other requests for information.

2. Participants shall not intimidate, threaten, coerce, or discriminate against any individual or firm for the purpose of interfering with any right or privilege secured by the ESB program or because the individual or firm has made a complaint, testified, assisted, or participated in any manner in an investigation, proceeding, or hearing under the ESB program. Failure to comply with this paragraph shall be a ground for appropriate action against the party involved (e.g., with respect to recipients, a finding of noncompliance; with respect to ESB firms, denial of certification or removal of eligibility and/or suspension and debarment; with respect to a complainant or appellant, dismissal of the complaint or appeal; with respect to a contractor which uses ESB firms to meet goals, findings of non-responsibility for future contracts and/or suspension and debarment).
3. If CDOT determines that a Contractor or Subcontractor was a knowing and willing participant in any intended or actual subcontracting arrangement contrived to artificially inflate ESB participation or any other impermissible business arrangement, or if the Contractor engages in repeated violations, falsification or misrepresentation, any fraudulent or misrepresented ESB participation shall not count as Eligible Participation, progress payments may be withheld from the Contractor commensurate with the violation, the Contractor's prequalification status may be suspended, the matter may be referred to the Office of Inspector General of the U.S. Department of Transportation for investigation and/or any other available contractual remedy may be sought.

3.4 DBRA Reporting Requirements

To comply with the DBRA requirements contained in Book 1, Section 7.3, weekly certified payrolls shall be submitted electronically utilizing LCPtracker at the following link: [LCPtracker - Labor Compliance Software](#).

1. The Contractor and all Subcontractors subject to DBRA requirements shall submit their payrolls directly to LCPtracker for approval by the Contractor.
2. For all Work covered by DBRA, the Contractor and all Subcontractors shall pay workers unconditionally and not less often than once per week.
3. The Contractor and all Subcontractors shall submit certified payrolls to LCPtracker within 7 Days of the applicable contractor's regular weekly payment date. Certified payrolls not submitted within the required 7 Day timeframe are Nonconforming Work.
4. The Contractor shall serve in the Prime Approver role within the LCPtracker system. The Contractor shall "approve" or "reject" the payroll within 7 Days of certified payroll submission.
5. For purposes of this requirement, Nonconforming Work in the context of a certified payroll may result from either: (1) the certified payroll is submitted late, in accordance with Book 2, Section 3.4.3, into LCPtracker by the Contractor or Subcontractor; or (2) the certified payroll is noncompliant with Davis-Bacon and Related Acts (DBRA) requirements.
6. An Administrative Notice shall be issued for all certified payrolls determined to be Nonconforming Work. The Administrative Notice shall include the following information: (1) the name of the contractor that the notice is being issued against and the name of the upper-tier contractor (2) the subject week ending date, (3) the initials or name of the person issuing the Administrative Notice, (4) a description of the Nonconforming Work, (5) the corrective

actions to resolve the nonconformance, and (6) a response deadline of 7 Days from the date the notice is issued. (1) the subject week ending date, (2) the initials or name of the person issuing the Administrative Notice, (3) a description of the Nonconforming Work, (4) the corrective actions to resolve the nonconformance, and (5) a response deadline of 7 Days from the date the notice is issued.

7. Certified Payroll Nonconforming Work Communication and Escalation Processes. If a certified payroll is determined to be Nonconforming Work, the following timeline shall apply:
- A. Late Certified Payroll Escalation Process. For late certified payrolls, the Prime Approver shall issue an Administrative Notice to the applicable contractor within 3 Days of the missed deadline. The applicable contractor shall be given 7 Days from the date of the Administrative Notice to submit the requested certified payroll. If the applicable contractor fails to submit the certified payroll within 7 Days of the Prime Approver's written notification, the Contractor shall issue an NCR for Nonconforming Work.
 - B. Noncompliant Certified Payroll Escalation Process (DBRA).
 - i. First Prime Approver Certified Payroll Review. Upon the Contractor's initial submission of a certified payroll, the Prime Approver shall conduct the first review within 7 Days of the submission date and shall either approve or reject the submitted certified payroll. For certified payrolls that are Nonconforming Work due to noncompliance with DBRA, the Prime Approver shall reject the certified payroll in LCPTracker via an Administrative Notice as a means of communication and shall document the reasoning for the rejection. The Contractor shall correct and resubmit the rejected certified payroll within 7 Days of the Administrative Notice.

If the certified payroll is not resubmitted within the due date of the first certified payroll rejection, an NCR shall be issued for Nonconforming Work within 3 Days of the due date of the first certified payroll rejection notice.
 - ii. Second Prime Approver Certified Payroll Review. Upon the Contractor's resubmission of the second certified payroll in response to the first Prime Approver rejection, the Prime Approver shall conduct the second review within 7 Days of the resubmission date and shall either approve or reject the resubmitted certified payroll. If the resubmitted certified payroll continues to be Nonconforming Work, the Prime Approver shall reject the resubmitted certified payroll in LCPTracker via an Administrative Notice that includes the same elements required in Book 2, Section 3.4.6. The Contractor shall correct and resubmit the rejected certified payroll within 7 Days of the second Administrative Notice.

If the certified payroll is not resubmitted within the due date of the second certified payroll rejection, an NCR shall be issued for Nonconforming Work within 3 Days of the due date of the second certified payroll rejection notice.
 - iii. Third Prime Approver Certified Payroll Review. Upon the Contractor's resubmission of the third certified payroll in response to the second Prime Approver rejection, the Prime Approver shall conduct the third review within 7 Days of the resubmission date and shall either approve or reject the resubmitted certified payroll. If the resubmitted certified payroll continues to be Nonconforming Work, the Prime Approver shall reject the resubmitted certified payroll in LCPTracker via an Administrative Notice that includes the same elements required in Book 2, Section 3.4.6. An NCR shall also be issued for Nonconforming Work.

If the certified payroll is not resubmitted within the due date of the third certified payroll rejection, the Prime Approver shall issue an NCR for Nonconforming Work within 3 Days of the due date of the third certified payroll rejection notice.

- iv. Prime Approver Post CRICQC Review. For purposes of certified payroll escalation tracking, any Prime Approver review conducted following a CRICQC rejection shall be considered a Prime Approver Post CRICQC Review. The Prime Approver shall follow the noncompliant certified payroll escalation process applicable under the Contract; however, all actions taken and findings made during a Prime Approver Post CRICQC Review shall be documented and reported in the designated Post CRICQC Review section of the Certified Payroll Escalation Report and shall be tracked separately from the initial Prime Approver Certified Payroll Review.
8. Wage Conformances. If the Work to be performed is not included on the Project's wage determination, a new wage and classification shall be added through the wage conformance process. This process requires the Contractor to submit a USDOL SF 1444 (Request for Authorization of Additional Classification and Rate) to CDOT via the CDOT's Document Management System.

The USDOL SF 1444 shall be submitted prior to inclusion of the classification on any certified payroll. Upon receipt, CDOT will review the request for concurrence and transmit the SF 1444 to USDOL. During the USDOL review period, CDOT will enter a presumptive wage into LCPtracker, and the Contractor shall utilize the presumptive wage for certified payroll reporting until the final USDOL determination is received.

Once the official wage conformance determination is issued by USDOL, CDOT will disseminate the approved rate to the Contractor and enter the conformed wage into LCPtracker. The applicable contractor will be responsible for any wage restitution if the employee is paid less than the conformed rate. If additional wages are due, a revised certified payroll shall be submitted in LCPtracker once the wage restitution has been resolved.

The Contractor shall post the USDOL conformance letter that communicates the approved rate on the project jobsite bulletin board.

9. The following supporting documentation is required for a certified payroll submission to be considered complete:
 - A. CDOT's Contractor Fringe Benefit Statement (CFBS). Each contractor shall submit a CFBS in the LCPtracker system prior to or concurrently with the first certified payroll submission. If a contractor's method for meeting the minimum prevailing wage is altered during the life of the Project, as previously reported, a revised CFBS shall be submitted.
 - B. Contractor Fringe Benefit Declaration Worksheet. If prevailing wage is met by counting company fringe benefits, a company's Contractor Fringe Benefit Declaration Worksheet (a worksheet that demonstrates how the company fringe benefits are calculated to an hourly rate) is required to be uploaded in the LCPtracker system for all applicable employees. If data on previously reported employee changes, an updated Contractor Fringe Benefit Declaration Worksheet shall be uploaded in LCPtracker.
 - C. Individual Deductions. Deductions listed on a certified payroll that are unique to a specific individual shall be accompanied by supporting documentation submitted into LCPtracker eDocuments as detailed in Guidance on Deductions for Construction Projects Requiring Certified Payrolls (March 2026), available online at [Payroll Compliance Overview – Colorado Department of Transportation](#). Examples of such

required supporting documentation include, but are not limited to wage garnishment orders, child support court orders, loan documentation, USDOL approval letters, or Owner Affidavits.

- D. Copeland Act. The Contractor shall ensure compliance with the Copeland Act, which requires employee certified payroll deductions to be within those allowed by the U.S. Department of Labor (USDOL) per 29 CFR 3.5, or otherwise contractors have obtained USDOL approval as documented in a USDOL approval Letter.
 - E. Other Deductions. All other deductions shall be detailed by type and dollar amount on each certified payroll.
 - F. Final Certified Payroll. All final certified payrolls shall be clearly marked as 'Final' in LCPtracker in accordance with the Davis-Bacon Act (29 CFR Part 5) and the U.S. Department of Labor WH-347 Certified Payroll Form Instructions.
10. Notification of Work Start Date Updates for Subcontractors Subject to DBRA Reporting. The Contractor shall notify CDOT, via a documented communication method, of any changes to estimated or actual Work start dates for Subcontractors subject to DBRA reporting no later than one Day after the expiration of the current estimated Work start date reflected in the Subcontractor and Supplier Report. Upon receipt of the Contractor's notification, CDOT shall update the revised Work start date in LCPtracker, as applicable. Failure by the Contractor to timely notify CDOT of Work start date changes may result in inaccurate DBRA reporting data.

3.5 Prompt Payment Reporting

All Subcontractors and Suppliers (with contracts in excess of \$10,000) shall be listed for this Project in CDOT's B2GNow database. By the 15th Day of each month, the Contractor and each Sub-Prime shall report all payments to Subcontractors and Suppliers in B2GNow; if no payment was made during the reporting period, the Contractor and each Sub-Prime shall record that zero dollars were paid. If payment to a Subcontractor or Supplier is withheld during the applicable B2GNow audit period, the applicable payor shall upload the Good Cause Notice and enter details of the withheld payment in the comments section of the associated B2GNow audit. Once a payment is reported in B2GNow, the Subcontractor or Supplier payee will receive a notice to confirm payment and shall have 15 Days from the date of such notice to confirm payment or report an issue. If the Subcontractor or Supplier does not report a prompt-payment issue within 15 Days from the date of the Contractor's monthly payment reporting, the Subcontractor or Supplier shall be deemed to have waived CDOT's assistance in resolving such prompt-payment issue, and the applicable monthly audit shall be closed.

3.6 Civil Rights Deliverables

The Contractor shall submit the following to CDOT for Review, Acceptance, or Approval:

Table 3-1: Deliverables

Deliverable	Review, Acceptance, or Approval	Schedule	System
CDOT DB Form 205, Design-Build Sublet Permit Application	Acceptance	B2GNow approval prior to a Subcontractor beginning Work on the Project.	B2GNow
CDOT Design-Build ESB Commitment Confirmation Form	Acceptance	Prior to, or in conjunction with, CDOT DB Form 205 or CDOT Form 1425 and shall be Accepted prior to the ESB firm commencing Work.	DMS
CDOT Design-Build ESB Good Faith Effort Report	Acceptance	In the event the Contractor cannot meet the ESB Contract Goal upon Project Completion, it may submit a CDOT Design-Build ESB Good Faith Effort Report and other supporting documentation to document Good Faith Efforts.	DMS
CDOT Form 832, OJT Trainee Status and Evaluation	Acceptance	Within 30 Days after each reporting month, beginning with the month of CDOT Acceptance of the OJT Trainee and continuing through the final month of training, including months with no OJT activity.	DMS
CDOT Form 838, OJT Trainee/Apprentice Record	Acceptance	For each OJT Trainee, prior to any hours counting toward the OJT Contract Goal.	DMS
CDOT Form 1337, Contractor Commitment to Meet OJT Requirements	Acceptance	For each contractor that is requesting to count hours toward the OJT Contract Goal and prior to any hours being counted.	DMS
CDOT Form 1425, Supplier Application Approval Request	Acceptance	For Suppliers and rental equipment companies, within 30 Days after the value of the written agreement exceeds \$10,000 or that cumulative payments exceed \$10,000, whichever occurs first.	B2GNow
CDOT Jobsite Bulletin Board Checklist	Acceptance	Conducted at least once per calendar year quarter and submitted within 14 Days following each inspection.	DMS

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 3 - Civil Rights and Contract Compliance

Deliverable	Review, Acceptance, or Approval	Schedule	System
Certified Payroll in LCPtracker System	Review	Within 7 Days of the applicable contractor's regular weekly payment date, subject to DBRA.	LCPtracker
Certified Payroll Escalation Report, Attachment 3B	Acceptance	By the 10th Day of each month.	DCS
Civil Rights Independent Contractor Quality Control Audit Report, Attachment 3D	Acceptance	By the 20th Day of each month following the reporting month.	DMS
Civil Rights Plan	Acceptance	Prior to NTP1	DMS
Civil Rights Plan updates	Acceptance	Annually, with the first annual update to occur no less than 12 months after NTP1, or as requested by CDOT	
Civil Rights Task Force Meeting Minutes	Acceptance	Within 48 hours of each Civil Rights Task Force Meeting.	DMS
Daily Field Report	Review	No less than weekly for the preceding week's activities.	DCS
Daily Trucking Report	Review	No less than weekly for the preceding week's activities.	DCS
ESB Performance Plan	Acceptance	In conjunction with the first submission of the ESB Performance Plan Schedule prior to NTP1; to be updated in the event the Contractor modifies any elements included in the ESB Performance Plan, or upon request by CDOT.	DMS
ESB Performance Plan Schedule, Attachment 3E	Acceptance	After Award, first submission prior to NTP1; thereafter, monthly no later than the last Day of every month following the reporting period.	DMS
Good Cause Notice	Review	Uploaded in B2GNow for the monthly audit that the withholding of payment is applicable to.	B2GNow

Deliverable	Review, Acceptance, or Approval	Schedule	System
Joint Check Letter	Acceptance	Prior to the use of a Joint Check.	DMS
OJT Achievement Report	Acceptance	No later than the last Day of the month for the preceding month's reporting period.	DMS
Payments to all Subcontractors and Suppliers in the B2GNow System	Review	By the 15 th Day of the month in B2GNow.	B2GNow
Subcontractor and Supplier Report, Attachment 3A	Acceptance	By the 10th Day of the month following the reporting month.	DCS

3.7 Attachments

Attachment 3A Subcontractor and Supplier Report
Attachment 3B Certified Payroll Escalation Report
Attachment 3C Certified Payroll Review Checklist
Attachment 3D CRICQC Audit Report
Attachment 3E ESB Performance Plan Schedule

4.0 Quality Management

The Contractor shall be responsible for the implementation and maintenance of an effective quality program to manage, control, document, and ensure that all obligations of the Contractor comply with the requirements of the Contract Documents for the Project. The Quality Management Plan (QMP) shall encompass all Work performed by all tiers of the Contractor and Subcontractors and its overall quality program, including, at a minimum, a Design Quality Management Plan (DQMP) and a Construction Quality Management Plan (CQMP). The CQMP shall include a Process Control Plan (PCP), an Independent Construction Quality Control Management Plan (ICQCMP), Operational Quality Control, and a Materials Testing and Management Inspection Plan (MTIP).

The QMP shall describe, in detail, the Quality processes related to internal checks, reviews, audits, responsibility and authority, and resolutions to occurrences of nonconformance to Contract requirements. The QMP shall address the responsibility and Approval authority of CDOT and outline processes for addressing issues related to elements of Work that do not comply with the Contract. The CDOT review time for all submittals is 14 Days, except for review times specifically identified in the Contract. QMP shall include the Contractor's quality policy, quality planning, and quality improvement processes.

The QMP shall be in effect until Final Acceptance and shall address the responses to Warranty issues during the Warranty period.

4.1 Administrative Requirements

The Contractor shall submit the Design Quality Management Plan (DQMP) and Civil Rights Plan per Book 2, Section 3 for Acceptance prior to issuance of NTP1. CDOT will deliver its Acceptance or provide comments on the DQMP submission within 14 Days following CDOT's receipt of the DQMP. The Contractor shall revise and submit its DQMP within 14 Days upon notification by CDOT's comments for Acceptance.

The Contractor shall submit the sections of the CQMP prior to NTP2. CDOT will deliver its comments or Acceptance on the CQMP submission within 14 Days following CDOT's receipt of the CQMP. The Contractor shall revise and submit its CQMP within 14 Days upon notification of CDOT comments for Acceptance.

The QMP shall be reviewed by the Contractor's executive management, Quality Control Administrator (QCA), and CDOT during the course of the Project, but no less than every 6 months, to ensure its continued suitability, adequacy, and effectiveness. Such reviews should include PC/ICQC /OVT results, status of corrective/preventative actions, quality trends, follow-up items from previous reviews, changes to the QMP, and recommendations for improvement. The Contractor shall submit all revisions of the QMP to CDOT for Acceptance prior to implementing any QMP modifications. At the beginning of the Project, and no less than every six months, the QMP, PC/ICQC/OVT results, status of corrective/preventative actions, quality trends, follow-up items from previous reviews, changes to the QMP, and recommendations for improvement shall be presented to the Project's EMT.

The entire QMP (including the DQMP and CQMP) for all of the Work on the Project must have CDOT's Acceptance before issuance of NTP2. CDOT will deliver its Acceptance and provide comments on the full QMP submission within 21 Days following CDOT's receipt of the QMP. The Contractor shall revise and submit its full QMP within 14 Days upon notification of CDOT comments.

4.1.1 Quality Policy

The QMP shall include the Contractor's executive management written definition and endorsement of the Contractor's policy for quality, including objectives and commitment to quality, as well as concurrence from the Project's EMT. The QMP shall delineate procedures used by the Contractor's executive management to implement the Contractor's quality policy. The Contractor's executive management shall ensure that the policy is implemented at all levels of the Project organization.

The Contractor shall publish and post a statement of its commitment to quality, and the organization's quality objectives in several locations throughout the Project site. The statement shall explain the Contractor's commitment to quality and the responsibility the Contractor has for assuring that it meets the quality requirements for the Project.

4.1.2 Quality Planning

In the QMP, the Contractor shall include methods to meet the requirements of the Contract. The Contractor shall include the following activities, at a minimum, the quality planning efforts to ensure continued conformance to Contract requirements:

1. Identify the necessary processes, resources, and personnel that are needed for Design Quality Control, Process Control, and Independent Construction Quality Control (ICQC) to assure the Work meets the requirements of the Contract.
2. Develop processes to ensure all Project personnel are trained in the implementation of the QMP.
3. Include procedures to develop, monitor, and maintain the Process Control, ICQC, and quality improvement processes.
4. Identify and define all measurable Contract requirements.
5. Develop procedures for preparation, control, Acceptance, and distribution of the QMP.
6. Develop procedures for internal quality auditing to ensure the Contractor employees, Subconsultants, Subcontractors, and Suppliers understand and are effectively implementing the QMP.
7. Identify the process to ensure the Contractor's executive management approves and endorses the QMP, and reviews the implementation of QMP throughout the duration of the Project.
8. Develop procedures for receiving (CDOT, ICQC, PC, etc.) review comments, for ensuring resolution of comments, and for providing transparency of changes to submittals and deliverables.
9. The QMP shall include a process to communicate design changes to the construction team on a timely basis, consistent with the progress of construction Activities.

The QMP may include a process to allow the execution of Restricted Activities on an at risk basis. Restricted Activity is defined as Work that proceeds prior to Review or Acceptance. If included, such processes shall require the Contractor to document at a minimum the following:

- a. Identification of the need to perform the Work on an at risk basis;

- b. Description of such Work;
- c. Assessment of risk associated with proceeding with Work on an at risk basis;
- d. Contractor Testing and Inspection plan for the specific Restricted Work, including ICQC, QCA, and CQM Activities;
- e. Clear delineation of at risk construction plans and when they will be released; and
- f. Verification process of Work's conformance and quality once plans have formally been Released for Construction.
- g. Documentation of specific discussions with the CDOT held on the proposed Restricted Activities;

Commencement of Restricted Activities.

a. Except to the extent expressly permitted by Section b, below, the Contractor shall not commence or perform, and shall ensure that none of its Subcontractors, nor any of their respective Subcontractors, commence or perform any part of a Restricted Activity to the extent that such Restricted Activity is subject to a submission, Review, or Acceptance of any deliverable unless:

i. CDOT has unconditionally Accepted such deliverable; or

ii. CDOT has conditionally Accepted such deliverable pursuant to the Contract, and

I. the Contractor has, as applicable, complied with or responded to, or agreed in writing to comply with or respond to, all relevant conditions and comments related to such deliverable, and

II. no resubmission of such deliverable is required

iii. or if the CDOT has:

I. failed to respond in any way to such deliverable within 5 Days after the Contractual response period end, and

II. subsequently failed to respond to any notice from the Contractor regarding such failure;

iv. the CDOT has had at least 14 Days to review and comment on such a "For Review" deliverable after it was first submitted.

b. Contractor may itself, and may permit its Subcontractors to commence or perform any Restricted Activity prior to Acceptance or Review of a deliverable required for the Work given the following conditions and provided that the Restricted Activity meets the conditions set forth in the Contractor's Approved Quality Management Plan:

i. for certainty, this Section b shall in no circumstance apply to any Restricted Activity that is the subject to the submission of any deliverable for Approval;

ii. any Restricted Activity undertaken by Contractor, or any Subcontractor, pursuant to this Section (b) shall be conducted at Contractor's sole cost and risk without prejudice to the CDOT's continuing rights of review, comment, and Acceptance or Approval of any relevant deliverables under the Contract; and

iii. Contractor shall at all times remain responsible for complying with the outcome of the CDOT's review process as defined by the Contract, at Contractor's sole cost and risk, including any and all reconstruction, alterations, modifications or other remedial Work to Work already completed as may be necessary to comply with such outcome.

4.1.3 Quality Management Program

The Contractor shall be responsible for the Quality Management Program, that includes all planned and systematic actions necessary to provide confidence that the Project performs as required per the Contract requirements. The Contractor's Quality Management Program shall include a Process Control (PC) program as follows:

- To ensure the quality of the production Work
- Independent Contractor Quality Control (ICQC) process for execution of the Work, which includes Testing and Inspection.

4.1.3.1 Civil Rights Plan

The Contractor's Civil Rights Plan is a component of both the Project Management Plan and the Quality Management Plan. Due to the unique requirements of the Civil Rights Plan, the elements of the Project Management Plan and Quality Management Plan that entail Civil Rights requirements are defined in Book 2, Section 3, Civil Rights and Contract Compliance as a standalone document addressing both programs.

As defined in Book 2, Section 3, the Civil Rights Plan must include the Civil Rights Quality Management Plan. The Civil Rights Quality Management Plan shall describe the processes to be executed and delivered by the Civil Rights Independent Contractor Quality Control. The Civil Rights Quality Management Plan shall outline the methods, procedures, and documentation controls implemented to ensure consistent quality, accuracy, and compliance across all Civil Rights Requirements.

4.1.4 Quality Improvement

The Contractor shall establish, document, and implement a program for quality improvement. The Contractor shall include in the QMP the methods for identifying, analyzing, evaluating, and implementing solutions to continuously improve quality. The QMP shall establish and maintain specific procedures to ensure a successful quality improvement program.

The Contractor's quality improvement program shall include internal quality audits and regularly scheduled quality meetings with staff and supervisors to discuss quality issues.

4.2 General Roles and Responsibilities

4.2.1 Contractor Roles and Responsibilities

The Contractor shall establish, document, and implement QMP. The QMP shall include all procedures necessary for the Contractor to control the quality of all aspects of the Work, including its design and

construction processes, to meet the requirements of the Contract. The QMP shall include a Testing and Inspection schedule to control the construction processes.

The Contractor shall provide a Process Control (PC) team to implement, monitor, assess, and adjust Contractor's internal production processes to conform with the CDOT Field Materials Manual and other applicable standards.

The Contractor shall provide a qualified Independent Contractor Quality Control (ICQC) team to perform Quality Control for all aspects of the Work, including Inspections and Testing. The ICQC staff shall remain independent from production PC. The ICQC team shall perform on Site Inspection and Testing of the construction elements of the Work to Verify that all Work has been constructed in conformance with the Contract requirements. ICQC personnel shall not perform any other role on the Project.

The Contractor shall provide a qualified design quality team, which shall oversee the design processes of the Project by conducting design reviews, providing review documentation, and coordinating with the Contractor and CDOT to ensure that the design meets the requirements of the Contract.

4.2.2 CDOT Roles and Responsibilities

CDOT will retain responsibility for the Owner Acceptance (OA), as required by Title 23, Code of Federal Regulations, Part 637 (23 CFR 637). CDOT will include the results of the Independent Contractor's Quality Control (ICQC) auditing and Testing in CDOT's Acceptance decisions.

CDOT will perform Owner Verification using a Testing and auditing sampling approach to assess the Contractor's compliance with the requirements of the Contract Documents. CDOT reviews of sampled Work for Contract compliance are defined as Verification Reviews. All requirements listed in the Field Materials Manual and Documentation for Design-Build chapter shall be followed.

CDOT Region 5 laboratory will perform Independent Assurance reviews and Tests in accordance with the Field Materials Manual and Documentation for Design-Build chapter to ensure that the sampling and Testing activities performed by the Contractor's ICQC team are conducted by qualified personnel using proper procedures and properly calibrated and functioning Equipment.

4.3 Personnel Requirements

The Contractor shall include in the QMP an organizational chart that illustrates a commitment to an effective quality program to ensure all Work meets the requirements of the Contract. The QMP shall describe the hierarchy of the Contractor's organization. The QMP shall graphically depict the principal quality participants showing lines of responsibility, authority, and communication with CDOT, other involved agencies, Subconsultants, Subcontractors, Suppliers, and any other team members having a significant quality role.

The Contractor's executive management shall have overall responsibility for successful execution of the QMP and shall ensure that responsibilities and authority are defined and communicated within their organization. The Contractor shall identify a Quality Control Administrator (QCA) that reports directly to the Project Executive Management Team (EMT) and shall be responsible for all Contractor design and construction quality Activities for the Project. The Quality Control Administrator shall not be responsible for the management and direction of Process Control activities.

4.3.1 Contractor's Quality Team

Contractor's quality team shall consist of the Quality Control Administrator (QCA), Design Quality Manager (DQM), and the Construction Quality Manager (CQM). The QCA and the CQM shall not be employees of the Contractor and be independent of the production Subcontractors. The CQM shall be employed by the ICQC firm. The QMP shall identify the persons filling these critical roles within the Quality Team. The QCA and CQM shall be co-located at the Project offices.

The Contractor shall not replace the QCA without prior Approval, or the DQM or CQM without prior Acceptance from CDOT. Proposed replacements for these positions must have equal or better qualifications as determined by CDOT.

1. Quality Control Administrator (QCA).

The QCA shall be responsible for certifying the overall Quality of the Project, including design, construction, management, and administrative processes, and for providing evidence of compliance to the Contract requirements. The QCA shall report directly to the Project's EMT, including representation from the leadership of CDOT and the Contractor's team. The QCA shall document monthly formal reviews of each discipline to Verify that the QMP is being effectively implemented. At a minimum, the QCA shall provide monthly status reports of the Project's quality to CDOT as defined in Book 2, Section 2, and described below in Section 4.4.6 Quality Reporting.

A request to replace the QCA shall name a proposed replacement and their qualifications. The proposed replacement must be on-site within 14 Days of CDOT Approval of the change. The QCA shall not have any other Project responsibilities. The Contractor shall have an Approved QCA available at all times during the Project.

2. Design Quality Manager (DQM).

The DQM shall report directly to the QCA and shall be responsible for Verifying the quality of the design elements of the Project. The DQM shall be a registered Professional Engineer in the State of Colorado.

3. Construction Quality Manager (CQM).

The CQM shall report directly to the QCA and shall be responsible for Verifying the quality of the construction elements of the Project. The CQM shall be a registered Professional Engineer in the State of Colorado.

4.3.2 Independent Contractor's Quality Control Team Staff

ICQC Team shall be an independent testing/engineering firm employed by the Contractor solely to provide ICQC and separate from the Contractor's Process Control team and shall not include any employees from the Contractor, its sub-contractors, or major participants. The professional training and experience of the ICQC Team staff shall be commensurate with the scope, complexity, and nature of the Activity to be checked, inspected, monitored, or Tested, to include, at a minimum, the requirements identified in Table 4-1.

Table 4-1: Quality Staff Certification Requirements

CDOT Class/Certification	Construction Quality Manager (CQM)	Inspector	Materials Testing Technician (MTT)
Basic Highway Math	X*	X	X
Basic Construction Surveying	X	X	X
Basic Highway Plan Reading	X	X	X
Stormwater Management and Erosion Control	X	X	
CCA Traffic Control Supervisor	X	X	
Laboratory for the Certification of Asphalt Technicians (LabCAT) Level A & B			X
Asphalt Paving Inspection LabCAT Level I		X	X
Colorado Ready Mix Concrete Association (CRMCA) Concrete Paving Certification		X	X
Excavation and Embankment		X	X
WAQTC			X
ACI Field Testing Tech 1			X
ACI Strength 1			X

*Not required if a licensed Professional Engineer

Materials Testing technicians shall meet the requirements of CDOT Field Materials Manual CP-10.

ICQC staff may not include individuals who are employees of, or retained by, manufacturers, vendors, or Suppliers.

4.3.3 Training

The Contractor shall establish and maintain documented procedures for identifying training needs and requirements for the implementation of the QMP and shall provide training to all personnel performing Activities affecting quality. Personnel performing specific assigned tasks affecting quality shall be trained in the specific plans, processes, and procedures as assigned in the QMP.

The QMP shall specify procedures that:

1. Familiarize all personnel with all requirements of the Contract documents, including the proposal documents pertaining to their responsibilities.
2. Educate, train, and certify (as appropriate) personnel performing Activities affecting or measuring the quality of the Work and ensure that they achieve and maintain reasonable proficiency.
3. Ensure that personnel performing the Work do so according to the QMP and all other Contract documents.
4. Provide formal training on the proper use and procedures for document control prior to implementation.
5. Provide documentation Verifying all training efforts and Activities.

The Contractor shall provide training to all personnel that may interface with CDOT's Owner Acceptance efforts to ensure they understand their roles and responsibilities for cooperating and responding to CDOT Acceptance Activities.

Materials Testers shall have at least 1 year relevant experience or be under the direct supervision of a person possessing this level of relevant experience.

4.4 Documentation

4.4.1 Documentation Control

CDOT will establish, configure, and maintain the following software systems to facilitate the control, communication, and storage of Project documentation:

- Bentley ProjectWise (DCS for Materials Documentation).
- Bentley Deliverable Management System (DMS).
- B2GNow (Civil Rights)
- LCPtracker (Civil Rights)

The Contractor shall establish, configure, and maintain the DCS on a software of their choosing. Materials documentation shall be maintained on Bentley ProjectWise. The Contractor shall ensure CDOT and ICQC have access to the DCS software. The DCS shall be organized in accordance with the DCS file structure in Book 2, Section 2, Exhibit 2-B DCS File Structure, unless otherwise Approved.

The Contractor shall utilize these systems for all Design Documents and Project deliverables. All documents required by the Contract to be submitted to CDOT shall be organized and maintained throughout the duration of the Project per this Section and Book 2, Section 2. The Contractor shall exclusively use CDOT forms for all recording, reporting, and Project record purposes.

All deliverables submitted to CDOT's DMS shall be categorized and follow an established file naming convention. The file naming convention for all deliverables shall be in accordance with the file naming

convention contained within the DCS file structure in Book 2, Section 2, Exhibit 2-B DCS File Structure, except for the PC deliverable file naming convention as described in this Section.

The Contractor shall identify (by name) the document control supervisory personnel for the maintenance and management of records and documents in the DCS and DMS.

4.4.1.1 Process Control Documentation

Process Control documentation shall be filed on CDOT ProjectWise. The file structure is established on the DCS File Structure in Book 2, Section 2, Exhibit 2-B DCS File Structure.

The records shall include factual evidence that required Inspections or Tests have been performed, including type and number of Inspections or Tests involved; results of Inspections or Tests.

The naming convention for the individual files shall be as follows:

20980_160A_MAT_PC_[Pay Item Number]_[Document Type]_[Form Number (Or Additional Description)]_[Sample/Test #]_[Additional Information]_[Date]

Examples:

20980_160_MAT_PC_214-00220_COC_Deciduous Tree (2 Inch Caliper)_01MAR2027

20980_160_MAT_PC_304-00060_Form_0565_Gradation_1_01MAR2027

20980_160_MAT_PC_403-34801_Form_0043_32021B12345-1A_64-22_Signed_01MAR2027

20980_160_MAT_PC_411-34255_Form_0411_PG58-28_lot 1_01MAR2027

20980_160_MAT_PC_601-00001_Form_1373_Mix_2020B12345_01MAR2027

20980_160_MAT_PC_609-20010_Batch Ticket_Set 1_Compressive Strength_01MAR2027

If the document has a field sheet number, add that to the end.

Examples:

20980_160_MAT_PC_304-07000_Form_0157_Source Approval Submittal_FS#12345-0700_01MAR2027

20980_160_MAT_PC_403-34801_Form_1304_Sample 1_IA 1_FS#12345-4001_01MAR2027

20980_160_MAT_PC_412-00600_Form_0083_Beam Set 1_FS#12345-4121_01MAR2027

4.4.2 ICQC Documentation Control

ICQC shall be responsible for entering and file management of Materials Testing and Inspection reports, Certificates of Compliance, Certified Test Results, Buy America/Build America, and other documentation into CDOT's ProjectWise. The file structure and naming conventions shall be as shown above; however, replaces PC with ICQC.

CDOT will be responsible for developing the Form 250 based on Contractor's RFC quantities which shall be delivered by Contractor with each RFC using CDOT item codes. The ICQC shall be responsible for implementing and documenting the CDOT Form 250 for the Project based on the quantities listed in each RFC release and other changes such as FDCs. The information submitted by ICQC will be in a format and method Approved by CDOT prior to NTP2 and will be considered by CDOT as the basis of Acceptance.

The responsible technician and supervisor shall sign the daily Test and Inspection reports, and the results of the reports shall be entered and electronically signed within 24 hours of report completion. All results entered shall utilize applicable CDOT forms.

The records shall include factual evidence that required Inspections or Tests have been performed, including type and number of Inspections or Tests involved; results of inspections or Tests; nature of Nonconforming Work and causes for rejection, etc.; proposed remedial action; and corrective actions taken. The records shall cover both conforming and nonconforming Work, and shall include statements that all supplies and Materials incorporated in the Work are in full compliance with the Contract Documents.

The CQM shall maintain a daily log of all Inspections performed for both Contractor and Subcontractor operations. The daily inspection reports shall identify Inspections conducted, dates of Inspections, results of Inspections, locations and nature of defects found, causes for rejection, and remedial or corrective actions taken or proposed. The responsible technician and the technician's supervisor shall sign the daily Inspection reports. These daily Inspection reports shall document the day's events, Activities, and discussions in a format consistent with the requirements contained within CDOT's Field Materials Manual and Construction Manual.

The CQM shall submit all ICQC Test measurements, Test results, and Inspection records. The CQM shall submit Test data and approved Test and Inspection results to CDOT via the DCS for Review within 24 hours following the Inspection or Test. The responsible technician and the technician's supervisor shall sign the daily Test reports. The CQM shall provide to CDOT a weekly summary of all ICQC Tests, Inspections, and results.

To enhance coordination of the CDOT's Acceptance Activities during construction, the Contractor shall provide CDOT with a weekly look-ahead of specific scheduled construction Activities, designating location and planned quantities of Materials to be placed, and protocols for identifying completed construction Work during the weekly quality meeting as required in Book 2, Section 2. The Contractor shall also provide CDOT with the actual construction Activities conducted during the previous week, designating location and quantities of Materials that were placed. Quantities shall be provided in the DCS in a format acceptable to CDOT. Daily trucking tickets and estimates of on Site generated fill of Materials emplaced shall be produced daily to validate the estimated required Tests (Form 250).

4.4.3 Request for Information

The QMP shall define a system to control the Request for Information (RFI) process for CDOT, Contractor and Third Party-generated issues and identify who is required to respond to the RFI. CDOT shall be included in the distribution of all RFIs. CDOT review is encouraged prior to formally issuing an RFI response. If Nonconforming Work is discovered through the RFI process, it shall be addressed with the Nonconforming Work process described in Section 4.6. Internal Contractor communication RFIs are excluded from these requirements.

4.4.4 Design Review Documentation

The QMP shall outline a process to maintain a written record of all design reviews.

The written record shall include, but not limited to, the following:

1. List the participants in each review or meeting;
2. Includes meeting agendas and minutes;
3. Report all items discussed;
4. Identifies discrepancies noted and reports on corrective action(s) taken or planned;
5. Identifies follow-up action items, due dates, and the responsible party;
6. Identifies items needing resolution and time constraints for resolution;
7. Detailed checking documentation of the Project design (example: sight distance calculations, superelevation calculations, etc.);
8. Process Control, independent quality control, and audits;
9. Compliance certifications by the DQM and QCA as applicable.

The Contractor shall provide to CDOT reports of design reviews and comment resolution within 7 Days of the completion of the design review.

4.4.5 Civil Rights Document Control

The Civil Rights Quality Management Plan shall describe the processes to be executed and implemented by the CRICQC. The Civil Rights Quality Management Plan shall outline the processes, methods, and procedures implemented to ensure consistent quality, accuracy and compliance across all Civil Rights Requirements. Book 2, Section 3 - Civil Rights and Contract Compliance details reporting and document control requirements utilizing B2GNow, LCPtracker, the DMS, and the DCS as specified.

4.4.6 Quality Reporting

The QMP shall outline a reporting process for recording, organizing, and distributing a record of internal quality Activities. Quality reports shall be issued by the QCA and be distributed to the Contractor's and CDOT's management personnel. The reports shall be prepared and submitted monthly to CDOT for Acceptance. The reports shall include the following:

1. A summary of internal quality Activities;
2. A summary of the status of all RFIs;
3. A summary of the status of all NDCs and FDCs;
4. A summary of the status of all Nonconforming Work;
5. A summary of any corrective and preventative actions.

4.5 Design Quality

The QMP shall include a Design Quality Management Plan (DQMP) to describe specific procedures to be followed to ensure all the designs conform to the requirements of the Contract and to the design

documents being used as the basis of construction. The DQMP shall identify specific processes to provide for the review of all design documents by CDOT and any other agencies that will ultimately have Acceptance or Approval authority for the Work and the Final Design Documents.

The Contractor's DQMP shall include three primary elements: design process quality control, independent quality control, and audits.

4.5.1 Design Process Quality Control

Design process quality control shall include the following activities:

1. Quality control checking of design calculations;
2. Quality control checking by discipline of milestone design packages (Preliminary Design Documents, Pre-RFC Documents, RFC Documents, Final Design Documents, and As-Constructed Documents);
3. Quality control reviews of studies, reports, and other design supporting documents;
4. Interdisciplinary reviews of milestone design packages (including regulatory compliance);
5. Constructability reviews of milestone design packages;
6. Log of design changes;
7. Design software validation.

All design process quality control Activities shall be well defined in the DQMP and shall be a fully documented processes.

4.5.2 Independent Quality Control and Audits

Independent quality control audits shall include the following Activities:

1. Audits of all the design quality control processes related to the release of each specific design milestone package shall be performed and documented to assure its quality prior to the final release of the document. Audits shall be performed by the DQM and reviewed and approved by the QCA,
2. Independent technical reviews, and
3. Independent structure reviews were required by the Technical Criteria or the Approved DQMP.

4.5.3 CDOT Design Acceptance

Ultimately, CDOT Design Acceptance will be through the Acceptance of the Final Design Documents. To facilitate the Acceptance of the Final Design Documents, CDOT will perform in-progress acceptance Activities, including:

1. Monitoring the adequacy of the DQMP;
2. "Over-the-shoulder" in progress design reviews;

3. Formal design reviews of milestone design packages, and
4. Auditing the resolution of design review comments through comment resolution forms.

4.5.4 Preliminary Design Documents

The Contractor shall prepare preliminary Design Documents (at approximately 30 percent design completion) clearly demonstrating how the Contractor's design meets the Book 2, Section 1 requirements and submit to CDOT for Review. CDOT Review of the preliminary Design Documents shall not relieve the Contractor from compliance with any of the Project Technical Criteria that may not be adequately or are incorrectly addressed in the preliminary Design Documents. The preliminary Design Documents shall include a cover sheet, typical sections, highway and street plans and profiles, intersection and access plans and profiles, bridge general layouts, major drainage structures general layouts, master drainage report, preliminary retaining wall layouts, and Roadway cross sections at 100-foot intervals.

Preliminary Design Documents shall be submitted to CDOT for Review a minimum of 14 Days, excluding holidays, prior to the review meeting. The Review process shall include a comment resolution process for documenting all Review comments affecting the Preliminary Design Documents and their resolution. CDOT's Review of the preliminary Design documents shall not be considered as an Acceptance or Approval of any elements of the Design Documents that do not conform to the Contract requirements.

The Preliminary Design Documents submittal shall include, as a minimum:

1. All design plans;
2. Design calculations;
3. Design reports and studies;
4. Interdisciplinary reviews;
5. Design variances and justifications if applicable;
6. Constructability review, and
7. Quality review documentation as defined in the QMP.

4.5.5 Pre-RFC Design Documents

The Contractor shall prepare Pre-RFC Documents (100 percent design), incorporating and resolving any issues identified during the Preliminary Design Document phase. Pre-RFC Documents can include any or all disciplines and phases that are to be advanced to the RFC level at the Contractor's discretion to allow efficient execution of the Work. Pre-RFC Documents shall be submitted initially to CDOT for Review as Pre-RFC Documents, a minimum of 14 Days, excluding Holidays, prior to review meeting. The Review process shall include a comment resolution process for documenting all review comments affecting the RFC Documents and their resolution prior to the submittal of Final RFC Documents to CDOT. The Pre-RFC Documents shall include plan quantities following standard CDOT item naming conventions to facilitate PC, ICQC, and OVT. The Pre-RFC Documents shall also include all applicable Inspection Hold Points from the QMP.

The review process shall include a comment resolution process for documenting all Review comments affecting the Pre-RFC Design Documents and their resolution. CDOT's Review of the Pre-RFC Design documents shall not be considered as an Acceptance or Approval of any elements of the documents that do not conform to the Contract Requirements.

The Pre-RFC Design Documents submittal shall include, as a minimum:

1. All design plans;
2. Design calculations;
3. Design reports and studies;
4. Interdisciplinary reviews (if required);
5. Constructability review;
6. Specifications;
7. Comment Resolution Forms, and
8. Quality review documentation as defined in the QMP.

4.5.6 Released For Construction (RFC) Documents

Released for Construction Documents allows the Contractor to initiate construction in advance of Acceptance of the Final Design Documents by CDOT. The RFC Documents shall incorporate and resolve all issues identified during the Pre-RFC. The RFC Documents shall include plan quantities to bid level accuracy. The RFC Documents shall include an MTIP. This plan shall provide Testing quantities and frequencies and Inspection Hold Points. The QCA shall approve RFC Documents prior to release for construction.

RFC Documents shall be submitted to CDOT for Acceptance a minimum of 14 Days, excluding Holidays, prior to the review meeting. The review process shall include a comment resolution process for documenting all review comments affecting the RFC Documents and their resolution prior to release of RFC documents for construction. The DQM shall provide assurance that all comments have been resolved prior to release of the RFC documents for construction. CDOT's Review of the RFC documents shall not be considered as an Acceptance or Approval of any elements of the RFC documents that do not conform to the Contract requirements.

The QMP shall identify the procedure for which RFC Documents are released for construction, including a discussion of the specific roles of the Contractor's Project Manager, QCA, DQM, CQM, and Design Manager.

The QMP shall include a process for a Colorado registered Professional Engineer(s) in responsible charge for the design to review and approve all RFC Documents prior to their issuance and review and approve revisions to Released for Construction Documents.

The RFC Design Documents submittal shall include, as a minimum:

1. All design plans;

2. Design calculations;
3. Design reports and studies;
4. Interdisciplinary reviews (if required);
5. Constructability review;
6. Specifications;
7. Estimated quantities,
8. Summary of construction Work element tolerances as defined by CDOT Standard Specifications for Road and Bridge Construction with references;
9. Comment resolution forms and any changes beyond comment resolution denoted (or a statement indicating that no other changes were made;
10. Quality review documentation as defined in the QMP;
11. CADD files, and
12. MTIP.

4.5.7 Design Changes after Plans have been Released for Construction

The QMP shall, outline the design, Review, and Acceptance method for issuing Notice of Design Changes (NDC) or Field Design Changes (FDC) after Design Documents have been released for construction. Design changes are new items of Work that were not included in the Review packages. New items must go through a design review process, even if they appear on existing plan sheets. All NDCs and FDCs shall be approved by the Engineer(s) in Responsible charge of the original design(s).

The QMP shall include a process to propose, notify, receive, track, respond to, and distribute design changes, and the participants and their associated responsibilities, and a Work process for each change. The ICQC Team shall review all design changes. The Contractor shall invite CDOT to all reviews. The ICQC Team, in coordination with CDOT, shall jointly determine the procedures and timing of reviews, with the mutual understanding that a timely and expeditious design change process benefits all parties, balanced with the quality of the end product. Contractor shall submit revisions to Release for Construction documents for Acceptance prior to construction of the Work element.

4.5.8 Working Shop and Falsework Drawings

The Contractor shall outline the process in the QMP for how shop drawings and falsework are prepared, reviewed, and corrected. The process outline shall include:

1. Personnel assigned to perform construction submittal reviews, and
2. Procedures for documenting reviews and approvals and for obtaining corrective action.

4.5.9 Methods for Handling Traffic Drawings

The Contractor shall outline the process in the QMP for how the Method of Handling Traffic (MHT) drawings are prepared, reviewed, and corrected. The process shall include:

1. Personnel assigned to perform submittal reviews, and
2. Procedures for documenting reviews and approvals for obtaining corrective action.

The QMP shall include a process for a Colorado licensed Professional Engineer(s) in responsible charge for the design to review, approve, and seal all MHT drawings prior to their issuance.

MHT drawings shall be submitted to CDOT for Acceptance in accordance with Book 2, Section 17.

4.5.10 Final Design Documents

The Contractor shall submit Final Design Documents to CDOT for Acceptance. The Final Design Documents shall be assembled into a single complete set. CDOT will not Accept the Final Design Documents until the Contractor has completed all design and has addressed, resolved, and incorporated, to the satisfaction of CDOT, any prior Contractor, ICQC, third party, or CDOT Acceptance review comments. The Contractor shall ensure and provide documentation to CDOT that all review comments have been addressed. If deemed necessary by CDOT, the Contractor shall resubmit revised Final Design Documents until such time that CDOT determines that the review comments have been satisfactorily addressed. The Final Design Documents submittal shall include, as a minimum:

1. All design plans;
2. Design calculations;
3. Design reports and studies;
4. Specifications;
5. Estimated quantities;
6. CADD files, and
7. Quality review documentation as defined in the QMP.

4.5.11 As-Constructed Documents

As-Constructed Documents shall be submitted to CDOT for Acceptance prior to the Final Acceptance of the Work. CDOT may assess As-Constructed Documents to ensure completeness and compliance with the requirements of the Contract. CDOT shall not Accept As-Constructed Documents until the Contractor has adequately addressed any prior Contractor PC reviews, ICQC audits, or CDOT assessments and Testing. The Contractor shall provide documentation to CDOT that all have been addressed. The As-Constructed Documents submittal shall include:

1. All plans reflecting RFC Documents and any revisions to RFC Documents;

2. Resolution of prior Contractor ICQC audits or CDOT audits, including completed comment resolution forms demonstrating that all formal meeting review comments have been fully addressed through the design and construction of the Project;
3. Design calculations;
4. Design reports and studies;
5. Specifications;
6. CADD files, and
7. Location of features on the Project as required in Book 2, Section 10.

Specific As-Constructed Document requirements per discipline can be found in the governing section within the Book 2 Technical Requirements.

4.5.12 Design Coordination

The QMP shall describe how the design team schedules design efforts, including but not limited to task force meetings, design reviews, constructability reviews, design meetings, independent design checks, and a schedule for Released for Construction and As-Constructed Documents.

The Contractor's Engineer shall conduct weekly task force meetings to coordinate the design development within the Contractor's organizations, CDOT and other affected agencies. As a minimum, the Contractor shall prepare an agenda and conduct each meeting to discuss the status of the design, coordinate the design development between design disciplines, discuss constructability issues, and identify any questions associated with design requirements. The Contractor shall take meeting minutes for all task force meetings and provide minutes to CDOT for Review within 7 Days after each meeting.

The Contractor shall hold joint design milestone review meetings for the Preliminary Design Plans, Pre-RFC Documents, RFC Documents, NDC Plans, final Design Documents, and other milestone reviews deemed appropriate by the Contractor or requested by CDOT. The design progress meetings shall be scheduled, conducted, and documented by the Contractor. The meeting minutes shall be taken by the Contractor and submitted to CDOT for Review within 7 Days after each meeting. The Contractor shall provide review documents stamped "Checked and Ready for Review."

The DQM shall keep CDOT updated on the schedule of all upcoming milestone reviews at least two months in advance of review meetings. Milestone review meetings shall not be scheduled within intervals of less than 7 Days, unless otherwise Approved by CDOT.

4.6 Construction

The Contractor shall be responsible for performing and documenting all required construction Process Control and ICQC Activities necessary to control the Work. The QMP shall cover both permanent and temporary Work (erosion control, traffic control, etc.). The QMP shall describe specific procedures to be followed to provide assurance that all the Work conforms to all the requirements of the Contract and of the Design Documents being used as the basis of construction, and that all Materials, Equipment, and elements of the Work being incorporated in the Project shall perform satisfactorily for the purpose intended. The QMP shall specifically include the procedures for inspecting, sampling,

Testing, checking, and documenting the Work, including all Work performed by Subcontractors, and for distribution of information (e.g., Released for Construction Plans, design changes, Nonconformance Report (NCR) remediation) to all necessary parties.

4.6.1 Construction Process Control

The Contractor shall establish, document, and implement a Process Control plan. The Process Control plan shall include all procedures necessary for the Contractor to control the quality of its production processes to meet the requirements of the Contract in compliance with the CDOT Field Materials Manual, the CDOT Construction Manual, CDOT Standard Specifications for Road and Bridge Construction, Project Special Provisions, and the Standard Special Provisions in Book 2, Section 21. The Contractor shall develop a Testing and Inspection schedule to control the production processes.

Tests or Inspections performed by production or Process Control (PC) personnel as part of the Quality Management Plan shall not be used to satisfy the ICQC requirements as cited in the CDOT Field Materials Manual, Documentation for Design-Build. PC personnel shall be capable of performing the testing procedures or inspections assigned to them in accordance with Table 4-1 above.. The Contractor shall have the sufficient qualified personnel to respond to the workload. The Contractor shall provide the Equipment and facilities to perform all Tests. All Testing personnel shall be properly certified in accordance with CDOT Field Materials Manual CP-10. The PC labs shall be certified and on the AMRL-accredited list.

PC staff shall:

1. Be responsible for quality of the Work during production.
2. Develop Pre-Activity check lists.
3. Be independent of the ICQC staff.
4. Have authority to stop Work.

The QMP shall include PC checklists. The PC checklists shall be developed and maintained by the Contractor at the Project Site and organized for execution of Work Breakdown Structure Activities and all other associated Contract requirements. PC shall use current CDOT forms, manuals, and handbooks to develop checklists. The PC checklists shall be available for CDOT personnel review at all times. Unmaintained or not up-to-date PC checklists shall constitute immediate Nonconforming Work. Work shall not proceed until the PC checklist is updated and made compliant to the requirements herein. The Contractor shall use current CDOT forms, manuals, and handbooks to develop PC checklists.

PC staff shall be integrated into the Contractor's management team and provide continual information to the ICQC and OVT teams, including providing daily quantity updates. PC staff shall also participate in weekly testing meetings in accordance with CDOT Field Materials Manual CP-16.

4.6.2 Independent Contractor Quality Control (ICQC)

The Contractor shall be responsible to establish, document, and implement an Independent Contractor Quality Control (ICQC) program. The ICQC program shall include both Testing and Inspection to support CDOT's Owner Acceptance responsibilities. The ICQC Testing program shall satisfy all of the Testing requirements defined in the CDOT Field Materials Manual, Documentation for Design-Build. The Contractor shall include in the QMP the methods and procedures by which the Work shall be certified by the Contractor as complying with the requirements of the Contract.

ICQC personnel shall not participate in any Process Control Activities and shall be independent of the Process Control personnel.

ICQC shall use current CDOT forms, manuals, and handbooks to develop checklists.

4.6.2.1 ICQC Inspection and Testing Staffing

The Contractor shall identify in the QMP all necessary resources and personnel to perform all ICQC activities required to ensure all the Work meets the Contract requirements. The QMP shall include a detailed staffing plan that identifies specific Testing and Inspection personnel commitments over the duration of the Project that is consistent with the Contractor's Baseline Schedule. The staffing plan shall constitute contractual staffing commitments, and any changes of the staffing plan shall be subject to CDOT Approval. Inspection and Testing personnel shall meet the CDOT Field Materials Manual CP-10.

At a minimum, the Contractor shall provide pre-activity checklists that include at a minimum any Inspection details from CDOT standards, CDOT Standard Specifications for Road and Bridge Construction, Project Special Provisions, and Standard Special Provisions in Book 2, Section 21, industry standard Inspection points, and Verification of line and grade of individual Work elements along with a construction tolerance guideline derived from the RFC plans. In addition, full-time Inspection personnel shall be provided for the following construction operations:

1. Major structural Work (Bridges, retaining walls, and overhead sign structures).
2. Trenching Work.
3. Minor structures Work (box culverts, pipes, and special drainage structures).
4. Excavation and embankment operations.
5. Structure excavation and backfill operations.
6. Safety-critical Work.
7. Utilities relocation Work.
8. ITS and electrical Work.
9. Work zone traffic control implementation.
10. Roadway base construction.
11. Paving operations.
12. Final signing and striping.
13. During development of punch list and completion of punch list items.

When Work Activities requiring full-time Inspection personnel are being performed simultaneously at different locations, then each operation shall require a separate full-time Inspector unless otherwise approved by CDOT.

4.6.2.2 Materials Testing and Inspection Plan (MTIP)

The Contractor shall prepare and implement a Materials Testing & Inspection Plan (MTIP) and submitted for Acceptance with each RFC package released as part of the approved QMP that includes the appropriate criteria, Tests, and Inspection requirements identified in CDOT's Construction Manual, Field Materials Manual, CDOT Standard Specifications for Road and Bridge Construction Project Special

Provisions, and Standard Special Provisions in Book 2, Section 21. The MTIP shall include Contractor-developed Inspection checklists of requirements as set forth herein.

The MTIP shall identify all Inspections and Tests required, including, at a minimum, reference to the requirements of the Contract, frequency of the Inspections and Tests in accordance with CDOT Field Materials Manual Owners Acceptance Frequency Guide Schedule, and the Contractor-developed ICQC processes. Where no Inspections or Test standard exists in any of the CDOT manuals, the MTIP shall develop criteria based upon the best available industry standard information and technology.

The MTIP shall include a summary of Activity-specific Material Quantities to document that the minimum sampling, Testing, and Inspection requirements have been met. This summary shall be updated and submitted to CDOT for Acceptance monthly on Form 250 with quality status report. The Contractor shall follow the CDOT Form 250 as a minimum basis for their Materials documentation record.

The MTIP shall include processes compliant with CDOT requirements to control, calibrate, and maintain Test Equipment (both field and lab Equipment), to ensure it meets industry standards and other applicable requirements. Test Equipment used by the Contractor shall be of a quality and capacity that ensures that measurements made are to levels of accuracy and precision that are required by the Test Procedure.

The MTIP shall include procedures for delivery, handling, and storage of furnished products, ensuring they are properly handled and stored to prevent damage, deterioration, or theft.

The MTIP shall include the following elements:

1. **Inspection:** The MTIP shall include detailed Inspection procedures to be used in cases where Inspections are to serve as the basis for Verifying compliance with the requirements of the Contract. The Contractor shall conduct each Inspection in accordance with the Approved QMP. The Contractor shall document whether the Inspections passed or failed based on the "pass/fail criteria" established in the procedure and the requirements of the Contract (e.g., concrete depth checks on deck pours, rebar clearance, size, locations, elevations, stationing). The Contractor shall include failing Inspection results in the Inspection documentation.
2. **Testing:** At a minimum, the Contractor shall follow the CDOT Field Materials Manual Owners Acceptance Frequency Guide Schedule for Minimum Materials Sampling, Testing, and Inspection requirements and recorded on the associated CDOT standard forms.

The Contractor shall document the results and show if the Test passed or failed based on the "pass/fail criteria" established in the Contract. The Contractor shall include failing Tests results in the Test documentation.

Independent Laboratories shall submit signed and certified test reports to the Contractor not more than 14 Days after completion of the Tests for all Tests which require an independent Laboratory.

CDOT reserves the right to witness any Test conducted for ICQC purposes. The Contractor shall develop and maintain a current Test log for all tests required by the Contract.

As a minimum, the Contractor shall document on CDOT-approved forms the results of Tests in report format. Include the following:

Request For Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 4 - Quality Management

- Contract or Project identification number.
- Identification of items Tested.
- Quantity.
- Date and time Test conducted.
- Location of items Tested.
- Test Procedure used.
- Name of technician.
- Acceptance criteria.
- Results - acceptance or rejection.
- Authorized signature.

The Contractor shall provide a Materials Testing field Laboratory (Class 2) for the ICQC MTTs and a certified full-service geotechnical Laboratory for more specialized Testing, if required, that has been pre-certified by CDOT. Laboratories performing ICQC Testing shall be independent from the PC Laboratories.

The Contractor shall provide a Materials Testing field Laboratory (Class 2) for the OVT MTT's. Laboratories performing OVT Testing shall be independent from the PC and ICQC laboratories.

4.6.2.2.1 Product Control Plan (PCP)

The PCP shall include procedures for the Contractor to Inspect and Test, where applicable, procured products provided by Suppliers during the manufacturing, receiving, and installation processes to ensure the requirements of the Contract documents are met. This Work includes ICQC Activities at manufacturing and fabrication sites.

Manufactured products used and permanently incorporated shall comply with Buy America, Build America (BABA) requirements per CDOT Standard Specifications for Road and Bridge Construction, Section 106.

Before the permanent incorporation into the Project and before payment for all manufactured products, the Contractor shall obtain a certification from the Manufacturer of the product, who has performed the final assembly of the product, and submit to CDOT with each Monthly Invoice.

The PCP shall require the Contractor to maintain receiving Inspection procedures. CDOT may designate Hold Points in the manufacturing and installation process.

The PCP shall include procedures to document and demonstrate product compliance with requirements of the Contract documents by Certificates of Compliance (COCs) and certified Test results (CTRs). The Contractor shall obtain COCs and CTRs prior to incorporation in the Work and before inclusion on the monthly invoice, and maintain a complete log of all COCs and CTRs. The log and all COCs and CTRs shall be available for CDOT's Verification at any time. The Contractor shall include in the COC and CTR log, signed certification that all Materials represented by each COC and CTR was installed in the Work. Certification shall be according to requirements of the Contract. The Contractor shall submit the COC and CTR log and all COCs and CTRs to ICQC for review prior to submittal to CDOT. The COC and CTR log and applicable COC's and CTR's shall be submitted to CDOT for Acceptance prior to Hold Point Inspections and issuance of continuance authorization. The Contractor shall submit the COC and CTR log and all COC's and CTR's to CDOT with each monthly invoice.

The PCP shall include procedures for delivery, handling, and storage of furnished products, ensuring that they are properly handled and stored to prevent damage, deterioration, or theft. The PCP shall

document procedures for stored items and Materials consistent with the expected duration and type of storage.

The PCP shall include procedures for monitoring special processes utilized in fabrication, assembly, and Testing of specified products. Special processes are those requiring qualified and certified production, Inspection, and Test personnel to perform highly skilled Work such as welding, brazing, soldering, non-destructive Testing, machining, coating, or plating.

4.6.2.3 Specialized Manufacturing Facilities

Specialized manufacturing facilities may be required to supply items or Materials not typically specified by CDOT. The QMP shall specify how the Contractor ensures that specialized manufacturing facilities meet requirements established by CDOT. These requirements include, but are not limited to, the following:

1. How manufacturing facilities are selected.
2. How the Contractor, the ICQC Team, and CDOT will determine the Inspection requirements of the facility (i.e., initial capabilities of the facility, ongoing process and production, final product certification and documentation, delivery and handling processes).
3. The lead times required for on-site Inspection of the facilities. CDOT requires a 30-day lead time to make travel arrangements for facility capability Inspection.

4.6.2.4 Hold Point Inspection

A Hold Point is defined as a point in time when construction has proceeded to a defined stage, and at which representatives of the Project's Quality Management assess the conformance of the Work to that point. Determination of conformance of the Work is the responsibility of ICQC. The Contractor shall invite CDOT to all Hold Point Inspections, with notice of each Hold Point Inspection provided 24 hours in advance.

With the exception of corrective Work items, no additional Work may take place past the Hold Point until the Work conforms to the requirements of the Contract and the QCA or CQM has formally authorized continuance of the Work in writing. Major Hold Point authorizations must be issued by the QCA or CQM. Minor Hold Point authorizations may be issued by appropriate ICQC field personnel as assigned by the QCA or CQM.

The QMP shall identify construction Hold Points, subject to CDOT Acceptance. At a minimum, the following Hold Points shall be established:

Environmental Mitigation Measures

1. Before any construction occurs, and after implementation of Best Management Practices (BMPs) and environmental controls per the Permitting requirement - Minor.
2. Prior to disturbing any stream, dewatering, diverting watercourses, or building cofferdams. - Major.

Embankments

1. After completion of drainage and Utility installations, and before backfill - Minor.
2. After all clearing, grubbing, and excavation - Minor.

3. After each lift in accordance with CDOT Standard Specifications for Road and Bridge Construction for lift requirements (applicable to all embankments, including walls) - Minor.
4. After completion of MSE wall panel placement every 10 vertical feet - Major.
5. At completion of embankment placement - Major.
6. At completion of surcharge placement - Major.
7. Prior to removal of surcharge - Major.

Structures

1. Before placement of the leveling pad of an MSE wall or other type of retaining wall - Major.
2. At completion of Bridge embankment settlement - Major.
3. Before start of Bridge foundation pile-driving - Major.
4. At Contractor's ICQC Acceptance of pile driving submittals (including design calculations, wave analysis, and hammer specification) - Major.
5. After completion of pile-driving at each Structure support (pile group), including pile-driving results and records - Major.
6. Before concrete placement of any Substructure element, including pile infilling and drilled shafts - Major.
7. Before and after girder and diaphragm placement - Major.
8. Before concrete placement of deck, approach slabs, diaphragms, and parapets - Major.
9. Before concrete placement of cast-in-place (CIP) retaining walls and box culverts, after rebar placement but before final form placement for CIP retaining walls and box culverts taller than 6 feet - Major.

Utilities

1. After the installation of direct-burial duct banks and prior to backfill operations - Minor.
2. For concrete-encased duct banks, after the installation of conduits and prior to the placement of concrete - Minor.
3. For all Utility lines intended to transport pressurized Materials and lines intended to carry liquids, after installation and prior to the completion of pressure Testing - Major.

Surfacing and Paving

1. Before placement of each course above Subgrade on permanent Roadway components (granular borrow, lean base, etc.) - Minor.

2. Before placement of each lift of asphalt or PCC paving on permanent Roadway components - Major at pre-pavement conference and Minor for subsequent lifts.
3. Before any placement of concrete - Minor.

Traffic Control

1. Traffic devices - Minor.
2. Traffic switches - Major.
3. Before opening to traffic - Major.

ITS

1. Before backfilling trenches containing conduit - Minor.
2. Before placing flowable fill around junction boxes - Minor.

The QMP shall specify processes for monitoring the progression of Work, including associated quantities of Materials, through the tracking of Hold Points. The process should be designed to aid in progressing Work, Verifying payments, and avoiding duplicate Inspection, Testing, and reporting.

CDOT and the Contractor may identify additional Hold Points to be included at any time during the Project. CDOT and the ICQC Team shall coordinate to define the procedures and criteria for additional Hold Points. The QMP shall include any additional Hold Points identified and necessitated by the Contractor's specific design and construction approaches.

4.6.2.5 Specific Inspection Procedures

Deep Foundations

The QMP shall detail the Contractor's process for monitoring and inspecting all elements of the Work required by the Contract related to drilled shafts, driven piles, and micropiles.

Paving Quality

The Contractor shall provide the following paving quality procedures in the QMP and submit a paving quality plan 30 Days prior to the beginning of paving operations for Acceptance by CDOT, including:

1. A thorough definition of pavement smoothness and quality, which shall be the same for all travel lanes and Shoulders, and the identification of steps for maintaining smoothness criteria, including defined Hold Points and potential corrective measures.
2. Detailed procedures for identification of potential issues affecting pavement quality, such as smoothness, dumping, and batching.
3. Procedures for monitoring, minimizing, and correcting for lane-to-lane roughness variation.
4. Procedures for dowel bar and tie bar placement and MIT scan Testing and Inspection, including the Contractor's obligation to provide additional Test sections for MIT scan Testing and auditing at CDOT's discretion in the event that all or part of the Work is suspended due to dowel bar placement Nonconformance Work.

5. A PCCP quality recovery plan for paving quality issues with corrective and preventative measures.

4.6.2.6 Nonconforming Work

The Contractor shall include in the QMP procedures to develop and maintain a system to identify, control, remedy, and report Nonconforming Work, including Nonconforming Work identified by CDOT. The QMP shall include procedures to identify Nonconforming Work and to withhold progress payment requests on the Monthly Invoice until the Nonconforming Work is remedied. The Contractor shall document the identification of Nonconforming Work by completing and submitting a Nonconformance Report (NCR) to CDOT for Review as soon as reasonably practicable, and in any event within 24 hours, after the Contractor first becomes aware of the Nonconforming Work. The Contractor shall remedy Nonconforming Work in accordance with the QMP. The responsibility for review and for the disposition of Nonconforming Work shall be established in the QMP. The Contractor shall identify Nonconforming Work by completing an NCR. The NCR shall include:

1. Identification of Nonconforming Work, including tagging Work products and location;
2. Description and evaluation of the Nonconforming Work;
3. Applicable Contract requirements;
4. Cause of Nonconforming Work;
5. Recommendation for construction elements: "remove and replace," "repair," or "use as is" dispositions;
6. Construction Cost adjustment considerations (if applicable),
 - A. Material price reduction in accordance with Book 2, Section 21, and Standard Specification Section 105.
 - B. Cost considerations shall be evaluated using CDOT Cost Data Book or other relevant industry cost information.
7. Proposed corrective action to prevent recurrence,
8. Responsibility for accomplishing corrective action,
9. Schedule of Work with a date of remedy completion,
10. Signature lines for the Contractor's Engineer in Responsible Charge of the Nonconforming Project element, Quality Control Administrator, and CDOT Verifying that the Nonconforming Work recommended remedy has been approved.

The recommended remedy for the Nonconforming Work shall be approved by the Engineer in Responsible Charge and the Quality Control Administrator prior to its submittal to CDOT. The Contractor shall not perform the recommended remedy prior to receiving from CDOT a determination of "repair" and "use as is" dispositions. For "repair" and "use as is" dispositions, NCR Report shall clearly identify if and how the remedy is out of compliance with the Contract requirement and why its nonconforming use is acceptable.

The Contractor shall develop and maintain a Nonconforming Work log to track and identify the status of Nonconforming Work. An updated log shall be submitted to CDOT weekly for Review and shall be used by the Contractor to look for Nonconforming Work trends to determine if corrective actions are needed.

The Contractor shall include in the QMP procedures for controlling the use of Nonconforming Work, including the tagging of Nonconforming Work products. Nonconforming Work product tags shall only be removed by the originator of the NCR or the originator's supervisor, and only when the Contractor demonstrates to CDOT that the Nonconforming Work product meets the requirements of the Contract.

All NCRs shall be recorded by the Contractor and provided to CDOT. The Quality Control Administrator shall maintain a log of all NCRs and submit it weekly to CDOT. Each NCR shall be numbered sequentially and provide a brief description and status.

As a part of its Acceptance Activities, CDOT will perform Verification assessments, which may result in CDOT-issued NCRs. These efforts are completely independent of Contractor ICQC activities and shall not relieve the Contractor of quality Inspection and Testing responsibilities. CDOT will forward all NCRs to the Contractor, and the Contractor shall respond to all NCRs within 7 Days of issuance. The Contractor's response shall identify how it proposes to remedy the Nonconforming Work and the date by which the remedy shall be completed. The QMP shall describe the approach and methodology for resolving CDOT NCRs.

4.6.2.7 Corrective and Preventative Action

The QMP shall describe corrective and preventative action procedures that the Contractor shall use to identify and improve processes that produce, or may produce, recurring Nonconforming Work identified by the Contractor or by CDOT. The Contractor's corrective and preventative action procedures shall include:

1. Methods to investigate the cause of the recurring Nonconforming Work and to determine what corrective action is needed to prevent recurrence.
2. Methods to analyze all processes, Work operations, quality records, service reports, and CDOT assessments and Testing to detect and eliminate the possibility of Nonconforming Work from occurring.
3. Methods to prioritize corrective and preventive action efforts based upon the level of risk to the quality of the Work.
4. Controls to ensure that effective corrective and preventative actions are taken when the need is identified.
5. Methods to implement and record changes in procedures resulting from corrective and preventative actions.
6. If identified as recurring by the issuance of multiple Nonconforming Work reports, Contractor shall be afforded a cure period of 14 Days to implement methods of correction. If the methods for corrective measures are not implemented during the cure period, Contractor shall be issued a stop Work order for the Nonconforming Work element until methods of correction are Approved by CDOT in writing. Contractor shall implement the corrective measures immediately upon Acceptance. The stop Work order shall be lifted upon satisfactory completion of the corrective and preventative action related to the identified deficiency.

4.6.3 Operational Quality Control

The Contractor shall establish, document, and implement an operational control plan as part of the CQMP. Operational control is defined as all procedures necessary for the Contractor to control the quality operations that support the construction of the Project. The operational control plan shall include all procedures necessary for the Contractor to control the quality operations that support the construction of the Project, including:

1. Environmental Monitoring and Compliance

The CQMP shall describe the methods, processes, and procedures to provide for the effective implementation and documentation of the environmental protection, training, compliance, and monitoring program. Refer to Book 2, Section 6 for additional requirements.

2. Transportation Management Plan Monitoring and Compliance

The CQMP shall describe the methods, processes, and procedures to provide for the effective implementation and documentation of the Transportation Management Plan. Refer to Book 2, Section 17.

3. Water Quality

The CQMP shall describe the methods, processes, and procedures to provide for the effective implementation and documentation of the Water Quality program. Refer to Book 2, Section 6, Environmental Requirements.

4. Maintenance During Construction

The CQMP shall describe the methods, processes, and procedures to provide for the effective implementation and documentation of the Maintenance During Construction program. Refer to Book 2, Section 19, Maintenance During Construction.

5. Safety

The CQMP shall describe the methods, processes, and procedures to provide for the effective implementation and documentation of the Project Safety Management program. Refer to Book 2, Section 2, Project Management.

4.7 CDOT Owner Verification and Owner Acceptance Activities

CDOT's Owner Verification will use a Testing and workmanship assessment sampling approach to determine the Contractor's compliance with the requirements of the Contract Documents.

CDOT will:

1. Perform quality oversight audits and reviews,
2. Monitor and audit the Contractor's quality program processes to Verify adherence to the QMP,
3. Participate in pre-activity meetings, Hold Point Inspections, additional Inspections outside of Hold Points, on-site meetings, and plan and specification reviews,

4. Participate in Contractor-initiated training,
5. Audit the Project records,
6. Conduct Verification and Testing (oversight, sampling, inspection, and evaluation),
7. Conduct Independent Assurance Testing (IAT) of ICQC and OVT Activities,
8. Perform off-site Verification, Inspection, and Testing of the fabrication of precast and pre-stressed concrete structures and of structural steel,
9. Issue Final Acceptance of the Work.

CDOT retains the right to stop Work:

1. If there is evidence that the QMP procedures are not being followed, or if the design, Materials, or workmanship are not meeting the Contract requirements, CDOT may, at its sole discretion, stop Work until corrective procedures have been established and implemented.
2. If the Contractor fails to correct conditions that are unsafe for Project personnel and the general public.

CDOT reserves the right to:

1. Check Testing Equipment for compliance with specified standards and to check Testing procedures and techniques.
2. Access the Testing facilities of independent Testing agencies to witness Testing and Verify compliance of Testing procedures, Testing techniques, Tester certifications, and Test results.

CDOT has the authority, at its sole discretion, to remove any of the following from the Project:

1. A tester who does not perform Testing in accordance with the Test methods;
2. A tester who does not report Test results accurately;
3. An Inspector who does not exercise good judgment in the performance of duty or demonstrates incongruity with respect to the Contract, and
4. An Inspector or tester who is not certified.

4.7.1 Owner Verification Testing

CDOT, or its representative, will perform Owner Verification Testing (OVT). OVT encompasses Material sampling and Testing, the results of which are used to validate the ICQC Team's Testing efforts. The OVT Tests will be conducted at the frequency as detailed in the CDOT Field Materials Manual. Based on a successful Verification by the OVT effort, the ICQC Tests will be incorporated into the Acceptance decision. The Verification evaluation may include statistical comparison and validation of Test results (e.g., F&T Test, control charts, etc.), monitoring quality processes of the ICQC Team, and over-the-shoulder review of Test Procedures and processes.

In accordance with 23 CFR 637.207, CDOT will establish a dispute resolution system to address the resolution of discrepancies occurring between the Verification sampling and Testing and the quality control sampling and Testing. This dispute resolution system may be administered entirely within CDOT.

4.7.2 Independent Assurance Roles and Responsibilities

CDOT Region 5 laboratory will perform independent assurance reviews and Tests in accordance with the Field Materials Manual, Documentation for Design-Build chapter, to ensure that:

1. Contractor ICQC personnel are trained and certified, and demonstrate that they understand the Test Procedures they are performing.
2. The Test Equipment used by the Contractor's ICQC personnel is calibrated.
3. Split sample Test results correlate.
4. The facilities used are AMRL certified.

Independent assurance Test results will also be used as referee Tests to assess statistically significant differences, determined by CDOT in its sole discretion, between Contractor ICQC Tests and CDOT Verification Test results.

4.7.3 Third Party Owner Inspections and Approvals

Third Party personnel shall have the right to inspect the Work, provided that the Third Party has jurisdiction over the Work and as required by Applicable Law. The Contractor shall adhere to Third Party Inspection and approval procedure.

4.8 Final Inspection

The Contractor shall develop a process, within the QMP, for scheduling, accomplishing, and tracking the final Inspection process and developing and resolving Punch Lists. Final Inspection shall include Inspection of the Work by the Contractor and ICQC, and associated As-Constructed Documents, certifications, and Contractor cleanup requirements.

After the Inspection, CDOT, Contractor and ICQC Team shall jointly agree upon Punch List items and an agreed date of correction of the items. The Punch List and Punch List log shall be completed by ICQC personnel. Contractor shall invite CDOT, including CDOT Maintenance, and other affected agencies to attend walks of the Work to include items on the development of the Punch List.

CDOT will perform a final field audit of the Work after the Contractor has resolved its final Punch List, and QCA has provided its final certification of the Work. CDOT's final Inspection will be performed prior to Final Acceptance of the Project.

The Contractor shall submit all final Materials documentation including CDOT Form 250 for Acceptance prior to Final Acceptance.

4.9 Deliverable Requirements

4.9.1 Quality Management Plan

The Contractor shall submit the QMP as identified in Section 4.1, Administrative Requirements.

4.9.2 Design Deliverables

The Contractor shall submit all Contract Documents to CDOT for Review or Acceptance, including the QMP, quality documentation, Work plans, design reports and studies, Preliminary Design Documents, Pre-RFC Design Documents, Released for Construction (RFC) Documents, Notice of Design Change (NDC) and Field Design Change (FDC), Final Design Documents, and As-Constructed Documents. Review and Acceptance documents shall be submitted to CDOT a minimum of 14 Days, excluding holidays, prior to Review meetings, unless otherwise specified in the Contract documents. The Review process shall include a comment resolution process for documenting all Review comments and their resolution. The DQM shall provide assurance that all comments have been resolved prior to final submittal of all documents that require CDOT's Acceptance or Approval.

The Contractor shall identify on its Contract Schedules when design deliverables will be submitted to CDOT.

The Contractor shall provide CDOT one set of electronic files of the design deliverables. All deliverables shall be submitted in their native format and *.PDF format.

As-Constructed Documents shall show all changes. All changes shall be noted using CADD. Hand-drawn changes shall not be allowed.

The design deliverables shall be delivered to CDOT, indexed, and clearly marked to indicate the date of issue and stage of development. All design deliverables shall include a title block, consistent with the standard Project drawing format established as part of the QMP, with the following information:

1. Date of issuance and including all prior revision dates.
2. Contract title and number.
3. Subject identification by Contractor drawing or Contract reference.

All RFC, NDC, and FDC Documents shall be sealed by the Engineer(s) in Responsible Charge.

If a design deliverable requires review and approval from a Local Agency or permitting authority, the Contractor shall gain such concurrence prior to submitting the design deliverable to CDOT.

Specifications applicable to a design deliverable shall be submitted with the design deliverable.

The CADD drawings and associated documents shall be organized in a logical manner, have a uniform and consistent appearance, and clearly depict the intent of the design and construction. In addition:

1. The software requirements for all submitted design deliverables shall be OpenRoads Designer 10.12 or newer, in accordance with the current CDOT standards in effect at the time of Proposal submittal by the Contractor.

2. Project files shall be organized and submitted in accordance with CDOT's ProjectWise format.
3. All design deliverables shall be in English units. The Project coordinate system shall comply with the CDOT Survey Manual.
4. The Contractor shall prepare pre RFC, RFC, NDC, FDC, and As-Constructed Documents for the Project that shall include, as applicable, the following:
 - A. Title Sheet.
 - B. Index.
 - C. Standard Plan List.
 - D. Summary of Approximate Quantities.
 - E. Roadway Design Data.
 - F. General Notes.
 - G. Pavement Details.
 - H. Roadway Details.
 - I. Drainage Details.
 - J. Geotechnical Plans.
 - K. Environmental Mitigation, as necessary.
 - L. Permanent Signing Plans.
 - M. Traffic Signal Plans.
 - N. Aesthetic Elements.
 - O. Roadway Typical Sections.
 - P. Roadway Geometric Layout Plans.
 - Q. Roadway Geometric Layout Tables.
 - R. Roadway Plan.
 - S. Roadway Profile.
 - T. Construction Phasing and Traffic Control Plans.
 - U. Intersection Plans.
 - V. Driveway Access Plans.

- W. Pavement Plans.
- X. Drainage Plans.
- Y. Pavement Marking and Signage Plans.
- Z. Utility Plans.
- AA. ITS Plans.
- BB. Landscape and Seeding Plans.
- CC. Grading Plans.
- DD. Lighting Plans.
- EE. Bridge Plans.
- FF. Wall Plans.
- GG. Fencing, Gates, Deer Guards, and Game Ramps Plans.
- HH. Other Details, as needed.
- II. Utility As-Construction Surveys downloaded to CDOT PointMan System by Contractor's Surveyor.
- JJ. Specifications.

The Contractor shall provide one set each of electronic files on compatible electronic media of Utility As-Constructed Documents to CDOT and to the respective Utility Owner(s) for Utility Work constructed by the Contractor, that conform to the Project CADD requirements, except as modified by the specific requirements of the individual Utility Owners. The Contractor shall obtain from each Utility Owner performing its own construction, one set of Utility As-Constructed Documents for their Utility Work and shall show the information on the As-Constructed Documents.

All As-Constructed Documents electronic files shall be submitted in *.dgn and *.pdf format.

All CADD files shall be documented in a tabular format describing the path, file name, and description.

4.9.3 Document and Data Approval

The Contractor shall ensure that all deliverables include a signed and dated certification by the originator of the deliverables and that the deliverable is complete and meets the requirements of the Contract.

4.9.4 Document and Data Changes

The Contractor shall ensure that any changes to Document Deliverables provided to CDOT as revised are in a format that can enable changes to be readily apparent and trackable (e.g., documents use the redline and strikeout method).

4.9.5 Product Data

The Contractor shall submit to CDOT for Acceptance two hard copies of all manufacturers' Warranties, guarantees, instruction sheets, parts lists, and other product data within 20 Days of installation of the items to which they relate. The Contractor shall ensure that the product data cited is organized and indexed in a manner that allows easy retrieval of information.

4.10 Deliverables

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

Table 4-2: Deliverables

Deliverable	Review, Acceptance, or Approval	Schedule
Design Quality Management Plan (DQMP)	Acceptance	Prior to issuance of NTP1
Civil Rights Plan	Acceptance	Prior to issuance of NTP1 and in accordance with Book 2, Section 3
Construction Quality Management Plans (CQMP)	Acceptance	Prior to issuance of NTP2
Quality Management Plan (QMP) (DQMP and CQMP combined)	Acceptance	Prior to issuance of NTP2
QMP revisions	Acceptance	Prior to implementing the modifications
QCA replacement	Approval	Prior to replacement
DQM replacement	Acceptance	Prior to replacement
CQM	Acceptance	Prior to replacement
DCS File Structure	Approval	If the file structure differs from Exhibit 2-B in Book 2, Section 2
Method and format for documenting the CDOT Form 250	Approval	Prior to NTP2
ICQC Test measurements, Test results, and Inspection records	Review	Within 24 hours following Inspection or Test
Quality status reports	Acceptance	Monthly

Request For Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 4 - Quality Management

Deliverable	Review, Acceptance, or Approval	Schedule
Preliminary Design Documents	Review	A minimum of 14 Days, excluding Holidays, prior to the review meeting
Pre-RFC Design Documents	Review	A minimum of 14 Days, excluding Holidays, prior to the review meeting
Released for Construction (RFC) Documents	Acceptance	A minimum of 14 Days, excluding Holidays, prior to the review meeting and prior to construction of the Work element
Revisions to Released for Construction Documents	Acceptance	Prior to construction of the Work element
MHT Drawings	Acceptance	In accordance with Book 2, Section 17
Final Design Documents	Acceptance	After the completion of all design elements, including revisions to address comments on the plans
As-Constructed Documents	Acceptance	Prior to Final Acceptance of the Work
Task force meeting minutes	Review	7 Days after meeting
Meeting minutes for milestone review meetings	Review	7 Days after meeting
Materials Testing and Testing Plan (MTIP)	Acceptance	With each RFC package
Summary of Activity-specific Materials Quantities, to support the MTIP	Acceptance	Monthly on Form 250 with the Quality Status Report
Certificates of Compliance (COC) or Certified Test Reports (CTR) and log	Acceptance	Prior to any Hold Point Inspections and issuance of continuance authorization and with each monthly invoice
Paving quality plan	Acceptance	30 Days prior to paving operations
Nonconformance Report (NCR)	Review	Within 24 hours after the Contractor first becomes aware of the Nonconforming Work

Request For Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 4 - Quality Management

Deliverable	Review, Acceptance, or Approval	Schedule
Nonconformance Work log	Review	Weekly
Final Materials Documentation and CDOT Form 250 Materials Documentation Record	Acceptance	Prior to Final Acceptance
Two hard copies of all manufacturers' warranties, guarantees, instruction sheets, parts lists, and other product data	Acceptance	Within 20 Days of installation of the items to which they relate

5.0 Public information

This Section includes the requirements for the public information Work for the US 160 Elmore's Corner to Dry Creek Build Design-Build Project (Project). This Work shall be completed in accordance with the Contract Documents.

Public Information shall be timely, relevant, and context-sensitive communication and is a critical component of the Project. The **Contractor's Representative (CR)** shall demonstrate a commitment to these values and shall develop a working relationship with the CDOT Public Information Management (PIM) team. This team includes the CDOT Regional Communications Manager (RCM) and the CDOT Public Information Managers. The CDOT PIM delegates may also be assigned to the team. Communications between the teams shall be professional, timely, and accurate. Methods for communication shall include face-to-face, virtual meetings, email, or text.

5.1 Administrative Requirements

5.1.1. Staff Requirements

The Contractor shall provide the name, credentials, and contact information for the selected Contractor Representative (CR) that will collaboratively Work with the CDOT PIM team prior to First Notice to Proceed (NTP1). The CR shall report directly to the Design-Build Project Manager.

The Contractor Representative and any additional contracted staff members shall enhance the CDOT PIM team. The CR's credentials shall be submitted to the CDOT RCM for Review prior to NTP1, the names and resumes of additional members of the communications team, and identify their assigned roles and responsibilities.

The CR shall be responsible for serving as the liaison for communications from the contracted team to the CDOT PIM team during Project construction. The CR and/or a member of the contractor's communications team shall be locally based. The Contractor communications team member shall be available at all times during Project work hours, shall be on call after work hours, and shall be available to respond to emergencies in a timely manner.

The CR shall be housed at the Contractor's Project office throughout construction of the Project and shall have a working knowledge of the Project, the Project Schedule, phasing and traffic operations, Safety Management Plan, daily operations, as well as contact information for Project staff.

5.1.2. Staff Coordination

The CR shall work with the CDOT PIM and shall participate in the Contractor's weekly status meetings and in task force meetings, as described in Book 2, Section 2. At the meetings, the CR shall be prepared to discuss weekly communications issues and work with the CDOT PIM to provide recommendations for public messaging of Project events and updates that may have significant impacts on the general public or surrounding community.

The CR shall maintain all communications with the CDOT PIM regarding all aspects of the Project, public information, and communications related to the Project.

5.1.3. CDOT RCM Responsibilities

The CDOT RCM is responsible for approving the development and dissemination of all Project public information and communications related to the Project vision and Project implementation.

The CDOT RCM will review the information provided by the CDOT PIM in collaboration with the CR regarding Project implementation, such as informing the public about any upcoming maintenance, operations issues, phasing, traffic impacts, major milestones, budget, etc. The CDOT PIM will share any messages and materials with the CR for their review, but the CDOT RCM will have final approval before the information is disseminated.

The overall vision for the Project communication plan includes why the Project is needed, what Work will be done, how the Project will benefit the public, how the Project fits into the community, and how the Project fits into broader transportation plans.

The CDOT RCM will distribute all public information materials per CDOT's processes.

5.1.4. CR Responsibilities

The CR shall be responsible for sharing details about construction Activities, detours, lane closures, ramp closures, lane height and width reductions, access impacts, information resources available, and other Activities that affect the public, residents, and businesses with the CDOT PIM.

The CR shall be responsible for supporting communications related to the operations of the Roadway during Project construction. The CR shall be responsible for submitting information 5 Days prior to the website updates to the CDOT PIM team for Review.

5.1.4.1 Stakeholder Contact List

The CR shall share any contacts they are aware of through their daily Work on the Project with the CDOT PIM team. Through the CR's data-gathering, the CR shall assist CDOT PIM team by sharing information to supplement and update the Project contact database.

5.1.4.2 Community/Business Relations

The Public Information Plan (PIP) will be developed by the CDOT PIM Team with review and input from the CR. The PIP will include community and business relations strategies that communicate Project updates and coping messages. Communication strategies will focus on providing the community and businesses with the information needed to make short-term and long-term decisions about how to cope with the Project construction with as little disruption as possible. Each strategy will be uniquely tailored to the individual Stakeholder group and will identify the location or region of the Stakeholder group(s); what information is needed and when; and tools to be used for dissemination, such as one-on-one meetings; additional research; multilingual communications; regular calls or contact, etc.

Special consideration shall be given to communications related to the specific issues described in the following sections.

5.1.4.2.1 Bicycle, Pedestrian, Mobility, Recreational, and Other Access

The CDOT PIM team, in collaboration with the CR, shall clearly define and communicate to the public and other associated Stakeholder groups the Contractor's plans for maintaining bicycle access, pedestrian access, and recreational access.

5.1.4.2.2 Transit Access

The CDOT PIM team, in collaboration with the CR, shall work with local public transit programs or private companies to clearly define and communicate to the public and other associated Stakeholder groups the Contractor's plans for maintaining access to transit services.

5.1.4.2.3 Access to Local Schools

The CDOT PIM team, in collaboration with the CR, shall work with the public school districts and private schools to define and communicate plans for maintaining bus and vehicle access.

5.1.4.2.4 Access to Businesses

The CDOT PIM team, in collaboration with the CR, shall work with businesses directly impacted by and adjacent to the Project to define and communicate plans for maintaining vehicle access to businesses during business hours.

5.1.4.2.5 Access to Residences

The CDOT PIM team, in collaboration with the CR, shall work with residents and neighborhoods directly impacted by and adjacent to the Project to define and communicate plans for maintaining vehicle access to residences at all times.

5.1.4.2.6 Utilities

In addition to the requirements of Book 2, Section 8, for communicating with the Utility Owners, the CDOT PIM team, in collaboration with the CR, shall communicate the scheduling of Utility Work performed by the Contractor or the Utility Owner and its impacts including but not limited to traffic, disruption to service, access to individual property owners, and the traveling public.

5.1.4.2.7 Noise

The CR shall communicate with the CDOT PIM team the scheduling of high noise events, particularly noise caused by potential nighttime Work, to individual property owners and impacted communities.

5.1.5. Media Relations

During the Project, the CR shall immediately notify the CDOT PIM team of any and all media requests and of any situations involving the media. The CDOT RCM will handle all media inquiries and media requests, but will require the CDOT PIM Team and the CR support to gather response information.

The CDOT PIM team, working with the CR, shall arrange and coordinate for the availability of project managers, supervisors, and other project area experts to assist in responding to media requests. The CR shall assist in requests for media Site visits and adhere to media deadlines.

5.1.5.1 Contact Tracking

The CDOT PIM will enter inquiries, complaints, and comments received through the telephone hotline, email, public meetings, website, and other outreach activities, along with follow-up action taken. All inquiries and complaints will be followed up with a return phone call or email from the PIM within the time frames indicated in Table 5-1. The CDOT PIM will utilize CDOT's "Dialog", a web-based contact and issue tracking database, as outlined in Section 5-2. The CDOT PIM will generate a report from "Dialog" and submit it to the Project Director and the CDOT RCM for review each week. If "Dialog"

reports are unavailable, the CDOT PIM will provide the report in an alternative format, such as Microsoft Excel spreadsheet.

5.1.5.2 Photos/Videos

The Contractor shall be responsible for the photos and videos and aerial videos required by Book 2, Section 2. The CDOT PIM will take and submit digital photos/videos of the Project Work for use in reports to agencies, social media, and collateral materials. A cell phone camera is permitted. Photographs/videos may include but not limited to traffic control, paving, slope repair, erosion control, Bridge Work, and other key areas of Work identified by the Contractor or the CDOT RCM. A minimum of 5 photographs/videos will be submitted each month to the CDOT RCM for their use.

5.1.5.3 Public Meetings and Special Events

The CR or their representative from the contracted team shall participate in public meetings in collaboration with the CDOT PIM team at Project milestones, as follows:

1. Project Kick-off at least 8 weeks prior to Construction
2. One meeting at least 2 weeks prior to Project construction start.
3. One meeting at seasonal shutdown or at seasonal start-up.
4. One meeting or special event at Project completion.

Additional meeting(s) may be held at the Contractor's discretion. It is anticipated that CDOT may require one additional public meeting.

The meetings will be an open-house format. Participants shall include Key Personnel from the Contractor and CDOT. Meetings will be held locally at a convenient location that will accommodate attendance by local elected officials, city/county staff, other surrounding local agencies, businesses, residents, and the traveling public.

The CDOT PIM will publicize the meeting through media advisories and press releases; website; emails; advertisements or inserts in local newspapers or newsletters; flyers; mailers; and social media.

The focus of the meetings will be to inform attendees of Project plans, schedules, and updates and to provide instructions on how to receive information or and digital/online newsletters (if any) about the Project, via an email address, or utilizing CDOT COTrip Travel Alerts. The CDOT PIM will be responsible for preparing Project exhibits, displays and presentations for the public meetings that communicate information on Project progress, phasing, traffic impacts, and other Project information of interest to the public, but will require information, usable graphics, or the like from the Contractor.

The CDOT PIM will respond to questions (that cannot be answered at the meeting) within 1 week of the meeting and will be submitted to the CDOT RCM for review. The CR shall be required to support the response.

5.1.5.4 Stakeholder Group Meetings

The CR shall, in coordination with the CDOT PIM team, when requested, attend community and Stakeholder group meetings. This may include city council meetings, county planning or commissioner meetings, business association or neighborhood meetings, at which the Project may be discussed or a presentation is requested.

5.1.5.5 Project Tours

The CR, when requested, participates in requests for Project tours from media, businesses, government officials, or other public groups in collaboration with the CDOT PIM team. The CR shall arrange for representatives of the Contractor team to participate in tours, when possible.

5.1.5.6 Lane Closure Reports(LCR)

The CR or contractor project team representative shall share pertinent Lane Closure information at the weekly Project meeting with the CDOT PIM team for the following week's activities (Monday-Saturday) for Acceptance. The Accepted LCR shall be updated in the CDOT LaneAware system by the CDOT PIM team. The final traffic impacts, being implemented by the Contractor. This information shall be provided to the CDOT PIM team by 10:30 AM each Thursday during Project construction.

5.1.5.7 Press Releases and Traffic Advisories

The CR shall review, as requested, press releases or traffic advisories that may contain information about the Project schedule, Project progress, construction information, and address specific issues as they arise. The releases and advisories will include CDOT's logo, the Project logo, or both. The releases and advisories may also contain the Contractor's logo, if desired. The CDOT RCM will distribute the releases to the media.

5.1.5.8 Travel Alerts

The CR shall provide a weekly travel alert to be distributed by the CDOT PIM team via CDOT's alert messaging system. The alert shall include mainline and side road closures, ramp closures, lane height and width restrictions, and any activity that may impact the traveling public. The alert shall be sent for Approval to the CDOT PIM team at least 1 Day prior to distribution. For more immediate Road Work, the CR shall contact the CDOT PIM team for notification to the Colorado Traffic Management Center (CTMC) with information for permanent variable message sign (VMS) boards, website alerts, and social media posts. The CDOT PIM team will coordinate any messaging required on portable VMS boards.

5.1.5.9 Project Flyers

At least 14 Days prior to the start of construction and at key construction milestones, the CR shall review flyers created by the CDOT PIM team to be delivered to each property owner potentially impacted by the construction, including properties with direct access to the Highway, nearby businesses, schools, homes, churches, or others who rely on regular access in the construction zone.

The flyer will include the Project start and anticipated end date, location, and description of the Work, traffic impacts, and hours/days of operation, the public information telephone hotline, email address, website URL, site map(s), and a construction safety message. The flyer will include CDOT's logo, the Project logo, or both. The flyer may also contain the Contractor's logo, if desired.

Additional flyers may be required throughout the Project, as directed by the CDOT RCM, the CDOT PIM team, or the CR. Flyers shall be submitted to the CDOT RCM for final Approval 1 week prior to distribution.

5.1.5.10 Construction Signage

The Design-Build Project Manager or a designated delegate shall ensure signs are erected at the Highway approaches to the Project limits (US 160 east and west of the Project limits) a minimum of 1 week prior to the start of construction. The signs shall include the Project description, name of the

Project, mileposts, estimated dates of when the Project will commence and end, the Contractor's name, and the telephone hotline number. Sign content shall be submitted to the CDOT RCM for Approval 1 week prior to the signs being erected.

5.1.6. Response Protocols

5.1.6.1 Response Protocol to CDOT and the Public

The CDOT PIM team will conform to Table 5-1 in responding to Stakeholders and the general public. As required by the CDOT PIM, the CR shall provide input the same day or as required for each inquiry to meet the response times specified. The CR shall support the CDOT PIM with the response to meet specified timelines.

Table 5-1: Response Protocol

Type of Communication	Timing of Response
Telephone Hotline Calls	Voice messages will be checked throughout the day by the PIM. The CR shall collaborate on necessary responses to hotline inquiries. Respond on the same day (initial call), or within 24 hours if the initial call occurs outside normal working hours, including weekends
Email	Same day (within 2 business Days for high-volume situations)
Call from CDOT Staff	Same day or as soon as possible
Website Inquiries	Same day (within 2 business Days for high-volume situations)
Public Meeting Inquiries	Within 1 week of the meeting

5.1.6.2 Public Notification Protocol

The CDOT PIM will conform to Table 5-2 in providing notifications to the public. The CR shall notify the CDOT PIM with information pertaining to the notifications listed in Table 5-2, 1 week prior to the required proactive notifications to allow for drafting of the Notice. The CR shall provide final details 1 Day before the required Notice.

Table 5-2: Public Notification Protocol

Proactive Notification Element	Timing
Major Project Activities (full road closures, detours, and major traffic impacts lasting 7 Days or longer)	14 Days prior to the beginning of Activity in any area of the Project
Minor Project Activities (lane shifts, short intermittent closures lasting 7 Days or less)	7 Days prior to the beginning of Activity
Other remaining types of construction Activities in any area of the Project, including: - Night Work - Utilities - Change of business/residential access	7 Days prior to the beginning of Activity
Other construction updates (e.g., cancellation of planned closures, additional lane closures, closure removals, major traffic shifts, etc.) that directly impact the public	As soon as known, within at least 24 hours of Activity

5.2 Deliverables

The Contractor and/or the CDOT PIM shall submit the following to CDOT for Review, Acceptance, or Approval:

Table 5-3: Deliverables

Deliverable	Review, Acceptance, or Approval	Schedule
Contractor Representative (CR), company name, credentials, and contact information	Review	Prior to NTP1 (CR Only)
Contact tracking	review	Weekly (CDOT PIM Only)
Responses to public questions	review	Within 1 week after meeting (CDOT PIM Only in collaboration with the CR)
Lane Closure Reports (LCR)	Acceptance	Weekly, on Thursday by 10:30 AM
Travel alerts	Approval	At least 1 Day prior to distribution
Project flyers	Approval	1 week prior to distribution
Construction signage content	Approval	A minimum of 1 week prior to the signs being erected
Information for website updates	Review	5 Days prior to submitting to CDOT PIM Team (CR Only)

6.0 Environmental Requirements

This Section includes the Environmental Requirements Work for the US 160 Elmore's Corner to Dry Creek Design-Build Project (Project). This Work shall be completed in accordance with the Contract Documents.

6.1 Administrative Requirements

6.1.1. Standards

The Contractor shall design and construct the Project in accordance with the Contract, including the Project Special Provisions and Standard Special Provisions in Book 2, Section 21, requirements of the standards in the documents listed in Table 6-1 and those referenced in Book 3. The Contractor shall use the latest adopted edition at the time of the Proposal Due Date.

Table 6-1: Standards

Author or Agency	Title
Colorado Department of Transportation (CDOT)	MS4 Construction Program Manual
CDOT	Standard Specifications for Road and Bridge Construction (Standard Specifications)
CDOT	M&S Standards
CDOT	Noise Analysis and Abatement Guidelines
CDOT	Roadway Design Guide
CDOT	2025 NEPA Manual
Federal Highway Administration (FHWA)	FHWA-CFL/TD-11-003 Wildlife Crossing Structure Handbook

6.1.2. Environmental Laws, Regulations, and Governmental Approvals

The Contractor shall comply with all requirements of all applicable Local, State, and Federal Environmental Laws, Regulations, and Governmental Approvals issued thereunder, whether obtained by CDOT or the Contractor.

The following Federal Highway Administration (FHWA) National Environmental Policy Act (NEPA) approvals are contained in the Reference Documents:

1. US Highway 160 from Durango to Bayfield La Plata County, Colorado FEIS/ROD (2006).
2. US Highway 160 from Durango to Bayfield La Plata County, Colorado FEIS/ROD Reevaluation (June 2025).

The mitigation commitments identified in these NEPA documents have been consolidated, and in some instances revised, as part of a Reevaluation. The mitigation measures listed in the Environmental Mitigation Tracking Form in Exhibit 6-A supersede the mitigation measures listed in the NEPA documents listed above.

The Contractor shall be responsible for implementing required control measures, minimization of environmental impacts, and mitigation measures to minimize environmental harm from the Project. The Contractor shall minimize both environmental impacts and impacts to adjacent property owners as

design decisions are made in task force meetings or milestone review meetings and provide documentation of the decisions to CDOT as defined in Book 2, Section 4. Any RFC package submitted for Approval shall include the Environmental Tracking Form (Exhibit 6-A) that illustrates all mitigation requirements that are to be implemented with the construction.

6.1.3. Submittals

All submittals shall be prepared, reviewed, and submitted in accordance with the requirements set forth in Book 2, Section 4.

6.2 Environmental Management

6.2.1. Environmental Compliance Manager

The Contractor shall hire an Environmental Compliance Manager (ECM) on the Project who shall report directly to the Design Build Project Manager. The ECM shall have experience with environmental documentation and implementing requirements that result from Environmental Impact Statements, Reevaluations, and all associated documents.

The ECM shall perform all of the following:

1. Monitor and ensure full Project compliance with all Environmental Laws, regulations, and Governmental Approvals, including Permits, design, construction, Technical Criteria, and operations.
2. Ensure the implementation of all the environmental, design, construction, and operational commitments, and all conditions necessary to achieve the environmental approvals for the Project.
3. Perform formal reviews of changes, design changes, and field design changes to confirm compliance with all Environmental Requirements.
4. Serve as the primary liaison between the Contractor and CDOT on environmental issues during design and construction.
5. Be the lead responder to any noncompliance findings issued by CDOT, the Quality Manager, or the ECM in the case of self-reporting, for the construction Work.
6. Respond to all noncompliance to the Environmental Requirements regardless of severity.
7. Shall conduct final QA/QC reviews on all environmental submittals prior to submittal to CDOT.
8. Have the authority to stop construction if Work Activities violate Environmental Laws, regulations, or Permits; or if they potentially jeopardize human health and safety.
9. Implement quality improvement strategies to reduce the number and severity of noncompliance to the Environmental Requirements.
10. Plan and conduct the Environmental Compliance and Mitigation Training Program (ECMTP).
11. Lead a field review with CDOT to review the Project and environmental issues every month during the construction period.
12. Write and submit any updates to the Environmental Compliance Work Plan (ECWP) for Acceptance.

13. Provide a Mitigation Completion Report that documents and certifies the completion of all Environmental Requirements to CDOT for Acceptance prior to Final Acceptance.

6.3 Environmental Compliance and Mitigation Training Program

The Contractor's ECM shall develop an Environmental Compliance and Mitigation Training Program (ECMTP) for Contractor and Subcontractor personnel who will be on Site to perform Work. The ECM shall submit the ECMTP for Acceptance prior to the issuance of NTP2. Once the Training Program has been Accepted, the Contractor shall not allow any personnel to begin Work on the Site without completing the training.

The Contractor shall keep records of the number of ECMTP training sessions held, the personnel who have completed the ECMTP, and report this information monthly in the Environmental Compliance Status Reports (ECSR).

The ECMTP shall cover the Environmental Requirements for the Project and train personnel on how to identify environmental concerns in the field and comply with the Environmental Requirements. The ECMTP shall include all of the following elements, including all of the associated Permits and Environmental Requirements:

1. Water quality requirements, including those for stormwater.
2. Wetlands and waters of the U.S.
3. Maintaining approved limits of disturbance.
4. Avoidance and minimization of impact to waterways and stormwater conveyances.
5. Seasonal Work restrictions - trees, waterways, threatened and endangered species, and migratory birds.
6. Pumping and dewatering operations.
7. Discovery of Archaeological material or human remains.
8. Discovery of paleontological resources.
9. Hazardous substances.
10. Historic property protection requirements.
11. Construction noise mitigation.
12. Dust and construction emissions mitigation.
13. Maintaining a clean Work Site.
14. Concrete and asphalt waste material management.
15. Spill prevention, response, and cleanup.
16. Impacts and consequences for deviating from approved operating procedures.
17. Additional topics as needed to maintain compliance with the Environmental Requirements.
18. Environmental compliance responsibilities of production supervisors and inspectors.

The ECM shall revise the ECMTP regularly to reflect the most current policies, rules, and regulations. The Contractor shall provide updates to the ECMTP to CDOT for Acceptance 30 Days after the end of each year.

6.4 Environmental Compliance Documentation

6.4.1. Environmental Compliance Work Plans

The Contractor shall prepare an Environmental Compliance Work Plan (ECWP) for the Project that specifically identifies all the Environmental Requirements for compliance on the Project and the Contractor's approach to ensure compliance.

6.4.1.1. Environmental Compliance Work Plan

The first ECWP shall be submitted to CDOT for Approval within 30 Days after NTP1 and prior to NTP2. At a minimum, the first ECWP shall include discussion on the following:

1. Environmental Compliance Team:

Provide each team member's name, title, contact information, and reporting structure.

Provide each team member's description of role, responsibilities, education, certifications, relevant work experience, and other qualifications.

2. Communication Protocol:

Describe and provide an illustrative communication tree for environmental compliance team coordination responsibilities, including the following:

- i. Design coordination.
- ii. Construction Inspection and coordination.
- iii. Owner-controlled QA/QC coordination.
- iv. Environmental permitting and approvals coordination.

This should demonstrate how each member of the environmental compliance team is integrated into the overall process and clarify communication protocol with the Contractor's team members, CDOT staff, Federal, State, and Local Agency representatives, and representatives of other relevant organizations.

3. Management Plans:

Provide a list of plans incorporated by reference, including submittal schedule and approval process.

4. Environmental Information on Plans:

Describe what environmental information will be included in the plan sets and/or map book, and at what levels of design.

5. Environmental Compliance Plan:

Identify and document all environmental requirements:

- i. Contract requirements.
- ii. NEPA document requirements.
- iii. Permit requirements.

Identify the applicable locations and phases for each Environmental Requirement.

For each Environmental Requirement applicable to design and preconstruction Activities, describe means and methods to achieve compliance.

For all other Environmental Requirements (those applicable to construction or post-construction Activities), provide a list of alternative solutions to achieve compliance. This list of alternative solutions shall communicate standard practices, typical approaches, or options the Contractor is considering for implementation on the Project.

Describe how noncompliance issues, regardless of issuer, will be documented, reported, and tracked to resolution. This shall be consistent with the communication protocol and provide additional detail, including response times, reporting and tracking tools to be used, and documentation to be provided.

Describe the purpose of the environmental team field reviews.

Provide an outline of how the 90-Day Environmental Compliance Work Plans (ECWP) will address Site-specific construction Activities.

6. Environmental Compliance Tracking:

Identify how compliance with each Environmental Requirement will be achieved:

- i. Verification method (design review, field review, etc.).
- ii. Timing/frequency of verification.
- iii. Documentation of compliance.

Describe when and how compliance documentation will be made available to CDOT for review.

Provide an outline for the ECSR

6.4.1.2. 90-Day Environmental Compliance Work Plan

The first 90-Day ECWP shall be submitted to CDOT for Approval no later than 30 Days prior to the start of NTP2. Approval of the 90-Day ECWP is a condition of issuance of NTP2. Once an ECWP has been Approved, the Contractor shall update the ECWP and submit for Acceptance every 90 Days until Final Acceptance. The 90-Day ECWP shall define how the Environmental Requirements shall be met for construction Activities planned for that 90-day period.

At a minimum, the 90-Day ECWP shall include the following:

1. Describe construction Activities for the next 90-Day period and how environmental compliance will be achieved.
2. Specify which options identified in the first ECWP will be applied to each Activity for compliance.
3. Provide means and methods to accommodate design changes/additions to previously submitted plans.
4. Provide key features map of environmental resources within the Construction Area, including permitted impacts to resources.

6.4.2. Environmental Compliance Work Plan Amendment

The Contractor shall monitor the effectiveness of the ECWP and resubmit the ECWP annually for Acceptance upon the anniversary of the first ECWP's Approval by CDOT. The plan should, at a minimum, be updated should any of the following conditions exist:

1. A plan or procedure no longer adequately addresses the matters it was originally intended to address.
2. A plan or procedure does not comply with the Environmental Requirements.
3. An audit by the Contractor or CDOT identifies a deficiency in the ECWP, triggering an update.
4. Organizational structure changes.
5. The Contractor is undertaking, or about to undertake, Activities that are not covered within the current ECWP.

6.4.3. Final Environmental Compliance Work Plan

A Final ECWP shall be submitted to CDOT for Approval as a condition for Final Acceptance of the Project. This submittal is the ECWP as it exists at the time of Project Completion.

6.4.4. Environmental Compliance Status Reports (ECSR)

The Contractor shall regularly report on the status of Activities undertaken in accordance with the Environmental Requirements, during the period beginning with NTP2 through Project Completion. The ECM shall submit an ECSR monthly to CDOT for Acceptance, within 21 Days following the end of the reporting period (Monthly).

The ECSR shall:

1. Include the current status of compliance with the Environmental Requirements as summarized using Exhibit 6-A, Environmental Mitigation Tracking Form.
2. Document any pertinent environmental issues and include a narrative of the compliance actions (i.e., avoidance, minimization, and mitigation) that have occurred during the reporting period.
3. Include a summary of any Stakeholder communications and Governmental communications that have occurred during the reporting period.
4. Include a summary that lists the plan sets and submittals that have undergone environmental cross-disciplinary review since the previous reporting period.
5. Include the summaries from field reviews performed during the reporting period.
6. Include dated photographs documenting environmental compliance, noncompliance, and Work Activities.
7. Document Activities performed by environmental professionals.
8. Include any audit information documenting the Environmental Compliance efforts within the reporting period.
9. Include all Activities related to the ECMP, including documentation of the participants in attendance.

10. Include an action and decision log for the environmental task force as defined in Book 2, Section 4.

All narratives shall include enough detail to fully document the environmental Activities. The ECSR shall clearly identify, in a cover sheet, what changes were made in the plan update in order to expedite CDOT review.

6.5 Environmental Resources Requirements

6.5.1. Air Quality

The Contractor shall prepare and submit a Construction Air Quality Plan and Fugitive Dust Control Plan to CDOT for Acceptance prior to NTP2. The Contractor shall obtain an Air Pollution Emissions Notice (APEN), including the Fugitive Dust Control Plan, from the Colorado Department of Public Health and Environment (CDPHE) Air Pollution Control Division.

All non-road diesel-powered Equipment shall use ultra-low sulfur diesel fuel. The Contractor shall minimize excessive idling of inactive Equipment and other vehicles. If construction Equipment is creating excessive air quality emissions that have a potential to affect air quality for operators or persons working/living in the area, Equipment shall be taken out of operation until properly serviced, repaired, or replaced. The Contractor shall also locate stationary emissions-producing Equipment with consideration of public health and environment, and staging areas shall not be located within 200 feet of residences.

CDOT will be performing air quality monitoring during construction. Prior to the start of construction, the Contractor shall provide space and access for the monitor installation. During construction, the Contractor shall continue to implement the Air Quality and Dust Control Plans, including a watering log. The Contractor shall follow the Project Special Revision of 107 - Legal Relations and Responsibility to Public.

6.5.2. Noise

6.5.2.1. Noise Technical Report

No permanent noise abatement mitigation measures (noise barriers) have been determined for the Project based on the design provided in the Reference Documents. If the Contractor's design varies from the design in the Reference Documents in a manner that results in the need for additional or revised noise mitigation measures, the Contractor shall be responsible for providing the necessary mitigation measures and shall obtain all required Approvals and Permits associated with the Work.

The Contractor shall perform a noise analysis based on its final design if design changes from the reference design warrant it. Design changes that could trigger a noise analysis include, but are not limited to, the following:

1. Change in vertical profile of 5 feet or more.
2. Change in horizontal alignment that halves horizontal distance between the nearest travel lane and the existing sensitive receptors.

Preliminary Noise Technical Reports shall document results of the noise analysis and be submitted for CDOT for Review prior to completing the Benefited Receptor Preference Survey. For information, the noise technical reports for the US 160 from Durango to Bayfield La Plata County, Colorado FEIS/ROD (2006) are provided in the Reference Documents.

All noise analysis shall be completed in accordance with the standards and procedures of the applicable CDOT Noise Analysis and Abatement Guidelines.

The Noise Technical Report shall determine and document the noise effects of any changes to the vertical and horizontal alignment, if they exceed the changes described above, from the Reference Documents. The noise analysis and Noise Technical Report shall include a detailed description of the locations where the horizontal and vertical Roadway elevations have changed from the Reference Drawings. The noise analysis and Noise Technical Report shall determine if any new receptors that have become eligible for noise abatement due to geometrical Roadway changes or changes that would affect line of sight between the noise source and the receptor via design. If any new receptors have become eligible for noise abatement because of changes in the vertical or horizontal alignment, the Contractor shall include that information in the analysis for recommended noise abatement and Noise Technical Report. The Contractor shall ensure proposed mitigation measures are consistent with mitigation standards identified in the Environmental Mitigation Tracking Form in Exhibit 6-A and State and Federal guidelines.

The Contractor shall submit documentation with the noise analysis and Noise Technical Report verifying the analysis was performed by a qualified individual with expertise in the field of highway noise analysis in Colorado. If additional noise abatement is required because of Contractor-initiated changes to the vertical or horizontal alignment, all costs for the additional noise abatement shall be included in the Upset Amount (UA).

6.5.2.2. New Noise Abatement

The following Reference Documents proposed no new noise abatement within the Project limits:

1. US Highway 160 from Durango to Bayfield La Plata County, Colorado FEIS/ROD (2006)
2. US Highway 160 from Durango to Bayfield La Plata County, Colorado Reevaluation (June 2025)

If final design of the Project results in the requirement for noise abatement infrastructure, the Contractor shall provide this infrastructure to meet the requirements of CDOT and FHWA guidelines. Additional new noise abatement analysis shall be required if changes to the final vertical or horizontal alignment, or any new Type I action, trigger eligibility as referenced in the noise analysis and Noise Technical Reports referenced above. New noise abatement infrastructure requirements triggered by changes to the Roadway geometry or surrounding geometries between the noise source and receptors shall be the responsibility of the Contractor.

The Contractor shall submit a Preliminary Noise Technical Report that contains the location and design of the proposed noise abatement in the affected area to CDOT for Review. CDOT Review of the Preliminary Noise Technical Report is required before the Benefited Receptor Preference Survey can be completed.

When the Preliminary Noise Technical Report has been Reviewed, the Contractor shall conduct the Benefited Receptor Preference Survey, as described in the current CDOT Noise Analysis and Abatement Guidelines. The Contractor shall provide all material necessary to conduct the survey, including exhibits, flyers, door hangers, ballots, and return mail envelopes. The Contractor shall conduct a public meeting on the proposed noise abatement design. The Contractor shall allow CDOT the opportunity for ongoing over-the-shoulder review of all planning Activities associated with the Benefited Receptor Preference Survey. The Contractor shall submit planning Activities of the Benefited Receptor Preference Survey for Acceptance at least 14 Days before initiating the survey, including the

geographic limits of the survey, procedures for conducting the survey, procedures for analyzing the results, and printed material and other media to be used for the survey.

After the Benefited Receptor Preference Survey is completed, a final Noise Technical Report shall be completed to document the final design noise analysis, final geometry, and details of the noise barriers. This report shall be submitted to CDOT for Acceptance as part of the RFC Documents submittal.

Noise abatement structures shall be designed and constructed in accordance with Chapter 18 of CDOT's Roadway Design Guide. Barriers shall be built without open joints or gaps. Joints between noise barrier elements shall be minimized. Where joints are necessary, they shall be designed in such a way that no light can pass through them.

Proposed noise walls, if required, shall be placed in locations that will accommodate the Project. Noise abatement structures shall be constructed to the Structural and Aesthetic requirements in Book 2, Section 16.

6.5.2.3. Construction Noise and Vibration

The Contractor shall comply with all applicable La Plata County noise ordinances and regulations, unless the Contractor first secures a variance. The Contractor shall acquire the variance prior to the start of any associated construction Activities and be solely responsible for compliance with the Permit requirements.

Prior to the start of construction, the Contractor shall prepare and submit a Noise and Vibration Mitigation Plan for Acceptance to CDOT prior to NTP2. The Noise and Vibration Mitigation Plan shall outline allowable daytime and allowable nighttime Work, projected noise levels, and locations and types of noise and vibration abatement measures for the associated construction Activities.

6.5.3. Cultural/Historical Resources, Archaeological Resources, and Historic Section 4(f) Resources

All areas of existing ROW have been surveyed, and the Project, as described in Book 2, Section 1, requires no further survey for cultural resources. If the area of construction disturbance increases in culturally sensitive areas, the ultimate extent of construction shall be submitted for Approval. If modifications to the Project cause new impacts and/or require mitigation. The Contractor shall be responsible for coordinating the new impacts and/or required mitigation with CDOT to obtain the State Historic Preservation Office (SHPO) approval. The cost of the new impacts and/or required mitigation shall be included in the UA.

The Contractor shall notify CDOT of any previously unidentified historic, eligible for listing on the National Register of Historic Places, or cultural resources encountered or unearthed during construction. Upon discovery of any historic, Paleontological, or Archaeological resources, the Contractor shall immediately cease Work in the vicinity of the discovery, fence off the area, and notify the CDOT Environmental Manager. CDOT will determine the resource mitigation requirements the Contractor shall implement. The Contractor shall not resume Work in the area until receiving formal notification from CDOT allowing Work to recommence.

The Contractor shall clearly delineate environmentally sensitive areas on all RFC Documents; these areas will be shown as "No Parking and No Staging Areas." This includes areas located outside the

limits of disturbance, as well as areas within the construction limits that require construction monitoring.

The US 550 North Cut area is known to contain significant Ancestral Puebloan archaeological materials, and possibly human remains. If the Contractor elects to use this area as a borrow site, a qualified Archaeological Monitor shall be present for the initial phase of ground disturbance during construction within the project area. The Archaeological Monitor and CDOT Senior Staff Archaeologist are authorized representatives of CDOT in the absence of the Engineer as it pertains to archaeological materials and, as such, are authorized to direct the Contractor to avoid significant cultural remains.

The Archaeological Monitor must be a current 'Archeological Survey/Testing' permit holder through the Colorado State Historic Preservation Office at History Colorado.
<https://www.historycolorado.org/archaeology-paleontology-permits> and for specific plan holders see the following link [Permit Holders 2026-02-06.xlsx](#)

If surface or subsurface archaeological materials—including but not limited to flaked stone or bone implements, pottery, architectural features, and/or human remains—are exposed in the presence (or absence) of an Archaeological Monitor, all work in the vicinity of the find shall stop and the Engineer shall be notified. Although there is a high likelihood the project will encounter archaeological artifacts within the top five (5) feet of excavation, there is a low probability those materials will be significant enough to require temporary avoidance. The Archaeological Monitor will work with the Contractor to avoid unnecessary work interruptions. Significance will be determined by the Archaeological Monitor in consultation with the CDOT Senior Archaeologist.

In the event potentially significant archaeological materials are encountered, the Engineer will immediately notify the CDOT Senior Archaeologist of the discovery. In consultation with the Archaeological Monitor (if present) and CDOT Archaeologist, the Engineer will ensure that the area of the find is surrounded with temporary fencing until the appropriate analysis and excavation, if required, is complete. The Contractor shall provide, install and remove the temporary fence at the direction of the Engineer. The area to be avoided will generally measure no more than 20x20 meters, and the issue will typically be resolved in less than 14 calendar days. No work will be allowed in proximity to the discovered materials. However, construction may proceed outside the area(s) of avoidance. The contractor should anticipate minor impacts to the earthwork and clearing schedule as a result of "no work area" avoidance.

Overall construction schedule will not be impacted, and the contractor will not be required to provide equipment and/or assistance related to an archaeological discovery. The Senior Archaeologist will provide the Engineer with clearance to proceed when all necessary evaluation and mitigation actions have been completed. The final disposition of all archaeological materials will be determined and facilitated by CDOT.

In addition, if the Contractor elects to use the BLM road to access the North Cut a Special Use Permit shall be obtained from the BLM. CDOT will assist with the Permit application, however, it can take 2-3 months to be obtained.

6.5.4. Paleontology

All areas of existing ROW have been surveyed, and the Project area is primarily underlain by the Paleocene Animas Formation. A Paleontological monitor will be required during excavation into the Animas Formation. The Contractor shall provide a qualified and permitted paleontological monitor on site during excavation into the Animas Formation for the widenings from Mile Marker 94 to the eastern

limit of the Project. A list of paleontological consultants with current State of Colorado permits will be provided, and their permits must be confirmed prior to construction.

The monitor will be required to be on site to observe the excavation of Animas Formation bedrock and may request temporary pauses in excavation production in order to collect newly exposed fossils. Monitoring and sampling will be conducted in conjunction with and during active excavation; any requested pauses in excavation are expected to be very brief and are primarily for the monitor's safety when crossing the path of currently active equipment. The monitor should attend appropriate site-specific safety training and will use appropriate PPE.

Paleontological monitors shall not be excluded from any construction area except in the interest of safety; they should not be limited to areas of known paleontological sensitivity. The monitor may decide at their discretion to reduce the level of monitoring effort if the planned excavation areas show lower than anticipated paleontological sensitivity upon ground disturbance. If fossil resources are uncovered in an area that is not being actively monitored at the time, Work in the immediate area of the find should stop, and either the usual monitor or the CDOT Staff Paleontologist contacted as soon as possible to evaluate the discovery before proceeding.

The Contractor shall provide RFC Documents to the CDOT paleontologist at least 14 Days prior to associated construction Activities to determine the extent of impact beyond (if any) areas previously surveyed. If modifications to the Project cause new impacts and/or require mitigation, the Contractor shall be responsible for coordinating the new impacts and/or required mitigation with CDOT, who will coordinate with the State Historic Preservation Office (SHPO) for approval. The cost of the new impacts and/or required mitigation shall be included in the Upset Amount (UA).

If paleontological resources are uncovered during Project construction, the Contractor shall immediately notify CDOT paleontological staff by calling the Cultural Resource Program Manager at 303-757-9631 and follow procedures in Section 107.23 of the CDOT Standard Specifications.

6.5.5. Trails, Parks, and Recreation

These resources will not be impacted or require mitigation by the Project. If the Contractor causes impact to these environmental resources, the Contractor shall be responsible for the Work needed to obtain clearance from CDOT, any mitigation required as a result of the impact, and any Permits necessary to complete the Work.

Land and Water Conservation Fund (LWCF) and Section (4f) properties are not present within the Project limits, and impacts to recreational resources are not anticipated as part of this Project. The Bureau of Land Management property is not considered a recreational property, as there are no public access or trails within the property.

6.5.6. Vegetation

6.5.6.1. Disturbance Areas

The Contractor shall reseed temporary disturbance areas and protect using appropriate control measures to avoid additional disturbance to existing vegetation. See Book 2, Section 18, for the seeding and all vegetation requirements.

6.5.6.2. Temporary Construction Access Plan

The Contractor shall provide a Temporary Construction Access Plan for CDOT Approval at least 14 Days prior to NTP2. The development of the plan shall include a Site visit with the CDOT Environmental Manager, who will provide direction on what resources shall be avoided. The Contractor shall comply with the requirements of Book 2, Section 18. The Contractor shall notify CDOT of the Site visit 2 weeks prior to the date of the Site visit.

6.5.7. Wildlife

The proposed Project will improve motorist safety in the corridor through the construction and installation of several complementary wildlife components that cumulatively should reduce wildlife-vehicle crashes while promoting Roadway permeability and habitat connectivity for wildlife. The design and installation of large wildlife underpasses, terrestrial crossings under bridges, small/medium mammal crossings, game ramps, deer guards, and exclusion fencing, at a minimum, shall include the following:

1. Game escape ramps shall be placed at intervals of 4 ramps total per mile, 2 ramps each side of US 160, and per Contract document escape ramp detail in Book 4. The locations of game ramps shall be submitted to CDOT for Approval prior to the RFC Documents Submittal. Perpendicular fence on the game ramp shall not be required as shown in Contract document detail.
2. Requirements for design and location of game ramps shall include the following: ROW impacts, clear zone considerations, long-term maintenance access, egress, and ingress considerations, stabilization of ramp topsoil, ramp height, ramp slope, flat landings, and locations that are not developed (i.e., commercial or fenced residential properties). Preferred locations shall be sited near likely spots for large game breeches, including locations at either side of the crossing structures. Small mammal crossings shall be located from MP 91.9 to 97.1, on average, every 750 feet, and shall be sized between 3 feet and 5 feet in diameter, with an average of 4 feet in diameter in total along the Project. The locations of small mammal crossings shall be determined in consultation with a Wildlife Biologist and be submitted to CDOT for Approval prior to RFC Documents submittal. The Contractor shall review the Reference Document 'US 160 Elmore's Corner FIR-level Wildlife Mitigation Review', which describes the preferred small mammal crossing locations. Distance between these crossings will be influenced by topography, adjacent habitats, proximity to large game crossings, nearby development, and impacts to the Roadway elevations. Preliminary locations for small- and medium-mammal crossings from MP 91.63 to MP 93.97 were sited and sized by a qualified wildlife biologist in coordination with CDOT in the reference design. A small-mammal crossing is required at MP 93.73 for Endangered Species Act compliance.
3. Requirements for design and location of small mammal crossing ramps shall include the following: natural substrate floor, dry location that is not intended to convey Roadway or storm drainage (they shall not be placed in intermittent or perennial drainages), ROW impacts, clear zone considerations, orientation perpendicular to Roadway to allow for shortest crossing possible, consideration of headwalls to promote shortest crossing possible as well as enhance visibility to wildlife; avoidance of constructed berms, vertical barriers, or riprap at crossing entrances, and long-term maintenance access. The wildlife fencing shall be continuous and cross above the opening of the crossing so the crossing terminates within ROW and is not obscured by fencing. Flared end sections will not be allowed.
4. The Mesa wildlife underpass shall require a minimum opening of 32 feet wide by 12 feet tall at and shall have a natural substrate bottom for a minimum of 1 foot in depth.

5. The Valley wildlife underpass shall require a minimum opening of 32 feet wide by 13 feet tall at and shall have a natural substrate bottom for a minimum of 1 foot in depth.
6. The Florida River Bridge shall be in accordance with Book 2, Section 16.
7. The wildlife underpasses shall be located as prescribed in Book 2, Section 14 and Book 2, Section 16. Wildlife underpasses that routinely convey surface water (i.e., USGS-mapped waterways) beneath US 160 shall include a terrestrial passage or path that accommodates wildlife movement through structure. The path shall be placed a minimum of 1 foot above the Ordinary High Water Mark (OHWM) to ensure the path is able to dry out following storm events. The Ordinary High Water Mark can be found on Figure A.6 of the Aquatic Resources Delineation Report, dated January 2025 within the EIS Reevaluation for the delineation of the approximate ordinary high water mark. Approximate elevations correlated to the OHWM at the upstream end of the bridge are Elev. 6745.5 and approximate OHWM elevation at the downstream end of the bridge is 6744.7. These elevations shall be confirmed by the Contractor. The path shall be designed to resist erosion during the "drainage design event" established in Book 2, Section 13 and Book 2, Section 16.
8. The preferred deer guard design will prevent large game from entering the fenced Highway corridor while also providing safe and predictable passage for a variety of vehicles. Deer guards are an essential deterrent to prevent wildlife from becoming trapped within the fenced Highway, where wildlife-vehicle crash may result. Designs should display elements that prevent wildlife from navigating across the guard. Deer guards shall be placed at select public and private approaches that abut and provide frequent vehicle access to US 160, such as all private and County Road accesses off of mainline US 160. Deer guards should be installed so that the guard abuts the CDOT ROW boundary to allow for the greatest distance from guard to US 160 to enable turning movements for a variety of vehicles per Book 2, Section 14. Deer guards shall be designed per the details found in the Contract Documents. See Book 2, Section 14, for additional requirements.
9. Deer guards should be designed to prevent breeches by large game into the fenced highway corridor while also enabling safe passage by a variety of vehicles ranging from bicycles (on County Roads only) and motorcycles to large multi-axle trucks. To prevent wildlife breeches, deer guards should avoid flat and wide surfaces that allow for hooves to land on Structure and secure footing for movement. Additionally, gaps between the deer guard Structure and exclusion fence should be avoided as large game, notably young, are able to squeeze through gaps and become trapped within fenced corridor. Traction to accelerate and decelerate and ride smoothness should be considered when designing deer guard deck to accommodate the wide range of vehicles that may encounter deer guards. The preferred deer guard design will also present a travel surface that is capable of shedding snow and small debris into grate so as to not become clogged and then provide ready passage to wildlife. Accumulating snow on deer guard should be readily plowable by CDOT Maintenance Forces and landowners to expose guard surface so it continues to deter wildlife passage while continuing to be passable by motorists. The grating shall be commercially available, as practicable. Additional design criteria's include:
 - i. Minimum length of 16' in the direction travel.
 - ii. Minimum width in accordance with the turning template requirement per Book 2, Section 14.
 - iii. Minimum HL-93 load rating.
 - iv. The deer guard shall minimize the grating dimension to 2" or smaller, minimizing flat landing surfaces, with sufficient spacing between bars to allow for debris (snow, ice,

mud) to fall through and not allow elk hooves to bridge between two surface bars (edge to edge shall be no closer than 4"). Alternatively, a proven design showing historic data of 85% efficacy at repelling deer and elk that meets debris pass through criteria may be used.

- v. Spacing of bars shall not prevent motorcyclists from crossing the Structure.
 - vi. County Roads shall meet bicycles route grate spacing requirements for bicycle and pedestrian facilities in the CDOT Roadway Design Guide.
 - vii. The underlying box shall meet the minimum requirements of M-Standard M-611-2 Deer Guard and be free draining.
 - viii. Connection of the wildlife fencing to the deer guard shall meet the requirements of the fencing section of Book 2, Section 14.
10. Wildlife fencing shall be installed in accordance with Book 2, Section 14 and/or the current M-607-4 Standard.

The Contractor shall submit the deer guard Structure (grate and underlying box) design to CDOT for Acceptance prior to fabrication.

Refer to Book 2, Section 14, for additional requirements and the FHWA-CFL/TD-11-003 Wildlife Crossing Structure Handbook for additional design criteria for wildlife crossings, fencing, deer guards, and game ramps.

6.5.7.1. Senate Bill 40 Certification

The proposed Work near the Florida River from MP 93.72 to MP 93.83, as well as Work near Long Hollow, will receive Senate Bill 40 Wildlife Certification from the Colorado Parks and Wildlife. The Contractor must comply with all applicable special and general conditions as detailed in the Guidelines for Senate Bill 40 Wildlife Certification, including the 1:1 tree replacement requirement.

6.5.7.2. Federally Listed Species

The proposed action has completed Endangered Species Act Section 7 Formal Consultation with the U.S. Fish & Wildlife Service (USFWS). Formal consultation was conducted due to anticipated adverse effects that could result to the endangered New Mexico meadow jumping mouse, endangered Southwestern Willow Flycatcher, endangered razorback sucker, and endangered Colorado pikeminnow, as well as designated critical habitat for the New Mexico meadow jumping mouse. If modifications to the Project cause new impacts and/or require mitigation, the Contractor shall be responsible for coordination with CDOT for USFWS concurrence, including preparation of a revised Biological Assessment for CDOT Approval and USFWS concurrence. The cost of the impacts and/or mitigation due to the new impacts and/or required mitigation shall be included in the UA.

The primary area of concern for threatened and endangered species is the Florida River. The Project, as described in Book 2, Section 1, results in direct and indirect impacts to critical habitat at the Florida River, resulting from Bridge construction and Roadway expansion. Numerous conservation/minimization measures detailed in the Mitigation Summary Table are an outcome of formal consultation with the USFWS and shall be implemented to ensure compliance with the Endangered Species Act. Additionally, mitigation in the form of habitat creation and increased habitat connectivity shall be constructed as detailed in the 2025 Biological Opinion prepared by the USFWS for the action. As well as the Mitigation and Monitoring Plan that CDOT is in the process of developing. Habitat creation will convert upland areas into wetland and riparian habitats suitable for New Mexico meadow jumping mouse occupation.

Habitat connectivity improvements are specific to the required construction of a small mammal crossing at MP 93.73. Should modifications to the Project result in additional impacts to listed/proposed/candidate species and/or critical habitat, such as additional permanent vegetation removal, USFWS coordination shall be required. Additional detail regarding mitigation needs resulting from Endangered Species Act Section 7 formal consultation can be found in the Special Construction Requirements.

Pre-construction surveys shall be required by the Contractor to determine presence or absence of southwestern willow flycatchers when construction activities occur within 0.25 mile of suitable willow habitat.

See Exhibit 6-A for all mitigation commitments associated with federally listed species.

6.5.7.3. Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act

The Contractor shall comply with the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act at all times, including conducting preconstruction surveys for nesting birds and roosting eagles set forth by USFWS, CPW, and Project Special Provision Section 240.

The Contractor shall schedule Work to avoid taking (pursue, hunt, take, capture, or kill; attempt to take, capture, kill, or possess) migratory birds protected by the MBTA. The incidental taking of a migratory bird shall be reported to CDOT. The Contractor shall be responsible for all penalties levied by the USFWS for the taking of a migratory bird.

The Contractor shall retain a qualified wildlife biologist with a minimum of 3 years of experience conducting migratory bird and raptor surveys to implement the requirements of the MBTA. The Contractor shall submit documentation of the biologist's education and experience to CDOT for Acceptance prior to NTP2.

To the extent possible, vegetation removal Activities will be timed to avoid the migratory bird breeding season (April 1 through August 31). Areas that must be scheduled for vegetation removal between April 1 and August 31 shall be surveyed for nests, and a Migratory Bird Nest Survey Memorandum shall be submitted to CDOT for Acceptance 7 Days prior to vegetation removal occurring between April 1 and August 3. Work buffers and Work exclusion zones shall be implemented as necessary to avoid impacts to nesting birds. Appropriate inactive nest removal and hazing/exclusion measures shall be incorporated into the Work to avoid the need to disturb active migratory bird nests.

The Contractor shall complete raptor nest surveys to evaluate for the presence of active raptor nests within 0.5 mile of the Project area. This survey shall be completed between February 1 through July 15. Raptor nest surveys shall be conducted no more than 7 Days prior to starting construction of the Project. Surveys for nocturnal bald eagle roosts shall be conducted between November 15 and March 15 prior to starting construction. If an active nest or roost is located in or near the Project area, the Contractor shall contact CDOT regarding use of seasonal buffers to prevent disturbance to nesting birds during construction. A Raptor Survey Memorandum shall be submitted to CDOT for Acceptance prior to construction occurring within 0.5 mile of a raptor nest.

6.5.7.4. Gunnison Prairie Dogs

The Project area is within the range and offers suitable habitat for occupation by Gunnison's prairie dog. Active prairie dog burrows may be present within the agricultural fields, grazed pastureland, vegetated ROW, as well as woodland edges and openings within the Project area. Prairie dogs may be

present as a clan or single family group with several characteristic burrows and mounds marking their home territory, or several clans may reside adjacent to one another, forming a larger colony displaying a complex of burrows.

The Contractor shall follow all applicable Local, State, and Federal laws, policies, and regulations, including the CDOT Impacted Black-Tailed Prairie Dog Policy (CDOT, 2009), Project Special Provision Revision of Section 240, and the CPW regulations (CPW General Provisions). At no time shall earth-moving Activities be performed that result in the burial of living prairie dogs. To achieve this guideline, the prioritization of prairie dog management is as follows:

1. Avoidance and minimization of impacts.
2. Passive relocation.
3. Active relocation, although this may not be feasible, as an appropriate relocation site may not be found.
4. Humanely euthanize in coordination with CPW.

The Contractor shall submit a Gunnison's Prairie Dog (GPD) Management Plan specifying and quantifying anticipated impacts to active prairie dog burrows and the proposed methods to be employed to ensure compliance with the GPD policies. The GPD plan will be submitted to CDOT for Approval prior to NTP2; additional approvals will be necessary by CPW and any other agencies as necessary. Approval is required before impacts to GPD habitat or species may occur.

The presence of active prairie dog burrows within 150 feet of the Project limits will necessitate pre-construction surveys for burrowing owl, following guidelines developed by the CPW, Recommended Survey Protocol and Actions to Protect Nesting Burrowing Owls When Conducting Prairie Dog Control. Surveys shall be performed of active prairie dog burrows within 150 feet of the Project area between March 15 and October 31. Surveys shall be performed by the Contractor's biologist. Guidelines recommend a minimum of 3 surveys separated by approximately 1 week. If burrowing owls are detected during the survey effort, the CDOT regional biologist, in coordination with the CPW, will determine if construction Activities need to be modified or limited in certain areas of the Project in order to comply with the CPW, Recommended Buffer Zones, and Seasonal Restrictions for Colorado Raptors and the State of Colorado's Endangered-Threatened Species Conservation Act.

The Contractor shall submit a burrowing owl survey to CDOT for Acceptance within 7 Days prior to disturbance of GPD colonies. The Contractor shall submit burrowing owl survey documentation to CDOT for Acceptance prior to impacts to GPD habitat or species.

If the Contractor elects to use the material in the stockpile located on US 550 MP 11.8 RT, they must complete Prairie Dog surveys prior to removal and follow the GPD Management Plan if found.

6.5.8. Visual Resources

Visual impacts associated with the Project, as described in Book 2, Section 1, were identified in the US 160 from Durango to Bayfield La Plata County, Colorado FEIS/ROD (2006).

If changes to the Project result in additional visual impacts, the Contractor shall be responsible for providing the necessary mitigation measures and obtain all required approvals, including a NEPA reevaluation(if necessary), associated with the Work.

The Contractor shall adhere to Book 2, Section 16 for required Aesthetic treatments to match the corridor Aesthetic scheme established by the previous CDOT U.S. 160 4th Lane at Farmington Hill Project (Grandview Interchange).

6.5.9. Water Quality

Permanent water quality for the Project is not required. The Contractor shall prevent and/or minimize erosion, sedimentation, and pollution of any State waters.

The Contractor shall comply with all aspects of:

1. The Colorado Discharge Permit System - Stormwater Construction Permit (CDPS-SCP) issued by CDPHE.
2. CDOT's Water Quality Specifications, CDOT Standard Specifications Subsection 107.25 and Sections 207, 208, 212, 213, 214, and 216.
3. CDOT M&S Standards M-208-1 M-216-1. and M-615, Topsoil Stockpile Control Measures.

The Contractor shall comply with the following additional requirements.

1. The Contractor shall have a CDOT-certified Stormwater Management Plan (SWMP) Preparer design the Project's complete SWMP per MS4 Construction Program Manual, Standard Operating Procedure [SOP] D5: SWMP Design and Review. (MS4 Permit, Part I.E.1.a.iv(A)). The SWMP shall be developed to meet the needs of the CDPS-SCP
2. The Contractor shall notify CDOT for inspection of Initial Control Measure installation for conformance with the Project's SWMP and CDOT's Water Quality Specifications and State and Federal Regulatory Requirements. The Contractor shall not open ground until the Initial Control Measure installation inspection has occurred and CDOT, through the Region Water Pollution Control Manager (RWPCM), has confirmed the installation conforms to the Project SWMP and CDOT's Water Quality Specifications and State and Federal Regulatory Requirements.
3. Each TECS [Transportation Erosion Control Supervisor]-certified Erosion Control Inspector (ECI) shall inspect no more than 40 acres of active Project area. Additional TECS-certified ECI staff are required for each additional 40 acres of active Project area.
4. During active construction, the Project's SWMP must be evaluated for conformance with CDOT's Water Quality Specifications and State and Federal Regulatory Requirements by a CDOT-certified SWMP Reviewer before the Contractor shall be allowed to open new ground, amend the SCP, apply for a new SCP, or implement other major modifications to the SWMP identified in CDOT's MS4 Construction Program Manual, SOP C1 (SWMP Design Modifications During Construction).
5. During active construction, CDOT will evaluate minor modifications to the Project's SWMP for conformance with CDOT's Water Quality Specifications and State and Federal Regulatory Requirements prior to issuance of CDOT issuing corrective action as per MS4 Construction Program Manual, SOP C1: SWMP Design Modifications During Construction.
6. The Contractor shall resolve all corrective actions and compliance assistance identified in weekly stormwater inspections and CDOT monthly audits, as defined in the CDPS-SCP Permit. The corrective actions will identify control measures and SWMP failures, and how and when these will be resolved. The Contractor shall file a copy in the SWMP notebook with the associated 105.
7. A summary of all water quality protection Activities that have occurred during the reporting period shall be included in ECSR's, as outlined in Section 5.4.

8. The Contractor shall inform the CDOT Project Engineer and the Region Water Pollution Control Manager of all water quality and erosion control-related communication with Local, State, and Federal regulatory agencies.

Refer to Section 6.5.10 for waters of the U.S. requirements; Book 2, Section 4, for quality requirements; Book 2, Section 13, for drainage requirements; and Book 2, Section 18, for landscape stabilization and Warranty requirements, including CDOT's MS4 Construction Program Manual.

The Contractor shall submit a SWMP Plan, including Erosion Control Plans, to CDOT for Review, in accordance with the requirements above, 60 Days prior NTP2.

6.5.9.1. CDPHE CDPS System

CDOT will obtain the CDPS permits from CDPHE. The Contractor shall submit the SWMP 60 days prior to NTP2. CDOT will obtain these permits a minimum of 10 Days prior to the start of construction, and CDOT and the Contractor will be co-owners for the CDPS permit.

All stormwater requirements, including the Stormwater Management Plan (SWMP), shall be fulfilled in accordance with CDPS-SCP, and Specification 208 of the CDOT Standard Specifications CDOT Regional Water Pollution Control Manager will perform monthly audits.

The Contractor shall have properly trained and certified staff on Site who will manage, administer, and inspect the Project to ensure the construction control measures are adequate for the Site conditions of the Project and are in good working condition. The Contractor shall prevent the discharge of any sediment or pollutants from the construction Activity into any storm drains or receiving waters during the life of the CDPS-SCP Permit.

6.5.9.2. Dewatering Permit

Dewatering shall include all labor, equipment, materials, permits, and fees required to dewater the construction sites of groundwater or groundwater that is comingled with surface or stormwater. The Contractors shall submit a detailed method statement that outlines the installation, operation, maintenance, and removal of the dewatering system, for Review 15 days prior to NTP2.

The Contractor shall obtain a Construction Dewatering, Remediation, or Individual Permit from the CDPHE for any dewatering of groundwater during construction in accordance with Water Quality Control Division (WQCD) requirements. The Permit shall be obtained prior to the start of discharge Activities. The permit shall be kept on site, including a copy in the Stormwater Management Plan. The Contractor shall provide all information needed to assist the WQCD in their evaluation and setting of a water quality standard for this Permit, which may include monitoring of the discharged water. If the Contractor's Activities require a permanent dewatering system, any such system will require the Approval of CDOT prior to submitting a CDPHE Dewatering Permit.

If the Contractor's Activities result in a consumptive use during construction, the Contractor shall obtain a Substitute Water Supply Plan from the Division of Water Resources. If any dewatering Activities are required after construction, the Contractor shall design, operate, and maintain the dewatering system so that no consumptive use of the water occurs.

The Contractor shall monitor for any settlement caused by dewatering. The Contractor shall conduct a preliminary survey of any private property or buildings that may be affected by dewatering to establish existing conditions. The Contractor shall repair any damage caused by dewatering operations.

6.5.10. Wetlands and Waters of the U.S.

CDOT will obtain the Section 404 Permit for the Project. The Contractor shall comply with the general, regional, and special conditions outlined in the Section 404 Permit and any other Colorado state waters requirements per Colorado Department of Public Health & Environment (CDPHE). This includes not exceeding Waters of the US impacts identified in the permit application and/or permit verification letter. If the Contractor is unable to comply with any of the conditions set in the Project 404 Permit, the Contractor shall be responsible for preparing a Clean Water Act, Section 404 Permit Application for impacts to waters of the U.S., including wetlands. Permit conditions are included in the Reference Documents.

6.5.10.1. Wetlands Field Identification

If the Contractor proposes to Work in areas outside of the aquatic resource delineation conducted for the US Highway 160 from Durango to Bayfield La Plata County, Colorado Reevaluation (June 2025), the Contractor shall delineate the additional Project area for all aquatic resources, including waters of the U.S., wetlands, and open waters, regardless of potential jurisdiction under the Clean Water Act.

6.5.10.2. Section 404 Permit

The application shall be submitted to CDOT for Review and Approval before it is submitted to the U.S. Army Corps of Engineers (USACE). USACE typically takes 1 year to approve an Individual Permit and 2 months to approve a Nationwide Permit. Depending on the Project limits of the modifications, the issuance of a new Section 404 Permit may require Section 7 and Section 106 compliance.

If modifications to the Project require a USACE Section 404 Individual Permit, the Contractor shall be responsible for obtaining the resulting Section 401 Water Quality Certification from CDPHE. This process can take 2 to 6 months and shall be completed concurrent with the Section 404 Individual Permit application review by USACE.

6.5.10.3. Wetlands and Waters of the U.S. Mitigation

CDOT will be responsible for purchasing wetland mitigation bank credits for the Project. If the Contractor modifies the Project, the Contractor shall be responsible for the purchase any additional mitigation credits required by the permit.

6.5.11. Other Permits

If the base design indicates impacts to aquatic resources regulated under CDPHE's dredge and fill program, CDOT will obtain a permit for those impacts. As with the 404 permit, the Contractor shall follow all of the terms, conditions, and requirements laid out in the application to CDPHE and/or any authorization received, including not exceeding the State Waters impact limits. If the contractor finds it necessary to impact any aquatic resource not covered by the Section 404 or CDPHE permit, they shall consult with the CDOT Regional Wetland Specialist to determine which agency has jurisdiction prior to submitting the appropriate permit application.

6.6 Recognized Hazardous Materials

Recognized Hazardous Materials (RHM) are defined as the presence or suspected presence of Hazardous Substances which may require management and/or disposal. Hazardous Substances may exist on the surface, subsurface, in groundwater, or on structures to be demolished, and may be mixed with soil, water, and/or other waste materials. Additional environmental concerns throughout the entire

Elmore's East Project area includes the potential presence of lead and/or chromium-based paint on structures and potential asbestos-containing materials.

RHMs have been identified at two locations adjacent to the Project. The Contractor's attention is directed to the following for information related to the RHMs:

1. US Highway 160 from Durango to Bayfield La Plata County, Colorado Reevaluation (June 2025)
2. Jameson Residence Asbestos Inspection Report
3. 20980 Elmore's Project Special Revision of Section 250

The Contractor is advised to thoroughly read and understand the findings and requirements in the Modified Environmental Site Assessments that have been prepared for any RHMs within the Project limits.

The Contractor shall follow all Federal, State and local requirements for the capping in place abandonment of the Lagoon on the Jameson Residence at 31505 HWY 160.

6.7 Materials Management Plan

The Contractor shall develop a Materials Management Plan (MMP) to be submitted for Approval by CDOT prior to issuance of NTP2. The Contractor shall comply with all provisions set forth within the Approved MMP.

The MMP shall identify potential RHMs: locations, extent of impact, proposed Remediation Work, avoidance measures, investigation measures, as well as contingency planning for addressing unforeseen conditions. The plan shall identify the Contractor's representative responsible for environmental compliance, the proposed design and construction staff, and approach to implementation of the MMP. The plan should also include a narrative describing how the MMP will inform the design and how the MMP will raise awareness during construction, in addition to meeting the requirements of Section 250 of the CDOT Standard Specifications.

The MMP shall include the following provisions:

1. The Contractor shall manage all RHMs, including soils, groundwater, surface water, and other contaminated substances, to prevent exposure to Project personnel and the public, and to prevent any contamination of non-contaminated areas.
2. The Contractor shall manage the design such that RHM location avoidance is considered a primary consideration.
3. The Contractor shall classify such wastes according to one of the following categories:
 - A. Hazardous waste, as defined under the Resource Conservation and Recovery Act (RCRA), requiring off Site disposal and/or treatment.
 - B. Contaminated soils requiring off Site disposal.
 - C. Soils to be stockpiled for further characterization.
 - D. Soils with concentrations of waste constituents below regulatory concern that can be reused without restriction.
 - E. Wastewater requiring off Site disposal and/or treatment.

- F. Impacted water to be held for further characterization.
 - G. Asbestos-containing material discovered during construction or demolition.
 - H. Lead-based paint associated with Structures, signage, light posts, etc.
 - I. Waste material to be contained for further characterization.
 - J. Contaminated groundwater requiring on Site treatment or off Site disposal.
 - K. Sample collection procedures during construction Activities to provide safety controls in areas previously not identified (field screening, borehole drilling, monitoring well construction, soil sampling and/or groundwater sampling methods, and decontamination).
 - L. Field equipment calibration procedures/frequency.
- 4. Prior to commencing any Remediation Work, a scope of work shall be submitted to CDOT for Approval. The Contractor shall utilize the most cost-effective approach in the performance of any remedial action deemed necessary. Remediation Work shall not include sampling, characterization, stockpiling, or disposal of materials that are determined not to require off Site disposal and/or treatment.
 - 5. The Contractor shall not allow Hazardous Substances to be spilled or tracked off Site at any time during the Project.
 - 6. The Contractor shall be responsible for locating storage facilities and disposal sites for RHMs that are to be removed from the Work Site.
 - 7. The Contractor shall maintain documentation of completed waste profiles, manifest forms, and bill-of-lading forms for proper transportation and disposal of materials off Site. This information shall be available at all times for Review by CDOT. The Contractor shall be held responsible for ensuring that all requirements of the transporter and receiving disposal facility and Federal, State, and Local statutes, rules, regulations, and ordinances are complied with and properly documented.

If Voluntary Cleanup Program (VCUP) Activities are needed, a No Further Action Determination (NAD) petition for each of the properties where residual or unknown contamination is encountered within the Project shall be prepared by the Contractor and submitted to CDOT for Approval. Once approved, the NAD will then be submitted to CDPHE for review and approval. If no residual or unknown contamination is encountered, a NAD will not be required.

The NAD Petition shall include the following sections and appendices:

- 1. Project Background.
- 2. Waste Management During Demolition.
- 3. Characterization Sampling Data:
 - Soil Management and Disposal Data.
 - Waste Streams Disposed Off Site.
- 4. Wastes Managed On Site.
- 5. ROW Maps.
- 6. Groundwater Management and Disposal Data.

7. Property Use Restrictions, Restrictions on Groundwater Use.
8. Summary of Variances of Regulatory Standards.
9. Qualified Environmental Professional Certification.
10. Appendices:
 - Photographs, Figures, and Tables.
 - Analytical Results.
 - VCUP addendums and copies of correspondence with CDPHE and Colorado Division of Oil and Public Safety (OPS).
 - Waste Manifests.

6.7.1. Health and Safety Plan

The Contractor shall develop a Health and Safety Plan (HASP) for the Work, as required by Section 250.03 of the CDOT Standard Specifications, CDOT MMP, and the CDOT Asbestos-Contaminated Soil Management SOP, as appropriate. The HASP shall be submitted to CDOT for Acceptance prior to NTP2.

The Contractor shall distribute the HASP to all employees that could be potentially exposed to RHMs. The HASP shall be displayed or made available on Site at all times. The Contractor shall develop and maintain all industrial hygiene information on Site, including "right-to-know" information. In addition to meeting the requirements of Section 250 of the CDOT Standard Specifications, the HASP shall include the following provision:

"The Contractor shall maintain documentation and provide information to CDOT, as requested, regarding potential or actual exposure to the public. The Contractor shall maintain records of all related incidents and notify CDOT and appropriate State authorities immediately."

The Contractor shall provide to CDOT identification of all Subcontractors to be used in the performance of Work required within this Section prior to performing any such Work. The Contractor shall maintain documentation of all pertinent certifications of all subcontractors and make it available to CDOT upon request.

6.7.2. Spill Response Plan

The Contractor shall develop a Spill Response Plan (SRP) for the Work, as required by Section 208 of the CDOT Standard Specifications, CDOT MMP, and the CDOT Asbestos-Contaminated Soil Management SOP as appropriate. The SRP shall be submitted to CDOT for Acceptance prior to NTP2.

The SRP shall establish operating procedures for handling pollutants and preventing spills. Pollutant sources include, but are not limited to, exposed and stored soils, paints, solvents, fertilizers or chemicals, vehicle tracking, management of contaminated soils, loading and unloading operations, outdoor storage, vehicle/Equipment maintenance and fueling, significant dust or particulate generation, on Site waste management practices, concrete truck/Equipment washing, dedicated asphalt and concrete batch plants, and non-industrial waste sources that may be significant, such as trash and portable toilets.

During the environmental task force meetings, the Contractor shall discuss the submittals of the MMP, SAP, HASP, and SRP. The Contractor's ECM and the Contractor's Safety Manager shall be present at the meeting. The Contractor shall incorporate comments into the submitted MMP, SAP, HASP, and SRP as agreed to during this meeting.

The Contractor shall comply with all provisions set forth in the Approved MMP, SAP, HASP, and SRP and shall maintain documentation of all pertinent certifications of all Subcontractors, which shall be available upon request by CDOT. The Contractor shall comply with all applicable requirements, including, but not limited to, all Federal, State, and Local Environmental Laws and regulations and CDOT Standard Specifications, Section 250, Environmental, Health and Safety Management; Section 208, Erosion Control; and any Project Special Revisions for the management and disposal of the RHMs. The Contractor shall notify CDOT within 24 hours if contacted by any regulatory agencies or Third Parties concerning RHMs associated or potentially associated with the Contract requirements. The Contractor shall coordinate all Work with CDOT and shall not discuss or negotiate with any regulatory agencies or Third Parties on behalf of CDOT. The Contractor shall support CDOT with necessary information, data, and exhibits if any discussions or negotiations with any regulatory agencies or Third Parties are necessary.

6.7.3. Statement of Regulated Hazardous Materials Management

If hazardous materials are encountered, the Contractor shall submit a weekly statement of RHM Management reports to CDOT for Review on all Activities associated with the Contract. The Contractor shall coordinate with CDOT to determine the format of the reports prior to conducting the associated construction Activities.

6.7.4. Quarterly Summary of Hazardous Materials Management

The Contractor shall submit quarterly reports to CDOT for Review and then subsequent submittal to CDPHE. The reports shall contain "Tasks/Activities Completed," "Tasks Expected for Next Reporting Quarter," "Percent Complete," and "Issues to be Resolved."

Prior to demolition Work on any Structures, or removal of Utility lines, the Contractor shall determine the presence or absence of lead- or asbestos-containing materials. If lead or asbestos is present, the Contractor shall conduct abatement in accordance with Section 250. The Contractor shall obtain a demolition permit from the CDPHE prior to the removal of any Structures, including the Florida River Bridge.

See Book 1 for payment of Hazardous Substances Management.

The Contractor shall be responsible for identification and performance of all Activities required within this Section associated with Utility Work being performed for the Project.

The Contractor shall be responsible for removal of any facilities and equipment installed within the Project limits related to performance of the Work under this Section prior to completion of the Project.

6.8 NEPA Reevaluation

6.8.1 NEPA Reevaluation

If the Contractor proposes or creates a design change beyond the Project, as described in Book 2, Section 1, these changes shall be tracked, documented, and assessed as to whether or not they have resulted in a new impact or changed the impact to an already accounted for environmental resource. The changes shall be assessed per policies, procedures, guidelines, or regulatory requirements specific to that resource. If necessary, per input from CDOT, the Contractor shall be responsible for documenting that change through the requirements and conditions of CDOT Reevaluation Form (#1399). The Reevaluation Form (#1399) shall be submitted to CDOT for Approval, documenting any other Work that was not included in one of the following NEPA documents:

1. US Highway 160 from Durango to Bayfield La Plata County, Colorado FEIS/ROD (2006)
2. US Highway 160 from Durango to Bayfield La Plata County, Colorado Reevaluation (June 2025)

Ten business Days are required for CDOT Approval. CDOT will then submit to FHWA for approval of the Reevaluation Form (#1399), which requires 4 weeks. Upon receipt of FHWA's approval, CDOT will authorize the Contractor to perform the Work.

In addition, the Contractor shall be responsible for additional environmental documentation, Permits, and mitigation resulting from impacts associated with any Project change at the Contractor's expense. The Contractor shall accept responsibility for any additional schedule impacts required to obtain the appropriate approvals and regulatory clearances throughout the Project.

6.9 Environmental Permits

The Contractor shall be responsible for obtaining all governmental and agency Permits required for the Work, not otherwise obtained by CDOT, including, but not limited to, the Permits in Table 6-2.

Permits that have been obtained by CDOT during the development of the Project, as described in Book 2, Section 1, are included in Book 3. Permits are subject to final review and approval by the appropriate Permitting Agency.

Table 6-2: Required Environmental Permits

Permits/Approvals	Permitting Agency	Permit Responsibility (CDOT or Contractor)
Colorado Discharge Permit System (CDPS - SCP) Stormwater Construction Permit	Colorado Department of Public Health and Environment - Water Quality Control Division	CDOT/Contractor (co-owners)
Clean Water Act, Section 404 Permit	U.S. Army Corps of Engineers	CDOT - for the Project
Clean Water Act, Section 404 Permit	U.S. Army Corps of Engineers	Contractor - if modifications to the Project

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 6 - Environmental Requirements

Permits/Approvals	Permitting Agency	Permit Responsibility (CDOT or Contractor)
Clean Water Act Section 402 Construction Dewatering Permit, Remediation, or Individual Construction Dewatering Permit, if contaminated groundwater is expected to be encountered.	Colorado Department of Public Health and Environment - Water Quality Control Division	Contractor
Subterranean Groundwater Permit	Colorado Department of Public Health and Environment - Water Quality Control Division	Contractor
Non-Extractive Industries Storm Water Permit	Colorado Department of Public Health and Environment - Water Quality Control Division	Contractor
Remediation Activities Discharging to Surface Water Permit	Colorado Department of Public Health and Environment - Water Quality Control Division	Contractor
Remediation Activities Discharging to Groundwater Permit	Colorado Department of Public Health and Environment - Water Quality Control Division	Contractor
Demolition Permit	Colorado Department of Public Health and Environment - Asbestos compliance	Contractor
Notification as Resource Conservation and Recovery Act (RCRA) hazardous waste generator	Colorado Department of Public Health and Environment - Hazardous Materials and Waste Management Division	Contractor
Air Pollution Emission Notice (APEN) and Construction Permit	Colorado Department of Health and Environment - Air Pollution Control Division	Contractor
Stationary Source Air Quality Permit (Emissions from portable units, such as rock crushers, generators, asphalt plants, and concrete plants, used during construction)	Colorado Department of Health and Environment - Air Pollution Control Division	Contractor
Noise Variance (as needed)	Local Agencies	Contractor

6.10 Deliverables

The Contractor shall submit the following to CDOT for Review, Acceptance, or Approval:

Table 6-3: Deliverables

Deliverable	Review Acceptance or Approval	Schedule
Environmental Compliance Mitigation Training Program (ECMTP)	Acceptance	Prior to NTP2
Environmental Compliance Mitigation Training Program (ECMTP) updates	Acceptance	30 Days after the end of each year
Environmental Compliance Work Plan (ECWP)	Approval	Within 30 Days after NTP1 and prior to NTP2
90-Day Environmental Compliance Work Plan (ECWP)	Approval	No later than 30 Days prior to NTP2
90-Day Environmental Compliance Work Plan (ECWP) Updates	Acceptance	Every 90 Days until Final Acceptance
Environmental Compliance Work Plan (ECWP) Amendment	Acceptance	Annually upon the anniversary of the first Approval of the ECWP
Final Environmental Compliance Work Plan	Approval	Required for Final Acceptance of the Project
Environmental Compliance Status Reports	Acceptance	Following the end of the reporting period (Monthly)
Construction Air Quality Plan and Fugitive Dust Control Plan	Acceptance	Prior to NTP2
Preliminary Noise Technical Reports (as needed)	Review	Prior to completing the Benefited Receptor Preference Survey
Planning Activities for the Benefited Receptor Preference Survey (as needed)	Acceptance	14 Days before initiating the survey
Final Noise Technical Report (as needed)	Acceptance	As part of the RFC Documents submittal
Construction Noise and Vibration Mitigation Plan	Acceptance	Prior to NTP2
Temporary Construction Access Plan	Approval	At least 14 Days prior to NTP2
Game ramp locations	Approval	Prior to the RFC Documents submittal
Deer guard design	Acceptance	Prior to fabrication
Small mammal crossing locations	Approval	Prior to the RFC Documents submittal

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 6 - Environmental Requirements

Deliverable	Review Acceptance or Approval	Schedule
Revised Biological Assessment and/or Biological Assessment Addendum (as needed)	Approval	If modifications to the Project cause new impacts
Biologist's Education and Experience	Acceptance	Prior to NTP2
Migratory Bird Nest Survey Memorandum	Acceptance	No more than 7 Days prior to vegetation removal occurring between April 1 and August 31
Raptor Survey Memorandum	Acceptance	Prior to construction occurring within 0.5 mile of a rapture nest.
GPD Management Plan	Approval	Prior to NTP2 and/or before impacts to GPD habitat or species.
Burrowing owl survey	Acceptance	Within 7 Days Prior to disturbance of GPD colonies
Burrowing owl survey documentation	Acceptance	Prior to impacts to GPD habitat or species.
SWMP Plan	Review	60 Days prior to NTP2
Dewatering Methods Statement	Review	15 Days prior to NTP2
Section 404 Permit (as needed)	Approval	If the conditions set in the Project 404 Permit are modified
Materials Management Plan (MMP)	Approval	Prior to NTP2
Remediation Scope Work	Approval	Prior to commencing Remediation Work
No Further Action Determination (NAD)	Approval	Prior to submittal to CDPHE
Health and Safety Management Plan (HASP)	Acceptance	Prior to NTP2
Spill Response Plan (SRP)	Acceptance	Prior to NTP2
Statement of Regulated Hazardous Materials (RHM) Management	Review	Weekly, if encountered
Quarterly summary of Hazardous Materials Management	Review	Quarterly
No Action Determination (NAD) (if under the Voluntary Cleanup Program)	Approval	Within 60 Days of completing Voluntary Cleanup Program Activities

Deliverable	Review Acceptance or Approval	Schedule
Form 1399 - CDOT Reevaluation Form (as needed)	Approval	If the Contractor proposes or creates a design change beyond the limits identified in the Project
Mitigation Completion Report	Acceptance	Prior to Final Acceptance

6.11 Exhibits

Exhibit 6-A Environmental Mitigation Tracking Form

As required in the ECSR, the Contractor shall include the current status of compliance with the Environmental Requirements as summarized in Exhibit 6-A, Environmental Mitigation Tracking Form. Prior to project completion, the Contractor is responsible for summarizing in the tracking form how each mitigation commitment was met for all commitments listing the Contractor as the Responsible Branch.

7.0 Third Party Agreements

This Section includes the requirements for the Third Party Agreements Work for the US 160 Elmore's Corner to Dry Creek Design-Build Project (Project). This Work shall be completed in accordance with the Contract Documents.

The Contractor shall be responsible for obtaining Third Party approvals required to complete the Work, except as otherwise specified in the Contract Documents. Third Party coordination and approvals may be required from, but not limited to:

1. The Florida Consolidated Ditch Company (FCDC) and the Bureau of Reclamation (BOR) for Work impacting the Florida Canal and the Griffith Ditch. CDOT has entered into Preliminary Service Agreement (PSA) for design review and construction Inspection;
2. The Pioneer Ditch Company for Work impacting the Pioneer Ditch. No PSA anticipated. If necessary, CDOT will enter into a PSA at a later date if required for design review and Inspection;
3. Atmos - No PSA anticipated. If necessary, CDOT will enter into a PSA at a later date if required for design review and Inspection;
4. Enduring Resources IV - CDOT will enter into a PSA and/or Standard Utility Agreement (SUA) for design and construction relocation;
5. Harvest Midstream - CDOT will enter into a PSA for design review and construction Inspection;
6. Hilcorp Energy Company - CDOT will enter into a PSA for design review and construction Inspection;
7. La Plata Electric Association - CDOT will enter into a PSA and/or Standard Utility Agreement for design and construction relocation;
8. La Plata Archuleta Water District - CDOT will enter into a PSA for design review and construction Inspection;
9. Lumen- No PSA anticipated. If necessary, CDOT will enter into a PSA at a later date if required for design review and construction Inspection;
10. Red Cedar gathering - CDOT will enter into a PSA for design review and construction Inspection;
11. Mach Natural Resources/Simcoe - CDOT has entered into a PSA for design review and construction Inspection;
12. Additional information pertaining to Utility Relocation Agreements are addressed in Book 2, Section 8. Coordination and approval requirements for irrigation and ditch companies are addressed in this Section.

7.1 CDOT Executed Agreements

CDOT will enter into Agreements as found in Exhibit 7-A. CDOT will enter into Preliminary Service Agreements as found in the Reference Documents. These Agreements are being executed separate from the Contract. If an executed Agreement is not available prior to NTP1, CDOT will provide a draft of the Agreement to the Contractor. The Contractor shall be responsible for meeting the requirements included in the executed Agreements. Until draft Agreements are executed, the Contractor shall be responsible for coordinating with Third-Parties as if the Agreement has been executed.

7.2 Contractor Associated Agreements

The Contractor shall facilitate execution of Agreements between CDOT and other Third Parties, which shall include, but may not be limited to, the following:

1. Agreements with the Florida Consolidated Ditch Company (FCDC) and the Bureau of Reclamation for crossing Permits associated with the Roadway Work at the Florida Canal crossing.
2. Agreements with the FCDC for ditch construction associated with the Work and relocation of the Griffith Ditch.
3. Agreements with the Pioneer Ditch Company for Work associated with the relocation of the Pioneer Ditch.
4. Execution of the Final Acceptance Letter of Replacement of Irrigation Facilities (Exhibit 7-C) within 10 Days of completion of the Work. Submit the completed and Executed Exhibit 7-C to CDOT for Acceptance once executed.

7.3 Irrigation/Ditch Company

The Project includes Work on ditch Right-of-Way (ROW) and on public and private properties along the flow channel of the irrigation and ditches.

The Contractor shall comply with the terms and conditions as set forth in the executed Agreement as required by this Section, Exhibit 7-B and Table 7-1. Any requirements related to private ditch relocation Work to be completed by the Contractor are included in Book 2, Section 9 and Book 2, Section 13.

This Section provides requirements applicable to Work performed upon or adjacent to the ditch ROW. Anticipated Work on or adjacent to ditch ROW shall be limited to the construction of Structures, open ditch that carry each ditch's flow, and access modifications required to restore maintenance access for ditch operations impacted by the Work on the Project.

Table 7-1: Irrigation Construction Summary

Ditch Company/Irrigation Owner	Construction Requirements
Florida Consolidated Ditch Company (FCDC) Jason Cole fcdcooperations@gmail.com (970) 759-3438 (cell) Durango CO 81301 Hayes Lenhart, P.E. Wright Water Engineering hlenhart@wrightwater.com (503) 449-5439 (cell) Bureau of Reclamation (BOR) Kelsey Deckert US BOR Southern Facilities Maintenance Group Chief kdeckert@usbr.gov (970) 903-2680 (cell) (970) 385-6557 Ethan Scott escott@usbr.gov (970) 317-4838 (cell) (970) 385-6572	Florida Canal (STA 138+20) Protect in place. Contractor to coordinate roadway design over structure with FCDC and BOR in accordance with Basis of Design Requirements and standard specifications submitted by FCDC. Seasonal restrictions apply with no interruptions to irrigation flows between April 1st to November 1st each year unless written approval by the FCDC is given. Contractor responsible for all Work, including Agreements/permits associated with the Project. If necessary, CDOT will enter into a PSA at a later date if required for design, review, and Inspection by FCDC. Griffith Ditch (STA 183+60) Contractor to remove/relocate portions of irrigation facility to accommodate proposed Work. Contractor to coordinate design and construction with FCDC in accordance with Basis of Design Requirements and standard specifications submitted by FCDC. Seasonal restrictions apply with no interruptions to irrigation flows between April 1st to November 1st each year unless written approval by the FCDC is given. CDOT to pay for engineering design review and construction Inspection by FCDC. Contractor responsible for all other Work, including Agreements, crossing permits associated with the Project.

Ditch Company/Irrigation Owner	Construction Requirements
Pioneer Ditch Company Ian Crosser Ditch Co Board President ianmcrosser@gmail.com (970) 270-5519 (cell) Mike Shumway Ditch Rider shumwaysprings@gmail.com (970) 749-9382 (cell)	Pioneer Ditch (STA 287+60) Contractor to remove/relocate portions of irrigation facility to accommodate proposed Work. Contractor to coordinate design and construction with PDC in accordance with Basis of Design Requirements and standard specifications submitted by PDC. Seasonal restrictions apply with no interruptions to irrigation flows between April 1st to November 1st each year unless written approval by the PDC is given. Contractor responsible for all Work, including Agreements/permits associated with the Project. If necessary, CDOT will enter into a PSA at a later date if required for design, review, and Inspection by Pioneer Ditch.
Private Irrigation Ditch Lateral See Book 2, Section 9, and Book 2, Section 13 for contact information.	Multiple Relocations at various locations Contractor to remove/relocate portions of private irrigation ditch laterals required to accommodate proposed Work. Coordinate design and construction with private irrigation owners. Seasonal restrictions apply with no interruptions to irrigation flows between April 1st to November 1st each year unless written approval by the private irrigation ditch lateral owner is given. Contractor responsible for the execution of Exhibit 7-C. Contractor responsible for all Work, including Agreements/permits associated with the Project. Additional information can be found in Book 2, Section 13, and Book 2, Section 9.

7.4 Standards

The Contractor shall design and construct the Project in accordance with the requirements included in the executed irrigation Agreement for construction between Contractor and associated ditch company (including written specifications, standards of practice, and construction methods) and the standards referenced in Book 3. The Contractor shall use the latest adopted edition at the time of the Proposal Due Date. In the event of a conflict between the requirements of the associated ditch company and the Contract Documents, CDOT and the respective ditch company will determine which shall govern. The Contractor shall be responsible for resolution of any unresolved ambiguity prior to proceeding with any ditch Work.

The Contractor shall ensure all Work on ditches allows future maintenance to be performed without disruption to the operation or maintenance of US 160.

7.5 Administrative Requirements

Within 7 Days after First Notice to Proceed (NTP1), the Contractor shall notify all private irrigation ditch lateral owners and ditch company representatives in writing of Project commencement. FCDC and Pioneer Ditch contact information can be found in Table 7-1. Private irrigation ditch lateral owner contact information is included in Book 2, Section 13, Exhibit 13-B and in Book 2, Section 9.

The Contractor shall meet with the various ditch owners and CDOT as soon as practicable after NTP1 to review all points of concern and other items that may affect the Project schedule. The Contractor shall identify critical Activities and sequences as they affect ditch operations and plan to effectively mitigate ditch impacts. These critical Activities shall be incorporated into the Project schedule requirements per Book 2, Section 2.

The Contractor shall obtain ditch approval in writing, in advance, of methods and procedures covering all Work within the ditch ROW. Copies of such approvals, notices, and correspondence shall be submitted to CDOT.

Within 7 Days after the Second Notice to Proceed (NTP2), the Contractor shall notify private irrigation Ditch Lateral representatives in writing of construction commencement. Private Irrigation Ditch Lateral contact information included in Book 2, Section 13, Exhibit 13-B and in Book 2, Section 9.

The Contractor shall provide 90 days written notice to the various ditch representatives prior to starting Work on private irrigation ditch laterals facilities.

The Contractor shall allow the private irrigation facility to operate for 3 months prior to acceptance of the Work by the Owner.

The Contractor shall be responsible for coordinating, developing, and preparing all ditch construction Agreements to be submitted to each ditch company, including developing the Agreement text, all supporting engineering and documentation, and exhibits to the satisfaction of ditch company. CDOT will supply an Agreement template upon request. The Contractor shall submit the Agreement for Acceptance to CDOT and ditch company for signature.

7.5.1 Utility Crossings

Ditch companies are not responsible for Utility Work on ditch ROW. The Contractor shall locate all Utilities on ditch ROW within the immediate vicinity of the Work. The Contractor shall certify to Ditch companies that all the Utilities on ditch ROW and within the immediate vicinity of the Work have been identified and properly located.

7.6 Design Requirements

7.6.1 Submittals

All design submittals shall be prepared, reviewed, and submitted in accordance with the requirements set forth in Book 2, Section 4.

Design requirements include work to be completed by Contractor for Work on irrigation/ditch company and private irrigation ditch lateral, with the requirements set forth in Book 2, Section 9 and Book 2, Section 13.

Ditch companies will review design plans for Work on its properties in accordance with Exhibit 7-B. The ditch company review is separate from CDOT oversight. The Contractor shall coordinate the required ditch design reviews with all Ditch Companies. All plans submitted to Ditch Company for review and approval shall be in English units. Payment for Ditch Company design review will be handled via a separate Agreement found in Exhibit 7-C between CDOT and the ditch company and shall not be included in the Contract Price. The Contractor shall obtain ditch company approval in writing of design plans for all of the Work within its ROW. Exhibit 7-B will set forth the review times and requirements for submittals.

The Contractor shall submit copies of all Ditch Company approvals, including private lateral irrigation owners, notices, and correspondence, including approval of the design plans to CDOT for Approval prior to the start of the Work within the ditch ROW within 7 days of irrigation Agreement execution.

The Contractor shall coordinate with Ditch Companies prior to beginning any construction that affects the operation or flow of the ditch. Generally, ditch flows occur between April 1 and November 1, but working windows for demolition and construction shall be coordinated with each Ditch Company.

The Contractor shall cooperate with Ditch Company where Work is within the limits of the ditch ROW to expedite the Work and to avoid interference with the operation of ditch flow.

The Contractor shall perform the Work in such a manner and at such times as not to endanger or interfere with the continuous operation of the ditch and property and the flow of water at or in the vicinity of the Work. No Work shall be performed that interferes with the deeded schedule and volume of flow of the Ditch, including the delivery of water to its shareholders. The Contractor shall be responsible to Ditch Company for all damages for delays that may be sustained by Ditch Company caused by any interference that could have been avoided by proper handling of the Work.

The Contractor shall, through the owner-controlled insurance program (OCIP), indemnify the Ditch Companies under its insurance coverage during the construction phase.

Upon completion of the Work to be performed within ditch ROW, the Contractor shall promptly remove all tools, Equipment, Materials, and debris from ditch property placed there by the Contractor or the Contractor's agents. The Contractor shall restore said property to the same state and condition as when the Contractor entered thereon (and shall provide documentary proof evidencing said restoration), and shall leave said property in a clean and presentable condition satisfactory to the Ditch Company.

The Contractor shall provide As-Constructed Documents to Ditch Company within 30 Days of completion of Work within ditch ROW for Ditch Company acceptance in writing.

7.7 Irrigation/Ditch Deliverables

The Contractor shall submit the following to ditch companies and private irrigation ditch lateral owners for information, review, approval, or acceptance:

Table 7-2: Ditch Company Deliverables

Deliverable	information, review, acceptance, or approval	Schedule
Written notice to ditch company (FCDC and Pioneer Ditch) of Project commencement	information	7 Days after NTP1
Written notice to private irrigation ditch lateral of construction commencement	information	7 Days after NTP2
FCDC and Pioneer Ditch approvals	approval	Copies of FCDC and Pioneer Ditch approvals, notices, Agreements, and correspondence shall be submitted to CDOT
Private irrigation ditch laterals	information	90 days written notice to the private owner prior to start of Work
Proposed ditch relocation plan and profiles to FCDC and Pioneer Ditch	review	See Exhibit 7-B
Final ditch relocation plan and profiles to FCDC and Pioneer Ditch	approval	See Exhibit 7-B
As-Constructed documents for Work within ditch ROW	acceptance	Within 30 Days of completion of Work on ditch property
Final Acceptance Letter of Replacement of Irrigation Facilities (Exhibit 7-C)	acceptance	Within 30 Days of completion of Work on ditch property.

7.8 CDOT Deliverables

The Contractor shall submit the following to CDOT for Review, Acceptance, or Approval:

Table 7-3: CDOT Deliverables

Deliverable	Review, Acceptance, or Approval	Schedule
Ditch Agreements	Acceptance	After ditch approval
All ditch companies including private irrigation ditch lateral owners, notices, correspondence including approvals of design plans	Acceptance	Prior to start of Work within the ditch ROW within 7 days of the irrigation Agreement execution.
Final Acceptance Letter of Replacement of Irrigation Facilities (Exhibit 7-C)	Acceptance	Upon execution

7.9 Exhibits

- Exhibit 7-A Draft Agreements are available in the Reference Documents. Exhibit 7-A will be provided upon execution of the Agreements.
- Exhibit 7-A.01 Executed PSA Florida Consolidated Ditch Company
- Exhibit 7-A.02 Executed PSA Mach Natural Resources
- Exhibit 7-B FCDC Basis of Design Recommendations
- Exhibit 7-C Final Acceptance Letter of Replacement of Irrigation Facilities for Private Irrigation Ditch Laterals

Exhibit “C”

Final Acceptance Letter of Replacement of Irrigation Facilities (Final Acceptance) for Private Irrigation Ditch Lateral

This Final Acceptance Letter of Replacement Irrigation Facilities is executed by _____ (“Grantor”) in connection with the 20980-COMBO US 160 Elmore’s Corner to Dry Creek Design-Build memorandum of Agreement (MOA) dated _____ entered into by Grantor and the Colorado Department of Transportation (CDOT) (Grantee). Execution of this Final Acceptance indicates the Grantor’s inspection and acceptance of the construction of the Replacement Irrigation Facilities, as that term is defined in the MOA, performed and completed by _____ the Grantee’s (CDOT’s) “Contractor”. Two originals shall be executed, and a copy shall be forwarded to CDOT by the Contractor

The construction of the Replacement of Irrigation Facilities Acceptance inspected and accepted by execution hereof is described below:

Grantor Name: _____

MOA Date: _____

Grantee’s Contractor: _____
by: Grantee’s Contractor’s Authorized Representative

Now, therefore, the Grantor executes this Final Acceptance to indicate that it has inspected the construction of the Replacement Irrigation Facilities completed by the Grantee’s Contractor and has found the construction of the Replacement Irrigation Facilities to be acceptable to the Grantor:

Grantor

By: _____

Name: _____

Title: _____

Date: _____

8.0 Utility Relocations

This Section provides information on the Contractor, CDOT and the Utility Owners' roles and responsibilities associated with any existing or new Utility that is located or planned to be located within the Project limits as well as any Service Line or Utility service including but not limited to how a Utility is to be protected, adjusted, upgraded, constructed, or incorporated into the Project. This Work shall be completed in accordance with the Contract Documents.

Utility Work is necessary to accommodate the Project for the following reasons.

1. Utility avoidance;
2. Utility Relocations;
3. Utility Betterment;
4. Requested Relocation.

8.1 General Utility Work Obligations

The Contractor shall either (1) execute a Utility No-Conflict Closeout form, Exhibit 8-A, or (2) execute a Utility Work Order, Exhibit 8-B, for every Utility located within the Project limits.

The Project will affect existing Utilities as part of the Work. To the extent possible, CDOT has coordinated with Utility Owners to provide the preparation of various preliminary planning, design, and schedule activities for the Utilities potentially impacted by the Project. Utility relocation design Work known to be in conflict with the Project is outlined in the Preliminary Utility Work Schedule, Exhibit 8-E.

The Contractor shall coordinate and cooperate with CDOT and the Utility Owners to ensure all Utility Work (whether performed by the Utility Owners or by the Contractor) is performed in accordance with the executed Utility Relocation Agreements (URA). The physical limits of the Contractor's obligation outside of the URA for the performance of Utility Work shall extend as far as is necessary to permit construction of the Project (taking into account the requirements of the Utility Owners, Governmental Persons with jurisdiction, and adjacent property owners), whether inside or outside the Right-of-Way (ROW), to ensure reestablishment of the Utility. The Contractor shall be responsible for making its own determination that the proposed Utility Relocation design Work currently proposed is acceptable and will work for purposes of meeting the Contractor's schedule and design. Phased utility relocation may be required depending on the Contractor's construction schedule. The Contractor shall be responsible for coordinating and ensuring that the required utility relocation works with the Contractor's means and methods of construction, as well as the Contractor's construction schedule.

Service Line Relocation or adjustment for power, phone, water, and sanitary sewer, irrigation lateral work, and any other private service that is not shown to be completed by others or covered within Book 2, shall be the Contractor's responsibility to complete. All cost charges from the service provider, and all necessary Materials, including meter (if required), state electrical inspection, labor, and coordination required to maintain existing or establish new Utility services, shall be the Contractor's responsibility unless specified otherwise. The Contractor shall obtain approval of the design from the Utility service provider and coordinate and meet all requirements as specified by the Utility service provider.

The Contractor shall be responsible for documenting any new or existing CDOT Services Lines on the CDOT Utility Account Matrix and shall be submitted to CDOT per this Section.

The Contractor shall transfer over all Utility Service Line billings to the appropriate entity after Acceptance of Service Lines associated with the Work.

The Contractor shall use due diligence to anticipate and avoid Utilities and to otherwise minimize and/or mitigate the consequences of the Utility Relocations so that the Contractor's construction completion date is achieved.

The Contractor shall follow BABA requirements per CDOT Standard Specifications for Road and Bridge Construction.

8.1.1 Utility Work

The Contractor shall carry out all Utility Work in accordance with the requirements of the URAs and Book 2, Section 8.

Utility Work shall include, but is not limited to, the following:

1. Verification of all Utilities, as identified or described in the Contract Documents, that are included with the Reference Documents, and the identification of all other Utilities, including all necessary potholing located within the Project limits or otherwise impacted by the Work.
2. Development and updates to the Contractor's Utility Conflict Matrix.
3. Development and updates of the CDOT Utility Account Matrix.
4. Development of utility plans for Acceptance by CDOT.
5. Preparation and execution of the Utility No-Conflict Close-Out Form, Exhibit 8-A for CDOT Acceptance prior to RFC Documents.
6. Negotiation, preparation, and execution of the Utility Work Order, Exhibit 8-B for each Utility Relocation and Services Lines, including preparing and providing such written information concerning the Project (such as reports, plans, and surveys), to fully identify the extent of such Utility Relocation as requested by CDOT and the Utility Owner, and either Acceptance or Approval by CDOT.
7. Preparation of Utility Relocation design for each Public Utilities Relocation, and obtaining the design acceptance by the Design of Relocation Acceptance Letter (DRAL), Exhibit 8-C from the Utility Owner, and Acceptance by CDOT.
8. Construction coordination of the Public Utilities Relocations, including Service Lines and temporary Relocations, and obtaining the construction acceptance by the Construction of Relocation Acceptance Letter (CRAL), Exhibit 8-D from the Utility Owner and Acceptance by CDOT.
9. Identification and removal of abandoned existing Public Utilities as required to complete the Work; with Approval from CDOT, existing Public Utilities may be flow-filled.
10. Extension of all existing utility casing as required by CDOT Utility Accommodation Code. The Contractor shall be responsible to extend casings for Publicly Owned Utilities in connection with the Project. The Contractor shall be responsible to coordinate with the Private Utility Owners to locate and extend existing casing in connection with the Project.

11. Review of Utility Relocation design for each Private Utility, and execution of the DRAL certifying the design of each Utility Relocation is compatible with the Work and Acceptance by CDOT.
12. Inspection of Utility Relocation construction for each Private Utility, and execution of the CRAL certifying the construction of each Utility Relocation is compatible with the Work and Acceptance by CDOT.
13. Reimbursement to Utility Owners for the acquisition of replacement easements and/or irrigation permits required for Utility Relocations in respect of existing easements shown on the Right-of-Way plans provided in Book 4.
14. Reimbursement to Public Utility Owners for the acquisition of additional easements and/or irrigation permits required for Utility Relocations unable to be accommodated within existing ROW.
15. Providing public information for Utility Work performed by the Contractor or the Utility Owner.
16. Performing traffic control for Utility Work performed by the Contractor or Utility Relocation performed by the Utility Owner.
17. Coordinating traffic control for third-party Utility Owners to avoid conflicts with Project traffic control.
18. Providing survey coordinates and staking in the field for design and construction of the Utility Work performed by the Contractor or the Utility Owner.
19. Performing Incidental Utility Work, as defined in the URAs.
20. Performing and coordinating As-Constructed Documents in accordance with Book 2, Section 4 for all Utility Work Orders, including x, y, and z coordinates for all completed Utility Work Orders.
21. Incorporation of Utility Relocation Work completed during Project Work shall be included in the Project plans base file for inclusion in all subsequent plan submittals.
22. Identification and removal of abandoned existing Private Utilities as required to complete the Work.
23. All necessary Project work associated with Utility Work.

8.1.1.1 Exclusion from Utility Work

Utility Work excludes the following activities:

1. Issuance of any Permit to any Utility Owner associated with Utility Relocations.
2. Design and Construction of Utility Relocation of Private Utilities, and temporary Utility Relocation, unless identified as a Requested Relocation.

8.1.2 Contractor's Responsibility to Perform

The Contractor shall perform all Activities included in the Utility Work with respect to each impacted Utility regardless of the following:

1. Whether the Utility was indicated in the Reference Documents or, if indicated, whether the Utility was accurately indicated.

2. The type of action, if any (i.e., Relocation, Protection-in-Place), feasibility, estimated duration of Work time, or any other characteristic of any Relocation concept(s) proposed for the Utility in the Reference Documents.

The allocation of responsibility for any Utility Work to a Utility Owner pursuant to Section 8 or to a URA shall not relieve the Contractor of the obligation to coordinate with the Utility Owner as necessary for such Utility Work to be timely performed, or of the obligation to perform any other Utility Work not specifically assigned to such Utility Owner. The circumstances under which the Contractor will be entitled to a Change Order for Utility Work are set forth in Book 1, Section 6.

8.2 Performance Standards

8.2.1 Utility Owners

Except as otherwise provided in the applicable URA, all Utility Relocation designs and construction of Relocations furnished or performed by the Contractor shall be consistent with the relevant Utility Owner's written specifications, standards of practice (which may include design format), ease of maintenance access, and construction methods that are current at the date of the execution of the Work Order. The Contractor shall obtain all such written specifications, standards of practice, and construction methods from the Utility Owners. In the event of a conflict between the requirements of the Utility Owner and the requirements of the Contract Documents, the most stringent requirement shall govern. The Contractor is responsible for the resolution of any unresolved ambiguity prior to proceeding with any Utility Work.

Utility Relocations for any existing Utilities shall be designed and constructed to provide service at least equal to that offered by the existing Utility, unless the Utility Owner approves a lesser replacement.

In performing the Utility Work, the Contractor shall ensure that all Utility Work results in Utilities being located in a manner to allow future Utility maintenance to be performed by the relevant Utility Owners without disruption to the operation or maintenance of US 160.

8.3 Identification of Utilities

8.3.1 CDOT-Supplied Information

CDOT has completed a Subsurface Utility Engineering (SUE). The results of that investigation are depicted in the SUE Plan included in Book 4, which includes a list of known Utility Owners and a Utility test hole log within and/or adjacent to the ROW. SUE was completed during August of 2025. It is the Contractor's responsibility to verify the contents of the SUE plans with regard to depicted Utilities. The Contractor shall identify and locate Utilities that may have been constructed after the SUE was completed. The results of CDOT's investigation are included in the Utility Data.

8.3.2 Contractor's Investigations

Without limiting its ability to negotiate a Change Order with respect to any Unidentified Utility, the Contractor shall take all actions reasonably practicable to identify and confirm the existence, exact location, size, and type of all Utilities within the Project limits or otherwise potentially impacted by the Project, regardless of whether such Utilities are shown in the Contract Documents, including all potentially impacted Service Lines.

If the Contractor's investigations identify Unidentified Utilities, the Contractor shall notify CDOT and the relevant Utility Owner immediately upon discovery. Thereafter, CDOT, the Contractor, and the relevant Utility Owner shall execute a Utility No Conflict Close-Out Form, or pursuant to a Utility Work Order, treat an Unidentified Utility as either a Contractor-relocated Utility or a Utility Owner-Relocated Utility.

8.3.2.1 Final Utility Plans

The Contractor shall comply with the 811 Subsurface Utility Engineering (SUE) requirements as set forth under Article 9-1.5-101, C.R.S. et. seq. The Contractor shall prepare final utility plans in accordance with the Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data as developed by the American Society of Civil Engineers (ASCE) CI/ASCE 38. The Contractor shall also be required to submit As-Constructed utility plans in accordance with this Section and Book 2, Section 10 upon completion of the Work.

8.3.3 Contractor's Utility Conflict Matrix

The Contractor, in accordance with the Utility Owner's URA, shall, at a minimum, submit to CDOT monthly and otherwise upon CDOT's reasonable request, for Review the Contractor's Utility Conflict Matrix to include all of the following information (unless otherwise agreed to by the parties):

1. The relevant number and execution date of each executed Utility Work Order.
2. Each No Conflict Close-Out Form execution date.
3. Each Design of Relocation Acceptance Letter (DRAL) execution date.
4. Each Construction of Relocated Acceptance Letter (CRAL) execution date.
5. Completed As-Constructed delivery date, to or by the Contractor, as applicable.
6. Identification of all changes made since the prior Contractor's Utility Conflict Matrix Report.

8.3.4 CDOT Utility Account Matrix

The Contractor shall be responsible for completing the CDOT Utility Account Matrix for all CDOT-owned services impacted and or created for the completion of this Project. The Contractor shall submit the CDOT Utility Account Matrix to CDOT for Review monthly or per CDOT request. A copy of this Utility Account Matrix can be found in the Reference Documents.

8.3.5 Utility Work Orders

The Contractor, Utility Owner, and CDOT (in that order) shall execute a Utility Work Order prior to commencement of any Utility Work to be performed by the Contractor or Utility Relocation to be performed by a Utility Owner. The Contractor may prepare a single Utility Work Order covering more than one Relocation, Betterment, or Requested Relocation with the consent of CDOT and the relevant Utility Owner.

Prior to executing any Utility Work Order, the Contractor and CDOT shall meet with the relevant Utility Owner to negotiate the relevant draft Work Order, including the following:

The scope of Work, the implementation schedule (including any applicable seasonal work restrictions), any exhibits, and any other matters required to be agreed to pursuant to the URA; and in accordance with the paragraphs below, cost and payment responsibility.

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 8 - Utility Relocations

The costs for Work performed by the Contractor under a Utility Work Order for Betterments or Requested Relocations shall be negotiated between the Contractor and the Utility Owner. If it is agreed that the Utility Owner will be reimbursing the Contractor for any costs in connection with Utility Work, the Contractor shall provide a definitive cost estimate to the Utility Owner in accordance with the Utility Owner's standard practice and with the requirements of the applicable URAs, and shall submit this estimate to CDOT for information.

After the cost estimate approval by the Utility Owner, the estimate shall be incorporated into the applicable draft Utility Work Order. It is agreed that Utility Owner is responsible for the payment of any amount of the cost of a Utility Betterment or Requested Relocation; payment shall be made directly by the Utility Owner to the Contractor. CDOT shall not be responsible for the payment of any amount with respect to a Utility Betterment or Requested Relocation other than as expressly provided for in the URAs or Utility Work Order.

The costs for construction Work with respect to a Utility Relocation within a Private Utility Owner's permanent Easement, or any Utility Relocation design Work performed by a Private Utilities Owner under a Utility Work Order, shall be negotiated between the Contractor and the Private Utility Owner.

If it is agreed that the Contractor will be reimbursing a Utility Owner for any such costs, the Contractor shall obtain a definitive cost estimate from the Private Utility Owner in accordance with the requirements of the applicable URA or the Private Utility Owner's standard practice, and shall submit such estimate to CDOT for information.

After cost estimate approval by the Contractor, the estimate shall be incorporated into the applicable Utility Work Order. If the Contractor is responsible for the payment of any such costs, that amount shall be paid directly to the Private Utility Owner.

For Utility Betterments and Requested Relocations, the draft Utility Work Order shall include the direct impact of such Utility Work Order on the performance of the Work and the Contractor's ability to follow the Project Schedule, in each case taking into account the Contractor's obligations under Book 1, Section 13, and such other information as CDOT may reasonably require.

On the basis of the meetings held in accordance with this Section, the Contractor shall submit each draft Utility Work Order to CDOT for Acceptance.

The Contractor shall submit each Accepted draft Utility Work Order to the Utility Owner for approval and execute the Utility Work Order itself.

The Contractor shall submit the Utility Owner-approved Utility Work order to CDOT for Acceptance.

After CDOT Acceptance of a Utility Work Order, the Contractor shall thereafter perform the Utility Work for which it is responsible pursuant to such Utility Work Order as part of the Work.

The Contractor shall propose revisions to any Utility Work Order if and when necessary in accordance with the terms of the applicable URA. The revised Utility Work Order shall be drafted and executed in accordance with the same procedures applicable to the drafting, Approval, and execution of the original Work Order under this Section.

8.3.6 Damage to Utilities Caused by the Contractor

The Contractor shall be responsible for any negligent damage caused by the Contractor or its Subcontractors, employees, or agents to property, Utilities, Structures, or by the Subcontractors, employees, or agents of the Utility Owners. The Contractor shall immediately notify the affected Utility Owner and CDOT of any Utility damaged by the Contractor's performance of the Work.

Promptly after the Contractor's discovery of this damage, or the Contractor's receipt of notice of any such damage from the Utility Owner or from any other source: (a) the Contractor shall repair the damage to the Utility Owner's satisfaction; or (b) at the Utility Owner's election, the Utility Owner may make such repairs at the Contractor's expense.

Upon receipt of the Utility Owner's invoice, the Contractor shall make payment to the Utility Owner according to the invoice instructions or within 60 Days, whichever timeframe is shorter.

8.3.7 Multiple Moves

The Contractor shall be responsible for all costs incurred by CDOT, the Contractor, or the Utility Owner to subsequently Relocate any Utility already Relocated to accommodate the Project, provided the move is at the request of the Contractor and for benefit of the Contractor's schedule. This includes the temporization of existing Utility lines necessitated by the Contractor's methods to construct and not otherwise planned for as part of the final Relocation Work, as shown in the Contractor's utility plans.

8.4 Utility Coordination

8.4.1 General

The Contractor shall be responsible for all coordination with the affected Utility Owners to accomplish each Utility Relocation in accordance with the applicable URAs. In the discharge of its coordination responsibilities, the Contractor shall perform all of the following:

1. Keep Utility Owners fully and timely informed of its construction schedule, including Utility Work being performed by Contractor, if applicable. The Contractor shall provide to the Utility Owners, as soon as practicable, an estimated schedule for their respective Utility Work and shall notify the Utility Owners of any significant changes to the schedule as soon as practicable.
2. Keep Utility Owners fully and timely informed of changes that affect their Utilities.
3. Consider, to the extent practicable, Utility Owners' needs for the allocation of resources to perform their respective Utility Work in a timely manner.
4. Keep Utility Owners involved in making decisions that affect their Utilities so Utility Owners are able to provide uninterrupted service to their customers, or to be subject to the least interruption practicable, as approved by the Utility Owner.
5. Avoid multiple Relocations of the same Private Utility, in accordance with the Contract Documents.
6. Coordinate with Utility Owners performing their own Relocations to develop Utility schedules.
7. Provide to Utility Owners a prioritization of necessary Utility Relocations consistent with the Contractor's schedule.

8.4.2 Utility Meetings

8.4.2.1 Between the Contractor and Utility Owners

In addition to any meetings or negotiations required under this Section 8 and Book 2, Section 7, after execution of a Utility Work Order, the Contractor shall schedule regular meetings with the relevant Utility Owner to complete the Utility Work pursuant to the terms of the Utility Work Order. The Contractor shall not unreasonably deny any request by a Utility Owner to meet regarding any Utility Work. The Contractor shall provide CDOT with at least 5 Days prior notice of any meeting with a Utility Owner, which CDOT may attend in its discretion, unless a shorter notice period is agreed to by CDOT and is reasonably necessary under the circumstances.

8.4.2.2 Between CDOT and the Contractor

The Contractor and CDOT shall meet as necessary and otherwise as reasonably requested by the other party to discuss and resolve matters relating to the Utility Work.

The party proposing a meeting shall provide the other party with a minimum of 5 Days prior notice of any proposed meetings, unless a shorter notice period is agreed to and reasonably necessary under the circumstances.

8.4.2.3 Meeting Log/Correspondence

The Contractor shall maintain a meeting/action and decision log for all Utility Work meetings with Utility Owners and/or CDOT and shall distribute copies of the log to CDOT for Acceptance and, when such meetings were attended by a Utility Owner, to the relevant Utility Owner, no later than 7 Days after each meeting date. The Contractor shall provide copies of all correspondence between the Contractor and any Utility Owner to CDOT for Acceptance no later than 7 Days after meeting/correspondence.

In developing the Project schedule, the Contractor shall allow appropriate time periods for the performance of all tasks shown on each Utility Work Order. Utility relocation Work activities and progress shall be documented by the Contractor and included with the Contractor's Monthly Schedule until the Utility Relocation Work is complete. All schedules and deadlines for the design and construction of Utility Work set forth in the Utility Work Orders shall prevail over any estimated times noted in the Contractor Utility Conflict Matrix.

8.4.3 Notices

8.4.3.1 To Utility Owners

To maintain the Project schedule, the Contractor shall issue all notices in writing to the Utility Owners called for under the URA, with copies submitted to CDOT for Review, no later than 5 Days after the issuance to the Utility Owner.

Notice shall be given to respective Utility Owners when the Contractor is performing Work adjacent to their Utilities. The Contractor shall be solely responsible for and liable for any damage to any Utilities resulting from the Contractor's Work outlined under this Section.

8.4.3.2 To CDOT

The Contractor shall be responsible for verifying progress of Utility Work performed by the Utility Owner and for notifying CDOT should the Contractor have cause to believe the Utility Owner will not meet the specified timeframe(s) in the Utility Work Order. The Contractor shall provide such written notice to CDOT for Review immediately after discovery.

If the Utility Owner is performing Utility Work that requires a CDOT Utility Permit, the Contractor shall verify the CDOT Utility Permit has been obtained and is being complied with. If the Contractor determines the Utility Owner does not have the required CDOT Utility Permit, or is in violation of the terms and conditions of the permit, the Contractor shall provide written notice to CDOT for Review immediately after discovery.

8.4.3.3 To Utility Notification Center of Colorado

The Contractor shall arrange for the Utility Notification Center of Colorado (UNCC) to provide training for the Contractor to order locate tickets online and to have Utility field locates performed. The Contractor shall contact UNCC to make arrangements for this training. This will allow the Contractor to order its own call tickets online. The contact for UNCC web ticket training in southwestern Colorado is Sanatam Khalsa, skhalsa@co811.org, (720) 705-8926.

8.5 Failure of Utility Owner to Cooperate or Timely Perform

The Contractor shall use reasonable efforts to obtain the cooperation of each Utility Owner as necessary for carrying out the Utility Work. The Contractor shall provide written notice to CDOT immediately for Review if:

1. The Contractor becomes aware that any Utility Owner is not cooperating in identifying Utilities, negotiating or executing Utility Work Orders, performing or approving any Utility Work, or delivering DRALs, CRALs, or any deliverable shown in Table 8-1; or
2. A Utility Owner fails to complete design and/or construction Work for which it is responsible on or before the deadline established in the applicable Utility Work Order; or
3. A Utility Owner fails to complete design and/or construction Work for which it is responsible on or before the deadline established in the applicable Utility Work Order; or
4. Based on the progress made by the relevant Utility Owner, the Contractor believes there is a possibility the Utility Owner will not complete the Relocation of an Owner-Relocated Utility or any other Utility Work as required pursuant to a Utility Work Order to the extent and in the manner shown on the utility draw within the time limits set out in the applicable Utility Work Order.

The Contractor shall advise CDOT whether the Utility Owner has complied in all respects with the requirements of this Section, including compliance with the applicable URA and the applicable Utility Work Order with respect to the relevant portion of the Utility Work.

After delivery of such notice, the Contractor shall continue to diligently pursue the Utility Owner's cooperation and shall assist CDOT in any attempts to reach a solution through the Dispute resolution procedure outlined in the applicable URA.

Utility relocation delays caused by the Utility Owner shall be sufficiently documented and incorporated into the Contractor's construction schedule so as to show possible damages resultant from the delay. The Contractor shall document any incurred costs as a direct result of the Utility Owner's failure to

cooperate or perform its obligations under the applicable URA on a weekly basis and demonstrate how this failure to perform resulted in a material delay to the Contractor's Work schedule and adversely affected the completion deadline. Utility delays and extensions shall be handled in accordance with Book 1, Section 6.2 and Book 1, Section 13.5.

In the event CDOT pursues legal action against a Utility Owner for failure to perform Utility Relocation Work resulting in damages to the Contractor, the Contractor shall cooperate as reasonably requested by CDOT in connection with such legal actions, including having the Contractor's staff and Subconsultants act as witnesses in such legal actions and providing information, reports, graphs, photos, plans, renderings, and similar materials to CDOT's counsel at the Contractor's expense.

8.6 Utility Work Procedure

8.6.1 Utility Agreements

A draft URA template is included in the Reference Documents. The CDOT URAs executed with each Utility Owner whose Utilities are, or may be, affected by the Project will be provided in the Reference Documents as the Agreements are executed. If a specific URA is not executed by the Proposal Due Date, the Contractor shall utilize the draft URA template for that specific Utility Owner, unless directed otherwise by CDOT.

If the Contractor identifies Utility Work that is required from a Utility Owner without an executed URA, CDOT may enter into a URA with the Utility Owner. The Contractor shall be responsible to coordinate with the Utility Owner as if it had an executed URA.

The Contractor shall not be a party to any URA, Standard Utility Agreement (SUA), or Preliminary Services Agreement (PSA) and shall not be responsible for negotiating the Agreement. CDOT will be responsible for drafting and negotiating the URA, Standard Utility Agreement, and Preliminary Services Agreements. The Contractor shall be responsible for assisting in any of the documentation or exhibits needed for inclusion in the SUA or PSA.

8.6.2 As-Constructed Documents

Where the Utility Owner performs the Utility Work, the Utility Owner is required in accordance with the terms of its URA to provide As-Constructed plans of the Utility Relocation to CDOT and to the Contractor no later than 90 days after execution of the relevant CRAL. The As-Constructed Documents may be in the form of redlining changes that deviate from the Accepted DRAL plans or labeling the Accepted DRAL plans "constructed per plan." The Contractor shall show the Utility As-Constructed information on the final Project As-Constructed Documents for CDOT Acceptance. Final As-Constructed utility plans shall be collected in accordance with Book 2, Section 10.

Where the Contractor performs the Utility Work, the Contractor shall provide As-Constructed Documents of the Relocation to CDOT and the Utility Owner as soon as practicable, but not later than 90 Days after execution of a CRAL. The As-Constructed Documents may be in the form of redlining changes that deviate from the Accepted DRAL plans or labeling the Accepted DRAL plans "constructed per plan." The Contractor shall show the Utility As-Constructed information on the final Project As-Constructed Documents for CDOT Acceptance. Final As-Constructed utility plans shall be in accordance with Book 2, Section 4 and Book 2, Section 10.

The Contractor shall plan, schedule, and perform all surveys required to document the location of As-Constructed utility features on the Project. The Contractor shall deliver the survey data (in a format

compatible with ORD TMOSS survey format, including x, y, and z coordinates) and field notes for CDOT 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-Constructed survey shall be the responsibility of the Contractor and shall be completed in accordance with the CDOT Survey Manual and the Revision of Section 625 Asset Geospatial Data Collection in Book 2, Section 21.

Quarterly (and at such other times as reasonably requested by CDOT), the Contractor shall update the utility plans developed by the Contractor and submit the updated version to CDOT for Acceptance. Progress updates to the utility plans are intended to assist the Contractor in completing other phases of its Work, as well as for the purpose of avoiding damages to relocated utilities. The Contractor shall provide this information to its subcontractors in order to mitigate the potential for utility damages.

8.6.3 Utility Specifications

The Contractor shall consult with Utility Owners for required design and construction specifications as listed in the executed URAs.

8.7 Deliverables

At a minimum, the Contractor shall submit the following for Review, Acceptance, or Approval:

Table 8-1: Deliverables

Deliverable	Review, Acceptance, or Approval	Schedule
Utility No-Conflict Close-Out Form	Acceptance	Prior to RFC Documents
Design of Relocation Acceptance Letter (DRAL)	Acceptance	No later than 7 Days after completion of relocation design
Construction of Relocation Acceptance Letter (CRAL)	Acceptance	No later than 7 Days after completion and acceptance of relocation Work
Contractor's Utility Conflict Utility Matrix	Review	Monthly or per CDOT's request
CDOT Utility Account Matrix	Review	Monthly or per CDOT's request
Utility Relocation Cost Estimate	information	Per 8.3.5
Draft Utility Work Order (including costs)	Acceptance	Per 8.3.5
Final or Revised Utility Work Order (including costs)	Acceptance	Per 8.3.5
Meeting action/decision log	Acceptance	No later than 7 Days after each meeting date
Correspondence between Contractor and any Utility Owner	Acceptance	No later than 7 Days after correspondence
Notice of performing Work	Review	No later than 5 Days after the issuance to the Utility Owner
Written notice to CDOT of Utility Owner not meeting Work Order time frame	Review	Immediately after discovery

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 8 - Utility Relocations

Deliverable	Review, Acceptance, or Approval	Schedule
Written notice of Utility Permit violation	Review	Immediately after discovery
Written notice of failure of Utility Owner to carry out the Utility Work	Review	Immediately after discovery
Utility survey	Review	Upon completion of the survey
As-Constructed Documents	Acceptance	No later than 90 Days after execution of a CRAL
Updated utility plans	Acceptance	Quarterly (and at such other times as reasonably requested by CDOT)

8.8 Exhibits

Exhibit 8-A	Utility No-Conflict Close-Out Form
Exhibit 8-B	Form of Utility Work Order
Exhibit 8-C	Form of Design of Relocation Acceptance Letter (DRAL)
Exhibit 8-D	Form of Construction of Relocation Acceptance Letter (CRAL)
Exhibit 8-E	Preliminary Utility Relocation Schedule

EXHIBIT 8-A

UTILITY NO-CONFLICT CLOSEOUT FORM

This Utility No-Conflict Closeout Form ("No-Conflict Form") is executed by the Utility Owner and the CDOT Contractor in connection with the US 160 Elmore's Corner to Dry Creek Design-Build Utility Relocation Agreement ("URA") entered into by the Utility Owner and CDOT. Unless the context clearly otherwise requires, initially capitalized terms shall have the meaning prescribed to them in the URA.

A fully-executed No-Conflict Form indicates the Parties' concurrence that, as of the Project plans current at the date of Utility Owner's execution hereof, no Relocation is required for Utility Owner's Utility referenced herein. Utility Owner and the CDOT Contractor acknowledge that future modifications to the Project may require Relocation of the referenced Utility in accordance with the URA. Two originals shall be executed and a copy shall be forwarded to CDOT by the CDOT Contractor.

Utility Owner	
Utility Identification No.:	
Location	
Comments (attach pages as necessary)	

FOR UTILITY OWNER

By: _____ Date: _____
 Name:
 Title:

FOR CDOT CONTRACTOR

By: _____ Date: _____
 Name:
 Title:

If this form is not signed by the Utility Owner, the Utility Owner shall state below its basis for disagreement with the No-Conflict designation for this Utility:

 _____ (attach pages as necessary)

**Exhibit 8-B
Form of Utility Work Order**

Utility Owner: _____			
Utility Identification No.: _____			
Work Order No.: _____		Work Order Revision No.: _____	
Work Breakdown Structure No.: _____			
<u>LOCATION:</u>			
<u>DESCRIPTION:</u>			
<u>OPERATING RIGHTS:</u>			
DESIGN			
		☐ No Design Required	
Performing Party		☐ Contractor	☐ Owner
Responsible Party		☐ Contractor	☐ Owner
Contractor pays Owner	Lump Sum: _____	Actual Cost Not to Exceed:	_____
Owner pays Contractor	Lump Sum: _____	Actual Cost Not to Exceed:	_____
Comments	_____		
CONSTRUCTION			
		☐ No Construction Required	
Performing Party		☐ Contractor	☐ Owner
Responsible Party		☐ Contractor	☐ Owner
Contractor pays Owner	Lump Sum: _____	Actual Cost Not to Exceed:	_____
Owner pays Contractor	Lump Sum: _____	Actual Cost Not to Exceed:	_____
Comments	_____		
CONSTRUCTION INSPECTION			
		☐ No Construction Inspection Required	
Performing Party		☐ Contractor	☐ Owner:
Responsible Party		☐ Contractor	☐ Owner:
Contractor pays Owner	Lump Sum: _____	Actual Cost Not to Exceed:	_____
Owner pays Contractor	Lump Sum: _____	Actual Cost Not to Exceed:	_____
Comments	_____		
PROPERTY ACQUISITION			
		☐ No Property Acquisition Required	
Performing Party		☐ Contractor	☐ Owner:
Responsible Party		☐ Contractor	☐ Owner:
Contractor pays Owner	Lump Sum: _____	Actual Cost Not to Exceed:	_____
Owner pays Contractor	Lump Sum: _____	Actual Cost Not to Exceed:	_____
Comments	_____		

<u>SCHEDULE (THIS WORK ORDER ONLY)</u>	
<u>Design</u>	<u>Construction</u>
Start Date: _____	Start Date: _____
Completion Date: _____	Completion Date: _____
Comments: _____	
<u>CHANGE ORDER</u>	
If this section is signed by the CDOT representative, then this Work Order will function as a Change Order.	
_____ CDOT Representative	_____ Date
<u>WORK ORDER TERMS AND CONDITIONS</u>	
SCOPE OF WORK ORDER. This Work Order is entered into by and among Utility Owner and CDOT, and, where applicable, the CDOT Contractor in order to implement in part the URA identified herein, as the same may be amended from time to time, and which is incorporated herein by this reference. All work undertaken pursuant to this Work Order shall be performed in accordance with the requirements of the URA, which shall govern to the extent of any conflict between its terms and the terms of this Work Order. Relocation Standards specifically identified in the URA are incorporated herein by this reference. Unless otherwise defined herein, all initially capitalized terms and conditions shall have the meaning prescribed to them in the URA. WORK ORDER ATTACHMENTS. This Work Order and any attachments hereto contain information specific to the Relocation to be performed hereunder. Attached and/or referenced Relocation Standards are incorporated herein by this reference and shall be considered a part of this Work Order. This Work Order governs only the Utility Work specifically identified herein and shall be conclusive as to all matters represented herein. ORDER OF EXECUTION. This Work Order shall be executed first by Utility Owner, then by the CDOT Contractor (if applicable) and finally by CDOT. IN WITNESS WHEREOF, CDOT, the Utility Owner, and where applicable, the CDOT Contractor have executed this Work Order, which shall be effective as of the date of the CDOT's signature.	
Utility Owner: By: Print Name: Title: Date:	_____ _____ _____ _____ _____
CDOT Contractor: By: Print Name: Title: Date:	_____ _____ _____ _____ _____
CDOT: By: Print Name: Title: Date:	_____ _____ _____ _____ _____

Utility Identification No.:															
SECTION A	SCOPE														
SECTION B	REQUIRED PERMITS														
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%; text-align: center;">Permit Type</th> <th style="width: 40%; text-align: center;">Permit Responsibility</th> </tr> </thead> <tbody> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </tbody> </table>		Permit Type	Permit Responsibility												
Permit Type	Permit Responsibility														
SECTION C	LIST OF ATTACHMENTS														
☐ Owner Design Sheet ☐ Project Design Sheet ☐ Cost Estimate ☐ Property Rights ☐ Other:															

Reset

Exhibit 8-C

Form of Design of Relocation Acceptance Letter

This Design of Relocation Acceptance Letter ("DRAL") is executed by the non-Designing Party in connection with the US 160 Elmore's Corner to Dry Creek Design-Build Utility Relocation Agreement (URA), entered into by the Utility Owner and CDOT. Execution of this DRAL indicates the non-Designing Party's acceptance and approval of the design of the Relocation, as attached to this DRAL, performed and completed by the Designing Party. Unless otherwise defined herein, initially capitalized terms shall have the meaning prescribed to them in the URA. Two originals shall be executed and a copy shall be forwarded to CDOT by the CDOT Contractor.

Utility Owner: _____

Utility Identification No.: _____

Work Order No.: _____ Work Order Date: _____

Work Order Rev. No.: _____ Rev. Date: _____

Designing Party: _____

Now, therefore, the non-Designing Party executes this DRAL to indicate that it has reviewed the design of the Relocation completed by the Designing Party and agrees the design of the Relocation was designed in accordance with the non-Designing Party's Relocation Standards duly provided to the Designing Party:

Non-Designing Party

By: _____

Name: _____.

Title: _____.

Date: _____

☐ The non-Designing Party declines execution of this DRAL at this time for the following reasons:

(attach pages as necessary)

☐ The Constructing Party may proceed with construction of the Relocation on the Project Site.

Exhibit 8-D

Form of Construction of Relocation Acceptance Letter

This Construction of Relocation Acceptance Letter ("CRAL") is executed by the non-Constructing Party in connection with the US 160 Elmore's Corner to Dry Creek Design-Build Utility Relocation Agreement (URA) entered into by the Utility Owner and CDOT. Execution of this CRAL indicates the non-Constructing Party's inspection and acceptance of the construction of the Relocation performed and completed by the Constructing Party. Unless otherwise defined herein, initially capitalized terms shall have the meaning prescribed to them in the URA. Two originals shall be executed and a copy shall be forwarded to CDOT by the CDOT Contractor.

The construction of the Relocation inspected and accepted by execution hereof is described below:

Utility Owner: _____

Utility Identification No.: _____

Work Order No.: _____ Work Order Date: _____

WO Revision No.: _____ WO Revision Date: _____

Constructing Party: _____

Now, therefore, the non-Constructing Party executes this CRAL to indicate that it has inspected the construction of the Relocation completed by the Constructing Party and agrees the construction of the Relocation was performed in accordance with the Relocation Plans:

Non-Constructing Party

By: _____

Name: _____.

Title: _____.

Date: _____

☐ The non-Constructing Party declines execution of this CRAL at this time for the following reasons:

(attach pages as necessary)

Exhibit 8-E

Preliminary Utility Relocation Schedule						
Utility Owner/Telecommunications Provider	Relocation Required	Preliminary Service Agreement (PSA) Preliminary Design	Standard Utility Agreement (SUA)	Utility Relocation Agreement (URA)	Anticipated Relocation Start Date	Anticipated Relocation Completion Date
Atmos (Gas Distribution) Sterling Balliger Sterling.balliger@atmosenergy.com (970) 759-9485 Gary Arnett Gary.arnett@atmosenergy.com (970) 759-9487	No. Protect in place, no relocation anticipated. Contractor to design for avoidance. If avoidance is not possible, Contractor shall coordinate relocation and/or mitigation measures with Owner. Contractor shall exercise caution when working on or around pipelines and crossings and adhere to construction requirements concerning depth of cover and placement of fill. Seasonal restrictions for relocations may apply.	No PSA anticipated	No- N/A (not reimbursable)	Yes	TBD Contractor to coordinate with Utility Owner pursuant to Book 2, Section 8.	TBD Contractor to coordinate with Utility Owner pursuant to Book 2, Section 8.
Enduring Resources IV (Gas Gathering Lines) Alex Campbell acampbell@enduringresources.com (303) 573-1222 Kyle Walter kyle.walter@enduringresources.com (505) 444-0750 Travis Whitham twhitham@enduringresources.com (303) 350-5716 Tim Frisenham (505) 444-0749	Yes. Relocation of gathering lines required to accommodate base configuration design. Design and construction relocation work to be completed by Owner concurrent with project. CDOT has initiated preliminary engineering review with Owner for relocation from approx. STA 133+00 Lt. to STA 146+00 Lt and Rt. Contractor to coordinate construction work with Owner for relocation of pipelines to accommodate proposed Work. Contractor shall exercise caution when working on or around pipelines and crossings and adhere to construction requirements concerning depth of cover and placement of fill. Seasonal restrictions for relocations may apply.	Yes, CDOT will execute a PSA for design and relocation. CDOT to pay Owner’s cost for design.	Yes, CDOT will execute a SUA for utility relocation. CDOT to pay Owner’s cost of reimbursable relocation work. Contractor to coordinate with Owner to complete the required relocation. Work to be completed by Owner concurrent with project pursuant to Book 2, Section 8.	Yes	TBD Contractor to coordinate with Utility Owner pursuant to Book 2, Section 8.	TBD Contractor to coordinate with Utility Owner pursuant to Book 2, Section 8. Relocation work currently estimated to take 60 working days to complete, Contractor to confirm relocation duration with Utility Owner. Contractor to verify with Utility Owner if seasonal restrictions may apply.

Preliminary Utility Relocation Schedule						
Utility Owner/Telecommunications Provider	Relocation Required	Preliminary Service Agreement (PSA) Preliminary Design	Standard Utility Agreement (SUA)	Utility Relocation Agreement (URA)	Anticipated Relocation Start Date	Anticipated Relocation Completion Date
Harvest Midstream (HP Gas Gathering Transmission Line) Juanita Farrell jfarrell@harvestmidstream.com (505) 215-9458 (cell) (505) 632-4851 (work) Robert Wilson robert.wilson@harvestmidstream.com (505) 215-3064	Protect in place- No relocation anticipated. Mitigation measures for wetland habitat may be required. Contractor to design for avoidance. If avoidance is not possible, Contractor shall coordinate relocation and/or mitigation measures with Owner. Contractor shall exercise caution when working on or around pipelines and crossings and adhere to construction requirements concerning depth of cover and placement of fill. Seasonal restrictions for relocations may apply.	Yes, CDOT will execute a PSA for design review. CDOT to pay Owner’s cost for design review.	TBD- SUA dependent on final design. CDOT to pay Owner’s cost of reimbursable relocation work, if required.	Yes	TBD Contractor to coordinate with Utility Owner pursuant to Book 2, Section 8.	TBD Contractor to coordinate with Utility Owner pursuant to Book 2, Section 8.
HilCorp Energy Company (Gas Gathering Lines) Ramon Hancock Ramon.hancock@hilcorp.com Brett Jones brjones@hilcorp.com	Protect in place - No relocation anticipated. Mitigation measures for bridge detour work may be required. Contractor to design for avoidance. If avoidance is not possible, Contractor shall coordinate relocation and/or mitigation measures with Owner. Contractor shall exercise caution when working on or around pipelines and crossings and adhere to construction requirements concerning depth of cover and placement of fill. Seasonal restrictions for relocations may apply.	Yes, CDOT will execute a PSA for design. CDOT to pay Owner’s cost for design.	TBD, SUA dependent on final design. CDOT to pay Owner’s cost of reimbursable relocation work, if required.	Yes	TBD Contractor to coordinate with Utility Owner pursuant to Book 2, Section 8.	TBD Contractor to coordinate with Utility Owner pursuant to Book 2, Section 8.

Preliminary Utility Relocation Schedule						
Utility Owner/Telecommunications Provider	Relocation Required	Preliminary Service Agreement (PSA) Preliminary Design	Standard Utility Agreement (SUA)	Utility Relocation Agreement (URA)	Anticipated Relocation Start Date	Anticipated Relocation Completion Date
La Plata Electric Association (LPEA) Toby Allred tallred@lpea.coop (970) 749-0663 (cell) Cliff Field cfield@lpea.coop (970) 382-3515 Hank Wills hwills@lpea.coop (970) 403-2644 (cell)	Yes. Relocation of overhead and buried electrical distribution lines and appurtenances required to accommodate base configuration design. Design and construction relocation work to be completed by Owner concurrent with project. Contractor to coordinate with Owner for relocation of electrical facilities, including services to accommodate proposed Work and phasing schedule.	Yes, CDOT will execute a PSA for relocation design. CDOT to pay Owner’s cost for design.	Yes, CDOT will execute a SUA for utility relocation. CDOT to pay Owner’s cost of reimbursable relocation work. Contractor to coordinate with Owner to complete the required relocation. Work to be completed by Owner concurrent with project pursuant to Book 2, Section 8.	Yes	TBD Contractor to coordinate with Utility Owner pursuant to Book 2, Section 8.	TBD Contractor to coordinate with Utility Owner pursuant to Book 2, Section 8. Relocation work currently estimated to take 120 working days to complete, Contractor to confirm relocation duration with Utility Owner.
La Plata Archuleta Water District (LPAWD) Edward Tolen, P.E. etolen@laplawd.org (970) 563-0320 (work) (970) 442-1303 (cell)	Protect in place, no relocation anticipated. Fire Hydrant protected in place at MP 95.15 a newly constructed Fire Hydrant at MP 95.33 located near mobile home park emergency access points. Coordination with LPAWD required for tie-in. See Section 14 Roadway 14.2.2.13. Contractor to design for avoidance. If avoidance is not possible, Contractor shall coordinate relocation and/or mitigation measures with Owner Contractor shall exercise caution when working on or around pipelines and crossings and adhere to construction requirements concerning depth of cover and placement of fill. Casing extensions may be required.	Yes, CDOT will execute a PSA for design review. CDOT to pay Owner’s cost for design.	Yes, CDOT will execute a SUA for utility relocation. CDOT to pay Owner’s cost of reimbursable relocation work. Contractor to coordinate with Owner to complete the required relocation. Work to be completed by Owner concurrent with project pursuant to Book 2, Section 8.	Yes	TBD Contractor to coordinate with Utility Owner pursuant to Book 2, Section 8.	TBD Contractor to coordinate with Utility Owner pursuant to Book 2, Section 8.

Preliminary Utility Relocation Schedule						
Utility Owner/Telecommunications Provider	Relocation Required	Preliminary Service Agreement (PSA) Preliminary Design	Standard Utility Agreement (SUA)	Utility Relocation Agreement (URA)	Anticipated Relocation Start Date	Anticipated Relocation Completion Date
Lumen Reference Number P-679894 CO Mike Gardner Mike.gardner@lumen.com (970) 382-1365 (cell) Guy O’nan Guy.onan1@lumen.com (970) 903-9030 (cell)	Yes. Relocation of aerial and buried communication lines and appurtenances required to accommodate base configuration design. Design and construction relocation work to be completed by Owner concurrent with project. Contractor to coordinate with Owner for relocation of communication facilities to accommodate proposed Work and phasing schedule.	No PSA anticipated	No- N/A (not reimbursable)	Yes	TBD Contractor to coordinate with Owner pursuant to Book 2, Section 8.	TBD Contractor to coordinate with Owner pursuant to Book 2, Section 8. Relocation work currently estimated to take 120 working days to complete, Contractor to confirm relocation duration and restrictions with Owner.
Red Cedar Gathering Company (Gas Gathering Line) Mat Ammerman Mammerman@redcedargathering.com (970) 749-8831 (cell) Ryan Morrison Rmorrison@redcedar.com (970)-749-7419 Tom Weinheimer Tweinheimer@redcedargathering.com (970) 764-6916 (work) (970) 759-6469 (cell)	Protect in place, no relocation anticipated. Contractor to design for avoidance. If avoidance is not possible, Contractor shall coordinate relocation and/or mitigation measures with Owner. Contractor shall exercise caution when working on or around pipelines and crossings and adhere to construction requirements concerning depth of cover and placement of fill. Seasonal restrictions for relocations may apply.	Yes. CDOT will execute a PSA for design. CDOT to pay Owner’s cost for design.	TBD - SUA dependent on final design. CDOT to pay Owner’s cost of reimbursable relocation work, if required.	Yes	TBD Contractor to coordinate with Utility Owner pursuant to Book 2, Section 8.	TBD Contractor to coordinate with Utility Owner pursuant to Book 2, Section 8.

Preliminary Utility Relocation Schedule						
Utility Owner/Telecommunications Provider	Relocation Required	Preliminary Service Agreement (PSA) Preliminary Design	Standard Utility Agreement (SUA)	Utility Relocation Agreement (URA)	Anticipated Relocation Start Date	Anticipated Relocation Completion Date
Mach Natural Resources (fka- Simcoe/IKAV/BP) (Gas Gathering Lines) Deb Bartel Dbartel@samuelengineering.com (970) 759-3564 (cell) Kate Feir Kate.feir@machnr.com (970) 394-4457 (work) (970) 243-4683 (cell) Chris Jaworsky chris.jaworsky@machnr.com (405)889-6602	Yes. Mach requested Utility Betterment of fiberglass gathering lines at approx. STA 344+65. Casing extensions may be required to accommodate base configuration design. Contractor to design for avoidance at large mammal underpass located at STA 365+50. Design and construction relocation work to be completed by Owner concurrent with project. Contractor to coordinate with Owner for pipeline relocation and mitigation measures to accommodate proposed Work and phasing schedule. Seasonal restrictions for relocations may apply.	Yes. CDOT will execute a PSA for design. CDOT to pay Owner’s cost for design.	No- N/A (not reimbursable) CDOT to pay Owner’s cost of reimbursable relocation work, if required.	Yes	TBD Contractor to coordinate with Utility Owner pursuant to Book 2, Section 8.	TBD. Contractor to coordinate with Utility Owner pursuant to Book 2, Section 8. Utility Betterment currently estimated to take 90 working days to complete.

9.0 Right-of-Way

This Section includes the requirements for the Right-of-Way (ROW) Work for the US 160 Elmore's Corner to Dry Creek Design Build Project (Project). This Work shall be completed in accordance with the Contract Documents.

9.1 CDOT Provided ROW and Contractor Acquisitions

CDOT will acquire ROW for this Project, as defined in the ROW Plans in Book 4. It has been determined that this Project shall be constructed within existing CDOT ROW and the additional acquired ROW, as defined in the ROW Plans in Book 4.

Contractor Acquisitions - In the event that the Contractor requests additional ROW acquisition to perform the Work and CDOT Approves such request, the Contractor shall perform all acquisitions in compliance with the requirements of this Section 9 and Book 1. The term "Contractor Acquisitions" is defined as ROW outside ROW in the ROW Plans in Book 4, that CDOT Approves the Contractor to purchase for Approved design changes. The Contractor shall be responsible for completion of all steps in the ROW acquisition process for Contractor Acquisitions, if any, and for condemnations, if needed. If Approved by the Colorado Transportation Commission (TC), the Colorado Attorney General's Office will file and prosecute all condemnation proceedings needed for Contractor Acquisitions.

If the Contractor's design requires Contractor Acquisitions, the Contractor is required to:

1. Include the cost of all Contractor Acquisitions in the Contract Price.
2. Assume sole responsibility of all costs associated with Contractor Acquisitions, including, but not limited to, the cost of obtaining any necessary environmental clearances, as required by Section 2.25 of the CDOT Right of Way Manual and mitigation, if required; the costs associated with surveying and ROW Plan preparation; the costs associated with obtaining TC Approvals; the costs associated with valuing and negotiating acquisition of the Contractor Acquisitions; condemnation just compensation award, costs, and fees; relocation costs; and the costs of improvement demolition.
3. Acquire Contractor Acquisitions for the Project on behalf of CDOT with title reflecting: Department of Transportation, State of Colorado, whose legal address is 2829 W. Howard Place, Denver, CO 80204.

If the Contractor's design requires Contractor Acquisitions, the Contractor is not entitled to:

1. Any Change Order for time or compensation as a result of Site conditions on the ROW (e.g., Recognized Hazardous Materials, Differing Site Conditions, geotechnical issues, Utilities, etc.).
2. Any Change Order for time or compensation as a result of any delay, inability, or cost associated with such ROW.

9.2 Administrative Requirements

CDOT will retain possession of and title to each parcel and all improvements, if any, made thereon by the Contractor. The Contractor's access and use of the ROW arises solely from the express permission granted by CDOT under the Contract.

Definitions of terms used herein are set forth in Exhibit A of Book 1 of the Contract Documents.

9.2.1 Acquisition and Relocation Standards

All ROW acquisition and relocations for Contractor Acquisitions shall be performed in accordance with all applicable federal and State laws, including:

1. The Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act), including regulations promulgated pursuant to the Uniform Act, which appear at Title 49 Code of Federal Regulations (CFR) Part 24, as amended.
2. ROW requirements for design-build projects per Title 23 CFR §710.313.
3. The Colorado Relocation Assistance and Land Acquisition Policies Act, Section 24-56-101, et seq., Colorado Revised Statutes (C.R.S.), as amended.
4. The Colorado Eminent Domain Act, Section 38-1-101, et seq., C.R.S., as amended.
5. CDOT Right of Way Manual, as amended.
6. CDOT Policy Directive 1301.0 entitled Transportation Guidelines to Determine Whether Acquisition of Property for a CDOT Highway Project will Serve the Public Interest (PD 1301.0).
7. All recent changes in CDOT's ROW processes or administration procedures that are in effect, but not yet incorporated into the CDOT Right of Way Manual.
8. If Contractor Acquisitions are Approved by CDOT and the TC, all appraisal, acquisition negotiation, and relocation shall be done by CDOT-Approved consultants, and the Contractor shall comply with PD 1301.0.

9.2.2 Status of Right-of-Way

CDOT will acquire permanent and temporary ROW, including but not limited to, Fee Parcels (designated as "RW" parcels in ROW plans), Permanent Easements (PE), Utility Easements (UE), Slope Easements (SE), Temporary Easements (TE), a Damaged Remnant Parcel (RM), a Wildlife Habitat Parcel (WH) and Highway Easement Deed Parcels (HE) for the Project as shown on the ROW Plans included in Book 4. The ROW Plans included in Book 4 show the ROW that CDOT owns and will acquire for the Project. Any additional Contractor Acquisitions are to be determined by the Contractor's design and Approved by CDOT and the TC.

CDOT has possession of the parcels as shown on the ROW Plans included in Book 4, except for the parcels listed in Exhibit 9-A. The anticipated access date is itemized for each parcel in Exhibit 9-A. The Contractor shall not be allowed access to the parcels identified in Exhibit 9-A until the parcel is acquired. CDOT will provide the Contractor status reports, written notice of parcel access, and any applicable restrictions that may apply. CDOT will notify the Contractor in writing when access is allowed for each parcel. The Contractor shall not access any Exhibit 9-A parcel for which written notice for access has not been provided.

Unique terms and conditions applicable to certain parcels acquired and arising from the negotiation of such acquisitions are identified in Exhibit 9-B. The Contractor shall comply with such terms and conditions. CDOT will provide the Contractor updates to Exhibit 9-B as parcels are acquired.

The Contractor shall not trespass on private property. If CDOT discovers a trespass or is notified of a trespass, the Contractor shall immediately vacate the private property upon receipt of notice of the trespass from CDOT. If any liability occurs as a result of the trespass, the Contractor shall be responsible for such liability, including indemnifying CDOT for such liability. If trespasses persist after

receipt of a notice to desist from CDOT, such occurrence will be an Event of Default, as defined in Book 1, Section 16.

9.2.3 Right-of-Way Manager and Compliance with the CDOT Right of Way Manual

The Contractor shall retain a ROW Manager if CDOT Approves Contractor Acquisitions. The Contractor's ROW Manager shall be responsible for all ROW coordination and compliance requirements. The Contractor's ROW Manager shall be certified for acquisition and relocation services pursuant to the CDOT Right of Way Manual and Approved by CDOT and shall meet the following minimum requirements:

1. 10 years of experience in the ROW profession, preferably within the State of Colorado.
2. 8 years of federal or state ROW experience (preferably within the State of Colorado), including 5 years of project management acquiring property under the Uniform Act, including managing and coordinating acquisition, appraisal, relocation, property management, and title/escrow.

The Contractor's ROW Manager shall coordinate all acquisition and relocation Activities with CDOT.

9.2.4 Property Management Plan

CDOT's property acquisition includes the acquisitions as shown in the ROW Plans included in Book 4. As set forth in this Section 9.2.4 and Section 9.3, the Contractor shall be responsible for demolition of any improvements acquired either by the Contractor or, if by CDOT, as listed in Exhibit 9-C. CDOT will provide the Contractor updates to Exhibit 9-C as information becomes available. Demolition shall not begin until CDOT has given the Contractor written authorization to access or take possession of the property. Demolition shall be completed prior to commencing construction Activities on the property.

If such demolition is not immediately completed, the Contractor shall be responsible for all property management requirements for such improvements until their demolition, including the Section 9.4 requirements. The Contractor shall establish and maintain a written Property Management Plan for the Work, including such improvements, which shall establish administrative and technical means for the security, Recognized Hazardous Materials assessment, demolition, debris removal, Site clearing, and cleanup of building Structures and property improvements acquired as a part of the ROW on the Project, including disposal of personal property left on premises by landowners. The Property Management Plan shall conform to the requirements of Chapter 7, Property Management, of the CDOT Right of Way Manual and shall specifically address the following components:

1. Project land and improvements.
2. Demolition.
3. Storm Water Management Plan (SWMP).
4. Rodent control.
5. Safety.
6. Hazardous waste and storage tanks.
7. Recognized Hazardous Materials.
8. Improvement security and maintenance.

The Property Management Plan shall be submitted to CDOT for Approval prior to Second Notice to Proceed (NTP2) and the Contractor being allowed access to the property.

9.2.5 Permission to Enter Property

The Contractor shall secure Permission to Enter Property forms (CDOT Form 730) prior to entering any property outside the ROW for surveying, geotechnical investigation, environmental investigation, utilities investigation, and appraisal purposes. It shall be the Contractor's sole responsibility to obtain signed forms from property owners, and the Contractor shall be responsible for any and all damages and liabilities arising from entering and occupying property outside of the ROW. The Contractor shall submit copies of all Permission to Enter Property forms to CDOT for Acceptance prior to entering the property.

Permission to Enter Property is limited to non-invasive activities (typically limited to foot travel, light vehicle travel, or minimally impactful survey Work). If entry is needed for destructive or construction Activities, a TE or permanent acquisition (Contractor Acquisitions) acquired in accordance with the ROW acquisition requirements of this Section 9 are necessary.

9.3 Acquisition and Relocation Requirements.

9.3.1 Request for Right-of-Way

Should the Contractor determine that Contractor Acquisitions, including but not limited to RW, PE, SE, UE, TE, RM, WH, and HE parcels, are necessary or desirable for the Work, the Contractor shall submit a written request to CDOT for Approval. If acquisition of both TEs and/or permanent ROW, including, but not limited to, RWs, PEs, UEs, RMs, WHs, and HEs, is requested, the application, Approval, and acquisition requirements of this Section are applicable. Requests shall be presented with the Preliminary Design plans, and request for ROW will require Approval prior to any RFC Design Approval. Each request shall include the following documentation:

1. Identification of the additional parcel and an explanation of the justification for its need.
2. An illustration of each parcel, superimposed on an aerial photograph, with approximate area of the parcel.
3. A preliminary cost estimate (Chief Engineer's ROW Cost Estimate, CDOT Form 438) for each parcel that includes separate values for land, improvements, and damages or benefits, if any. A separate cost estimate shall be provided for Utility impacts, relocation (if applicable), survey, ROW Plan preparation, appraisal, and acquisition negotiation.
4. A title commitment report for each parcel, including all supporting documentation, not older than 90 Days from the date of the request.
5. Any maps, deeds, or other information available to the Contractor that shall expedite the acquisition.
6. Acquisition Stage Relocation Plan if additional ROW acquisition requires occupant or personal property relocation, in accordance with Chapter 5 of the CDOT Right of Way Manual.
7. Required environmental reports documenting all required clearances.
8. Documents required by PD1301.0, Section IV.(C).
9. A certification, in compliance with 23 CFR §710.313(d)(3), that the Contractor's ROW Manager has reviewed the current copy of the CDOT Right of Way Manual and PD 1301.0.

CDOT will Review each Contractor Acquisition request and, if Approved, shall notify the Contractor in writing. CDOT will notify the Contractor of any deficiencies and may request a resubmittal of the request. The Contractor shall promptly correct any deficiencies and resubmit the appropriate documentation.

9.3.2 Right-of-Way Plans

If the CDOT ROW Manager Approves the request for Contractor Acquisitions, the Contractor may begin the ROW Plans preparation process in compliance with Chapter 2 of the CDOT Right of Way Manual and the CDOT Survey Manual. The Contractor's Project Survey Coordinator will arrange for title policies for and on behalf of CDOT. The Contractor's Project Survey Coordinator shall perform research and coordinate a field survey (tied to the Primary Control Network) to locate ROW monuments, private land surveyor monuments, and Public Land Survey System monuments to develop an existing property, encumbrance (from title commitments), and ROW model. The Contractor's Project Survey Coordinator shall resolve discrepancies between property boundary locations and the intersection of these boundary lines with the existing and proposed CDOT ROW.

If the additional ROW interests are TEs ONLY (no permanent interests such as PEs or RW parcels of any kind), TE exhibit(s) may be produced instead of producing a new ROW Plan set. See Section 2.25.10 of the CDOT Right of Way Manual for more detail. Any existing survey monuments that may be obliterated or disturbed within or adjacent to TE boundaries shall be replaced/reset at the Contractor's expense (see Book 2, Section 10).

For any acquisition of a permanent interest type (RW, PE, SE, UE, RM, WH, HE, etc., as defined in the CDOT Right of Way Manual), the Contractor shall prepare a full ROW Plan set. The ROW Plan set shall contain, at a minimum, title sheet, tabulation of properties, land survey control diagram, tabulation of monuments to be set, plan sheet(s), and ownership map. Property descriptions of parcels and Easements shall be prepared using the above-generated data. After completion of the ROW Plan set and the property descriptions, a ROW Plan Review (ROWPR) will be conducted.

After the Contractor incorporates comments and changes from the ROWPR into the ROW Plans, the Contractor shall prepare an authorization packet and submit it to the CDOT Survey Coordinator for Review. Pursuant to Section 2.25.6 of the CDOT Right of Way Manual, the authorization packet shall contain (electronic) copies of the ROW Plans; property descriptions of the parcels and easements; ROWPR form; a memorandum listing individual ownerships requesting authorization of Function 3111 and/or 3109; a Chief Engineer's ROW Cost Estimate (CDOT Form 438); a title commitment for each parcel not more than 90 Days old; and the environmental clearance required by Section 2.25.3 of the CDOT Right of Way Manual. All files shall use the CDOT file naming conventions as stated in 2.25.6 of the CDOT Right of Way Manual.

The CDOT Survey Coordinator will submit the ROW authorization package, on behalf of the Contractor, to the CDOT State Right of Way Program Survey Manager for final Review. If modification of these documents are requested by the State Right of Way Program Survey Manager, the Contractor will promptly make the requested modifications. Once accepted by the State Right of Way Program Survey Manager, the ROW plans and Chief Engineer's ROW Cost Estimate will be submitted to the CDOT Chief Engineer for signature (Approval).

9.3.3 Acquisition of Right-of-Way

After the Contractor receives written notification from the CDOT Survey Coordinator that the CDOT Chief Engineer has Approved the ROW authorization package, the Contractor shall begin the ROW

acquisition process for the Contractor Acquisitions. The Contractor shall conduct all aspects of the ROW process for Contractor Acquisitions in compliance with the CDOT Right of Way Manual and any other CDOT ROW procedures and processes This required compliance pertains to, and is not limited to, the processes of appraisal, valuation Review and Approval (appraisal Review and fair market value [FMV] preparation is the responsibility of CDOT), acquisition negotiations, and relocation, if needed. For any RW parcels acquired, the Contractor shall obtain and provide appropriate release documents for any encumbrances affecting the parcels, including but not limited to releases of deeds of trust, mortgages, Easements, and Liens. If Liens or encumbrances affect PE parcels, the Contractor shall notify CDOT of such Liens and encumbrances, and the Contractor shall be required to take the action requested by CDOT, which may include subordination or release of Liens and encumbrances.

If the Contractor Acquisitions are to be acquired from a landowner with whom CDOT has an unsettled condemnation case, the same appraiser who prepared the appraisal for CDOT's condemnation case shall value the Contractor Acquisitions at the Contractor's expense. If a condemnation of the Contractor Acquisitions becomes necessary, the Contractor shall use the same appraiser for the condemnation case that the Contractor used originally as a basis for the original offer of just compensation, unless otherwise Approved by CDOT. CDOT must Review all value determinations for the Contractor Acquisitions, including, if required, issue a Determination of FMV (Form 930) prior to any offer being made to the landowner. CDOT must Approve all settlements over the amount of the offer to purchase at FMV that are made to the landowner.

If Approval is obtained from CDOT for the Contractor to purchase Contractor Acquisitions, the Contractor shall be responsible for creation and implementation of an internal status tracking and Quality Control system for all ROW processes. The Contractor shall submit the status tracking and Quality Control system to the CDOT ROW Manager for Acceptance before implementation. The Contractor's ROW Manager shall meet with CDOT every two weeks to review the status of the Contractor Acquisitions and relocations, if applicable, and check Quality Control/Quality Assurance as needed, until the completion and CDOT Approval of the Contractor Acquisitions and relocations. An updated copy of the status tracking form shall be provided to the CDOT ROW Manager at the meetings.

If good faith negotiations for the purchase of the Contractor Acquisitions are unsuccessful and condemnation authority is needed, the Contractor shall prepare and submit to the CDOT ROW Manager all documents for TC Approval of such Contractor Acquisitions required by PD 1301.0.

Exhibit 9-D is provided as a general guideline of the CDOT ROW acquisition process. It describes most tasks of the CDOT ROW acquisition process, the entity that is responsible for completion of each task (Contractor or CDOT), and approximate time frames for some of the tasks. Note that, since this is a general guideline, all time frames in Exhibit 9-D are approximate and shall not be relied upon by the Contractor for scheduling purposes and completion of required tasks. The actual schedule for Contractor Acquisitions, developed by the Contractor, and the actual time for completion of these tasks may vary dramatically from the approximations in the Exhibit 9-D general guideline. The Contractor shall be fully responsible for developing and meeting the actual acquisition schedule for Contractor Acquisitions.

9.3.4 Utility Easements

Construction of the Project will affect existing Utilities. Most known Easements for existing Utilities and Utilities to be relocated are shown in the ROW Plans included in Book 4. If the Contractor determines UE parcels are needed, the Contractor, at its sole cost and expense, shall be responsible for acquiring such additional UEs. Additional UEs shall be added to the ROW Plans.

The acquisition of additional UEs requires prior CDOT Review and CDOT Chief Engineer Approval. The Contractor shall conduct the acquisition of additional UEs in compliance with this Section 9.3.

9.3.5 Relocation

If the additional Contractor Acquisitions require occupant or personal property relocation, such relocation shall be conducted in compliance with Chapter 5 of the CDOT Right of Way Manual. Exhibit 9-E is provided as a general guideline of the CDOT relocation process. It describes most tasks of the CDOT relocation process that the Contractor shall undertake, the entity that is responsible for completion of each task (Contractor or CDOT), and approximate time frames for some of the tasks. Note that, since this is a general guideline, all time frames in Exhibit 9-E are approximate and shall not be relied upon by the Contractor for scheduling purposes and completion of required tasks. The actual schedule for Contractor relocations, developed by the Contractor, and the actual time for completion of these tasks may vary dramatically from the approximations in the Exhibit 9-E general guideline. The Contractor shall be fully responsible for developing and meeting the actual relocation schedule. If an acquisition displaces an occupant, the Contractor is advised that the relocation process is lengthy and should be prioritized.

9.3.6 Condemnation

If the Contractor cannot reach an agreement with a landowner for the acquisition of the Contractor Acquisitions, the Contractor may request in writing that CDOT acquire the additional ROW through condemnation proceedings. The Contractor shall prepare the required documentation for TC Approval as required by PD 1301.0. The condemnation request shall include a certified check payable to the Clerk of the District Court of the appropriate county in the amount of the required condemnation filing fee and Approved FMV or waiver valuation.

The Contractor shall work with CDOT to establish a realistic schedule for filing condemnations and setting and holding immediate possession hearings. It usually takes at least four to six months from the date of submission of a condemnation request file to the Colorado Attorney General's Office for a condemnation action to be filed and an immediate possession hearing to be set and held. The Contractor shall not enter any properties until notified in writing that legal possession has been obtained. If a settlement is negotiated with a property owner after the filing of a condemnation, the Contractor will be consulted on the settlement; however, CDOT will Review and decide whether to Accept or reject the settlement. If CDOT Accepts the settlement, the Contractor shall pay the full amount of the settlement. If a valuation trial is held, the Contractor shall be responsible for payment of the full amount of the just compensation award, including all interest, costs, and attorneys' fees per Section 38-1-101, et seq., C.R.S., as amended.

If there are any time delays as a result of condemnation proceedings, all costs associated with such time delays shall be borne by the Contractor. The Contractor may be required to provide personnel for pre-trial and court testimony for each condemnation request.

9.3.7 Contractor Possession of Acquired Properties

After each parcel of Contractor Acquisitions is acquired, the Contractor shall submit a complete parcel acquisition file, which shall include, but not be limited to, copies of offer letters, FMV determinations or waiver valuations, fully executed Easement documents and/or agreements, the negotiator's signed diary, and a statement (CDOT Form 444) signed by the property owner acknowledging receipt of payment in full. If relocation is applicable, all required relocation forms shall be organized and submitted in a separate file. Parcel acquisition and relocation files shall be submitted to CDOT for Acceptance no later than 7 Days following payment to the landowner or displaced individual. The

Contractor shall not access or take possession of any requested ROW parcel for construction until CDOT provides written Acceptance. CDOT will provide Contractor with a decision on a Contractor's request for possession within 2 Days of the Contractor's request.

9.4 Construction Requirements

9.4.1 Demolition

The Contractor shall coordinate with CDOT for the Contractor to properly demolish all buildings, Structures, and other improvements on all acquisitions. ROW acquisitions that include acquisition of buildings, Structures, or improvements and demolition of such buildings, the Structures and improvements shall be completed in compliance with this Section. The Contractor shall conduct and document asbestos and hazardous waste, including lead-based paint inspections and any required action in accordance with Book 1 and Chapter 7 of the CDOT Right of Way Manual. A SWMP shall be submitted to CDOT for Approval prior to any Work on these acquired parcels.

All Utilities associated with such buildings, Structures, and other improvements installed on or connected to the ROW shall be abandoned or removed in accordance with the requirements of the applicable Utility Owner as part of the demolition, unless otherwise noted.

The Contractor shall properly remove and dispose of all regulated asbestos-containing material, all universal and other types of hazardous waste, and any other regulated material other than solid waste prior to demolition of any property in accordance with all Federal, State, and Local regulations. The Contractor shall obtain all permits and other documents required by State and local government, including a demolition plan Approved by CDOT in accordance with the Occupational Health and Safety Administration (OSHA) demolition regulations 1926.850, prior to demolition of any property. Such documentation shall be submitted to CDOT for Approval at least 21 Days prior to demolition.

9.4.2 Restoration of Property and Landscape

TEs are temporary rental of property. At the end of the rental period, property occupied by the Contractor under a TE shall be returned to the landowner in the same condition it was in prior to taking possession. If not purchased in the acquisition, the Contractor shall, at its sole cost and expense, repair and/or replace or restore any damage to TE property that may occur as a result of the Contractor's occupancy, to a condition equal to or better than that which existed prior to the damage. Restoration may include, but is not limited to, repair, replacing in kind, rebuilding, or replanting. Such restoration shall be completed prior to the termination date of the TE rental term, or the termination date of TE rental term extensions, if any.

9.4.3 Protection of Property

Once CDOT provides written authorization to access property, in accordance with the requirements herein, the Contractor shall manage and minimize losses to the property in accordance with the requirements of Book 2, Section 19. This shall include securing all buildings and Structures and the installation of temporary fencing sufficient to contain animals and prevent the unauthorized entry or trespassing of the property. The temporary fencing shall be installed prior to removing any ROW fencing within the Project limits.

9.4.4 Prohibition against Coercion, Impairment of Safety, and Inconvenience of Displaced Occupants Still in Occupancy

In compliance with Title 23 CFR §710.313(d)(3), CDOT may establish no-Work areas around occupied properties whose occupants are being displaced by a ROW acquisition, but have not vacated the premises. If such areas are established, no construction-related Activity shall be allowed within the no-Work area until CDOT provides written authorization in accordance with this Section.

In compliance with Title 23 CFR §710.313(d)(4), adequate access shall be provided to occupied properties whose occupants are being displaced by a ROW acquisition, but have not vacated the premises, to ensure emergency and personal vehicle access.

In compliance with Title 23 CFR §710.313(d)(5), Utility service must be available to all occupied properties whose occupants are being displaced by a ROW acquisition, but have not vacated the premises, at all times prior to and until relocation is completed.

9.5 Deliverables

At a minimum, the Contractor shall submit the following to CDOT and or the TC Review, Acceptance, or Approval (as applicable):

Table 9-1: Deliverables

Deliverable	Review, Acceptance or Approval	Schedule
Property Management Plan	Approval	Prior to NTP2
Permission to Enter Property form (Form 730)	Acceptance	Prior to entering private property
Contractor's formal request for Approval to acquire Contractor Acquisitions	Approval	As needed
ROW authorization package for Contractor Acquisitions	Review by CDOT Survey Coordinator and State Right of Way Program Survey Manager, Approval by the CDOT Chief Engineer	After ROWPR meeting
Appraisals or valuation waivers for Contractor Acquisitions	Review	After delivery to CDOT of draft appraisals or waiver valuations
Settlements over the amount of the offer to purchase any Contractor Acquisitions	Approval	After delivery to CDOT of such proposed settlements

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 9 - Right-of-Way

Deliverable	Review, Acceptance or Approval	Schedule
Status Tracking and Quality Control System for Contractor Acquisitions	Acceptance	After TC Approval of Contractor Acquisitions and CDOT Approval of ROW Plans for Contractor Acquisitions
Documents for TC Approval of Contractor Acquisitions (only for Condemnation process)	Approval by TC	One week before the TC schedule deadline for requests for matters to be included in the TC agenda as soon as possible after completion of Contractor Acquisitions
Additional Utility Easements as part of Contractor Acquisitions	Approval	As needed
Exhibit 9-E Relocation Planning Study (49 CFR §24.205)	Approval	After delivery to CDOT
Exhibit 9-E Business Relocations, Reimbursement Requests (49 CFR §§ 24.301, 24.304, 24.305 and Section 24-56-103, C.R.S.)	Approval	After delivery of each request to CDOT
Exhibit 9-E Residential Relocations, Reimbursement Requests (49 CFR §§ 24.301 and 24.401)	Approval	After delivery of each request to CDOT
Exhibit 9-E Personal Property Relocations, Reimbursement Requests (49 CFR §24.301)	Approval	After delivery of each request to CDOT
Contractor's formal request for condemnation (letter) and required documentation	Approval by TC	One week before the TC schedule deadline for requests for matters to be included in the TC agenda
Parcel Acquisition File with all required documents (for Contractor Acquisitions)	Acceptance	No later than 7 Days following tender of payment to landowner
Documented result of hazardous materials inspection, including asbestos and lead-based paint (required if Contractor performs demolition)	Approval	No later than 7 Days following completion of hazardous materials inspection
Hazardous materials removal plan and SWMP associated with hazardous materials removal and demolition	Approval	21 Days prior to hazardous materials removal
Demolition Plan and required permits for demolition	Approval	21 Days prior to demolition

9.6 Exhibits

Exhibit 9-A Right-of-Way Schedule

Exhibit 9-B Schedule of Unique Acquisition Terms and Conditions

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 9 - Right-of-Way

Exhibit 9-C	Schedule of Improvements to be Demolished
Exhibit 9-D	Tasks of the CDOT Right-of-Way Acquisition Process for Contractor Acquisitions, Entity Responsible for Completion of Each Task, and Approximate Time Frames
Exhibit 9-E	Tasks of the CDOT Relocation Process for Contractor Acquisitions, Entity Responsible for Completion of Each Task, and Approximate Time Frame

Exhibit 9-A

Right-of-Way Schedule - Updated: 6/16/2026

ROW Plan Parcel No.	Property Owner Name	Anticipated Access Date
RW-3, TE-3	Kay L. Thrash and Gary A. Thrash, in joint tenancy	September 4, 2026
RW-4, TE-4	Jason Trujillo and Crystal Trujillo	September 4, 2026
RW-5, TE-5	SKTM Properties, LLC	September 4, 2026
TE-6	Mesa Heights Sub. HOA	September 4, 2026
RW-8, TE-8	Bernie L. Gurule	September 4, 2026
RW-9, TE-9	ACM Empire LLC	September 4, 2026
RW-15, TE-15	Ronald G. Maxwell and Laurie K. Maxwell	September 4, 2026
RW-16, TE-16	James W. Davenport and Rosalie Rea	September 4, 2026
RW-17, TE-17	Paul Davenport and Jane P. Davenport	September 4, 2026
RW-18, TE-18	Carol Jameson	September 4, 2026
RW-19, TE-19	Robert Carmon and Katherine M. Carmon as Joint Tenants	April 22, 2027
RW-22, TE-22	Michael A. May	September 4, 2026
RW-26, TE-26	Los Prados Homeowners Association, Inc.	September 4, 2026
RW-27, TE-27	Rodolfo Ramos Palacios & Katherin L. Ramos	September 4, 2026
RW-28, TE-28	Cheryl Morris Coffey	September 4, 2026
RW-29, TE-29	Lisa D. Murphy	April 22, 2027

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 9 - Right-of-Way

ROW Plan Parcel No.	Property Owner Name	Anticipated Access Date
RW-30, TE-30	Judy M. Sauck aka Judy M. Tinker	September 4, 2026
TE-32, TE-32A	Far View Estates Home Owners Association	September 4, 2026
TE-33, TE-33A	James Ellis III and Marilyn Ellis as Co-Trustees of the James M. Ellis III and Marilyn Ellis Trust dated February 12, 1993	April 22, 2027
RW-34 TE-34	The Donald E. Englishman and Marilyn J. Englishman Revocable Living Trust dated March 5, 2002	April 22, 2027
HE-36, HE-36A	United States of America Dept of the Interior Bureau of Land Management	April 22, 2027
RW-41, TE-41	Max Campbell Howard & Eleah Kim Howard	September 4, 2026

Exhibit 9-B

Schedule of Unique Acquisition Terms and Conditions

The Unique Terms and Conditions listed in Exhibit 9-B include, but are not limited to those elements as required by the Agreements between the Property Owners and CDOT. Landowner Agreements are included in Book 4.

Updated: 6/16/2026

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
RW-1 TE-1 TE-1A	Willard Franklin Elmore, Jr	Memorandum of Agreement (MOA) dated 12/10/25, a copy of which is located in Book 4, Contract Documents. The MOA defines improvements to be removed as “Wire fencing 90 LP (+EP), 2 trees, trees and shrubs/per Love”. All of such improvements are located within RW-1, except for one large three that is located in Parcel TE-1A. A document entitled <i>MOA Elmore #1 detail tree removal on MullerMap</i>, a copy of which is located in Book 4, is an aerial photograph with additional guidance on some of the improvements to be removed. Paragraph 2 under <i>Other conditions</i> states as follows: The Land and Temporary Easement(s) described on the attached Exhibit(s) A are for fence installation, driveway construction, detour construction, and construction of associated highway improvements which is the temporary easement, highway expansion and associated highway improvements which is for fee ROW. Further, it is understood and agreed between the parties that: The Temporary Easement(s) shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. Temporary Easement Extensions will include incentive payments calculated on the total FMV of all acquisitions. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-1 (optional 4th year term - 15% increase from FMV of year 1 + incentive): 3,605 Sq.Ft TE= \$1,088 + 272=\$1,360 Temporary Easement (shown in attached exhibits) TE-1 (optional 5th year term - 18% increase from FMV of year 1 + incentive): 3,605,Sq.Ft TE= \$1,117 + \$279=\$1,396 Temporary Easement (shown in attached exhibits) TE-1A (optional 4th year term - 15% increase from FMV of year 1 + incentive): 1,693 Sq.Ft TE= \$649+ \$162=\$811 Temporary Easement (shown in attached exhibits) TE-1A (optional 5th year term - 18% increase from FMV of year 1 + incentive): 1,693 ,Sq.Ft TE= \$666+ \$166=\$832 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel Nos. TE-1 and TE-1A. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-1 and/or TE-1A, the contractor is required to provide the required thirty (30) day notice(s) to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE- 1 and/or TE-1A. Paragraph 2 under <i>Other conditions</i> also states the following: At its sole cost and expense, GRANTEE shall repair and restore the Temporary Easement areas (“Affected Areas”) and return said Affected Area(s) to a condition reasonably similar to or better than that which existed prior to GRANTEE’s entry, excepting the repair or restoration of Improvements paid to GRANTOR by GRANTEE and included in the Net Total above. The contractor is responsible for compliance for this provision. Note that just compensation for the tree located in Parcel No. TE-1A is included in the agreed upon just compensation total in the MOA. As a result, the contractor can remove such tree, if such removal is required. Paragraph 3 under the <i>Other conditions</i> states the following: The Temporary Easement Area is to remain free of parked cars during contractor construction operations.

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
RW-3 TE-3	Kay L. Thrash and Gary A. Thrash	Memorandum of Agreement (MOA) dated 12/20/25, a copy of which is located in Book 4, Contract Documents. The MOA defines improvements to be removed as “190 LF fencing, 25 trees, 30 LF irrigation pipe”. All of such improvements are located within RW-3. There are two <i>Other Conditions</i> provisions in this MOA: The first states as follows: ROW fence to meet CDOT standard M-607-1 with a type appropriate for cattle (this includes connections to cross fence). Temporary fencing to be provided by CDOT or CDOT through its contractor during construction for cattle. Landowner to keep trees after removal. Call Gary at 970-749-7378 to coordinate. Note the contractor is responsible compliance with this provision. Paragraph 2 under the second <i>Other conditions</i> states as follows: The Land, Permanent Easements, and Temporary Easement(s) described on the attached Exhibit(s) A is for a Temporary Easement is required for fence installation, driveway construction and construction of associated highway improvements. Fee ROW required for highway expansion and associated highway improvements. Further, it is understood and agreed between the parties that: The Temporary Easement(s) shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. Temporary Easement Extensions will include incentive payments calculated on the total FMV of all acquisitions. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-3 (optional 4th year term - 15% increase from FMV of year 1 + incentive): 0.184 acres; \$1,663 (TE) + \$416 (incentive) = \$2,079 Temporary Easement (shown in attached exhibits) TE-3 (optional 5th year term - 18% increase from FMV of year 1 + incentive): 0.184 acres; \$1,706 (TE) + \$426 incentive = \$2,132 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel No. TE-3. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-3, the contractor is required to provide the required thirty (30) day notice(s) to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE- 3. Paragraph 2b. under the second <i>Other conditions</i> states the following: At its sole cost and expense, GRANTEE shall repair and restore the Temporary Easement areas (“Affected Areas”) and return said Affected Area(s) to a condition reasonably similar to or better than that which existed prior to GRANTEE’s entry, excepting the repair or restoration of Improvements paid to GRANTOR by GRANTEE and included in the Net Total above. The contractor is responsible for compliance for this provision. Note that no payments have been made to the Grantor for any improvements located in Parcel No. TE-3. As a result, if any improvements in Parcel No. TE-3 are damaged or removed by the contractor, the contractor will need to replace or repair such items. Paragraph 3 under the second <i>Other conditions</i> states the following: The Temporary Easement Area is to remain free of parked cars during contractor construction operations.
RW-4 TE-4	Jason Trujillo and Crystal Trujillo	Memorandum of Agreement (MOA) dated 1/13/26, a copy of which is located in Book 4, Contract Documents. The MOA defines improvements to be removed as “28 LF of fencing”. All of such improvements are located within RW-4.

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		Paragraph 2 under <i>Other conditions</i> states as follows: The Land, Permanent Easements, and Temporary Easement(s) described on the attached Exhibit(s) A is for a Temporary Easement is required for fence installation, replacement of irrigation facilities, highway expansion and construction of associated highway improvements. Further, it is understood and agreed between the parties that: The Temporary Easement(s) shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. Temporary Easement Extensions will include incentive payments calculated on the total FMV of all acquisitions. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-4 (optional 4th year term - 15% increase from FMV of year 1 + incentive): 0.29 acres (12,610 sq. ft.); \$1.70/SF (x 15% + *) = \$4,623 Temporary Easement (shown in attached exhibits) TE-4 (optional 5th year term - 18% increase from FMV of year 1 + incentive): 0.29 acres (12,610 sq. ft.); \$1.70/SF (x 15% + *) = \$4,743 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel No. TE-4. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-4, the contractor is required to provide the required thirty (30) day notice(s) to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE- 4. Paragraph 2b. under <i>Other conditions</i> states the following: At its sole cost and expense, GRANTEE shall repair and restore the Temporary Easement areas (“Affected Areas”) and return said Affected Area(s) to a condition reasonably similar to or better than that which existed prior to GRANTEE’s entry, excepting the repair or restoration of Improvements paid to GRANTOR by GRANTEE and included in the Net Total above. The contractor is responsible for compliance for this provision. Note that no payments have been made to the Grantor for any improvements located in Parcel No. TE-4. As a result, if any improvements in Parcel No. TE-4 are damaged or removed by the contractor, the contractor will need to replace or repair such items. Paragraph 3 under <i>Other conditions</i> states the following: The Temporary Easement Area is to remain free of parked cars during contractor construction operations. Paragraph 4 under Other conditions states the following: Certain private irrigation facilities owned by the Grantor are located on Parcel No. RW-4 and will be removed and relocated by Grantee’s project, hereinafter referred to as “Removal Irrigation Facilities”. Grantee’s design-build contractor (Grantee’s Contractor) will design, and construct modified replacement irrigation facilities to be located on Parcel No. TE-4 that will replace the Removed Irrigation Facilities (hereinafter referred to as “Replacement Irrigation Facilities”). The Removal Irrigation Facilities and Replacement Irrigation Facilities are generally illustrated in a plan sheet, that includes additional information, attached hereto as Exhibit “B”. The Replacement Irrigation Facilities will be designed and constructed to replace the historic quantity and quality of historic irrigation flows. Grantor hereby grants Grantee and Grantee’s Contractor a right of entry onto Grantor’s property outside of Parcel No. TE-4 for Construction of the Replacement Irrigation Facilities, if needed. If Grantee’s Contractor enters Grantor’s property outside of Parcel No. TE-4 for such construction purpose, Grantee’s Contractor will, at Grantee’s sole cost and expense, reconstruct the portion of Grantor’s property occupied to a condition reasonably similar to that which existed prior to Grantee’s Contractor’s entry. Grantor agrees to reasonably cooperate and work collaboratively with Grantee’s Contractor on coordination of the design and construction of the Replacement Irrigation Facilities. Grantee’s Contractor may request additional information and/or documentation about the Removal Irrigation Facilities to inform the design and construction of the Replacement Irrigation Facilities. To the extent possible, Grantee has captured certain design criteria for the Replacement Irrigation Facilities to be constructed (e.g. flow dates, flow quantities (if made available by Grantor), minimum pipe

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		size and material type, size of ditch, conceptual alignment and diversions, as applicable). Grantee’s Contractor will provide to Grantor the design of Replacement Irrigation Facility prior to starting construction of the Replacement Irrigation Facility. If Grantor has any material issues with the Replacement Irrigation Facilities as they are being designed, constructed, tested, or in operation prior to completion of the Replacement Irrigation Facilities, Grantor should discuss such issues with Grantee’s Contractor. Work on Grantor’s Replacement Irrigation Facilities shall not impair or impact the conveyance of irrigation water during irrigation season, April 1 through October 31st of each year, unless written approval is given by Grantor. Grantee’s Contractor shall be responsible for maintaining irrigation flows through the Removal Irrigation Facilities during construction of Grantee’s project until flows from the Removal Irrigation Facilities are changed to the Replacement Irrigation Facilities. Grantee’s Contractor may, however, be required to temporarily modify the existing irrigation conveyance based upon construction phasing. Grantee’s Contractor shall schedule a final walk through with Grantor upon completion of the Replacement Irrigation Facilities work. Notice of the final walk through shall be provided by Grantee’s Contractor in accordance with the notice provisions outlined below. After Grantor’s concerns from the final walk through have been addressed by Grantee’s Contractor, Grantor shall provide Grantee’s Contractor with written final acceptance of the Replacement Irrigation Facility (Final Acceptance) which shall not be unreasonably withheld by Grantor. A draft version of the Final Acceptance document is attached hereto as Exhibit “C”. After Grantor has signed the Final Acceptance, Grantor will own all the Replacement Irrigation Facilities located on Grantor’s property and be fully responsible for all maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. Grantee and Grantee’s Contractor shall then be fully released from any and all liability for such maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. When Grantee provides Grantee’s Contractor with a notice to proceed for construction of Grantee’s project (NTP), Grantee shall notify Grantor within 90 days that such NTP has been issued and provide the contact information of Grantee’s Contractor with whom to coordinate the irrigation design and construction. All communications, notices and correspondence regarding the design and construction of the Replacement Irrigation Facilities shall be exchanged between Grantor, Grantee, and Grantee’s Contractor by email or certified mail or handed in-person. Either party may from time to time designate in writing a new or substitute contact, if needed. The following contacts for the Grantee and Grantor are as follows: For the Grantee: For the Grantor: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us Jason Trujillo 48 Mesa Heights Drive 3421 E. McDowell Rd. Durango, CO 81303 Phone: 970-749-4197 The provisions of the Memorandum of Agreement applicable to the Replacement Irrigation Facilities will survive the closing of Parcel Nos. RW-4 and TE-4 and be binding upon and inure to the benefit of the Grantor, Grantee, Grantee’s Contractor and their respective heirs, personal representatives, successors, and assigns. Furthermore, the covenants, conditions and restrictions contained herein applicable to the Replacement Irrigation Facilities, shall run with the land and shall survive any transfer of title of interest in the property owned by Grantor.
RW-5 TE-5	SKTM Properties, LLC	Memorandum of Agreement (MOA) dated 4/29/26, a copy of which is located in Book 4, Contract Documents. The MOA defines improvements to be removed as “212 LF cross fencing and 1 tree”. All of such improvements are located within _____. Paragraph 2 under <i>Other conditions</i> states as follows: The Land and Temporary Easement described on the attached Exhibit A is for a Temporary Easement is required for fence installation, driveway construction, irrigation replacement construction, CR 229 improvements and construction of associated highway improvements. Fee ROW is required for highway expansion and associated improvements. The Fee ROW is required for highway expansion and associated improvements. Further, it is understood and agreed between the parties that:

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		a. The Temporary Easement(s) shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. Temporary Easement Extensions will include incentive payments calculated on the total FMV of all acquisitions. b. At its sole cost and expense, GRANTEE shall repair and restore the Temporary Easement areas (“Affected Areas”) and return said Affected Area(s) to a condition reasonably similar to or better than that which existed prior to GRANTEE’s entry, excepting the repair or restoration of Improvements paid to GRANTOR by GRANTEE and included in the Net Total above. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-5 (optional 4th year term - 15% increase from FMV of year 1 + incentive): 0.700 acres \$12,000/ac. X 15%/year \$1,956 Temporary Easement (shown in attached exhibits) TE-5 (optional 5th year term - 18% increase from FMV of year 1 + incentive): 0.700 acres \$12,000/ac. X 15%/year \$2,007 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel No. TE-5. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-5, the contractor is required to provide the required thirty (30) day notice to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE-5. Paragraph 3 under the second <i>Other conditions</i> states the following: The Temporary Easement Area is to remain free of parked cars during contractor construction operations. Paragraph 4 under the second <i>Other conditions</i> states the following: Grantor acknowledges that a portion of Property adjacent to the acquisition area will be required for a replacement utility easement in connection with the Project. Specifically, the gathering lines owned and operated by Enduring Resources will require relocation for the completion of the project work. This work will occur concurrent with construction. Grantor agrees to convey the required 0.935 acre replacement utility easement (UE-5) at a price per acre consistent with the per -acre value agreed to in this Agreement (\$35,000/acre x 90% of fee). The parties acknowledge that the cost of such acquisition will be paid for by Enduring Resources and reimbursed by CDOT as part of the project This provision is limited solely to UE-5 associated with the Project and does not obligate Grantor to convey any additional property beyond that area. Paragraph 5 under the second Other conditions states the following: Certain private irrigation facilities owned by the Grantor are located on Parcel No. RW-5 and will be removed and relocated by Grantee’s project, hereinafter referred to as “Removal Irrigation Facilities”. Grantee’s design-build contractor (Grantee’s Contractor) will design, and construct modified replacement irrigation facilities to be located on Parcel No. TE-5 that will replace the Removed Irrigation Facilities (hereinafter referred to as “Replacement Irrigation Facilities”). The Removal Irrigation Facilities and Replacement Irrigation Facilities are generally illustrated in a plan sheet, that includes additional information, attached hereto as Exhibit “B”. The Replacement Irrigation Facilities will be designed and constructed to replace the historic quantity and quality of historic irrigation flows. Grantor hereby grants Grantee and Grantee’s Contractor a right of entry onto Grantor’s property outside of Parcel No. TE-5 for Construction of the Replacement Irrigation Facilities, if needed. If Grantee’s Contractor enters Grantor’s property outside of Parcel No. TE-5 for such construction purpose, Grantee’s Contractor will, at Grantee’s sole cost and expense, reconstruct the portion of Grantor’s property occupied to a condition reasonably similar to that which existed prior to Grantee’s Contractor’s entry. Grantor agrees to reasonably cooperate and work collaboratively with Grantee’s Contractor on coordination of the design and construction of the Replacement Irrigation Facilities. Grantee’s Contractor may request additional information and/or documentation about the Removal Irrigation Facilities to inform the design and construction of the Replacement Irrigation Facilities. To the extent possible, Grantee has captured certain design criteria for the Replacement Irrigation Facilities to be constructed (e.g. flow dates, flow quantities (if made available by Grantor), minimum pipe

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		size and material type, size of ditch, conceptual alignment and diversions, as applicable). Grantee’s Contractor will provide to Grantor the design of Replacement Irrigation Facility prior to starting construction of the Replacement Irrigation Facility. If Grantor has any material issues with the Replacement Irrigation Facilities as they are being designed, constructed, tested, or in operation prior to completion of the Replacement Irrigation Facilities, Grantor should discuss such issues with Grantee’s Contractor. Work on Grantor’s Replacement Irrigation Facilities shall not impair or impact the conveyance of irrigation water during irrigation season, April 1 through October 31st of each year, unless written approval is given by Grantor. Grantee’s Contractor shall be responsible for maintaining irrigation flows through the Removal Irrigation Facilities during construction of Grantee’s project until flows from the Removal Irrigation Facilities are changed to the Replacement Irrigation Facilities. Grantee’s Contractor may, however, be required to temporarily modify the existing irrigation conveyance based upon construction phasing. Grantee’s Contractor shall schedule a final walk through with Grantor upon completion of the Replacement Irrigation Facilities work. Notice of the final walk through shall be provided by Grantee’s Contractor in accordance with the notice provisions outlined below. After Grantor’s concerns from the final walk through have been addressed by Grantee’s Contractor, Grantor shall provide Grantee’s Contractor with written final acceptance of the Replacement Irrigation Facility (Final Acceptance) which shall not be unreasonably withheld by Grantor. A draft version of the Final Acceptance document is attached hereto as Exhibit “C”. After Grantor has signed the Final Acceptance, Grantor will own all the Replacement Irrigation Facilities located on Grantor’s property and be fully responsible for all maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. Grantee and Grantee’s Contractor shall then be fully released from any and all liability for such maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. When Grantee provides Grantee’s Contractor with a notice to proceed for construction of Grantee’s project (NTP), Grantee shall notify Grantor within 90 days that such NTP has been issued and provide the contact information of Grantee’s Contractor with whom to coordinate the irrigation design and construction. All communications, notices and correspondence regarding the design and construction of the Replacement Irrigation Facilities shall be exchanged between Grantor, Grantee, and Grantee’s Contractor by email or certified mail or handed in-person. Either party may from time to time designate in writing a new or substitute contact, if needed. The following contacts for the Grantee and Grantor are as follows: For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 Email: brian.spain@state.co.us For the Grantor: SKTM Properties, LLC an Arizona Limited Liability Company Attn: Steve Adams 3421 E McDowell Rd. Mesa, Arizona, 85213 Phone: 602-770-7647 Email: stevepadams@gmail.com The provisions of the Memorandum of Agreement applicable to the Replacement Irrigation Facilities will survive the closing of Parcel Nos. RW-5 and TE-5 and be binding upon and inure to the benefit of the Grantor, Grantee, Grantee’s Contractor and their respective heirs, personal representatives, successors, and assigns. Furthermore, the covenants, conditions and restrictions contained herein applicable to the Replacement Irrigation Facilities, shall run with the land and shall survive any transfer of title of interest in the property owned by Grantor.
TE-6	Mesa Heights Sub. HOA	Memorandum of Agreement (MOA) dated 1/13/26, a copy of which is located in Book 4, Contract Documents. The MOA defines improvements to be removed as “2 Subdivision Signs with Posts, electric; landscaping”. All of such improvements are located within TE-6. <i>Additional Considerations</i> states as follows: Mesa Heights Sub HOA has an interest in irrigation facilities running just west of the Florida Canal that cross through the parcel owned by Bandy Family Trust dated June 15, 2005 (as shown in Exhibit “B”). Mesa Heights Sub HOA shall coordinate with the Grantee and Bandy Family Trust on that portion of the relocated irrigation facilities overlying the Bandy Family Trust property (Lot 14 of Mesa Heights Subdivision) per the conditions relocated to replacement irrigation facilities below. Paragraph 2 under <i>Other conditions</i> states as follows: The term of Grantee’s use of the Temporary Easement shall be for a period of 3 years (“term). The term shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension.. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-6 (optional 4th year term - 15% increase from FMV of year 1 + incentive): 0.164 acres; \$6,000/ac. (x 15% yr) = \$238 Temporary Easement (shown in attached exhibits) TE-6 (optional 5th year term - 18% increase from FMV of year 1 + incentive): 0.164 acres; \$6,000/ac. (x 15% yr) = \$244 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel No. TE-6. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-6, the contractor is required to provide the required thirty (30) day notice(s) to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE- 6. Paragraph 3 under <i>Other conditions</i> states the following: TE-6 is required for driveway construction, construction of replacement irrigation facilities, and construction of associated highway improvements. Grantee shall repair and restore disturbed areas to a condition reasonably approximate to or better than the condition that existed prior to Grantee’s entry for construction. Note that just compensation for the 2 Subdivision Signs with Posts, electric; landscaping is included in the agreed upon just compensation total in the MOA. As a result, the contractor can remove such items, if such removal is required. Paragraph 4 under <i>Other conditions</i> states the following: Certain private irrigation facilities owned by the Grantor are located in CDOT ROW, Parcel No. TE-6 and Parcel No. TE-7 and will be removed and relocated by Grantee’s project, hereinafter referred to as “Removal Irrigation Facilities”. Grantee’s design-build contractor (Grantee’s Contractor) will design, and construct modified replacement irrigation facilities to be located on Parcel No. TE-6 and TE-7 that will replace the Removed Irrigation Facilities (hereinafter referred to as “Replacement Irrigation Facilities”). The Removal Irrigation Facilities and Replacement Irrigation Facilities are generally illustrated in a plan sheet, that includes additional information, attached hereto as Exhibit “B”. The Replacement Irrigation Facilities will be designed and constructed to replace the historic quantity and quality of historic irrigation flows. Grantor hereby grants Grantee and Grantee’s Contractor a right of entry onto Grantor’s property outside of Parcel No. TE-6 for Construction of the Replacement Irrigation Facilities, if needed. If Grantee’s Contractor enters Grantor’s property outside of Parcel No. TE-6 for such construction purpose, Grantee’s Contractor will, at Grantee’s sole cost and expense, reconstruct the portion of Grantor’s property occupied to a condition reasonably similar to that which existed prior to Grantee’s Contractor’s entry. Grantor agrees to reasonably cooperate and work collaboratively with Grantee’s Contractor on coordination of the design and construction of the Replacement Irrigation Facilities in TE-6 and TE-7. Grantee’s Contractor may request additional information and/or documentation about the Removal Irrigation Facilities to inform the design and construction of the Replacement Irrigation Facilities. To the extent possible, Grantee has captured certain design criteria for the Replacement Irrigation Facilities to be constructed (e.g. flow dates, flow quantities (if made available by Grantor), minimum pipe size and material type, size of ditch, conceptual alignment and diversions, as applicable). Grantee’s Contractor will provide to Grantor the design of Replacement Irrigation Facility prior to starting construction of the Replacement Irrigation Facility. If Grantor has any material issues with the Replacement Irrigation Facilities as they are being designed, constructed, tested, or in operation prior to completion of the Replacement Irrigation Facilities, Grantor should discuss such issues with Grantee’s Contractor. Work on Grantor’s Replacement Irrigation Facilities shall not impair or impact the conveyance of irrigation water during irrigation season, April 1 through October 31st of each year, unless written approval is given by Grantor. Grantee’s Contractor shall be responsible for maintaining irrigation flows through the Removal Irrigation Facilities during construction of Grantee’s project until flows from the Removal Irrigation Facilities are changed to the Replacement Irrigation Facilities. Grantee’s Contractor may, however, be required to temporarily modify the existing irrigation conveyance based upon construction phasing. Grantee’s Contractor shall schedule a final walk through with Grantor upon completion of the Replacement Irrigation Facilities work on both TE-6 and TE-7. Notice of the final walk through shall be provided by Grantee’s Contractor in accordance with the notice provisions outlined below. After Grantor’s concerns from the final walk through have been addressed by Grantee’s Contractor, Grantor

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		shall provide Grantee’s Contractor with written final acceptance of the Replacement Irrigation Facility (Final Acceptance) which shall not be unreasonably withheld by Grantor. A draft version of the Final Acceptance document is attached hereto as Exhibit “C”. After Grantor has signed the Final Acceptance, Grantor will own all the Replacement Irrigation Facilities located on Grantor’s property and be fully responsible for all maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. Grantee and Grantee’s Contractor shall then be fully released from any and all liability for such maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. After Grantor has signed the final acceptance for its facilities on TE-7, Grantor and Bandy Family Trust Dated June 15, 2005 will own all the Replacement Irrigation facilities located on the Bandy Family Trust Dated June 15, 2005 property (Lot 14) and will be fully responsible for all maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. Grantee and Grantee’s Contractor shall then be fully released from any and all liability for such maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. When Grantee provides Grantee’s Contractor with a notice to proceed for construction of Grantee’s project (NTP), Grantee shall notify Grantor within 90 days that such NTP has been issued and provide the contact information of Grantee’s Contractor with whom to coordinate the irrigation design and construction for Replacement Irrigation Facilities with TE-6 and TE-7. All communications, notices and correspondence regarding the design and construction of the Replacement Irrigation Facilities shall be exchanged between Grantor, Grantee, and Grantee’s Contractor by email or certified mail or handed in-person. Either party may from time to time designate in writing a new or substitute contact, if needed. The following contacts for the Grantee and Grantor are as follows: For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us For the Grantor: Mesa Heights Subdivision Attn: Greg Munro 440 Mesa Heights Dr. Durango, CO 81301 Phone: 970-759-7118 The provisions of the Memorandum of Agreement applicable to the Replacement Irrigation Facilities will survive the closing of Parcel Nos. TE-6 and TE-7 and be binding upon and inure to the benefit of the Grantor, Grantee, Grantee’s Contractor and their respective heirs, personal representatives, successors, and assigns. Furthermore, the covenants, conditions and restrictions contained herein applicable to the Replacement Irrigation Facilities, shall run with the land and shall survive any transfer of title of interest in the property owned by Grantor.
TE-7	Bandy Family Trust Dated June 15, 2005	Memorandum of Agreement (MOA) dated 1/8/26, a copy of which is located in Book 4, Contract Documents. The MOA defines improvements to be removed as “76 LF of fence”. All of such improvements are located within TE-7. <i>Additional Considerations</i> states as follows: Replacement irrigation facilities on subject parcel convey water to multiple owners. The replacement irrigation facilities rto the west of the Florida Canal will convey water to Mesa Heights Subdivision while the irrigation ditch to he east of the Florida Canal will convey water to the Florida Acres Subdivision (as shown in Exhibit “B”). Grantee’s Contractor shall coordinate with respective impacted parties as detailed in the other conditions below. Paragraph 2 under <i>Other conditions</i> states as follows: The term of Grantee’s use of the Temporary Easement shall be for a period of 3 years (“term). The term shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-7 (optional 4th year term - 15% increase from FMV of year 1 + incentive): 0.193 acres; \$40,000/ac. (x 15% yr) = \$1,828

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		Temporary Easement (shown in attached exhibits) TE-7 (optional 5th year term - 18% increase from FMV of year 1 + incentive): 0.193 acres; \$40,000/ac. (x 15% yr) = \$1,844 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel No. TE-7. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-7, the contractor is required to provide the required thirty (30) day notice(s) to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE- 7. Paragraph 3 under <i>Other conditions</i> states the following: TE-6 “TE-7 [sic]” is required for driveway construction, construction of replacement irrigation facilities, and construction of associated highway improvements. Grantee shall repair and restore disturbed areas to a condition reasonably approximate to or better than the condition that existed prior to Grantee’s entry for construction. Note that just compensation for the 76 LF of fence is included in the agreed upon just compensation total in the MOA. As a result, the contractor can remove such item, if such removal is required. Paragraph 3 under <i>Other conditions</i> states the following: The Temporary Easement Area is to remain free of parked cars during contractor construction operations. Paragraph 4 under <i>Other conditions</i> states the following: Certain private irrigation facilities owned by the Grantor, Mesa Heights Subdivision, and Florida Acres Subdivision are located in CDOT ROW, Parcel No. TE-7 and will be removed and relocated by Grantee’s project, hereinafter referred to as “Removal Irrigation Facilities” (See Exhibit “B”). Grantee’s design-build contractor (Grantee’s Contractor) will design, and construct modified replacement irrigation facilities to be located on Parcel No. TE-7 that will replace the Removed Irrigation Facilities (hereinafter referred to as “Replacement Irrigation Facilities”). The Removal Irrigation Facilities and Replacement Irrigation Facilities are generally illustrated in a plan sheet, that includes additional information, attached hereto as Exhibit “B”. The Replacement Irrigation Facilities will be designed and constructed to replace the historic quantity and quality of historic irrigation flows. Grantor hereby grants Grantee and Grantee’s Contractor a right of entry onto Grantor’s property outside of Parcel No. TE-6 for Construction of the Replacement Irrigation Facilities, if needed. If Grantee’s Contractor enters Grantor’s property outside of Parcel No. TE-7 for such construction purpose, Grantee’s Contractor will, at Grantee’s sole cost and expense, reconstruct the portion of Grantor’s property occupied to a condition reasonably similar to that which existed prior to Grantee’s Contractor’s entry. Grantor agrees to reasonably cooperate and work collaboratively with Grantee’s Contractor, Mesa Heights Subdivision and Florida Acres Subdivision on coordination of the design and construction of the Replacement Irrigation Facilities. Grantee’s Contractor may request additional information and/or documentation about the Removal Irrigation Facilities to inform the design and construction of the Replacement Irrigation Facilities. To the extent possible, Grantee has captured certain design criteria for the Replacement Irrigation Facilities to be constructed (e.g. flow dates, flow quantities (if made available by Grantor), minimum pipe size and material type, size of ditch, conceptual alignment and diversions, as applicable). (A) Grantee’s Contractor will provide to Grantor and Mesa Heights Subdivision, the design of Replacement Irrigation Facility lying to the west of the Florida Canal prior to starting construction of the Replacement Irrigation Facility. If Grantor or Mesa Heights Subdivision have any material issues with the Replacement Irrigation Facilities as they are being designed, constructed, tested, or in operation prior to completion of the Replacement Irrigation Facilities, Grantor and Mesa Heights Subdivision should discuss such issues with Grantee’s Contractor. (B) Grantee’s Contractor will provide to Grantor and Florida Acres Subdivision, the design of Replacement Irrigation Facility lying to the east of the Florida Canal prior to starting construction of the Replacement Irrigation Facility. If Grantor or Florida Acres Subdivision have any material issues with the Replacement Irrigation Facilities as they are being designed, constructed, tested, or in operation prior to completion of the Replacement Irrigation Facilities, Grantor and Florida Acres Subdivision should discuss such issues with Grantee’s Contractor. Work on Grantor’s/Mesa Heights Subdivision Replacement Irrigation Facilities (lying west of the Florida Canal) shall not impair or impact the conveyance of irrigation water during irrigation season, April 1 through October 31st of each year, unless written approval is given by Grantor and Mesa Heights Subdivision. Work on Grantor’s/Florida Acres Subdivision Replacement Irrigation Facilities (lying east of the Florida Canal) shall not impair or impact the conveyance of irrigation water during irrigation season, April 1 through October 31st of each year, unless written approval is given by Grantor and Florida Acres Subdivision. Grantee’s Contractor shall be responsible for maintaining irrigation flows through the Removal Irrigation Facilities during construction of Grantee’s project until flows

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions				
		from the Removal Irrigation Facilities are changed to the Replacement Irrigation Facilities. Grantee’s Contractor may, however, be required to temporarily modify the existing irrigation conveyance based upon construction phasing. Grantee’s Contractor shall schedule a final walk through with Grantor and Mesa Heights Subdivision upon completion of the Replacement Irrigation Facilities lying to the west of the Florida Canal. Notice of the final walk through shall be provided by Grantee’s Contractor in accordance with the notice provisions outlined below. After Grantor and Mesa Heights Subdivision’s concerns from the final walk through have been addressed by Grantee’s Contractor, Grantor and Mesa Heights Subdivision shall provide Grantee’s Contractor with written final acceptance of the Replacement Irrigation Facility (Final Acceptance) which shall not be unreasonably withheld by Grantor or Mesa Heights Subdivision. A draft version of the Final Acceptance document is attached hereto as Exhibit “C”. Grantee’s Contractor shall schedule a final walk through with Grantor and Florida Acres Subdivision upon completion of the Replacement Irrigation Facilities lying to the east of the Florida Canal. Notice of the final walk through shall be provided by Grantee’s Contractor in accordance with the notice provisions outlined below. After Grantor and Florida Acres Subdivision’s concerns from the final walk through have been addressed by Grantee’s Contractor, Grantor and Florida Acres Subdivision shall provide Grantee’s Contractor with written final acceptance of the Replacement Irrigation Facility (Final Acceptance) which shall not be unreasonably withheld by Grantor or Florida Acres Subdivision. A draft version of the Final Acceptance document is attached hereto as Exhibit “C”. When Grantee provides Grantee’s Contractor with a notice to proceed for construction of Grantee’s project (NTP), Grantee shall notify Grantor, Mesa Heights Subdivision and Florida Acres Subdivision within 90 days that such NTP has been issued and provide the contact information of Grantee’s Contractor with whom to coordinate the irrigation design and construction. All communications, notices and correspondence regarding the design and construction of the Replacement Irrigation Facilities shall be exchanged between Grantor/Mesa Heights Subdivision/Florida Acres Subdivision, Grantee, and Grantee’s Contractor by email or certified mail or handed in-person. Either party may from time to time designate in writing a new or substitute contact, if needed. The following contacts for the Grantee and Grantor are as follows: <table><tr><td>For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us</td><td>For the Grantor: Bandy Family Trust Attn: Carolyn (Jeanne) Bandy 123 Mesa Heights Dr. Durango, CO 81303 Phone: 303-503-9228 email: beautifulglass@bresnana.net</td><td>For the Grantor: Mesa Heights SUB HOA Attn: Greg Munro 440 Mes Heights Dr. Durango, CO 81303 Phone: 970-759-7118 e-mail: gwmunro1@gmail.com</td><td>For the Grantor: Florida Acres Sub Attn: Dan Cornelius 193 Florida Acres Dr. Durango, CO 81303 Phone: 970-422-2322 e-mail: davacornelius@charter.net</td></tr></table> The provisions of the Memorandum of Agreement applicable to the Replacement Irrigation Facilities will survive the closing of Parcel Nos. TE-7 and be binding upon and inure to the benefit of the Grantor, Grantee, Grantee’s Contractor and their respective heirs, personal representatives, successors, and assigns. Furthermore, the covenants, conditions and restrictions contained herein applicable to the Replacement Irrigation Facilities, shall run with the land and shall survive any transfer of title of interest in the property owned by Grantor.	For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us	For the Grantor: Bandy Family Trust Attn: Carolyn (Jeanne) Bandy 123 Mesa Heights Dr. Durango, CO 81303 Phone: 303-503-9228 email: beautifulglass@bresnana.net	For the Grantor: Mesa Heights SUB HOA Attn: Greg Munro 440 Mes Heights Dr. Durango, CO 81303 Phone: 970-759-7118 e-mail: gwmunro1@gmail.com	For the Grantor: Florida Acres Sub Attn: Dan Cornelius 193 Florida Acres Dr. Durango, CO 81303 Phone: 970-422-2322 e-mail: davacornelius@charter.net
For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us	For the Grantor: Bandy Family Trust Attn: Carolyn (Jeanne) Bandy 123 Mesa Heights Dr. Durango, CO 81303 Phone: 303-503-9228 email: beautifulglass@bresnana.net	For the Grantor: Mesa Heights SUB HOA Attn: Greg Munro 440 Mes Heights Dr. Durango, CO 81303 Phone: 970-759-7118 e-mail: gwmunro1@gmail.com	For the Grantor: Florida Acres Sub Attn: Dan Cornelius 193 Florida Acres Dr. Durango, CO 81303 Phone: 970-422-2322 e-mail: davacornelius@charter.net			
RW-8 TE-8	Bernie L. Gurule	Memorandum of Agreement (MOA) dated 1/28/26, a copy of which is located in Book 4, Contract Documents. The MOA defines improvements to be removed as “40 LF wire fencing, 60 trees and a tenant-owned sign”. All of such improvements are located within RW-8. Paragraph 2 under <i>Other conditions</i> states as follows: The Temporary Easement(s) described on the attached Exhibit(s) A is required for fence installation, driveway construction, construction of relocated irrigation facilities, and construction of associated highway improvements. Fee ROW required for highway expansion and associated highway improvements. Further, it is understood and agreed between the parties that: The Temporary Easement(s) shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. Temporary Easement Extensions will include incentive payments calculated on the total FMV of all acquisitions.				

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-8 (optional 4th year term - 15% increase from FMV of year 1 + incentive): 0.199 acres (8,676 sq. ft.); \$2.10/SF (x 15%/year) = \$4,253 Temporary Easement (shown in attached exhibits) TE-8 (optional 5th year term - 18% increase from FMV of year 1 + incentive): 0.199 acres (8,676 sq. ft.); \$2.10/SF (x 15%/year) = \$4,354 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel No. TE-8. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-8, the contractor is required to provide the required thirty (30) day notice(s) to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE-8. Paragraph 2b. under <i>Other conditions</i> states the following: At its sole cost and expense, GRANTEE shall repair and restore the Temporary Easement areas (“Affected Areas”) and return said Affected Area(s) to a condition reasonably similar to or better than that which existed prior to GRANTEE’s entry, excepting the repair or restoration of Improvements paid to GRANTOR by GRANTEE and included in the Net Total above. The contractor is responsible for compliance for this provision. Note that no payments have been made to the Grantor for any improvements located in Parcel No. TE-8. As a result, if any improvements in Parcel No. TE-8 are damaged or removed by the contractor, the contractor will need to replace or repair such items. Paragraph 3 under <i>Other conditions</i> states the following: The Temporary Easement Area is to remain free of parked cars during contractor construction operations. Paragraph 4 under <i>Other conditions</i> states the following: Certain private irrigation facilities owned by the Grantor are located on Parcel No. RW-8 and will be removed and relocated by Grantee’s project, hereinafter referred to as “Removal Irrigation Facilities”. Grantee’s design-build contractor (Grantee’s Contractor) will design, and construct modified replacement irrigation facilities to be located on Parcel No. TE-8 that will replace the Removed Irrigation Facilities (hereinafter referred to as “Replacement Irrigation Facilities”). The Removal Irrigation Facilities and Replacement Irrigation Facilities are generally illustrated in a plan sheet, that includes additional information, attached hereto as Exhibit “B”. The Replacement Irrigation Facilities will be designed and constructed to replace the historic quantity and quality of historic irrigation flows. Grantor hereby grants Grantee and Grantee’s Contractor a right of entry onto Grantor’s property outside of Parcel No. TE-8 for Construction of the Replacement Irrigation Facilities, if needed. If Grantee’s Contractor enters Grantor’s property outside of Parcel No. TE-8 for such construction purpose, Grantee’s Contractor will, at Grantee’s sole cost and expense, reconstruct the portion of Grantor’s property occupied to a condition reasonably similar to that which existed prior to Grantee’s Contractor’s entry. Grantor agrees to reasonably cooperate and work collaboratively with Grantee’s Contractor on coordination of the design and construction of the Replacement Irrigation Facilities. Grantee’s Contractor may request additional information and/or documentation about the Removal Irrigation Facilities to inform the design and construction of the Replacement Irrigation Facilities. To the extent possible, Grantee has captured certain design criteria for the Replacement Irrigation Facilities to be constructed (e.g. flow dates, flow quantities (if made available by Grantor), minimum pipe size and material type, size of ditch, conceptual alignment and diversions, as applicable). Grantee’s Contractor will provide to Grantor the design of Replacement Irrigation Facility prior to starting construction of the Replacement Irrigation Facility. If Grantor has any material issues with the Replacement Irrigation Facilities as they are being designed, constructed, tested, or in operation prior to completion of the Replacement Irrigation Facilities, Grantor should discuss such issues with Grantee’s Contractor. Work on Grantor’s Replacement Irrigation Facilities shall not impair or impact the conveyance of irrigation water during irrigation season, April 1 through October 31st of each year, unless written approval is given by Grantor. Grantee’s Contractor shall be responsible for maintaining irrigation flows through the Removal Irrigation Facilities during construction of Grantee’s project until flows from the Removal Irrigation Facilities are changed to the Replacement Irrigation Facilities. Grantee’s Contractor may, however, be required to temporarily modify the existing irrigation conveyance based upon construction phasing. Grantee’s Contractor shall schedule a final walk through with Grantor upon completion of the Replacement Irrigation Facilities work. Notice of the final walk through shall be provided by Grantee’s Contractor in accordance with the notice provisions outlined below. After Grantor’s concerns from the final walk through have been addressed by Grantee’s Contractor, Grantor shall provide

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions		
		Grantee’s Contractor with written final acceptance of the Replacement Irrigation Facility (Final Acceptance) which shall not be unreasonably withheld by Grantor. A draft version of the Final Acceptance document is attached hereto as Exhibit “C”. After Grantor has signed the Final Acceptance, Grantor will own all the Replacement Irrigation Facilities located on Grantor’s property and be fully responsible for all maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. Grantee and Grantee’s Contractor shall then be fully released from any and all liability for such maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. When Grantee provides Grantee’s Contractor with a notice to proceed for construction of Grantee’s project (NTP), Grantee shall notify Grantor within 90 days that such NTP has been issued and provide the contact information of Grantee’s Contractor with whom to coordinate the irrigation design and construction. All communications, notices and correspondence regarding the design and construction of the Replacement Irrigation Facilities shall be exchanged between Grantor, Grantee, and Grantee’s Contractor by email or certified mail or handed in-person. Either party may from time to time designate in writing a new or substitute contact, if needed. The following contacts for the Grantee and Grantor are as follows: <table><tr><td>For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us</td><td>For the Grantor: Bernie “Lee” Gurle 49 Florida Acres Drive Durango, CO 81303 Email: lee_gurule@q.com Phone: 970-759-0170</td></tr></table> The provisions of the Memorandum of Agreement applicable to the Replacement Irrigation Facilities will survive the closing of Parcel Nos. RW-8 and TE-8 and be binding upon and inure to the benefit of the Grantor, Grantee, Grantee’s Contractor and their respective heirs, personal representatives, successors, and assigns. Furthermore, the covenants, conditions and restrictions contained herein applicable to the Replacement Irrigation Facilities, shall run with the land and shall survive any transfer of title of interest in the property owned by Grantor.	For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us	For the Grantor: Bernie “Lee” Gurle 49 Florida Acres Drive Durango, CO 81303 Email: lee_gurule@q.com Phone: 970-759-0170
For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us	For the Grantor: Bernie “Lee” Gurle 49 Florida Acres Drive Durango, CO 81303 Email: lee_gurule@q.com Phone: 970-759-0170			
RW-9 TE-9	ACM Empire, LLC	Memorandum of Agreement (MOA) dated 12/18/25, a copy of which is located in Book 4, Contract Documents. The MOA defines improvements to be removed as “lateral ditch 30 LF, 13 trees, Gravel Driveway SF, Perimeter fencing 305 LF”. All of such improvements are located within _____. A document entitled MOA ACM #9 Details Tree Removal on Muller Map for Contractor, a copy of which is located in Book 4, is an aerial photograph with additional guidance on some of the improvements to be removed and landowner (ACM) privacy fence to be constructed before the project begins. Note that this document includes the following: CDOT to install carcnites for owner. There are two <i>Other Conditions</i>. The first states: ROW confirmed with engineering that TE-9 will not be used from point 539 east and that ACM may install their fence within this area. Paragraph 2 under the second <i>Other conditions</i> states as follows: The Land and Temporary Easement(s) described on the attached Exhibit(s) A are for fence installation, driveway construction, detour construction, and construction of associated highway improvements which is the temporary easement, highway expansion and associated improvements which is for fee ROW. Further, it is understood and agreed between the parties that: The Temporary Easement(s) shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. Temporary Easement Extensions will include incentive payments calculated on the total FMV of all acquisitions. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-9 (optional 4th year term - 15% increase from FMV of year 1 + incentive): 0.158 acres \$4,156 + \$1,039=\$5,195		

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		Temporary Easement (shown in attached exhibits) TE-9 (optional 5th year term - 18% increase from FMV of year 1 + incentive): 0.158 acres \$4,264 +\$1,066 =\$5,330 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel No. TE-9. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-9, the contractor is required to provide the required thirty (30) day notice(s) to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE-9. Paragraph 2b. under the second <i>Other conditions</i> states the following: At its sole cost and expense, GRANTEE shall repair and restore the Temporary Easement areas (“Affected Areas”) and return said Affected Area(s) to a condition reasonably similar to or better than that which existed prior to GRANTEE’s entry, excepting the repair or restoration of Improvements paid to GRANTOR by GRANTEE and included in the Net Total above. The contractor is responsible for compliance for this provision. Note that no payments have been made to the Grantor for any improvements located in Parcel No. TE-8. As a result, if any improvements in Parcel No. TE-9 are damaged or removed by the contractor, the contractor will need to replace or repair such items. Paragraph 3 under the second <i>Other conditions</i> states the following: The Temporary Easement Area is to remain free of parked cars during contractor construction operations. Paragraph 4 under the second <i>Other conditions</i> states the following: Irrigation NOTE: Landowner is “Grantor” CDOT is “Grantee” Certain private irrigation facilities owned by the Grantor are located on Parcel No. RW-9 and will be removed and relocated by Grantee’s project, hereinafter referred to as “Removal Irrigation Facilities”. Grantee’s design-build contractor (Grantee’s Contractor) will design, and construct modified replacement irrigation facilities to be located on Parcel No. TE-9 that will replace the Removed Irrigation Facilities (hereinafter referred to as “Replacement Irrigation Facilities”). The Removal Irrigation Facilities and Replacement Irrigation Facilities are generally illustrated in a plan sheet, that includes additional information, attached hereto as Exhibit “B”. The Replacement Irrigation Facilities will be designed and constructed to replace the historic quantity and quality of historic irrigation flows. Grantor hereby grants Grantee and Grantee’s Contractor a right of entry onto Grantor’s property outside of Parcel No. TE-9 for Construction of the Replacement Irrigation Facilities, if needed. If Grantee’s Contractor enters Grantor’s property outside of Parcel No. TE-9 for such construction purpose, Grantee’s Contractor will, at Grantee’s sole cost and expense, reconstruct the portion of Grantor’s property occupied to a condition reasonably similar to that which existed prior to Grantee’s Contractor’s entry. Grantor agrees to reasonably cooperate and work collaboratively with Grantee’s Contractor on coordination of the design and construction of the Replacement Irrigation Facilities. Grantee’s Contractor may request additional information and/or documentation about the Removal Irrigation Facilities to inform the design and construction of the Replacement Irrigation Facilities. To the extent possible, Grantee has captured certain design criteria for the Replacement Irrigation Facilities to be constructed (e.g. flow dates, flow quantities (if made available by Grantor), minimum pipe size and material type, size of ditch, conceptual alignment and diversions, as applicable). Grantee’s Contractor will provide to Grantor the design of Replacement Irrigation Facility prior to starting construction of the Replacement Irrigation Facility. If Grantor has any material issues with the Replacement Irrigation Facilities as they are being designed, constructed, tested, or in operation prior to completion of the Replacement Irrigation Facilities, Grantor should discuss such issues with Grantee’s Contractor. Work on Grantor’s Replacement Irrigation Facilities shall not impair or impact the conveyance of irrigation water during irrigation season, April 1 through October 31st of each year, unless written approval is given by Grantor. Grantee’s Contractor shall be responsible for maintaining irrigation flows through the Removal Irrigation Facilities during construction of Grantee’s project until flows from the Removal Irrigation Facilities are changed to the Replacement Irrigation Facilities. Grantee’s Contractor may, however, be required to temporarily modify the existing irrigation conveyance based upon construction phasing. Grantee’s Contractor shall schedule a final walk through with Grantor upon completion of the Replacement Irrigation Facilities work. Notice of the final walk through shall be provided by Grantee’s Contractor in accordance with the notice provisions outlined below. After Grantor’s concerns from the final walk through have been addressed by Grantee’s Contractor, Grantor shall provide

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions		
		Grantee’s Contractor with written final acceptance of the Replacement Irrigation Facility (Final Acceptance) which shall not be unreasonably withheld by Grantor. A draft version of the Final Acceptance document is attached hereto as Exhibit “C”. After Grantor has signed the Final Acceptance, Grantor will own all the Replacement Irrigation Facilities located on Grantor’s property and be fully responsible for all maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. Grantee and Grantee’s Contractor shall then be fully released from any and all liability for such maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. When Grantee provides Grantee’s Contractor with a notice to proceed for construction of Grantee’s project (NTP), Grantee shall notify Grantor within 90 days that such NTP has been issued and provide the contact information of Grantee’s Contractor with whom to coordinate the irrigation design and construction. All communications, notices and correspondence regarding the design and construction of the Replacement Irrigation Facilities shall be exchanged between Grantor, Grantee, and Grantee’s Contractor by email or certified mail or handed in-person. Either party may from time to time designate in writing a new or substitute contact, if needed. The following contacts for the Grantee and Grantor are as follows: <table><tr><td>For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us</td><td>For the Grantor: ACM Empire LLC 2611 Arroyo Dr. Durango, CO 81301 Phone: 970-946-7549 email: acmestimating@gmail.com</td></tr></table> The provisions of the Memorandum of Agreement applicable to the Replacement Irrigation Facilities will survive the closing of Parcel Nos. RW-9 and TE-9 and be binding upon and inure to the benefit of the Grantor, Grantee, Grantee’s Contractor and their respective heirs, personal representatives, successors, and assigns. Furthermore, the covenants, conditions and restrictions contained herein applicable to the Replacement Irrigation Facilities, shall run with the land and shall survive any transfer of title of interest in the property owned by Grantor.	For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us	For the Grantor: ACM Empire LLC 2611 Arroyo Dr. Durango, CO 81301 Phone: 970-946-7549 email: acmestimating@gmail.com
For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us	For the Grantor: ACM Empire LLC 2611 Arroyo Dr. Durango, CO 81301 Phone: 970-946-7549 email: acmestimating@gmail.com			
RW-10 PE-10 TE-10	W. Gary Robison & Judy S. Robison	Memorandum of Agreement (MOA) dated 1/4/26, a copy of which is located in Book 4, Contract Documents. The MOA defines improvements to be removed as “Cross fencing 134 LF (+EP)F”. All of such improvements are located within _____. Paragraph 2 under <i>Other conditions</i> states as follows: The Land and Temporary Easement(s) described on the attached Exhibit(s) A are for fence installation, driveway construction, irrigation facilities, detour construction, and construction of associated highway improvements which is the temporary easement, highway expansion and associated improvements which is for fee ROW. Further, it is understood and agreed between the parties that: The Temporary Easement(s) shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. Temporary Easement Extensions will include incentive payments calculated on the total FMV of all acquisitions. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-10 (optional 4th year term - 15% increase from FMV of year 1 + incentive): 26,354 Sq. Ft. TE= \$1,564 + \$391 = \$1,955 Temporary Easement (shown in attached exhibits) TE-10 (optional 5th year term - 18% increase from FMV of year 1 + incentive): 26,354 Sq. Ft. TE= \$1,605 + \$401 = \$2,006 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel No. TE-10. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-10, the contractor is required to provide the required thirty (30) day notice(s) to the Grantor (landowner) of its intent to exercise such options, and the		

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE-10. Paragraph 2b. under the second <i>Other conditions</i> states the following: At its sole cost and expense, GRANTEE shall repair and restore the Temporary Easement areas (“Affected Areas”) and return said Affected Area(s) to a condition reasonably similar to or better than that which existed prior to GRANTEE’s entry, excepting the repair or restoration of Improvements paid to GRANTOR by GRANTEE and included in the Net Total above. The contractor is responsible for compliance for this provision. Note that no payments have been made to the Grantor for any improvements located in Parcel No. TE-10. As a result, if any improvements in Parcel No. TE-10 are damaged or removed by the contractor, the contractor will need to replace or repair such items. Paragraph 3 under the second <i>Other conditions</i> states the following: The Temporary Easement Area is to remain free of parked cars during contractor construction operations. Paragraph 4 under the second <i>Other conditions</i> states the following: Irrigation NOTE: Landowner is “Grantor” CDOT is “Grantee” Certain private irrigation facilities owned by the Grantor are located on Parcel No. RW-10 and will be removed and relocated by Grantee’s project, hereinafter referred to as “Removal Irrigation Facilities”. Grantee’s design-build contractor (Grantee’s Contractor) will design, and construct modified replacement irrigation facilities to be located on Parcel No. TE-10 and PE-10 that will replace the Removed Irrigation Facilities (hereinafter referred to as “Replacement Irrigation Facilities”). The Removal Irrigation Facilities and Replacement Irrigation Facilities are generally illustrated in a plan sheet, that includes additional information, attached hereto as Exhibit “B”. The Replacement Irrigation Facilities will be designed and constructed to replace the historic quantity and quality of historic irrigation flows. Grantor hereby grants Grantee and Grantee’s Contractor a right of entry onto Grantor’s property outside of Parcel No. TE-10 and PE-10 for Construction of the Replacement Irrigation Facilities, if needed. If Grantee’s Contractor enters Grantor’s property outside of Parcel No. TE-10 and PE-10 for such construction purpose, Grantee’s Contractor will, at Grantee’s sole cost and expense, reconstruct the portion of Grantor’s property occupied to a condition reasonably similar to that which existed prior to Grantee’s Contractor’s entry. Grantor agrees to reasonably cooperate and work collaboratively with Grantee’s Contractor on coordination of the design and construction of the Replacement Irrigation Facilities. Grantee’s Contractor may request additional information and/or documentation about the Removal Irrigation Facilities to inform the design and construction of the Replacement Irrigation Facilities. To the extent possible, Grantee has captured certain design criteria for the Replacement Irrigation Facilities to be constructed (e.g. flow dates, flow quantities (if made available by Grantor), minimum pipe size and material type, size of ditch, conceptual alignment and diversions, as applicable). Grantee’s Contractor will provide to Grantor the design of Replacement Irrigation Facility prior to starting construction of the Replacement Irrigation Facility. If Grantor has any material issues with the Replacement Irrigation Facilities as they are being designed, constructed, tested, or in operation prior to completion of the Replacement Irrigation Facilities, Grantor should discuss such issues with Grantee’s Contractor. Work on Grantor’s Replacement Irrigation Facilities shall not impair or impact the conveyance of irrigation water during irrigation season, April 1 through October 31st of each year, unless written approval is given by Grantor. Grantee’s Contractor shall be responsible for maintaining irrigation flows through the Removal Irrigation Facilities during construction of Grantee’s project until flows from the Removal Irrigation Facilities are changed to the Replacement Irrigation Facilities. Grantee’s Contractor may, however, be required to temporarily modify the existing irrigation conveyance based upon construction phasing. Grantee’s Contractor shall schedule a final walk through with Grantor upon completion of the Replacement Irrigation Facilities work. Notice of the final walk through shall be provided by Grantee’s Contractor in accordance with the notice provisions outlined below. After Grantor’s concerns from the final walk through have been addressed by Grantee’s Contractor, Grantor shall provide Grantee’s Contractor with written final acceptance of the Replacement Irrigation Facility (Final Acceptance) which shall not be unreasonably withheld by Grantor. A draft version of the Final Acceptance document is attached hereto as Exhibit “C”.

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions		
		After Grantor has signed the Final Acceptance, Grantor will own all the Replacement Irrigation Facilities located on Grantor’s property and be fully responsible for all maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. Grantee and Grantee’s Contractor shall then be fully released from any and all liability for such maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. When Grantee provides Grantee’s Contractor with a notice to proceed for construction of Grantee’s project (NTP), Grantee shall notify Grantor within 90 days that such NTP has been issued and provide the contact information of Grantee’s Contractor with whom to coordinate the irrigation design and construction. All communications, notices and correspondence regarding the design and construction of the Replacement Irrigation Facilities shall be exchanged between Grantor, Grantee, and Grantee’s Contractor by email or certified mail or handed in-person. Either party may from time to time designate in writing a new or substitute contact, if needed. The following contacts for the Grantee and Grantor are as follows: <table><tr><td>For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us</td><td>For the Grantor: Gary & Judy Robison P.O. Box 1847 Durango, CO 81302 Phone: 970-759-1616 email: judyrobison_2000@yahoo.com</td></tr></table> The provisions of the Memorandum of Agreement applicable to the Replacement Irrigation Facilities will survive the closing of Parcel Nos. RW-10, TE-10 and PE-10 and be binding upon and inure to the benefit of the Grantor, Grantee, Grantee’s Contractor and their respective heirs, personal representatives, successors, and assigns. Furthermore, the covenants, conditions and restrictions contained herein applicable to the Replacement Irrigation Facilities, shall run with the land and shall survive any transfer of title of interest in the property owned by Grantor.	For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us	For the Grantor: Gary & Judy Robison P.O. Box 1847 Durango, CO 81302 Phone: 970-759-1616 email: judyrobison_2000@yahoo.com
For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us	For the Grantor: Gary & Judy Robison P.O. Box 1847 Durango, CO 81302 Phone: 970-759-1616 email: judyrobison_2000@yahoo.com			
RW-11 SE-11 TE-11	Michael C. Lively	Memorandum of Agreement (MOA) dated 12/30/25, a copy of which is located in Book 4, Contract Documents. The MOA defines improvements to be removed as “lateral ditch 40 LF”. All of such improvements are located within _____. Paragraph 2 under <i>Other conditions</i> states as follows: The Land and Temporary Easement(s) described on the attached Exhibit(s) A are for fence installation, driveway construction, detour construction, and construction of associated highway improvements which is the temporary easement, highway expansion and associated improvements which is for fee ROW. Further, it is understood and agreed between the parties that: The Temporary Easement(s) shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. Temporary Easement Extensions will include incentive payments calculated on the total FMV of all acquisitions. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-11 (optional 4th year term - 15% increase from FMV of year 1 + incentive): 0.146 acres \$710 + \$248 = \$958 Temporary Easement (shown in attached exhibits) TE-11 (optional 5th year term - 18% increase from FMV of year 1 + incentive): 0.146 acres \$728 + \$255 =\$983 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel No. TE-11. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-11, the contractor is required to provide the required thirty (30) day notice(s) to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE-11.		

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		Paragraph 2b. under the second <i>Other conditions</i> states the following: At its sole cost and expense, GRANTEE shall repair and restore the Temporary Easement areas (“Affected Areas”) and return said Affected Area(s) to a condition reasonably similar to or better than that which existed prior to GRANTEE’s entry, excepting the repair or restoration of Improvements paid to GRANTOR by GRANTEE and included in the Net Total above. The contractor is responsible for compliance for this provision. Note that no payments have been made to the Grantor for any improvements located in Parcel No. TE-11. As a result, if any improvements in Parcel No. TE-11 are damaged or removed by the contractor, the contractor will need to replace or repair such items. Paragraph 3 under the second <i>Other conditions</i> states the following: The Temporary Easement Area is to remain free of parked cars during contractor construction operations.
TE-12	W. Travis Craig	Memorandum of Agreement (MOA) dated 12/30/25, a copy of which is located in Book 4, Contract Documents. The MOA defines improvements to be removed as “Fencing”. Provide an explanation of the fencing, if possible. Paragraph 2 under <i>Other conditions</i> states as follows: The term of Grantee’s use of the Temporary Easement shall be for a period of 3 years from the Commencement Date (“term”). The term shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). In the event that the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-12 (Optional 4th year term - 15% increase from FMV of year 1) TE=\$1,695=incentive \$597=\$2,292 Temporary Easement (shown in attached exhibits) TE-12 (optional 5th year term - 18% increase from FMV of year 1) TE=\$1,739 + incentive \$609 =\$2,348 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel No. TE-12. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-12, the contractor is required to provide the required thirty (30) day notice(s) to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE-12. Paragraph 3 <i>Other conditions</i> states the following: Grantee shall repair and restore disturbed areas to a condition reasonably approximate to or better than the condition that existed prior to Grantee’s entry for construction. Note Grantor has been paid for the “Fencing” described above, so it will not need to be replaced.
TE-13	Max Campbell Howard and Eleah Kim Howard	Memorandum of Agreement (MOA) dated 11/13/25, a copy of which is located in Book 4, Contract Documents. The MOA defines improvements to be removed as “Lateral ditch 150 LF + 15%EP)”. Provide an explanation of the affected improvements, if possible. Paragraph 2 under <i>Other conditions</i> states as follows:

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		The term of Grantee’s use of the Temporary Easement shall be for a period of 3 years from the Commencement Date (“term”). The term shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). In the event that the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-13 (Optional 4th year term - 15% increase from FMV of year 1) TE=\$621 + incentive \$248=\$869 Temporary Easement (shown in attached exhibits) TE-13 (optional 5th year term - 18% increase from FMV of year 1) TE=\$637 + incentive \$231=\$868 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel No. TE-13. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-13, the contractor is required to provide the required thirty (30) day notice(s) to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE-13. Paragraph 3 <i>Other conditions</i> states the following: Grantee shall repair and restore disturbed areas to a condition reasonably approximate to or better than the condition that existed prior to Grantee’s entry for construction. Note Grantor has been paid for the “Lateral ditch 150 LF + 15%EP” described above, so it will not need to be replaced. Revisit and think about highlighted provision, especially in light of below paragraph. Paragraph 4 <i>Other conditions</i> states the following: Grantor’s existing private irrigation facilities will be impacted by construction of the Grantee’s project. Grantor and Grantee agree that \$2,588 of the agreed total just compensation is a cost to cure to provide funds for Grantor to reconfigure such “Replacement Irrigation Facilities”. Grantor agrees to use a portion of the agreed upon just compensation to design and construct the Replacement Irrigation Facilities. Grantor agrees to work collaboratively with Grantee’s Contractor on scheduling construction of the Replacement Irrigation Facilities. Irrigation flows will commence on or about April 1st and will cease on or about November 1st each year. Grantor will try to finalize the connection of the Replacement Irrigation Facilities in the November 1st to April 1st time frame, if possible. After Grantor’s construction of the Replacement Irrigation Facilities, Grantor will then be responsible for maintaining the Replacement Irrigation Facilities and all associated irrigation facilities located on Grantor’s property.
RW-41 TE-41	Max Campbell Howard and Eleah Kim Howard	Memorandum of Agreement (MOA) dated 11/19/25, a copy of which is located in Book 4, Contract Documents. The MOA defines improvements to be removed as “Lateral ditch 215 LF (\$15LF+15%EP), Wire fencing 160 LF (40% depreciation 15% EP)”. Provide an explanation of the affected improvements, if possible. Paragraph 2 under <i>Other conditions</i> states as follows: The Land and Temporary Easement(s) described on the attached Exhibit(s) A are for fence installation, driveway construction, detour construction, construction of associated highway improvements which is the temporary easement, highway expansion and associated highway improvements which is for fee. Further, it is understood and agreed between the parties that: a. The Temporary Easement(s) shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. Temporary Easement Extensions will include incentive payments calculated on the total FMV of all acquisitions. b. At its sole cost and expense, GRANTEE shall repair and restore the Temporary Easement areas (“Affected Areas”) and return said Affected Area(s) to a condition reasonably similar to or better than that which existed prior to GRANTEE’s entry, excepting the repair or restoration of Improvements paid to GRANTOR by GRANTEE and included in the Net Total above. Note Grantor has been paid for the “Lateral ditch 215 LF (\$15LF+15%EP), Wire fencing 160 LF (40% depreciation 15% EP)” described above, so it will not need to be replaced. Revisit and think about highlighted provision, especially in light of below paragraph. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-41 (Optional 4th year term - 15% increase from FMV of year 1 + incentive) 0.831 acres \$2,007 + \$702=\$2,709 Temporary Easement (shown in attached exhibits) TE-41 (optional 5th year term - 18% increase from FMV of year 1) 0.831 acres \$2,059 + \$721 = \$2,780 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel No. TE-41. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-41, the contractor is required to provide the required thirty (30) day notice(s) to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE-41. Paragraph 3 <i>Other conditions</i> states the following: The Temporary Easement Area is to remain free of parked cars during contractor construction operations. Paragraph 4 <i>Other conditions</i> states the following: Grantor’s existing private irrigation facilities will be impacted by construction of the Grantee’s project. Grantor and Grantee agree that \$3,709 of the agreed total just compensation is a cost to cure to provide funds for Grantor to reconfigure such “Replacement Irrigation Facilities”. Grantor agrees to use a portion of the agreed upon just compensation to design and construct the Replacement Irrigation Facilities. Grantor agrees to work collaboratively with Grantee’s Contractor on scheduling construction of the Replacement Irrigation Facilities. Irrigation flows will commence on or about April 1st and will cease on or about November 1st each year. Grantor will try to finalize the connection of the Replacement Irrigation Facilities in the November 1st to April 1st time frame, if possible. After Grantor’s construction of the Replacement Irrigation Facilities, Grantor will then be responsible for maintaining the Replacement Irrigation Facilities and all associated irrigation facilities located on Grantor’s property.
RW-14 TE-14	Sun Cloud Estates HOA	Memorandum of Agreement (MOA) dated 12/2/25, a copy of which is located in Book 4, Contract Documents. The MOA does not define any improvements to be removed. Paragraph 2 under <i>Other conditions</i> states as follows: The Land and Temporary Easement(s) described on the attached Exhibit(s) A are for fence installation, driveway construction, detour construction, construction of associated highway improvements which is the temporary easement, highway expansion and associated highway improvements which is for fee ROW. Further, it is understood and agreed between the parties that: a. The Temporary Easement(s) shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. Temporary Easement Extensions will include incentive payments calculated on the total FMV of all acquisitions. b. At its sole cost and expense, GRANTEE shall repair and restore the Temporary Easement areas (“Affected Areas”) and return said Affected Area(s) to a condition reasonably similar to or better than that which existed prior to GRANTEE’s entry, excepting the repair or restoration of Improvements paid to GRANTOR by GRANTEE and included in the Net Total above. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-14 (Optional 4th year term - 15% increase from FMV of year 1 + incentive) 0.081 acres \$56.00 +\$22.00=\$78.00 Temporary Easement (shown in attached exhibits) TE-14 (optional 5th year term - 18% increase from FMV of year 1) 0.081 acres \$57.00 + \$23.00=\$80.00 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel No. TE-14. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-14, the contractor is required to provide the required thirty (30) day notice(s) to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE14. Paragraph 3 <i>Other conditions</i> states the following: The Temporary Easement Area is to remain free of parked cars during contractor construction operations. Paragraph 4 <i>Other conditions</i> states the following: The section of ditch being replaced by the project on the adjacent property in which Suncloud gets their irrigation water will be replace in kind by the design build contractor.
RW-15 TE-15	Ronald G. Maxwell and Laurie K. Maxwell	Memorandum of Agreement (MOA) dated 1/1/26, a copy of which is located in Book 4, Contract Documents. The MOA defines improvements to be removed as “wire fencing (370 linear ft), Trees (25), Entry Structure”. All of such improvements are located within _____. Paragraph 2 under <i>Other conditions</i> states as follows: The Temporary Easement described on the attached Exhibit A is required for fence installation, irrigation ditch construction, driveway construction and construction of associated highway improvements. The Fee ROW is required for highway expansion and associated improvements. Further, it is understood and agreed between the parties that: a. The Temporary Easement(s) shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. Temporary Easement Extensions will include incentive payments calculated on the total FMV of all acquisitions. b. At its sole cost and expense, GRANTEE shall repair and restore the Temporary Easement areas (“Affected Areas”) and return said Affected Area(s) to a condition reasonably similar to or better than that which existed prior to GRANTEE’s entry, excepting the repair or restoration of Improvements paid to GRANTOR by GRANTEE and included in the Net Total above. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-15 (optional 4th year term - 15% increase from FMV of year 1 + incentive): 0.537 acres (23,397 sq. ft.) \$1.50 SF x 15%/year = \$7,567

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		Temporary Easement (shown in attached exhibits) TE-15 (optional 5th year term - 18% increase from FMV of year 1 + incentive): 0.537 acres (23,397 sq. ft.) \$1.50 SF x 15%/year = \$7,765 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel No. TE-15. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-15, the contractor is required to provide the required thirty (30) day notice(s) to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE-15. Paragraph 3 under the second <i>Other conditions</i> states the following: The Temporary Easement Area is to remain free of parked cars during contractor construction operations. Paragraph 4 under the second <i>Other conditions</i> states the following: Certain private irrigation facilities owned by the Grantor are located on Parcel No. RW-15 and will be removed and relocated by Grantee’s project, hereinafter referred to as “Removal Irrigation Facilities”. Grantee’s design-build contractor (Grantee’s Contractor) will design, and construct modified replacement irrigation facilities to be located on Parcel No. TE-15 that will replace the Removed Irrigation Facilities (hereinafter referred to as “Replacement Irrigation Facilities”). The Removal Irrigation Facilities and Replacement Irrigation Facilities are generally illustrated in a plan sheet, that includes additional information, attached hereto as Exhibit “B”. The Replacement Irrigation Facilities will be designed and constructed to replace the historic quantity and quality of historic irrigation flows. Grantor hereby grants Grantee and Grantee’s Contractor a right of entry onto Grantor’s property outside of Parcel No. TE-15 for Construction of the Replacement Irrigation Facilities, if needed. If Grantee’s Contractor enters Grantor’s property outside of Parcel No. TE-15 for such construction purpose, Grantee’s Contractor will, at Grantee’s sole cost and expense, reconstruct the portion of Grantor’s property occupied to a condition reasonably similar to that which existed prior to Grantee’s Contractor’s entry. Grantor agrees to reasonably cooperate and work collaboratively with Grantee’s Contractor on coordination of the design and construction of the Replacement Irrigation Facilities. Grantee’s Contractor may request additional information and/or documentation about the Removal Irrigation Facilities to inform the design and construction of the Replacement Irrigation Facilities. To the extent possible, Grantee has captured certain design criteria for the Replacement Irrigation Facilities to be constructed (e.g. flow dates, flow quantities (if made available by Grantor), minimum pipe size and material type, size of ditch, conceptual alignment and diversions, as applicable). Grantee’s Contractor will provide to Grantor the design of Replacement Irrigation Facility prior to starting construction of the Replacement Irrigation Facility. If Grantor has any material issues with the Replacement Irrigation Facilities as they are being designed, constructed, tested, or in operation prior to completion of the Replacement Irrigation Facilities, Grantor should discuss such issues with Grantee’s Contractor. Work on Grantor’s Replacement Irrigation Facilities shall not impair or impact the conveyance of irrigation water during irrigation season, April 1 through October 31st of each year, unless written approval is given by Grantor. Grantee’s Contractor shall be responsible for maintaining irrigation flows through the Removal Irrigation Facilities during construction of Grantee’s project until flows from the Removal Irrigation Facilities are changed to the Replacement Irrigation Facilities. Grantee’s Contractor may, however, be required to temporarily modify the existing irrigation conveyance based upon construction phasing. Grantee’s Contractor shall schedule a final walk through with Grantor upon completion of the Replacement Irrigation Facilities work. Notice of the final walk through shall be provided by Grantee’s Contractor in accordance with the notice provisions outlined below. After Grantor’s concerns from the final walk through have been addressed by Grantee’s Contractor, Grantor shall provide Grantee’s Contractor with written final acceptance of the Replacement Irrigation Facility (Final Acceptance) which shall not be unreasonably withheld by Grantor. A draft version of the Final Acceptance document is attached hereto as Exhibit “C”. After Grantor has signed the Final Acceptance, Grantor will own all the Replacement Irrigation Facilities located on Grantor’s property and be fully responsible for all maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. Grantee and Grantee’s Contractor shall then be fully released from any and all liability for such maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. When Grantee provides Grantee’s Contractor with a notice to proceed for construction of Grantee’s project (NTP), Grantee shall notify Grantor within 90 days that such NTP has been issued and provide the contact information of Grantee’s Contractor with whom to coordinate the irrigation design and construction. All communications, notices and correspondence regarding the design and

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions		
		construction of the Replacement Irrigation Facilities shall be exchanged between Grantor, Grantee, and Grantee’s Contractor by email or certified mail or handed in-person. Either party may from time to time designate in writing a new or substitute contact, if needed. The following contacts for the Grantee and Grantor are as follows: <table><tr><td>For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us</td><td>For the Grantor: Ronnie Maxwell 61 Dvorak Lane Durango, CO 81303 Phone: 970-749-0089</td></tr></table> The provisions of the Memorandum of Agreement applicable to the Replacement Irrigation Facilities will survive the closing of Parcel Nos. RW-15 and TE-15 and be binding upon and inure to the benefit of the Grantor, Grantee, Grantee’s Contractor and their respective heirs, personal representatives, successors, and assigns. Furthermore, the covenants, conditions and restrictions contained herein applicable to the Replacement Irrigation Facilities, shall run with the land and shall survive any transfer of title of interest in the property owned by Grantor.	For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us	For the Grantor: Ronnie Maxwell 61 Dvorak Lane Durango, CO 81303 Phone: 970-749-0089
For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us	For the Grantor: Ronnie Maxwell 61 Dvorak Lane Durango, CO 81303 Phone: 970-749-0089			
RW-16 TE-16	James W. Davenport and Rosalie Rea	Memorandum of Agreement (MOA) dated 1/6/26, a copy of which is located in Book 4, Contract Documents. The MOA defines improvements to be removed as “1 tree”. All of such improvements are located within _____. Paragraph 2 under <i>Other conditions</i> states as follows: The Temporary Easement described on the attached Exhibit(s) A is required for fence installation, irrigation ditch construction, driveway construction and construction of associated highway improvements. The Fee ROW is required for highway expansion and associated improvements. Further, it is understood and agreed between the parties that: a. The Temporary Easement shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. Temporary Easement Extensions will include incentive payments calculated on the total FMV of all acquisitions (included in the amounts listed above). b. At its sole cost and expense, GRANTEE shall repair and restore the Temporary Easement areas (“Affected Areas”) and return said Affected Area(s) to a condition reasonably similar to or better than that which existed prior to GRANTEE’s entry, excepting the repair or restoration of Improvements paid to GRANTOR by GRANTEE and included in the Net Total above. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-16 (optional 4th year term - 15% increase from FMV of year 1 + incentive): 0.324 acres (14,124 sq. ft.) \$.90/sq. ft. x 15%/year = \$2,778 Temporary Easement (shown in attached exhibits) TE-16 (optional 5th year term - 18% increase from FMV of year 1 + incentive): 0.324 acres (14,124 sq. ft.) \$.90/sq. ft. x 15%/year = \$2,810 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel No. TE-16. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-16, the contractor is required to provide the required thirty (30) day notice to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE-16. Paragraph 3 under the second <i>Other conditions</i> states the following:		

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		The Temporary Easement Area is to remain free of parked cars during contractor construction operations. Paragraph 4 under the second <i>Other conditions</i> states the following: Certain private irrigation facilities owned by the Grantor are located on Parcel No. RW-16 and will be removed and relocated by Grantee’s project, hereinafter referred to as “Removal Irrigation Facilities”. Grantee’s design-build contractor (Grantee’s Contractor) will design, and construct modified replacement irrigation facilities to be located on Parcel No. TE-16 that will replace the Removed Irrigation Facilities (hereinafter referred to as “Replacement Irrigation Facilities”). The Removal Irrigation Facilities and Replacement Irrigation Facilities are generally illustrated in a plan sheet, that includes additional information, attached hereto as Exhibit “B”. The Replacement Irrigation Facilities will be designed and constructed to replace the historic quantity and quality of historic irrigation flows. Grantor hereby grants Grantee and Grantee’s Contractor a right of entry onto Grantor’s property outside of Parcel No. TE-16 for Construction of the Replacement Irrigation Facilities, if needed. If Grantee’s Contractor enters Grantor’s property outside of Parcel No. TE-16 for such construction purpose, Grantee’s Contractor will, at Grantee’s sole cost and expense, reconstruct the portion of Grantor’s property occupied to a condition reasonably similar to that which existed prior to Grantee’s Contractor’s entry. Grantor agrees to reasonably cooperate and work collaboratively with Grantee’s Contractor on coordination of the design and construction of the Replacement Irrigation Facilities. Grantee’s Contractor may request additional information and/or documentation about the Removal Irrigation Facilities to inform the design and construction of the Replacement Irrigation Facilities. To the extent possible, Grantee has captured certain design criteria for the Replacement Irrigation Facilities to be constructed (e.g. flow dates, flow quantities (if made available by Grantor), minimum pipe size and material type, size of ditch, conceptual alignment and diversions, as applicable). Grantee’s Contractor will provide to Grantor the design of Replacement Irrigation Facility prior to starting construction of the Replacement Irrigation Facility. If Grantor has any material issues with the Replacement Irrigation Facilities as they are being designed, constructed, tested, or in operation prior to completion of the Replacement Irrigation Facilities, Grantor should discuss such issues with Grantee’s Contractor. Work on Grantor’s Replacement Irrigation Facilities shall not impair or impact the conveyance of irrigation water during irrigation season, April 1 through October 31st of each year, unless written approval is given by Grantor. Grantee’s Contractor shall be responsible for maintaining irrigation flows through the Removal Irrigation Facilities during construction of Grantee’s project until flows from the Removal Irrigation Facilities are changed to the Replacement Irrigation Facilities. Grantee’s Contractor may, however, be required to temporarily modify the existing irrigation conveyance based upon construction phasing. Grantee’s Contractor shall schedule a final walk through with Grantor upon completion of the Replacement Irrigation Facilities work. Notice of the final walk through shall be provided by Grantee’s Contractor in accordance with the notice provisions outlined below. After Grantor’s concerns from the final walk through have been addressed by Grantee’s Contractor, Grantor shall provide Grantee’s Contractor with written final acceptance of the Replacement Irrigation Facility (Final Acceptance) which shall not be unreasonably withheld by Grantor. A draft version of the Final Acceptance document is attached hereto as Exhibit “C”. After Grantor has signed the Final Acceptance, Grantor will own all the Replacement Irrigation Facilities located on Grantor’s property and be fully responsible for all maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. Grantee and Grantee’s Contractor shall then be fully released from any and all liability for such maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. When Grantee provides Grantee’s Contractor with a notice to proceed for construction of Grantee’s project (NTP), Grantee shall notify Grantor within 90 days that such NTP has been issued and provide the contact information of Grantee’s Contractor with whom to coordinate the irrigation design and construction. All communications, notices and correspondence regarding the design and construction of the Replacement Irrigation Facilities shall be exchanged between Grantor, Grantee, and Grantee’s Contractor by email or certified mail or handed in-person. Either party may from time to time designate in writing a new or substitute contact, if needed. The following contacts for the Grantee and Grantor are as follows: For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us For the Grantor: Jim Davenport 31360 E US HWY 160 Durango, CO 81303 Phone: 970-903-7984

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		The provisions of the Memorandum of Agreement applicable to the Replacement Irrigation Facilities will survive the closing of Parcel Nos. RW-16 and TE-16 and be binding upon and inure to the benefit of the Grantor, Grantee, Grantee’s Contractor and their respective heirs, personal representatives, successors, and assigns. Furthermore, the covenants, conditions and restrictions contained herein applicable to the Replacement Irrigation Facilities, shall run with the land and shall survive any transfer of title of interest in the property owned by Grantor.
RW-17 TE-17	Paul Davenport and Jane P. Davenport	Memorandum of Agreement (MOA) dated 1/13/26, a copy of which is located in Book 4, Contract Documents. The MOA defines improvements to be removed as “1 tree”. All of such improvements are located within _____. Paragraph 2 under <i>Other conditions</i> states as follows: The Temporary Easement described on the attached Exhibit(s) A is required for fence installation, irrigation ditch construction, driveway construction and construction of associated highway improvements. The Fee ROW is required for highway expansion and associated improvements. The Fee ROW is required for highway expansion and associated improvements. Further, it is understood and agreed between the parties that: a. The Temporary Easement(s) shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. Temporary Easement Extensions will include incentive payments calculated on the total FMV of all acquisitions. b. At its sole cost and expense, GRANTEE shall repair and restore the Temporary Easement areas (“Affected Areas”) and return said Affected Area(s) to a condition reasonably similar to or better than that which existed prior to GRANTEE’s entry, excepting the repair or restoration of Improvements paid to GRANTOR by GRANTEE and included in the Net Total above. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-17 (optional 4th year term - 15% increase from FMV of year 1 + incentive)*: 0.521 acres (22,706 sq. ft.) \$.90/sq. ft. (x 15%/year)* = \$4,406 Temporary Easement (shown in attached exhibits) TE-17 (optional 5th year term - 18% increase from FMV of year 1 + incentive)*: 0.521 acres (22,706 sq. ft.) \$.90/sq. ft. x 15%/year = \$4,512 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel No. TE-17. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-17, the contractor is required to provide the required thirty (30) day notice to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE-17. Paragraph 3 under the second <i>Other conditions</i> states the following: The Temporary Easement Area is to remain free of parked cars during contractor construction operations. Paragraph 4 under the second <i>Other conditions</i> states the following: Certain private irrigation facilities owned by the Grantor are located on Parcel No. RW-17 and will be removed and relocated by Grantee’s project, hereinafter referred to as “Removal Irrigation Facilities”. Grantee’s design-build contractor (Grantee’s Contractor) will design, and construct modified replacement irrigation facilities to be located on Parcel No. TE-17 that will replace the Removed Irrigation Facilities (hereinafter referred to as “Replacement Irrigation Facilities”). The Removal Irrigation Facilities and Replacement Irrigation Facilities are generally illustrated in a plan sheet, that includes additional information, attached hereto as Exhibit “B”. The Replacement Irrigation Facilities will be designed and constructed to replace the historic quantity and quality of historic irrigation flows. Grantor hereby grants Grantee and Grantee’s Contractor a right of entry onto Grantor’s property outside of Parcel No. TE-17 for Construction of the Replacement Irrigation

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		Facilities, if needed. If Grantee’s Contractor enters Grantor’s property outside of Parcel No. TE-17 for such construction purpose, Grantee’s Contractor will, at Grantee’s sole cost and expense, reconstruct the portion of Grantor’s property occupied to a condition reasonably similar to that which existed prior to Grantee’s Contractor’s entry. Grantor agrees to reasonably cooperate and work collaboratively with Grantee’s Contractor on coordination of the design and construction of the Replacement Irrigation Facilities. Grantee’s Contractor may request additional information and/or documentation about the Removal Irrigation Facilities to inform the design and construction of the Replacement Irrigation Facilities. To the extent possible, Grantee has captured certain design criteria for the Replacement Irrigation Facilities to be constructed (e.g. flow dates, flow quantities (if made available by Grantor), minimum pipe size and material type, size of ditch, conceptual alignment and diversions, as applicable). Grantee’s Contractor will provide to Grantor the design of Replacement Irrigation Facility prior to starting construction of the Replacement Irrigation Facility. If Grantor has any material issues with the Replacement Irrigation Facilities as they are being designed, constructed, tested, or in operation prior to completion of the Replacement Irrigation Facilities, Grantor should discuss such issues with Grantee’s Contractor. Work on Grantor’s Replacement Irrigation Facilities shall not impair or impact the conveyance of irrigation water during irrigation season, April 1 through October 31st of each year, unless written approval is given by Grantor. Grantee’s Contractor shall be responsible for maintaining irrigation flows through the Removal Irrigation Facilities during construction of Grantee’s project until flows from the Removal Irrigation Facilities are changed to the Replacement Irrigation Facilities. Grantee’s Contractor may, however, be required to temporarily modify the existing irrigation conveyance based upon construction phasing. Grantee’s Contractor shall schedule a final walk through with Grantor upon completion of the Replacement Irrigation Facilities work. Notice of the final walk through shall be provided by Grantee’s Contractor in accordance with the notice provisions outlined below. After Grantor’s concerns from the final walk through have been addressed by Grantee’s Contractor, Grantor shall provide Grantee’s Contractor with written final acceptance of the Replacement Irrigation Facility (Final Acceptance) which shall not be unreasonably withheld by Grantor. A draft version of the Final Acceptance document is attached hereto as Exhibit “C”. After Grantor has signed the Final Acceptance, Grantor will own all the Replacement Irrigation Facilities located on Grantor’s property and be fully responsible for all maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. Grantee and Grantee’s Contractor shall then be fully released from any and all liability for such maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. When Grantee provides Grantee’s Contractor with a notice to proceed for construction of Grantee’s project (NTP), Grantee shall notify Grantor within 90 days that such NTP has been issued and provide the contact information of Grantee’s Contractor with whom to coordinate the irrigation design and construction. All communications, notices and correspondence regarding the design and construction of the Replacement Irrigation Facilities shall be exchanged between Grantor, Grantee, and Grantee’s Contractor by email or certified mail or handed in-person. Either party may from time to time designate in writing a new or substitute contact, if needed. The following contacts for the Grantee and Grantor are as follows: For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us For the Grantor: Paul Davenport 31368 E US HWY 160 Durango, CO 81303 Phone: 970-769-9622 The provisions of the Memorandum of Agreement applicable to the Replacement Irrigation Facilities will survive the closing of Parcel Nos. RW-17 and TE-17 and be binding upon and inure to the benefit of the Grantor, Grantee, Grantee’s Contractor and their respective heirs, personal representatives, successors, and assigns. Furthermore, the covenants, conditions and restrictions contained herein applicable to the Replacement Irrigation Facilities, shall run with the land and shall survive any transfer of title of interest in the property owned by Grantor.
RW-18 TE-18	The Estate of Carol Jamieson	Memorandum of Agreement (MOA) dated 4/14/26, a copy of which is located in Book 4, Contract Documents. The MOA defines improvements to be removed as “Barn 2,176 SF, 429 LF fence, and 5 trees”. All of such improvements are located within _____. Paragraph 2 under <i>Other conditions</i> states as follows:

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		The Temporary Easement described on the attached Exhibit(s) A is required for fence installation and construction of associated highway improvements. The Fee ROW is required for highway expansion and associated improvements. The Fee ROW is required for highway expansion and associated improvements. Fee ROW is required for highway expansion and associated highway improvements. Further, it is understood and agreed between the parties that: a. The Temporary Easement(s) shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. Temporary Easement Extensions include incentive payments and are included in the amounts listed above. b. At its sole cost and expense, GRANTEE shall repair and restore the Temporary Easement areas (“Affected Areas”) and return said Affected Area(s) to a condition reasonably similar to or better than that which existed prior to GRANTEE’s entry, excepting the repair or restoration of Improvements paid to GRANTOR by GRANTEE and included in the Net Total above. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-18 (optional 4th year term - 15% increase from FMV of year 1 + incentive): 0.238 acres \$19,500/acre x 15%/year = \$1,000 Temporary Easement (shown in attached exhibits) TE-18 (optional 5th year term - 18% increase from FMV of year 1 + incentive): 0.238 acres \$19,500/acre x 15%/year = \$1,076 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel No. TE-18. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-18, the contractor is required to provide the required thirty (30) day notice to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE-18. Paragraph 3 under the second <i>Other conditions</i> states the following: The Temporary Easement Area is to remain free of parked cars during contractor construction operations. Paragraph 4 under the second <i>Other conditions</i> states the following: A portion of the settlement in the amount of \$40,223.56 is included as a cost-to-cure payment for the drilling, installation, and connection of a replacement domestic water well necessitated by the project. This amount is based on an estimate obtained by the property owner and reviewed for reasonableness. The property owner shall be solely responsible for hiring contractors, obtaining permits, drilling the well, and completing all work associated with the replacement well. CDOT does not guarantee the quality, quantity, or production of water from the replacement well and shall not be responsible for the success or failure of the well. The cost-to-cure payment is a one-time payment and is intended to fully compensate the property owner for all costs associated with the replacement well. CDOT shall not be responsible for any additional costs, change orders, cost overruns, additional drilling, replacement wells, water treatment systems, storage systems or future maintenance. Acceptance of this payment constitutes full and final settlement for all impacts to the existing well and water system caused by the project, and no additional compensation related to the well shall be owed by CDOT. Because CDOT is funding a replacement well, the existing well and associated equipment become CDOT property and may not be removed, salvaged, or reused by the owner.
RW-19 TE-19	Robert Carmon and Katherine M. Carmon	No agreement. In negotiation.
RW-20 TE-20	Richard Gallegos and Nancy C. Gallegos	Memorandum of Agreement (MOA) dated 12/18/25, a copy of which is located in Book 4, Contract Documents. The MOA does NOT define any improvements to be removed. Paragraph 2 under <i>Other conditions</i> states as follows:

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		The Land and Temporary Easement(s) described on the attached Exhibit(s) A is required for fence installation, driveway construction, detour construction, and construction of associated highway improvements which is the temporary easement, highway expansion and associated improvements which is for Fee ROW. Further, it is understood and agreed between the parties that: a. The Temporary Easement(s) shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. Temporary Easement Extensions will include incentive payments calculated on the total FMV of all acquisitions. b. At its sole cost and expense, GRANTEE shall repair and restore the Temporary Easement areas (“Affected Areas”) and return said Affected Area(s) to a condition reasonably similar to or better than that which existed prior to GRANTEE’s entry, excepting the repair or restoration of Improvements paid to GRANTOR by GRANTEE and included in the Net Total above. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-20 (optional 4th year term - 15% increase from FMV of year 1 + incentive): 0.021 acres TE= \$271 +95 = \$366 Temporary Easement (shown in attached exhibits) TE-20 (optional 5th year term - 18% increase from FMV of year 1 + incentive): 0.021 acres TE= \$278 +95 = \$375 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel No. TE-20. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-20, the contractor is required to provide the required thirty (30) day notice to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE-20. Paragraph 3 under the second <i>Other conditions</i> states the following: The Temporary Easement Area is to remain free of parked cars during contractor construction operations. Paragraph 4 under the second <i>Other conditions</i> states the following: Irrigation: NOTE: Landowner is “Grantor” CDOT is “Grantee” Certain private irrigation facilities owned by the Grantor are located on Parcel No. RW-20 and will be removed and relocated by Grantee’s project, hereinafter referred to as “Removal Irrigation Facilities”. Grantee’s design-build contractor (Grantee’s Contractor) will design, and construct modified replacement irrigation facilities to be located on Parcel No. TE-20 that will replace the Removed Irrigation Facilities (hereinafter referred to as “Replacement Irrigation Facilities”). The Removal Irrigation Facilities and Replacement Irrigation Facilities are generally illustrated in a plan sheet, that includes additional information, attached hereto as Exhibit “B”. The Replacement Irrigation Facilities will be designed and constructed to replace the historic quantity and quality of historic irrigation flows. Grantor hereby grants Grantee and Grantee’s Contractor a right of entry onto Grantor’s property outside of Parcel No. TE-20 for Construction of the Replacement Irrigation Facilities, if needed. If Grantee’s Contractor enters Grantor’s property outside of Parcel No. TE-20 for such construction purpose, Grantee’s Contractor will, at Grantee’s sole cost and expense, reconstruct the portion of Grantor’s property occupied to a condition reasonably similar to that which existed prior to Grantee’s Contractor’s entry. Grantor agrees to reasonably cooperate and work collaboratively with Grantee’s Contractor on coordination of the design and construction of the Replacement Irrigation Facilities. Grantee’s Contractor may request additional information and/or documentation about the Removal Irrigation Facilities to inform the design and construction of the Replacement Irrigation Facilities. To the extent possible, Grantee has captured certain design criteria for the Replacement Irrigation Facilities to be constructed (e.g. flow dates, flow quantities (if made available by Grantor), minimum pipe size and material type, size of ditch, conceptual alignment and diversions, as applicable). Grantee’s Contractor will provide to Grantor the design of Replacement Irrigation Facility prior to starting

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		construction of the Replacement Irrigation Facility. If Grantor has any material issues with the Replacement Irrigation Facilities as they are being designed, constructed, tested, or in operation prior to completion of the Replacement Irrigation Facilities, Grantor should discuss such issues with Grantee’s Contractor. Work on Grantor’s Replacement Irrigation Facilities shall not impair or impact the conveyance of irrigation water during irrigation season, April 1 through October 31st of each year, unless written approval is given by Grantor. Grantee’s Contractor shall be responsible for maintaining irrigation flows through the Removal Irrigation Facilities during construction of Grantee’s project until flows from the Removal Irrigation Facilities are changed to the Replacement Irrigation Facilities. Grantee’s Contractor may, however, be required to temporarily modify the existing irrigation conveyance based upon construction phasing. Grantee’s Contractor shall schedule a final walk through with Grantor upon completion of the Replacement Irrigation Facilities work. Notice of the final walk through shall be provided by Grantee’s Contractor in accordance with the notice provisions outlined below. After Grantor’s concerns from the final walk through have been addressed by Grantee’s Contractor, Grantor shall provide Grantee’s Contractor with written final acceptance of the Replacement Irrigation Facility (Final Acceptance) which shall not be unreasonably withheld by Grantor. A draft version of the Final Acceptance document is attached hereto as Exhibit “C”. After Grantor has signed the Final Acceptance, Grantor will own all the Replacement Irrigation Facilities located on Grantor’s property and be fully responsible for all maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. Grantee and Grantee’s Contractor shall then be fully released from any and all liability for such maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. When Grantee provides Grantee’s Contractor with a notice to proceed for construction of Grantee’s project (NTP), Grantee shall notify Grantor within 90 days that such NTP has been issued and provide the contact information of Grantee’s Contractor with whom to coordinate the irrigation design and construction. All communications, notices and correspondence regarding the design and construction of the Replacement Irrigation Facilities shall be exchanged between Grantor, Grantee, and Grantee’s Contractor by email or certified mail or handed in-person. Either party may from time to time designate in writing a new or substitute contact, if needed. The following contacts for the Grantee and Grantor are as follows: For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us For the Grantor: Richard & Nancy Gallegos 64 Cole Ranch Road Durango, CO 81301 Phone: 970-946-8964 email: c.gallegos.1@hotmail.com The provisions of the Memorandum of Agreement applicable to the Replacement Irrigation Facilities will survive the closing of Parcel Nos. RW-20 and TE-20 and be binding upon and inure to the benefit of the Grantor, Grantee, Grantee’s Contractor and their respective heirs, personal representatives, successors, and assigns. Furthermore, the covenants, conditions and restrictions contained herein applicable to the Replacement Irrigation Facilities, shall run with the land and shall survive any transfer of title of interest in the property owned by Grantor.
RW-21 PE-21 TE-21	Daryl Evan Crone & Diedre Crone Farrell	Memorandum of Agreement (MOA) dated 12/30/25, a copy of which is located in Book 4, Contract Documents. The MOA defines improvements to be removed as “Fencing 85 LF, 5 trees”. All of such improvements are located within _____. Paragraph 2 under <i>Other conditions</i> states as follows: The Land and Temporary Easement(s) described on the attached Exhibit(s) A is required for fence installation, driveway construction, detour construction, and construction of associated highway improvements which is the temporary easement, highway expansion and associated improvements which is for Fee ROW. Further, it is understood and agreed between the parties that: a. The Temporary Easement(s) shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. Temporary Easement Extensions will include incentive payments calculated on the total FMV of all acquisitions. b. At its sole cost and expense, GRANTEE shall repair and restore the Temporary Easement areas (“Affected Areas”) and return said Affected Area(s) to a condition reasonably similar to or better than that which existed prior to GRANTEE’s entry, excepting the repair or restoration of Improvements paid to GRANTOR by GRANTEE and included in the Net Total above. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-21 (optional 4th year term - 15% increase from FMV of year 1 + incentive): 0.164 acres TE= \$2,522 + \$631 = \$3,153 Temporary Easement (shown in attached exhibits) TE-21 (optional 5th year term - 18% increase from FMV of year 1 + incentive): 0.164 acres TE= \$2,588 + \$647 = \$3,235 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel No. TE-20. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-21, the contractor is required to provide the required thirty (30) day notice to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE-21. Paragraph 3 under the second <i>Other conditions</i> states the following: The Temporary Easement Area is to remain free of parked cars during contractor construction operations. Paragraph 4 under the second <i>Other conditions</i> states the following: Irrigation: NOTE: Landowner is “Grantor” CDOT is “Grantee” Certain private irrigation facilities owned by the Grantor are located on Parcel No. RW-21 and will be removed and relocated by Grantee’s project, hereinafter referred to as “Removal Irrigation Facilities”. Grantee’s design-build contractor (Grantee’s Contractor) will design, and construct modified replacement irrigation facilities to be located on Parcel No. TE-21 and PE-21 that will replace the Removed Irrigation Facilities (hereinafter referred to as “Replacement Irrigation Facilities”). The Removal Irrigation Facilities and Replacement Irrigation Facilities are generally illustrated in a plan sheet, that includes additional information, attached hereto as Exhibit “B”. The Replacement Irrigation Facilities will be designed and constructed to replace the historic quantity and quality of historic irrigation flows. Grantor hereby grants Grantee and Grantee’s Contractor a right of entry onto Grantor’s property outside of Parcel No. TE-21 and PE-21 for Construction of the Replacement Irrigation Facilities, if needed. If Grantee’s Contractor enters Grantor’s property outside of Parcel No. TE-21 and PE-21 for such construction purpose, Grantee’s Contractor will, at Grantee’s sole cost and expense, reconstruct the portion of Grantor’s property occupied to a condition reasonably similar to that which existed prior to Grantee’s Contractor’s entry. Grantor agrees to reasonably cooperate and work collaboratively with Grantee’s Contractor on coordination of the design and construction of the Replacement Irrigation Facilities. Grantee’s Contractor may request additional information and/or documentation about the Removal Irrigation Facilities to inform the design and construction of the Replacement Irrigation Facilities. To the extent possible, Grantee has captured certain design criteria for the Replacement Irrigation Facilities to be constructed (e.g. flow dates, flow quantities (if made available by Grantor), minimum pipe size and material type, size of ditch, conceptual alignment and diversions, as applicable). Grantee’s Contractor will provide to Grantor the design of Replacement Irrigation Facility prior to starting construction of the Replacement Irrigation Facility. If Grantor has any material issues with the Replacement Irrigation Facilities as they are being designed, constructed, tested, or in operation prior to completion of the Replacement Irrigation Facilities, Grantor should discuss such issues with Grantee’s Contractor. Work on Grantor’s Replacement Irrigation Facilities shall not impair or impact the conveyance of irrigation water during irrigation season, April 1 through October 31st of each year, unless written approval is given by Grantor. Grantee’s Contractor shall be responsible for maintaining irrigation flows through the Removal Irrigation Facilities during construction of Grantee’s project until flows

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		from the Removal Irrigation Facilities are changed to the Replacement Irrigation Facilities. Grantee’s Contractor may, however, be required to temporarily modify the existing irrigation conveyance based upon construction phasing. Grantee’s Contractor shall schedule a final walk through with Grantor upon completion of the Replacement Irrigation Facilities work. Notice of the final walk through shall be provided by Grantee’s Contractor in accordance with the notice provisions outlined below. After Grantor’s concerns from the final walk through have been addressed by Grantee’s Contractor, Grantor shall provide Grantee’s Contractor with written final acceptance of the Replacement Irrigation Facility (Final Acceptance) which shall not be unreasonably withheld by Grantor. A draft version of the Final Acceptance document is attached hereto as Exhibit “C”. After Grantor has signed the Final Acceptance, Grantor will own all the Replacement Irrigation Facilities located on Grantor’s property and be fully responsible for all maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. Grantee and Grantee’s Contractor shall then be fully released from any and all liability for such maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. When Grantee provides Grantee’s Contractor with a notice to proceed for construction of Grantee’s project (NTP), Grantee shall notify Grantor within 90 days that such NTP has been issued and provide the contact information of Grantee’s Contractor with whom to coordinate the irrigation design and construction. All communications, notices and correspondence regarding the design and construction of the Replacement Irrigation Facilities shall be exchanged between Grantor, Grantee, and Grantee’s Contractor by email or certified mail or handed in-person. Either party may from time to time designate in writing a new or substitute contact, if needed. The following contacts for the Grantee and Grantor are as follows: For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us For the Grantor: Darryl Evan Crone & Diedre Crone Farrell 1080 Fulson Street #316 San Francisco, CA 94103 Phone: 619-851-1525 email: dcluvsmusic@yahoo.com The provisions of the Memorandum of Agreement applicable to the Replacement Irrigation Facilities will survive the closing of Parcel Nos. RW-21, PE-21 and TE-21 and be binding upon and inure to the benefit of the Grantor, Grantee, Grantee’s Contractor and their respective heirs, personal representatives, successors, and assigns. Furthermore, the covenants, conditions and restrictions contained herein applicable to the Replacement Irrigation Facilities, shall run with the land and shall survive any transfer of title of interest in the property owned by Grantor.
RW-22 TE-22	Michael A. May	Memorandum of Agreement (MOA) dated 3/13/26, a copy of which is located in Book 4, Contract Documents. The MOA defines improvements to be removed as “10 trees (cottonwoods, aspens). All of such improvements are located within _____. Paragraph 2 under <i>Other conditions</i> states as follows: The Land and Temporary Easement(s) described on the attached Exhibit(s) A is required for fence installation, driveway construction, detour construction, and construction of associated highway improvements which is the temporary easement, highway expansion and associated improvements which is for Fee ROW. Further, it is understood and agreed between the parties that: a. The Temporary Easement(s) shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. Temporary Easement Extensions will include incentive payments calculated on the total FMV of all acquisitions.

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		b. At its sole cost and expense, GRANTEE shall repair and restore the Temporary Easement areas (“Affected Areas”) and return said Affected Area(s) to a condition reasonably similar to or better than that which existed prior to GRANTEE’s entry, new access will <u>be constructed at a reasonable gradient</u> to accommodate existing commercial vehicle use (which will be addressed in the 138), excepting the repair or restoration of Improvements paid to GRANTOR by GRANTEE and included in the Net Total above. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-22 (optional 4th year term - 15% increase from FMV of year 1 + incentive): 0.386 acres TE= \$1,665 + \$583 = \$2,248 Temporary Easement (shown in attached exhibits) TE-22 (optional 5th year term - 18% increase from FMV of year 1 + incentive): 0.386 acres TE= \$1,708 + \$598 = \$2,306 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel No. TE-22. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-22, the contractor is required to provide the required thirty (30) day notice to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE-22. Paragraph 3 under the <i>Other conditions</i> states the following: The Temporary Easement Area is to remain free of parked cars during contractor construction operations. Paragraph 4 under the <i>Other conditions</i> states the following: Any fencing removed from the Temporary Easement will be replaced in like or better condition that exists at the time of removal. Paragraph 5 under the <i>Other conditions</i> states the following: Irrigation: Certain private irrigation facilities owned by the Grantor are located on Parcel No. RW-22 and will be removed and relocated by Grantee’s project, hereinafter referred to as “Removal Irrigation Facilities”. Grantee’s design-build contractor (Grantee’s Contractor) will design, and construct modified replacement irrigation facilities to be located on Parcel No. TE-22 that will replace the Removed Irrigation Facilities (hereinafter referred to as “Replacement Irrigation Facilities”). The Removal Irrigation Facilities and Replacement Irrigation Facilities are generally illustrated in a plan sheet, that includes additional information, attached hereto as Exhibit “B”. The Replacement Irrigation Facilities will be designed and constructed to replace the historic quantity and quality of historic irrigation flows. Grantor agrees to reasonably cooperate and work collaboratively with Grantee’s Contractor on coordination of the design and construction of the Replacement Irrigation Facilities. Grantee’s Contractor may request additional information and/or documentation about the Removal Irrigation Facilities to inform the design and construction of the Replacement Irrigation Facilities. To the extent possible, Grantee has captured certain design criteria for the Replacement Irrigation Facilities to be constructed (e.g. flow dates, flow quantities (if made available by Grantor), minimum pipe size and material type, size of ditch, conceptual alignment and diversions, as applicable). Grantee’s Contractor will provide to Grantor the design of Replacement Irrigation Facility prior to starting construction of the Replacement Irrigation Facility. If Grantor has any material issues with the Replacement Irrigation Facilities as they are being designed, constructed, tested, or in operation prior to completion of the Replacement Irrigation Facilities, Grantor should discuss such issues with Grantee’s Contractor. Work on Grantor’s Replacement Irrigation Facilities shall not impair or impact the conveyance of irrigation water during irrigation season, April 1 through October 31st of each year, unless written approval is given by Grantor. Grantee’s Contractor shall be responsible for maintaining irrigation flows through the Removal Irrigation Facilities during construction of Grantee’s project until flows from the Removal Irrigation Facilities are changed to the Replacement Irrigation Facilities. Grantee’s Contractor may, however, be required to temporarily modify the existing irrigation conveyance based upon construction phasing. Grantee’s Contractor shall schedule a final walk through with Grantor upon completion of the Replacement Irrigation Facilities work. Notice of the final walk through shall be provided by Grantee’s Contractor in accordance with the notice provisions outlined below. After Grantor’s concerns from the final walk through have been addressed by Grantee’s Contractor, Grantor shall provide

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions		
		Grantee’s Contractor with written final acceptance of the Replacement Irrigation Facility (Final Acceptance) which shall not be unreasonably withheld by Grantor. A draft version of the Final Acceptance document is attached hereto as Exhibit “C”. After Grantor has signed the Final Acceptance, Grantor will own all the Replacement Irrigation Facilities located on Grantor’s property and be fully responsible for all maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. Grantee and Grantee’s Contractor shall then be fully released from any and all liability for such maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. When Grantee provides Grantee’s Contractor with a notice to proceed for construction of Grantee’s project (NTP), Grantee shall notify Grantor within 90 days that such NTP has been issued and provide the contact information of Grantee’s Contractor with whom to coordinate the irrigation design and construction. 6: Driveway Construction Notice: CDOT is providing 32’wide road up to the new ROW line with 45’radii that ties into the edge of travel lane (not actual edge of pavement) as what’s dictated by the Access Code. This appears to create a larger apron than what is shown now. CDOT is also buffering the radii with additional class 6 shoulder material to further stabilize the pavement at the radii. The access road will then transition back to existing as it heads north beyond the ROW. CDOT is matching what is out there or providing greater width if necessary to convey semis through the constrained area of the deer guard with vertical fence that runs along the sides of it in the direction of travel. A 32’deer guard will be installed. Grantee and/or its contractor shall ensure access to Grantee’s property will remain and accessible for all residential uses, emergency vehicles, and commercial uses, including semi tractors and trailers, at all times during construction period. All communications, notices and correspondence regarding the design and construction of the Replacement Irrigation Facilities shall be exchanged between Grantor, Grantee, and Grantee’s Contractor by email or certified mail or handed in-person. Either party may from time to time designate in writing a new or substitute contact, if needed. The following contacts for the Grantee and Grantor are as follows: <table><tr><td>For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us</td><td>For the Grantor: Michael May 452 Jenkins Road Durango, CO 81301 Phone: 970-759-5894 email: mayinsulation@gmail.com</td></tr></table> The provisions of the Memorandum of Agreement applicable to the Replacement Irrigation Facilities will survive the closing of Parcel Nos. RW-22, TE-22 and be binding upon and inure to the benefit of the Grantor, Grantee, Grantee’s Contractor and their respective heirs, personal representatives, successors, and assigns. Furthermore, the covenants, conditions and restrictions contained herein applicable to the Replacement Irrigation Facilities, shall run with the land and shall survive any transfer of title of interest in the property owned by Grantor.	For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us	For the Grantor: Michael May 452 Jenkins Road Durango, CO 81301 Phone: 970-759-5894 email: mayinsulation@gmail.com
For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us	For the Grantor: Michael May 452 Jenkins Road Durango, CO 81301 Phone: 970-759-5894 email: mayinsulation@gmail.com			
TE-23	United States of America	Letter dated July 28, 2025 from Nicholas Glidden, District Ranger, United States Department of Agriculture, Forest Service, Columbine Ranger District. The letter, wherein the Forest Service confirms that a “special use permit is not required”, includes the following provisions: Construction activities on NFS lands will include the installation of a deer guard within the new access as part of the wildlife mitigation system. The deer guard will require minor excavation for the concrete vault and minor grading to ensure the driveway surface matches the deer guard height. The wildlife exclusion fence will be 8 feet in height with wood posts and woven wire. The new fence will extend both east and west from the deer guard along the CDOT right of way boundary. Fence installation will require a 10-foot wide temporary use area along the north boundary of the NFS parcel to provide the contractor with adequate space to construct the fence. There is an existing irrigation pipe along the north parcel boundary and the contractor will be instructed to protect this irrigation pipe in place, and its location will be documented on the construction plans. Moreover, the conveyance of the drainage and this irrigation system that runs from the west side of Cole Ranch Road and continues east onto the parcel will maintain the same historical flow patterns. This irrigation system is proposed to be piped under the newly constructed Cole Ranch access and will then		

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		connect back into the existing pipe system along the north boundary and remain separated from the drainage ditch flows to match the existing condition. In addition, irrigation systems on properties west or northwest of the NFS land that serve the NFS land will also be protected and will maintain their same historical flow patterns. CDOT and the contractor will work with property owners along the project corridor to incorporate temporary fencing as needed during construction to support all agricultural uses of adjacent properties. Reconstruction of the Cole Ranch highway access with a deer guard and exclusion fence will necessitate the operation of heavy machinery within the NFS parcel. Anticipated heavy equipment may include: a mini excavator, forklift, wheel loader, drum roller for compaction and possibly a small dump truck to spread earthen fill and haul roadway aggregate. The equipment to be used to remove and replace the right of way fencing with the wildlife exclusion fence would include a post hole auger or a small pile driver implement on a skid steer for the removal and installation of fence posts, a small concrete drum mixer for bracing, and a forklift or pickup to transport materials. If the project changes from what is described above, please contact us to determine if your use continues to qualify for a permit waiver. Likewise, if any factor associated with NFS lands, resources, or programs (such as the discovery of an endangered species in the area) changes and there is no longer a basis for the permit waiver, we will contact you in writing to rescind the permit waiver determination.
RW-24 TE-24	Stansell, LLC	Memorandum of Agreement (MOA) dated 1/7/26, a copy of which is located in Book 4, Contract Documents. The MOA defines improvements to be removed as “Sign and Wire Fencing”. All of such improvements are located within _____. Paragraph 2 under <i>Other conditions</i> states as follows: The Land and Temporary Easement(s) described on the attached Exhibit(s) A is required for fence installation, driveway construction, detour construction, and construction of associated highway improvements which is the temporary easement, highway expansion and associated improvements which is for Fee ROW. Further, it is understood and agreed between the parties that: a. The Temporary Easement(s) shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. Temporary Easement Extensions will include incentive payments calculated on the total FMV of all acquisitions. b. At its sole cost and expense, GRANTEE shall repair and restore the Temporary Easement areas (“Affected Areas”) and return said Affected Area(s) to a condition reasonably similar to or better than that which existed prior to GRANTEE’s entry, excepting the repair or restoration of Improvements paid to GRANTOR by GRANTEE and included in the Net Total above. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-24 (optional 4th year term - 15% increase from FMV of year 1 + incentive): 0.177 \$794 + \$278 = \$1,072 Temporary Easement (shown in attached exhibits) TE-24 (optional 5th year term - 18% increase from FMV of year 1 + incentive): 0.177 \$851+\$285=\$1,100 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel No. TE-24. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-24, the contractor is required to provide the required thirty (30) day notice to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE-24. Paragraph 3 under the <i>Other conditions</i> states the following: The Temporary Easement Area is to remain free of parked cars during contractor construction operations.

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
RW-25 TE-25	Ramos Farms, LLC	Memorandum of Agreement (MOA) dated 12/23/25, a copy of which is located in Book 4, Contract Documents. The MOA defines improvements to be removed as “Wire Fencing 160 LF, 83 trees and 1 metal gate”. All of such improvements are located within _____. Paragraph 2 under <i>Other conditions</i> states as follows: The Land and Temporary Easement(s) described on the attached Exhibit(s) A is required for fence installation, driveway construction, detour construction, and construction of associated highway improvements which is the temporary easement, highway expansion and associated improvements which is for Fee ROW. Further, it is understood and agreed between the parties that: a. The Temporary Easement(s) shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. Temporary Easement Extensions will include incentive payments calculated on the total FMV of all acquisitions. b. At its sole cost and expense, GRANTEE shall repair and restore the Temporary Easement areas (“Affected Areas”) and return said Affected Area(s) to a condition reasonably similar to or better than that which existed prior to GRANTEE’s entry, excepting the repair or restoration of Improvements paid to GRANTOR by GRANTEE and included in the Net Total above. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-25 (optional 4th year term - 15% increase from FMV of year 1 + incentive): 0.28 acres \$1,280 +\$320=\$1,600 Temporary Easement (shown in attached exhibits) TE-25 (optional 5th year term - 18% increase from FMV of year 1 + incentive): 0.28 acres \$1,641 + \$313 =\$1,641 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel No. TE-25. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-25, the contractor is required to provide the required thirty (30) day notice to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE-25. Paragraph 3 under the <i>Other conditions</i> states the following: The Temporary Easement Area is to remain free of parked cars during contractor construction operations.
RW-26 TE-26	Los Prados Homeowners Association, Inc.	Memorandum of Agreement (MOA) dated 2/16/26, a copy of which is located in Book 4, Contract Documents. The MOA defines improvements to be removed as “2 trees, 16,597 Sq.ft. sprinkler system”. All of such improvements are located within _____. <i>Additional Conditions</i> states: ADA compliant gate to road. Paragraph 2 under <i>Other conditions</i> states as follows: The Temporary Easement(s) described on the attached Exhibit(s) A is required for fence installation, driveway construction, and construction of associated highway improvements. Fee ROW required for highway expansion and associated improvements. Further, it is understood and agreed between the parties that: a. The Temporary Easement(s) shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. Temporary Easement Extensions will include incentive payments calculated on the total FMV of all acquisitions. b. At its sole cost and expense, GRANTEE shall repair and restore the Temporary Easement areas (“Affected Areas”) and return said Affected Area(s) to a condition reasonably similar to or better than that which existed prior to GRANTEE’s entry, excepting the repair or restoration of Improvements paid to GRANTOR by GRANTEE and included in the Net Total above. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-26 (optional 4th year term - 15% increase from FMV of year 1 + incentive): 0.38 acres \$6,000 (x 15%/year) \$540 Temporary Easement (shown in attached exhibits) TE-26 (optional 5th year term - 18% increase from FMV of year 1 + incentive): 0.38 acres \$6,000 (x 15%/year) \$545 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel No. TE-26. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-26, the contractor is required to provide the required thirty (30) day notice to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE-26. Paragraph 3 under the <i>Other conditions</i> states the following: The Temporary Easement Area is to remain free of parked cars during contractor construction operations. Paragraph 4 under the <i>Other conditions</i> states the following: Certain private irrigation facilities owned by the Grantor are located on La Plata County Parcel No. 5673083020003 aka 50 Cole Ranch Rd., Durango, CO and La Plata County Parcel No. 567308300040 aka 3178 E US Hwy 160, Durango, CO and will be removed and relocated by Grantee’s project, hereinafter referred to as “Removal Irrigation Facilities”. Grantee’s design-build contractor (Grantee’s Contractor) will design, and construct modified replacement irrigation facilities to be located on Parcel No. TE-22 that will replace the Removed Irrigation Facilities (hereinafter referred to as “Replacement Irrigation Facilities”). The Removal Irrigation Facilities and Replacement Irrigation Facilities are generally illustrated in a plan sheet, that includes additional information, attached hereto as Exhibit “B”. The Replacement Irrigation Facilities will be designed and constructed to replace the historic quantity and quality of historic irrigation flows. Grantor hereby grants Grantee and Grantee’s Contractor a right of entry onto Grantor’s property outside of Parcel No. TE-26 for such construction purpose, if needed. If Grantee’s Contractor enters Grantor’s property outside of Parcel No. TE-26 for such construction purpose , Grantee’s Contractor will, at Grantee’s sole cost and expense, reconstruct the portion of Grantor’s property occupied to a condition reasonably similar to that which existed prior to Grantee’s Contractor’s entry. Grantor agrees to reasonably cooperate and work collaboratively with Grantee’s Contractor on coordination of the design and construction of the Replacement Irrigation Facilities. Grantee’s Contractor may request additional information and/or documentation about the Removal Irrigation Facilities to inform the design and construction of the Replacement Irrigation Facilities. To the extent possible, Grantee has captured certain design criteria for the Replacement Irrigation Facilities to be constructed (e.g. flow dates, flow quantities (if made available by Grantor), minimum pipe size and material type, size of ditch, conceptual alignment and diversions, as applicable). Grantee’s Contractor will provide to Grantor the design of Replacement Irrigation Facility prior to starting construction of the Replacement Irrigation Facility. If Grantor has any material issues with the Replacement Irrigation Facilities as they are being designed, constructed, tested, or in operation prior to completion of the Replacement Irrigation Facilities, Grantor should discuss such issues with Grantee’s Contractor. Work on Grantor’s Replacement Irrigation Facilities shall not impair or impact the conveyance of irrigation water during irrigation season, April 1 through October 31st of each year, unless written approval is given by Grantor. Grantee’s Contractor shall be responsible for maintaining irrigation flows through the Removal Irrigation Facilities during construction of Grantee’s project until flows from the Removal Irrigation Facilities are changed to the Replacement Irrigation Facilities. Grantee’s Contractor may, however, be required to temporarily modify the existing irrigation conveyance based upon construction phasing. Grantee’s Contractor shall schedule a final walk through with Grantor upon completion of the Replacement Irrigation Facilities work. Notice of the final walk through shall be provided by Grantee’s Contractor in accordance with the notice provisions outlined below. After Grantor’s concerns from the final walk through have been addressed by Grantee’s Contractor, Grantor shall provide

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions		
		Grantee’s Contractor with written final acceptance of the Replacement Irrigation Facility (Final Acceptance) which shall not be unreasonably withheld by Grantor. A draft version of the Final Acceptance document is attached hereto as Exhibit “C”. After Grantor has signed the Final Acceptance, Grantor will own all the Replacement Irrigation Facilities located on Grantor’s property and be fully responsible for all maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. Grantee and Grantee’s Contractor shall then be fully released from any and all liability for such maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. When Grantee provides Grantee’s Contractor with a notice to proceed for construction of Grantee’s project (NTP), Grantee shall notify Grantor within 90 days that such NTP has been issued and provide the contact information of Grantee’s Contractor with whom to coordinate the irrigation design and construction. All communications, notices and correspondence regarding the design and construction of the Replacement Irrigation Facilities shall be exchanged between Grantor, Grantee, and Grantee’s Contractor by email or certified mail or handed in-person. Either party may from time to time designate in writing a new or substitute contact, if needed. The following contacts for the Grantee and Grantor are as follows: <table><tr><td>For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us</td><td>For the Grantor: Los Prados Homeowners Association, Inc. Attn: Mike Botts P.O. Box 519 Durango, CO 81302 Phone: 970-799-3030</td></tr></table> The provisions of the Memorandum of Agreement applicable to the Replacement Irrigation Facilities will survive the closing of Parcel Nos. RW-26 and TE-26 and be binding upon and inure to the benefit of the Grantor, Grantee, Grantee’s Contractor and their respective heirs, personal representatives, successors, and assigns. Furthermore, the covenants, conditions and restrictions contained herein applicable to the Replacement Irrigation Facilities, shall run with the land and shall survive any transfer of title of interest in the property owned by Grantor.	For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us	For the Grantor: Los Prados Homeowners Association, Inc. Attn: Mike Botts P.O. Box 519 Durango, CO 81302 Phone: 970-799-3030
For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us	For the Grantor: Los Prados Homeowners Association, Inc. Attn: Mike Botts P.O. Box 519 Durango, CO 81302 Phone: 970-799-3030			
RW-27 TE-27	Rudolfo Ramos Palacios and Katherin L. Ramos	Memorandum of Agreement (MOA) dated 12/17/25, a copy of which is located in Book 4, Contract Documents. The MOA defines improvements to be removed as “Wire Fencing 30 LF, 17 trees”. All of such improvements are located within _____. Paragraph 2 under <i>Other conditions</i> states as follows: The Land and Temporary Easement(s) described on the attached Exhibit(s) A is required for fence installation, driveway construction, detour construction, and construction of associated highway improvements which is the temporary easement, highway expansion and associated improvements which is for Fee ROW. Further, it is understood and agreed between the parties that: a. The Temporary Easement(s) shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. Temporary Easement Extensions will include incentive payments calculated on the total FMV of all acquisitions. b. At its sole cost and expense, GRANTEE shall repair and restore the Temporary Easement areas (“Affected Areas”) and return said Affected Area(s) to a condition reasonably similar to or better than that which existed prior to GRANTEE’s entry, excepting the repair or restoration of Improvements paid to GRANTOR by GRANTEE and included in the Net Total above. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-27 (optional 4th year term - 15% increase from FMV of year 1 + incentive): 0.306 acres \$1,531 +\$383=\$1,914		

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		Temporary Easement (shown in attached exhibits) TE-27 (optional 5th year term - 18% increase from FMV of year 1 + incentive): 0.306 acres \$1,571 + \$393 =\$1,964 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel No. TE-27. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-27, the contractor is required to provide the required thirty (30) day notice to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE-27. Paragraph 3 under the <i>Other conditions</i> states the following: The Temporary Easement Area is to remain free of parked cars during contractor construction operations.
RW-28 TE-28	Cheryl Morris Coffey	Memorandum of Agreement (MOA) dated 12/20/25, a copy of which is located in Book 4, Contract Documents. The MOA defines improvements to be removed as “40 linear feet of cross fencing, 2 trees”. All of such improvements are located within _____. Paragraph 2 under <i>Other conditions</i> states as follows: The Land, Permanent Easements, and Temporary Easement(s) described on the attached Exhibit(s) A is required for fence installation, driveway construction and construction of associated county road improvements. Fee ROW required for CR 223 realignment for highway expansion and associated improvements. Further, it is understood and agreed between the parties that: a. The Temporary Easement(s) shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. Temporary Easement Extensions will include incentive payments calculated on the total FMV of all acquisitions. b. At its sole cost and expense, GRANTEE shall repair and restore the Temporary Easement areas (“Affected Areas”) and return said Affected Area(s) to a condition reasonably similar to or better than that which existed prior to GRANTEE’s entry, excepting the repair or restoration of Improvements paid to GRANTOR by GRANTEE and included in the Net Total above. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-28 (optional 4th year term - 15% increase from FMV of year 1 + incentive): \$26,500/ac (x15%/year+15% incentive) \$1,120 Temporary Easement (shown in attached exhibits) TE-28 (optional 5th year term - 18% increase from FMV of year 1 + incentive): \$26,500/ac (x15%/year+15% incentive) \$1,149 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel No. TE-27. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-27, the contractor is required to provide the required thirty (30) day notice to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE-27. Paragraph 4 under the <i>Other conditions</i> states the following: The Temporary Easement Area is to remain free of parked cars during contractor construction operations.
RW-29 TE-29	Lisa D. Murphy	No agreement. In negotiation.

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
RW-30 TE-30	Judy M. Sauck aka Judy M. Tinker	Memorandum of Agreement (MOA) dated 2/12/26, a copy of which is located in Book 4, Contract Documents. The MOA defines improvements to be removed as “96 LF wire fencing/posts and 300 SF gravel driveway”. All of such improvements are located within _____. Paragraph 2 under <i>Other conditions</i> states as follows: The Temporary Easement described on the attached Exhibit(s) A is required for fence installation, driveway construction and construction of associated highway improvements. The Fee ROW is required for highway expansion and associated improvements. Further, it is understood and agreed between the parties that: a. The Temporary Easement(s) shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. Temporary Easement Extensions will include incentive payments calculated on the total FMV of all acquisitions. b. At its sole cost and expense, GRANTEE shall repair and restore the Temporary Easement areas (“Affected Areas”) and return said Affected Area(s) to a condition reasonably similar to or better than that which existed prior to GRANTEE’s entry, excepting the repair or restoration of Improvements paid to GRANTOR by GRANTEE and included in the Net Total above. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-30 (optional 4th year term - 15% increase from FMV of year 1 + incentive): 0.669 acres \$10,685/acre (x15%/year) \$1541 Temporary Easement (shown in attached exhibits) TE-30 (optional 5th year term - 18% increase from FMV of year 1 + incentive): 0.669 acres \$10,685/acre (x15%/year) \$1581 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel No. TE-30. If the contractor needs an optional 4th and/or 5th year for Parcel No. TE-30, the contractor is required to provide the required thirty (30) day notice to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel No. TE-30. Paragraph 3 under the <i>Other conditions</i> states the following: The Temporary Easement Area is to remain free of parked cars during contractor construction operations.
RW-31 RW-31A 31-WH TE-31 TE-31A	W. Gary Robison and Judy S. Robison	Memorandum of Agreement (MOA) dated 4/8/26, a copy of which is located in Book 4, Contract Documents. The MOA does NOT identify any improvements to be removed. <i>Additional Conditions</i> states: ADA compliant gate to road. Paragraph 1 under <i>Other conditions</i> states as follows: The Land and Temporary Easement(s) described on the attached Exhibit(s) A are for fence installation, driveway construction, irrigation facilities, detour construction, and construction of associated highway improvements which is the temporary easement, highway expansion and associated improvements which is for Fee ROW. Further, it is understood and agreed between the parties that: a. The Temporary Easement(s) shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension. Temporary Easement Extensions will include incentive payments calculated on the total FMV of all acquisitions. b. At its sole cost and expense, GRANTEE shall repair and restore the Temporary Easement areas (“Affected Areas”) and return said Affected Area(s) to a condition reasonably similar to or better than that which existed prior to GRANTEE’s entry, excepting the repair or restoration of Improvements paid to GRANTOR by GRANTEE and included in the Net Total above. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-31 (optional 4th year term - 15% increase from FMV of year 1 + incentive): 1.296 acres (55,289 Sq. Ft.) TE= \$5,472 + \$1,094= \$6,566 Temporary Easement (shown in attached exhibits) TE-31 (optional 5th year term - 18% increase from FMV of year 1 + incentive): 1.296 acres (55,289 Sq. Ft.) TE= \$5,615 + \$1,123= \$6,738 Temporary Easement (shown in attached exhibits) TE-31A (optional 4th year term - 15% increase from FMV of year 1 + incentive): .296 acres (12,904 Sq. Ft.) TE= \$1,277 + \$255= \$1,532 Temporary Easement (shown in attached exhibits) TE-31A (optional 5th year term - 18% increase from FMV of year 1 + incentive): .296 acres (12,904 Sq. Ft.) TE= \$1,310 + \$262= \$1,572 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel Nos. TE-31 and TE-31A. If the contractor needs an optional 4th and/or 5th year for Parcel Nos. TE-31 and TE-31A, the contractor is required to provide the required thirty (30) day notice to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel Nos. TE-31 and TE-31A. Paragraph 2 under the <i>Other conditions</i> states the following: The Temporary Easement Area is to remain free of parked cars during contractor construction operations. Paragraph 3 under the <i>Other conditions</i> states the following: Irrigation: NOTE: Landowner is “Grantor” CDOT is “Grantee” Certain private irrigation facilities owned by the Grantor are located on La Plata County Parcel No. RW-31, RW-31A, 31-WH and will be removed and relocated by Grantee’s project, hereinafter referred to as “Removal Irrigation Facilities”. Grantee’s design-build contractor (Grantee’s Contractor) will design, and construct modified replacement irrigation facilities to be located on Parcel No. TE-31 and TE-31A that will replace the Removed Irrigation Facilities (hereinafter referred to as “Replacement Irrigation Facilities”). The Removal Irrigation Facilities and Replacement Irrigation Facilities are generally illustrated in a plan sheet, that includes additional information, attached hereto as Exhibit “B”. The Replacement Irrigation Facilities will be designed and constructed to replace the historic quantity and quality of historic irrigation flows. Grantor hereby grants Grantee and Grantee’s Contractor a right of entry onto Grantor’s property outside of Parcel No. TE-10 (note that this is an error, it should be TE-31) and PE-10 (note that his is an error, it should be TE-31A) for such construction purpose, if needed. If Grantee’s Contractor enters Grantor’s property outside of Parcel No. T Parcel No. TE-10 (note that this is an error, it should be TE-31) and PE-10 (note that his is an error, it should be TE-31A) for such construction purpose , Grantee’s Contractor will, at Grantee’s sole cost and expense, reconstruct the portion of Grantor’s property occupied to a condition reasonably similar to that which existed prior to Grantee’s Contractor’s entry. Grantor agrees to reasonably cooperate and work collaboratively with Grantee’s Contractor on coordination of the design and construction of the Replacement Irrigation Facilities. Grantee’s Contractor may request additional information and/or documentation about the Removal Irrigation Facilities to inform the design and construction of the Replacement Irrigation Facilities. To the extent possible, Grantee has captured certain design criteria for the Replacement Irrigation Facilities to be constructed (e.g. flow dates, flow quantities (if made available by Grantor), minimum pipe size and material type, size of ditch, conceptual alignment and diversions, as applicable). Grantee’s Contractor will provide to Grantor the design of Replacement Irrigation Facility prior to starting

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions		
		construction of the Replacement Irrigation Facility. If Grantor has any material issues with the Replacement Irrigation Facilities as they are being designed, constructed, tested, or in operation prior to completion of the Replacement Irrigation Facilities, Grantor should discuss such issues with Grantee’s Contractor. Work on Grantor’s Replacement Irrigation Facilities shall not impair or impact the conveyance of irrigation water during irrigation season, April 1 through October 31st of each year, unless written approval is given by Grantor. Grantee’s Contractor shall be responsible for maintaining irrigation flows through the Removal Irrigation Facilities during construction of Grantee’s project until flows from the Removal Irrigation Facilities are changed to the Replacement Irrigation Facilities. Grantee’s Contractor may, however, be required to temporarily modify the existing irrigation conveyance based upon construction phasing. Grantee’s Contractor shall schedule a final walk through with Grantor upon completion of the Replacement Irrigation Facilities work. Notice of the final walk through shall be provided by Grantee’s Contractor in accordance with the notice provisions outlined below. After Grantor’s concerns from the final walk through have been addressed by Grantee’s Contractor, Grantor shall provide Grantee’s Contractor with written final acceptance of the Replacement Irrigation Facility (Final Acceptance) which shall not be unreasonably withheld by Grantor. A draft version of the Final Acceptance document is attached hereto as Exhibit “C”. After Grantor has signed the Final Acceptance, Grantor will own all the Replacement Irrigation Facilities located on Grantor’s property and be fully responsible for all maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. Grantee and Grantee’s Contractor shall then be fully released from any and all liability for such maintenance, repair, upkeep and replacement of such Replacement Irrigation Facilities. When Grantee provides Grantee’s Contractor with a notice to proceed for construction of Grantee’s project (NTP), Grantee shall notify Grantor within 90 days that such NTP has been issued and provide the contact information of Grantee’s Contractor with whom to coordinate the irrigation design and construction. All communications, notices and correspondence regarding the design and construction of the Replacement Irrigation Facilities shall be exchanged between Grantor, Grantee, and Grantee’s Contractor by email or certified mail or handed in-person. Either party may from time to time designate in writing a new or substitute contact, if needed. The following contacts for the Grantee and Grantor are as follows: <table><tr><td>For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us</td><td>For the Grantor: Gary & Judy Robison P.O. Box 1847 Durango, CO. 81301 Phone: 970-759-1616 email: judyrobison_2000@yahoo.com</td></tr></table> The provisions of the Memorandum of Agreement applicable to the Replacement Irrigation Facilities will survive the closing of Parcel Nos. RW-31, RW-31A, 31-WH, TE-31 and TE-31A and be binding upon and inure to the benefit of the Grantor, Grantee, Grantee’s Contractor and their respective heirs, personal representatives, successors, and assigns. Furthermore, the covenants, conditions and restrictions contained herein applicable to the Replacement Irrigation Facilities, shall run with the land and shall survive any transfer of title of interest in the property owned by Grantor.	For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us	For the Grantor: Gary & Judy Robison P.O. Box 1847 Durango, CO. 81301 Phone: 970-759-1616 email: judyrobison_2000@yahoo.com
For the Grantee: Brian Spain CDOT Region 5 Right of Way Manager 3803 N. Main Ave., Suite 300 Durango, CO 81301 Phone: 970.385.1434 email: brian.spain@state.co.us	For the Grantor: Gary & Judy Robison P.O. Box 1847 Durango, CO. 81301 Phone: 970-759-1616 email: judyrobison_2000@yahoo.com			
TE-32 TE-32A	Far View Estates Home Owners Association	Memorandum of Agreement (MOA) dated 11/20/25, a copy of which is located in Book 4, Contract Documents. The MOA defines improvements to be removed as “96 LF wire fencing/posts and 300 SF gravel driveway”. All of such improvements are located within _____. Paragraph 2 under <i>Other conditions</i> states as follows: The Term of Grantor’s use of the Temporary Easement shall be for the period of 3 years (term). The Temporary Easement(s) shall commence seven (7) calendar days after the Grantee, or the Grantee through its contractor, delivers written notice to the Grantor (“Commencement Date”) and will terminate 3 years from the Commencement Date (“Initial Term”). If the Project is not completed within the Initial Term, Grantee, or the Grantee through its contractor, may give notice to Grantor thirty (30) calendar days prior to the expiration of the Initial Term that it is exercising the optional 4th and/or 5th year term(s) of the Temporary Easement. A new Memorandum of Agreement shall be executed upon each Temporary Easement Extension and additional payments will be rendered upon extension.		

ROW Plan Parcel No.	Property Owner Name	Unique Terms and Conditions
		Paragraph 3 under <i>Other conditions</i> states as follows: Grantee shall repair and restore disturbed areas to a condition reasonably approximate to or better than the condition that existed prior to Grantee’s entry for construction. The just compensation to be paid to the landowner for exercising the option for the 4th and 5th year is defined in the MOA as follows: Temporary Easement (shown in attached exhibits) TE-32 (optional 4th year term - 15% increase from value of year 1): \$30 Temporary Easement (shown in attached exhibits) TE-32 (optional 5th year term - 18% increase from value of year 1): \$31 Temporary Easement (shown in attached exhibits) TE-32A (optional 4th year term - 15% increase from value of year 1): \$22 Temporary Easement (shown in attached exhibits) TE-32A (optional 5th year term - 18% increase from value of year 1): \$22 Note that the contractor is responsible for providing the required seven (7) calendar day notice to the Grantor (landowner) prior to the initial entry onto Parcel Nos. TE-32 and TE-32A. If the contractor needs an optional 4th and/or 5th year for Parcel Nos. TE-32 and TE-32A, the contractor is required to provide the required thirty (30) day notice to the Grantor (landowner) of its intent to exercise such options, and the contractor is required to negotiate and obtain execution of the required new Memorandum of Agreement(s) with the Grantor (landowner) for such options and to pay the Grantor (landowner) the above stated just compensation for such option(s). Prior coordination with and approval by CDOT is required for the exercise of any option for additional time for Parcel Nos. TE-302 and TE-32A.
TE-33 TE-33A	James Ellis III and Marilyn Ellis as Co-Trustees of the James M. Ellis III and Marilyn Ellis Trust dated February 12, 1993	No agreement. In negotiation.
RW-34 TE-34	The Donald E. Englishman and Marilyn J. Englishman Revocable Living Trust dated March 5, 2002	No agreement. In negotiation.
HE-36 HE-36A	United States of America Dept of Interior Bureau of Land Management	No agreement. In negotiation.

Exhibit 9-C

Schedule of Improvements to be Demolished

Updated: 6/16/2026

Address of Improvement	Parcel Numbers on CDOT Plans for Underlying Ownership	Owner from Whom Underlying Property Shall Be Acquired	Description of Improvements to be Demolished
31505 E. US Hwy 160 Durango, CO 81303	RW-18	Carol Jameson	Barn, and Water Well

Exhibit 9-D

**Tasks of the CDOT Right-of-Way Acquisition Process for Contractor Acquisitions,
Entity Responsible for Completion of Each Task, and Approximate Time Frames**

Description of ROW Task	Entity Responsible for Completion of ROW Task	Approximate Time Frame for Completion of ROW Task	Entity Responsible for Acceptance or Approval of ROW Task	Approximate Time Frame for Acceptance or Approval of ROW Task	Comments
Survey	Contractor	Variable depending on scope, 2 to 4 weeks for smaller surveys, 2 to 4 months for larger surveys	Department's Survey Unit	2 to 3 weeks from submission	This is only survey of property boundary and topography needed for development of ROW Plans
Delivery of engineering design of improvements requiring ROW completed to a sufficient level to verify that location, size and shape of ROW parcels will not change as design is advanced	Contractor	Variable depending on scope of improvements to be designed	Contractor's design review team and Department's ROW Manager	Variable depending on scope of improvements designed	Completion of sufficient design to this level is a common cause of delay in the ROW Plans development process
ROW Plans	Contractor	60 to 120 Days for ROW Plan preparation depending upon the number of acquisitions, and complexity of the Plans and title matters	TC Approves ROW Plans	Approx. 45 to 60 Days for TC Approval of ROW Plans	ROW Plan preparation and procurement of TC Approval is a time-consuming process. TC Approval to be obtained in compliance with PD 1301.0.

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 9 - Right-of-Way

Description of ROW Task	Entity Responsible for Completion of ROW Task	Approximate Time Frame for Completion of ROW Task	Entity Responsible for Acceptance or Approval of ROW Task	Approximate Time Frame for Acceptance or Approval of ROW Task	Comments
Appraisal and Appraisal Review	Appraisal: Contractor Appraisal Review: Department	6 to 12 weeks per appraisal per landowner 2 to 4 weeks to Review an appraisal	Department	2 to 4 weeks to Review an appraisal	If the estimated value of the acquisition is \$10,000 or less, a value finding can be prepared by a real estate specialist and an appraisal Review of the value estimate is not needed. All requests for valuation by a value finding vs. an appraisal must be Approved by Department.
Acquisition negotiation	Contractor	4 to 6 weeks for the initial negotiation. 2 weeks for a final offer letter. 2 weeks for a last and final offer letter, if provided. At least 4 months from submission of request for condemnation to completing immediate possession hearing.	Department must Review and Approve settlements above FMV amounts.	2 to 4 Calendar Days to review and Approve request for settlements above FMV amount.	Contractor cannot use duress or coercion in acquisition negotiations

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 9 - Right-of-Way

Description of ROW Task	Entity Responsible for Completion of ROW Task	Approximate Time Frame for Completion of ROW Task	Entity Responsible for Acceptance or Approval of ROW Task	Approximate Time Frame for Acceptance or Approval of ROW Task	Comments
Condemnation	Colorado Attorney General's Office	At least 4 to 6 months to file a condemnation petition, serve it on the parties, set and hold an immediate possession hearing. Valuation trials can take a year or more from the date of filing the condemnation petition.	Department must Review and Approve settlements above FMV amounts.	2 to 4 Calendar Days to Review and Approve request for settlements above FMV amount.	All offers to purchase must be made in CDOT's name, so the Attorney General's Office is properly authorized to represent CDOT as the condemning authority in the condemnation proceeding.
Certification that acquisition was completed in compliance with State and Federal Requirements	Contractor	At Contractor's discretion, but only after Department's Acceptance of Contractor's acquisition files	Department's ROW Manager	At least 7 Days after Department ROW Manager's receipt of the Contractor's Certification Letter in acceptable form and ROW Manager's Acceptance of acquisition files provided to Department by the Contractor.	For purposes of efficiency, it is preferred that the Contractor receive CDOT's Acceptance of its acquisition files prior to the Contractor's submittal of its Certification letter to CDOT.

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 9 - Right-of-Way

Description of ROW Task	Entity Responsible for Completion of ROW Task	Approximate Time Frame for Completion of ROW Task	Entity Responsible for Acceptance or Approval of ROW Task	Approximate Time Frame for Acceptance or Approval of ROW Task	Comments
Request for TC Approval or ratification of Contractor Acquisitions	Contractor	After Approval by Department of Certification that acquisition was completed in compliance with State and Federal Requirements.	TC	45 to 60 Days from submission of request	

Exhibit 9-E

Tasks of the CDOT Relocation Process for Contractor Relocations, Entity Responsible for Completion of Each Task, and Approximate Time Frames

Description of ROW Task	Entity Responsible for Completion of ROW Task	Approximate Time Frame for Completion of ROW Task	Entity Responsible for Acceptance or Approval of ROW Task	Approximate Time Frame for Completion of Acceptance or Approval of ROW Task	Comments
Relocation Planning Studies Required by Title 49 CFR §24.205	Contractor	Variable depending on scope; 1 to 2 weeks for smaller studies; 60 to 90 Calendar Days for larger studies.	Department's Headquarters ROW Unit	1 to 3 weeks from submission, depending on size of the study	
Relocation Advisory Services Required by Title 49 CFR §24.205	Contractor	Variable. Typically continuous throughout relocation process.	Department's Acquisition / Relocation Supervisor. Note: Approval of a specific Deliverable is not required. Rather this is general oversight by CDOT.	Generally continuous throughout relocation process.	Department's Acquisition / Relocation personnel can assist with advisory services, as needed.

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 9 - Right-of-Way

Description of ROW Task	Entity Responsible for Completion of ROW Task	Approximate Time Frame for Completion of ROW Task	Entity Responsible for Acceptance or Approval of ROW Task	Approximate Time Frame for Completion of Acceptance or Approval of ROW Task	Comments
Provide displaced occupants with notice that they have 90 Calendar Days to vacate the premises and, additionally, later notice that they have 30 Calendar Days to vacate the premises Title 49 CFR §24.203	Contractor	The 90-Calendar Day notice is provided at the time the written offer to purchase the property is provided to the landowner.	Department's ROW Manager. Note: Approval of a specific Deliverable is not required. Rather this is general oversight by CDOT.		90 Calendar Days for a displaced occupant to find a replacement property and move into it is the minimum required by law. As a practical matter, that is too short, especially for displaced businesses. It is desirable to lengthen this minimum time frame as much as possible. At least 6 months is a better expectation. The 30 Calendar Day notice cannot be provided until possession of the underlying property is obtained.
Personal Property Relocation: Prepare and submit requests for reimbursement moving expenses, Title 49 CFR §24.301,	Contractor	Variable	Department's Headquarters ROW Unit	2 to 5 Calendar Days per submittal	Because these are reimbursable expenses, the displaced occupant must actually incur the expenses before a request for reimbursement can be prepared.

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 9 - Right-of-Way

Description of ROW Task	Entity Responsible for Completion of ROW Task	Approximate Time Frame for Completion of ROW Task	Entity Responsible for Acceptance or Approval of ROW Task	Approximate Time Frame for Completion of Acceptance or Approval of ROW Task	Comments
Business Relocation: Prepare and submit requests for reimbursement of all available business relocation monetary benefits, including expenses incurred searching for a replacement property, Title 49 CFR §24.301, moving expenses, Title 49 CFR §24.301, reestablishment Title 49 CFR §24.304 and Section 24-56-103, C.R.S., or single "in lieu" payment, Title 49 CFR §24.305	Contractor	Variable	Department's Headquarters ROW Unit	2 to 5 Calendar Days per submittal	Because these are reimbursable expenses, the displaced occupant must actually incur the expenses before a request for reimbursement can be prepared.
Residential Relocation: Prepare and submit requests for reimbursement of all available residential relocation monetary benefits, including replacement housing payment, Title 49 CFR §24.401 and moving expenses, Title 49 CFR §24.301	Contractor	Variable	Department's Headquarter ROW Unit	5 to 10 Calendar Days per submittal	Since these are reimbursable expenses, the displaced occupant must actually incur the expenses before a request for reimbursement can be prepared.
Certification that relocation was completed in compliance with State and Federal Requirements	Contractor	At Contractor's discretion, but only after all relocation has been completed.	Department's ROW Manager	At least 7 Days after receipt by Department's ROW Manager	

10.0 Survey

This Section includes the requirements for the survey Work for the US 160 Elmore's Corner to Dry Creek Design Build-Project (Project). This Work shall be completed in accordance with the Contract Documents.

10.1 Administrative Requirements

10.1.1. Project Survey Coordinator

The Contractor shall designate a Colorado Professional Land Surveyor as the Project Survey Coordinator. The Contractor's Project Survey Coordinator shall be in responsible charge of all Contractor survey Work for the Project. The Contractor's 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 Contractor's Project Survey Coordinator.

All survey crew chiefs shall carry business cards that include their name, title, business address, and phone number while engaged in performing survey Work 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.

10.1.2. Standards

The Contractor shall design and construct the Project in accordance with the requirements of the Contract, including the CDOT Standard Specifications for Road and Bridge Construction, Project Special Provisions, and Standard Special Provisions in Book 2, Section 21, standards referenced in Book 3 and in this Section. The Contractor shall use the latest adopted edition at the time of the Proposal Due Date. The Contractor shall meet all applicable federal, State, and local requirements related to surveys, records, and monuments. It is the responsibility of the Project Survey Coordinator, in responsible charge, to perform all survey Work in conformance with the specifications, methods, and tolerances as set forth in the current Colorado Department of Transportation (CDOT) Survey Manual, CDOT Right of Way Manual, and CDOT CADD Manual.

Prior to any field survey Activities, all conventional survey Equipment shall be checked in accordance with the CDOT Survey Manual on a National Geodetic Survey (NGS)/National Oceanic and Atmospheric Administration (NOAA) calibrated baseline. In lieu of NGS/NOAA baseline observations, conventional Equipment can be checked and certified by a survey equipment vendor. A certificate of calibration is required from the vendor. Calibration documentation for conventional Equipment shall be submitted to CDOT for Review prior to any field survey Activities.

10.1.3. CDOT-Supplied Survey Data

Topography survey information, to be supplied by CDOT, is provided in Book 4, Contract Documents. The topography survey is a merged Bentley Open Roads Designer (ORD) file (CDOT Workspace v 10.10) containing three-dimensional planimetric features, notes, and a digital terrain model. Sources to this merged file include:

- Ground survey on US Highway 160 from MP 91.00 to MP 97.25 from the south ROW fence to the north ROW fence. Dates of the field work 2016-2017.

- Aerial photogrammetry on US Highway 160 from MP 91.00 to MP 97.25, 250 feet north of the physical centerline and 250 feet south of the physical centerline. The date of observations is 2016.
- Supplemental ground survey in proposed landowner acquisition areas. Date of field work: 2022-2025.

The topography survey was performed according to the guidelines for preliminary surveys published in the CDOT Survey Manual.

Other survey data, including ROW/boundary ORD files, proposed ROW ORD file, and aerial imagery, are provided in the Reference Documents and are available for the Contractor's use. The Contractor shall be responsible for any supplemental survey and mapping necessary to complete the Work (see Section 10.2.3).

In 2018, CDOT constructed resurfacing Project 22010 (NHPP 1602-166) - US 160 SH 172 to Bayfield Resurfacing (see Reference Documents). This Project modified the elevations of the roadway surface as shown in the 2017 CDOT-supplied topography survey. The Project Survey Coordinator is responsible for verifying vertical and horizontal tie-ins to existing features. If the Project Survey Coordinator identifies any inaccuracies in the CDOT-provided survey information, it shall be the Contractor's responsibility to provide additional surveys, as necessary, to resolve the inaccuracies to complete the Work.

Changes in conditions at the Site may occur after the Proposal Due Date that require additional survey. Survey of said changes is the responsibility of the Contractor at no added cost to the Project.

10.1.4. Preservation of Federal Monuments

"Tabulation of Federal Monuments To Be Protected" has been drafted for the Project and can be found in Book 4, Contract Documents. The preservation of these existing monuments on the tabulation is mandatory and must be marked on the ground. If these monuments are disturbed during the course of construction, they shall be replaced at the Contractor's expense. Replacement of these monuments will require coordination with the National Geodetic Survey (NGS) Rocky Mountain Regional Advisor.

10.1.5 Survey Records

The Project Survey Coordinator 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 and shall be available to CDOT for Review or reproduction at any time.

Field books shall contain daily records of points set and/or measurements observed. The information recorded shall contain the date, crew members' names, point number, description, staking information, and sketches. If the survey information is collected electronically, the information recorded shall be submitted to CDOT in a hard copy format that is intuitive, clear, and related to the supplemental information recorded in the field books. All linear surveys, such as slope stakes and blue tops, shall have the station and offset information related to the measured information. Non-linear surveys shall have sketches relating electronic information, such as point numbers, to the sketch.

Such records shall be neat, legible, accurate, and maintained by the Contractor in an orderly manner. The Contractor's Project Survey Coordinator is required to sign and seal all survey documentation in accordance with State law, Section 625 and Section 629 of the current CDOT Standard Specifications for

Road and Bridge Construction, and the CDOT Survey Manual. All survey records, including documentation, shall be submitted to CDOT for Acceptance at the completion of the Work and prior to Final Acceptance.

10.2 Design Requirements

10.2.1. Submittals

All submittals shall be prepared, reviewed, and submitted in accordance with the requirements set forth in Book 2, Section 4.

10.2.2. Project Control Surveys/Networks

Primary Project control to be utilized for all survey tasks is shown on the Project control diagram dated June 30, 2025 (Book 4, Contract Documents). The Project Survey Coordinator shall plan, schedule, and perform all surveys and monumentation necessary to develop, maintain, and supplement the Project control network for the design and construction of the Project in accordance with the CDOT Survey Manual. All existing CDOT primary control shall be checked and verified prior to use for any survey Activities. If any substantial discrepancies are found, the Project Survey Coordinator shall develop a report showing the discrepancies and immediately submit to CDOT for Review.

If it is determined that any primary control monuments will be disturbed by construction Activities, the Project Survey Coordinator shall establish replacement monuments. Replacement monuments shall be established **"before"** the existing primary control monuments are disturbed. All monument material will be furnished by the Contractor. Within 30 Days of the establishment of the revised Project control network, the Project Survey Coordinator shall submit to CDOT for Review a Revised Project Control Diagram containing information as required in the CDOT Survey Manual. After Review, the Project Control Diagram shall be signed and sealed by the Project Survey Coordinator.

10.2.3. Design Surveys

The Contractor shall arrange for all supplemental survey information (including Utility locations) necessary to complete the design. Surveying shall be performed in accordance with the CDOT Survey Manual. The Project Survey Coordinator shall collect survey data in Bentley ORD in CDOT Workspace version 10.12 format, utilizing CDOT's Terrain Modeling Survey System (TMOSS) coding and configuration. The Contractor shall submit the survey data to CDOT for Review within 30 Days upon completion of the survey. Errors and omissions found by CDOT shall be corrected by the Project Survey Coordinator and the data resubmitted. Traffic control and permits necessary to complete the survey shall be the responsibility of the Contractor.

10.2.4. Right-of-Way Survey and Monumentation

If the Contractor determines that additional ROW or Easements are required, the Contractor shall follow the request for ROW process set forth in Book 2, Section 9. The Project Survey Coordinator shall locate ROW monuments, private land surveyor monuments, and Public Land Survey System monuments, as required, to develop an existing property, encumbrance, and ROW model. The Project Survey Coordinator is responsible for conducting all parcel and easement (temporary and permanent) staking associated with Contractor Acquisitions (defined in Book 2, Section 9).

If the Contractor prepares ROW plans for Contractor Acquisitions, ROW monuments shall be set at a time when they will not be impacted by construction Activities. All Material for ROW monumentation shall be provided by the Contractor. The Project Survey Coordinator shall submit ROW plans to CDOT for Acceptance after parcel/easement acquisition and after ROW monuments have been set. The

Project Survey Coordinator shall sign and seal the ROW Plans and deposit them with the appropriate county office. A copy of the signed and sealed ROW Plans shall be submitted to CDOT for inclusion in the survey records. See Book 2, Section 9 for the ROW Plans process.

Monuments that are shown "to be set" on ROW Plan set 20980 (NHPP 1602-157)/26704 (FBR 1602-193) will be set after construction by CDOT. Project ROW plan sets are included in Book 4. The Contractor shall set temporary stakes on ROW lines and easement lines shown on the ROW plan sets.

10.3 Construction Requirements

10.3.1. Construction Layout Surveys

The Project Survey Coordinator shall plan, schedule, and perform all staking and construction layout required for the Work. All survey Work and staking intervals shall be done in accordance with the CDOT Survey Manual.

3D Engineered Construction Surveying (3DECS) is approved for the Project. The Contractor's use of 3DECS shall conform to the requirements set forth in Section 625 of the current CDOT Standard Specifications for Road and Bridge Construction and the CDOT Survey Manual.

10.3.2. Pre-Survey Conference-Construction Survey

Prior to beginning any construction survey Activities, the Contractor shall hold a Pre-survey Conference as required in the CDOT Survey Manual Section 6.1.6. Any known error in the provided survey shall be discussed at the pre-survey conference.

10.3.3. As-Constructed Surveys

The Contractor shall plan, schedule, and perform all surveys to document the location of constructed features on the Project as required in Book 2, Section 4 and Section 6.13 of the CDOT Survey Manual.

The Project Surveyor shall conduct an as-constructed survey of the assets outlined the Revision of Section 625 Asset Geospatial Data Collection using CDOT's mobile application, PointMan. This includes asset installation/relocation by the Contractor and/or the Utility Owner.

All other as-constructed survey data shall be collected in Bentley ORD in CDOT Workspace version 10.12 format or newer, utilizing CDOT's TMOSS coding and configuration. The Project Survey Coordinator shall deliver the data and field notes to CDOT for Acceptance upon completion of the survey. Errors and omissions found by CDOT shall be corrected by the Contractor and data resubmitted.

Any element that is modified from the design plans in the field, the Project Survey Coordinator shall coordinate with the Design Manager to collect as-constructed data and update the RFC plans.

10.4 Deliverables

The Contractor shall submit the following to CDOT for Review, Acceptance, or Approval:

Table 10-1: Deliverables

Deliverable	Review, Acceptance, or Approval	Schedule
Equipment calibrated baseline check or vendor Equipment certificate	Review	Prior to any field survey Activities
Survey records	Acceptance	Survey records may be Reviewed by CDOT at any time during the course of the Work. Acceptance at completion of the Work and prior to Final Acceptance
Report of any discrepancies in primary Project control	Review	Discrepancies shall be reported immediately
Revised Project Control Diagram	Review	Revised Project Control Diagram shall be submitted within 30 Days of the establishment of the revised Project control network
Supplemental survey for design and Utilities	Review	Within 30 Days upon completion of the survey
ROW plans for Contractor Acquisitions	Acceptance	After proposed acquisition and ROW monumentation
Documentation/date of the location of As-Constructed features on the Project and field notes	Acceptance	At completion of the Work and prior to Final Acceptance

11.0 Geotechnical and Roadway Pavements

This Section includes the requirements for the geotechnical and Roadway pavements Work for the US 160 Elmore's Corner to Dry Creek Design-Build Project (Project). This Work shall be completed in accordance with the Contract Documents.

11.1 Administrative Requirements

11.1.1. Standards

The Contractor shall design and construct the Project in accordance with the Contract, including the Project Special Provisions and Standard Special Provisions in Book 2, Section 21, requirements of the standards in the documents listed in Table 11-1 and those referenced in Book 3. The Contractor shall use the latest adopted edition at the time of the Proposal Due Date.

Table 11-1: Standards

Author or Agency	Title
American Association of State Highway and Transportation Officials (AASHTO)	AASHTOWare Pavement Mechanistic-Empirical Design Software, Version 2.3.1
AASHTO	Load and Resistance Factor Design (LRFD) Bridge Design Specifications
Colorado Department of Transportation (CDOT)	Standard Specifications for Road and Bridge Construction (Standard Specifications)
CDOT	Mechanistic-Empirical (M-E) Pavement Design Manual
CDOT	Field Materials Manual
CDOT	Bridge Design Manual
CDOT	Geotechnical Design Manual
CDOT	M&S Standard Plans
Federal Highway Administration (FHWA)	Geotechnical Engineering Circular No. 5, Geotechnical Site Characterization
FHWA	Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes
FHWA	Soils and Foundations Reference Manual

11.2 Geotechnical Investigations

The results of geotechnical investigations performed by CDOT are provided in Book 3, Geotechnical Data Report (GDR) dated January 9, 2026, by Yeh and Associates, Inc.

Geotechnical investigations conducted in the area of the Structures and pavements are included in the GDR in Book 3. The soil and rock samples referenced in the GDR and collected as part of this geotechnical engineering exploration are available at the CDOT Durango facility:

CDOT Region 5
3803 North Main Avenue
Durango, CO 81301

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 11 - Geotechnical and Roadway Pavement

The Contractor shall have 90 Days from NTP1 to take possession of these geotechnical samples. If the Contractor has not taken possession within this timeframe, CDOT will dispose of these materials. If the Contractor does take possession of these samples, the Contractor shall assume full responsibility for both storage and disposal.

The Contractor shall be responsible for supplemental subsurface investigation necessary to complete the Work, to support the proposers' design and to meet required sampling frequency and depth. When planning and conducting additional investigations, the Contractor shall refer to the referenced Book 3 geotechnical documents completed for this Project. Geotechnical investigations and analysis shall comply with the requirements of the CDOT Geotechnical Design Manual, the CDOT Field Materials Manual, the CDOT M-E Pavement Design Manual, the AASHTO LRFD Bridge Design Specifications, where applicable, Table 11-2, and any other applicable standards necessary to perform the Work.

The Contractor shall prepare a geotechnical investigation plan prior to commencing field Work. The plan shall include locations, investigation methods, anticipated depths, anticipated sampling and testing, and discussion of the criteria and rationale used to develop the proposed geotechnical investigations with respect to planned elements of the Project. The plan shall be submitted to CDOT for Review at least 4 weeks prior to commencing field Work.

If groundwater observation wells are necessary to monitor water level or water quality, it shall be the Contractor's responsibility to properly permit and abandon or renew the permits of these wells in accordance with Colorado Division of Water Resources requirements.

The Contractor shall perform geotechnical investigations to evaluate existing pavement settlement and distress in the general vicinity of MP 96.0. This investigation shall be included in the supplement geotechnical investigations report submitted to CDOT for Acceptance. This investigation shall include remediation recommendations to be included in the Design Documents to be submitted per Book 2, Section 4.

Supplemental investigations made by the Contractor shall be documented in supplemental geotechnical investigation reports of format similar to those in the referenced geotechnical documents. These supplemental investigations shall be submitted to CDOT for Acceptance within 90 Days following completion of the field Work. Supplemental investigations made by the Contractor for County or other municipal Roads shall be documented in separate supplemental geotechnical investigation reports according to the maintaining agency's requirements and shall be submitted to CDOT for Acceptance within 90 Days following completion of the field Work.

The minimum depth and frequency of geotechnical borings for subsurface explorations is provided in Table 11-2. Roadway subgrade sampling is required for all pavement areas and shall conform to the Region Soil Survey Sampling Checklist for Soil Survey of Constructed Roadbeds presented in Chapter 200 of the CDOT Field Materials Manual. The soil survey shall be completed prior to beginning construction of the pavement Subbase course.

Table 11-2: Geotechnical Boring Depth and Minimum Frequency Table

Exploration Type	Recommended Minimum Number of Borings	Minimum Boring Depth
Drilled Shaft Foundations	One per substructure unit < 100 feet width Two per substructure unit > 100 feet width	10 feet into bedrock ($N \geq 50$) or 3D below tip elevation.
Driven Piles Foundations	One per substructure unit < 100 feet width Two per substructure unit > 100 feet width	10 feet into bedrock ($N \geq 50$) or 20 feet below tip elevation.
Spread Footing Foundations	One per substructure unit < 100 feet width Two per substructure unit > 100 feet width	2B where $L < 2B$, 4B where $L > 2B$ and interpolate for L between 2B and 4B or 10 feet into bedrock ($N \geq 50$).
Concrete Box Culvert Foundations	One at each end and every 100 feet along axis	3H or 10 feet into bedrock ($N \geq 50$).
Mechanically Stabilized Earth (MSE)/Cast in Place Walls	One at each end and every 200 feet along wall	2H or 10 feet into bedrock ($N \geq 50$).
Soil Nail Walls	One in nail zone 1H from wall face every 200 feet along wall	2H or 10 feet into bedrock ($N \geq 50$).
Pavement Settling	Determined by size and extent of distressed area.	Determined by size and extent of distressed area.
Pavement Heaving	Determined by size and extent of distressed area.	20 feet.
Pavement realignment or widening Material Soil Survey	One every 1,000 feet along centerline or determined by CDOT	Minimum of 5 feet below top of proposed pavement elevation or determined by CDOT.
Cut sections - road widening Material Soil Survey	One at each end of cut section and every 500 feet or determined by CDOT.	Minimum of 5 feet below top of proposed pavement elevation or determined by CDOT.
Embankment Fill > 5 feet Material Soil Survey	One every 500 feet with at least one at the location of the greatest height of proposed fill.	Borings shall extend at least 2 times the total height of the proposed fill below the base elevation or 5 feet into hard substratum ($N > 30$).

Modified from CDOT Geotechnical Design Manual, Chapter 3; CDOT M-E Pavement Design Manual, Chapter 4; CDOT Field Materials Manual, Chapter 200; and AASHTO LRFD Bridge Design Specifications, Table 10.4.2-1.
D = Diameter B = Footing Width H = Wall Height L = Footing Length N = Blow count values in 12 inches

11.3 Design Requirements

11.3.1. Submittals

All submittals shall be prepared, reviewed, and submitted in accordance with the requirements set forth in Book 2, Section 4.

11.3.2. Sulfate Resistant Concrete

Concrete for Structures and pavements shall be designed for Class 2 Severity of Sulfate Exposure unless field sampling and laboratory testing indicates a greater sulfate resistance is required.

11.3.3. Structure Foundation Analysis and Design

Structure foundation analysis and design shall follow the requirements provided in Book 2, Section 16. Subsurface conditions at major Structures identified in Book 2, Section 16 have been investigated by CDOT and are documented in the GDR in Book 3. Foundation designs for sign Structures, and other minor Structures may require supplemental geotechnical investigations. Performance and reporting of supplemental geotechnical investigations shall be in accordance with Section 11.2. Foundation analysis and design for Structures shall conform to the AASHTO LRFD Bridge Design Specifications, the CDOT Bridge Design Manual, and the CDOT Geotechnical Design Manual.

A Preliminary Foundation Design Report shall be submitted for Review for each major structure and minor structure as required in Book 2, Section 16, for the design of foundations for Bridges, retaining walls, noise walls, and other Structures. The report shall be in draft form and contain design recommendations and substantiating analysis for foundation elements, lateral earth load parameters, soil corrosivity analysis, seismic design parameters, and any other geotechnical design or analysis parameters necessary to complete the design. The Preliminary Foundation Report shall be submitted to CDOT for Review with the Preliminary Design Plans submittal.

The Foundation Design Report shall be revised from the Preliminary Foundation Design Report and be the basis for the load analysis from seismic and earth loads and the basis for the design of foundation elements. Supplemental soil borings required for Structures design shall have been completed. Foundation Design Reports shall be submitted to CDOT for Acceptance 90 Days following completion of supplemental field Work or with the Release for Construction (RFC) Documents per Book 2, Section 4.

11.3.4. McClean Spring and Unnamed Seep

There are a known spring and seep between MP 93.2 to MP 93.5. There are existing pipes and underdrain systems in place that can remain or be removed. New subsurface drainage shall be provided to prevent saturation of subgrade Materials for pavements, Structures, and embankments. Design of Structures, pavements, and embankments shall consider the potential for saturated conditions. Permanent design solutions shall provide drainage away from Structures, pavements, and embankments. Additional design requirements are provided in Book 2, Sections 6, 9, 13, 14 and 16.

The Contractor shall perform geotechnical investigations in this area. The investigation shall be included in the supplement geotechnical investigations report submitted to CDOT for Acceptance. This investigation shall include remediation recommendations to be included in the Design Documents to be submitted per Book 2, Section 4.

11.3.5. Baseline Roadway Pavement Analysis and Design

11.3.5.1 Pavement Structure

The Pavement Structure is defined as the combination of Subbase, Base Course, and Surface Course placed on a prepared Subgrade to support the traffic load and distribute it to the Roadbed:

1. **Subgrade.** The top surface of a Roadbed upon which the Pavement Structure and Shoulders are constructed.
2. **Subbase.** The layer or layers of specified or selected Material of designed thickness placed on a Subgrade to support a Base Course, Surface Course, or both.
3. **Base Course.** The layer or layers of specified or selected Material of designed thickness placed on a Subbase or a Subgrade to support a Surface Course.

4. **Surface Course.** The upper most component of a Pavement Structure designed to accommodate the traffic load, the top layer of which resists skidding, traffic abrasion, and the disintegrating effects of climate.

11.3.5.2 Subgrade Treatment

Expansive and high plasticity surficial soil and bedrock Subgrade Materials have been identified within the alignment as documented in the GDR. These Subgrade conditions shall be treated by the subexcavation method with granular Material as defined in Chapter 4 of the CDOT M-E Pavement Design Manual. This is the only subgrade treatment allowed. This treatment is not ATC eligible. In order to achieve the Project goal of maximizing the use of available on Site Materials and for the long-term resiliency and benefit of the Project, the subexcavation shall be backfilled with a minimum thickness of 12 inches of moisture conditioned, recompacted subgrade and a minimum of 15 inches of Subbase course Materials consisting of suitable Material meeting the minimum requirements of Class 2 Aggregate Base Course (ABC), AASHTO classification of A-1 and with an R-value of at least 70, in accordance with Book 2, Section 12. Subbase course constructed on expansive and high plasticity subgrade Materials (surficial soils and processed bedrock) shall be placed on a geosynthetic filter-separator layer and constructed with ditches, edge drains or other drainage measures to collect and divert water from the Subbase Materials and prevent saturation of the Subgrade and Pavement Structure. The CDOT baseline pavement design has accounted for the reworked Subgrade and Subbase course layers. ATCs, including those prepared using the AASHTOWare Pavement M-E Design software, shall not propose reductions in the minimum requirements of this section. These minimum requirements are not ATC eligible.

Material placed in the top 4 feet below the bottom of the Subbase shall have an R-Value of at least 40.

11.3.5.3 Baseline Pavement Design

CDOT has prepared the baseline pavement design, as described in the Pavement Justification Report, and performed the Life-Cycle Cost Analysis (LCCA) to determine the types and thicknesses of pavement surface courses, thicknesses of Base Courses and Subbase courses, and Subgrade treatments that meet the requirements of this Project. The Pavement Justification Report is included in the Reference Documents. This baseline Pavement Structure is provided below and Contractor proposed ATC pavement designs shall include the same components as the baseline design. Proposed ATCs for pavement designs shall utilize the baseline pavement design parameters and the baseline pavement design calibration factors defined in this Section. Output reports for the baseline pavement design are provided in the Reference Documents. Due to statewide calibration issues, CDOT performed the baseline pavement design using AASHTO Design Analysis and Rehabilitation for Windows (DARWin). All DARWin-specific referencing was done using the 2013 CDOT Pavement Design Manual. The 2025 CDOT M-E Pavement Design Manual was referenced for all other aspects of the baseline pavement design.

11.3.5.4 Baseline Pavement Types and Thickness Requirements

The LCCA performed by CDOT indicates Portland Cement Concrete Pavement (PCCP) and Hot Mix Asphalt (HMA) pavement types have life-cycle costs that are similar such that neither has a distinct cost advantage. The two life-cycle costs are within the range where CDOT policy requires designs for both types of pavement be presented as baseline pavement designs. The Contractor shall select either the PCCP or HMA CDOT design for the entire extent of the US 160 mainline within the Project limits, except for the CR 225 roundabout which shall be PCCP.

Permanent patching of HMA pavement shall conform to Section 403 of the CDOT Standard Specifications. Patching on US 160 shall consist of a minimum of 8-inches of HMA. Access Roads shall have a minimum Surface Course thickness of 3 inches of HMA and a minimum Base Course thickness of 4

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 11 - Geotechnical and Roadway Pavement

inches of ABC Class 6. County Roads shall have a minimum Surface Course thickness of 4 inches of HMA and a minimum Base Course thickness of 6 inches of ABC Class 6.

11.3.5.4.1 Portland Cement Concrete Pavement

PCCP shall meet compressive strength requirements as identified in the most current CDOT Standard Specifications and any currently approved Standard Special Provisions as detailed in Book 2, Section 21.

1. PCCP shall be required for the CR 225 roundabout.

The baseline PCCP design shall have the minimum thicknesses shown in Table 11-3 for the design parameters provided as determined in accordance with CDOT M-E Pavement Design Manual for locations where new construction of the pavement section is required.

Table 11-3: Minimum Pavement Design Parameters for PCCP (New Construction)

Segments	Pavement Type	Design Life (Years)	2024 Daily Truck Volume (AADTT)	Thickness of PCCP Surface Course (in.)	Thickness of ABC Class 6 (in.)	Thickness of ABC Class 2 Subbase (in.)
US 160 Mainline Reconstruction	Rigid	30	840	9.5	6	0
CR 225 Roundabout	Rigid	30	840	9.5	6	0

Baseline PCCP designs based on use of 1.25-inch diameter dowel bars and 15-foot joint spacing.
ABC = Aggregate Base Course.

11.3.5.4.2 Hot Mix Asphalt Pavement

The baseline HMA pavement design shall have the minimum thicknesses shown in Table 11-4 for the design parameters provided based on the M-E Design software for HMA. All segments with widening shall be overlaid the full width of the roadway.

Table 11-4: Minimum Pavement Design Parameters for HMA (New Construction)

Segments	Pavement Type	Design Life (Years)	2024 Daily Truck Volume (AADTT)	Thickness of HMA Surface Course (in.)	Thickness of ABC Class 6 (in.)	Thickness of ABC Class 2 Subbase (in.)
US 160 Mainline Reconstruction	Flexible	20	840	6	6	15
US 160 Widening	Flexible	20	840	6	6	15
US 160 Overlay	Flexible	20	840	2	NA	NA

ABC = Aggregate Base Course.

NA = Not Applicable

11.3.6. Alternate Pavement Designs

CDOT has performed an LCCA for the baseline pavement design that shows HMA and PCCP as equally suitable pavement type alternatives. ATCs for pavement designs proposed by the Contractor shall

include analysis of life-cycle costs to show maintenance costs and demonstrate required design life according to the CDOT M-E Pavement Design Manual.

The Contractor shall prepare the final ATC pavement designs using Version 2.3.1 of the AASHTOWare Pavement Mechanistic-Empirical Design software (M-E Design software) for all pavement constructed as part of this Project. In addition to M-E Design output, pavement design ATCs will be evaluated based on the requirements of the CDOT M-E Pavement Design Manual, in particular section 4.9 Expansive Subgrade soils. Contractor designs shall utilize the Colorado-specific calibration model and the inputs, calibration factors, Material properties, etc., set forth in the Pavement Justification Report and as provided in Exhibit 11-A. The Material properties of the Surface Course, Base Course, Subbase course, and Subgrade used during construction shall follow those used in the CDOT M-E Pavement Design Manual and CDOT baseline pavement design. Level 2 design parameters shall be used. The Contractor may use Level 1 design parameters when better information is available. Level 3 design parameters will not be applicable and shall not be used without specific written Acceptance of their applicability from CDOT. Items in conflict between the CDOT M-E Pavement Design Manual and the CDOT baseline design shall follow inputs provided in the CDOT baseline design and Exhibit 11-A. HMA and PCCP mixes from the CDOT material databases shall be used in all M-E Design analyses. Generic, nationwide, or similar, samples of HMA and PCCP shall not be used in the analysis.

Properties of Materials proposed for the Pavement Structure must be able to be represented within the M-E Design software. Materials incompatible with the M-E Design software will not be Accepted. Performance properties of alternative Materials shall be verified through documentation of the Materials' structural value within the Roadway prism and with formal guidance on how they should be modeled within the M-E Design software. The Contractor shall be required to provide the documentation and formal guidance for incorporation of Materials into the M-E Design software. CDOT will not Accept proposed pavement Materials modifications with insufficient documentation and/or lack of adequate modeling of a Material's structural value.

The Contractor's Alternate Pavement Design Report shall explicitly state any differences between the CDOT baseline pavement design and the ATC pavement design model proposed by the Contractor. All pages of the M-E Design software output reports for designs proposed by the Contractor shall be provided to CDOT for Review. The exact model (electronic file) that generated the associated design shall also be provided to CDOT for Review. A narrative detailing the changes from the CDOT baseline model and associated detailed description and justification of changes and/or assumptions shall be provided with every ATC pavement design for Review. Review and any associated Review and comment time periods will not begin until all Requests for Information (RFI), narratives, and assumptions/descriptions are received from the Contractor. The Preliminary Alternate Pavement Design Report package shall be submitted to CDOT for Review as part of the Preliminary Design Plans submittal. The Alternate Pavement Design Report packages shall be submitted to CDOT for Acceptance as part of the Pre-RFC Documents and Final RFC Documents submittals. It is the Contractor's responsibility to furnish this information in a timely manner. CDOT is not responsible for any delays associated with the Contractor furnishing incomplete information to CDOT for ATC pavement designs.

The minimum required pavement section thicknesses for ATC pavement designs within the Project are provided in Table 11-5. The Contractor shall select either PCCP or HMA for the entire extent of the US 160 mainline within the Project limits, except for the CR 225 roundabout which shall be PCCP. All segments with widening shall be overlaid the full width of the roadway. The minimum requirements listed in Table 11-5 and the selection of PCCP or HMA are not ATC eligible.

Table 11-5: Minimum Pavement Section Thicknesses

Parameters	US 160 Mainline Reconstruction	CR 225 Roundabout	US 160 Widening	US 160 Overlay
HMA Surface Course	5.5 inches	NA	5.5 inches	2 inches
PCCP Surface Course	9 inches	9.5 inches	NA	NA
Base Course	6 inches	6 inches	6 inches	NA
Subbase course (HMA Only)	15 inches	NA	15 inches	NA

Chemical stabilization of Base Courses, Subbases, and Subgrades is not allowed on this Project. Any Full Depth Reclamation (FDR) Treatment Material shall be considered as the upper portion of the Subbase course. This design requirement is not ATC eligible.

The use of geogrid to reduce the pavement section shall be limited to a maximum of a 6 inch reduction in the Subbase layer (i.e. ABC Class 2) for HMA designs. Geogrid shall not be used to reduce the pavement section on PCCP designs. Any pavement design utilizing geogrid shall follow the procedures outlined in the CDOT M-E Pavement Design Manual.

Required modifications to Contractor pavement design ATCs as a result of conditions identified by post-design subsurface investigations or Subgrade soil survey performed by the Contractor after CDOT Approval of the ATC shall be the sole responsibility of the Contractor.

Calibration factors used in ATC pavement designs shall be the same as those for the baseline pavement design and Exhibit 11-A. Modifications of calibration factors will not be allowed.

Typical CDOT HMA and PCCP mixtures from the Pavement Design Manual materials databases shall be used in all M-E Design analysis. Generic, nationwide, or similar samples of HMA and PCCP shall not be utilized in the analysis without prior Approval by CDOT, as applicable for use and design within CDOT Roadways.

The appropriate Performance Grade (PG) binder shall be determined using the web-based tool, LTPPBind Online. The binder selection output from LTPPBind shall be included in the ATC pavement design submittal.

All Material being modeled within the M-E Design software for ATC pavement designs shall be representative of actual Materials that will be installed. Deviation of modeling procedures in ATC pavement designs from to-be-installed Materials will only be allowed with CDOT's Approval. Recycled PCCP will not be allowed as a component in the new pavement surface Materials.

The maximum allowable Resilient Modulus (M_r) for design purposes shall be:

- 25,000 psi for Base Course
- 15,000 psi for Subbase course and Subgrade

This design requirement is not ATC eligible.

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 11 - Geotechnical and Roadway Pavement

Rigid pavement Surface Course designs consisting of PCCP shall contain load transfer devices tied to inside and outside Shoulders with doweled outside Shoulders. PCCP shall have a 30-year design life for new pavement. Continuously reinforced PCCP will not be permitted. Precast concrete panels will not be allowed for the permanent pavement surface.

HMA pavement shall be used for tie-ins to existing flexible pavement. Flexible pavement shall have a 20-year design life for new pavement.

Consistent subsurface drainage shall be provided as necessary to prevent saturation of the Subgrade Materials under pavement areas where Subgrade consists of reworked bedrock or surficial soil. Where subsurface drains are used, they shall extend laterally to a location at least 2 feet beyond the edge of pavement to an enclosed water conveyance system or daylighted to an open gravity flow ditch. The Contractor is responsible for managing and mitigating subsurface water per the CDOT Pavement Design Manual and Book 2, Section 13.

Where vertical sag areas in alignments can collect and concentrate subsurface water or surface water infiltration, they shall have longitudinal and/or transverse subsurface drains installed under the Pavement Structure to provide gravity drainage of the Subbase and Base Courses. Drains shall be located at the lowest point of the sag and shall be sufficient in size to drain the area. Drain outlets shall be located at culvert inlets or other appropriate locations.

The Contractor shall use the design parameters listed in Table 11-6 to prepare ATC pavement designs. This requirement is not ATC eligible.

Table 11-6: Minimum M-E Design Parameters

Parameters	Input			
	US 160 Mainline Reconstruction	CR 225 Roundabout	US 160 Widening	US 160 Overlay
Reliability	95%	95%	95%	95%
Two-way Annual Average Daily Truck Traffic (AADTT) (OTIS as of November 2025)	840	840	840	840
Number of Lanes in Design Direction	2	1	NA	2
Percent of Trucks in Design Direction	50	60	NA	60
Percent of Trucks in Design Lane	90	100	NA	90
Operational speed (in miles per hour [mph])	45 mph	20 mph	NA	60 mph
Vehicle Class Distribution (CDOT)	Cluster 3	Cluster 3	Cluster 3	Cluster 3
Growth Rate %	1.25	1.25	1.0	NA
Growth Function	Compound	Compound	Compound	NA
Climate Station	Durango, CO	Durango, CO	Durango, CO	NA

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 11 - Geotechnical and Roadway Pavement

Parameters	Input			
	US 160 Mainline Reconstruction	CR 225 Roundabout	US 160 Widening	US 160 Overlay
Depth of Water Table	10	10	10	NA
Design life (Rigid) (New Construction)	30-year minimum	30-year minimum	NA	NA
Design Life (Flexible) (New Construction)	20-year minimum	NA	20-year minimum	NA
Performance Criteria Thresholds	Per CDOT M-E Pavement Design Manual			

All M-E designs for PCCP pavement shall use 13-foot design lane width. Modification of the design lane width shall require appropriate modification of the traffic wander deviation and supporting justification for the modification.

11.3.7. Detours

The Contractor shall be responsible for designing, providing, and maintaining detour pavements in a safe and serviceable condition, subject to CDOT Acceptance and per Book 2, Section 21. The Contractor shall determine the type and thickness of detour pavement through the use of M-E Design software and shall submit a detour pavement design to CDOT for Acceptance a minimum of 14 Days prior to detour construction. Detour pavements shall be designed in accordance with the CDOT M-E Pavement Design Manual and CDOT baseline design parameters. The minimum detour thickness design shall be based on the actual Subgrade strength and traffic loading for the length of time the detour is anticipated to be in service or a minimum 2-year design life in M-E Design, whichever is greater. If the Contractor's detour pavement design requires thicknesses greater than the minimum to serve for the life of the detour pavement, these shall be provided at no additional cost. Where detours will include existing paved Shoulders, the Contractor shall verify that there is sufficient Pavement Structure within the Shoulders to accommodate detour traffic.

11.3.8. County Road Pavements

The Contractor shall verify the required Pavement Structure thicknesses for pavements associated county Roads utilizing M-E Design software and the CDOT M-E Pavement Design Manual for pavement design. Designs shall be in conformance with the minimum requirements in subsections 11.3.5 and 11.3.6. Additional geotechnical investigation may be required to verify Subgrade conditions. Supplemental Geotechnical and Pavement Design Reports shall be submitted for CDOT Acceptance prior to the pre-paving conference and at least 30 days prior to placement of HMA on the Project.

11.3.9. Existing Pavement Sections

Existing pavement within segments of reconstruction shall be removed or reclaimed as Approved by CDOT prior to construction of the new pavement section.

11.4 Construction Requirements

Excavation to the profile grades shown on the Reference Drawings, and possible alternative profile grades proposed by the Contractor, will expose transitions in Subgrade Materials. The Contractor shall perform subsurface exploration at Subgrade transition areas to confirm and document thickness of suitable native Subgrade and adequate depth of subexcavation for placement of Subbase Materials.

The Contractor shall construct the PCCP, HMA, and all other pavements in accordance with the requirements of the Contract Documents. Project Special Provisions for pavement construction are included in Book 2, Section 21. Construction of permanent pavement ATCs shall not commence until the pavement design has been Accepted by CDOT.

A minimum of 30 Days prior to the proposed construction of any pavement on the Project, a pre-paving conference shall be conducted. Prior to the pre-paving conference, the Contractor shall present mix designs to CDOT for Acceptance. The Contractor shall also present construction Paving Quality Control Plans (QCP) for HMA and PCCP to CDOT for Approval.

Where it is required to cut existing pavement, the cutting shall be done to a neat work line, full-depth, with a pavement-cutting saw or other method as Approved by CDOT.

The Contractor shall modify existing valve boxes, manholes and inlets located in paving areas so that the pavement can be placed without covering or impacting their function. The Contractor shall submit an inlet/manhole modification plan for CDOT Acceptance with the applicable Traffic Control Plan for each paving operation.

11.4.1. PCCP Construction

Concrete pavement Acceptance shall be by compressive strength criteria.

The Contractor shall texture US 160 Shoulders in a manner consistent with the CDOT M&S Standard Plans. Station stamping is not required.

All jointing plans shall be submitted on 1:50 scale plans with fully scalable and legible letters, numbers, and details. Preliminary PCCP Jointing Plans shall be submitted to CDOT for Review as part of the Preliminary Design Plans Submittal. PCCP Jointing Plans for new construction and for connecting new to existing pavement shall be submitted to CDOT for Acceptance as part of the Pre-RFC Documents and Final RFC Documents submittals.

The jointing plan shall include jointing details for surface features including inlets, valves, and manholes.

The concrete jointing plan shall follow American Concrete Paving Association (ACPA) guidelines and CDOT M Standard Plan No. M-412-1.

Disincentives for PCCP properties shall apply per the CDOT Standard Specifications.

11.4.2. HMA Pavement Construction

Asphalt pavement Acceptance shall be by gradation criteria.

Hot Mix Asphalt shall be constructed in lifts with maximum thickness of 3-inches for new construction, and in lifts with maximum thickness of 2-inches for widening and overlay sections. In widening sections, a minimum depth of 2 inches and a minimum width of 2 feet of the existing HMA adjacent to the widened section shall be milled and overlaid with a minimum of 2 inches of HMA prior to placing the HMA surface course and overlay.

Tack coats for asphalt products shall be utilized in accordance with the following:

1. Tack coat (diluted) for asphalt products on this Project shall be one part emulsified asphalt (slow setting) and one part water. The rate of application shall be 0.1 gallons per square yard.
2. A tack coat of emulsified asphalt (slow setting) is to be applied to improve bond at the following locations:
 - A. Before placing new pavement over existing pavement.
 - B. Along the face of all curbs, gutters, manholes, adjacent existing pavement, and other surfaces against which asphalt will be placed.
 - C. Between new pavement courses.

The Contactor shall prepare a Quality Control Plan (QCP) outlining the steps taken to minimize segregation of HMA. This plan shall be submitted to CDOT for Approval at the pre-paving conference and at a minimum of 30 Days prior to the planned placement of any HMA/PCCP on the Project.

Disincentives for HMA properties shall apply per the CDOT Standard Specifications.

11.4.2.1 Pavement Smoothness

The Contractor shall construct the PCCP or flexible pavement for the Project to the smoothness requirements as set forth in Table 11-7.

Table 11-7: Smoothness Requirements

Location	Pavement Smoothness Category
US 160 Mainline Reconstruction and Widening	MRI Category A (inches/mile)
US 160 Mainline Overlay	MRI Category B (inches/mile)

Pavement smoothness requirements shall apply to new Shoulders (greater than 12 feet in width), rehabilitated Shoulders (greater than 12 feet in width), and ramps in addition to the mainline pavement. Shoulders less than 12 feet in width and medians constructed as part of this Project shall be measured in accordance with subsection 105.07(a). An incentive for pavement smoothness will not be paid under this Contract. Full payment of the Upset Amount (UA) constitutes acknowledgment of meeting smoothness objectives. Disincentives for poor pavement smoothness shall apply per the CDOT Standard Specifications.

11.4.3. Shouldering

The Contractor shall use Shouldering Material as required in Book 2, Section 14. The shouldering Materials and placement shall conform to the requirements of Revision of Section 304 and 703 Aggregate Base Course (Special) included in Book 2, Section 21.

11.4.4. Park and Ride Pavement

The existing park and ride Pavement Section is 4 inches of HMA over 6 inches of ABC Class 6 over 12 inches of ABC Class 2. The minimum rehabilitation and repair of the existing park and ride pavement section shall be as follows:

1. Full depth patch areas of exposed Base Course, Subbase, or Subgrade, or "alligator" cracking.

2. Repair cracking within the existing pavement in accordance with the CDOT Standard Specifications, Section 408, for cracks smaller than 1 inch in width. Cracks larger than 1 inch in width shall be cut out and repaved full depth at a width of at least 2 feet. Crack repair Materials shall be a high heat (385 degrees or higher) applied product to mitigate the crack filler from liquifying and rising into the overlay mat during paving operations.
3. If Contractor operations cause excessive damage or deterioration in any area within the park and ride, the existing Pavement Section within that area shall be fully reconstructed to the existing Pavement Section.
4. Overlay the entire park and ride with a 2 inch HMA mat in accordance with Book 2, Section 21 and Section 400 of the CDOT Standard Specifications using SX(75) PG 58-28 HMA.

11.5 Deliverables

At a minimum, the Contractor shall submit the items specified in Table 11-8 to CDOT for Review, Acceptance, or Approval:

Table 11-8: Deliverables

Deliverables	Review, Acceptance, or Approval	Schedule
Geotechnical Investigation Plan	Review	At least 4 weeks prior to commencing field Work
Supplemental Geotechnical Investigation Reports (CDOT)	Acceptance	Within 90 Days following completion of the field Work
Supplemental Geotechnical Investigation Reports (County)	Acceptance	Within 90 Days following completion of the field Work
Preliminary Foundation Design Reports	Review	As part of the Preliminary Design Plans submittal
Foundation Design Reports	Acceptance	Within 90 Days following completion of supplemental field Work or as part of the RFC Documents submittals
Preliminary Alternate Pavement Design Report, including M-E Design software output reports	Review	As part of the Preliminary Design Plans submittal
Alternate Pavement Design Report	Acceptance	As part of the Pre-RFC Documents and Final RFC Documents submittals
Detour Paving Design	Acceptance	14 Days prior to beginning detour construction

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 11 - Geotechnical and Roadway Pavement

Deliverables	Review, Acceptance, or Approval	Schedule
Supplemental Pavement Design Reports (County)	Acceptance	Prior to the pre-paving conference and at least 30 days prior to placement of HMA on the Project.
HMA and Mix Designs	Acceptance	Prior to the pre-paving conference and at least 30 Days prior to the planned placement of any HMA on the Project
Paving Quality Control Plan (QCP)	Approval	At the pre-paving conference and at a minimum of 30 Days prior to the planned placement of any HMA/PCCP on the Project.
Inlet/Manhole Modifications Plans	Acceptance	Concurrently with each applicable Traffic Control Plan (TCP)
Preliminary PCCP Jointing Plan	Review	As part of the Preliminary Design Plans Submittal.
PCCP Jointing Plan and PCCP Jointing Plan for Connecting New to Existing Pavement	Acceptance	As part of the Pre-RFC Documents and Final RFC Documents submittals
QCP Outlining the Steps Taken to Minimize Segregation of HMA	Approval	At the pre-paving conference and at a minimum of 30 Days prior to the planned placement of any HMA on the Project

11.6 Exhibits

Exhibit 11-A Colorado Specific M-E Pavement Design Calibration Factors, 2019

Table 11-A1: New PCCP Calibration Factors

Distress Criteria	Calibration Factor
PCC Cracking	
PCC Cracking C1	2
PCC Cracking C2	1.22
PCC Cracking C4	0.6
PCC Cracking C5	-2.05
PCC Reliability Cracking Standard Deviation	$\text{Pow}(57.08 \cdot \text{CRACK}, 0.33) + 1.5$
PCC Faulting	
PCC Faulting C1	0.51040000000000008
PCC Faulting C2	0.00838
PCC Faulting C3	0.00147
PCC Faulting C4	0.008345
PCC Faulting C5	5999
PCC Faulting C6	0.8404
PCC Faulting C7	5.9293000000000005
PCC Faulting C8	400
PCC Reliability Faulting Standard Deviation	$0.0831 \cdot \text{Pow}(\text{FAULT}, 0.3426) + 0.00521$
PCC IRI-CRCP	
PCC IRI C1	3.15
PCC IRI C2	28.35
PCC IRI Initial CRCP Std. Dev.	5.4
PCC IRI-JPCP	
PCC IRI J1	0.8203
PCC IRI J2	0.44170000000000004
PCC IRI J3	1.4929000000000001
PCC IRI J4	25.240000000000002
PCC IRI Initial JPCP Std. Dev.	5.4
PCC Longitudinal Cracking	
PCC Longitudinal Cracking C4	0
PCC Longitudinal Cracking C5	0
PCC Reliability Longitudinal Cracking Standard Deviation	
PCC Punchout	
PCC CRCP C1	2
PCC CRCP C2	1.22
PCC CRCP C3	107.73
PCC CRCP C4	2.475
PCC CRCP C5	-0.785

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 11 - Geotechnical and Roadway Pavement

Distress Criteria	Calibration Factor
PCC CRCP Crack	1
PCC Reliability PO Standard Deviation	$2.208 * \text{Pow}(\text{PO}, 0.5316)$

Table 11-A2: New AC Calibration Factors

Distress Criteria	Calibration Factor
AC Cracking	
AC Cracking Bottom Standard Deviation	$1 + 15 / (1 + \exp(-3.1472 - 4.1349 * \text{LOG}_{10}(\text{BOTTOM} + 0.0001)))$
AC Cracking C1 Bottom	0.021
AC Cracking C1 Top	7
AC Cracking C2 Bottom	2.35
AC Cracking C2 Top	3.5
AC Cracking C3 Bottom	6000
AC Cracking C3 Top	0
AC Cracking C4 Top	1000
AC Cracking Top Standard Deviation	$200 + 2300 / (1 + \exp(1.072 - 2.1654 * \text{LOG}_{10}(\text{TOP} + 0.0001)))$
AC Fatigue	
AC Fatigue BF1	130.3674
AC Fatigue BF2	1
AC Fatigue BF3	1.2177989999999999
AC Fatigue K1	0.007566
AC Fatigue K2	3.9492000000000003
AC Fatigue K3	1.2810000000000001
AC Rutting	
AC Rutting BR1 (1)	4.3
AC Rutting BR2 (1)	1
AC Rutting BR3 (1)	1
AC Rutting K1 (1)	-3.35412
AC Rutting K2 (1)	1.5606
AC Rutting K3 (1)	0.3791
AC Rutting Standard Deviation	$0.1414 * \text{Pow}(\text{RUT}, 0.25) + 0.001$
IRI	
IRI Flexible C1	50
IRI Flexible C2	0.55
IRI Flexible C3	0.0111
IRI Flexible C4	0.02
IRI Flexible Over PCCC1	40.800000000000004

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 11 - Geotechnical and Roadway Pavement

Distress Criteria	Calibration Factor
IRI Flexible Over PCCC2	0.5750000000000007
IRI Flexible Over PCCC3	0.0014
IRI Flexible Over PCCC4	0.00825
Subgrade Rutting	
Fine Subgrade Rutting BS1	0.37
Fine Subgrade Rutting K1	1.35
Fine Subgrade Rutting Standard Deviation	$0.0663 * \text{Pow}(\text{SUBRUT}, 0.5) + 0.001$
Granular Subgrade Rutting BS1	0.22
Granular Subgrade Rutting K1	2.0300000000000002
Granular Subgrade Rutting Standard Deviation	$0.0104 * \text{Pow}(\text{BASERUT}, 0.67) + 0.001$
Thermal Fracture	
AC Thermal Cracking Level 1K	6.3
AC Thermal Cracking Level 1 Std. Dev.	$0.1468 * \text{THERMAL} + 65.027$
AC Thermal Cracking Level 2K	0.5
AC Thermal Cracking level 2 Std. Dev.	$0.2841 * \text{THERMAL} + 55.462$
AC Thermal Cracking Level 3K	6.3
AC Thermal Cracking Level 3 Std. Dev.	$0.3972 * \text{THERMAL} + 20.422$

Table 11-A3: AC over AC Rehabilitation Calibration Factors

Distress Criteria	Calibration Factor
AC Cracking	
AC Cracking Bottom Standard Deviation	$1+15 / (1+\exp(-3.1472-4.1349*\text{LOG10}(\text{BOTTOM}+0.0001)))$
AC Cracking C1 Bottom	0.021
AC Cracking C1 Top	7
AC Cracking C2 Bottom	2.35
AC Cracking C2 Top	3.5
AC Cracking C3 Bottom	6000
AC Cracking C3 Top	0
AC Cracking C4 Top	1000
AC Cracking Top Standard Deviation	$200 + 2300 / (1+\exp(1.072-2.1654*\text{LOG10}(\text{TOP}+0.0001)))$
AC Fatigue	
AC Fatigue BF1	130.3674
AC Fatigue BF2	1
AC Fatigue BF3	1.2177989999999999
AC Fatigue K1	0.007566

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 11 - Geotechnical and Roadway Pavement

Distress Criteria	Calibration Factor
AC Fatigue K2	3.9492000000000003
AC Fatigue K3	1.2810000000000001
AC Rutting	
AC Rutting BR1 (1)	4.3
AC Rutting BR2 (1)	1
AC Rutting BR3 (1)	1
AC Rutting K1 (1)	-3.35412
AC Rutting K2 (1)	1.5606
AC Rutting k3 (1)	0.3791
AC Rutting Standard Deviation	$0.1414 * \text{Pow}(\text{RUT}, 0.25) + 0.001$
IRI	
IRI Flexible C1	50
IRI Flexible C2	0.55
IRI Flexible C3	0.0111
IRI Flexible C4	0.02
IRI Flexible Over PCCC1	40.800000000000004
IRI Flexible Over PCCC2	0.5750000000000007
IRI Flexible Over PCCC3	0.0014
IRI Flexible Over PCCC4	0.00825
Reflective Fatigue Cracking AC	
Reflective Fatigue Cracking AC C1	0.38
Reflective Fatigue Cracking AC C2	1.6600000000000001
Reflective Fatigue Cracking AC C3	2.72
Reflective Fatigue Cracking AC C4	105.4
Reflective Fatigue Cracking AC C5	-7.0200000000000005
Reflective Fatigue Cracking AC K1	0.012
Reflective Fatigue Cracking AC K2	0.005
Reflective Fatigue Cracking AC K3	1
Reflective Fatigue Cracking AC Std. Dev.	$1.1097 * \text{Pow}(\text{FATIGUE}, 0.6804) + 1.23$
Reflective Transverse Cracking AC	
Reflective Transverse Cracking AC C1	3.22
Reflective Transverse Cracking AC C2	25.7
Reflective Transverse Cracking AC C3	0.1
Reflective Transverse Cracking AC C4	133.4
Reflective Transverse Cracking AC C5	-72.4
Reflective Transverse Cracking AC K1	0.012
Reflective Transverse Cracking AC K2	0.005
Reflective Transverse Cracking AC K3	1

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 11 - Geotechnical and Roadway Pavement

Distress Criteria	Calibration Factor
Reflective Transverse Cracking AC Std. Dev.	$70.98 * \text{Pow}(\text{TRANSVERSE}, 0.2994) + 30.12$
Subgrade Rutting	
Fine Subgrade Rutting BS1	0.37
Fine Subgrade Rutting K1	1.35
Fine Subgrade Rutting Standard Deviation	$0.0663 * \text{Pow}(\text{SUBRUT}, 0.5) + 0.001$
Granular Subgrade Rutting BS1	0.22
Granular Subgrade Rutting K1	2.0300000000000002
Granular Subgrade Rutting Standard Deviation	$0.0104 * \text{Pow}(\text{BASERUT}, 0.67) + 0.001$
Thermal Fracture	
AC Thermal Cracking Level 1K	6.3
AC Thermal Cracking Level 2K	0.5
AC Thermal Cracking Level 3K	6.3

12.0 Earthwork

This Section includes the requirements for the earthwork Work for the US 160 Elmore's Corner to Dry Creek Design-Build (Project). This Work shall be completed in accordance with the Contract Documents.

12.1 Administrative Requirements

12.1.1. Standards

The Contractor shall design and construct the Project in accordance with the Contract, including the Project Special Provisions and Standard Special Provisions in Book 2, Section 21, requirements of the standards in the documents listed in Table 12-1, and those referenced in Book 3. The Contractor shall use the latest adopted edition at the time of the Proposal Due Date.

Table 12-1: Standards

Author or Agency	Title
Colorado Department of Transportation (CDOT)	Standard Specifications for Road and Bridge Construction (Standard Specifications)
American Association of State Highway and Transportation Officials (AASHTO)	Standard Specifications for Transportation Materials and Methods of Sampling and Testing
CDOT	MS4 Construction Program Manual
CDOT	Field Materials Manual (FMM)
CDOT	Geotechnical Design Manual (GDM)
CDOT	Mechanistic-Empirical (M-E) Pavement Design Manual
Federal Highway Administration (FHWA)	Design of Mechanically Stabilized Earth Walls and Reinforced Slopes, Geotechnical Engineering Circular No. 11, Report No. FHWA-NHI-10-024, 2009 (GEC 11)

12.2 Design Requirements

12.2.1. Submittals

All submittals shall be prepared, reviewed, and submitted in accordance with the requirements set forth in Book 2, Section 4.

12.2.2. Cut and Fill Slope Design

Cut and fill slopes shall be designed with the minimum factors of safety for global stability shown in the GDM and meet all requirements shown in Book 2, Section 11. Designs that include permanent reinforcing to improve stability shall follow the guidelines in GEC 11. Evaluation of global stability for slopes shall be performed using limit-equilibrium analysis methods. Slope grades shall be designed to mitigate potential surface erosion, sloughing, and rockfall; and to promote revegetation in accordance with Book 2, Section 18.

The Contractor is responsible for stability of temporary cut and fill slopes and excavations. Global stability of temporary access Roads shall be evaluated, and the results included in the temporary access plans and method statements. The restorations of temporary Roads shall be designed with appropriate global stability per the GDM, and the restoration plans shall be included in the temporary access plans and method statements submittal.

12.3 Construction Requirements

12.3.1. Clearing and Grubbing

Trees, logs, limbs, stumps, brush, trash, unsuitable Materials, and any other items identified under clearing and grubbing shall become the property of the Contractor and shall be disposed of off Site. Clearing and grubbing shall conform to Section 201 of the CDOT Standard Specifications. The Contractor shall provide a tree removal plan in accordance with Book 2, Section 18, prior to clearing and grubbing.

The Contractor shall conduct a landscape walkthrough, in accordance with requirements of Book 2, Section 18, prior to the start of any Construction Activities.

12.3.2. Archaeological Discoveries

Archaeological Materials may be encountered within the Project limits. Refer to Book 2, Section 6.

12.3.3. Paleontological Discoveries

Paleontological Materials may be encountered within the Project limits within cut areas in the Animas Formation east of CR 225. Refer to the Geotechnical Data Report (GDR) in Book 3 for boring locations, locations, and estimated depths. Contractor shall provide an on-Site paleontological monitor when working in these areas in accordance with Book 2, Section 6.

12.3.4. Removal of Structures and Obstructions

The Contractor shall raze, remove, and dispose of all Structures and obstructions that are identified in the Basic Configuration for removal, except Utilities, Structures, and obstructions removed under other contractual agreements. Removal of Structures and obstructions shall conform to Section 202 of the CDOT Standard Specifications.

Substructures of existing Structures, regardless of location, shall be removed a minimum of 2 feet below the existing natural ground surface, the proposed ground surface, or the proposed excavation limits, whichever is at a lower elevation, and a minimum of 5 feet horizontally from proposed underground Structures.

Existing pavements shall be removed for the Work. Removals, at a minimum, shall include Surface course, Base Course, Subbase, and unsuitable embankment Materials.

In areas where embankment will be placed on top of existing pavements, the pavement and base may be rubblized in place as long as a minimum of 15 inches of Subbase (ABC Class 2) is placed over the top of the rubblized pavement. All pavement requirements in Book 2, Section 11, and all other requirements shall be met.

Millings produced from removal of asphalt by planing shall become the property of the Contractor. Removal of asphalt mat shall conform to the Project Special Provisions, Revision of Section 202 Removal of Asphalt Mat and Revision of Section 202 Removal of Asphalt Mat (Planing) in Book 2, Section 21.

12.3.5. Excavations and Embankments

The Contractor shall provide an Earthwork Management Plan (EMP) to CDOT for Approval prior to NTP2. The EMP, at a minimum, shall include a narrative discussing treatment and testing of non-durable bedrock to be used as embankment, settlement monitoring, archeological and paleontological resource monitoring, and how settlement and expectations of gas company near underpass at MP 96.1 and other settlement-sensitive utilities will be addressed.

If Contractor chooses to utilize available Material from cut slope above US 550/US 160 south roundabout, EMP must also include method statement about volume of proposed excavation, stockpile locations and volumes, and locations for reused Materials, as well as a method statement that includes haul routes and final configuration and stabilization of the modified cut slope.

Cut slopes and embankment fill slopes shall be constructed in accordance with Section 203 of the CDOT Standard Specifications and the Technical Criteria of the Contract. Embankment construction shall comply with the requirements of Project Special Provisions Revision of Sections 105, 106, and 203, Conformity to the Contract of Embankment; and in accordance with Section 203 Embankment Material of the CDOT Standard Specification. The Contractor shall perform erosion control and stormwater management in accordance with the Contract and all applicable permits. A stormwater management plan shall be prepared in accordance with Section 208 of the CDOT Standard Specifications and Book 2, Section 6.

Where the top of a cut slope meets existing grade, the slope shall be rounded and shaped to blend with the adjacent existing contours to create a pleasing appearance and to reduce erosion.

New embankment shall be benched into the existing slopes, where required, in accordance with Section 203.06 of the CDOT Standard Specifications.

Where Roadway embankment is retained by structurally designed walls (retaining walls), the retained embankment and reinforced fill Material properties shall be compatible with the soil parameters used in design of the walls. This shall apply to both externally stabilized and internally stabilized wall systems.

Underlayment requirements for flexible and rigid Pavements can be found in Book 2, Section 11. See Section 12.3.9 for additional guidance and requirements for the use of Materials. The upper 12 inches of soil or bedrock beneath the Subbase shall be scarified or pulverized such that the maximum particle size is less than 6 inches. The Material shall be classified per AASHTO M 145 and placed and compacted per CDOT Standard Specifications subsection 203.07(a). The results of geotechnical investigations performed by CDOT are provided in the Geotechnical Data Report (GDR) in Book 3. The Contractor may use non-durable bedrock, such as Animas Formation bedrock Materials, for embankment, landscape fill, or fill within the Roadway prism in accordance with Section 203 of the CDOT Standard Specifications. Any Material classified as soil-like non-durable shall be pulverized, broken down, watered, and processed to a 6-inch maximum particle size and a maximum of 30 percent retained on the 3/4-inch sieve before incorporation into embankment fill. Non-durable bedrock shall not be placed within 4 feet of the bottom of the ABC Class 2 Subbase. Non-durable bedrock shall not be placed as rock fill or rock embankment.

Subbase course Material with a Hveem R-value of at least 70 (R-70) may be an acceptable substitute for the ABC Class 2. R-70 Subbase course shall consist of soil placed on Subgrade under the pavement section and shall be at least 15 inches in depth, as stated in the previous paragraph and in Book 2, Section 11. Approval of the R-70 Subbase course Material will be contingent on the Material having a resistance value of at least 70 when tested by the Hveem Stabilometer. The Material must be stable when tested in accordance with AASHTO T-190. Prior to transport or placement of the Material, a representative sample shall be tested in accordance with Book 2, Section 4 and the Contractor's Approved Quality Management Plan (QMP).

The amount of water to be used in compacting R-70 Subbase course shall be in the moisture content range of 2 percent below optimum to 2 percent above optimum, in accordance with AASHTO test method T-180.

R-70 Subbase course shall be compacted to at least 95 percent of maximum modified Proctor dry density in accordance with AASHTO T-180. ABC Class 2 Subbase course shall be placed as rock embankment in accordance with Section 203.07 (b) of the CDOT Standard Specifications if the requirements of Section 203.03 of the CDOT Standard Specifications are met.

12.3.5.1 Temporary Access and Detours

Detour submittals are stated in Book 2, Section 11. Temporary access routes and construction shall conform to the requirements of this Section 12, Book 2, Section 6, Book 2, Section 17, Book 2, Section 18, and Project Special Provision, Revision of Section 621.

Temporary Roads to provide construction access shall be designed and constructed to minimize disturbance to existing vegetation and shall be restored to the original contours or to new contours as shown on the restoration plans. Detours shall be obliterated, and the alignments restored when they will no longer be used. Restoration of access Road and detour sites shall include stabilization, seeding, and planting as required by Book 2, Section 6, and Book 2, Section 18.

12.3.6. US 160 Mainline Subgrade Treatment

US 160 Subgrade treatment shall conform to the requirements in Book 2, Section 11.

12.3.7. Compaction Requirements

The type of compaction for the Project shall be per the CDOT Standard Specifications unless superseded by Project or Standard Special Provisions with depth of moisture-density control, as follows:

1. Full depth of all embankments.
2. 12 inches for bases of cuts and fills unless otherwise specified.
3. Compaction shall comply with (AASHTO) T-180 or T-99 testing procedures per Sections 203, 206, 304, and 603.
4. The amount of water to be used in compacting the embankment shall be in the moisture content range as specified by soil type and gradation in 203.07(a). Non-durable bedrock shall be watered to promote slaking and breakdown.
5. Soil Embankment compaction shall comply with section 203.07(a) as applicable by soil type and gradation.

12.3.8. Settlement

Fills greater than 5 feet in height and fills over settlement-sensitive utilities shall be evaluated for potential primary and long-term settlement. The evaluation should consider potential settlement of both the Materials below the base of the fill and the embankment Materials. The evaluations may need to include geotechnical investigations consisting of subsurface exploration and testing of existing conditions below the embankment. Primary settlement must be complete prior to construction of any Pavement Structure or Structure. The Contractor shall be responsible for development of methods to measure fill settlement, to mitigate excessive or long-term settlement, and to mitigate impacts to settlement-sensitive utilities. Proposed measurement and mitigation methods are to be included in the QMP. Any impacts to the Baseline Schedule due to delays caused by settlement shall be the responsibility of the Contractor.

12.3.9. Use of Materials

Earthwork volumes calculated from the reference design includes a shortage of embankment Material. Excavations within the Project limits may encounter non-durable bedrock of the Animas Formation, as shown in the GDR in Book 3. The Contractor may use excavated non-durable bedrock Materials, such as Animas Formation bedrock Materials, for embankment, landscape fill, or fill within the Roadway prism in accordance with Section 203 of the CDOT Standard Specifications. Any Material classified as soil-like non-durable shall be pulverized, broken down, watered, and processed to a 6-inch maximum particle size and a maximum of 30 percent retained on the 3/4-inch sieve before incorporation into embankment fill. Non-durable bedrock shall not be placed within 4 feet of the bottom of the ABC Class 2 Subbase. Non-durable bedrock shall not be placed as rock fill or rock embankment.

CDOT has identified locations/sources of potential borrow Materials for use on the Project, as shown in Table 12-2. The Contractor's Earthwork Management Plan shall show how it proposes to utilize Materials from the locations shown in Table 12-2.

The Contractor shall complete all necessary clearances and obtain all necessary Permits, property rights, and permissions for each borrow site presented in the Earthwork Management Plan. The Contractor shall conform to the Environmental requirements in Book 2, Section 6 for the CDOT locations listed in Table 12-2. Reestablishment of borrow areas shall conform to the corridor Aesthetics and Landscaping requirements in Book 2, Section 18, and the Standard Specifications.

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 12 - Earthwork

Table 12-2: Potential Material Sources

Supplier ¹	Pit Name	Location	Distance (miles)	Capability			
				Embankment (Large Qty)	Base Course	Asphalt	Concrete
CDOT	-	Grandview Interchange	3	x			
	-	US 550 MP 11.8 RT, Stockpile South of CR 302	7.5	x			
C&J Gravel/ C&J Ready Mix	C&J	27661 US 160, Durango, CO 81301	3	x	x		x
Four Corners Materials	Animas Glacier	9755 CR 213 Durango, CO 81303	6	x	x	x	x
	Aztec	1106 NM 516 Aztec, NM 87410	37	x	x	x	x
	Simmons/ Mud Creek	39145 US 160 Mancos, CO 81328	38	x	x		
	Bayfield	5804 Buck Hwy, Bayfield, CO 81122	15		x		
Elam/ Peak Ready Mix	Agri DLD	3559 CR 307, Durango, CO 81303	7	x	x	x	
	Dillon Pit	691 CR 252, Durango, CO 81302	17		x	x	x

Request for Proposal
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Supplier ¹	Pit Name	Location	Distance (miles)	Capability			
				Embankment (Large Qty)	Base Course	Asphalt	Concrete
Crossfire	La Boca	MM 0.4 SH 172, Ignacio, CO 81137	25		x		
	Ignacio	223 Chicken Hawk Ln, Ignacio, CO 81137	8		x		
	Piedra	12577 SH 151, Pagosa Springs. CO 81174	37		x		
Private	Craig Pit	15299 US 550, Durango, CO 81303	11	x			

1. Borrow source of Material at any location other than those described in Book 2, Section 12 shall be Approved by CDOT.

12.4 Deliverables

The Contractor shall submit the following to CDOT for Review, Acceptance, or Approval:

Table 12-3: Deliverables

Deliverable	Review, Acceptance, or Approval	Schedule
Earthwork Management Plan and Methods Statement	Approval	Prior to NTP2
Embankment Process Control Plan Per Revision of Sections 105, 106, and 203	Acceptance	Include in QMP per Book 2, Section 4

13.0 Drainage

This Section includes the requirements for the drainage Work, which includes irrigation, for the US 160 Elmore's Corner to Dry Creek Design-Build Project (Project). This Work shall be completed in accordance with the Contract Documents.

The National Environmental Policy Act (NEPA) approval documents, the US 160 Elmore's Corner East Draft Preliminary Drainage Report and the Roundabout at US 160 and CR 225A Final Hydraulic Design Report are included in the Reference Documents. These documents provide various levels of information regarding stormwater quality treatment, on Site and off Site drainage basins, design flows, and a conceptual layout of the proposed drainage for informational purposes.

For the overall system capacity, drainage shall fully accommodate the Basic Configuration and AREs that are incorporated into the Project representing the ultimate build-out of US 160. Basic Configuration improvements shall be designed and constructed to limit reconstruction of future improvements.

The Contractor shall design and construct a complete drainage system to intercept and remove surface runoff from the Project; maintain surface, channel, and conduit flow through the ROW; and convey flows crossing US 160 under Bridges and through cross drains. The drainage system shall be designed and constructed to manage subsurface flows to avoid saturation of Subgrade Materials that support the Roadway and its associated Structures. Since the Project lies outside of CDOT's Municipal Separate Storm Sewer System (MS4) boundary, permanent water quality (PWQ) control measures (CM) are not required. The Contractor shall design and construct the drainage facilities to limit drainage-related hazards within and outside the ROW, while minimizing future operation and maintenance costs, public inconvenience, flood damages, and water quality impacts during construction.

The Contractor shall evaluate all existing cross drains, storm drains, and drainage facilities to remain within the Project for condition and performance and shall provide recommendations on adequacy to CDOT for Acceptance. All drainage facilities shall be clean prior to Final Acceptance.

The Contractor shall design drainage facilities to be compatible with existing drainage systems on adjacent properties and shall preserve existing drainage patterns or discharges. The Contractor shall design drainage facilities to be compatible with proposed drainage systems on adjacent properties. All existing and proposed drainage facilities shall be designed and constructed to be commensurate with Colorado Drainage Law documented in CDOT's Drainage Design Manual. The Contractor shall obtain prior written approval from affected Local Agencies for any proposed on Site drainage improvements that connect to or impacts existing storm drains upstream or downstream of the Project. If existing drainage patterns or discharges must be changed or they increase above pre-project peak flow rates due to the design of the Project, the Contractor shall design and construct a solution that does not adversely impact CDOT or property owners outside the CDOT ROW or Easement areas. Where drainage patterns or discharges are changed from existing, the Contractor shall secure necessary approvals, permits, and additional Easements from Local Agencies and affected Stakeholders.

13.1 Administrative Requirements

13.1.1. Standards

The Contractor shall design and construct the Project in accordance with the requirements of the Contract, including the Project Special Provisions and Standard Special Provisions in Book 2, Section 21,

standards in the documents listed in Table 13-1 and those referenced in Book 3. The Contractor shall use the latest adopted edition at the time of the Proposal Due Date.

Table 13-1: Standards for Drainage

Author or Agency	Title
CDOT	Standard Specifications for Road and Bridge Construction (Standard Specifications)
CDOT	Standard Plans, M&S Standards
CDOT	Drainage Design Manual (DDM)
CDOT	Erosion Control and Stormwater Quality Guide
CDOT	Design Bulletin Pipe Material Selection Policy
CDOT	Bridge Design Manual, Section 16—Hydraulics and Drainage
Mile High Flood District (MHFD)	Urban Storm Drainage Criteria Manual, Volumes I, II, and III (USDCM)
Federal Emergency Management Agency (FEMA)	National Flood Insurance Program Regulations (44 Code of Federal Regulations [CFR] Parts 59-80)
La Plata County	La Plata County Code, Chapter 74: Development Standards and Specifications
Irrigation facilities	For irrigation ditch company facilities located within the limits of construction, the Contractor shall adhere to the applicable basis of design requirements for the respective ditch company in addition to the design standards and guidelines listed under this Section. Any inconsistencies in design requirements shall give precedence to the more stringent requirement. Refer to Section 13.2.9 of this Section for additional information pertaining to irrigation. Private irrigation requirements, if any, are covered under the respective landowner Memorandum of Agreements (MOA) which are included in Book 2, Section 9, Exhibit 9-B.

13.1.2. Design Guidelines

Where the above standards do not address a certain design criterion or element, the design guidelines listed in Table 13-2 shall be used. Current editions of all manuals and guidelines shall be used.

Table 13-2: Design Guidelines for Drainage

Author or Agency	Title
American Association of State Highway and Transportation Officials (AASHTO)	A Policy on Geometric Design of Highways and Streets
Federal Highway Administration (FHWA)	Hydraulic Design Series (HDS) No. 4, Introduction to Highway Hydraulics

Author or Agency	Title
FHWA	HDS No. 2, Highway Hydrology
FHWA	HDS No. 5, Hydraulic Design of Highway Culverts
FHWA	HDS No. 7, Hydraulic Design of Safe Bridges
FHWA	HEC-14, Design of Energy Dissipators for Culverts and Channels
FHWA	HEC-15, Design of Roadside Channels with Flexible Linings
FHWA	HEC-18, Evaluating Scour at Bridges
FHWA	HEC-20, Stream Stability at Highway Structures
FHWA	HEC-21, Design of Bridge Deck Drainage
FHWA	HEC-22, Urban Drainage Design Manual
FHWA	HEC-23 Volume 1 & 2, Bridge Scour and Stream Instability Countermeasures: Experience, Selection, and Design Guidance-Current Edition

13.1.3. Coordination with Other Agencies and Disciplines

The Contractor shall coordinate all drainage related issues with affected regulatory agencies. The Contractor shall include CDOT in all contacts with appropriate regulatory agencies.

The implementation of the conceptual drainage plan is dependent upon Agreements between CDOT and Third Parties. The Agreements between the Third Parties and CDOT are anticipated to be completed prior to the execution of the Contract. The Agreements will identify existing and proposed drainage facilities that currently receive runoff from the Project or off Site basins and that will receive runoff from Project improvements or off Site basins (see Book 2, Section 7). All proposed designs and construction shall fully comply with the terms of these Agreements.

13.1.4. Permits

The Contractor shall comply with the requirements of all Permits that are necessary for installation and operation of the Work. The Contractor shall adhere to the following Permit requirements. The Contractor shall refer to Book 2, Section 6, for additional requirements. If conflicts exist between requirements of Book 2, Section 6, and this Section, the more stringent requirement shall apply.

13.1.4.1 Colorado Discharge Permit System - Stormwater Construction Permit (CDPS-SCP)

Refer to Book 2, Section 6.

13.1.4.1.1 Stormwater Management Plan (SWMP)

Refer to Book 2, Section 6.

13.1.4.1.2 Control Measures

Refer to Book 2, Section 6.

13.1.4.1.3 Temporary Drainage

The Contractor shall be responsible for design, maintenance, and construction of temporary drainage for the Project at all times during construction. Temporary drainage shall maintain the conveyance of water or irrigation necessary to avoid damage to the Highway, the ROW, or to private property, as well as to maintain seasonal irrigation flows. The minimum size for temporary storm drains and cross drains shall be 12 inches. The minimum size of temporary underdrains shall be 4 inches. The Contractor shall be responsible for the final selection of pipe size and Material type for temporary drainage features. Temporary drainage shall be designed to avoid hydroplaning and icing for each phase or stage of construction. Temporary drainage features shall comply with Project clear zone requirements and shall not present hazards to the traveling public. The Contractor shall submit temporary drainage plans to CDOT for Acceptance within 14 Days prior to the implementation of each Traffic Control Plan (TCP) per Book 2, Section 17. The Contractor shall also submit temporary drainage As-Constructed Documents to CDOT for Acceptance and shall be maintained during the duration of the Project.

The Contractor shall keep all existing storm drainage systems used for temporary drainage on the Project in operating condition during construction. Prior to the start of construction, the Contractor shall locate and clean all existing drainage systems in accordance with Section 202 of CDOT Standard Specifications as required to maintain temporary drainage to support the Contractor's design.

The Contractor shall track all temporary drainage that is installed on the Project. It shall include location and type of pipe and connection to existing fixtures, and if required, a resolution for abandonment or removal after the permanent drainage is in place.

The Contractor shall continuously maintain temporary drainage features until removal or abandonment. Throughout the duration of the Project, the Contractor shall continually protect existing, temporary and/or new permanent inlets from sediment and pollutants and, if needed, shall remove any Material deposited in the systems. All existing, temporary, and new permanent inlets and outlets shall be identified on the SWMP Site map and shall follow the requirements of Section 208 of CDOT Standard Specifications. All temporary drainage features shall be removed when they are no longer required unless abandonment is Approved by CDOT. The proposed method and Materials for abandonment of any temporary drainage feature shall be submitted to CDOT for Approval prior to implementation.

13.1.4.1.4 Erosion Control Measures

Refer to Book 2, Section 6.

13.1.4.1.5 Site Inspections

Refer to Book 2, Section 6.

13.1.4.2 Municipal Separate Storm Sewer System

Refer to Book 2, Section 6.

13.1.4.3 Construction Dewatering Permit

Refer to Book 2, Section 6.

13.1.4.4 U.S. Army Corps of Engineers Section 404 Permit

Refer to Book 2, Section 6.

13.1.4.5 Other Regulations and Requirements

13.1.4.5.1 Floodplain Regulations

There is one FEMA designated flood zone within the Project corridor. Florida River crosses US 160 near MP 93.76 and is a FEMA Flood Zone A - Model-Backed. The Contractor shall confirm the FEMA designated flood zones for all drainageways within the Project and shall comply with all Local, State, and Federal Requirements associated with potential impacts to regulated floodplains. Regulated floodplains include the most recent flood hazard areas delineated on FEMA Flood Insurance Rate Maps (FIRM) (or Digital FIRMs [DFIRM]) or shown by more recent studies, local or regional master plans, or local floodplain maps.

13.1.4.5.2 Senate Bill 15-212 Requirements

Senate Bill 212, Colorado Revised Statutes (C.R.S.) 37-92-602 (8) (SB 212), contains requirements regarding the design of new stormwater detention and infiltration facilities and notifications regarding the intention to operate new stormwater detention and infiltration facilities. On behalf of CDOT and Local Agencies that will own and maintain new facilities, the Contractor shall provide the required information for the notifications and shall disseminate notifications for facilities owned by CDOT, as required by the statute.

The Contractor shall design stormwater detention and infiltration facilities to meet Project Technical Criteria and in accordance with the requirements of SB 15-212. Where standards conflict with SB 15-212 requirements, the more stringent requirements shall apply.

13.1.4.5.3 Senate Bill 40 Requirements

Refer to Book 2, Section 6, for additional requirements.

13.2 Design Requirements

13.2.1. Submittals

All submittals shall be prepared, reviewed, and submitted in accordance with the requirements set forth in Book 2, Section 4.

13.2.2. Drainage Design Software

The following software (most recent or compatible versions) may be used in performing drainage design calculations.

1. FHWA, HY-8	8. Aquaveo, Surface-water Modeling Solutions, SRH-2D
2. FHWA, Hydraulic Toolbox	
3. Bentley, OpenRoads Designer	9. MHFD, MHFD-Detention
4. Bentley, FlowMaster	10. MHFD, MHFD-Culvert
5. Bentley, CulvertMaster	11. MHFD, MHFD-Inlet
6. Bentley, StormCAD	12. MHFD, UD-Rational
7. Aquaveo, Watershed Modeling System	13. MHFD, SCM Design

14. MHFD, CRS 37-92602(8) Compliance Design Data Workbook	17. US Army Corps of Engineers, HEC-RAS
15. Environmental Systems Research Institute (ESRI), Arc-Geographic Information System (GIS)	18. EPA Stormwater Management Model (SWMM)
16. US Army Corps of Engineers, HEC-HMS	19. NRCS, Rock Chute Method

All software used must be capable of creating summary tables for all individual input values and all individual output values (including all hydraulic losses) and summary tables of the accumulated results of the analyses at key locations in the system.

No software or spreadsheets created by the Contractor may be used without Acceptance by CDOT. The Contractor shall demonstrate the proposed alternative provides analyses and results more adequately than the aforementioned software. Alternative software shall also provide results of comparable accuracy and reliability prior to CDOT Acceptance. CDOT is under no obligation to consider alternatives to Accepted software and spreadsheets.

13.2.3. Permanent and Interim Drainage

The Contractor shall provide drainage design for all Work within the Project limits in accordance with Book 2, Section 1, Basic Configuration. If stockpiles are placed within CDOT ROW per Book 2, Section 12, and the Earthwork Management Plan (EMP), the Contractor shall develop an interim drainage design meeting Technical Criteria and shall be included with the appropriate drainage submittals.

13.2.4. Data Collection

The Contractor shall identify all drainage related issues using available data, including, but not limited to, requirements imposed by Local, State, and Federal Regulations and official documents concerning the Project.

The Contractor shall obtain all relevant storm drainage improvement plans, drainage planning studies, and drainage reports for the Project area from CDOT, FEMA, and all Local Agencies, including La Plata County, City of Durango, and appropriate ditch companies. The US 160 Elmore's Corner East Draft Preliminary Drainage Report and the Roundabout at US 160 and CR 225A Final Hydraulic Design Report include documentation that relates to drainage adjacent to the Project. CDOT makes no representation as to accuracy, completeness, or adequacy of these documents. The Contractor shall obtain the most recent available LiDAR information from USGS or CWCB (most current), where site survey doesn't exist, to complete the necessary drainage analyses.

The Contractor shall obtain any existing and known projected future land uses from all Local Agencies, as necessary, to design facilities to be compatible with drainage systems, existing or proposed, on adjacent properties.

The Contractor shall perform detailed mapping and surveys, as required, to verify locations of existing drainage features necessary for the proposed drainage design. The Contractor shall further verify or identify boundaries, flow patterns, and land uses of drainage basins based on field observations. Refer to Book 2, Section 10 for a list of available Project survey.

13.2.5. Surface Hydrology

The Contractor shall perform hydrologic analyses for all on Site drainage basins and for all local off Site drainage areas immediately adjacent to the Project that contribute runoff to on Site drainage basins. Local, on Site drainage basins shall include those that manage runoff generated from the Project improvements. Local, off Site drainage basins shall include those contributing flow onto the Project where flow rates are not quantified by published documents. Analyses shall be based on known projected future land uses.

The Contractor shall perform hydrologic analyses for any locations where published design flow rates are not available or where changes in off Site drainage patterns or increased discharges are proposed as a result of the design of the Project.

13.2.5.1 Design Frequencies

For all CDOT owned facilities, the design storm frequency shall comply with *Table 7.2, Table of Design Frequencies*, in the *CDOT Drainage Design Manual (DDM)* for rural areas.

The US 160 cross drain design storm frequency shall be for rural, multi-lane Roads. The design storm frequency for all other Roadways outside of CDOT ROW affected by the Project shall comply with the affected Local Agency's criteria.

13.2.5.2 Precipitation

Precipitation data for all drainage analyses shall be obtained from the National Oceanic and Atmospheric Administration (NOAA) Atlas 14, *Precipitation Frequency Atlas of the Western United States, Volume III, Colorado*. Precipitation intensities from NOAA Atlas 14 shall be used for all Rational Method calculations.

13.2.5.3 Hydrologic Methods

The Contractor shall perform all necessary hydrologic analyses required to evaluate and satisfactorily comply with all Project design standards and criteria, except as provided by previously published documents as described in this Section. The Contractor shall perform the necessary hydrologic analyses using the following methods:

1. Areas less than 90 acres shall be evaluated using the Rational Method as described in the MHFD *USDCM*.
2. Areas greater than 90 acres shall be evaluated using methods described in the CDOT *DDM*.
3. For Rational Method time of concentration calculations, urban areas are defined as tributary areas with an imperviousness greater than 20%.
4. Florida River hydrology shall be based on effective FEMA flows.

13.2.6. Hydraulic Structures

13.2.6.1 Roadways

Roadway component geometric configurations shall be designed to provide adequate drainage and minimize hydroplaning and icing. Superelevation transitions shall be designed to eliminate 0.0% cross slopes on Bridge decks or on profile crest and sag curves where grades flatter than 0.5% occur.

Cross slopes shall be in accordance with the requirements of Book 2, Section 14.

13.2.6.1.1 Roadway Profile

Longitudinal grades shall be in accordance with the requirements of Book 2, Section 14. Where there is curb and gutter or Guardrail Type 9 Single Sloped Barrier and the minimum profile grades cannot be maintained, flanking inlets shall be constructed, as required in the CDOT *DDM*.

13.2.6.1.2 Allowable Flow Spreads

The Contractor shall design all Roadway drain systems including gutters, inlets, inlet spacing, catch basins, laterals, and trunk lines, using Section 13.2 of the CDOT *DDM*.

All other Roadways outside of CDOT ROW shall comply with the Local Agency's criteria.

13.2.6.1.3 Edge Treatment

In areas where the Roadway pavement discharges runoff to barrier or guardrail with curb, inlets, CDOT Standard embankment protectors shall be used to manage flow from the curb section, down the Roadway embankment and protect the embankment from erosion. Erosion protection shall be constructed at the embankment protector outfalls beyond the toe of slope.

13.2.6.1.4 Roadside Ditches, Open Channels, and Slope Protection

Roadside ditches along all existing and proposed Roadways shall be designed per the CDOT *DDM* for the design frequency event with a minimum freeboard of 1-foot measured from the bottom of the Class 6 road base layer and shall not exceed edge of pavement for the 100-year storm frequency peak discharge. The Contractor is not responsible for analyzing or improving existing Roadside ditches that are not impacted or improved as part of this Project.

For infill sections and median ditches, the water surface profile elevation shall not exceed the edge of pavement for the 100-year storm frequency peak discharge.

All open channels within the Project shall be designed to capture and convey the required design frequency in accordance with Chapter 7 of the CDOT *DDM* and designed in accordance with Chapter 8 of the CDOT *DDM*. Capacity shall be determined using Manning's Equation or backwater analysis at culverts, inlets, and other hydraulic Structures.

All proposed Roadside ditches, swales, or other areas of concentrated flow shall be evaluated to determine the channel hydraulic shear stresses for the required design flow frequency in accordance with the CDOT *DDM*. Where hydraulic shear stresses are found to exceed the maximum allowable shear stresses, a Turf Reinforcement Mat (TRM) or riprap armoring shall be designed and placed to protect against the design shear stresses in the proposed ditch or channel facility. The maximum permissible shear stresses for a TRM Class 3 (CDOT *Standard Special Provision 216*) must meet or exceed the criteria identified in the CDOT *Erosion Control and Stormwater Quality Guide* or FHWA *Design of Roadside Channels with Flexible Linings*, HEC-15. Where slopes exceed the maximum allowable gradient of 5 percent or where the maximum allowable shear stress of 3.1 pounds per square foot is exceeded, embedded riprap armoring or other permanent erosion control treatment shall be designed and placed to protect against the design shear stresses in the proposed ditch/channel facility.

Flexible channel linings shall be designed in accordance with FHWA *Design of Roadside Channels with Flexible Linings*, HEC-15.

All abandoned concrete diversion Structures in Roadside ditches and open channels shall be removed and disposed of off Site.

13.2.6.2 Cross Drains

Cross drains shall be defined as pipes or culverts that convey water from one side of the Highway to the other. All cross drains shall be designed for the design frequency in accordance Chapter 7 of the CDOT *DDM* with no inundation of the Highway paved Shoulders or adjacent properties and no inadvertent detention or retention.

Hydraulic design of cross drains shall be based on the procedures included in FHWA HDS-5, *Hydraulic Design of Highway Culverts*. Hydraulic design data shall be listed on the final design and RFC Documents for each cross drain in accordance with Chapter 4 of the CDOT *DDM*.

The minimum allowable pipe size for cross drains shall be in accordance with Chapter 9 of the CDOT *DDM*. End treatment shall be provided for all cross drain pipe ends, regardless of size. Toe walls are required at inlet and outlet for equivalent diameter 36-inch conduits and larger. Concrete aprons with a toe wall shall be installed at the ends of box culverts with the necessary scour protection. To reduce culvert sizes, improved inlets may be used. Improved inlets shall be designed based on FHWA HDS-5, *Hydraulic Design of Highway Culverts*.

All cross drain and small mammal crossing pipe Material shall comply with Section 624 - Drainage Pipe in the CDOT Standard Specifications. Due to the risk of fires, ditch burning activities and large temperature fluctuations, the last 8 feet at each end of the culvert shall be reinforced concrete pipe (RCP). Contractor shall provide details for smooth transitions between varying pipe Materials.

Allowable headwater elevation for the design frequency peak discharge shall be designed as described in Chapter 9.2.2 of the CDOT *DDM*. In addition, allowable headwater elevation shall be limited by the minimum of the following:

- Non-damaging to upstream or adjacent property.
- Below outside edge of Roadway Shoulder elevation.
- Headwater to depth ratio requirements shall be as shown in the CDOT *DDM*, Table 9.3.
- No overflow to another drainage basin is allowed.

The use of sag pipes or inverted siphons shall not be allowed.

Small mammal crossing pipes shall not be used for stormwater conveyance. Refer to Book 2, Section 6, for additional requirements.

Cross drains shall be continuous and straight. Bends or turns shall not be permitted without prior Approval from CDOT.

Cross drains that are connected directly to off Site existing drainage systems shall have a manhole constructed inside and adjacent to CDOT ROW, to join the CDOT cross drain to the existing drainage system. Manholes shall be constructed of the appropriate size and type, according to the CDOT *DDM*.

All stormwater runoff, either from off Site or on Site areas, shall drain freely to an existing cross drainage or storm drain system.

All cross drain outfall protection or energy dissipation shall be designed for the culvert design storm frequency and per FHWA HEC-14.

Rehabilitation instead of replacement of existing cross drains shall be per applicable methods identified in the CDOT *DDM*. Cure-in-Place Pipe (CIPP) shall only be used on pipes 48 inches or smaller and shall be UV-cured not steam cured.

Refer to Exhibit 13-A for a list of culverts within the Project corridor and the assumed improvements for pricing purposes.

13.2.6.3 Storm Drains

Storm drains shall be defined as a network of pipes that connect inlets, manholes, and other drainage features to an outfall. Cross drains and side drains connected to the storm drainage system are considered part of the storm drain system for the purpose of determining the hydraulic performance of storm drains. Runoff generated from within the limits of the Project and/or draining onto the Project from off Site areas shall be collected and conveyed in a drainage system designed for the design frequencies included herein. The drainage system shall be designed to not worsen the existing conditions for properties outside the CDOT ROW or Easement. Ponding shall not be permitted within the Project, except at specifically designed stormwater detention and PWQ CM facilities.

Hydraulic analyses and plans for storm drains that are connected to existing storm drain systems upstream or downstream of the Project must be coordinated with affected Local Agencies. The hydraulic analyses shall identify the impacts to the existing storm drain systems caused by the connections and proposed combined peak design discharges for the overall systems. The Contractor shall obtain acceptance of the proposed design by Local Agencies affected by connections to their storm drain systems and for runoff leaving the Project.

The minimum allowable pipe diameter for storm drain systems shall be 18 inches.

All storm drain pipe Material shall comply with Section 624 - Drainage Pipe in the CDOT Standard Specifications. Due to the risk of fires, ditch burning activities and large temperature fluctuations, the last 8 feet of the storm drain outfall shall be reinforced concrete pipe (RCP). Contractor shall provide details for smooth transitions between varying pipe Materials.

The use of sag pipes or inverted siphons are not allowed.

Storm drains shall not decrease in size in the downstream direction. From upstream to downstream, pipe diameters shall remain constant or increase. All bends and turns shall occur within a manhole or inlet.

13.2.6.3.1 Hydraulic Design of Storm Drains

Storm drain system design shall be performed using hydraulic gradient analysis to account for all friction losses and minor losses. Friction losses shall be calculated using Manning's Equation. Minor losses at junctions, manholes, bends, and other appurtenances shall be calculated based on design procedures in FHWA HEC-22, *Urban Drainage Design Manual*.

Storm drains under the Highway shall be designed with the Hydraulic Grade Line (HGL) at or below the crown of pipe for the design frequency peak discharge. The Hydraulic Grade Line (HGL) shall be at or below the surface of pavement and inlet grates in the 100-year frequency peak discharge. Local Agency

criteria shall be followed for storm drain system design outside of CDOT ROW. The hydraulic gradient for the minor and major design peak discharges shall be plotted for all storm drains in each storm drain profile.

The flow velocity of storm drains shall not be less than 3 feet per second for the design frequency peak discharge and shall not be greater than 22 feet per second for the 100-year frequency peak discharge. This minimum storm drain flow velocity requirement may be waived, at CDOT's sole discretion, in locations where tailwater controls the flow and no alternative solution is evident.

13.2.6.3.2 Storm Drain Alignment and Profile

Storm drain alignments shall be straight between Structures. Profiles of all storm drains shall be straight grades between Structures.

The Contractor shall comply with Local Agency criteria for storm drains outside CDOT ROW.

13.2.6.3.3 Inlets

Inlets are required at locations to collect runoff within the design controls specified in this Section. In addition, there are locations where inlets may be necessary with little regard to contributing drainage area. These locations shall be designated on the plans prior to computations regarding discharge, water spread, inlet capacity, or bypass.

1. CDOT *M&S Standard Plans* inlets shall be used on all CDOT Roadways.
2. The following criteria apply to inlets:
 - A. Type C and Type D inlets shall not be allowed within the Roadway pavement limits unless used in conjunction with embankment protectors.
 - B. Vane grate inlets shall be used in the Shoulders of the Highway and shall not extend into adjacent travel lanes.
 - C. Close mesh grates shall be used for Type C and D inlets near pedestrian areas; concrete aprons shall be installed on Type C and D inlets.
 - D. Type 13 or Type C inlets shall be used in conjunction with valley pans.
 - E. Pursuant to the CDOT Design Guide, placement of drainage inlet grates should be avoided within a bicycle facility regardless of whether that facility is a bike lane, Shoulder, or shared lane. If this is not possible, drainage inlet grates should be replaced with bicycle-safe grates that maintain the required hydraulic capacity for the inlet. A bicycle-safe grate should have, at a minimum, bars perpendicular to the travel direction at a 4 inch center-to-center spacing.
3. Inlet hydraulic efficiency and spacing shall be determined based on design procedures in FHWA *HEC-22, Urban Drainage Design Manual*; 100 percent of the bypass flow shall be added to the next downstream inlet.
4. For a continuous storm drain system, maximum inlet spacing shall be designed based on allowable flow spread or the manhole spacing criteria, whichever is less.

5. The sag vertical curve or sump area on a Roadway requires an inlet at the lowest point and flanking inlets on each side of the lowest inlet to provide relief from debris clogging. Inlets shall be located such that the design criteria for spread are maintained.
6. Inlets are required 10 feet upstream from the point where the street cross slope begins to super-elevate toward the opposite side to minimize cross street flow. Bypass flow across the Highway shall be limited to 0.1 cubic foot per second (cfs) or less for the 10-year design frequency. Sump inlets shall not be placed at the zero point of the superelevation transition.
7. Trench drains are not be allowed in the traveled way or transverse to traffic flow on the Highway.
8. Inlets and inlet aprons shall not be located in the travel lanes of the Highway or CDOT Roadways.
9. A clogging factor of 50 percent shall be used for sizing single-unit inlet grates. A clogging factor of 10 percent shall be used for sizing single-unit curb opening inlets. For multiple-unit inlets, the clogging factor may be reduced as recommended in the MHFD *USDCM, Volume I*, Chapter 7, Section 3.

13.2.6.3.4 Maintenance Access Structures

Maintenance access Structures shall be incorporated into the storm drain system to provide access for inspection, cleaning, and other maintenance activities. Maintenance access shall be constructed at all junctions, changes in pipe size, drops, and grade changes. Maintenance access shall be provided at any change in horizontal alignment greater than 2 degrees. Maintenance access shall not be located in travel lanes of the Highway. Inlets should be used for maintenance access where permitted by pipe sizes according to the CDOT *DDM*.

A lateral that is less than half the size (inside diameter) of the trunkline, and no more than 75 feet long may be connected to the trunkline with a prefabricated pipe wye or tee connection. Larger laterals shall be connected to the trunkline with a maintenance access Structure.

The spacing of maintenance access Structures shall be in accordance with the criteria identified in the CDOT *DDM*. The spacing of maintenance access Structures outside of CDOT ROW shall be in accordance with Local Agency criteria. For storm drain diameters of 60 inches or greater, maintenance access Structures shall be located considering Site conditions that provide for staging of large-scale maintenance Activities.

Maintenance access and junction Structure floors shall be shaped to fit the pipe inverts to minimize hydraulic losses within the Structure.

Maintenance access Structures, junction Structures, and vaults in Roadside areas (outside the pavement) shall be designed to extend a maximum of 2 inches above the finished grade all around the Structure.

13.2.6.4 Water Quality and Detention Facilities

PWQ control measures are not required per CDOT's MS4 permit because the Project lies outside CDOT's MS4 Boundary. If PWQ is implemented, the Contractor is to design, construct, and locate all ponds, low impact development (LIDs), and water quality vaults in accordance with the CDOT *DDM*.

Detention/runoff reduction facilities shall be designed and constructed in accordance with the CDOT *DDM*.

13.2.6.5 Off Site Drainage Systems

The Contractor shall assess the impacts of the increase in peak flows on the downstream system and provide as part of the drainage report to CDOT for Review and Acceptance. The report shall provide information regarding the source and amount of flows discharged off Site and the characteristics of the off Site system receiving the increase in peak flow. The report shall include options for mitigating the increase in peak flows to the off Site system. The report also shall include a record of communications with the owner of the off Site system and their stated position regarding the proposed design to address potential impacts due to the increase in peak flows.

The Contractor shall take immediate temporary action to mitigate potential impacts due to the increased peak flows while awaiting Acceptance for proposal to provide permanent mitigation of potential impacts.

The Contractor shall mitigate the increase in anticipated peak flow rates, if necessary, based on the Local Agency direction and as Approved by CDOT.

13.2.6.6 Bridge Deck Drainage

All deck drainage should be carried to the ends of the Bridge. Drains at the end of the Bridge should have sufficient inlet capacity to carry all of the minor drainage. A curb roll is required from the Bridge ends to the end of the guardrail. At the end of this curb roll, an inlet and pipe (preferred design) or well depressed rundown with a transition from the curb roll is required to convey the drainage down the fill slope. Additionally, storm drains shall be provided at the ends of the Bridge to minimize flow onto the Bridge. No intermediate deck drainage is allowed.

See Book 2, Section 16, for more information on Bridge deck drainage.

13.2.6.7 Stormwater Pumping Stations

The use of stormwater pumping stations shall not be permitted.

13.2.6.8 Drain Outfalls

Cross Drain and storm drain outfalls shall be designed such that the outlet elevation matches the receiving drainageway flowline. Outfalls shall be oriented in a downstream direction and designed to minimize existing habitat disturbances during construction.

Permanent erosion protection shall be provided at all outfalls and along the drainage flowlines where needed. Energy dissipaters shall be designed in accordance with the CDOT *DDM*.

All drain outfalls require either a headwall or flared end section regardless of pipe size. All drain outfalls with a pipe diameter (or an equivalent diameter) of 36 inches or larger shall require toe walls. End sections or headwalls shall be used for drains 48 inches and smaller. A headwall shall be used for any drain 54 inches and larger. Saddle headwalls shall not be used. Concrete pipe joint fasteners for end sections shall be installed so that a minimum of 15 linear feet of the outlet end of the pipe are mechanically locked together.

The effect of tailwater in the receiving drainageway on the hydraulics of the outfall shall be evaluated. The design frequency of the tailwater of the receiving drainageway shall be based on the comparison of design discharge frequencies for coincidental occurrence included in FHWA *HEC-22, Urban Drainage Design Manual*.

Grouted boulders are not preferred. If grouted boulder rundowns are used, they must extend down to bedrock or to at least 2 feet below the ultimate scour depth in the channel in the receiving water, whichever is less.

13.2.7. Scour and Erosion Control

Scour, rill, or channel erosion, slope failures, and areas with poor vegetative cover within the Project limits caused by the Work shall be identified and corrected by the Contractor.

Bridges over drainageways shall be designed in accordance with the CDOT *DDM* and the CDOT *Bridge Design Manual*. Scour analyses shall be completed for all existing and proposed Bridges based on the procedures in the FHWA *HEC-18, Evaluating Scour at Bridges*, and *HEC-20, Stream Stability at Highway Structures*. Scour countermeasures shall be designed in accordance with the FHWA *HEC-23, Bridge Scour and Stream Instability Countermeasures: Experience, Selection, and Design Guidance-Current Edition*. Roadway embankment performance shall be the same as the design frequency for cross culverts. Table 10.1 of the CDOT *DDM* is not applicable for this Project.

Outlet protection for culverts shall be designed in accordance with the standards of the *USDCM*, Chapter 9, Section 3, FHWA *HDS-5, Hydraulic Design of Highway Culverts* or MHFD *USDCM Design of Low Tailwater Riprap Basins for Storm Sewer Pipe Outlets* or FHWA *HEC-14* or FHWA *HEC-23*. The design frequency for outlet protection and energy dissipation shall be the same as the design frequency used for the culvert design. A comparison between the existing condition and proposed condition is required. The proposed condition hydraulics shall match or improve the existing condition hydraulics.

The following minimum criteria apply to riprap installations:

1. Thickness shall not be less than the spherical diameter of the D100 stone or less than 2.0 times the spherical diameter of the D50 stone, whichever results in the greater thickness.
2. Thickness shall not be less than 12 inches for practical placement.
3. The thickness determined by the criteria above, shall be increased by 50 percent where the riprap is placed underwater to provide for uncertainties associated with this type of placement.
4. Stones greater than the D100 spherical diameter shall not be used.
5. All stone shall be designed with a specific gravity of at least 2.25. This may be adjusted based on certified material tests from the supplier.
6. Minimum D50 shall not be less than 9 inches.
7. Geotextile (Drainage) (Class 1), non-woven shall be used under all riprap per CDOT M&S Standards.

13.2.8. Subsurface Drainage Systems

Where needed, subsurface drainage systems (e.g., underdrains, edge drains) shall be designed in accordance with the CDOT *DDM*. Subsurface drainage systems shall not be discharged to the stormwater systems, except for open channel conveyances or where approved by CDOT. Clean-outs shall be provided at 300-ft intervals, at grade changes, and at changes in alignment.

Groundwater may be encountered during construction of this Project. If groundwater is day-lighted to the ground surface via storm drains (point source), a Subterranean Permit from CDPHE shall be

required. Upon completion of the Project, the permit shall be transferred to CDOT. The Contractor shall be responsible for obtaining the permit. Refer to Book 2, Section 6.

There are a known spring and seep between MP 93.2 and MP 93.5 (STA 215+00 and STA 230+00). There are existing pipes and underdrain systems in place that can remain or be removed. New subsurface drainage shall be provided to prevent saturation of Subgrade Materials for pavements, Structures, and embankments. The Contractor shall provide subsurface drainage systems that replace or exceed the capacities and functionality of the existing systems. Where subsurface drains are used, they shall extend laterally to a location at least 2 feet beyond the edge of pavement and run longitudinally to capture and convey subsurface drainage away from the highway section. Subsurface drains shall be placed at a depth equal to or exceeding the depth of any existing subsurface drainage and any proposed bedding Material for storm drains. If underdrains or subsurface flows are found to exist in other locations, the Contractor shall replace the capacities and functionality of all existing groundwater drains encountered during construction or replace drains if impacted by construction. In all cases, subsurface drainage design should acknowledge the existing subsurface drainage systems and their interface with the Contractor's design. Geotechnical investigations conducted for the Project are provided in the Reference Documents.

If the Contractor encounters wells or springs within the Project limits, the Contractor shall protect the flow quantity, water quality, access, and availability of the wells and springs during and after construction.

13.2.9. Irrigation Facilities

All irrigation ditches, canals, and laterals crossing the Project shall be protected and preserved in place, or reconstructed as needed to accommodate the Project, and the Contractor shall ensure all facilities are maintained so that normal ditch operations are uninterrupted. Irrigation flows commence April 1 and cease November 1 of each year, unless otherwise agreed to by the owner. The Contractor shall coordinate with the appropriate owners to identify and mitigate any potential disturbance to the irrigation facilities or operations during irrigation season and shall plan and coordinate its works to not disrupt irrigation flows. Temporary irrigation conveyances may be required by the Contractor. All irrigation facilities impacted by the Project shall be cleaned, inspected, and approved by the respective owners prior to Final Acceptance. Additional information pertaining to irrigation design and construction requirements can be found in Book 2, Section 7, Table 7-1 for ditch companies and Book 2, Section 9, Exhibit 9-B for the private irrigation laterals.

Irrigation facilities shall be replaced in kind, including pipe sizes and slide gate sizes. Contractor shall reset or replace flumes if impacted.

The Contractor shall limit stormwater discharges to irrigation ditches to be equal to or less than pre-Project discharges, unless otherwise prohibited by the owner, as is the case with the Florida Consolidated Ditch Company.

See Exhibit 13-B for a summary of irrigation facilities potentially affected by the Project. For additional information on coordination with the Irrigation Owners, refer to Book 2, Section 7 Table 7-1 and Book 2, Section 9 and Exhibit 9-B.

13.2.10. Area-Specific Drainage and Irrigation Requirements and/or Information

13.2.10.1 Carmon Property Drainage

Near MP 92.41 (STA 172+00) on the south side of US 160 is the existing access to the Carmon property. Per discussions with the property owner, the driveway is frequently overtopped at the driveway culvert located about 370 feet south of US 160. The Contractor shall design and construct a drainage solution to mitigate increased runoff tributary to this culvert and does not adversely impact the property.

Refer to the MOA requirements and special conditions in Book 2, Section 9, Exhibit 9-B.

13.2.10.2 McClean Spring

The McClean Spring discharges around MP 93.37 (STA 224+00) via a CMP on the north side of US 160. Historically, flows from the McClean Spring where conveyed northwest from this location in a ditch. The ditch has not been maintained and in recent years, flows from the McClean Spring run northeast down the roadway embankment to the McClure Murray ditch.

CDOT is working to purchase the deeded water right from the owner. If successful, the Contractor shall be required to manage the subsurface flows per Section 13.2.8. If CDOT is unable to secure the water right, the Contractor shall design and construct a system to discharge flows to the historic ditch location at an elevation that matches the existing Spring elevation.

Refer to the MOA requirements and special conditions in Book 2, Section 9, Exhibit 9-B.

13.2.10.3 McClure Murray Irrigation

The McClure Murray Irrigation crosses US 160 near MP 93.42 (STA 227+00) via 30 inch and 24 inch CSPs. Due to the condition, depth and age of the pipes, the existing pipes shall be abandoned in place using Structure Backfill (flow-fill) per CDOT specifications. Replacement pipes shall be located to minimize the depth of the pipes to the extent practicable and shall be upsized 12 inches above the required pipe capacity to account for future culvert lining needs.

13.2.10.4 Florida River

Florida River is designated a FEMA Flood Zone A - Model-Backed. Bridge improvements at the river crossing shall require a Floodplain Development Permit with La Plata County. Based on discussions with La Plata County, neither a Conditional Letter of Map Revision (CLOMR) nor Letter of Map Revision (LOMR) is required if a rise in the 100-year water surface elevation is contained within CDOT ROW and the tie-in to the effective model is within CDOT ROW. The Contractor shall obtain the necessary floodplain permit from La Plata County.

New Mexico Meadow Jumping Mouse Habitat establishment and associated grading required per Book 2, Section 6 near the Florida River shall limit impact to the Florida River floodplain to the extent practicable.

The Contractor shall create habitat suitable for New Mexico Meadow Jumping Mouse occupation by converting upland areas into wetland and riparian habitats as described in Book 2, Section 21. Grading from surrounding ground to habitat elevations (as shown in Book 2, Section 1) shall be no steeper than 4:1 but in certain areas as needed, a maximum of 3:1 slopes is acceptable when there is a need to minimize grading impacts to adjacent features or ROW. The Contractor shall allow for maintenance access as described in Book 2, Section 14. Grading within the habitat shall generally follow adjacent grades but shall be no flatter than 0.5% or steeper than 3%.

The habitat bench elevation shall support vegetation as described in Book 2, Section 18.

13.3 Construction Requirements

The Contractor shall map all new and existing (remaining) outfalls for inclusion into CDOT's GIS system.

The Contractor shall resolve all conflicts between Utilities and proposed drainage improvements in accordance with Book 2, Section 8.

13.3.1. Pipe Material Selection Policy

The Contractor shall comply with the CDOT *Design Bulletin Pipe Material Selection Policy*, except where required pipe Materials are specified herein. The most current version, as signed by the CDOT Chief Engineer at the time of the Proposal Due Date, shall be utilized.

Clarifications of the CDOT *Pipe Material Selection Policy* are as follows:

- The Contractor shall sample soil and water.
- References to "Project Manager" in the Guide shall be the Contractor.
- The Contractor shall provide a sampling schedule for pipe selection to CDOT for review 30 Days after issuance of the First Notice to Proceed (NTP1).
- Pipe Material selection report shall be submitted as part of the Drainage Reports.
- Storm Drains that are both parallel to and within the strap zone of retaining walls shall be solid wall plastic conduit.
- Irrigation siphons shall be constructed using nonmetallic pipe with watertight fittings. All end treatments, connections and ancillary components (including Structures) shall be watertight and/or waterproofed.
- For irrigation pipes conveying Ditch Company owned water, the Contractor shall consult the requirements for the respective owner. Concrete pipe shall be required for all Ditch Company roadway crossings (e.g. Florida Consolidated Ditch Company and Pioneer Ditch Company).

13.4 Deliverables

13.4.1. Drainage Reports

13.4.1.1 Master Drainage Report

The Contractor shall prepare a Master Drainage Report and submit it to CDOT for Acceptance concurrent with the Preliminary Design Document submittal.

13.4.1.2 Interim Drainage Reports

The purpose of an Interim Drainage Report is to actively capture and document all changes to design between the Master and Final Report submittals. Interim Drainage Reports shall be submitted by the Contractor to CDOT for Acceptance prior to the RFC Documents submittal. The Contractor shall create and include an index of changes to design with each Interim Drainage Report submittal.

13.4.1.3 Final Drainage Report

The purpose of the Final Drainage Report is to integrate all Accepted Interim Drainage Reports into one stand-alone report for the Project. The Final Drainage Report shall be prepared by the Contractor and submitted to CDOT for Acceptance prior to Notice of Final Acceptance. The Contractor shall include a summary index that incorporates all interim report changes with the Final Drainage Report submittal. No addenda to the Final Drainage Report shall be permitted.

13.4.1.4 Documentation Procedure

Drainage Reports shall follow the documentation procedure in Chapter 4 of the CDOT *DDM* and shall include the following:

1. Basic design data, design assumptions, hydrologic and hydraulic methodologies, assumptions, model inputs and outputs, detailed calculations, computations and computer printouts, relevant design criteria, circumstances influencing design, discussion of all drainage issues and drainage facilities, appropriate maps, figures, and plans.
2. Rationale for sizing and selection of all drainage elements, including, but not limited to, catch basins, storm drain systems, cross drains, ditches, swales, detention/infiltration facilities, and pipe Materials selection.
3. Hydraulic data sheets with a summary of hydraulic design information for each storm drain and cross drain.
4. A delineation of contributing basins, existing drainage patterns for both Highway and cross-drainage flows, drainage parameters, inflow hydrographs for detention basins, detention basin sizing, discharge characteristics, discharge hydrographs for detention basins, detention times, and other information necessary for the design of the drainage system; all drainage reports shall include documentation of tributary flows from areas outside of each construction segment, as defined by the Contractor.
5. Documentation that the proposed runoff shall be controlled and treated in accordance with this Section and all drainage Permits.
6. Documentation of existing drainage discharge rates, outfall locations, and pond release rates.
7. Documentation of the impact of proposed drainage designs on existing drainage facilities.

In addition to the documentation procedure in Chapter 4 of the CDOT *DDM*, the Contractor shall follow the report outline below. The section and subsection headings shall be maintained at a minimum. If a section or subsection is not used, the reason it is not applicable to the Project shall be specified. New sections or additional subsections shall be added as necessary to fully document the drainage design.

13.4.1.5 Drainage Report Outline

The Drainage Reports shall use the report outline below as guidance. The report outline shall also address the documentation requirements set forth in Chapter 4 of CDOT's *DDM*. New sections or additional subsections shall be added as necessary to fully document the design:

1. Table Of Contents
2. Project Overview
 - A. Project limits
 - B. Brief Project Overview
 - C. Planned project phasing

- D. Drainage report purpose and anticipated report submittals based on Project phasing
- 3. Introduction
 - A. Project Location
 - B. Project Description
 - C. Purpose and Scope
 - i. Objectives of the drainage analysis
 - ii. Drainage elements evaluated
- 4. Existing Conditions
 - A. Study Area Description
 - i. Topography
 - ii. Land use
 - iii. Soil types and hydrologic soil groups
 - B. Major Basin and Sub-basin descriptions
 - C. Existing Drainage Patterns
 - D. Existing Drainage Features
 - i. Culverts
 - ii. Storm drain systems
 - iii. Ditches and channels
 - iv. Outfalls and receiving waters
 - E. Existing Floodplains and Regulatory Constraints
 - F. Existing Irrigation features
- 5. Drainage and Irrigation Design Criteria
 - A. Applicable codes, standards and manuals
 - B. Hydrologic Criteria
 - C. Hydraulic Criteria
 - D. Detention Criteria
 - E. Irrigation Criteria
- 6. Agency Coordination (i.e., FEMA, Local Agencies)
- 7. Proposed Drainage Design
- 8. Hydrologic Analysis
 - A. Hydrologic Methodology
 - B. Pre-development runoff
 - C. Post-development runoff
- 9. Hydraulic Analysis
 - A. Conveyance systems (culverts, storm drains, ditches, channels)
 - B. Outfall and erosion protection
 - C. Detention design
 - D. Floodplain Analysis
 - E. Minor Structures
 - i. Scour Analysis
 - ii. Countermeasures and Bank stabilization
 - F. Major Structures
 - i. Scour Analysis
 - ii. Countermeasures and Bank stabilization
 - G. Subsurface drainage design
 - H. Irrigations systems
- 10. Operation and Maintenance

11. Conclusion

12. References

13. Appendices

- A. Hydrologic Analysis
 - i. On Site Hydrology
 - ii. Off Site Hydrology
 - iii. Precipitation Data
 - iv. Soil Survey
 - v. Land Use
 - vi. FEMA Maps
- B. Hydraulic Analysis
 - i. Spread width, Inlet and Storm Drain Calculations
 - ii. Roadside Ditch and Channel Calculations
 - iii. Drain Outfalls, Scour and Erosion Control Calculations
 - iv. Sub-surface Drainage Systems
- C. Detention
 - i. Detention Basin Calculations
 - ii. Stage Storage Calculations
 - iii. Outlet Works Calculations
- D. Basin Maps
 - i. Existing and Proposed On-Site Basin Maps
 - ii. Off-Site Basin Maps (full size 22-inch by 34-inch sheets)
- E. Pipe Material Selection Report
- F. Maintenance Exhibit

The Contractor shall submit to CDOT the Master Drainage Report, all Interim Drainage Reports, and the Final Drainage Report for Acceptance. All Drainage Reports shall be signed and sealed. The Contractor also shall submit to CDOT an electronic copy of all signed and sealed drainage reports in a format compatible with Adobe .PDF. All drainage reports shall include electronic copies of all computer analysis input and output files in the native file format.

13.4.2. Water Quality Reports

If the Contractor elects to install PWQ CM, a Water Quality Report shall be required in accordance with CDOT *DDM*.

13.4.3. Drainage Design Plans

The Contractor shall prepare plans for all drainage-related facilities for the Project in a format that follows the documentation procedure in the CDOT *DDM* Chapter 4, the CDOT *CADD Manual*, and the CDOT *Drafting Manual*.

The Contractor shall submit all applicable plans with each drainage report.

The Contractor shall include the following for all drainage plan deliverables:

1. Plan View

- A. Provide the location of all existing and proposed storm drains. Provide a label for each proposed storm drain location. The Contractor shall establish a labeling system that is specific to each proposed storm drain system and provide a table to summarize all pertinent information. The table shall include, at a minimum, the drain line and sheet number where the profile can be found.
- B. Provide the location of all existing and proposed inlets, maintenance access Structures, end sections, and outlet protection. Provide a label for each proposed inlet, manhole, end section, outlet Structure, and outlet protection. Include a table that summarizes all pertinent information. The table shall include, at a minimum, the label identification (ID), station and offset, item, length, pay depth, and notes.
- C. Provide all existing and proposed grading.
- D. Provide all Utility locations and Relocations.
- E. Provide location of ROW lines.

2. Profiles

- A. Provide profiles for all proposed storm drains. Include the label ID from plan view sheets, station and offset, invert elevations, rim elevations, Structure depth, slopes, sizes, Material, Utility crossings, existing and proposed finished grade lines, the design flow for the 10-year and 100-year event, and the calculated HGL and EGL for the 10-year and 100-year event.
- B. Provide profiles for all proposed cross drains. Include the label ID from plan view sheets, station and offset, invert elevations, slopes, sizes, Material, utility crossings, and existing and proposed finished grade lines. Provide the drainage area of contributing basin, 50- and 100-year design discharge, tailwater, and headwater elevation on all applicable profile sheets for cross drains.

3. Drainage Details

- A. Include details for all non-standard CDOT items.

4. Permanent Water Quality CM Details for Extended Detention Basin (EDB) (If Needed)

- A. Provide each EDB in plan view. Provide existing and proposed contours that define limits of overall facility. Include access Roads, overflow location or Structure, forebay, trickle channel, micro-pool, emergency spillway, and outlet Structure. Include all locations of Utilities and property lines. Include point labels to define location and elevations within the facility.
- B. Provide a table summarizing each point label. The table shall include at a minimum the point label, station and offset, northing, easting, elevation, and notes.

- C. Provide a cross section of the EDB from where flows enter the pond to the outlet Structure. Label elevations for the Water Quality Capture Volume (WQCV). Include slopes and elevations of all features.
 - D. Provide a geometry plan of the EDB from where flows enter the pond to the outlet Structure. Include access Roads.
 - E. Provide specific details for the forebay, trickle channel, micro-pool, emergency spillway, and outlet Structure.
 - F. Provide pond certification letter and the information required for the statewide notification compliance portal to CDOT for Acceptance prior to Final Acceptance.
5. Permanent Water Quality CM Details for Porous Landscape Detention (PLD) (If needed)
- A. Provide each PLD in plan view. Provide existing and proposed contours that define limits of overall facility. Include all locations of Utilities, storm and irrigation. Include point labels to define location and elevations within the facility.
 - B. Provide a table summarizing each point label. The table shall include at a minimum the point label, station and offset, northing, easting, elevation, and notes.
 - C. Provide a cross section of the PLD from where flows enter the pond to the outlet Structure. Label elevations for the WQCV. Include slopes and elevations of all features.
 - D. Provide a geometry plan of the EDB from where flows enter the pond to the outlet Structure.
 - E. Provide specific details for the growing medium and geomembrane and underdrain if required.

13.4.4. Drainage As-Constructed Documents

13.4.4.1 Drainage As-Constructed Documents

The Contractor shall provide accurate as-constructed survey of the constructed drainage and irrigation systems for the Project per the requirements of Book 2, Section 10. As-constructed survey shall be provided for all drainage and irrigation features including but not limited to inlets, manholes, pipes, siphons, diversions and detention facilities.

The Contractor shall submit As-Constructed Documents to CDOT for Acceptance per the requirements of Book 2, Section 4.

The Contractor shall clearly label and locate all items of Work with station, offset, coordinates, and elevation information based on surveys of what was actually built in the field. Provide summaries of all As-Constructed drains with the following hydraulic information, at a minimum: pipe/culvert size, invert elevations and slope. The Contractor shall provide summaries of As-Constructed storage facilities with the following information, at a minimum: basin bottom elevations along toe of embankment, top and bottom elevations of hardscape features such as trickle channels, storage volume and freeboard provided, outlet control Structure elevations, and maintenance access paths.

As part of the Drainage As-Constructed Documents, the Contractor shall prepare and submit Hydraulic As-Constructed Condition Calculations, as determined necessary by the Engineer of Record, that reflect the final constructed condition of all permanent irrigation, drainage and hydraulic features.

The Hydraulic As-Constructed Condition Calculations shall document and verify that the constructed condition complies with the Contract requirements, CDOT criteria, and applicable permits.

13.4.4.2 Engineer of Record Certification

The Engineer of Record shall provide a signed and sealed certification stating that:

- a. The As-Constructed documents accurately reflect the as-constructed hydraulic features; and
- b. Hydraulic As-Constructed Condition Calculations, including revised calculations where required, accurately represent the as-constructed hydraulic condition of the Project; and
- c. The as-constructed hydraulic condition complies with the Contract requirements, CDOT criteria, and applicable permits.

The certification and supporting calculations shall be prepared under the responsible charge of a Professional Engineer licensed in the State of Colorado.

13.5 Deliverables

The Contractor shall submit the following to CDOT (and all applicable review agencies) for Review, Acceptance, or Approval:

Table 13-3: Deliverables

Deliverable	Review, Acceptance, or Approval	Schedule
Temporary Drainage Plans	Acceptance	Within 14 Days prior to the implementation of each TCP
Temporary Drainage As-Constructed Documents	Acceptance	To be maintained during the duration of the Project
Proposed method and Materials for abandonment of any temporary drainage feature	Approval	Prior to implementation
Sampling Schedule for Pipe Selection	Review	30 Days after issuance of NTP1
Master Drainage Report	Acceptance	Concurrent with Preliminary Design Documents
Interim Drainage Reports	Acceptance	Prior to the RFC Documents submittal
Final Drainage Report	Acceptance	Prior to Project Final Acceptance

Request for Proposal
US160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 13 - Drainage

Deliverable	Review, Acceptance, or Approval	Schedule
Revised Final Drainage Report (as required)	Acceptance	Prior to Project Final Acceptance
Drainage As-Constructed Documents	Acceptance	Per the requirements of Book 2, Section 4
Pond Certification Letter *	Acceptance	Prior to Final Acceptance
Information required for the statewide notification compliance portal *	Acceptance	Prior to Final Acceptance

* These deliverables are required only if PWQ CMs are provided.

13.6 Exhibits

Exhibit 13-A Pipe Table

Exhibit 13-B Irrigation Table

Exhibit 13-A Pipe Table

Mile Post	Approx. Station	FLOC NUM	Existing Size (in.)*	Pipe Material*	Type	Pricing Recommendations [Reference Documents]	Pictures (Summer 2025)	Video (Summer 2025)	Acceptable Alternatives
91.64	145+XX	37703	24	CSP	Mixed	Remove and replace with 30" pipe	☒	☒	Replace to meet minimum size. Lining is not acceptable.
91.92	145+XX	40646	24	CSP	Mixed	Remove and replace with 24" pipe	☒	☒	Replace to meet minimum size. Lining is not acceptable.
91.93	146+XX	Un-labeled Culvert 2	24 ^a	CSP	Drainage	Remove and replace with 30" pipe	☒	☒	Replace to meet minimum size. Lining is not acceptable.
92.15	157+XX	N/A	24 ^a	CSP	Drainage	Remove and replace with 30" pipe	☒	☐	Replace to meet minimum size. Lining is not acceptable.
92.42	171+XX	38859	24	CSP	Mixed	Remove and replace with 30" pipe	☒	☒	Replace to meet minimum size. Lining is not acceptable.
92.50	177+XX	41649	48	CSP	Mixed	Remove and replace with 48" pipe	☒	☒	Will accept alternative design/ rehabilitation options that meet criteria.
92.85	196+XX	38181	24 ^a	CSP	Mixed	Remove and replace with 30" pipe	☒	☐	Replace to meet minimum size. Lining is not acceptable.
93.09	209+XX	40703	30 ^a	CSP	Mixed	Remove and replace with 30" pipe	☒	☐	Will accept alternative design/ rehabilitation options that meet criteria.
93.38	225+XX	Un-labeled Culvert 1	48 ^a	CSP	Mammal crossing	Remove. All required mammal crossings will be newly added	☒	☐	-
93.60	233+XX	36039	18	CSP	Drainage	Remove and replace with 30" pipe	☒	☐	Replace to meet minimum size. Lining is not acceptable.
93.62	237+XX	38797	18	CSP	Drainage	Remove and Replace with 30" pipe	☐	☐	Replace to meet minimum size. Lining is not acceptable.
94.00	254+XX	42225	60	CSP	Drainage	Extending	☒	☒	-
94.31	272+XX	37117	120	CSP	Drainage	Remove and replace with 120" pipe	☒	☐	Will accept alternative design/ rehabilitation options that meet criteria.
94.37	275+XX	38557	48	CMP	Drainage	Modify manhole / Extend & Treat invert approximate 25 LF	☒	☒	-
94.45	279+XX	36430	84	CSP	Drainage	Protect in place	☒	☐	-
94.62	288+XX	39546	48	CSP	Drainage	Protect in place	☒	☒	-
94.95	306+XX	Un-labeled Culvert 4	24 ^a	CSP	Drainage	Remove and replace with 30" pipe	☒	☒	Replace to meet minimum size. Lining is not acceptable.
94.99	308+XX	40971	24	CSP	Drainage	Remove and replace with 30" pipe	☒	☒	Replace to meet minimum size. Lining is not acceptable.
95.25	323+XX	41327	36	CSP	Drainage	Line and extend pipe.	☒	☒	-
95.38	329+XX	36258	84	CSP	Drainage	Remove and replace with 84" pipe	☒	☐	Will accept alternative design/ rehabilitation options that meet criteria.
95.42	331+XX	39987	24	CSP	Drainage	Remove and replace with 30" pipe	☒	☒	Replace to meet minimum size. Lining is not acceptable.
95.58	339+XX	38925	24	CSP	Drainage	Remove and replace with 30" pipe	☒	☐	Replace to meet minimum size. Lining is not acceptable.
95.70	346+XX	38294	24	CSP	Drainage	Remove and replace with 30" pipe	☒	☒	Replace to meet minimum size. Lining is not acceptable.
95.81	352+XX	38505	36	CSP	Drainage	Extend	☒	☒	-
96.05	364+XX	37723	60	CSP	Drainage	Line and extend pipe.	☒	☒	-
96.09	366+XX	38843	84	CSP	Drainage	Line and extend pipe.	☒	☒	-
96.29	377+XX	37806	36	CSP	Drainage	Line and extend pipe.	☒	☒	-
96.60	389+XX	N/A	24	CSP	Drainage	Remove and replace with 30" pipe	☐	☐	Replace to meet minimum size. Lining is not acceptable.
96.74	401+XX	40227	24 ^a	CSP	Drainage	Remove and replace with 30" pipe	☒	☐	Replace to meet minimum size. Lining is not acceptable.
96.87	407+XX	41335	36	CSP	Drainage	Line and extend pipe.	☒	☐	-
97.06	416+XX	40893	36 ^b	HDPE ^a	Drainage	Protect in place	☒	☒	-
97.19	423+XX	Un-labeled Culvert 6	36 ^b	HDPE ^a	Drainage	Protect in place	☒	☒	-

Mile Post	Approx. Station	FLOC NUM	Existing Size (in.)*	Pipe Material*	Type	Pricing Recommendations [Reference Documents]	Pictures (Summer 2025)	Video (Summer 2025)	Acceptable Alternatives
97.21	424+XX	Un-labeled Culvert 8	24X14 ^a	RCP ^a	Drainage	Protect in place.	☒	☐	-
97.22	425+XX	Un-labeled Culvert 7	48 ^b	CSP ^b	Mammal crossing	Protect in place	☒	☒	-
97.33	430+XX	37459	36 ^b	CSP ^b	Drainage	Protect in place	☒	☒	-
97.39	433+XX	N/A	18 ^b	Not specified	Drainage	Protect in place	☐	☐	-
97.51	440+XX	39182	60 ^b	Not specified	Drainage	Protect in place	☐	☐	-
97.53	441+XX	N/A	18 ^c	Not specified	Drainage	Extend.	☐	☐	-
97.66	448A+XX	N/A	48 ^b	Not specified	Mammal crossing	Extend	☐	☐	-
97.68	482+XX	37299	24 ^b	CSP ^b	Irrigation	Remove and replace with a 24" pipe	☐	☐	
97.75	453+XX	36058	60 ^b	CSP ^b	Drainage	Remove and replace with a 10' X 8' CBC	☐	☐	-
97.88	459+XX	39609	18 ^b	CSP ^b	Drainage	Remove and replace with a 30" pipe	☐	☐	Replace to meet minimum size. Lining is not acceptable.
97.96	463+XX	37891	18 ^b	CSP ^b	Drainage	Remove and replace with a 30" pipe	☐	☐	Replace to meet minimum size. Lining is not acceptable.
98.02	467+XX	38382	36 ^b	CSP ^b	Drainage	Line and extend pipe.	☐	☐	-
98.25	478+XX	38690	23X14 ^b	HERCP ^b	Drainage	Remove and replace with a 30" pipe	☐	☐	Replace to meet minimum size. Lining is not acceptable.
98.31	481+XX	37950	7' X 6 ^b	CSP ^b	Cattle Crossing	Protect in place	☐	☐	-
98.32	482+XX	N/A	18 ^b	CSP ^b	Drainage	Protect in place	☐	☐	-
98.38	485+XX	41875	18 ^b	CSP ^b	Drainage	Protect in place	☐	☐	-

* All pipe sizes and materials were determined according to the the Elmore's survey file

a 20980 Culvert Review revised 8.8.25 (Inspection file received from CDOT)

b 19362 US 160 Dry Creek Passing Lanes _Shelf Set - 2019-09-03

c HDR SUE Plans, Dated December 2025

Exhibit 13-B Irrigation Table

Station	Mile Post	Irrigation Type	Irrigation Ditch Name	Irrigation Owner	Relocation by	Contact
126+50	91.59	18" RCP siphon	Parker Ditch	Private	Contractor	-
129+00	91.64	24" CSP	Private ditch	Private	Contractor	-
134+80 RT - 141+20 RT	91.75 - 91.87	Open ditch	Private ditch	Private - Multiple End Users	Contractor	-
134+80	91.75	18" CSP siphon	Private lateral	Private -Multiple End Users	Contractor	-
134+80 RT	91.75	Diversion	Private	-	Contractor	Greg Munro (970-759-7118)(cell)
137+00 RT	91.81	Diversion to be Abandoned - No prescribed right at this location.	N/A	Private - Trujillo	N/A	Greg Munro (970-759-7118)(cell)
138+20	91.82	48" RCP	Florida Canal	Florida Consolidated Ditch Company	N/A - Protect in Place	Jason Cole (970-759-3438)(cell)
138+50 LT - 144+90 LT	91.85 - 91.90	Open ditch	Private ditch	N/A	Contractor	-
138+70 RT	91.83	Diversion	Private	Private - Mesa Heights	Contractor	Greg Munro (970-759-7118)(cell)
139+00 LT - 145+00 LT	91.83 - 91.95	Open ditch	N/A - Return Flows	SKTM Properties	Contractor	-
139+00 RT	91.83	Diversion	Private	Private - Florida Acres	Contractor	Darren Rowley (970-759-4612)(cell)
139+50 RT	91.85	Diversion	Private	Private	Contractor	Darren Rowley (970-759-4612)(cell)
139+60 RT	91.85	Diversion	Private	Private - Gurule	Contractor	Darren Rowley (970-759-4612)(cell)
141+20 RT	91.88	Open ditch	Private	Private - Holmes	Contractor	Darren Rowley (970-759-4612)(cell)
145+40	91.95	24" CSP	N/A - Return Flows	N/A	Contractor	-
146+20 RT - 149+60 RT	91.96 - 92.03	Open ditch	Private ditch	Robison	Contractor	Robison
148+90 RT	91.98	Diversion	Private	Robison	Contractor	-
149+20 RT	92.00	Diversion	Private	Robison	Contractor	-
149+60 RT - 151+80 RT	92.01 - 92.07	Open ditch	Private ditch	Robison	Contractor	-
149+60	92.01	18" CSP siphon	Private lateral	Robison	Contractor	-
149+60 RT	92.01	Open Ditch	Private ditch	Private	Contractor	-
150+20 RT	92.01	Diversion	Private	Robison	Contractor	-
150+30 RT	92.02	Diversion	Private	Robison	Contractor	-
151+80 RT - 157+40 RT	92.07 - 92.15	Open ditch	Private ditch	Robison	Contractor	-
151+80	92.05	24" CSP	Private lateral	Robison	Contractor	-
151+80	92.05	Open ditch	Private ditch	Private	Contractor	-
154+40 RT	92.09		Private ditch	Robison	Contractor	-
159+50	92.18	18" CSP siphon	Private lateral	Multiple End Users	Contractor	-
159+90 RT - 174+60 RT	92.19 - 92.46	8" (?) plastic pipe	Private	Carmon	Owner	-
159+90 RT	92.19	Diversion	Private	Patchek, Maxwell, Davenport, Carmon	Contractor	-
159+90 RT - 160+00 RT	92.19	Open ditch	Private ditch	Maxwell	Contractor	-

Station	Mile Post	Irrigation Type	Irrigation Ditch Name	Irrigation Owner	Relocation by	Contact
163+50 RT - 169+00 RT	92.25 - 92.36	Open ditch	Private ditch	Davenport	Contractor	-
165+20 RT	92.28	Driveway/Irrigation pipe	Private	Davenport	Contractor	-
168+80 RT	92.35	Driveway/Irrigation pipe	Private	Davenport	Contractor	-
171+50 RT	92.41	Open ditch	Waste water	Private	Contractor	-
174+30	92.45	18" CSP siphon	Private Lateral	Carmon	Contractor	TBD- pending
176+80	92.50	48" CSP	Waste water	TBD	Contractor	-
178+60 RT - 181+40 RT	92.53 - 92.58	Open ditch	Private ditch	Gallegos	Contractor	Flows west
181+40 RT - 183+00 RT	92.58 - 92.62	Open ditch	Private ditch	Moyer	Contractor	-
181+40	92.58	30" CSP	Private lateral	Moyer & Gallegos	Contractor	-
183+60 RT - 185+70 RT	92.62 - 92.66	Open ditch and pipe	Private ditch/pipe	Los Prados and John Hoff	Contractor	-
183+60	92.62	38"x23" CSP	Florida Farmer's Ditch (Griffith Ditch)	Florida Consolidated Ditch Company	Contractor	Jason Cole (970-759-3438)(cell)
185+70 RT - 200+00 RT	92.66 - 92.82	12" PVC	Private Pipe	Los Prados HOA	N/A- Protect In Place	-
185+70 RT - 201+40 RT	92.66 - 92.86	8" PVC	Private Pipe	John Hoff	Contractor	
196+20	92.85	24" CSP	Waste water	Los Prados and John Hoff	Contractor	-
199+00 RT - 200+00 RT	92.87- 93.12	12" Plastic	Private	Los Prados	Contractor	-
209+40	93.09	30" CSP	Waste water	Webber Ditch	Contractor	-
211+30	93.13	28"x18" CSP	Private lateral	Reynold's Brasher	Contractor	-
211+50	93.13	28"x18" CSP	Private lateral	Reynold's Brasher	Contractor	-
227+00	93.42	30" CSP & 24" CSP	McClure Murray Ditch	Private	Contractor	Mike Shumway (970-749-9382)
247+40 LT - 248+60 LT	93.80 - 93.85	Open ditch	Highline Ditch	Tinkers	N/A - Protect in Place	Mike Shumway (970-749-9382)
249+70	93.85	36" CSP	Highline Ditch	Robison	N/A - Protect in Place	Mike Shumway (970-749-9382)
264+40	94.16	18" Welded Steel Siphon Pipe	Robison Siphon	Private	N/A - Protect in Place	Mike Shumway (970-749-9382)
266+10	94.19	24" Welded Steel Siphon Pipe	Leader's Siphon	Private	N/A - Protect in Place	Mike Shumway (970-749-9382)
270+40	94.27	24" CSP	Waste water	TBD	Contractor	-
287+60	94.60	36" CSP	Pioneer Ditch	Pioneer Ditch Company	Contractor	Mike Shumway (970-749-9382)
448+90	97.67	24" CSP	Thompson-Epperson Ditch	Thomas Epperson Ditch Company	Contractor	-

14.0 Roadways

This Section includes the requirements for the Roadway Work for the US 160 Elmore's Corner to Dry Creek Design-Build Project (Project). This Work shall be completed in accordance with the Contract Documents.

14.1 Administrative Requirements

14.1.1. Standards

The Contractor shall design and construct the Project in accordance with the requirements of the Contract, including the Project Special Provisions and Standard Special Provisions in Book 2, Section 21, standards in the documents listed in Table 14-1 and those referenced in Book 3. The Contractor shall use the latest adopted edition at the time of the Proposal Due Date.

14.1.1.1 US 160

Table 14-1: Standards for US 160

Author or Agency	Title
Request for Proposal US 160 Elmore's Corner to Dry Creek	Roadway Criteria Table (Exhibits 14-A, 14-B, and 14-C to this Section)
American Association of State Highway and Transportation Officials (AASHTO)	A Policy on Geometric Design of Highways and Streets, 7th Edition (PGDHS, 2018)
AASHTO	Roadside Design Guide
Colorado Department of Transportation (CDOT)	Roadway Design Guide
CDOT	Standard Plans, M&S Standards
CDOT	Standard Specifications for Road and Bridge Construction (Standard Specifications)
Federal Highway Administration (FHWA)	FHWA-CFL/TD-11-003, Wildlife Crossing Structures Handbook, Design and Evaluation in North America
International Code Council (ICC)	International Fire Code (IFC)
National Cooperative Highway Research Program (NCHRP)	Report 1043 Guide for Roundabouts
State of Colorado	State Highway Access Code
Department of Justice	2010 ADA Standards for Accessible Design

14.1.1.2 Local Roadways

Local Roadways include La Plata County Roads CR 229, CR 222, CR 223 Elmore's, CR 225, and other non-CDOT Roadways impacted by the Project including Mesa Heights, Florida Acres Drive, Wageman Road, C Bar K Lane, Cole Ranch Road, Encantado Lane, Lone Pine Gulch Road, gas well accesses, Via Visa Circle, Kirk Lane, Wasinger Drive, and Silver Hills Road.

Roadways controlled or maintained by Local Agencies, other than CDOT, shall be designed and constructed according to the Local Agency's standards and requirements. In addition to the documents referenced in Table 14-1 and Book 3, Local Agency manuals and standards are in Table 14-2.

Table 14-2: Standards for Local Roadways

Author or Agency	Title
Request for Proposal US 160 Elmore's Corner to Dry Creek	Roadway Design Criteria Table (Exhibit 14-B and Exhibit 14-C to this Section)
La Plata County	La Plata County Code Development Standards and Specifications

14.2 Design Requirements

14.2.1. Submittals

All submittals shall be prepared, reviewed, and submitted in accordance with the requirements set forth in Book 2, Section 4.

14.2.2. General Design Requirements by Project Element

14.2.2.1 Intersection at US 160 and CO 172/CR 234

Only the east leg of the intersection of US 160 and CO 172/CR 234 is impacted by the Project. The existing lane configuration consists of two 12-foot thru lanes, a right-turn acceleration lane, and a 4-foot Shoulder in the eastbound direction, and two 12-foot thru lanes, a 12-foot left turn lane, a 12-foot right-turn lane, and 6-foot Shoulder in the westbound direction.

The raised median shall be configured to develop the two-way left-turn (TWTL) prior to the driveway on the north side of US 160 at MP 91.71. Center median shall be a minimum of 4-feet wide, including the width of the curb and gutter. No inside Shoulder is required.

As the eastbound right-turn acceleration lane terminates, the Shoulder shall transition from 4-feet adjacent to the acceleration lane to 12 feet paved width to the Mesa Heights access. East of the Mesa Heights access, the outside Shoulder will resume the standard 10-foot composite width.

14.2.2.2 Florida Canal Ditch Rider Road

Access to the existing ditch rider Road for the Florida Canal at MP 91.83, on the north side of US 160, shall be constructed along the fill slope no steeper than a 10 percent vertical grade behind the guardrail. This access Road shall be 10-foot-wide.

14.2.2.3 CR 229

Construct a paved Shoulder on the north side of US 160, a minimum width of 12 feet from the end of the guardrail over the Florida Canal (approx. MP 91.88) to the first driveway east of CR 229 (approx. MP 91.99).

14.2.2.4 Wageman Road

The two adjacent access point at MP 92.17, shall be consolidated to a single access point intersecting US 160 up until the deer guard. The access point will diverge into two accesses, one for each parcel, within the CDOT ROW.

14.2.2.5 Field Access at MP 92.50 South

The existing field access at MP 92.50 will no longer have direct access to US 160. Grading and vehicle access gates shall be provided in the deer fence such that the property owner can traverse along the toe of slope and up a reasonable grade back to their main access point. The gate configuration shall accommodate CDOT maintenance access to the wildlife underpass Structure.

14.2.2.6 Lone Pine Gulch Road

Access to both the north-south and the east-west access points must be maintained. Design vehicle to access the east-west movement shall be a multi-unit truck (PU) and a 30-foot trailer. The vehicle turning movement shall be able to be completed in one continuous smooth movement to/from US 160. Provide a vehicle access gate along the east-west access in a similar configuration to the existing configuration. The new gate on secondary access is not required to match the height of the deer fence.

14.2.2.7 US 160 and CR 223 Elmore's

The existing cul-de-sac and approximately 650 feet of CR 223 will be reconfigured further north to accommodate the widened section of US 160. The existing emergency vehicle gates shall be removed and replaced with new vehicle gates and shall match the height of the deer fence. The emergency access to US 160 shall be maintained. The eastern centerline curve radius along CR 223 Elmore's shall be maintained, or flattened, and it is desirable to include a tangent west of that curve to provide a more direct travel path. The CR 223 section includes two 12 foot travel-lanes and 2 foot outside Shoulders. The cul-de-sac diameter shall accommodate fire truck and school bus turn-around maneuver.

14.2.2.8 McClean Spring and Unnamed Seep

There is a known spring and seep between MP 93.2 and MP 93.5, that starts on the north side of the Highway and then crosses to the south side, with existing pipes and underdrain systems. Permanent design solutions shall meet clear zone requirements and care should be taken to protecting the integrity of the embankment and other improvements. Additional design requirements are per Book 2, Sections 6, 9, 11, 13, and 16.

14.2.2.9 Access to Mouse Mitigation Areas

Provide a 10 foot wide maintenance access Road near MP 93.7 from US 160 to the bottom of the mouse mitigation area west of the Florida river. Provide an additional 10 foot wide maintenance access Road and gate from US 160 through the ROW fence between MP 93.95 and MP 93.97 that extends across existing ditch crossing located approximately 310 feet due south of MP 93.95 from the edge of pavement, and then routes this access down into the proposed mouse mitigation area.

Provide vehicle access gates in deer fence at both locations. Grades along access Roads shall be no steeper than 10 percent, shall extend past catch point to habitat elevation, and shall be located within permanent CDOT ROW. Additional requirements for the mouse mitigation areas are described in Book 2, Section 6, Book 2, Section 13, Book 2, Section 18, and Book 2, Section 21.

14.2.2.10 Existing Intersection at US 160 and CR 225

The intersection of US 160 and CR 225 shall be reconfigured to a high-speed approach roundabout including two-lane entries and exists for US 160 and one-lane entry and exits for CR 225. See Section 14.2.11 for additional design requirements.

Construct a widened paved Shoulder on the north side of US 160 for the intended use of an informal chain up area for westbound vehicles prior to the steep roadway grade on US 160 west of the Florida River. Minimum dimensions shall be 12 feet wide, as measured from the edge of traveled way, and a length of 150 feet but note that a length of 200 feet is desired. The preferred location is west of intersection prior to the Florida River Bridge. There are no associated lighting requirements. The final location of the widened paved Shoulder shall be submitted to CDOT for Acceptance prior to the Pre-RFC Document submittal.

14.2.2.11 CR 225 Park and Ride

The rehabilitation and reconfiguration of the existing park and ride in the northeast corner of US 160 and CR 225 is required per this Section, Book 2, Section 2 and Book 2, Section 11.

The park and ride area shall have a minimum of 40 total parking spaces, with 2 ADA accessible spaces, and a transit loading area for Road Runner Transit.

Parking spaces shall be 9-foot wide and 20-foot long perpendicular. Two-way aisles between the two rows of 90 degree, perpendicular parking shall be a minimum of 24-feet wide. Alternative parking orientations shall comply with La Plata County Land Use Code Chapter 70-18. No raised islands or parking bumpers shall be used to allow for snow removal.

The two ADA accessible spaces shall be provided next to the transit loading area. The Contractor shall provide one van accessible space and this space shall be located closest to the transit loading area. An accessible route shall be provided from the ADA accessible spaces to/from the transit loading area. The ADA spaces, accessible route, and transit loading area shall comply with the 2010 ADA Standards for Accessible Design.

The transit loading area shall be a minimum of 12 foot wide in accordance with La Plata County Land Use Code Chapter 70-18. The transit design vehicle shall be a route bus per Road Runner Transit and is 7-foot wide and 30 foot long.

Parking spaces shall be striped 4 inch wide with reflectorized white paint.

If there are existing asphalt areas remaining that are not needed for the parking spaces and the transit loading area, the asphalt may remain intact as long as it is designated a snow accumulation area by signing and striping. Alternatively, the area may be sawcut from the rest of the park and ride, obliterated, disposed of, graded into surrounded areas, and reseeded.

The Contractor shall submit the design for the park and ride area to CDOT for Acceptance prior to the RFC Documents submittal.

14.2.2.12 Via Vista Circle (MP 94.41)

Place deer guard as close to the ROW fence as possible without impacting the waterline. Adjust drainage crossing access as necessary.

14.2.2.13 Englishman and Narrow Gauge Mobile Home Park Accesses

A consolidated access point for the Englishman and Narrow Gauge mobile home parks shall be constructed as shown in Book 2, Section 1. The new alignment shall be configured to include 4-foot outside Shoulders and two 12-foot through lanes. Existing access points to US 160 for each mobile home park shall be maintained as emergency access points and will be closed to general use by installing a gate at each access point. Extra width or clear area shall be provided to accommodate a large vehicle with a mobile home turning movements and additional Shouldering Material shall be provided for any off-tracking that occurs.

Each emergency access shall meet La Plata County Code requirements for emergency access. The Contractor shall ensure fire protection is provided through fire hydrants for each individual mobile home park meeting current fire code requirements. One existing fire hydrant to the west is to be protected in place, with the wildlife mitigation fencing bumped around the existing fire hydrant ensuring the fire hydrant is accessible from the private side of the fence. A new fire hydrant shall be placed adjacent to the eastern emergency access (Englishman Mobile Home Park) on the private side of the ROW line/wildlife mitigation fence. The fence shall not be bumped out around the new fire hydrant. Fire hydrants are served by the La Plata Archuleta Water District (LPAWD), refer to Book 2, Section 8 and Exhibit 8-E, Preliminary Utility Relocation Schedule. Tie-in requirements are per LPAWD standards.

An eastbound right-turn deceleration lane from US 160 into the new access is required. The eastbound passing lane shall be fully ended a minimum of 200 feet prior to beginning the right-turn lane.

14.2.2.14 Access at MP 95.49 North

The existing gravel turnaround shall be constructed with similar size and grades to the existing condition and shall be adjusted, as necessary to tie into the new driveway profile. Additional requirements are shown in Book 2, Section 9.

14.2.2.15 Lon's Salvage Yard (MP 96.86)

The final configuration shall be designed to accommodate WB-67 vehicle turning movements for exiting and entering westbound US 160, while remaining in the outside lane. If necessary, provide additional Shouldering Material in any areas with off-tracking. See Section 14.3.5.7 for additional design requirements. Shouldering Material shall consist of 6-inches of Aggregate Base Course (Class 6).

14.2.2.16 Encantado Lane to CR 222

14.2.3. An ADA-compliant pathway is required for the residents of the Los Prados neighborhood to connect from Encantado Lane to CR 222. There is no requirement for this pathway to be separate from other facilities and it may route along Encantado Lane, the shoulder of US 160, and emergency access to CR 222. Pedestrian gates shall be installed to support this ADA pathway as described in Book 2, Section 14.3.6. If a separate pathway is provided, a firm, stable, and slip-resistant ADA accessible path with a minimum width of 6-feet is required. Cross Slope and Superelevation

14.2.3.1 Normal Cross Slope

All new and reconstructed pavement sections shall have a normal cross slope of 2 percent.

When overlay areas are needed, the sections where the existing cross slope is equal to or greater than 2 percent, the Contractor shall maintain the existing pavement cross slope. For overlay sections where the existing cross slope is less than 2 percent, the cross slope shall be built up through the use of a variable thickness overlay to a minimum of 2 percent.

14.2.3.2 Superelevation Rates

Superelevation transitions for US 160 shall be designed based on the typical sections (number of lanes). Superelevation transition design shall comply with the design criteria and methodology of the current AASHTO PGDHS, 2019 CDOT Standard Plans, M&S Standards, and the CDOT Roadway Design Guide based on an $e_{\max}$ of 8 percent.

Superelevation diagrams shall be provided in the Roadway plans to verify that edge profiles (at the location of the Shoulder/lane line) meet design criteria. Superelevation transitions shall be modified if necessary to meet these criteria.

Superelevation transitions shall be designed to eliminate 0.0 percent cross slopes on Bridge decks or on profile crest and sag curves where grades flatter than 0.5 percent occur.

For sections where the existing superelevation is less than required by current design standards, the cross slope shall be built up through the use of a variable thickness overlay to achieve the appropriate cross slope. Where matching existing horizontal radius, the Contractor shall coordinate with CDOT for needed superelevation corrections prior to the Preliminary Design Documents submittal.

14.2.4. Stopping Sight Distance

Stopping sight distances and decision sight distances shall meet or exceed the requirements of Exhibits 14-A, 14-B, and 14-C in this Section. Stopping sight distances shall be determined in accordance with the CDOT Roadway Design Guide and AASHTO PGDHS.

The Contractor shall evaluate and correct known vertical sight distance issue at CR 225.

14.2.5. Intersection Sight Distance

Intersection sight distances shall meet or exceed the requirement of Exhibits 14-A, 14-B, and 14-C in this Section. Intersection sight distances shall be determined in accordance with the CDOT Roadway Design Guide and AASHTO PGDHS.

14.2.6. Vehicle Turning Movements for Access Points

The land use along the corridor is primarily residential and agricultural with some commercial use. Vehicle turning movements for access points need to take into account property use. At a minimum, access points shall accommodate a design vehicle of a pickup truck with a trailer. Access points requiring larger design vehicles are identified in Exhibits 14-A, 14-B, and 14-C. Access geometry shall accommodate the design vehicle turning movements into and out of property from US 160 and shall be able to pass through the deer guard without encroachment into adjacent US 160 travel lanes.

The turning movements for a large vehicle with a mobile home is allowed to encroach into the adjacent US 160 travel lanes for the Englishman and Narrow Gauge Mobile Home Park access point. A short-term lane closure on US 160 can be assumed.

The Contractor shall coordinate with the respective fire districts for their emergency vehicle templates. Access points shall accommodate access by emergency vehicles. Some pavement off-tracking is acceptable when an SU-33 is the most restrictive design vehicle.

As described in Section 14.2.2, a stabilized gravel Shoulder defined as 6-inches of Aggregate Base Course (Class 6), shall be utilized to accommodate use by a larger design vehicles or to negotiate within tight geometric constraints.

Vehicle turning template exhibits for all access points shall be submitted to CDOT for Acceptance prior to RFC. The vehicle turning templates shall show both the tire path and vehicle overhang for ingress and egress for the design vehicle and SU-33. The exhibits should clearly indicate location of access, scale, edge of pavement, design vehicle, tire path, vehicle overhang, and all pertinent design features (edge of pavement/gravel, fencing, deer guards, gates, drainage, etc.) to demonstrate access functionality.

14.2.7. Fill and Cut Slopes and Clear Zones

The Contractor shall design cut and fill slopes to obtain clear zones and avoid the need for guardrail wherever possible. Where clear zones cannot be obtained within CDOT ROW, guardrail shall be required.

Clear zones shall be designed in accordance with the recommendations of the AASHTO Roadside Design Guide and a minimum clear zone of 30 feet shall be used on US 160 per Table 3-1 Note A. The horizontal curve adjustment factor shall be calculated per Table 3-2. All other guidelines within the AASHTO Roadside Design Guide shall apply. Clear zones for County Roads and other named Roads shall be calculated in accordance with the recommendations of the AASHTO Roadside Design Guide. Clear zone for all other driveways shall be 2-feet in accordance with La Plata County Code Development Standards and Specifications.

14.2.7.1 Roadside Slopes Adjacent to Pavement

The Point of Slope Selection (POSS) is defined as the location at which the Roadside slope, also known as the z-slope, adjacent to the pavement ends and the cut or fill slope begins. Width and slope of the

area between the edge of pavement (EOP) (or curb and gutter, or Sidewalk) and the POSS shall be as follows:

1. US 160: 10 feet minimum at a 4:1 or flatter slope, US 160 curb areas: 4 feet at a 2 percent slope toward the gutter pan
2. La Plata County Roads: 8 feet at 4:1 or flatter slope

14.2.7.2 Fill Slopes

Fill slope areas shall be designed with ditches and storm sewer as necessary to prevent Roadside and slope drainage from flowing onto adjacent properties.

Fill slopes and height beyond the POSS shall be designed and constructed in accordance with the following priorities:

1. Use 4:1 slopes where fill heights are less than 6 feet and match with existing conditions that can be obtained within the Project limits.
2. Use 4:1 slopes then break to 3:1 slopes where fill heights exceed 6 feet, match with existing conditions can be obtained within the Project limits, and clear zone can be obtained within the Project limits.
3. Where the above conditions cannot be obtained, the Contractor may use any of the following design approaches.
 - A. Use 3:1 slopes with barrier protection or appropriate runoff.
 - B. 2:1 slopes with barrier protection allowable from MP 93.35 to MP 93.61 and at major Structures.
 - C. Use retaining walls or reinforced soil slopes, as necessary, with barrier protection to match with existing conditions within the Project limits. Where retaining walls or reinforced soil slopes in fill condition are used, locate to avoid maintenance areas less than 10 feet in width with a maximum 6:1 cross slope between the face of wall or slope and ROW or permanent Easement (PE) line, fence line, or other obstruction.

Additional design requirements related to Materials and reinforcement as shown in Book 2, Section 11, Book 2, Section 12, and Book 2, Section 16.

14.2.7.3 Cut Slopes

There are at least two different native Materials that will be encountered within the Project. The two Materials consist of surficial soil and bedrock of the Animas Formation, as defined in Book 2, Sections 11 and 12. The surficial soil is at the top near existing ground and the bedrock is below the surficial soil. Each of the Material layers have different requirements for cut slopes. In certain instances, all Material types will be encountered.

All tops of cut slopes at the existing ground shall be rounded to provide a pleasing appearance.

Cut slopes in surficial soil beyond the POSS shall be designed and constructed in accordance with the following priorities:

1. Cut slopes shall be transitioned at the match with the z-slope adjacent to Roadway pavement in such a manner to comply with the recommendations of the clear zone requirements and the AASHTO Roadside Design Guide.
2. The bottom of the Roadside ditch must be a minimum of 1 foot below the bottom of the Aggregate Base Course (Class 6) per Book 2, Section 11, and meet freeboard requirements per Book 2, Section 13.
3. Use 4:1 or flatter slopes for cut slopes where matching with existing conditions can be obtained within the Project limits.
4. Use 3:1 slopes beyond the clear zone for cut slopes where such slopes steeper than 4:1 are necessary to match with existing conditions within the Project limits.
5. Where the above conditions cannot be obtained, the Contractor may use any of the following design approaches.
 - A. Use 3:1 foreslopes with barrier protection.
 - B. Use retaining walls, as necessary, to match with existing conditions within the Project limits.

Cut slopes in the bedrock in the Animas Formation beyond the POSS shall be designed and constructed in accordance with the following priorities:

1. Cut slopes shall be transitioned at the match with the z-slope adjacent to Roadway pavement in such a manner to comply with the recommendations of the clear zone requirements and the AASHTO Roadside Design Guide.
2. The bottom of the Roadside ditch must be a minimum of 1 foot below the bottom of the Aggregate Base Course (Class 6) per Book 2, Section 11, and meet freeboard requirements per Book 2, Section 13.
3. Use 3:1 or flatter slopes for cut slopes.
4. Use retaining walls, as necessary, to match with existing conditions within the Project limits.
5. When competent and durable sandstone is encountered in cut sections, it may be cut at a steeper slope than 3:1 and left exposed. The Contractor's Geotechnical Engineer will determine the allowable cut slope of the exposed rock and CDOT will be given opportunity to accept or comment on the recommended cut slope.
6. Paleontological monitoring will be required when excavating within the Animas Formation east of CR 225 as shown in Book 2, Section 6.

14.2.7.4 Retaining Walls

Refer to Book 2, Section 16, for retaining wall requirements. Retaining walls shall be used as necessary. Where retaining walls are used in a fill condition, locate to avoid maintenance areas less than 10 feet in width with a maximum 6:1 cross slope between the wall and ROW or PE line, fence line, or other obstruction. Where retaining walls are used in a cut condition directly adjacent to the Roadway, a 10 foot access width can include the Shoulder.

14.2.8. Guardrail

All Guardrail Type 3 W Beam shall be Midwest Guardrail System (MGS) 31-inch with steel posts. Guardrail Type 3 W Beam shall include hot mix asphalt (HMA) as shown on M-606-1. Wooden curb and earthen Shoulder is not allowed.

New guardrail placed shall meet the finishing requirements in accordance with Project Special Provision Section 522 Environmental Stain (Galvanized), in Book 2, Section 21.

14.2.9. Barrier

All concrete barriers shall be cast-in-place. Precast barriers are not allowed for permanent installations. All concrete barriers shall be Guardrail Type 9 Single Slope Barrier.

Colored barrier is required between MP 93.21 and MP 93.35 and shall be required to match corridor aesthetics. Center median barriers are not required to be colored and it is not required to include colored barriers at the wildlife crossing at MP 97.43.

14.2.10. End Terminals

All end terminals shall be MASH compliant.

14.2.11. Roundabouts

A roundabout shall be constructed at the US 160 and CR 225 intersection. The Contractor shall submit the roundabout design approach memo and vehicle turning templates to CDOT for Acceptance prior to the Pre-RFC Documents submittal addressing each of the criteria listed below. The roundabout shall be designed according to NCHRP Report 1043: Guide for Roundabouts, and according to the following requirements:

1. Number of lanes: The roundabout shall have two-lane entries and exits for US 160 and one-lane entry and exit for CR 225.
2. Design vehicle: The roundabout shall accommodate a WB-67 vehicle for all movements.
3. Truck apron: Provide a truck apron to accommodate a WB-67 vehicle traveling in the inside lane. The truck apron shall slope outward at 1 percent to 2 percent. Provide a 3-inch to 4-inch sloping curb between the truck apron and circulatory Roadway, as described in NCHRP Report 1043 Section 13.4 and as shown in NCHRP Report 1043 Exhibit 13.10. The pattern and color of the truck apron shall have a contrasting color from the Roadway that complements the existing Grandview interchange aesthetics as described in the Reference Documents. The color shall not be the same color used for the median cover Material. The truck apron thickness and base course under it shall be designed by the Contractor's geotechnical engineer.
4. Inscribed circle diameter: The inscribed circle diameter shall be between 165 feet and 220 feet.
5. Entry width: The entry width shall be between 24 feet and 30 feet for two-lane entries and shall be a minimum of 14 feet for the one-lane entry.
6. Circulatory Roadway width: The width of each lane in the circulatory Roadway shall be between 14 feet and 16 feet (or as needed to adjust for and allow side by side P and WB-67 turning movements) as Approved by CDOT.

7. Entry radius: The entry radius shall be 65 feet minimum for the two-lane entries as shown in NCHRP Report 1043 Exhibit 10.68. The entry radius shall be 50 feet minimum for the one-lane entry, as described in NCHRP Report 1043 Section 10.6.4.
8. Entry path overlap: To avoid entry path overlap, all two-lane entrances shall comply with vehicle path alignment criteria described in NCHRP Report 1043 Appendix A.3 and allow for side by side P and WB-67 turning movements as Accepted by CDOT.
9. Exit radius: All exit radii shall be greater than 100 feet as described in NCHRP Report 1043 Section 10.6.5.
10. Exit path overlap: To avoid exit path overlap, all two lane exits shall comply with the vehicle path alignment criteria described in NCHRP Report 1043 Appendix A.3.
11. Fastest path: The fastest path shall be drawn for all entries according to NCHRP Report 1043 Section 9.4.1. The speed for R1 of the fastest path shall be 25 mph to 30 mph for the two-lane entries and 20 mph to 25 mph for the one-lane entry. Use equation 3-7 from AASHTO PGDHS, 2018 to calculate the speed.
12. Curb: Place Curb and Gutter Type 2 on all outside edges of the roundabout, and place Curb and Gutter Type 2 on all splitter islands. The Contractor shall select the appropriate curb type based on the design speed and transitional design speeds through the roundabout approaches (Section M versus Section B). The outside Shoulder of the US 160 entries shall taper from 10 feet to 0 from the beginning of the curb to the beginning of the entry curve. For CR 225 entries and exits, the curb shall extend at least through the entry or exit curve.
13. Treatment for high-speed approaches: The splitter island on the approaches along US 160 shall be at least 200 feet long. There shall be successively tightening reversing curves approaching the roundabout on US 160, such that the speed differential between each curve is not more than 10-15 mph and appropriate tangents are present between the curves as described in NCHRP Report 1043 Section 10.14.3.
14. Grade: The maximum grade of the circulatory Roadway shall be 3 percent. The maximum profile grade of US 160 shall be 3 percent, 680 feet from the center of the inscribed circle. This requirement is not ATC eligible.
15. See Book 2, Section 18, for landscaping requirements within the roundabout.

14.2.12. Vertical Profile

14.2.12.1 US 160 Mainline Transition to Existing

At the terminus of the proposed Basic Configuration limits in accordance to Book 2, Section 1, provide a transition to the existing two-lane US 160 that meets the requirements for a design speed of 60 mph.

14.2.13. Design Considerations

Existing grades on the corridor exceed the 5 percent maximum grade in three locations (approximately MP 93.12 to MP 93.58, approximately MP 94.65 to MP 95.06, and approximately MP 96.00 to MP 96.37). In these areas, no grade correction is required and the Contractor may match the existing grade. Though not a controlling criteria, CDOT acknowledges that meeting clear zone requirements over the Florida Canal may be a competing factor with other design requirements. Guardrail protection on the south side is not desirable due to close proximity of access points.

14.2.14. Design Exception Process

Design exceptions shall be submitted to CDOT for Approval prior to the submittal of the Pre-RFC Documents. Design exceptions may be subject to the Approval of FHWA. Design exceptions that require Approvals beyond CDOT may require additional time for Approval. Delays incurred from said Approvals are non-compensable and shall not justify any additional time to the schedule.

The Contractor shall comply with the following requirements when requesting a design exception:

1. The Contractor shall submit design exception requests in the form of a letter addressed to the CDOT Project Director for Approval prior to the submittal of Pre-RFC Documents.
2. The design exception request shall consist of the following items:
 - A. A letter identifying the exception(s) by number, Project number, location, and status (new submittal, resubmittal, etc.).
 - B. A completed CDOT Form 464 - Design Exception Variance Request, Exhibit 14-D.
 - C. Supporting documentation indicating the justification for the design exception. Justification shall address the following items:
 - i. Site conditions of the exception.
 - ii. Compelling reason for the exception, including which standard is not being met. If the exception affects any other standards, state what will be done to mitigate the effects of the exception on those standards.
 - iii. Alternatives considered
 - iv. Analysis of risk, including effects of the exception on safety and operation of the facility and previous crash history near the location of the exception.
 - v. Calculations estimating the cost of attaining the design standard and costs of exception as proposed.
 - vi. Effect on scenic, historical, or other environmental features.
 - vii. Discussion of any proposed mitigations.
 - D. Plan and profile drawings depicting the exception.

14.3 Construction Requirements

14.3.1. Median Cover Material

Median cover Material for all raised medians on mainline US 160 and CR 225 roundabout and mainline US 160 shall match the aesthetics of the corridor like at the Grandview Interchange as described in the Reference Documents via a concrete median cover Material. The Contractor shall provide a mockup (4-foot by 4-foot minimum) test panel to CDOT for all surface treatments for texture, color, and quality that will be compared to existing infrastructure for Acceptance.

14.3.2. Safety Edge

The Contractor's design shall include safety edges. Safety edge shall be required on all mainline US 160 pavement, overlay areas, and local Roadway pavement. Other than in overlay areas, CDOT safety edge detail shall be modified such that the Base Course and Subbase (ABC Class 6 and ABC Class 2) extend to topsoil layer on fill or ditch foreslope as shown in Figure 7-2 of the CDOT Roadway Design Guide rather

than a vertical face as shown in M-400-1. Safety edge is not required at the front face or under guardrail, adjacent to median barrier, or adjacent to curb and gutter.

14.3.3. Shouldering Material

Shouldering Material is required along the outside pavement edge for the outside Shoulder of US 160 and County roads as follows:

1. Topsoil may be used in lieu of Shouldering where Shoulders are 10 feet or greater.
2. 2 feet width where Shoulders are less than 10 feet.
3. Match width along US 160 to face of deer guards where they are located at clear zone.
4. Topsoil and seeding is allowable on all County Roads.

Additional requirements are shown in Book 2, Section 11.

14.3.4. Water Wells

The Contractor shall protect in place any water wells within properties acquired by the Project in accordance with Book 2, Section 9, Book 2, Section 13, and the CDOT Standard Specifications, Section 202.

14.3.5. Fencing

14.3.5.1 Temporary Fencing

Provide temporary fencing according to ROW acquisition agreements per Book 2, Section 9, to protect adjacent private property, livestock containment, and other property owner requirements.

Livestock may be pastured in various fields adjacent to the Project during construction. In order to protect and control livestock, the Contractor shall install and maintain temporary fence at locations where adjacent property has livestock and as specified in Book 2, Section 9, during construction. The Contractor shall maintain the temporary fence in such condition that it is capable of performing its intended function until such time as the permanent fence is completed. The Contractor shall give the landowner 30 Days written notice before any existing fence or gates are removed unless otherwise noted in Book 2, Section 9.

In remaining areas, temporary fencing shall be considered to control construction operations and to avoid impacts beyond ROW limits. Temporary fence shall be placed as required in any other Section of Book 2 and property-specific needs shall be coordinated with landowner prior to placement.

14.3.5.2 Permanent Fencing

The Contractor shall provide permanent ROW fencing of the types and at the locations shown in Table 14-3. See Book 2, Section 9, for additional requirements. All fencing, deer guards, and game ramps, including fencing across small mammal crossings, shall be located outside of the clear zone.

There shall be no gaps in the deer fencing along the US 160 corridor especially when there is a change in grade at wildlife underpasses, small mammal crossings, and at Bridge locations. Avoid abrupt angles where the deer fence transitions at the wildlife underpasses, small mammal crossings, and at the Bridges. Deer fence shall tie to all gates, game ramps, deer guards, and access control fence along the Project ROW. A bump out is required at a fire hydrant per 14.2.2.13 of this Section. In cut conditions,

Request For Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 14 - Roadways

fencing shall be placed on a 4-foot bench, a minimum of 2 feet away from grade breaks to promote long term stability. Fencing shall be placed a minimum of 10 feet away from fill slope catch points to allow for maintenance access.

At deer fencing termination points, where it does not tie into existing deer fence, geocell cellular confinement system and geotextile weed barrier shall be placed from fence termination point (clear zone) to the edge of Shouldering Material or to a maximum of 5-feet from the edge of pavement where Shouldering Material is not present. The pads shall be a minimum of 20-feet wide and a minimum of 8-inches depth geocell shall be used.

The construction of game ramps and deer fencing shall be phased to construct game ramps within 10 Days of the construction of the deer fence. Deer fencing shall be constructed on both sides of the Roadway at one time. No run of permanent deer fence on one side of the Highway shall be constructed more than one quarter mile beyond the end of the permanent deer fencing on the opposite side of the Roadway. Permanent deer fencing shall be constructed after the wildlife underpasses are installed. If deer fencing is constructed prior to the construction of the wildlife underpasses, gaps in the deer fencing will be required to facilitate wildlife movement. The gaps shall be installed at proposed game ramp locations until the wildlife underpasses are completed. The gaps shall be no more than one quarter mile apart.

Any ROW and/or deer fencing that crosses perpendicular through irrigation ditches shall meet ditch company standards and no gaps shall be allowed.

Table 14-3: Permanent Fencing

Location	Type	Remarks
US 160 ROW west of MP 91.96	ROW Fence	Per CDOT Standard M-607-1
US 160 ROW east of MP 91.96 ¹	Deer Fence	Per CDOT Standard M-607-4
Between CR 223 Elmore's and US 160	Deer Fence	Per CDOT Standard M-607-4
CR 223 Elmore's ROW	Barbed Wire with Metal Posts (Smooth Strand Wire - Top and Bottom)	Per CDOT Standard M 607-1 and the top and bottom strands per 710.01 without the barbs
CR 225 ROW from US 160 to deer guards	Deer Fence	Per CDOT Standard M 607-4
CR 225 ROW beyond deer guards	Barbed Wire with Metal Posts (Smooth Strand Wire - Top and Bottom) beyond deer guards	Per CDOT Standard M 607-1 and the top and bottom strands per 710.01 without the barbs

Request For Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 14 - Roadways

Location	Type	Remarks
Englishman and Narrow Gauge combined access ROW	Barbed Wire with Metal Posts (Smooth Strand Wire - Top and Bottom)	Per CDOT Standard M 607-1 and the top and bottom strands per 710.01 without the barbs
Between Englishman and Narrow Gauge combined access and US 160	Deer Fence	Per CDOT Standard M 607-4
MP 95.55 to MP 95.66	Existing Fencing	Tie proposed fencing to existing deer fence. Delineate ROW with carsonite markers, if needed.
BLM properties	Deer Fence with existing ROW Fence behind	Per CDOT Standard M-607-4 and M-607-1
Wildlife underpasses and small mammal crossings	Deer Fence	Per CDOT Standard M-607-4
Wildlife crossing access openings at ROW	Barbed Wire with Metal Posts (Smooth Strand Wire - Top and Bottom)	Per CDOT Standard M 607-1 and the top and bottom strands per 710.01 without the barbs

1. Where existing deer fence is present, located at ROW, and in good condition, the Contractor may elect for deer fence to remain in place. There is approximately 55,000 LF of existing fencing as anticipated to remain for this Project. The Contractor shall assume a replacement of 25,000 linear feet if additional fencing is required during construction.

14.3.5.3 Emergency Access

Emergency access points along the corridor are located at CR 222, CR 223 Elmore's, Englishman and Narrow Gauge mobile home parks, and the access at the north side of US 160 at MP 96.79. Emergency access points shall be gated with 12 foot gates at a minimum and shall match the height of the deer fence. Emergency access point gates shall include a locking system compatible with the local fire department requirements, Knox Padlock® eLock - Long Shackle - Exterior Use, Model: KLS-3781. Emergency access point gates do not require the installation of deer guards.

14.3.5.4 ACM Parcel (MP 91.87 to MP 91.95)

The property owner will install screening fence per LaPlata County. ROW fencing shall tie into property owner's screen fencing on either side. Markers will be in place to delineate CDOT ROW through the limits of screening fence.

14.3.5.5 Carmon Property (MP 92.41 to MP 92.53 South)

Additional access shall be provided as described in Book 2, Section 9.

14.3.5.6 McClure Murray Ditch MP 93.40 to MP 93.45)

Grade maintenance an access Road a minimum of 10 feet wide between the toe of slope and the fence line from the oil well pad access Road at MP 93.64 to the ditch outfall on the south side of US 160. Provide 10-foot wide vehicle gates, as required to allow passage across drainage and small mammal crossing facilities.

14.3.5.7 Lon's Salvage Yard (MP 96.78 to MP 96.91)

The fence on the Lon's Salvage Yard property shall be configured as shown in the reference design. Deer fence will run along the ROW line and turn at right angles to parallel the access and extend to the deer guard. In front of the deer guard, continue with the 4 strand ROW fencing and offset 4 feet to the clear zone.

14.3.6. Pedestrian Gates and Pedestrian Paths

A self-closing, ADA compliant pedestrian gate, shall be placed adjacent to all private, subdivision, emergency, and commercial accesses points with deer guards. A firm, stable, and slip-resistant ADA accessible path, 4 foot minimum width, must be provided through the pedestrian gate connecting the access on both sides of the fence/ROW. Pedestrian gates shall match the height of the deer fence and shall be a minimum of 4 feet wide.

Pedestrian gates shall be placed at each quadrant of the Florida River Bridge for maintenance access. The four pedestrian gates shall be self-closing, match the height of the deer fence, and shall be 4 feet wide.

For subdivisions or properties with livestock activity, a 6-foot wide self-closing gates shall be required.

The Contractor shall coordinate with property owners for specific width requirements and clearly document the requirements as part of the 138 Access Permit process described in Section 14.3.13.

See Book 2, Section 14.2.2 and Section 9, for locations of additional pedestrian gates. The locations of pedestrian gates and paths shall be submitted to CDOT for Approval prior to the RFC Documents submittal.

14.3.7. Vehicle Gates and Maintenance Access

A minimum 10-foot wide access gates are required for maintenance access to all drainage and irrigation facilities to match the height of the deer fence. Where existing gates are present, the gates shall match the existing widths. All gates for maintenance access shall be in line with a designed vehicle access path, a minimum of 10 feet wide.

Maintenance access gates, 10 feet wide, shall be installed at all wildlife underpasses. They shall be installed at each side of US 160 to match the height of the deer fence.

See Book 2, Section 14.2.2 and Section 9, for locations of additional vehicle gates. If there are discrepancies between the gate size in this Section and Book 2, Section 9, Section 9 shall have precedence.

The locations of the maintenance gates and paths shall be submitted to CDOT for Approval prior to the RFC Documents submittal.

14.3.8. Game Ramps

See Book 2, Section 6 for requirements.

14.3.9. Deer Guards

Deer guards shall be placed outside curb return radii at all private and La Plata County Road access points from mainline US 160 where the deer fence is placed. This requirement does not apply to the emergency access points listed in Section 14.3.5.3.

Deer guards and fencing must be placed outside of the clear zone limits and shall be placed to avoid impacting the LAPLAWD waterline. Deer guards that are within CDOT and La Plata County snow removal maintenance areas, shall be designed per the Contract Documents. Deer guards shall meet HL-93 loading requirements.

Deer guards shall not include wings to tie to the deer fencing. Instead, the deer fence shall abut the deer guard and run continuous along the outside edges (i.e. turn fence at a 90 degree angle perpendicular to the deer guard and run the entire length of the deer guard).

At driveway accesses, the pavement shall continue to the front side of the deer guards. At driveway accesses steeper than 8 percent, the pavement shall continue 20 feet beyond the deer guard on the property side. Pavement sections shall be in accordance with the requirements in Book 2, Section 11.

See Book 2, Section 6 for additional deer guard requirements.

14.3.10. Small Mammal Crossings

The location of the small mammal crossings shall be submitted to CDOT for Approval prior to the RFC Documents submittal. See Book 2, Section 6, and Book 2, Section 13 for requirements.

14.3.11. Wildlife Underpass

The Mesa wildlife underpass shall be placed at MP 92.52. The Valley wildlife underpass shall be placed between MP 96.05 and MP 96.13. The location of the Valley wildlife underpass shall be submitted to CDOT for Approval prior to the RFC Documents submittal. A 10-foot wide flat area with a maximum slope of 10:1 shall be provided at the openings of the wildlife underpasses. The flat area shall extend in length to be across the entire opening of the wildlife underpass.

See Book 2, Section 6 and Book 2, Section 16 for additional requirements.

14.3.12. Mailboxes

Single use mailboxes shall be reset and replaced per CDOT Standard M-210-1.

Existing community mailbox Structures shall be surveyed for existing conditions and shall be reset in the same condition on new concrete foundations at their new locations. Any damage incurred to the mailbox Structure shall be the responsibility of the Contractor.

The Contractor shall coordinate the final location and placement of mailboxes with both the United States Postal Service and CDOT.

14.3.13. 138 Access Permits

All properties impacted by modifications to their access points will be required to have a Form 138. A reference document is provided in Book 3 containing the access points that are impacted by the reference design with the requirements of the access for the Contractor's use. The following elements will be required after the preliminary Design Documents are Reviewed:

1. Key map for Project with each access point having a unique identifier
2. Exhibit for each owner showing a plan and profile view
 - A. The following information shall be provided for each exhibit
 - i. Unique identifier established on the key map
 - ii. Physical address
 - iii. LaPlata County Assessor Parcel ID
 - iv. Access Permit ID
 - v. Permitted use
 - vi. Permitted width and radii
 - vii. Existing width and radii
 - viii. Design width and radii
 - ix. Date
 - B. Plan View Requirements
 - i. Aerial imagery
 - ii. Scale: 1 inch = 20 feet
 - iii. US 160 and driveway stationing
 - iv. Surfacing types and limits labeled clearly
 - v. Label all widths and tapers
 - vi. Show all improvements including but not limited to: throat width, radii, profile grade, grading limits, pedestrian path, pipes, riprap, fencing, gate widths, deer guards, utilities, ROW, and Easements. Design of these elements shall be to a level where no substantial changes are expected after they are presented to the property owners.
 - C. Profile Requirements
 - i. No vertical exaggeration
 - ii. Label existing and proposed ground
 - iii. Label proposed slopes
 - iv. Label location and extents of deer guards, pipes, and other relevant features
 - v. Show Existing and Proposed ROW and Easements
3. Draft cover letter on template similar to one provided in the Reference Documents.

4. If requested, a representative from the design team shall attend in-person meetings with property owners within the 2 week timeframe during the owner's appeal. The representative shall be able to adequately describe design, familiar with design standards, understand the ROW process, and discuss potential alternatives.

The complete 138 package shall be submitted to CDOT, in groups of no more than 15 packages, for Review. The Contractor shall address comments within 7 Days. The submittal packages in groups of no more than 15 shall be submitted no closer than 2 weeks apart.

The template letter and exhibit shall be submitted to CDOT 2 weeks ahead of the distribution to the property owner. Owners will have 35 Day appeal period. In the event of an owner appeal, design and exhibit updates shall be provided within 7 Days after the end of the appeal process. Construction on the access will not commence until the appeal period is over, plus 5 Days.

See the Reference Documents for an example 138 package.

14.4 Deliverables

The Contractor shall submit the following to CDOT for Review, Acceptance, or Approval:

Table 14-4: Deliverables

Deliverables	Review, Acceptance, or Approval	Schedule
Paved widened Shoulder near CR 225	Acceptance	Prior to the Pre-RFC Documents submittal
Vehicle turning template exhibits at all access locations	Acceptance	Prior to the RFC Documents submittal
Roundabout design approach memo and turning templates	Acceptance	Prior to the Pre-RFC Documents submittal
Design exceptions (if applicable)	Approval	Prior to the Pre-RFC Documents submittal
Median cover Material test panel (4 foot by 4 foot)	Acceptance	Prior to placement of median cover Material
Locations of pedestrian gates and pedestrian paths	Approval	Prior to the RFC Documents submittal
Location of maintenance vehicle gates and vehicle paths	Approval	Prior to the RFC Documents submittal
Location of small mammal crossings	Approval	Prior to the RFC Documents submittal

Request For Proposal
 US 160 Elmore's Corner to Dry Creek Design-Build
 Project No.: NHPP 1602-157 & FBR 1602-193
 Sub Account No.: 20980 - COMBO
 Book 2 - Technical Requirements
 Section 14 - Roadways

Deliverables	Review, Acceptance, or Approval	Schedule
Location of the Valley wildlife underpass	Approval	Prior to the RFC Documents submittal
138 Permit Packages	Review	Varies along corridor to meet construction schedule needs. After preliminary design review and comments are addressed at each location

14.5 Exhibits

Exhibit 14-A	Roadway Design Criteria Table
Exhibit 14-B	Minor Roadway Criteria Table
Exhibit 14-C	Local Roadway Criteria Table
Exhibit 14-D	CDOT Design Exception Variance Request Form
Exhibit 14-E	CDOT Design Exception Variance - Elmore's Segment Vertical Exception
Exhibit 14-F	CDOT Design Exception Variance - Valley Segment Vertical Exception

Request For Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 14 - Roadways

Exhibit 14-A: Roadway Design Criteria

Criteria	US 160 West of MP 94.05/CR 225	US 160 East of MP 94.05/CR 225	US 160 / CR 225 RAB
Location	MP 94.05	MP 94.05	
Design Criteria and Controls			
Roadway Classification	R-A (Rural Arterial)	R-A (Rural Arterial)	R-A (Rural Arterial)
Design Speed (mph)	65	65	30 ¹
Posted Speed (mph)	60	60	N/A
Terrain	Mountainous	Mountainous	Mountainous
Maximum Superelevation (e_{MAX})	8%	8%	See Note 2
Axis of Rotation	CL	CL	See Note 2
Minimum Radius (ft.) ³	1480	1480	See Note 2
Maximum Superelevation Cross Slope at Intersection (%)	4%	4%	3% ²
Maximum Superelevation Cross Slope at Bridges (%)	6%	6%	N/A
Use of Spirals	Permitted	Permitted	N/A
Minimum Profile Grade	0.5%	0.5% or Match Existing	See Note 2
Maximum Profile Grade (%) ⁴	5%	5% or Match Existing	3% ²

Request For Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 14 - Roadways

Criteria	US 160 West of MP 94.05/CR 225	US 160 East of MP 94.05/CR 225	US 160 / CR 225 RAB
Minimum K Value, Crest ⁵	193	193	19
Minimum K Value, Sag ⁶	157	157	37
Stopping Sight Distance (SSD) (ft.) ⁷	645	645	200
Intersection Sight Distance (ISD) (ft.) ⁸	Left Turn From Major =530	Left Turn From Major =530	See Note 2
Overhead Sign Structures (ft.) ⁹	17	17	17
Lane Width (ft.)	12	12	See Note 2
Two-way Left Turn Lane (ft.)	14 (min)	N/A	N/A
Inside Shoulder (ft.)	N/A	10 ¹⁰	See Note 2
Outside Shoulder (ft.) ¹¹	10	8	See Note 2
Normal Cross-Slope (%)	2%	2%	See Note 2
Clear Zone (ft.) ¹²	30	30	30
Design Vehicle	WB-67	WB-67	WB-67
Acceleration Length (ft.) ¹³	1170	1170	190
Deceleration Length (ft.) ¹³	700	700	250
Redirect Taper Rate ¹⁴	60:1	60:1	60:1

Request For Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 14 - Roadways

Criteria	US 160 West of MP 94.05/CR 225	US 160 East of MP 94.05/CR 225	US 160 / CR 225 RAB
Min. Return Curve Radius (ft.)	25	25	N/A

Notes:

- (1) Design speed change at MP 93.8 and 94.3 to 30 MPH prior to roundabout entry curve. Roundabout circulatory design speed is 30 mph.
- (2) National Cooperative Highway Research Program (NCHRP) Report 1043 Roundabouts: An Informational Guide, third edition and Book 2, Section 14.2.11.
- (3) AASHTO PGDHS, 2018 Table 3-10 for curves along US 160.
- (4) Existing terrain steeper than 5% at 3 locations. Designers may match existing grade in those areas. See Exhibits 14-E and 14-F.
- (5) AASHTO PGDHS, 2018 Table 3-35.
- (6) AASHTO PGDHS, 2018 Table 3-37.
- (7) AASHTO PGDHS, 2018 Table 3-1, use AASHTO PGDHS, 2018 Table 3-2 for SSD on Grades. Table values not adjusted for grade. Allow horizontal sight distance across barriers. Use 3D graphical solutions for areas with vertical curvature. Glare screen not allowed.
- (8) AASHTO PGDHS, 2018 Table 9-17 along US 160. NCHRP Report 1043 Exhibit A.15 for intersection sight distance within the roundabout
- (9) AASHTO PGDHS, 2018 section 7.2.5.1.
- (10) Inside Shoulder only required in divided highway condition between MP 97.1 to 97.7.
- (11) Outside Shoulder can be reduced to 4 ft paved adjacent to auxiliary lanes. Shoulder width will vary on approach to roundabout.
- (12) AASHTO Roadside Design Guide Table 3-1.
- (13) State Highway Access Code Table 4-6.
- (14) State Highway Access Code Table 4-9.

Exhibit 14-B: Minor Roadway Design Criteria

Criteria	CR 229	CR 223 Elmore's	CR 225
Location	MP 91.94	MP 93.13 - 93.3	MP 94.05
Roadway Classification	Rural Minor Collector	Rural Minor Collector	Rural Minor Collector
Design Speed (mph)	35	35	35
Posted Speed (mph)	35	35	35
Maximum Superelevation (e_{MAX})	6%	6%	6%
Minimum Radius (ft.) ¹	340	340	340
Minimum Stopping Sight Distance (SSD) (ft.) ²	250	250	250
Intersection Sight Distance (ISD) (ft.) ³	Left Turn From Stop=720 Right Turn From Stop=625	N/A	Left Turn From Major=285
Minimum Profile Grade	0.50%	0.50%	0.50%
Maximum Profile Grade	5%	5%	4% (Roundabout Approach) 3% (Roundabout)
Minimum K Value, Crest ⁴	29	29	29
Minimum K Value, Sag ⁵	49	49	49

Request For Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 14 - Roadways

Criteria	CR 229	CR 223 Elmore's	CR 225
Access Width (ft.)	28	28	36
Lane Width (ft.)	14 (28 ft. Total Width)	12	12
Minimum Shoulder Width (ft.)	Match Existing	2	6
Redirect Taper	N/A	N/A	20:1 ⁶
Clear Zone Width (ft.) ⁷	10	10	14
Surface Treatment ⁸	HMA/Gravel	HMA	HMA
Design Vehicle ⁹	WB-67	P/T, School Bus & SU-33	WB-67

Notes:

- (1) AASHTO PGDHS, 2018 Table 3-9.
- (2) AASHTO PGDHS, 2018 Table 3-1, use AASHTO PGDHS, 2018 Table 3-2 for SSD on Grades. Table values not adjusted for grade.
- (3) AASHTO PGDHS, 2018 Table 9-7, Table 9-9 and Table 9-17.
- (4) AASHTO PGDHS, 2018 Table 3-35.
- (5) AASHTO PGDHS, 2018 Table 3-35.
- (6) State Highway Access Code Table 4-9.
- (7) AASHTO Roadside Design Guide Table 3-1.
- (8) Match existing conditions.
- (9) All access points from US 160 with a deer guard must accommodate a SU-33 for Fire Department access.

Request For Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 14 - Roadways

Exhibit 14-C: Local Roadway Design Criteria

Criteria	Access West of MP 94.05/CR 225 ¹¹	Mesa Heights Dr	Florida Acres Dr	Wageman Rd	C Bar K Ln	Cole Ranch Rd
MP		MP 91.81	MP 91.84	MP 92.17	MP 92.28	MP 92.65
Design Criteria and Controls						
Roadway Classification	Local Road	Local Road	Local Road	Local Road	Local Road	Local Road
Design Speed (mph)	15	15	15	15	15	15
Posted Speed (mph)	15	15	15	15	15	15
Maximum Superelevation (e _{MAX})	N/A	N/A	N/A	N/A	N/A	N/A
Minimum Radius (ft.) ¹	82	82	82	82	82	82
Minimum Stopping Sight Distance (SSD) (ft.) ²	80	80	80	80	80	80
Intersection Sight Distance (ISD) (ft.) ³	Left Turn From Stop=720 Right Turn From Stop=625	Left Turn From Stop=720 Right Turn From Stop=625	Left Turn From Stop=720 Right Turn From Stop=625	Left Turn From Stop=720 Right Turn From Stop=625	Left Turn From Stop=720 Right Turn From Stop=625	Left Turn From Stop=720 Right Turn From Stop=625
Minimum Profile Grade	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%

Request For Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 14 - Roadways

Criteria	Access West of MP 94.05/CR 225 ¹¹	Mesa Heights Dr	Florida Acres Dr	Wageman Rd	C Bar K Ln	Cole Ranch Rd
Maximum Profile Grade	5% ⁹	5%	5%	5%	5%	6.50%
Minimum K Value, Crest ⁴	40 ft Vertical Curve	3	3	3	3	3
Minimum K Value, Sag ⁵	40 ft Vertical Curve	10	10	10	10	10
Access Width (ft.)	See Access Permit and MOAs					
Lane Width (ft.)		13 (26 ft. Total Width)	12 (24 ft. Total Width)	10 (20 ft. Total Width)	9 (18 ft. Total Width)	11 ft (22 ft. Total Width)
Redirect Taper	N/A	N/A	N/A	N/A	N/A	N/A
Clear Zone Width (ft.) ⁶	10	10	10	10	10	10
Surface Treatment ⁷	See Book 2 Section 14.3.8	HMA/Gravel	HMA	HMA/Gravel	HMA/Gravel	HMA/Gravel
Design Vehicle ⁸	P/T SU-33	P/T SU-33	P/T SU-33	P/T SU-33	P/T SU-33	P/T SU-33

Request For Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 14 - Roadways

Exhibit 14-C: Local Roadway Design Criteria (cont.)

Criteria	Lone Pine Gulch Rd	Encantado Ln	Driveways East of MP 94.05/CR 225 ¹¹	Via Vista Cir	Kirk Lane	Wasinger Dr	Silver Hills Road
MP	MP 92.97	MP 93.0		MP 94.41 & MP 94.92	MP 94.61	MP 96.30	MP 97.05
Design Criteria and Controls							
Roadway Classification	Local Road	Local Road	Local	Local Road	Local Road	Local Road	Local Road
Design Speed (mph)	15	15	15	25	15	15	15
Posted Speed (mph)	15	15	15	25	10	15	15
Maximum Superelevation (e _{MAX})	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Minimum Radius (ft.) ¹	82	82	82	292	82	82	82
Minimum Stopping Sight Distance (SSD) (ft.) ²	80	80	80	155	80	80	80
Intersection Sight Distance (ISD) (ft.) ³	Left Turn From Stop=720 Right Turn From Stop=62	Left Turn From Stop=720 Right Turn	Left Turn From Stop=720 Right Turn	Left Turn From Stop=720 Right Turn	Left Turn From Stop=720 Right Turn	Left Turn From Stop=720 Right Turn	Left Turn From Stop=720 Right Turn

Request For Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 14 - Roadways

Criteria	Lone Pine Gulch Rd	Encantado Ln	Driveways East of MP 94.05/CR 225 ¹¹	Via Vista Cir	Kirk Lane	Wasinger Dr	Silver Hills Road
		From Stop=625	From Stop=625	From Stop=625	From Stop=625	From Stop=625	From Stop=625
Minimum Profile Grade	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Maximum Profile Grade	5%	5%	8% ¹⁰	5%	5%	12.5%	5%
Minimum K Value, Crest ⁴	3	3	40 ft Vertical Curve, or K-Value of 3	12	3	3	3
Minimum K Value, Sag ⁵	10	10	40 ft Vertical Curve or K-Value of 10	26	10	10	10
Access Width (ft.)	See Access Permit and MOAs						
Lane Width (ft.)	8 (16 ft Total Width)	12 (24 ft Total Width)	M.E.	12 (24 ft. Total Width)/ 15 (30 ft. Total Width)	12 (24 ft Total Width)	8 (16 ft Total Width)	8 (16 ft Total Width)
Redirect Taper	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Clear Zone Width (ft.) ⁶	10	10	10	10	10	10	10

Request For Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 14 - Roadways

Criteria	Lone Pine Gulch Rd	Encantado Ln	Driveways East of MP 94.05/CR 225 ¹¹	Via Vista Cir	Kirk Lane	Wasinger Dr	Silver Hills Road
Surface Treatment ⁷	HMA/Gravel	HMA	M.E	HMA/Gravel	HMA/Gravel	HMA/Gravel	HMA/Gravel
Design Vehicle ⁸	P/T SU-33	P/T SU-33	P/T SU-33	P/T SU-33	P/T SU-33	P/T SU-33	P/T SU-33

Notes:

1. AASHTO PGDHS, 2018 Table 3-9.
2. AASHTO PGDHS, 2018 Table 3-1.
3. AASHTO PGDHS, 2018 Table 9-7, Table 9-9.
4. AASHTO PGDHS, 2018 Table 3-35.
5. AASHTO PGDHS, 2018 Table 3-37.
6. AASHTO Roadside Design Guide Table 3-1.
7. Match existing conditions.
8. All access points from US 160 must accommodate a SU-33 for Fire Department access.
9. All driveways West of CR 225 (MP 94.05) except as noted shall have a maximum driveway grade of 5% unless noted: 126+06 LT (MP 91.59), 142+01 RT (ACM) (MP 91.89).
10. All driveways East of CR 225 (MP 94.05) except as noted shall have a maximum driveway grade of 8% unless noted: 335+40 RT (MP 95.49), 339+44 RT (MP 95.57), 373+43 RT (MP 96.22), 398+66 LT (MP 96.72), 402+58 LT (MP 96.79), 416+09 LT (MP 97.05).
11. Driveways with different turning requirements: 142+01 RT (ACM) (MP 91.89) = WB-50, 183+87 LT (MP 92.62)= WB 67, Englishman/Narrow Gauge (MP 95.28) = firetruck/school bus/Mobile Home, 406+35 LT (Lon's) (MP 96.86) = WB-67. Must provide turning template and clear distance. Supplement off-tracking areas with stabilized Shoulder.

COLORADO DEPARTMENT OF TRANSPORTATION DESIGN EXCEPTION VARIANCE REQUEST		FHWA Oversight ☐ Yes ☐ No	Project Code
Project name		Date	Project Number
Type (check all that are applicable) ☐ New construction ☐ Restoration ☐ Resurfacing ☐ Rehabilitation ☐ _____ ☐ Reconstruction ☐ Safety ☐ Enhancement ☐ _____ ☐ _____		Revised	Region HQ

Part 1 – Complete A through H for all projects.

A. Short project description (☐ see CDOT Form 463 for more detailed description)		☐ AASHTO standards apply ☐ 3R standards apply ☐ Other: _____
B. Description of standard(s) reduced		
C. Rational need for exception(s)		
D. Mitigation measures proposed (include safety discussion)		
E. Description of adjoining sections: (☐ see CDOT Form 463) Other:		☐ same as existing project ☐ same as proposed project
F. Supporting Data Driven Safety Analysis (DDSA) Analysis Completed: ☐ Yes ☐ No DDSA Summary or explanation if no DDSA performed:	G. Cost Estimated item cost if built to full standard \$ _____ Estimated item cost with exception \$ _____ ± difference in cost: \$ _____	
H. Other (as needed)		

Part 2 – Appropriate signatures required.

A. Submitted by (Project Manager)	Date	Program Engineer Approval	Date
Resident Engineer Approval			Date

Required for Federal aid oversight and Interstate projects

Approved by (FHWA Division Administrator)	Date

B. ☐ Not approved ☐ Approved with conditions	Conditions/comments

Previous editions are obsolete and may not be used.

Distribution: Project Manager
 Program Engineer
 Resident Engineer
 HQ Records Center
 FHWA, if applicable

CDOT Form #0464 12/18

15.0 Signing, Pavement Marking, and Lighting Infrastructure

This Section includes the requirements for the signing, pavement marking, and lighting infrastructure Work for the US 160 Elmore's to Dry Creek Design-Build (Project). This Work shall be completed in accordance with the Contract Documents.

15.1 Administrative Requirements

15.1.1 Standards

The Contractor shall design and construct the Project in accordance with the Contract, including the Project Special Provisions and Standard Special Provisions in Book 2, Section 21, requirements of the standards in the documents listed in Table 15-1 and those referenced in Book 3. The Contractor shall use the latest adopted edition at the time of the Proposal Due Date.

Table 15-1: Standards

Author or Agency	Title
American Association of State Highway and Transportation Officials (AASHTO)	A Policy on Geometric Design of Highways and Streets (PGDHS)
AASHTO	Roadside Design Guide
AASHTO	Standard Specifications for Highway Bridges
Colorado Department of Transportation (CDOT)	Standard Specifications for Road and Bridge Construction (Standard Specifications)
CDOT	Lighting Design Guidelines
CDOT	Retroreflective Sheeting Materials Guide
CDOT	Sign Design Manual
CDOT	M&S Standard Plans
CDOT	The Colorado Supplement to the Federal Manual on Uniform Traffic Control Devices
CDOT	Retroreflective Sheeting Materials Guide
Federal Highway Administration (FHWA)	Manual on Uniform Traffic Control Devices (MUTCD)
FHWA	Standard Highway Signs (with supplements)

Author or Agency	Title
La Plata Electric Association, Inc. (LPEA)	Electric Service Regulations
National Cooperative Highway Research Program (NCHRP)	Research Report 1043: Guide for Roundabouts
National Fire Protection Association	National Electrical Code

15.2 Design Requirements

15.2.1 Submittals

All submittals shall be prepared, reviewed, and submitted in accordance with the requirements set forth in Book 2, Section 4.

15.2.2 Temporary Traffic Control

All requirements for temporary traffic control, including signing and striping for the Work, are found in this Section and in Book 2, Section 17.

15.2.3 Electrical, Power Service, and Communications

The Contractor shall determine electric, power, and communication requirements for the Project and develop the Project lighting design and construction requirements.

The Contractor shall provide Service Line Relocation or adjustment for the electrical, power service, and communications per Book 2, Section 8.

The Contractor shall obtain Approval of the power service design from the power service provider and from CDOT and coordinate with and meet all requirements as specified by the power service provider for the complete and operational power service to all required locations. All power connections to devices shall include a quick-disconnect.

The Contractor shall be responsible for the coordination of Service Line Work. The Contractor shall contact the appropriate electrical supplier to request and process to completion the required coordination to establish the power sources for all Roadway, electrical assets, and Street lighting. The Contractor shall perform all Work necessary to maintain existing or establish new power sources.

The Contractor shall be responsible for installing the power meter(s) and lighting control centers for the Project. All cost charges from the power service provider and all necessary Materials, including meter (if required), labor, and coordination required to maintain existing or establish new power sources, shall be included in the Work.

15.2.4 Permanent Signing and Striping

The Contractor shall provide permanent signing, pavement marking, delineation, and other traffic control devices that facilitate safe travel flow through the completed Project elements.

The Contractor shall submit to CDOT signage and pavement marking plans to CDOT for Acceptance prior to the RFC Documents submittal.

15.2.4.1 Signing Design

The Contractor shall prepare signing plans for all necessary warning, supplemental, and regulatory signs for the Project. The plans shall also include additions, removals, or modifications to existing signs and appurtenances.

Signing design shall comply with the requirements of the most current publications of the CDOT Standard Specifications, M&S Standard Plans, and Sign Design Manual; and the FHWA Manual on Uniform Traffic Control Devices (MUTCD), as modified by the Colorado Supplement, as well as all interpretations issued by FHWA. The requirements of the MUTCD shall include both the standard requirements and the guidance recommendations of the manual. MUTCD standards take precedence over any Request for Proposal (RFP) exhibit or preliminary design.

The plans shall include modifications to permanent signing inside and outside the Project that is rendered inaccurate, ineffective, confusing, or unnecessary by the Project.

The plans for all signs shall identify the location and legend for each sign. The Contractor shall submit sign layouts for all special signs of any size to CDOT for Acceptance prior to the RFC Documents submittal and prior to fabrication of the sign panel.

Permanent signage near Bridges shall not be hung from or be attached to Bridges.

One way arrow, R6-1(R) signs with roundabout directional arrows (three chevrons), R6-4a shall be placed in the central island across from each entrance leg of the roundabout.

Structure identification signs shall be included for all major structures.

The final location for new mile markers shall be Approved by CDOT prior to installation. All mile markers must be placed according to assigned GPS locations per CDOT's Linear Referencing System.

15.2.4.2 Materials

Wood posts for mounting permanent ground signs shall not be used.

Flexible delineators are required in raised median areas only and shall not be used anywhere else within the Project. Delineators not in raised medians shall have metal posts.

Sheeting shall be Type IV and Type XI, as defined in the CDOT Retroreflective Sheeting Materials Guide, and shall conform to Subsections 713.04 and 713.06 when applicable.

15.2.4.3 Pavement Marking Design

The Contractor shall prepare pavement marking plans for Roads affected by the construction of the Project. These plans shall include, but not be limited to, all striping required for center lines, edge

lines, lane lines, lane drops, merging lanes, transition lanes, arrows, legends, symbols, object markings, delineation, and other striping, as well as any modifications required for transitions to existing pavement markings.

Pavement marking design for CDOT facilities shall comply with the requirements of the most current publications of the M&S Standard Plans and the FHWA MUTCD (both the standard requirements and the guidance recommendations of the manual).

All permanent lane lines and edge lines shall be 6 inches wide.

Dotted lane lines (3-foot paint and 12-foot gap) shall be provided through the taper for all acceleration and deceleration lanes.

The entrance approaches to the roundabout shall use the fishhook style pavement marking arrows with the dot as appropriate.

15.2.4.4 Materials

The Contractor shall use pavement marking Materials specified in Table 15-2, and be in conformance with CDOT Standard S-627-1 and CDOT Standard Specifications, Sections 627 and 713.

Table 15-2: Pavement Marking Materials

Location	Pavement Marking Type
All striping line types on asphalt	Pavement Marking Paint (High Build)
Word/symbols/cross walks/stop lines on asphalt	Preformed Plastic Pavement Marking (Inlaid)
Yellow lines of any type on Portland concrete cement pavement (PCCP)	Preformed Plastic Pavement Marking (Type I) (Inlaid)
White lines of any type on Portland concrete cement pavement (PCCP)	Preformed Plastic Pavement Marking (Type II) (Inlaid)(Contrast)
Word/symbols/cross walks/stop lines on Portland concrete cement pavement (PCCP)	Preformed Thermoplastic Pavement Marking (Inlaid)

15.2.5 Lighting

15.2.5.1 Lighting Design

Permanent lighting shall be provided at the new roundabout and for 400 feet along US 160 to the approaches of new roundabout, measured from the outside edge of the roundabout. The illuminance levels at the new roundabout shall be per Exhibit 14.3 of NCHRP 1043. Temporary lighting shall be installed if the roundabout is operational prior to installation of the permanent lighting.

The Contractor shall prepare lighting plans for the Project. Lighting plans shall address both temporary and permanent Work and shall include existing topography, ROW, Utilities, drainage facilities,

Structures, and all other existing and new facilities. The plans shall include location and orientation of standards and fixtures, wiring, conduits, pedestals, power sources, lighting control centers, and all other lighting components required to construct the lighting on the Project and shall be submitted to CDOT for Acceptance prior to the RFC Documents submittal.

The Contractor shall prepare lighting calculations, including voltage-drop calculations for each circuit, showing the design meets the performance criteria for Roadway design to include average, maximum, minimum foot-candles, and average to minimum and maximum to minimum luminance on the horizontal Roadway plane. The lighting design shall be per the iso-foot-candle curve plots showing foot-candle levels at 1.0-, 0.5-, 0.2-, and 0.1-foot-candles. The lighting and electrical design calculations shall be submitted to CDOT for Acceptance prior to the RFC Documents submittal.

15.2.5.2 Lighting Materials

Lighting Equipment for all permanent installations shall be as specified in the CDOT Lighting Design Guidelines and the CDOT M&S Standards.

All permanent lighting within the Project shall be dimmable, Light Emitting Diode (LED) luminaries and shall comply the Revision of Sections 613 and 715 LED Roadway Luminaires in Book 2, Section 21.

The Contractor shall submit the Materials lists for the lighting to CDOT for Approval prior to ordering Material.

The Contractor shall be responsible for lighting maintenance and service per Book 2, Section 8 and Book 2, Section 20 for the Project through Final Acceptance.

15.3 Construction Requirements

No Material, part, or attachment of any Equipment shall be substituted or applied contrary to a manufacturer's recommendations and standard practices.

15.3.1 Existing Signing

The Contractor shall remove and dispose of all existing sign Structures, ground-mounted signs, and delineators within the Project area that conflict with Project modifications or do not meet current standards and specifications. All existing removed signs and poles shall become the property of the Contractor.

15.3.2 Permanent Signing

The Contractor shall coordinate with Colorado Logos, Inc. in the removal, resetting, and accommodation of final placement of Colorado Logos, Inc. signs.

Sign posts shall be installed plumb. Vertical deviation shall not exceed 0.5 inch in 10 feet.

15.3.3 Pavement Marking Removal

Removal of existing markings and temporary markings shall be hydroblasted prior to placing permanent markings.

15.3.4 Power Sources

All power connections to devices shall include a Colorado State Permit and an electrical inspection performed by a journeyman electrician licensed in the State of Colorado.

15.3.5 Lighting

All electrical Work shall meet current National Electrical Code (NEC) requirements and be performed by a journeyman electrician licensed in the State of Colorado.

15.3.6 Temporary Signalization

Temporary traffic signals for construction operations shall comply with the Revision of Section 630 Traffic Signal (Temporary) in Book 2, Section 21.

15.4 Deliverables

The Contractor shall submit the following to CDOT for Review, Acceptance, or Approval:

Table 15-3: Deliverables

Deliverable	Review, Acceptance, or Approval	Schedule
Power service design	Approval	As needed to establish power connections
Signage and pavement marking plans	Acceptance	Prior to the RFC Documents submittal
Location of new mile markers	Approval	Prior to installation
Sign layouts for all special signs of any size	Acceptance	Prior to the RFC Documents submittal and prior to fabrication
Lighting plans	Acceptance	Prior to the RFC Documents submittal
Lighting and electrical design calculations	Acceptance	Prior to the RFC Documents submittal
Materials lists for the proposed lighting	Approval	Prior to ordering material

16.0 Structures

This Section includes the requirements for the Structures Work for the US 160 Elmore's Corner to Dry Creek Design-Build Project (Project). This Work shall be completed in accordance with the Contract Documents.

16.1 Structures Work

16.1.1 Bridges

Refer to [Table 16-1](#) and this Section for the Work required on existing Bridges.

Table 16-1: Action for Existing Bridges

Milepost (MP)	Structure No.	Description	Work
93.8	P-05-BC	US 160 over Florida River	The existing Bridge shall be replaced. The new Bridge shall accommodate large mammal wildlife passage as well as hydraulic conveyance requirements.
97.43	P-06-AM	US 160 Bridge over Wildlife Underpass	Replace concrete Bridge rail and transitions to meet current standards.
97.43	P-06-AN	US 160 Bridge over Wildlife Underpass	Replace concrete Bridge rail and transitions to meet current standards.

Refer to [Table 16-2](#) and this Section for new Bridge Structures to be constructed for the Project. General layouts are provided in the Reference Documents for information.

Table 16-2: New Bridges

Milepost (MP)	Structure No.	Approximate Length (ft)	Description
92.52	P-05-BD	106	US 160 over Mesa Wildlife Underpass
96.05	P-05-BE	83	US 160 over Valley Wildlife Underpass

16.1.2 Retaining Walls

Permanent retaining wall locations in the Basic Configuration are shown in the Reference Drawings. Final retaining wall types, sizes, and locations shall be determined by the Contractor. The Contractor may use the preliminary retaining wall locations in [Table 16-4](#), subject to final detailed design, choose

alternative locations, or eliminate retaining walls if the grading requirements for the Project are met. Retaining walls shall be designed and constructed in accordance with the requirements of this Section.

Refer to [Table 16-3](#) and this Section for the Work required on existing retaining walls.

Table 16-3: Action for Existing Retaining Walls

Milepost (MP)	Structure No.	Description	Work
n/a	n/a	n/a	No existing retaining walls present.

Refer to [Table 16-4](#) and this Section for new retaining wall Structures that may be constructed.

Table 16-4: New Retaining Walls

Milepost (MP)	Structure No.	Length (ft)	Description
93.22	R160A093220LRA	360	Cut Wall along WB US 160
93.26	R160A093260RRA	360	Cut Wall along EB US 160

16.1.3 Minor Structures

Anticipated minor Structures include hydraulic Structures and small mammal pipe culvert crossings. Book 2, Section 13, includes small mammal crossing requirements.

16.1.4 Sign Structures

Refer to [Table 16-5](#) for new sign Structures to be constructed on this Project.

Table 16-5: New Sign Structures

Milepost (MP)	Structure No.	Description
n/a	n/a	No new sign Structures are anticipated.

16.2 Administrative Requirements

16.2.1 Structure Numbers or Structure IDs

As required in the CDOT Bridge Design Manual (BDM), the Contractor shall obtain from the Colorado Department of Transportation (CDOT) the Structure numbers or Structure IDs for CDOT-managed structural assets and for new Structures added to the Project not included in Section 16.1. Location

changes for new Structures listed in this Section may require a new or revised Structure number or ID to be requested. Structure numbers or IDs shall be shown on the Released for Construction (RFC) Documents. Contractor shall maintain the list of Structure number IDs throughout the Project and shall coordinate with CDOT until Project Final Completion. Contractor shall also be responsible for installation of Structure ID signs per CDOT Standard S-614-12.

16.3 Design Requirements

16.3.1 Standards

The Contractor shall design and construct the Project in accordance with the Contract, the requirements of the standards in the BDM, the Standard and Project Special Provisions in Book 2, Section 21, and documents referenced in Book 3. The Contractor shall use the latest adopted edition at the time of the Proposal Due Date.

The BDM defines policy and procedures currently in effect for the design, rehabilitation, and repair of Bridges and other Roadway Structures on the Project. The BDM presents the minimum requirements for Structures, except as otherwise noted in this Section. Deviations from the BDM and this Section shall be submitted to CDOT for Approval prior to Acceptance of Final RFC Documents.

Table 16-6: Standards

Author or Agency	Title
American Association of State Highway and Transportation Officials (AASHTO)	Load and Resistance Factor Design (LRFD) Bridge Design Specifications
AASHTO	LRFD Bridge Construction Specifications
AASHTO	Guide Specifications for Design and Construction of Segmental Concrete Bridges
AASHTO	Guidelines for Steel Girder Bridge Analysis
AASHTO	Manual for Bridge Evaluation
AASHTO	AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals
AASHTO	Guide Specifications for LRFD Seismic Design
AASHTO	AASHTO/AWS D1.5 M- D 1.5, Bridge Welding Code
AASHTO	Guide for Development of Bicycle Facilities
AASHTO	Guide Specifications for Fracture Critical Non- Redundant Steel Bridge Members

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 16 - Structures

Author or Agency	Title
AASHTO	Guide Specifications for Horizontally Curved Steel Highway Bridges
AASHTO	AASHTO LRFD Guide Design Specifications for Bridge Temporary Works
AASHTO	AASHTO M-203 Standard Specification for Steel Strand, Uncoated Seven-Wire for Concrete Reinforcement
AASHTO	AASHTO/NSBA Steel Bridge Collaboration Shop Detail Drawing Review/Approval Guidelines
American Society for Testing and Materials (ASTM)	ASTM A-416 Standard Specification for Low-Relaxation, Seven-Wire Steel Strand for Prestressed Concrete
ASTM	ASTM D-1143 Standard Test Methods for Deep Foundations Under Static Axial Compressive Load
CDOT	Bridge Design Manual
CDOT	Bridge Detail Manual
CDOT	Bridge Structural Worksheets
CDOT	Bridge Rating Manual
CDOT	Deck Geometry Manual
CDOT	Retaining & Noise Wall Inspection & Asset Management Manual
CDOT	Bridge Technical Memorandums
CDOT	Standard Specifications for Road and Bridge (Standard Specifications)
CDOT	Standard Special Provisions
CDOT	Survey Manual
CDOT	Roadway Design Guide
CDOT	Drainage Design Manual

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
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Book 2 - Technical Requirements
Section 16 - Structures

Author or Agency	Title
CDOT	Construction Manual
CDOT	Standard Plans, M & S Standards
CDOT	Sign Design Manual
CDOT	Supplement to Standard Highway Signs
CDOT	CDOT (BTE) Bridge & Tunnel Enterprise 100-Year Design Guidelines
Federal Highway Administration (FHWA)	Corrosion/Degradation of Soil Reinforcements for Mechanically Stabilized Earth Walls and Reinforced Slopes
FHWA	Geotechnical Engineering Circular No. 10 - Drilled Shafts: Construction Procedures and LRFD Design Methods
FHWA	Geotechnical Engineering Circular No. 11 - Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes
FHWA	Geotechnical Engineering Circular No. 12 - Design and Construction of Driven Pile Foundations
FHWA	Geotechnical Engineering Circular No. 6 - Shallow Foundations
FHWA	Geotechnical Engineering Circular No. 7 - Soil Nail Walls Reference Manual
FHWA	Design and Construction Guidelines for Geosynthetic Reinforced Soil Abutments and Integrated Bridge Systems
FHWA	Micropile Design and Construction
FHWA	FHWA HI-95-038 "Geosynthetic Design and Construction Guidelines"
FHWA	FHWA RD-73-93, Analysis and Design Problems in Modeling Slurry Wall Construction
FHWA	Hydraulic Design Series (HDS) No. 4, Introduction to Highway Hydraulics

Author or Agency	Title
FHWA	FHWA-CFL/TD-11-003, Wildlife Crossing Structures Handbook, Design and Evaluation in North America

16.3.2 Software

16.3.2.1 Design

According to BDM Section 4.2, CDOT Staff Bridge does not support a preapproved list of software but reserves the right, at its sole discretion, to disallow any software on a regular or case-by-case basis.

16.3.2.2 Load Rating

The following software shall be used to load rate all major and minor Structures on this Project:

- AASHTOWare Bridge Rating (BrR). The Contractor shall confirm with CDOT which version to use.
- If a Bridge type is selected that cannot be rated using the above software package, the Contractor shall submit to CDOT a proposed alternate Bridge rating method for Approval prior to the preparation of Bridge or concrete box culvert ratings.

16.3.3 Materials

16.3.3.1 Concrete

Class B concrete shall be used for slope paving.

Class BZ concrete shall be used for drilled shafts.

Class DF concrete shall be used for conventionally reinforced Bridge decks, diaphragms, approach slabs, Bridge rails, and any element exposed to de-icing salts.

Class D concrete shall be used for abutments, piers, walls, and substructure elements outside of the splash zone and not exposed to de-icing salts.

Concrete mix classes may be substituted per the CDOT Standard Specifications and the BDM.

The use of lightweight concrete will not be allowed.

Reference Book 2, Section 11 for water-soluble sulfate percentages.

Proposed concrete mix designs and procedures shall be submitted to CDOT for Acceptance at least 15 Days prior to the anticipated concrete placement date.

16.3.3.2 Post-Tensioning Steel Systems

Corrosion protection shall be provided for the strands and shall consist of grout-filled galvanized or non-metallic ducts.

16.3.3.3 Structural Steel

Structural steel shall conform to AASHTO M 270, Grades 36, 50, or 70.

Weathering steel may be used for Bridge Superstructures. Weathering steel shall conform to AASHTO M 270, Grades 36W, 50W, or 70W.

The Charpy V-notch Impact Energy Requirements shall be for Test Zone 2.

Reference the GDR in Book 3 for soil properties that can contribute to corrosion of buried metal.

16.3.3.4 Steel Coatings

Florida River Bridge shall be MASH Bridge Rail Type 10. The structural steel components shall be galvanized structural steel, colored in accordance with Project Special Provision Section 522 - Environmental Stain (Galvanized), in Book 2, Section 21.

16.3.4 Loads and Forces

16.3.4.1 Live Load

Temporary Bridges shall be load rated for HL93 and CDOT permit vehicles.

16.3.4.2 Uplift

Bridge spans shall be proportioned to avoid uplift at supports due to non-seismic loads.

16.3.4.3 Thermal Forces

Temperature ranges for cold climates shall be used per the American Association of State Highway and Transportation Officials (AASHTO) Load and Resistance Factor Design (LRFD) Bridge Design Specifications.

16.3.4.4 Downdrag

The proposed designs shall consider downdrag forces as applicable per the AASHTO LRFD Specifications.

16.3.5 Geotechnical

Geotechnical subsurface investigations conducted within the vicinity of the Structures are documented in the GDR in Book 3. Supplemental geotechnical investigations, per Book 2, Section 11, will be required for sign Structures and Structures in segments of the Project beyond the Base Configuration. Additionally, supplemental geotechnical investigations will be required for proposed Structure designs where the geotechnical investigation requirements of the BDM and AASHTO LRFD Bridge Design Specifications are not met by the GDR.

16.3.6 Structure Aesthetics Requirements

16.3.6.1 Aesthetic Requirements for Structures in General

New Bridges and walls, and existing walls, where indicated, require aesthetic treatments to match the corridor aesthetic scheme established by the previous CDOT U.S. 160 4th Lane at Farmington Hill Project (Grandview Interchange). The shapes, patterns, colors, and rustication shall match the style

set by the Grandview interchange, considering potentially different Structure types. The limits of the aesthetic treatments are detailed in sections 16.3.6.2 and 16.3.6.3. As-Constructed drawings for the Grandview Interchange are included in Reference Documents, which provide details on the aesthetics constructed for the interchange. The mountain banner texture shown in these plans is not required.

For consistency within the Project limits, retaining walls within a common viewshed shall incorporate similar visual aesthetics.

Aesthetic refinements shall be submitted to CDOT for Acceptance prior to the Preliminary Design Plans submittal. The formliner pattern selection shall be submitted to CDOT for Acceptance prior to the Preliminary Design Plans submittal.

Structures with visible concrete surfaces shall have a surface treatment of structural concrete stain. This includes retaining walls, Bridge abutments and piers, Roadway and Bridge barriers, and slope protection.

Optional aesthetic features for this Project include partial-height precast panels in lieu of full-height precast panels and the inclusion of bridge monuments at the bridge corners.

16.3.6.2 Aesthetic Requirements for Bridges

16.3.6.2.1 US 160 over Wildlife Underpasses Mesa and Valley

Wingwalls shall meet the requirements of Section [16.3.6.3](#).

Structural colored concrete stain shall be applied to wingwalls, headwalls, Bridge rails, guardrails, and exterior and bottom faces of exterior concrete girders. Concrete surface finish shall be Class 1, except for Bridge rails that will be Class 2 finish. If Type 3 Guardrail is used, follow the requirements in Section 16.3.3.4 and Book 2 Section 14.

16.3.6.2.2 US 160 over Florida River

Designs should achieve a slender and well-balanced appearance. Piers shall be located in the center of the Bridge for a two-span Bridge option or symmetrically about the midpoint of the Bridge for a three-span option. To reduce debris accumulation, Bridge piers shall not be located within the low-flow channel, but shall be placed on banks or overbank areas. Discontinuities in the depths of girders from span to span will not be allowed.

Wingwalls shall meet the aesthetic requirements of Section [16.3.6.3](#).

Structural colored concrete stain shall be applied to wingwalls, curbs, barriers, and overhangs. Concrete surface finish shall be prepared per the Project specification requirements for structural concrete coating.

No formliners or rustications are required on Bridge Substructures.

The Contractor shall submit a Bridge Aesthetic Report to CDOT for Approval Prior to Preliminary Design Plans submittal. This report shall demonstrate to CDOT that the Structure meets a well-balanced appearance for CDOT Approval. In addition to the appearance, this report shall also demonstrate and document how all aesthetic requirements will be met.

Steel girders shall be weathering steel.

16.3.6.3 Aesthetic Requirements for Walls

Preliminary layouts of the walls are shown in the reference drawings. The Contractor shall choose wall geometries to blend with the topography as much as practical. Walls shall be tiered to avoid massive vertical or near-vertical faces. The height of walls or tiers shall be limited to 20 feet. A setback between faces of tiered walls shall be at least 6 feet.

Wall panels shall be cast-in-place or precast concrete, and the preference shall be full-height panels. All wall facing shall be of a consistent type (i.e., cast-in-place, precast facing, etc.) within any section of the Road. This includes surface treatment, pattern, texture, color, and jointing layout. Panel design and construction shall consider ease of replacement and/or repair.

No horizontal seams at grid line joints will be allowed for formliners. All joints shall occur per layout grids and shall be straight and clean. Joints or striations shall intersect within 0.25 inch at panel matches. Any horizontal banners, rustications, or straight-line elements found on retaining walls and Bridge abutments shall align correctly; lines that are visually intended to match up on a horizontal plane shall meet with no offset or irregular match, to within 0.25 inch. All cold joints shall have chamfered edges. All concrete surfaces that the structural concrete stain will be applied shall be prepared per the requirements of Project Special Provisions Revision of Sections 601 and 708 Structural Concrete Stain. The concrete walls, caps, coping, and adjacent barriers shall be covered with Structural concrete stain.

The Contractor shall submit to CDOT for Approval a visual graphic of each retaining wall prior to Preliminary Design Documents and report submittals. This graphic shall be submitted in both hard and electronic format. Proposed retaining wall aesthetics graphics shall include all visible surfaces, and slope protection shall be submitted to CDOT prior to the Preliminary Design Documents submittal. This submittal shall include drawings illustrating form, texture, and color.

The Contractor shall provide full-size mockups (4 feet x 4 feet minimum) for all surface treatments for texture, color, and quality for Acceptance by CDOT with the Preliminary Design Documents for each Structure.

16.3.7 Bridges

16.3.7.1 Geometry

16.3.7.1.1 Geometric Layout

Fill and cut slopes along the longitudinal axis of Bridges shall not be steeper than 2:1 (H:V) perpendicular to the abutment. A 2-foot minimum width berm shall be at the top of the slope at the front face of abutment, and a 2-foot minimum vertical dimension from the top of this berm to the bottom of girder. See the BDM Figures 11-1, 11-3, and 11-4.

A minimum of a 25 foot wide bench for large mammal wildlife shall be provided a under one of the spans of the Florida River Bridge. This bench shall be placed a minimum of 1 foot above the ordinary highwater mark to ensure the path is able to dry out following storm events.

The Florida River Bridge is anticipated to accommodate Elk and shall have a minimum vertical clearance of 13 feet per the requires of Book 2, Section 6.

16.3.7.1.2 Wildlife Underpasses

The minimum-sized opening for the wildlife underpass shall be 32 feet wide in accordance with Book 2, Section 6. The Mesa wildlife underpass shall require a minimum vertical clearance of 12 feet above the path as only deer are anticipated to use this underpass. The Valley wildlife underpass is anticipated to accommodate elk and shall be a minimum vertical clearance of 13 feet in accordance with Book 2, Section 6.

Wildlife underpasses shall be free draining. Standing and or ponding water is not allowed within or around the wildlife Structure.

16.3.7.2 Type

Bridge types shall follow the guidelines in the BDM unless otherwise specified in this Section. Alternate Bridge types will be allowed, but only if they have been accepted for general use by other US State Transportation Authorities for major Highways. The Contractor shall demonstrate that the design of the alternate Bridge types and components meet the Project Technical Criteria and perform well under the Project's environmental conditions, including frequent freeze-thaw cycles, anti-icing, and de-icing. Proposed Bridge types in the Structural Concept Plans/Report, historically not used by CDOT, shall be submitted for Approval prior to Structure Concept Plan and Report submittals.

Experimental Bridge types, timber Bridges, steel trusses, and masonry Bridges will not be allowed. An experimental Bridge type is a Bridge type that has not been accepted for general use by other US State Transportation Authorities. The use of structural-plate arches is allowed for wildlife underpasses and not allowed for water crossings. If structural-plate arches are used for wildlife underpasses, they shall have a moisture barrier per Section 515 of the CDOT Standard Specifications or as approved by CDOT.

16.3.7.3 Components

16.3.7.3.1 Bridge Rails

Bridge rail shall be FHWA MASH compliant, meeting the following requirements.

Bridge rail requirements are as follows:

1. Florida River Bridge shall be MASH Bridge Rail Type 10.
2. Wildlife underpasses rails shall be Guardrail Type 9 or Guardrail Type 3. Wildlife underpasses shall extend behind guardrail per CDOT Standard M-606.

Cover plates shall be used over the interior face of joints on concrete barrier and concrete Bridge rail curb to provide safety shape continuity across the joint. Bridge rails shall be used on approach slabs.

Conduits shall be provided in Bridge rails on the outside Shoulder of Bridges where conduit runs are required for the Project. Refer to Book 2, Section 20 for ITS conduit requirements. No additional spare conduits shall be provided through the Bridge Structures.

16.3.7.3.2 Fencing

Chain link fence shall not be used on Bridges or wingwalls.

16.3.7.3.3 Drop-Off Protection

Bridge walls and wingwalls that may be accessed from the Highway by descending from the edge of pavement shall be categorized as CDOT Maintenance Personnel Protection and be protected by safety rail (cable), pedestrian railing, or safety railing. When deer fence is designated to be installed adjacent

to a wall, deer fence shall be used. All other walls shall provide, at a minimum, tie-off points to conduct routine maintenance.

16.3.7.3.4 Approach Slabs

Approach slabs shall be a minimum of 20 feet in length measured along the centerline of the Bridge, except when other physical features of the Project preclude this minimum length.

The use of precast approach slabs shall be submitted to CDOT for Approval prior to Structure Concept Plan and Report submittals.

Bridge rails shall be connected to approach slabs.

Drainage and backfill behind the abutments and beneath the approach slabs shall be as shown on CDOT Bridge Structural Worksheet Backfill Drawings B-206-F1, B-206-F2, B-206-01, or B-206-M2.

Approach slabs shall not be used as jump spans.

16.3.7.3.5 Decks

Open or filled and partially filled metal grid decks, orthotropic steel decks, aluminum decks, fiber-reinforced polymer decks, and sandwich deck panels shall not be used.

Full-depth precast deck slabs shall have cast-in-place concrete joint closures, post-tensioning across joints, and an overlay.

Pretensioned, precast concrete deck forms shall be a minimum of 3-inches thick and have a full grout or concrete bearing. Full grout is defined as a 1-inch minimum thickness by 2-inch wide grout pad.

The use of concrete stay-in-place deck forms is optional and may be used for cantilevered portions of deck. Metal stay-in-place deck forms are prohibited from use. Precast double tees or precast box girders without a cast-in-place Bridge deck or concrete topping shall not be used.

16.3.7.3.6 Expansion Joints

Aluminum joints shall not be used.

If compression seal joints are used, they shall be the continuous elastomeric type and not the segmental foam seals.

The end dam on the approach slab shall be detailed to accommodate overlay.

Expansion joints shall be located at the Roadway ends of the approach slabs and not over the Bridge Substructure units.

16.3.7.3.7 Overlays

Bridge overlays shall be $\frac{3}{4}$ inch Polyester Polymer Concrete when the adjacent Roadway pavement is concrete.

16.3.7.3.8 Superstructures

Jointless construction shall be implemented as discussed in Section 14.4.1 of the BDM. The use of expansion joints at abutments and piers shall be submitted to CDOT for Approval prior to Structure Concept and Report submittals. Bridges shall be continuous over supports and shall not use intermediate hinges.

The minimum concrete strength ($f'c$) shall be 4.5 ksi for any cast-in-place concrete member that forms part of a deck.

Bridge deck drainage and anti-icing pipes shall not be located inside box girders.

Shear studs on steel girders shall be field welded in accordance with Section 509.20(h) of the CDOT Standard Specifications.

The use of pins and hangers will not be allowed. Category D or poorer weld details in tension zones subject to fatigue stress ranges shall be avoided.

Preparation of steel Shop Drawings shall follow the AASHTO/National Steel Bridge Alliance (NSBA) Steel Bridge Collaboration Shop Detail Drawing Review/Approval Guidelines.

Girders shall be lettered sequentially, starting with "A" for each Bridge Structure on the RFC Documents.

Jacking locations and required jack sizes for bearing replacement shall be shown on the RFC Documents. Bridges shall be designed to withstand anticipated applied loads and forces with the Superstructure jacked at the locations shown on the RFC Documents.

16.3.7.3.9 Abutments and Piers

The bottom of the abutment cap shall extend a minimum of 18 inches below the bottom of riprap or slope protection, as shown in Figures 11-1, 11-3, and 11-4 in the BDM.

Integral or semi-integral abutments with deep foundations shall be used wherever applicable.

Foundation design shall include foundation performance under total scour from long-term degradation, contraction scour, and abutment scour, and pier scour for the scour design flood (strength limit state) and scour check flood (extreme event limit state) without accounting for support from the hydraulic countermeasures.

Major Structures shall not be located directly over minor Structures, nor can the major Structure's foundation and stability rely on the performance of a minor Structure(s). Foundations must be designed to the 500-year event and address concerns with hydraulic piping.

16.3.7.3.10 Slope Protection

Riprap or an Approved alternative shall be on the sloped portions under Bridges and anywhere else that scour may be of concern under Bridges.

16.3.7.3.11 Bridge Deck Drains

No intermediate deck drains are allowed.

16.3.7.3.12 Barrier

Median barrier, if required, shall be Guardrail Type 9 Single Slope Barrier anchored to the Bridge deck and approach slabs.

If the Highway is divided at a wildlife crossing, an atrium shall be provided in the center median. There shall be a minimum 3-foot wall that runs perpendicular to the Roadway between the wildlife underpasses northbound and southbound Structures that protect the center atrium from snow and light pollution.

16.3.8 Retaining Walls

The Technical Criteria in this Section shall apply to permanent retaining wall Structures. Retaining walls that support traffic for interim phases of traffic and are left in place to become part of the final Structure shall be considered permanent retaining walls and be designed and constructed as such. The first and second phases of two-phase walls shall be considered part of a permanent wall and shall be designed and constructed as such.

The Contractor shall have sole responsibility for the type, Material, performance, and safety of temporary retaining wall Structures.

16.3.8.1 Geometry

Retaining wall layouts shall address slope maintenance above and below the wall and provide returns into the retained fill or cut at retaining wall ends. Residual wall batter shall be into the fill or cut.

Lengths of walls without relief joints shall be limited to lengths that control the differential settlement.

16.3.8.2 Type

Retaining wall types shall follow the guidelines in the BDM unless otherwise specified in this Section. Other wall types will be allowed, but only if they have been accepted for general use by other US State Transportation Authorities. The Contractor shall demonstrate that the design of the retaining wall types and components meet the Project Technical Criteria and perform well under the Project's geotechnical and environmental conditions, including frequent freeze-thaw cycles, anti-icing, and de-icing. Proposed retaining wall types in the Structural Concept Plans/Report, historically not used by CDOT, shall be submitted to CDOT for Approval prior to Structure Concept Plan and Report submittals.

Experimental retaining wall types will not be allowed. Metal walls, including bin and sheet pile walls, recycled Material walls, Mechanically Stabilized Earth (MSE) block walls, and timber walls shall not be used for permanent retaining walls.

Permanent retaining walls and their associated structural support elements constructed for the Project shall be designed to resist corrosion or deterioration for a minimum service life of 75 years.

The latest FHWA geotechnical references and guidelines shall be used in conformance with the Contract and as provided at the following website:

https://www.fhwa.dot.gov/engineering/geotech/library_listing.cfm

Retaining wall installations shall provide for a positive drainage system of the Backfill. Backfill drainage outlets shall be shown on the plans. Retaining walls near irrigation lines for landscaping shall account for additional hydrostatic load due to a waterline break. Free draining Backfill Material and/or leak detection devices to reduce hydrostatic loads on retaining walls may be used.

16.3.8.2.1 Mechanically Stabilized Earth (MSE) Walls

The Contractor shall follow the FHWA Geotechnical Engineering Circular No. 11 - Design and Construction of Mechanically Stabilized Earth Walls as guidelines for the design and construction of MSE walls. MSE wall designs integrated with abutments shall account for thermal movement of the Bridge and approach settlement.

MSE walls near or in bodies of water shall account for soft saturated soils and scour and shall prevent fine washout between facing elements. MSE walls may be used in scour areas, provided the foundation of the wall is located below the scour level determined in accordance with CDOT Drainage Design Manual. MSE walls shall be designed for hydrostatic pressure or be constructed using a free-draining Material to account for water fluctuations, including rapid drawdown after flooding conditions, to prevent failure.

Soil reinforcement for MSE walls shall be galvanized or epoxy-coated steel, geogrids, or fabrics meeting creep requirements of AASHTO LRFD Bridge Design Specifications. The design shall account for any items projecting through the soil reinforcement. Placement of culverts and Utilities perpendicular to soil reinforcement within the reinforced soil mass shall be avoided. Metal portions of soil reinforcement shall be protected from corrosion due to stray electrical currents.

MSE wall panels shall be constructed of reinforced concrete and provide corrosion protection for prestressing or post-tensioning steel. The cover to reinforcing steel shall be a minimum of 2 inches. Wall panels in the splash zone shall use epoxy-coated reinforcing steel.

16.3.8.2.2 Soil Nail Walls

The Contractor shall follow the FHWA Soil Nail Walls Reference Manual and the BDM as guidelines for the design and construction of soil nail walls. Soil nail walls may only be used when top-down construction is warranted. The exposed surface of pneumatically placed concrete shall meet the requirements of this Section. Load Tests for soil nails shall be provided in accordance with the above FHWA guidelines.

16.3.8.3 Components

16.3.8.3.1 Fencing

Chain link fence shall not be used on retaining walls.

16.3.8.3.2 Drop-Off Protection

New retaining walls that may be accessed from the Highway by descending from the edge of pavement shall be categorized as CDOT Maintenance Personnel Protection and protected by safety rail (cable), pedestrian railing, or safety railing. When deer fence is designated to be installed adjacent to a wall, deer fence should be used. All other walls shall provide, at a minimum, tie-off points to conduct routine maintenance. Reference Safety Railing section of the BDM.

16.3.9 Sign Structures

Major sign Structures and supports for Intelligent Transportation System (ITS) Equipment are not anticipated for this Project.

Minor sign Structures and supports shall be constructed in accordance with CDOT M&S Standard Plans.

16.3.9.1 Components

16.3.9.1.1 Foundations

Drilled Shafts shall be used to support overhead and cantilever sign Structures, as well as the ground-mounted Structures. The Contractor shall submit as part of the preliminary design plans submittal one general Project sign Structures foundation report for Acceptance. There shall be a minimum of 1 foundation boring within 10 feet of each single drilled shaft supporting large sign supports.

16.3.9.1.2 Connections

Connections shall be made with high-strength A325 bolts. Shop splices shall be made with full penetration butt welds. Base connections shall be made with full penetration shop butt welds. All sign connection hardware shall be galvanized with strengthened structural tubing at electrical connection openings.

16.3.9.1.3 Bridge-Mounted Signs

The Contractor shall not mount signs or brackets on Bridge Superstructures.

16.4 Submittals

Submittals shall be prepared, reviewed, and submitted in accordance with the requirements set forth in Book 2, Section 4.

16.4.1 Preliminary Design Documents

The Contractor shall submit Preliminary Design Documents for proposed major Structures and walls prior to proceeding to final design and preparation of the Pre-RFC Documents. The Preliminary Design Documents shall include Structure Concept Plans, Structure Concept Reports, and Preliminary Foundation Design Reports.

16.4.1.1 Structural Concept Plans

Structural concept plans shall include general layout drawings of proposed major Structures and retaining walls. Bridge plans shall be consistent with the Bridge Detail Manual for general layout drawings, as defined by the BDM. For proposed retaining walls, the general layout drawings shall provide plan, elevation, and typical section details like those provided for major Structures. The Contractor shall submit the plans to CDOT for Review as part of the Preliminary Design Documents submittal.

16.4.1.2 Structure Concept Reports

Structure concept reports shall be developed for the Structure type, Materials, foundation types, methods of accommodating differential settlement, design strategy for lateral loads, and design-life considerations for each major Structure. It shall also include a list of transportation authority's actual projects and references for all Bridges, and foundation types and retaining wall types not historically used by CDOT. Additional information provided for structures not historically used by CDOT. The Contractor shall submit the reports to CDOT for Review as part of the Preliminary Design Documents submittal.

16.4.1.3 Preliminary Foundation Design Report

A Preliminary foundation design report shall be submitted to CDOT for Review as part of the Preliminary Design Documents for each major Structure and minor Structure as required for the design of foundations for Bridges, retaining walls, and other Structures, in accordance with Book 2, Section 11. The report shall be in draft form and contain design recommendations and substantiating analysis for foundation elements, lateral earth load parameters, soil corrosivity analysis, seismic design parameters, and any other geotechnical design or analysis parameters necessary to complete the design.

16.4.2 RFC Documents

16.4.2.1 Pre-RFC Documents

Pre-RFC Documents shall be submitted for proposed CDOT-managed Structural assets. Pre-RFC Documents shall include plans and specifications; major and minor Structure load ratings; and the Foundation Design Report.

The Foundation Design Report shall be revised from the Preliminary Foundation Design Report and be the basis for the load analysis from seismic and earth loads and the basis for the design of foundation elements. Supplemental soil borings required for Structures design shall have been completed.

16.4.2.2 Final RFC Documents

The Final RFC Documents shall include resubmittal of the Pre-RFC Documents listed above with all comments addressed.

16.4.3 Final Design Documents

Final Design Documents shall include final plans and specifications for proposed CDOT-managed structural assets; design calculations and independent design calculations for major Structures; independent detail checks of the plans and specifications for major Structures; major and minor Structure load ratings, Foundation Design Reports, and a final submittal letter.

16.4.3.1 Final Plans and Specifications

The final plans and specifications for each Structure shall be signed and sealed by the Contractor's designer in accordance with laws for licensed Professional Engineers in the State of Colorado. Copies in .PDF and OpenRoads Designer or compatible electronic format shall be made of all plans for all Structures on the Project and submitted to CDOT for Acceptance.

16.4.3.2 Design and Independent Design Calculations

The design calculations or the independent calculations shall be prepared by, signed, and sealed by a Professional Engineer licensed in the State of Colorado. Copies in .PDF and electronic format shall be made of design and design-check calculations and submitted to CDOT for Acceptance as part of the Final Design Documents submittal.

Calculations shall be in English (Standard) units and identify which code is utilized and reference the appropriate section in the right-hand column. References shall be included in the calculations to computer programs used to do the calculations. Computer documentation shall include the name of program, vendor, version, and release date; record of software output and Verification of output with

manual calculations or other recognized program; clear identification of input and output values and meaning; and check of input.

16.4.3.3 Load Ratings

A load rating package, as defined by the CDOT Bridge Rating Manual, shall be completed and submitted to CDOT for Acceptance as part of the Final Design Documents submittal for each major and minor Structure prior to the start of Bridge construction Activities.

16.4.3.4 Foundation Design Reports

The Foundation Design Reports shall be signed and sealed by the Contractor's designer in accordance with laws for licensed Professional Engineers in the State of Colorado. The foundation design reports shall be submitted to CDOT for Acceptance as part of the Final Design Documents submittal.

16.4.3.5 Final Detail Letter

The Contractor's designer shall submit a letter containing a Professional Engineer's stamp to CDOT for Acceptance as part of the Final Design Documents submittal certifying that Structure plans and specifications have been prepared in accordance with the current CDOT design standards. An example letter can be found at the CDOT's forms library.

16.4.4 As-Constructed Documents

As-Constructed Documents shall be submitted for each proposed Structure in accordance with Book 2, Section 4.

16.4.5 Working and Shop Drawings

The Contractor shall submit Working and Shop Drawings in accordance with Table 105-1 of the CDOT Standard Specifications. Preparation of steel Shop Drawings shall follow the Shop Detail Drawing Review/Approval Guidelines developed by the AASHTO/NSBA Steel Bridge Collaboration G1.1-1999. Working and Shop Drawing accuracy is the sole responsibility of the Contractor. Working Drawings shall be submitted for information only. The approved Shop Drawings (by the Contractor's Engineer) shall be submitted prior to fabrication for Acceptance by CDOT.

16.4.6 Bridge Owner's Manual

A Bridge Owner's Manual shall be developed and submitted to CDOT for Acceptance with the Final Design Documents for the Florida River Bridge. The manual shall follow the Bridge and Tunnel Enterprise Owners Manual Template.

16.5 Construction Requirements

A technical representative shall be at the Project Site to assist the Contractor with the Approved QMP for Structures. The representative shall maintain a construction diary. The diary shall be submitted with the Final RFC Documents.

The Contractor shall notify CDOT 7 Days in advance of reductions in vertical clearances or when lane closures, lane reductions, or lane width restrictions are put into effect.

Falsework shall be designed in accordance with the AASHTO Guide Design Specifications for Bridge Temporary Works. Shoring areas that are considered a risk to the traveling public shall require an

independent design check. Falsework or shoring carrying live traffic shall be submitted to CDOT for Acceptance 10 Days prior to construction.

Temporary retaining walls constructed of Materials not allowed for permanent walls may be abandoned and left in place. Temporary retaining walls left in place shall be completely covered by soil or construction Materials, so they are not visible. Structural components of temporary retaining walls may be reused as part of permanent retaining wall (two-phase walls) systems, provided all structural support elements and Materials of the permanent retaining walls meet the requirements of this Section.

Exposed concrete surfaces in the splash zone shall be sealed. The limits of concrete sealer shall be shown on the plans.

Concrete guardrails shall not be cast monolithically with integral pier caps.

Installers of prestressing, post-tensioning systems shall be Post-Tensioning Institute (PTI) certified.

16.6 Deliverables

The following Deliverables shall be submitted to CDOT for Review, Acceptance, or Approval:

Table 16-7: Deliverables

Deliverables	Review, Acceptance, or Approval	Schedule
Deviations from CDOT's Bridge Design Manual and this Section	Approval	Prior to Acceptance of Final RFC Documents
Alternate Bridge rating software	Approval	Prior to major and minor Structure ratings
Concrete mix design and procedures	Acceptance	Minimum 15 Days prior to the anticipated concrete placement date
Refinements to the Project aesthetic guidelines	Acceptance	Prior to Preliminary Design Documents submittal
Formliner pattern	Acceptance	Prior to Preliminary Design Documents submittal
Bridge Aesthetic Report	Approval	Prior to Preliminary Design Documents submittal
Retaining wall aesthetic graphics	Approval	As part of the Preliminary Design Documents submittal
Full-size mockup of all surface treatments	Acceptance	As part of the Preliminary Design Documents submittal

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 16 - Structures

Deliverables	Review, Acceptance, or Approval	Schedule
Bridge types historically not used by CDOT	Approval	Prior to the submittal of the Concept Documents and Report submittals
Use of precast approach slabs	Approval	Prior to Structure Concept Plan and Report submittals
Use of expansion joints at abutments and piers	Approval	Prior to Structure Concept Plan and Report submittals
Wall Structure types not historically used by CDOT	Approval	Prior to the submittal of the Concept Plans and Report submittals
Sign Structures Foundation Report	Acceptance	As part of the Preliminary Design Documents submittal
Structural Concept Plans	Review	As part of the Preliminary Design Documents submittal
Structure Concept Reports	Review	As part of the Preliminary Design Documents submittal
Preliminary foundation design report	Review	As part of the Preliminary Design Documents submittal
Final plans and specifications	Acceptance	As part of the Final Design Documents submittal
Design and independent design calculations	Acceptance	As part of the Final Design Documents submittal
Load ratings	Acceptance	As part of the Final Design Documents submittal
Foundation design reports	Acceptance	As part of the Final Design Documents submittal
Shop drawings	Acceptance	Prior to fabrication
Falsework or shoring plans carrying live traffic	Acceptance	10 Days prior to construction
As-Constructed Documents	Acceptance	In accordance with Book 2, Section 4

Request for Proposal
 US 160 Elmore's Corner to Dry Creek Design-Build
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 Book 2 - Technical Requirements
 Section 16 - Structures

Deliverables	Review, Acceptance, or Approval	Schedule
Bridge Owner's Manual for Florida River Bridge	Acceptance	As part of the Final Design Documents submittal
Construction diary	Acceptance	As part of the Final Design Documents submittal
Final detail letter	Acceptance	As part of the Final Design Documents submittal

17.0 Transportation Management Plan

This Section includes the requirements for the Transportation Management Plan Work for the US 160 Elmore's Corner to Dry Creek Design-Build Project (Project). This Work shall be completed in accordance with the Contract Documents.

The Transportation Management Plan (TMP) defines the strategies for managing the Work zone impacts of the Project. The TMP shall include a Maintenance of Traffic Plan (MOT), a Traffic Operations Plan (TOP), Traffic Control Plans (TCP), and Methods of Handling Traffic (MHT).

17.1 Administrative Requirements

17.1.1. Standards

The Contractor shall design and construct the Project in accordance with the Contract, including the Project Special Provisions and Standard Special Provisions in Book 2, Section 21, requirements of the standards in the documents listed in Table 17-1 and those referenced in Book 3. The Contractor shall use the latest adopted edition at the time of the Proposal Due Date.

Table 17-1: Standards

Author or Agency	Title
American Association of State Highway and Transportation Officials (AASHTO)	Roadside Design Guide
American Traffic Safety Services Association (ATSSA)	Quality Guidelines for Work Zone Traffic Control Devices
ATSSA	Guidelines on the Use of Positive Protection in Temporary Traffic Control Zones
Colorado Department of Transportation (CDOT)	Guidelines for the Use of Positive Protection in Work Zones
CDOT	M&S Standard Plans
CDOT	Region 5 Lane Closure Strategy Report (LCS)
CDOT	Standard Specifications for Road and Bridge Construction (Standard Specifications)
CDOT	Roadway Design Guide
CDOT	Guidelines for Developing Traffic Incident Management Plans for Work Zones

Author or Agency	Title
CDOT	The Colorado Supplement to the Federal Manual on Uniform Traffic Control Devices
CDOT	Sign Design Manual
CDOT	Work Zone Safety and Mobility Program: Work Zone Safety – Colorado Department of Transportation
CDOT	Work Zone Safety and Mobility Rule
CDOT	Safety Selection Guide
Federal Highway Administration (FHWA)	Manual on Uniform Traffic Control Devices (MUTCD)
FHWA	Standard Highway Signs (with supplements)

17.2 Transportation Management Plan

The Contractor shall prepare a TMP that defines the strategic plan for traffic management on the Project. The TMP shall address major aspects of the Work for individual construction areas, phases, and stages as defined herein. These aspects shall include, but are not limited to, US 160 closures, county Road and local Road closures, Bridge closures, construction phasing and staging, numbers and type of major traffic shifts, detours, typical section requirements, pullout requirements, emergency and construction access, pedestrian and bicycle accommodations, access points for impacted properties, and detours. The TMP is a planning and policy guide that the Contractor shall use to develop and execute the Project MOT program.

The TMP shall be submitted to CDOT (and the respective Local Agency[ies] where local Streets and facilities are affected) for CDOT Acceptance prior to the Second Notice to Proceed (NTP2). No Work that impacts traffic shall commence until the TMP is Accepted.

The major aspects of the TMP shall include, but are not limited to:

1. An overview and description of the proposed construction, construction phasing, including maintenance of traffic during construction, and major traffic shifts.
2. A detailed approach to the development of TCPs and Methods of Handling Traffic (MHT) on the Project per Book 2, Section 4. MHT drawings shall be submitted to CDOT for Acceptance 7 Days prior to the implementation of each MHT.
3. A list of known or potential Roadway lane closures, traffic shifts, detours, and shoefly detours, including the following information:
 - A. Description of traffic shift.
 - B. Description of detour:
 - i. Specific routes used.

- ii. Identification of detour limits to be used in each construction phase.
 - iii. Contractor's identification and coordination with other construction projects within the vicinity of the proposed detour route. The impact of these construction projects shall be incorporated into the detour route planning and scheduling.
- C. Number of shifts expected.
- D. Duration of shifts and detours.
- E. Lane Closure Policy requirements.
 - i. Potential variance requests.
- 4. An approach to the use of existing and temporary Variable Message Sign (VMS) boards and traffic signals, including coordination with CDOT's Public Information Management (PIM) team.
- 5. The Contractor's plan for coordinating the TMP Activities with those Activities required under Book 2, Section 5.
 - A. A checklist identifying specific items that shall be provided to the CDOT's PIM team every Thursday by 10:30 AM for public information data collection and management Activities on the Project. The checklist shall include supporting information relevant to public messaging and public awareness and shall meet the requirements of Book 2, Section 5.
- 6. An approach to night Work that addresses the nighttime Work requirements of Book 2, Section 6. Any night Work will require written Approval from CDOT.
- 7. Additional elements:
 - A. An approach to coordination and cooperation with construction being performed by other projects along US 160.
 - B. Approach to coordination and cooperation with construction being performed by Utility Companies or other Utility Relocations, as required in Book 2, Section 8.
 - C. Approach to coordination and cooperation with construction being performed by Local Agency projects that are occurring on possible detour routes.
 - D. An approach to traffic access management, including restrictions.
 - E. Relevant portions of the Incident Management Plan (IMP) described in Section 17.2.2.2.
 - F. An approach to handle oversized loads through the Project.
- 8. Typical section requirements.
- 9. Emergency requirements:
 - A. Pullout locations.
 - B. Emergency access.
- 10. Temporary closure scenarios:
 - A. Location.
 - B. Time and duration.
 - C. Lane Closure Policy requirements.
 - i. Potential variance requests.

11. Access:
 - A. Business/home/property.
 - B. Work Site (area).
 - C. Colorado State Patrol (CSP).
12. Construction zone temporary speed reduction.
 - A. The Contractor shall submit a Form 568 to CDOT for Approval 14 Days prior to the date when speed reduction is to be implemented.
13. MHT requirements.
 - A. MHT drawings shall be sealed by the Engineer in Responsible Charge.
14. Traffic control device maintenance:
 - A. A Work plan to meet all requirements of Section 17.4.3 shall be provided to CDOT with the TMP submittal. This Work plan shall include, at a minimum, detailed staff commitments and contacts, along with a plan to deploy equipment and resources.

17.2.1. Maintenance of Traffic Plan

The following elements shall be considered part of the MOT plan and shall be addressed in the TMP.

17.2.1.1 Transportation Management Plan Task Force

The Contractor shall establish a TMP task force to assure proper coordination, including with affected Local Agencies. The TMP Task Force shall include, at a minimum, the CDOT PIM team, CDOT RCM, the Contractor's Representative (CR), Contractor's TCS, the Contractor's superintendent, La Plata County, and others as needed if Local Agency streets and facilities are impacted. The Contractor shall submit the proposed list of TMP task force members to CDOT for Acceptance within 30 Days after NTP1.

Within 14 Days after CDOT's Acceptance of the TMP task force members, the Contractor shall convene a TMP kick-off meeting. The meeting shall be used to develop an agreed-upon level of detail required for the TMP, as described in this Section 17.

The TMP task force discussions shall be included in the weekly status meetings as required in Book 2, Section 2.

17.2.1.2 Business and Private Access

The Contractor shall maintain public and private access to the local Street and Highway systems at all times. Temporary signage to business entrances shall be provided during construction to draw attention to Highway access points.

The TCP and MHT drawings shall incorporate Stakeholder information in coordination with CDOT's PIM team as outlined in Book 2, Section 5, relating to business and private access to the local Street system and the Highway.

The Contractor shall coordinate with the CDOT PIM team to communicate and document the following information relevant to business and private access:

1. Access points impacted by a particular construction phase or stage.

2. All notifications of affected businesses and landowners.
3. Schedule of closures and estimated durations.
4. Site-specific access or delivery requirements for local businesses (deliveries, wide load vehicles, etc.).
5. Proposed access mitigation efforts.

17.2.1.3 Maintenance of Traffic Variance Process

The Contractor may request a MOT variance for any closure, detour, or other restriction beyond the specified limits defined herein. The following information shall be included in each MOT variance request:

1. Summary of the variance request.
2. Justification for the variance request, including a list of the criteria that cannot be met and the reason(s) for not being able to meet them.
3. List of affected emergency services and the schedule for notification.
4. List of affected Local Agencies or private owners and the method(s) and schedule for notification.
5. Description of additional public information surveys to be performed by the CDOT PIM team, if required.
6. List of any potential safety hazards to which the public may be exposed.
7. Proposed revisions to the Accepted TCP drawings or current MHT drawings.
8. Proposed duration of closure, detour, or phasing change for which a variance is requested.

The Contractor shall allow CDOT a minimum of 14 Days for Approval of any MOT variance requests. CDOT, in its sole discretion, will determine if the MOT variance request is Approved, rejected, or incomplete and requiring resubmission. The Contractor shall coordinate with CDOT's PIM team for public notification and schedule for any MOT variance request.

17.2.1.4 Detour Routes

Detour routes shall be submitted to CDOT for Approval and shall be submitted to the Local Agency as required prior to implementation. Detour routes shall be the shortest, most direct routes feasible and shall not utilize County Roads, with adequate signing to limit additional travel to the greatest extent possible.

The Contractor shall obtain prior Local Agency approval for detours utilizing non-State-owned facilities. If Local Agency approvals are necessary, they shall be obtained prior to submittal of the MOT plans to CDOT. If approved by the Local Agency, the Contractor is responsible for ensuring the detour route can accommodate the highway traffic design vehicle. The Contractor is responsible for any damage resulting from the use of the facility.

Detour routes shall be video-recorded by the Contractor prior to and after construction. The Contractor and CDOT shall be present for video-recording. Any damage to the routes as a result of the use of the route shall be repaired by the Contractor in a time and manner as negotiated with CDOT and the Contractor. All repairs associated with damage to the detour route shall be done at no additional cost to the Project or CDOT.

17.2.1.5 Shoo-fly Detour Routes

If the Contractor elects to utilize a shoo-fly detour route during construction, the Contractor shall submit the design criteria and shoo-fly detour design package for each shoo-fly detour route to CDOT for Acceptance prior to the RFC Documents submittal.

The design criteria shall include the design speed, minimum radius, maximum superelevation, minimum vertical grade, maximum vertical grade, and minimum k-values. The design criteria shall clearly document the Standards used for each design criteria. The design criteria shall include the proposed typical section of the shoo-fly detour with lane and shoulder widths, along with the proposed pavement section per Section 17.4.4 and Book 2, Section 11.

The design vehicle for the shoo-fly detour shall be a WB-67.

The shoo-fly detour route package shall include the design criteria, pavement section, typical section(s), plan view, profile view, signing and striping, and cross sections. The shoo-fly detour route submittal shall be prepared, Reviewed, and submitted in accordance with the requirements set forth in Book 2, Section 4.

17.2.1.6 Pedestrian and Bicycle Impacts

Existing pedestrian and bicycle accommodations along US 160 and County Roads shall be maintained at all times.

An ADA-compliant pathway with a firm, stable, and slip-resistant surface is required for the residents of the Los Prados neighborhood to CR 222 per Book 2, Section 14.2.2.16.

17.2.2. Traffic Operations Plan

The TOP shall address the operations and management of the transportation system in the Work zone impact area. The TOP shall address the components described below.

17.2.2.1 Variable Message Signs (VMS)

Public notices shall be provided through VMS boards to warn motorists of major traffic shifts, detours, and Road closures 1 week prior to and 2 weeks after a change in the traffic pattern. The VMS boards shall be placed on the affected route in advance of the construction zone.

Routine requests to use the CDOT Traffic Management Center (CTMC) VMS boards shall be submitted to CDOT by 10:30 AM on Thursday of the week prior to when the VMS boards will be needed (Monday through Sunday of the following week). Requests for routine use of the CTMC VMS boards will be Reviewed by noon Friday of the same week of the submittal. The Contractor shall coordinate directly with the CTMC following Review by CDOT.

The CTMC is available to the Contractor to modify VMS messages 24 hours a Day, 7 Days a week, and may be contacted at (303) 512-5826.

The Contractor shall coordinate with CDOT and the CTMC for emergencies in accordance with the Accepted IMP.

CDOT has ultimate right of use of and first priority to the CTMC.

17.2.2.2 Incident Management Plan (IMP)

The Contractor shall develop a detailed IMP as a companion to the TOP to manage traffic incidents and emergency operations on the Project Site. Emergency service providers shall be contacted and provided an access plan during construction to minimize delays and response times for emergency services.

The IMP shall comply with the CDOT Guidelines for Developing Traffic Incident Management Plans for Work zones.

At a minimum, the IMP shall include the following components:

1. Coordination with the CDOT PIM team, as described in Book 2, Section 5.
2. Incident detection and identification.
3. Incident response.
4. Incident Site management.
5. Incident clearance.
6. Dissemination of traveler information regarding incidents.
7. Emergency services notification, including local area police departments, the Colorado State Patrol, local area fire departments, ambulance services, and any other emergency response providers.
8. Notification of local school districts about possible impacts to school bus routes, student drop-offs, and/or pedestrian facilities.
9. Geographic and other special constraints.
10. Available resources.
11. Operational procedures.

The IMP shall be submitted to CDOT for Acceptance within 30 Days after NTP2. No Work that impacts traffic shall commence until the IMP is Accepted.

17.2.2.3 Contractor Response Time

The Contractor shall have at least 1 employee on call 24 hours a day, 7 days a week via cell phone, who shall respond to an incident within 30 minutes. Upon arrival at the incident site, that employee shall assess the situation, shall be empowered to direct Work, and shall immediately notify the appropriate personnel to implement the IMP. Upon notification of the incident, the Contractor shall immediately undertake all actions necessary to restore traffic operations to the maximum extent practicable.

17.2.2.4 Coordination with Adjacent Projects

Other projects along US 160 may occur during the construction of this Project. The Contractor shall coordinate construction traffic and detour impacts with CDOT and contractors on those projects to minimize simultaneous closures or impacts to adjacent or alternate routes.

17.2.2.5 Coordination with Adjacent Neighborhoods

No construction traffic shall be allowed in residential neighborhoods adjacent to the Project.

17.2.3. Communications Plans

The TMP shall reference the appropriate sections of CDOT's PIP and the Crisis Communications Plan (CCP) per Book 2, Section 5, and shall ensure the necessary communications support.

17.3 Design Requirements

17.3.1. Submittals

All submittals shall be prepared, reviewed, and submitted in accordance with the requirements set forth in Book 2, Section 4.

The Contractor's Engineer in responsible charge of the MOT design shall prepare, review, and approve the TCP, Released for Construction (RFC) Documents, Field Design Changes, and the MHT drawings. These plans shall be in conformance with the TMP described in this Section.

17.3.2. Maintenance of Traffic Design Thresholds

The following thresholds shall be used to determine if a lane closure is acceptable. For the Project, the following mobility thresholds shall be maintained:

1. Level of Service (LOS), LOS D or better for intersections.
2. LOS E or better for individual approaches at impacted intersections during peak hours.
3. Travel time impacts for out-of-direction travel shall be less than 20 minutes.
4. Queues shall be maintained within existing storage lengths.

17.3.3. Traffic Control Plans

The Contractor shall prepare TCPs to control traffic on the Project. The TCPs shall conform to the requirements specified herein, the CDOT Standard Specifications, and the most current version of the Manual on Uniform Traffic Control Devices (MUTCD). The TCPs shall generally describe all lane and shoulder configurations, including widths, traffic control signing, pavement markings, traffic control devices, temporary signalization, flagger locations, construction access, construction parking, emergency access, Work areas, and pedestrian/bicycle accommodations necessary for each construction phase.

Flaggers shall be placed immediately adjacent to Work areas to optimize traffic flow during periods of construction activities and to reduce delays.

The TCP shall be submitted to CDOT for Acceptance 14 Days prior to implementation of the particular TCP.

Any major revision to a TCP, as determined by CDOT, shall require submission of a new TCP for Acceptance.

17.3.4. Design Vehicle

The design vehicle shall be a WB-67.

17.3.5. Design Speed and Posted Speed

Design speeds shall in all cases be equal to or greater than the posted speed. The Contractor shall provide existing design and posted speed whenever it can be reasonably maintained. In the event speed reductions are required, the Contractor shall submit Form 568 to CDOT for Approval at least 14 Days prior to implementation.

17.3.6. Minimum Lane and Shoulder Requirements

17.3.6.1 Lane and Shoulder Restrictions

Minimum lane and Shoulder widths during construction shall be according to Table 17-2.

Table 17-2: Minimum Lane and Shoulder Widths

Location	Travel Lanes	Shoulders	
		Inside	Outside
US 160	11 ft.	2 ft.	2 ft.
County Roads 223, 225, and 229	10 ft.	0 ft.	0 ft.

Short-term modifications of existing traffic signals in conjunction with construction phasing may be needed and shall be the responsibility of the Contractor to build and maintain through the construction phase. Where signal detection and communications are present, they shall be maintained.

17.3.6.2 Lane Closures

Allowable lane closures for the Project are per the CDOT Region 5 Lane Closure Strategy Report (LCS), in Book 3, until Notice of Final Acceptance. The restricted times are also listed in Table 17-3, Table 17-4, and Table 17-5. Summer months shall be May through September and off-season months shall be October through April.

During lane closures, the Contractor shall monitor travel time delays and the queue length. If delays exceed 20 minutes, the lane shall be opened to traffic until the queue has dissipated.

When US 160 is reduced to a single lane, the Contractor shall provide a minimum clear width of 16 feet to accommodate oversized vehicles. When a County Road is reduced to a single lane, the Contractor shall provide a minimum clear width of 12 feet.

The Contractor may request lane closures that are outside of the restricted hours per the LCS and Tables 17-3 through 17-5. The request for the lane closures shall be submitted to CDOT for Acceptance at least 7 Days in advance of the closure.

Table 17-3: Restricted Hours for US 160 Lane Closures (Less than 1-Mile)

Weekday		Weekend	
Summer	Off-Season	Summer	Off-Season
7 AM to 6 PM (MP 91.5 to MP 103.6)	7 AM to 9 AM & 3 PM to 6 PM (MP 91.5 to MP 93.1) 7 AM to 9 AM & 4 PM to 6 PM (MP 93.1 to MP 103.6)	8 AM to 7 PM (MP 91.5 to MP 93.1) 10 AM to 12 PM (MP 93.1 to MP 103.6)	None (MP 91.5 to MP 103.6)

Table 17-4: Restricted Hours for US 160 Lane Closures (1-mile to 2-miles)

Weekday		Weekend	
Summer	Off-Season	Summer	Off-Season
7 AM to 7 PM (MP 91.5 to MP 103.6)	7 AM to 7 PM (MP 91.5 to MP 93.1) 7 AM to 6 PM (MP 93.1 to MP 103.6)	8 AM to 7 PM (MP 91.5 to MP 93.1) 8 AM to 6 PM (MP 93.1 to MP 103.6)	9 AM to 6 PM (MP 91.5 to MP 93.1) 9 AM to 5 PM (MP 93.1 to MP 103.6)

Table 17-5: Restricted Hours for US 160 Lane Closures (Greater than 2-Miles)

Weekday		Weekend	
Summer	Off-Season	Summer	Off-Season
6 AM to 9 PM (MP 91.5 to MP 103.6)	6 AM to 8 PM (MP 91.5 to MP 103.6)	7 AM to 9 PM (MP 91.5 to MP 103.6)	7 AM to 8 PM (MP 91.5 to MP 93.1) 8 AM to 7 PM (MP 93.1 to MP 103.6)

17.3.6.3 Emergency Pullouts

The Contractor shall provide pullouts along US 160 for disabled vehicles and law enforcement vehicles per Table 17-6. The pullouts shall have a firm and stable surface, shall be a minimum of 50-feet in length, and shall be a minimum of 14-feet including the shoulder width. The transitions for the ingress of the pullout shall be 6:1 or greater.

If pullout areas are required along both westbound and eastbound travel lanes, the pullout areas shall be staggered through the Work zone so they are not directly across from each other.

Table 17-6: Spacing for Emergency Pullouts

Shoulder Width	Emergency Pullout Spacing
Barrier constrained	One half mile

17.3.6.4 Local Roads

Any and all variances for local street lane closures and lane reductions shall be approved by the respective jurisdiction.

17.4 Construction Requirements

17.4.1. Smart Work Zones

The implementation of smart work zones is highly encouraged. Additional information is provided in the Reference Documents that includes a sample CDOT specification and a selection tool in excel format provided by CDOT.

17.4.2. Temporary Traffic Control Devices

The Contractor shall install, maintain, and remove all temporary traffic control devices.

17.4.2.1 Construction Signing

Construction signing within the Project limits and all detours shall comply with CDOT Standard Specifications, the MUTCD, and all other applicable standards. The Contractor shall maintain all existing guide signs, warning signs, and regulatory signs during construction. Construction signing and construction signing maintenance shall be the responsibility of the Contractor.

All signs in place for more than 3 Days shall be post-mounted.

17.4.2.2 Temporary Barriers

The Contractor shall maintain a clear zone in accordance with the AASHTO Roadside Design Guide. When clear zone cannot be obtained, the Contractor shall use barriers to positively separate traveled lanes from Work zones.

Temporary barriers within the Project limits and all detours shall comply with CDOT Standard Specifications, CDOT M&S Standards, and the AASHTO Roadside Design Guide. All barrier termini within the clear zone shall have an end treatment. A barrier is to be installed per CDOT Standard M-606-14 when adjacent to roadside Work zone, obstructions, obstacles, hazards, and vertical drop-offs. Temporary barriers shall be located so as to not negatively affect temporary drainage in current or future phases. Pinning of temporary barriers into new permanent pavement is not allowed.

17.4.2.3 Temporary Marking Paint and Signs

The Contractor shall furnish, apply, and remove temporary pavement marking paint in accordance with CDOT Standard Specifications. Temporary paint striping shall meet the conformity of lines (including no overspray), dimensions, patterns, locations, retroreflectivity, and details established in the Contractor's TCP and MHT drawings.

All temporary edge line shall be a minimum of 4 inches wide.

1. Temporary pavement paint striping shall be restriped as required to meet retroreflectivity standards and maintain safe traffic operations.
2. Hydroblasting, or other methods that do not result in scarring of permanent pavements, shall be used for removal of temporary striping.
3. For temporary alignments in place for 3 months or more, modified epoxy striping shall be used.

Barrier reflector strips shall be installed on all temporary barrier when the barrier is within 4 feet of the traffic, per the CDOT Standard S-612-1. The spacing between each 3-foot panel shall be no more than 50 feet.

Delineation shall be placed and maintained through all phases of Work, including lighted areas.

17.4.2.4 Temporary Traffic Signals

Temporary traffic signals shall comply with the Project Special Provisions in Book 2, Section 21.

17.4.2.5 Temporary Walls

Temporary walls shall comply with Book 2, Section 16.

17.4.2.6 Temporary Bridges

Temporary Bridges shall comply with Book 2, Section 16.

17.4.2.7 Temporary Lighting

Temporary Lighting shall comply with Book 2, Section 15.

17.4.3. Maintenance of Temporary Traffic Control Devices

The Contractor shall be responsible for the maintenance of all temporary traffic control devices within the Project limits, including the local Street and county Road systems. All traffic control devices shall meet MUTCD requirements, including retroreflectivity standards, and shall meet the acceptable standard as defined by the ATSSA Quality Guidelines for Work zone Traffic Control Devices. All devices shall be cleaned a minimum of every 2 weeks.

17.4.4. Detour Pavement

The Contractor shall provide a paved surface for all detours and shoo-fly detours. Design and construction of detour pavement shall conform to the requirements of Book 2, Section 11. Detour pavement locations shall be generally described in the Contractor's TMP and detailed in the Accepted TCP.

The Contractor shall maintain the detour pavement for the entire period that it is open to the traveling public, including all temporary approaches, accesses, crossings, and intersections with adjacent Roads and Streets. Detour pavements shall be maintained in good operating condition, devoid of potholes, uneven surfaces, and rutting. CDOT may direct the Contractor to repair or replace detour pavements if, at CDOT's sole discretion, detour pavements are determined to be in poor condition. Detours that use existing Roads shall be subject to pavement repair or replacement where it is determined that the condition of the existing pavement has noticeably deteriorated over the duration of its use as a detour.

The Contractor shall be responsible for the complete removal, regrading, revegetation, and disposal of all temporary detour pavement.

17.4.5. Queue Delays During Construction

The Contractor shall monitor queue lengths and durations on all Roads within the Project limits whenever a lane closure is in effect. If the queue times exceed 20 minutes, the Contractor shall notify CDOT and adjust the detours, lane closures, and traffic control devices, including advanced warning signage, to minimize delay. If queue lengths extend beyond the location of the advance warning signs, the Contractor shall adjust the detours, lane closures, traffic control devices, including advanced warning signage, and shall provide advance warning to motorists of stopped traffic.

17.4.6. Working Time Violation Incidents

If there is a violation of the working time limitations for traffic control as allowed for in this Section 17, the Contractor will first be issued a written notice to stop Work at the start of the next Day. Work shall not resume until the Contractor ensures CDOT, in writing, there will not be a recurrence of the working time violation. Subsequent Incidents, beyond this first written notice, will be assessed a price reduction. The working time violation incident (WTVI) price reduction charges shall be reflected on the Contractor's Monthly Invoice. Price reductions will not be considered a penalty, but will be a price reduction for failure to perform traffic control in compliance with the Contract.

A WTVI is any violation up to 30 minutes in duration. Each 30 minutes or increment thereof will be considered a WTVI. A price reduction will be assessed for each successive or cumulative 30-minute period in violation of the working time limitations, as determined by CDOT.

WTVI charges shall be as follows:

1. \$1,200 per WTVI for US 160.
2. \$600 per WTVI for CR 223, CR 225, and CR 229.

17.4.7. Uniformed Traffic Control

The Contractor shall contract with the Colorado State Patrol for uniform traffic control (UTC) services. The Contractor shall provide a copy of the Contract with Colorado State Patrol (CSP) to CDOT for Review. Uniformed law enforcement coordination shall comply with the Project Special Provisions in Book 2, Section 21.

17.5 Deliverables

The Contractor shall submit the following to CDOT (and Local Agencies when applicable) for Review, Acceptance, or Approval:

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 17 - Transportation Management Plan

Table 17-7: Deliverables

Deliverable	Review, Acceptance, or Approval	Schedule
Transportation Management Plan (TMP)	Acceptance	Prior to NTP2
Maintenance of Traffic (MHT)	Acceptance	7 Days prior to implementation of each MHT
CDOT Form 568 for temporary speed reduction	Approval	At least 14 Days prior to the date when speed reduction is to be implemented.
TMP task force members	Acceptance	Within 30 Days after NTP1
Maintenance of Traffic (MOT) variance request	Approval	14 Days prior to implementation of each MHT
Detour routes	Approval	Prior to implementation and after Local Agency approval
Shoo-fly detour design package	Acceptance	Prior to RFC Documents submittal
Requests to CDOT for modifications to CTMC VMS messages	Review	By 10:30 AM on Thursday of the week prior to when the VMS boards will be needed
Incident Management Plan (IMP)	Acceptance	Within 30 Days after NTP2
Traffic Control Plan (TCP)	Acceptance	At least 14 Days prior to implementation of each TCP
Requested lane closure that are outside of the restricted hours per the LCS	Acceptance	At least 7 Days prior to implementation of closure
Copy of Contractor's contract with CSP	Review	As needed for UTC

18.0 Landscaping

This Section includes the requirements for the Landscaping Work for the US 160 Elmore's Corner to Dry Creek Design-Build (Project). This Work shall be completed in accordance with the Contract Documents. Contractor shall limit disturbance of all existing vegetation to the extent practical.

18.1 Administrative Requirements

18.1.1. Standards

The Contractor shall design and construct the Project in accordance with the Contract, including the Project Special Provisions and Standard Special Provisions in Book 2, Section 21 and requirements of the standards referenced in Book 3. The Contractor shall use the latest adopted edition at the time of the Proposal Due Date.

18.2 Design Requirements

18.2.1. Submittals

All submittals shall be prepared, reviewed, and submitted in accordance with the requirements set forth in Book 2, Section 4.

18.2.2. Landscape Plan (Written Plan)

The Contractor shall prepare and submit a written Landscape plan and approach for Acceptance by CDOT prior to NTP2. The Landscape plan shall be required for any area of Work where construction disturbance occurs, including permanent Right-of-Way (ROW), temporary Easements, staging, haul road, locations of fill/borrow, temporary fills, access locations, or other areas that are disturbed as part of the Work.

The Landscape plan shall include all the following:

1. Existing Vegetation Plan: The contractor shall conduct a Site walkthrough and identify the existing vegetation locations in all areas that may be potentially disturbed, including permanent and temporary Easements as part of the Work. This shall include species, location, condition, size, health, and a recommendation for remaining undisturbed, pruning, removal, or replacement in conformance with Book 2, Section 9. This plan shall include the following:
 - A. Identification of areas adjacent to existing wetlands, trees, and significant vegetation.
 - B. Documentation of the results of the Site walkthrough on aerial images and submitted as part of the plan.
2. Removal Plan: Identification of removals, clearing and grubbing, and any selective thinning areas in the areas between the limits of construction and the ROW. The Contractor shall identify toes of fill, top of cut, access Roads, temporary fills, and any haul Road locations, mitigations, removals, and replacements of trees, shrubs, and landscapes impacted by the Work. The removal plan shall include, at a minimum, the following:

- A. The Contractor shall conduct a Site walkthrough to identify areas to be protected to accommodate temporary access features. All construction operations shall be performed in such a manner as to avoid these protected areas.
 - i. The results of the Site walkthrough shall be documented on aerial images and submitted as part of the plan.
 - B. The locations of protected areas. The Contractor shall protect and maintain all existing vegetation in the Project, except for the vegetation that must be removed to accommodate construction of the Project.
 - C. The removal plan shall clearly delineate the clearing and grubbing Work limits and the trees that will be removed to construct the Project. In addition to these prescribed areas, the Contractor shall identify trees to be removed or protected within the limits.
 - D. How Book 2, Section 9 commitments will be met, specifically addressing how landowner requirements have will be handled.
 - E. Identify areas defined in Book 2, Section 6.
 - F. Schedule of Work: The contractor shall develop a schedule of when the Work shall take place, per CDOT Standard Specifications for Road and Bridge Construction, and Book 2 Section 21.
3. An Integrated Noxious Weed Management Plan (INWMP): The Contractor shall use industry standard protocol for weed management, as well as the requirements outlined in this Section.
 - A. Upon completion of the designation and tagging Activities, the Contractor shall conduct an inspection of the existing Landscape with CDOT prior to the start of the Work. The Contractor shall install protection and finish pruning in accordance with the Accepted Landscape plan and address any issues identified during the inspection. Removals may take place over the life of the Project.
 - B. The contractor shall identify the need for herbicide.
4. Revegetation / Restoration Plan: Areas to receive soil amendments and permanent seeding shall meet the requirements of CDOT, Region 5. The plan shall also meet the requirements of Book 2 Section 12. The written plan and approach shall include the following:
 - A. A plan and approach for restoration of temporary fills.
 - B. A detailed layout and approach for meeting the Special Construction Requirements - General (Section 404 Permit, Senate Bill 40 Certification, And New Mexico Meadow Jumping Mouse Habitat Creation) found in Book 2 Section 21 for the habitat restoration at the Florida River Bridge.
 - C. An approach to how the disturbance areas, including haul Roads, will be restored.
 - D. Special Considerations (North Cut Borrow Area if Used)
 - i. Use of the north cut for fill on the Project requires special considerations. The restoration of the north cut includes benching at intervals to be determined by calculations to prevent rilling (such as RUSLE2 or other), at a bench width and depression to capture the volume of the upslope contributing area major storm volume (non-discharging), in addition to the seeding, mulching, soil amendments, watering, temporary BMPs, and other requirements defined herein.

5. Establishment Plan/Maintenance Plan: The Contractor shall submit a detailed Landscape maintenance plan in accordance with the requirements of Section 214 of the CDOT Standard Specifications for Road and Bridge Construction and prior to requesting Project Final Acceptance. CDOT will Inspect the Landscape installations on at least a monthly basis to determine the Acceptability of the maintenance Work. Nonconforming maintenance will be brought up to Acceptable levels within 5 Days of receipt of notice of maintenance deficiencies. This plan shall include a detailed watering plan that includes a detailed schedule in order to meet the required watering.
6. Schedule of Work: The contractor shall develop a schedule of when the Work shall take place, per CDOT Standard Specifications for Road and Bridge Construction, and Book 2 Section 21.

When the Landscape plan is Accepted by CDOT and prior to NTP2 and before any construction Activities, the Contractor shall designate and clearly tag all existing plants that will remain undisturbed, pruned, or removed, as identified in the Landscape plan.

18.2.3. Landscaping Plans (Drawings)

1. The Contractor shall prepare drawings and a design intent narrative detailing at a minimum the following:
 - A. Xeriscaping at the proposed roundabout. The plan shall include all the plant materials and ground covers. For planting materials, the Contractor shall consider the surrounding environment and include drought-resistant native plants and seeding mix.
 - B. Tree installation at each of the wildlife underpasses. The plan shall include a minimum of 6 evergreen trees, Pinyon pine (*Pinus edulis*) per side (3 per wingwall), each a minimum of 4 feet in height.
 - C. Drawings depicting how Book 2, Section 9 commitments have been met.
 - D. Drawings of Book 2, Section 6, defined areas.
 - E. If there are any haul Roads or temporary fills, the plan shall include restoration drawings for the temporary construction impacts and shall meet the requirements of Book 2, Section 12.
2. Revegetation / Restoration Drawings: Drawings depicting the areas to receive soil amendments and permanent seeding shall meet the requirements of CDOT, Region 5. The plan shall also meet the requirements of Book 2 Section 12. The drawings shall include:
 - A. Drawings for where and how restoration of temporary fills will be restored.
 - B. Detailed drawings showing how the requirements for the habitat restoration for the New Mexico Jumping Mouse habitat at the Florida River Bridge will be completed.
 - C. Drawings on how the disturbance areas, including haul Roads, will be restored.

These landscaping plans (Drawings) shall be completed and sealed by a Landscape Architect licensed in the State of Colorado. The plans shall be submitted in accordance with Table 18-2.

18.2.4. Clearing and Work Area Limits Identification and Protection

The Contractor shall follow the removal plan as part of the Landscape plan submitted and Accepted by CDOT in accordance with this Section. Prior to construction Activities, the Contractor shall conduct a

site walkthrough with CDOT to verify removal limits. CDOT will have the opportunity to provide input on removals and discuss additional protections with the Contractor. During the Site walkthrough, the Contractor shall tag the trees adjacent to the existing landowner boundaries, as well as trees that CDOT desires to remain, including those in temporary Easements for protection that are to remain in place. The Contractor shall review Book 2, Section 9, for unique conditions associated with each property acquisition identified. The Contractor shall use all appropriate care to avoid damage or removal of the tagged trees. The Contractor shall contact CDOT before removing a tagged tree. Tagged trees that are damaged shall be replaced in-kind at the Contractor's expense. Trees that are damaged and assessed as salvageable shall be promptly repaired, pruned, wrapped, and protected from further damage at the Contractor's expense.

18.2.4.1 Weed Management

The Contractor shall take actions necessary to control all State and County listed noxious weeds within the Project limits. Prior to construction, the Contractor shall perform an initial noxious weed survey, and prepare a current Integrated Noxious Weed Management Plan for inclusion in the Final Environmental Compliance Work Plan (ECWP). The Integrated Noxious Weed Management Plan shall be submitted for Acceptance prior to NTP2.

The plan shall include a variety of species-specific control methods based on the size of the weed populations and the surrounding landscape. Weed mitigation efforts shall take place at a minimum twice per year (spring and fall). The plan shall be implemented throughout Project construction as appropriate. The plan shall include monthly noxious weed surveys during the growing season, March through October, to identify and treat noxious weeds. Weed-infested staging areas shall not be allowed. Staging areas shall be mowed and cleared of noxious weeds and sprayed with the appropriate herbicide, or as referenced in the Colorado Department of Agriculture species fact sheets. Topsoil salvaged from the Site and stockpiled for reuse on the Site shall be treated in accordance with the methodology described in the first ECWP to eliminate noxious weeds prior to salvage. Topsoil stockpiles shall be monitored during the monthly noxious weed Surveys and treatment shall be implemented as needed. If imported topsoil is used for any part of the Project, the topsoil shall be inspected and certified noxious weed free. Mitigated sites shall be monitored at least twice over the first growing season following construction, and follow-up weed control shall be provided through the Landscape Warranty Period.

18.2.5. Protected Areas

The Contractor shall install temporary fencing for the protection of all existing vegetation that is designated to remain undisturbed and any additional areas defined in the Accepted Landscape Plan. After installation of the fence, the Contractor shall request a field Inspection from CDOT prior to proceeding with the Work.

Fencing shall be placed at the drip line for trees. Construction Activities, such as earth disturbance, storage, staging, or parking inside the drip line, shall be prohibited. No chemicals shall be applied or used around or near these areas that would be detrimental to vegetation health.

18.2.6. Trees and Shrubs

18.2.6.1 Trees and Shrubs Removal

Tree stumps within the Roadway prism or within 10 feet of the edges of Roadway pavements shall become the property of the Contractor. All other tree stumps within the Project area shall be ground to 3 feet below finished grade.

All trees or shrubs removed from the Project shall become the property of the Contractor.

18.2.6.2 Pruning

The Contractor shall have all necessary root and branch pruning that interferes with the be pruned in accordance with American National Standard Institute (ANSI) A300.

18.2.6.2.1 Root Pruning

Tree roots 2 inches or greater in diameter shall not be removed. The Contractor shall not prune roots at a depth greater than the excavation. The Contractor may prune branches that will interfere with the Work per the Accepted Landscape plan and according to Section 240 - Protection of Migratory Birds, Biological Work Performed by the Contractor's Biologist of the CDOT Standard Specifications for Road and Bridge Construction.

The Contractor shall remove weak or dead branches on trees that are to remain within the ROW.

18.2.6.3 Planting Locations

With temporary Easements, the contractor shall replace trees and shrubs in accordance with Book 2, Section 6 and Book 2, Section 9.

Replaced Materials shall comply with Section 214 of CDOT's Standard Specifications for Road and Bridge Construction and Book 2, Section 21, and be equal to or better than the existing Materials in type and function. Planting requirements shall meet the criteria listed below.

The Contractor shall provide the minimum sizes to be planted or provided as part of the Work:

1. Native evergreen trees - Either Pinyon pine (*Pinus edulis*) or Juniper (*Juniperus* spp): 4 feet in height.
2. Shrubs:
 - A. Native deciduous shrubs: 5 gallon.
 - B. Native evergreen shrubs: 5 gallon.
 - C. Native ornamental grasses: 1 gallon.

18.2.7. Staking and Watering

New replacement trees shall be guyed in accordance with M-Standard Plans M-214-1 and Section 214 of the CDOT Standard Specifications. Trees shall be staked for two full growing seasons. All guying Material shall be removed by the Contractor at completion of the Landscape Establishment Period, defined in this Section.

The Contractor shall water new and protected trees on the Project until the Project has reached the Landscape Establishment Period. The Contractor shall water the plant Material per Section 214 of the CDOT Standard Specifications.

18.2.8. Topsoil

The existing topsoil should be stripped and stored separately for use on the Project to the extent practical.

All topsoil, either imported or salvaged on Site shall meet the requirements of Section 207 of the CDOT Standard Specifications and Book 2, Section 21. Topsoil shall be placed to a minimum thickness of 4 inches.

18.2.9. Seeding

All disturbed areas that are not surfaced shall be re-vegetated to replicate or enhance native vegetative communities.

Revegetation species that attract wildlife to the Roadside area shall not be used.

All areas to be seeded shall be accessible to maintenance Activities by CDOT.

Seeding shall follow Section 212 of the CDOT Standard Specifications and Book 2, Section 6. Seeding of areas shall be completed in conjunction with erosion control requirements, final Roadside cut/fill slopes, and as required in Book 2, Section 6.

If any detention facilities are incorporated into the Project, the slopes shall be planted with an Approved seed mix.

Placement of soil conditioner, topsoil, seeding, mulching (weed-free), and mulch tackifier (or soil retention blanket) shall not be completed in a single operation, but shall be completed immediately following each area that is to final grade, per CDOT Standard Specifications, Sections 208, 212, and 213.

Fertilizer can be used adjacent to waterways, but shall not be used directly in wetlands or waterways.

The Contractor shall place native seed, soil amendments, mulch (weed-free), and mulch tackifier after each construction phase and prior to any winter shutdown Work.

The following seed mix, or equivalent, shall be used on the Project:

Table 18-1: Seed Mix

Common Name	Botanical Name	PLS lbs/acre Drill Seed	PLS lbs/acre Broadcast/Hydro
Oats	Avina sativa	2	3
Arizona fescue	Fescue arizonia	0.3	0.45
Western wheatgrass	Pascopyrum smithii Arriba	1.5	2.25
Indian ricegrass	Achnatherum hymenoides San Luis	1.1	1.65
Alkali sacaton	Sporobolus airoides VNS	0.25	0.375
Mountain brome	Bromus marginatus Bromar	2.6	3.9
Slender wheatgrass	Elymus trachycaulusPaloma	1.1	1.65
Saltgrass (inland)	Distichlis spicata VNS	0.4	0.6
Tanseyleaf Tansy-aster	Machaeranthera tanacetifolia	0.2	0.3
Rocky Mountain beeplant	Cleome serrulata	0.25	0.375
Palmer's penstemon	Penstemon palmerii	0.05	0.075
	Totals	9.75	14.625

Note: The seeding rate at the egress and ingress to the large wildlife underpasses shall be applied at 2X the rate shown in Table 18-1.

18.2.10. Landscaping Inspection, Establishment, Acceptance, and Warranty Period

18.2.10.1 Interim Landscape Inspections

The Contractor's Environmental Compliance Manager (ECM) shall conduct inspections at completion of the following Activities. The Work shall meet the requirements of the Contract Documents prior to proceeding to the next Activity:

1. Completion of the subgrade preparation.

2. Completion of finished grade preparation.
3. Layout of trees.
4. Layout of all plant materials.
5. Completion of seeding operations.

Nonconforming Work shall be replaced or repaired promptly by the Contractor at sole expense. When damage endangers public safety or traffic, remedial action shall be taken immediately to ensure safety and prevent further disruption of traffic.

18.2.10.2 Substantial Landscape Completion

Substantial Landscape Completion is defined as when all seeding, trees, or plant materials have been planted and are completed in compliance with the requirements of the Contract Documents. Trees and plants shall be healthy and in flourishing condition and be free of dying branches and branch tips; and shall bear foliage of normal density, size, and color.

Prior to Substantial Landscape Completion, a Landscape Inspection shall be held with CDOT to determine Acceptance of trees, plant material, and seeding areas. Upon Acceptance, CDOT will issue a Notice of Substantial Landscape Completion.

18.2.10.3 Landscape Establishment

The Landscape Establishment Period will commence at Project Final Acceptance, which will be contingent upon receipt of a written Notice of Substantial Landscape Completion from CDOT in accordance with the requirements of Section 214 of the CDOT Standard Specifications for Road and Bridge Construction, and in this Section.

All Landscape installations shall be completely maintained by the Contractor during the Landscape Establishment Period.

18.2.10.4 Final Landscape Acceptance

Upon completion of the Landscape Establishment Period, at the Contractor's request, CDOT will inspect the Landscaping to determine compliance with the Contract Documents. All Landscape installations shall be fully established (80% of pre-vegetative conditions), weed-free, clean, smooth, properly graded, and without tree or plant mortality.

The Contractor shall schedule a final Landscape Inspection and Verification walkthrough. After this walkthrough, the Contractor shall submit a letter requesting Final Landscape Acceptance from CDOT. The Landscape Establishment Period and Contractor maintenance will terminate after CDOT Acceptance is reached. Should CDOT identify any areas of Nonconforming Work, the Contractor shall correct the deficiencies and extend the Landscape Establishment Period for a minimum of one additional growing season at no additional cost to the Project. If Final Landscape Acceptance occurs in the fall, the Contractor shall continue to maintain the Landscaped area until the following spring. Any dead trees, plant material, or seeding areas shall be replaced or repaired at no additional cost to the Project.

The Contractor shall provide Landscape As-Constructed Documents to CDOT for Acceptance 90 days post installation. The As-Constructed Documents shall be completed by a Landscape Architect licensed in the State of Colorado. At the request of the Contractor, a final field review of the Landscaping shall

be conducted to ensure compliance with the Contract Documents. The results of the Landscape final field review of the Project revegetation shall be submitted, showing the conditions of all landscape items.

The Contractor shall provide accurately detailed As-Constructed Documents of the constructed Landscape plan in an electronic format (i.e., GIS Shape files) that is Accepted by CDOT, and a non-editable format, such as Adobe .PDF, at the same scale as the design plans within 90 Days after installation is complete and before Notice of Substantial Landscape Completion is issued.

Provision of the Landscape As-Constructed Documents is a condition for Final Landscape Acceptance and release of Retainage. The Contractor shall provide finalized As-Constructed Documents to CDOT at the time of Final Landscape Acceptance.

18.2.10.5 Landscape Warranty Period

All trees, shrubs, and ground covers, including seeding, shall be completely Warranted by the Contractor for 1 year from the date of Final Landscape Acceptance. Any plant Material deemed deficient following this 1-year Warranty period shall be replaced in kind by the Contractor at no additional cost to the Project, and shall be Warranted for 1 additional year by the Contractor. Any additional 1-year Warranty period beyond the initial 1-year Warranty period will be considered an extended Warranty period. Another Inspection will be conducted at the request of the Contractor at the end of the extended Warranty period to determine Acceptance or rejection.

If access to a completed Landscaped area is required by the Contractor after Final Landscape Acceptance, Landscape Materials will be considered existing and shall be protected in accordance with the requirements of the Contract Documents.

18.3 Deliverables

The Contractor shall submit the following to CDOT for Review, Acceptance, or Approval:

Table 18-2: Deliverables

Deliverable	Review Acceptance or Approval	Schedule
Landscape Plan (Written)	Acceptance	Prior to NTP2
Establishment Plan/Maintenance Plan	Acceptance	Prior to requesting Project Final Acceptance
Landscaping Plan (Drawings)	Acceptance	In accordance with Book 2, Section 4
Integrated Noxious Weed Management Plan	Acceptance	Prior to NTP2
Letter requesting Acceptance	Acceptance	After Final Landscape Inspection
Landscape As-Constructed Documents	Acceptance	90 Days post installation

19.0 Maintenance During Construction

This Section includes the requirements for the maintenance during construction Work for the US 160 Elmore's Corner to Dry Creek Design-Build (Project). This Work shall be completed in accordance with the Contract Documents.

19.1 Maintenance Administration

19.1.1. Responsibilities for Maintenance

The responsibility for performing maintenance of the Highway within the Project limits shall be the Contractor's responsibility except for (i) the Activities listed in Section 19.1.4., or (ii) otherwise specified in an Intergovernmental Agreement (IGA). Contractor's maintenance activities shall conform to Sections 104.04, 105.19, 105.20, and 107.17 of CDOT Standard Specifications for Road and Bridge Construction, and as described herein.

Americans with Disabilities Act (ADA) compliant pathways with a firm, stable, and slip-resistant surface shall be provided and maintained at all times by the Contractor, where applicable, specifically the Contractor's attention is directed to the Los Prados neighborhood to CR 222 area per Book 2, Section 14.2.2.16, where an ADA-compliant pathway is required. The requirements herein define those maintenance Work responsibilities that shall be performed by the Contractor and those that will remain the responsibility of CDOT. All Work shall conform to the CDOT Highway Maintenance Levels of Service Manual.

19.1.1.1 Initiation of Contractor Maintenance Responsibilities

The Contractor shall commence maintenance responsibilities beginning upon first mobilization for any Work on the Project through Final Acceptance, including any and all Project suspensions for weather and/or seasonal shutdowns.

19.1.1.2 Termination of Contractor Maintenance Responsibilities

All responsibilities assigned to the Contractor shall remain as defined until Final Acceptance.

19.1.2. Maintenance Level of Service Plan

The Contractor shall develop and submit to CDOT a Maintenance Level of Service (MLOS) Plan for Acceptance. The MLOS plan shall define the Contractor's complete strategy for the implementation, coordination, scheduling, and monitoring of maintenance Activities during the Project. The MLOS plan shall conform to the CDOT Highway Maintenance Levels of Service Manual and be updated, at a minimum, every 6 months or sooner if needed, to reflect changes in the Contractor's construction Activities. The MLOS plan shall also address all of the following components:

- 1. Initial Condition Survey**

The Contractor shall perform a detailed survey of existing maintenance conditions for the Highway and any Roadway provided for construction phasing.

- 2. Monthly Maintenance Progress Report**

Monthly maintenance progress reports are required for the full term of the Contractor's maintenance responsibilities. These reports shall include all maintenance activities performed,

the monitored maintenance condition of existing facilities, identification of any deficiencies from minimum standards, and an action plan for correcting the deficiencies.

Every 6 months, the Contractor shall perform a detailed survey of maintenance conditions for the Highway and any Roadway provided for construction phasing until all of the Contractor's maintenance responsibilities are complete (Final Acceptance). The results of the survey shall be documented by the Contractor and submitted to CDOT for Acceptance concurrent with the MLOS update.

Monthly maintenance progress reports shall be submitted to CDOT with the monthly invoice submittal for Review, as required in Book 2, Section 2.

The MLOS Plan shall be submitted to CDOT for Acceptance at least 21 Days prior to the Second Notice to Proceed (NTP2). The MLOS Plan shall include existing condition survey, as well as report and survey formats.

19.1.3. Maintenance Responsibilities of the Contractor

Except as specifically assigned to CDOT in this Section, the Contractor shall perform all required maintenance Activities for all Roadways within the Project limits, including, but not limited to, the following:

1. Patching and repair of existing pavements and detour pavements.
2. Patching and repair of all existing Structures included as a part of the Project.
3. Repair of Shoulder drop-offs.
4. Replacement and repair of existing HMA Shoulders.
5. Snow and ice removal for lanes closed to traffic and behind all temporary barrier.
6. Snow and ice removal from public trails within the Project limits, if applicable.
7. Compliance to ADA requirements for all-weather surfaces of all pathways and accesses at all times.
8. Maintenance of delineators, temporary and permanent signs, and pavement markings.
9. Drainage maintenance.
10. HMA overlays of existing pavements and Structures utilized as detours or as a part of the Contractor's MOT plans.
11. Replacement of damaged guardrail and barriers.
12. Repair of impact attenuators.
13. Vegetation control in conformance with Local Agency ordinances.
14. Litter control.
15. Graffiti removal (graffiti shall be removed within 24 hours of notification, and surface shall be the same color as the original, with no resulting damage to the surface).
16. Activities described in Exhibit 19-A, Maintenance Performance Activities (During Construction).
17. Debris removal responsive to providing the minimum lane requirements in Book 2, Section 17.

18. Sweeping as required by CDOT Standard Specifications for Road and Bridge Construction.

The Contractor shall meet vehicle weight limits for all trucks hauling Material over the Roadway. CDOT may request certified truck weights for any trucks hauling Material over the Roadway at any time. The

snow removal operations in the lanes closed to traffic and behind all temporary barriers shall be done in a way to avoid placing snow back into open lanes to traffic. Snow shall be removed far enough from the edge of travel lane that runoff from melting snow does not enter the travel lanes.

Any items (debris) of value discovered by the Contractor in the Highway shall be held by the Contractor no longer than 30 Days in consideration of claim by the original owner. This requirement includes temporary advertisement signs. If the original owner does not claim these items within 30 Days, the Contractor shall then relinquish the items (debris) of value to CDOT's maintenance staff for storage, and may dispose of all advertising material at their discretion.

If repair of infrastructure or removal of items illegally dumped on any ROW or Easement is required, the Contractor shall perform such services within 3 Days from the date discovered or reported.

19.1.4. Maintenance Responsibilities of CDOT

CDOT will perform the following maintenance Activities:

1. Inspection of existing Structures, unless modified by the Contractor.
2. Patching and repair of all existing Structures excluded from the Project.
3. Snow and ice control for all lanes open to traffic on US 160 prior to and during a snow event.

19.1.5. Limits of Maintenance Responsibilities

The longitudinal limits of the Contractor's maintenance responsibilities on the Project shall conform to the Project limits, including all portions of the Work.

The lateral limits shall be the ROW and intersecting Roadways within the Project Site. Any other areas disturbed by Contractor Activities outside of these limits shall be the sole maintenance responsibility of the Contractor.

19.1.6. Excluded Areas

There are no excluded areas within the Project limits.

19.1.7. Payment for Maintenance During Construction

Progress payments for maintenance during construction shall be according to Book 2, Section 2.

19.2 Performance Specifications

In performance of maintenance on the Project, the Contractor shall comply with the CDOT Highway Maintenance Levels of Service Manual. Specifically, the Contractor shall adhere to the requirements for data collection and measurement for equating level of service (LOS) on the Highway and incorporate these requirements into its performance of all maintenance Work according to the MLOS Plan.

A minimum of LOS D shall be maintained within the Project limits through the duration of the Project, per the CDOT Highway Maintenance Levels of Service Manual.

19.3 Right-of-Way Construction Requirements

19.3.1. Risk of Loss, Obligation to Maintain and Repair

The Contractor shall comply with requirements in Book 2, Section 9, and shall maintain improvements included in the Project and provide reasonable safety and security measures to preserve any ROW or Easements (temporary or permanent). The Contractor shall conduct regular Site inspections and prevent, minimize, or correct problems, including but not limited to vandalism, trespassing, rodent infestation, weed control (in accordance with any Local Agency ordinances), illegal dumping or disposal of rubble, and other debris on all areas of the Project that are under the Contractor's maintenance responsibility.

19.4 Deliverables

The Contractor shall submit the following to CDOT for Review, Acceptance, or Approval:

Table 19-1: Deliverables

Deliverable	Review, Acceptance or Approval	Schedule
Maintenance Level of Service Plan	Acceptance	At least 21 Days prior to NTP2, then update every 6 months or sooner if needed
Maintenance condition surveys	Acceptance	Concurrent with the Maintenance Level of Service Plan update
Monthly Maintenance Progress Reports	Review	Concurrent with each monthly Invoice submittal

19.5 Exhibits

Exhibit 19-A Maintenance Performance Activities (During Construction)

Exhibit 19-A: Maintenance Performance Activities (During Construction)

The following is a list of Activities from CDOT's Highway Maintenance Levels of Service Manual for which the Contractor shall be responsible during construction.

Maintenance Program Area: Roadway Surface (150)

Survey Item	CDOT Activities Number
Patching/Minor Surface Repair	152
Patching-Machine, Overlay, and Leveling	154
Blading - Existing Unpaved Surface/Shoulder	162
Building / Restoring Unpaved Surface/Shoulder	163
Base Stabilization and Repair	164

Maintenance Program Area: Roadside Facilities (200)

Survey Item	CDOT Activities Number
Drainage Structures Clean, Repair, or Replace	202
Maintenance of Ditches and Streambeds	206
Slope Repair	210
Fence, Gate Cleaning & Maintenance	216
Litter Barrel and Trash Cleanup	218
Sweeping - Machine	220
Sweeping - Hand	222

Maintenance Program Area: Roadside Appearance (250)

Survey Item	CDOT Activities Number
Vegetation Control - Dry Land	252
Vegetation Control - Bluegrass	253
Vegetation Control - Hand Mowing, Weeding	254
Vegetation Control - Herbicide & Pesticide App	256
Vegetation Control - Irrigation	258
Tree Planting, Removal, Trimming	260

Maintenance Program Area: Traffic Services (300)

Survey Item	CDOT Activities Number
Traffic Signs	302, 303
Delineators, Mile Markers	304

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 19 - Maintenance During Construction

Survey Item	CDOT Activities Number
Metal Guardrail	306
Concrete Guardrail	307
Pavement Striping, Pavement Markings	308, 310
Roadway, Sign Lighting	312

Maintenance Program Area: Structure Maintenance (350)

Survey Item	CDOT Activities Number
Bridge Decks	353
Bridge Superstructure	354
Bridge / Structure Painting	355
Bridge Curbs, Railings	356
Bridge Structure Bearings	357
Bridge Substructure	358
Bridge Approaches, Slopes	360
Bridge Deck Expansion Devices	364

Maintenance Program Area: Snow and Ice Control (400)

Survey Item	CDOT Activities Number
Snow Removal (Lanes Closed to Traffic)	402
Ice Control - Drainage Related	403

20.0 Intelligent Transportation Systems (ITS)

This Section includes the requirements for the ITS Work for the US 160 Elmore's Corner to Dry Creek Design-Build Project (Project). This Work shall be completed in accordance with the Contract Documents.

20.1 Administrative Requirements

The purpose of the ITS Work is to inform the Roadway users and to collect various data to assist agencies in the maintenance and operation of the facility. The ITS system includes conduit, pull boxes, manholes, and the various components that make up an empty backbone conduit system for future installation of fiber optic communications.

The Contractor shall be responsible for the design, furnishing, and installation of the conduit system for the future communications network and the supporting infrastructure that is necessary to maintain or relocate existing ITS infrastructure. All ITS elements of the Project shall comply with the requirements of this Section.

20.1.1. Standards

The Contractor shall design and construct the Project in accordance with the Contract, including the Project Special Provisions and Standard Special Provisions in Book 2, Section 21, requirements of the standards in the documents listed in Table 20-1, and those referenced in Book 3. The Contractor shall use the latest adopted edition at the time of the Proposal Due Date.

Table 20-1: Standards

Author	Title
American Association of State Highway and Transportation Officials (AASHTO)	A Policy on Geometric Design of Highways and Streets
AASHTO	Roadside Design Guide
Colorado Department of Transportation (CDOT)	Standard Specifications for Road and Bridge Construction
CDOT	M&S Standards
CDOT	Sign Design Manual
Federal Highway Administration (FHWA)	Manual on Uniform Traffic Control Devices
International Organization for Standardization (ISO)	9001

Author	Title
NFPA 70 (NEC®)	National Electric Code
CDOT	Roadway Design Guide

The Contractor shall also follow the latest guidance and standards provided by the following industry organizations.

- American Society for Testing and Materials (ASTM).
- Electronic Industries Alliance (EIA).
- Insulated Cable Engineers Association (ICEA).
- International Electrotechnical Commission (IEC).
- Institute of Electrical and Electronics Engineers (IEEE).

20.1.2. Submittals

All submittals shall be prepared, reviewed, and submitted in accordance with the requirements set forth in Book 2, Section 4.

The Contractor shall design the ITS infrastructure components in accordance with the requirements in this Section. No part or attachment of any Equipment shall be substituted or applied contrary to the manufacturer's recommendations and standard practices, without CDOT Approval. Infrastructure locations shall meet the requirements of CDOT.

The ITS Design Documents shall show all known Utility information.

Refer to Book 2, Section 21, for Project Special Provisions that apply to this Section.

20.2 Design Requirements

20.2.1. Location and Protection of ITS Elements

The Contractor shall locate all ITS infrastructure elements within the public ROW such that routine maintenance, including the use of a bucket truck, shall not require a lane closure, affect traffic operations, require complex traffic control, or reduce worker safety, unless otherwise Approved by CDOT. Whenever possible, ITS elements shall not be located in the Highway medians.

All existing Utilities shall be identified, and all ITS infrastructure elements shall be designed to avoid or minimize conflicts with these facilities. The Contractor shall be responsible for all repairs to facilities damaged during construction.

The Contractor shall ensure all Equipment, including but not limited to devices, interconnect wiring, communications devices, communications lines, power supplies, antennas, operator controls, and power service, is protected to eliminate damage by external and internal sources (including power surges), lightning, induced voltages, and static discharge. A grounding system and protection devices that are suitable for the specific installation and Equipment shall be included in the design.

ITS design plans shall show existing and proposed underground and overhead Utilities, Structures, and drainage facilities to aid in determining and resolving conflicts during design reviews.

There are elements of an existing, decommissioned wildlife detection system near MP 94.95. The Contractor shall remove all aboveground components of the decommissioned system including pole bases and other associated Materials.

20.2.2. Conduit

20.2.2.1 Design Requirements

The Contractor shall design new and separate conduit systems (including all hardware, fasteners, and accessories) for communication and power control systems, where necessary. Conduits shall not exceed the National Electric Code (NEC) fill ratio requirements. Backbone conduits for the future communications network shall be installed within the ROW and as close to the ROW line as practical.

The Contractor shall prepare a design to install a backbone conduit system for future ITS fiber optic communications at the following location:

- Two 2-inch conduits along US 160 from next to the existing traffic signal pull box in the southeast corner of US 160 and CO 172 near MP 91.4 to the eastern Project limits.

The backbone conduit system should be installed on only one side of the Road for the entire length of the Project. In the event a crossover of US 160 is needed, the Contractor shall request and obtain CDOT Approval to cross US 160 with the backbone conduit system. Backbone conduit pull boxes or manholes shall be installed on either side of all US 160 crossings, and crossings shall be perpendicular to US 160.

The following conduit colors shall be used for backbone conduit so the contents can be easily identified. Any additional power conduits required by the Contractor shall be a different color than backbone or lateral conduits.

Backbone Conduit Colors:

1. Orange: one 2-inch conduit for primary backbone communication.
2. Blue: one 2-inch conduit for secondary backbone communication.

Lateral Conduit Color:

1. Orange: one 2-inch lateral conduit from the existing traffic signal pull box to the nearest backbone pull box or manhole.

Traffic Signal Conduit Color:

1. The Contractor shall match the number and size of existing conduit or conduits to the traffic signal advanced flashing beacon impacted by Project construction.

Where conduit needs to cross on a Structure, separate 2-2-inch conduits shall be designed to be integrated into the Structure. Bridge conduit design shall include expansion-deflection joints as required by the NEC. Conduit attached to the outside of the Structure is not allowed. Innerducts pulled through larger conduits are not allowed. There are up to two locations that will require Bridge conduit:

1. Florida River Bridge.

At the wildlife underpasses, the conduit should be designed to be close to the ROW to avoid interaction with the Structures.

At small culverts, if the backbone conduits need to cross the culvert, the conduit shall be designed to cross over the top of the culvert. If a minimum depth of 48 inches cannot be achieved, the design shall include concrete encasement with a minimum depth of 24 inches to the top of the conduit.

Where backbone conduit crosses ditches or other managed waterways, the design shall meet all requirements of each ditch company, including providing additional plan and profile views if necessary.

20.2.2.2 Material Requirements

All conduits shall meet CDOT specifications described in Book 2, Section 21. The conduit shall be factory-lubricated, low-friction, high-density conduit constructed of virgin Schedule 80 high-density polyethylene resin. Conduit shall be capable of being coiled on reels in continuous lengths, transported, stored outdoors, and subsequently uncoiled for installation, without affecting its properties or performance.

20.2.3. Pull Boxes and Manholes

20.2.3.1 Design Requirements

The Contractor's design shall utilize fiberglass-reinforced, polymer concrete pull boxes and pre-cast concrete manholes as described in Book 2, Section 21.

The Contractor shall install a pull box or pull boxes to replace impacted existing pull boxes at the existing advanced flashing beacon. The Contractor shall match the size of the existing impacted pull boxes at this location.

The Contractor shall install 30-inch x 48-inch x 24-inch (depth) pull boxes along the fiber backbone. At the US 160 and CO 172 intersection, a 30-inch x 48-inch x 24-inch (depth) pull box shall be placed next to the existing homerun pull box at the traffic signal cabinet. 30-inch x 48-inch x 24-inch (depth) pull box spacing along the fiber backbone shall be 1,200 feet maximum.

A backbone pull box or manhole shall be placed in the northeast quadrant of the roundabout intersection at CR 225.

Pull box spacing for new conduit to the impacted advanced flashing beacon, located on the north side of US 160, east of CO 172, shall be a maximum of 200 feet.

Where backbone pull boxes are placed within 12 feet of the existing or proposed edge of traveled way, they shall be replaced with a 48-inch x 48-inch x 48-inch (interior dimensions) manhole with an AASHTO HL-93 rating for deliberate vehicular traffic.

20.2.3.2 Material Requirements

All pull boxes and manholes shall be consistent with the requirements outlined in Book 2, Section 21, including a requirement to use tamper-resistant bolts for all fiber communications backbone pull boxes or manholes. Tamper-resistant bolts are not required in the pull box or pull boxes for the conduit to the impacted advanced flashing beacon. Communications pull boxes shall be 24 inches x 36 inches x 24 inches or larger, as required. Pull boxes for the impacted advanced flashing beacon shall be 11 inches x 18 inches x 12 inches or larger to match the size of the existing pull boxes.

20.2.4. Relocated Traffic Signal Advanced Flashing Beacon

20.2.4.1 Design Requirements

The Contractor shall prepare a design to relocate the existing advanced flashing beacon, radio antennae, cabinet, and detection system that is located on the north side of US 160, east of CO 172 at approximate milepost 91.52, including all plans to keep the system operational during construction. The Contractor shall design a new conduit system (matching the existing number, size, and colors), new pull box or pull boxes (matching the existing size or sizes), and a new 15-foot pedestal pole (with transformer base) and foundation. The new pedestal pole location shall be at the same approximate milepost, with a lateral offset compared to the new edge of traveled way that meets the requirements of Lateral Placement "A" in CDOT Standard Plan S-614-14.

20.2.4.2 Material Requirements

Pull boxes and manholes shall be consistent with requirements found in this Section and Book 2, Section 21.

The flashing beacon pole and foundation shall be in accordance with CDOT Standard Plan S-614-44.

All additional cabling, connectors, fasteners, or any other Material required to relocate the existing Equipment shall confirm with manufacturer recommendations for each piece of Equipment.

20.3 Construction Requirements

The Contractor shall be responsible for furnishing and installing all ITS devices and the communications system. The Contractor shall submit product sheets and certifications for all ITS devices and Materials to CDOT for Acceptance prior to ordering and installation.

Refer to Book 2, Section 21 for construction requirements in addition to those described in the following Sections.

20.3.1. Location and Protection of ITS Elements

The Contractor shall be responsible for locating all underground facilities to avoid or minimize conflicts. If any facilities are damaged during construction, the Contractor shall be responsible for all repairs at Contractor's sole cost and expense.

The Contractor shall install a grounding system and protection devices that are suitable for each specific ITS element.

20.3.2. Conduit

The Contractor shall furnish and install any conduit required for the ITS system or devices.

The Contractor shall furnish and install a future ITS fiber backbone conduit system at the locations described in Section 20.2.2.1.

The Contractor shall provide a trenching and boring Plan for CDOT Review 1 week prior to any trenching or boring Activities.

For bores that contain more than one conduit, the conduit shall be bundled together and contained in a single bore.

Refer to the Project Special Provisions in Book 2, Section 21 for detailed construction requirements for all conduit installations.

20.3.3. Pull Boxes and Manholes

The Contractor shall furnish and install all pull boxes and manholes according to the Project Special Provisions in Book 2, Section 21. Pull boxes and manholes shall be placed above the freeboard requirements in the Roadside ditches per Book 2, Section 13, and shall not be placed in a known flood-prone area. A label shall be attached to each cable and conductor located within a pull box or manhole.

20.3.4. Relocated Traffic Signal Advanced Flashing Beacon

The Contractor shall phase construction to keep the flashing beacon operational throughout construction. The Contractor shall submit the design per Section 20.2.4. and the cutover plan to CDOT for Acceptance 4 weeks prior to starting construction. The plan shall include, at a minimum, a description of the phased construction, turn-off date, construction duration, testing plan, and testing date.

20.3.5. Cabling and Conductors

All cables shall be installed per the manufacturer's requirements for each device or the Project Special Provisions in Book 2, Section 21. The maximum conduit fill ratio for new conduits shall be in accordance with the NEC, latest version.

20.3.6. Removal of Intersection Conflict Warning System at US 160 and CR 225

There is an existing intersection conflict warning system at the intersection of US 160 and CR 225. The system includes Equipment at six locations (four locations at the US 160 and CR 225 intersection, one location to the east, and one location to the west along US 160). The Equipment includes illuminated signs, solar panels, controller and battery enclosures, radio antennas, radar detectors, and coordination units. For system details, refer to the Existing High Speed Rural Intersections Minor Street Stop Controlled Signing Plan included in the Reference Documents. The existing Equipment shall be maintained in the same condition it is in at the start of the Project, removed when it is no longer needed at the intersection, and shall be returned to the CDOT Traffic Signal Shop at 20581 West Hwy 160, Durango CO, 81301.

20.4 Deliverables

The Contractor shall submit the following to CDOT for Review, Approval, or Acceptance:

Table 20-2: Deliverables

Deliverable	Review, Acceptance, or Approval	Schedule
Product sheets and certifications for all ITS devices and Materials	Acceptance	Prior to ordering and installation
Trenching and boring plan	Review	1 week prior to any trenching or boring Activities
Relocated advanced flashing beacon Design and cutover plan	Acceptance	4 weeks prior to starting construction of the relocated advanced flashing beacon.

21.0 Modifications To Standard Specifications

21.1 Construction Requirements

This Section sets forth modifications to the Colorado Department of Transportation (CDOT) Standard Specification for Road and Bridge Construction for design-build projects. The first section contains revisions to Division 100 of the Standard Specifications. The second section contains revisions to Divisions 200 through 700 of the Standard Specifications, Standard Special Provisions, and Project Special Provisions. All references to the "specifications" in this section refer to the CDOT Standard Specifications for Road and Bridge Construction as modified and incorporated into the RFP by the terms of this section.

These Contract Provisions revise the CDOT's Standard Specifications for Road and Bridge Construction, and contain requirements generally applicable to the Work to be performed by the Contractor. In certain cases, provisions in Section 100 of the Standard Specifications for Road and Bridge Construction have been superseded by other provisions of the Contract Documents. For ease of reference, this document uses the same Section numbers as the Standard Specifications for Road and Bridge Construction and identifies provisions of the Contract Documents that have replaced or modified the standard clauses.

The Specifications in this Section (Section 21) refer to "CDOT" in conjunction with "sampling of materials" and/or "testing of materials"; such reference may mean ICQC or OVT. If it is not clear which reference should be used, CDOT will make that decision in its sole discretion. In all cases, regardless of the language, CDOT maintains its acceptance role, and this role cannot be shifted to ICQC.

All references to "Engineer" that are incorporated into this Request for Proposal (RFP) refer to the Contractor's Engineer, unless the context requires or CDOT determines otherwise. Non-capitalized terms, such as "work" that are defined in Book 1, Exhibit A, shall have the meanings defined therein unless the context requires otherwise. References to "approve, approval or approved" shall mean "Approve, Approval or Approved" as defined in Book 1, Exhibit A, when the approval is by CDOT or a division of CDOT. If the interpretation(s) pursuant to this paragraph are not clear, CDOT shall decide, in its sole discretion, how these terms shall be interpreted.

When the specifications describe actions, Materials, means or methods that are required and that are qualified by phrases such as: "as directed by the Engineer", "when directed by the Engineer", "as determined by the Engineer", "with or without permission of the Engineer", "in the opinion of the Engineer", "unless authorized by the Engineer", "satisfactory to the Engineer", "as approved by the Engineer", or "unless another type is specified or is permitted with approval of the Engineer", such phrases pertaining to Contractor actions, materials, operations, and means or methods shall be disregarded. If it is not clear whether a phrase should be disregarded, CDOT will make that decision in its sole discretion.

When the specifications refer to "CDOT", "Department", "Resident Engineer", "Agricultural Engineer", "Bridge, Construction or Maintenance Engineer", "TMC system inspector", "Concrete Engineer", "Project Engineer", "Materials Engineer", "Commissioner", "Structural Metals Engineer", "Department's Lighting Engineer", "Geotechnical Engineer" or any other specific CDOT special engineer, such reference shall mean the CDOT Project Director.

When the specifications use the term Engineer relating to the approval of any activities involving the use of explosives, such term shall mean the CDOT Project Director.

When an approval or authorization of the Engineer or CDOT is required in these specifications for the use of alternative or substituted processes or components, the Engineer shall mean CDOT. If it is not clear whether a phrase involves the use of alternative or substituted processes, CDOT will make that determination in its sole discretion.

When the specifications refer to an approval of any correction or repair that deviates from the Contract requirements, the approval must be by CDOT. If it is not clear whether a specification involves a correction or repair that deviates from the Contract requirements, CDOT will make that determination in its sole discretion.

When the specifications provide that reports, records or other documents shall be submitted to CDOT or to the Engineer, such reports shall be made available to CDOT and do not have to be submitted unless either they are otherwise listed in the deliverables in the Contract Documents, or are required shop drawings, warranties, parts lists, instruction sheets or manufacturer's drawings or specifications. Such documents shall be submitted to CDOT as required by the specifications.

When the specifications require actions, Materials, means, or methods that are "either as indicated in the Plans or as designated by the Engineer," the Contractor shall disregard the phrase "or as designated by the Engineer."

When the specifications refer to the "Engineer" ordering work beyond the scope of work in the Contract, "Engineer" shall mean CDOT. Whenever in these specifications the Engineer may order work that results in additional costs to CDOT, the "Engineer" shall mean CDOT.

Any acceptances on behalf of CDOT or the State shall be performed by CDOT.

Any references to other standards, codes, or criteria, or to the latest version of other standards, codes, or criteria in Book 2 of the Contract Documents shall mean the latest version at the Proposal Due Date unless otherwise indicated.

21.1.1. Modifications to Section 100 of the CDOT Standard Specifications for Road and Bridge Construction

101 - Definitions and Terms

Definitions of terms used herein are set forth in Exhibit A, to Book 1 of the Contract Documents.

102 - Bidding Requirements and Conditions

102.01 - Prequalification of Bidders

Prequalification of Proposers was determined during the evaluation of the Statements of Qualifications.

102.02 - Contents of Proposal Forms

Provisions regarding the contents of Proposal Forms are set forth in the Instructions to Proposers.

102.03 - Interpretation of Quantities in Proposal Form

Not applicable.

102.04 - Interpretation of Plans and Specifications

Provisions regarding the interpretation of plans and specifications are set forth in the Instructions to Proposers.

102.05 - Examination of Plans, Specifications, Special Provisions, and Site or Work

Provisions regarding examination of plans, specifications, special provisions, and Site or Work are set forth in the Instructions to Proposers and in Book 1, Sections 1 and 2, of the Contract Documents.

102.06 - Preparation of Proposal

Provisions regarding preparation of the Proposal are set forth in the Instructions to Proposers.

102.07 - Irregular Proposals

Provisions regarding irregular Proposals are set forth in the Instructions to Proposers.

102.08 - Combination or Conditional Proposals

Not applicable.

102.09 - Anti-Collusion Affidavit

Provisions regarding Anti-Collusion Affidavit are set forth in the Instructions to Proposers.

102.10 - Material Guaranty

Provisions regarding Material Guaranty are set forth in Book 1, Section 21, and Book 2, Section 4.

103 - Award, and Execution of Contract

Provisions regarding award and execution of the Contract are set forth in the Instructions to Proposers and in Book 1 of the Contract Documents.

104 - Scope of Work

104.01 - Intent of Contract

Provisions regarding the intent of contract are set forth in Book 1 of the Contract Documents.

104.02 - Differing Site Conditions, Suspensions or Work, and Significant Changes in the Character of Work

Provisions regarding differing Site conditions and changes in the character of Work are set forth in Book 1, Sections 5 and 13, of the Contract Documents. Provisions regarding limitations to contract price increases are set forth in Book 1, Section 13.5, of the Contract Documents. Provisions regarding Suspensions of Work are set forth in Book 1, Sections 14 and 15.15, of the Contract Documents.

104.03 - Extra Work

Provisions regarding changes are set forth in Book 1, Section 13, of the Contract Documents.

104.04 - Maintaining Traffic

The provisions regarding maintenance of traffic are set forth in Book 2, Sections 17 and 19, of the Contract Documents. Provisions regarding maintenance responsibilities of the Contractor during Suspensions of Work are set forth in Book 1, Section 14, of the Contract Documents.

104.05 - Rights In and Use of Materials Found on the Work

The provisions regarding rights in and use of Materials found on the Work are replaced with the following:

The Contractor shall not excavate or remove any Material from within the Roadway, which is not within the grading limits, as indicated by the slope and grade lines, without written authorization from CDOT.

104.06 - Final Cleaning Up

Provisions regarding final cleaning up before Final Acceptance are fully incorporated herein.

104.07 - Value Engineering Change Proposals by the Contractor

Provisions regarding Value Engineering change proposals by the Contractor are set forth in Book 1, Section 12, of the Contract Documents.

105 - Control of Work

105.01 - Authority of the Engineer

The provisions regarding Control of Work are set forth in Book 1, Section 5, of the Contract Documents. CDOT has the authority by written order to suspend the Work wholly or in part for the reasons delineated in Book 1, Section 14, of the Contract Documents.

105.02 - Plans, Shop Drawings, Working Drawings, Other submittals, and Construction Drawings

Provisions regarding plans, Shop Drawings, Working Drawings, and construction documents are set forth in Book 2, Section 4, of the Contract Documents.

105.03 - Conformity to the Contract

The provisions regarding conformity to the Contract are revised as follows:

1. No incentive payments will be made under this Contract.
2. Paragraph 4 is deleted and replaced with the following: When the Engineer or CDOT finds the Materials furnished, the Work performed, or the finished product does not conform with the Contract Documents, but CDOT determines, in its sole discretion, that reasonably acceptable

Work has been produced, CDOT will determine the extent the Work will be Accepted and remain in place. If accepted, the Contractor shall (a) document the basis for Acceptance based on CDOT's determination by Change Order which will provide for an appropriate reduction in the Contract price for such Work or Materials not otherwise provided for in this Subsection, or (b) CDOT will notify the Contractor in writing that the agreed-upon unit price will be reduced in accordance with this Subsection when P is 25 or less, or (c) CDOT may notify the Contractor in writing if there should be no reduction in the Contract Price; or in lieu of a price reduction, CDOT may permit correction or replacement of the finished product, provided the correction or replacement does not adversely affect the Work.

3. For purposes of Nonconforming Work, the Contractor and CDOT will negotiate a unit price for determining the reduction in the Contract Price, with supporting documentation. The unit price is subject to Approval by CDOT. The reduction in Contract Price shall take place as provided in this Section 105.03, based upon the Approved unit price. The Change Order shall be prepared in accordance with this Section 105.03.
4. Paragraph 5 is deleted and replaced with the following: When the Engineer or CDOT finds the Materials furnished, Work performed, or the finished product are not in conformity with the Contract Documents, and CDOT determines, in its sole discretion, that it has resulted in an inferior or unsatisfactory product, the Work or Materials shall be removed and replaced or otherwise corrected by and at the expense of the Contractor.
5. Paragraph 8 is deleted and replaced with the following: Materials or Work will be evaluated for price reduction only when deviations from the requirements of the Contract Documents occur on any of the several individual Tests for the lot. Several individual test values will be averaged, and the percent of price reduction for the lot will be determined by applicable formula and table as shown in Section 105.03.
6. Paragraph 15 is deleted and replaced with the following: Price reduction for those elements which are not included in the Table of Price Reduction Factors, as shown in Section 105.03, will be proposed by the Contractor for Approval by CDOT.
7. Paragraph 16 is deleted and replaced with the following: The Contractor will not have the option of accepting a price reduction in lieu of producing Material that complies with the Contract Documents. Continued production of nonconforming Material will not be permitted. Material which is obviously defective may be isolated and rejected by CDOT without regard to sampling sequence or location within a lot.

105.05 - Conformity to the Contract of Hot Mix Asphalt

The provisions regarding conformity to the Contract of Hot Mix Asphalt are revised as follows:

No incentive payments will be made under this Contract.

105.06 - Conformity to the Contract of Portland Cement Concrete Pavement

The provisions regarding conformity to the Contract of Portland Cement Concrete Pavement are revised as follows:

No incentive payments will be made under this Contract.

105.07 - Conformity to Roadway Smoothness Criteria

The provisions regarding conformity to Roadway Smoothness Criteria are revised as follows:

Pavement Smoothness Category of HMA shall be MRI Category A for US 160 and MRI Category D for County Roads. See Book 2, Section 11.

No incentive payments will be made under this Contract.

105.08 Document Management and Professional Engineer and Professional Land Surveyor Electronic Seals

Provisions regarding document management, Professional Engineer Seals, and Land Surveyor Seals are set forth in Book 2, Section 4, and Book 2, Section 10, of the Contract Documents.

105.09 - Coordination of Plans, Specifications, Supplemental Specifications, and Special Provisions

Book 1, Section 1.3, of the Contract Documents sets forth the order of precedence of the various Contract Documents.

105.10 - Cooperation by Contractor

Provisions regarding cooperation by the Contractor are set forth in Book 1, Section 2.2, and Book 1, Section 23.0, of the Contract Documents.

105.11 - Cooperation with Utilities

Provisions regarding cooperation with Utilities are fully incorporated herein, except the reference to Extra Work is not applicable, and the provisions for delays are set forth in Book 1, Section 6.2, and Book 2, Section 8, of the Contract Documents.

105.12 - Cooperation Between Contractors

Provisions regarding Cooperation between Contractors are set forth in Book 1, Section 23.0, and in Book 2, Section 17, of the Contract Documents.

105.15 - Duties of the Inspector

Provisions regarding inspection of the Work are set forth in Book 1, Section 5, Book 1, Section 22, and Book 2, Section 4, of the Contract Documents.

105.16 - Inspection and Testing of Work

Provisions regarding Inspection and Testing of the Work are set forth in Book 1, Section 5, Book 1, Section 22, and Book 2, Section 4.

105.17- Removal of Unacceptable Work and Unauthorized Work

Book 1, Section 5.7, of the Contract Documents provides for removal of Nonconforming Work.

105.18 - Load Restrictions

The provisions regarding load restrictions are incorporated herein, except the fourth and fifth paragraphs are replaced with the following:

If a scale ticket from an overweight vehicle is inadvertently accepted and the Material incorporated into the Project, CDOT will adjust the price for the overweight load as follows:

1. The Contract price will be reduced by an amount based upon the pay item quantity represented by the amount of Material in excess of the legal weight according to a unit price to be proposed by the Contractor, with supporting documentation, and Approved by CDOT.

105.19 - Maintenance during Construction

Provisions for maintenance during construction are set forth in Book 1, Section 10, and Book 2, Section 19, of the Contract Documents.

105.20 - Failure to Maintain Roadway or Structure

Provisions for failure to maintain the Roadway or Structure are set forth in Book 2, Section 19, of the Contract Documents.

105.21 - Acceptance

Provisions regarding partial Acceptance and Final Acceptance are set forth in Book 1, Section 20, of the Contract Documents.

105.22, 105.23, and 105.24 - Dispute Resolution, Dispute Review Board, and Claims for Contract Adjustments

Provisions regarding claims for Contract adjustments are set forth in Book 1, Section 1, of the Contract Documents, and provisions regarding Dispute Resolution are set forth in Book 1, Section 19, of the Contract Documents.

106 - Control of Material

106.02 - Material Sources

Provisions regarding Material sources are set forth in Book 2, Section 4, of the Contract Documents. The provisions regarding hazardous Materials are set forth in Book 1, Sections 5.3, 13.11, 18.1, and 18.2 of the Contract Documents.

106.03 - Samples, Tests, Cited Specifications

Provisions regarding quality control and quality assurance are set forth in Book 2, Section 4, of the Contract Documents.

Unless otherwise designated, when American Association of State Highway and Transportation Officials (AASHTO), American Society for Testing and Materials (ASTM), or other specifications, standards, or policies are cited, the reference shall be to the latest edition as revised or updated by approved

supplements or interim editions published and issued as of the Proposal Due Date, unless otherwise indicated.

106.07 - Material Inspection at Plant

Provisions regarding Material Inspection at the plant are set forth in Book 2, Section 4, of the Contract Documents.

106.08 - Storage of Materials

Provisions regarding storage of Materials are set forth in Book 2, Section 4, of the Contract Documents.

106.09 - Handling Materials

Provisions regarding the handling of Materials are set forth in Book 2, Section 4, of the Contract Documents.

107 - Legal Relations and Responsibility to Public

107.02 - Permits, Licenses, and Taxes

Provisions regarding Permits, licenses, and taxes are set forth in Book 1, Section 2.2, of the Contract Documents.

107.04 - Restoration of Surfaces Opened by Permit

Provisions regarding restoration of surfaces opened by a Permit to construct or reconstruct a Utility service are set forth in Book 1, Section 6.2, and Book 2, Section 8, of the Contract Documents.

107.05 - Federal Aid Provisions

Provisions regarding Federal Aid Provisions are contained in Book 1, Section 1.10, of the Contract Documents.

107.06 - Safety, Health, and Sanitation and Performance of Safety Critical Work

Provisions regarding Safety, Health, and Sanitation are contained in Book 2, Section 2 of the Contract Documents and in Section 107.06 of the Standard Specifications, which is incorporated.

107.07 - Performance of Safety Critical Work

Provisions regarding Performance of Safety Critical Work are incorporated.

107.08 - Public Convenience and Safety

The Contractor shall conduct the work to minimize obstruction to traffic. The safety and convenience of the public and the protection of persons and property shall be provided as specified in Book 2, Section 17, of the Contract Documents, and in Section 104.04 of the Standard Specifications, which is incorporated.

107.09 - Railroad-Highway Provisions

The Railroad-Highway provisions are incorporated herein with the following revision:

Delete the first paragraph and replace with the following:

If the Contract requires Materials to be hauled across Railroad tracks, the Contractor shall make arrangements with the Railroad for any new crossings required or for the use of any existing crossings.

107.16 - Responsibility for Damage Claims, Insurance Types and Coverage Limits

Provisions regarding responsibility for damage claims are set forth in Book 1, Sections 3.3, 5.6, 9.0, and 11.1 of the Contract Documents.

107.17 - Opening Sections of Project to Traffic

The Provisions regarding opening sections of Project to traffic are deleted except as follows:

1. Opening certain sections of the Work for traffic use shall not constitute acceptance of the Work, or provide a waiver of any provision of the Contract Documents.

107.18 - Contractor's Responsibility for Work

Provisions regarding Contractor's responsibility for Work are set forth in Book 1, Section 2, of the Contract Documents.

107.19 - Furnishing Right of Way

The provisions regarding ROW for the Project are set forth in Book 1, Section 6.1, and Book 2, Section 9, of the Contract Documents.

107.20 - Personal Liability of Public Employees

The provisions regarding personal liability of public employees are revised as follows:

The employees of CDOT or CDOT's authorized representatives are acting solely as agents and representatives of CDOT when carrying out and exercising the power or authority granted to them under the Contract Documents. There shall not be any liability on them either personally or as employees of CDOT.

107.21 - No Waiver of Legal Rights

Provisions regarding no waiver of legal rights are set forth in Book 1, Sections 2, 5, 15, 17, 20, and 24 of the Contract Documents.

107.22 - Third Party Beneficiary

Provisions regarding Third Party beneficiaries are set forth in Book 1, Sections 21.5 and 24.7, of the Contract Documents.

107.23 - Archaeological and Paleontological Discoveries

Provisions regarding archaeological and paleontological discoveries are set forth in Book 1, Sections 5 and 13, and Book 2, Sections 6 and 12, of the Contract Documents.

108 - Prosecution and Progress

108.02 - Notice to Proceed

Provisions for notice to proceed are set forth in Book 1, Sections 4 and 11, of the Contract Documents.

108.03 - Schedule

Provisions regarding progress schedules are set forth in Book 1, Section 4, and Book 2, Section 2, of the Contract Documents.

108.04 - Payment Schedule

Provisions regarding the Contractor's Payment Schedule are set forth in Book 1, Section 11, and Book 2, Section 2, of the Contract Documents.

108.08 - Determination and Extension of Contract Time

Provisions regarding Completion Deadlines are set forth in Book 1, Section 4, of the Contract Documents. Provisions for extensions of such deadlines are set forth in Book 1, Section 13, of the Contract Documents. Provisions regarding time for construction operations are set forth in Book 2, Section 17, of the Contract Documents.

108.09 - Failure to Complete Work on Time

Provisions regarding Damages for late completion are set forth in Book 1, Section 17, of the Contract Documents.

108.10 - Default of Contract

Provisions regarding default of Contract are set forth in Book 1, Section 16, of the Contract Documents.

108.11 - Termination of Contract

Provisions regarding termination of Contract are set forth in Book 1, Sections 15 and 16, of the Contract Documents.

109 - Measurement and Payment

109.02 - Scope of Payment

Provisions regarding scope of payment are set forth in Book 1, Section 11, and Book 2, Section 2 of the Contract Documents.

109.04 - Compensation for Changes and Force Account Work

Provisions for compensation for changes in the Work are set forth in Book 1, Section 13, of the Contract Documents. With the exception of the following:

Force Account Items Description

The Department's estimate for force account items not included in the Contract Upset Amount (UA). Force Account work for this Project will only be paid for the Force Account Items listed below; all other work provisions for compensation for changes in work are set forth in Book 1, Section 13.

Basis Of Payment

Payment will be made in accordance with subsection 109.04 for the following Force Accounts only. Payment will constitute full compensation for all work necessary to complete the item.

Force Account Item	Quantity	Amount
F/A DRB	F.A.	\$ 20,000
F/A OJT	F.A.	\$200,000
F/A Project First Program	F.A.	\$ 5,000

Descriptions

F/A DRB - Participation in a Standing DRB between the Contractor and the Department will be in accordance with Section 105 of the Standard Special Provisions.

F/A OJT - Cost of maintaining on-the job-training program in accordance with the Standard Special Provision.

F/A Project First Program - Participation in a Project First Program between the Contractor and the Department will be in accordance with Section 105 of the Standard Special Provisions.

109.05 - Eliminated Items

Provisions regarding eliminated items are set forth in Book 1, Section 13, of the Contract Documents.

109.06 - Partial Payments

Provisions regarding Retainage and securities in lieu of Retainage are fully incorporated herein. Monthly payments will be based on the requirements set forth in Book 1, Section 11, and Book 2, Section 2, of the Contract Documents.

Notwithstanding the provisions of Book 1, Section 11.6, prior estimates and payments made in accordance with this Subsection 109.06(f) shall not be subject to correction in the Final Payment.

No cost adjustments will be made under this Contract.

109.07 - Payment for Material on Hand (Stockpiled Material)

Provisions regarding payment for stockpiled structural steel are fully incorporated herein. Additional provisions regarding payment for Materials on hand (stockpiled Materials) are set forth in Book 1, Section 11, of the Contract Documents.

109.09 - Acceptance and Final Payment

Provisions regarding Acceptance and final payment are set forth in Book 1, Section 11, of the Contract Documents.

109.10 - Compensation for Compensable Delays

Provisions regarding compensation for compensable delays are set forth in Book 1, Section 13, of the Contract Documents.

21.1.2. Modifications to Section 200 to 700 of the CDOT Standard Specifications for Road and Bridge Construction and Standard Special Provisions

21.1.2.1 Modifications to Section 200 to 700 of the CDOT Standard Specifications for Road and Bridge Construction

Sections 200 through 700 are incorporated herein, except as otherwise provided in the Contract Documents, with the following exceptions: (1) in Sections 200 through 600, the method of measurement and basis of payment provisions are superseded by the provisions set forth in Books 1 and 2 of the Contract Documents.

21.1.2.2 Standard Special Provisions

The following Standard Special Provisions are to be used by the Contractor for Design and Construction of the Work. The Standard Special Provisions are Revisions to the 2025 Standard Specifications for Road and Bridge Construction.

Standard Special Provision Index: December 12, 2025

The following Standard Special Provisions are available at the following link:

<https://www.codot.gov/business/designsupport/cdot-construction-specifications/2025-construction-specifications/rev-ssp>

Standard Special Provisions Revisions to the 2025 Standard Specifications	Date	No. of Pages
Revision of Section 101 - General Provisions	(March 19, 2026)	1
Revision of Section 105 - Project First	(June 11, 2025)	4

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 21 - Modifications to Standard Specifications

Standard Special Provisions Revisions to the 2025 Standard Specifications	Date	No. of Pages
Revision of Section 105 - Dispute Resolution, Dispute Review Board and Claims for Unresolved Disputes	(June 11, 2025)	26
Revision of Sections 105 & 106 - Conformity to the Contract of Hot Mix Asphalt (Voids Acceptance)	(July 1, 2025)	13
Revision of Section 106 - Buy America and Build America Buy America Requirements - Projects with \$500,000 or more in Federal-Aid Highway Funding	(September 11, 2025)	1
Revision of Section 106 - Environmental Product Declarations	(June 11, 2025)	11
Revision of Sections 108 - Liquidated Damages	(July 1, 2025)	1
Revision of Sections 201 - Clearing and Grubbing	(March 19, 2026)	3
Revision of Section 203 - Excavation and Embankment	(March 19, 2026)	1
Revision of Section 206 - Shoring	(September 11, 2025)	3
Revision of Section 207 - Topsoil	(April 1, 2026)	7
Revision of Section 212 - Soil Amendments, Seeding, and Sodding	(July 1, 2026)	25
Revision of Section 401 - Composition of Mixtures - Voids Acceptance	(July 1, 2025)	1
Revision of Section 401 - Plant Mix Pavements - General (Subsection 401.17)	(July 1, 2025)	4
Revision of Section 401 - Reclaimed Asphalt Pavement	(July 1, 2025)	2
Revision of Section 401- SafetyEdge	(September 11, 2025)	1
Revision of Section 412 - SafetyEdge	(September 11, 2025)	1
Revision of Sections 412 & 601 - Accelerated Pavement Repair Concrete	(June 11, 2025)	5
Revision of Sections 412 & 705 - Preformed Compression Seals	(July 1, 2025)	2
Revision of Section 504 - Walls	(July 1, 2025)	3
Revision of Section 509 - Steel Structures	(September 11, 2025)	1

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 21 - Modifications to Standard Specifications

Standard Special Provisions Revisions to the 2025 Standard Specifications	Date	No. of Pages
Revision of Section 601 - Low Strength Evaluation	(March 19, 2026)	2
Revision of Section 601 - Pigment in Concrete	(July 1, 2025)	1
Revision of Section 601 - Structural Concrete	(September 11, 2025)	1
Revision of Section 614 - Galvanized Steel Poles	(July 1, 2025)	1
Revision of Section 627 - Pavement Marking Paint	(July 1, 2025)	15
Revision of Section 630 - TCS Trainee	(March 19, 2026)	2
Affirmative Action Requirements Equal Employment Opportunity	(July 1, 2025)	13
Certified Payroll Requirements for Construction Contracts	(July 1, 2025)	1
Minimum Wages, Colorado, U.S. Department of Labor General Decision Number CO20250012, Mod 0, Highway Construction for Alamosa, Archuleta, Chaffee, Conejos, Custer, Delta, Dolores, Fremont, Gunnison, Hinsdale, La Plata, Mineral, Montezuma, Montrose, Ouray, Rio Grande, Saguache, San Juan, and San Miguel counties.	(January 9, 2026)	8
On the Job Training	(July 1, 2025)	6
Required Contract Provisions - Federal-Aid Construction Contracts	(July 1, 2025)	15
Special Construction Requirements, Fire Protection Plan	(July 1, 2025)	2

21.1.2.3 Project Special Provisions

The following Project Special Provisions supplement or modify the CDOT Standard Specifications for Road and Bridge Construction and take precedence over the CDOT Standard Specifications and plans. The Contractor is responsible to have a copy of the CDOT Standard Specifications at all times on the Project Site.

Index of Project Special Provisions

Special Construction Requirements - General (Section 404 Permit, SB40 Wildlife Certification, and New Mexico Meadow Jumping Mouse Habitat Creation)

Revision of Sections 105, 106, and 203 Conformity of the Contract of Embankment

Revision of Section 105 Segmental Concrete Control Work

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 21 - Modifications to Standard Specifications

Revision of Section 106 Control of Material (Sampling)

Revision of Section 107 Performance of Safety Critical Work

Revision of Section 107 Legal Relations and Responsibility to Public

Revision of Section 202 Removal of Asphalt Mat

Revision of Section 202 Removal of Asphalt Mat (Planing)

Revision of Section 202 Removal of Portions of Present Structure

Revision of Section 202 Plug Culvert

Revision of Section 207 Stream Substrate

Revision of Section 208 Construction Mats

Revision of Section 208 Water Control

Revision of Section 240 Protection of Migratory Birds Biological Work Performed by the Contractor's Biologist.

Revision of Section 250 Environmental, Health, and Safety Management

Revision of Section 304 Aggregate Base Course

Revision of Sections 304, 403, and 601 Aggregate Base Course, Hot Mix Asphalt, and Concrete Ticket Collection

Revision of Sections 304 and 703 Aggregate Base Course (Special)

Revision of Section 401 Hot Mix Asphalt Compaction

Revision of Section 403 Hot Mix Asphalt

Revision of Section 412 Portland Cement Concrete Pavement

Revision of Section 412 Tie Bar Inspection

Revision of Section 420 Geotextile Mats in Wetland Areas

Revision of Section 420 Geogrid Reinforcement

Revision of Section 502 Drilling Hole to Facilitate Pile Driving

Revision of Section 503 Drilled Caissons

Revision of Section 504 Concrete Panel Facing Phased Built GRS Walls

Revision of Section 506 Riprap

Revision of Sections 509 and 708 Painting of Aluminum Access Doors for Steel Structures

Request for Proposal
US 160 Elmore's Corner to Dry Creek Design-Build
Project No.: NHPP 1602-157 & FBR 1602-193
Sub Account No.: 20980 - COMBO
Book 2 - Technical Requirements
Section 21 - Modifications to Standard Specifications

Revision of Section 513 Bridge Drain

Revision of Section 522 Environmental Stain (Galvanized)

Revision of Section 601 Painting of Aluminum Access Doors for Concrete

Revision of Sections 601 and 708 Structural Concrete Stain

Revision of Section 603 Culvert Lining (UV-CIPP)

Revision of Section 604 Drainage Pipe

Revision of Section 604 Vane Grate Inlet

Revision of Section 604 Manhole (Traffic Management System)

Revision of Section 607 Self Closing Gates

Revision of Section 612 Location Markers

Revision of Sections 613 and 715 LED Roadway Luminaires

Revision of Section 613 ITS Electrical Conduit

Revision of Section 613 ITS Pull Boxes

Revision of Section 614 Grounding and Bonding

Revision of Section 618 Prestressed Concrete

Revision of Section 621 Detour Pavement

Revision of Section 625 Asset Geospatial Data Collection

Revision of Section 630 Uniformed Law Enforcement Coordination

Revision of Section 630 Traffic Signal (Temporary)

Special Construction Requirements - General
(Section 404 Permit, Senate Bill 40 Certification, and New Mexico Meadow Jumping Mouse Habitat Creation)

The proposed work, as shown on the plans, has been permitted by the U.S. Army Corps of Engineers under a Section 404 Nationwide Permit. The Contractor must comply with all special and general conditions attached to the permit. Any questions regarding this permit should be directed to the Project Engineer in coordination with the Region Wetland Specialist (Tim Funk 970-759-5012).

Copies of the Section 404 Permit and Authorization are available from the CDOT Project Office.

The proposed work, as shown on the plans, will require Senate Bill 40 Wildlife Certification from the Colorado Parks and Wildlife. CDOT will coordinate and execute SB 40 Wildlife Certification. The Contractor must comply with all applicable special and general conditions as detailed in the Guidelines for Senate Bill 40 Wildlife Certification. Any questions regarding this permit should be directed to the Project Engineer in coordination with the Region Biologist (Mark Lawler 970.385.8371).

Copies of the Senate Bill 40 Application and Guidelines will be available from the CDOT Project Office.

The proposed project is located within U.S. Fish and Wildlife Service (USFWS) designated critical habitat for the endangered New Mexico meadow jumping mouse (NMMJM). Designated critical habitat includes and bounds the Florida River where it intersects the project area, as well as the river and floodplain upstream and downstream of the project. Due to anticipated adverse effects to both critical habitat for the NMMJM as well as NMMJM individuals that may occupy those wetland and riparian habitats in and near the project, CDOT engaged in Endangered Species Act Section 7 formal consultation to ensure the action would not jeopardize the species. Formal consultation was concluded in April 2025 with the completion of a biological opinion (BO) by the USFWS. The biological opinion details numerous conservation measures, construction requirements, and mitigation intended to offset the impacts to the NMMJM and its critical habitat. Conservation measures developed from formal consultation include:

- Physical alteration to occupied and partially occupied NMMJM habitat resulting from construction activities will be offset through the preservation, creation, protection, enhancement, and/or restoration of the physical and biological features of habitat for this species.
 - Preliminary compensatory habitat creation and restoration for adverse effects will be at a ratio of 1.5:1 for temporary impacts and 2:1 for permanent impacts.
- Specifics of the impacts and location of compensatory habitat creation and restoration will be considered when determining the final acreages.
- Creation and restoration of NMMJM habitat will be within or adjacent to proposed critical habitat Unit.
- If creation or restoration of habitat is not possible within or adjacent to critical habitat Unit 7, enhancement measures will be implemented to improve connectivity with Unit 7. Improved habitat connectivity within Unit 7 would partially offset the temporary and permanent barriers created by the proposed project.
- Culverts and/or small mammal crossings installed within Unit 7 will be single-cell concrete box culverts containing small mammal ledges to facilitate crossing in wet conditions.

-2-

Special Construction Requirements - General
(Section 404 Permit, Senate Bill 40 Certification, and New Mexico Meadow Jumping Mouse Habitat Creation)

- All temporarily disturbed areas will be returned to pre-construction grades and reseeded with appropriate native upland and/or wetland seed mix. Revegetation efforts for reclamation of temporarily disturbed NMMJM habitat will be monitored to ensure success of restoration efforts. Monitoring will occur until upland and wetland foliar cover totals at least 70 percent of preconstruction foliar cover, excluding noxious weeds.
- Habitat creation, restoration, revegetation, and enhancement will be supervised by a biologist experienced in reclamation or habitat restoration.
- The contractor will minimize impacts to existing vegetation by cutting shrubs to ground level, allowing sprout re-growth, and by trimming trees rather than removing them.
- The contractor will limit areas where bare ground exists after clearing and grubbing. If these areas are temporary impacts, reseeded will be promptly initiated.
- Suitable hibernation habitat that would see construction activities after August 15 will be mowed and cleared of shrubs prior to August 15 to discourage NMMJM from hibernating in these areas.
- Noxious weeds will be controlled in all disturbed occupied and partially occupied habitat areas until it is determined that there are no state-listed A noxious weeds and state-listed B and C noxious weeds comprise less than 10 percent of the absolute ground cover.
- Night work will be avoided within 330 feet of suitable NMMJM habitat.
- Permanent and construction lighting will be located to prevent or minimize light-throw into suitable NMMJM habitat.

The BO details the anticipated temporary and permanent impacts to NMMJM habitat and asserts the need to create 4.42 acres of habitat suitable for NMMJM occupation within or adjacent to critical habitat. Additional consultation with the USFWS has removed the need to create habitat to offset temporary impacts, so long as the project improves habitat connectivity for the NMMJM, where the Florida River and riparian corridor intersect US 160. Specifically, the project is required to install a small mammal crossing connecting the riparian habitats bounding the Florida River at STA 243+45. The small mammal crossing shall have a ledge installed in its interior to offer passage for the NMMJM. With the implementation of the required measures to improve habitat connectivity, the total habitat creation required is 3.72 acres.

The created mitigation habitat will need to provide the four biological and physical features of NMMJM critical habitat as described in the BO and the Designation of Critical Habitat for the NMMJM- Final Rule (81 FR 1426414325). The physical and biological features of NMMJM habitat are:

- Riparian communities along waterways that display emergent and scrub-shrub wetlands.
- Flowing water sufficient to saturate soils during the NMMJM active season.
- Sufficiently large areas to allow for the movements of the NMMJM.
- Floodplain and uplands within 330 feet of waterway.

-3-

Special Construction Requirements - General
(Section 404 Permit, Senate Bill 40 Certification, and New Mexico Meadow Jumping Mouse Habitat Creation)

Construction of NMMJM habitat will convert non-habitat into suitable habitat. Creation of mitigation will require extensive excavation and earthwork of the upland location so that it is at elevations and grades that will support wetland grasses and forbs, and woody wetland/riparian vegetation such as willow, alder, and cottonwood. A Mitigation and Monitoring Plan is currently being developed by CDOT for approval by the USFWS. The Mitigation and Monitoring Plan will describe existing site conditions, mitigation goals, implementation plan during construction, management plan, monitoring requirements, and contingency plan.

**Revision of Sections 105, 106, and 203
Conformity to the Contract of Embankment**

Sections 105, 106, and 203 of the Standard Specifications are hereby revised for this project as follows:

Subsection 105.03 shall include the following:

- (c) Conformity to the contract of embankment construction will be determined per the following:
1. Process Control Plan. The Contractor shall be responsible for Process Control (PC) for all embankment material and embankment construction on this project. The Contractor shall submit a written Process Control Plan (PCP), including a methods statement, to the Engineer for acceptance. The PCP shall include, but not be limited to, the following:
 1. Identification of the supervisor and technicians responsible for implementing the PCP throughout construction. The Contractor shall demonstrate that an appropriate number of technicians/inspectors will be present on the project to accommodate the laboratory testing and inspection items that are required to maintain PC requirements specified for daily earthwork operations.
 2. Identification of the laboratory, accredited in accordance with CP-10, to be used throughout the project to conduct PC testing. The CDOT Central lab and the CDOT Regional labs will not be responsible for testing materials submitted to meet Contractor PC Requirements.
 3. Maximum lift thickness not to exceed eight inches as per subsection 203.06 or as directed.
 4. Methods to separate, process, or supply material for embankment fill that meets the material requirements specified in the contract documents.
 5. List of compaction equipment capable of the specified compaction.
 6. Water trucks with an adequate distribution system that will apply water evenly and equipment to evenly incorporate the water into the embankment.
 7. Methods to control and document foundation preparation before placement of embankment fill, which will include clearing and grubbing per Section 201, removal of all topsoil per Section 207, removal and replacement of any unsuitable material identified during excavation or foundation preparation, and scarifying, moisture conditioning, and compaction of the final embankment foundation surfaces using methods appropriate for the material types present.
 8. Methods to control and document that placement, lift thickness, moisture conditioning, compaction equipment and methods, and compaction observation/testing are appropriate for the embankment material types being placed.
 9. Methods to identify and communicate changes in embankment fill being placed require modification of placement, moisture conditioning, compaction methods, observation, and testing.
 10. A plan to notify or communicate in advance when the embankment is ready for OVT testing, to satisfy OVT testing requirements.

-2-

**Revision of Sections 105, 106, and 203
Conformity to the Contract of Embankment**

11. List of all documentation for inspection and materials testing, including worksheets, forms, and procedures utilized by the Contractor per CP-12C.
12. Minimum testing frequency, as per Table 106-4.

The Contractor shall submit the PCP at least ten working days before the start of the work. The Engineer's review of the PCP will not exceed five working days. Work shall not begin until the PCP has been accepted in writing, unless otherwise approved.

2. Documentation. The Contractor shall maintain current records of process control operation activities, observations made, and tests performed. These records shall be in the form shown in the PCP and per CP-12C. The records shall be submitted to the Engineer on a daily basis, documenting any earthwork-related activities from the prior day, and shall include both conforming and defective or deficient features, all test results, inspection reports, and certification reports. Copies of these records and a statement that work incorporated in the project complies with the Contract shall be submitted to the Engineer before payment for the work or upon request. Monthly certification reports shall be stamped with the seal of a Professional Engineer registered in Colorado. Failure to provide the Engineer with the necessary documentation may result in the suspension of work and will result in the suspension of payments on embankment until the documentation has been completed and accepted by the Engineer. CDOT Owner Acceptance testing and documentation shall not be used as supporting documentation for the Contractor's certification.

Add subsection 106.061, immediately following subsection 106.06, as follows:

106.061 Embankment Testing. The supervisor responsible for the direct supervision and implementation of process control sampling and testing shall be identified in the PCP and be qualified according to the requirements of CP-10. The technicians taking samples and performing tests must be qualified according to requirements of CP-10. At least one technician with a minimum of one year of experience with soils testing and inspection of earthwork projects will be designated full-time on the project whenever embankment is being placed. Absence of the process control technician will result in the suspension of work on the embankment until the technician is on site performing process control testing.

The project verification sampling and testing procedures shown in the CDOT Field Materials Manual under the frequency guide schedule for minimum materials sampling, testing, and inspection shall be used for the elements shown in Table 106-4.

-3-

Revision of Sections 105, 106, and 203
Conformity to the Contract of Embankment

Table 106-4 Excavation and Embankment Testing Schedule

	Element	Minimum Testing Frequency Contractor's Process Control	Minimum Testing Frequency
Soil Embankment with < 30% Retained on ¾-inch Sieve	In-place Density / Relative Compaction	1 per 500 cu yds. or fraction thereof, with one additional test required per change in material type.	1 per 1,000 cu yds. or fraction thereof, with one additional test required per change in material type.
	In-place Density / Relative Compaction within 100 feet of bridge approach.	1 per 250 cu yds. with a minimum of two tests per lift, and one additional test required per change in material type.	1 per 500 cu yds. with minimum one test per lift, and one additional test required per change in material type.
	Moisture Density Curve	1 per 10,000 cu yds. or fraction thereof, with one additional test required per change in material type.	1 per soil type.
	Moisture Density One-Point Verification	1 per 2,000 cu yds. or fraction thereof, with one additional test per change in material type. Minimum of one test per day.	1 per 5,000 cu yds. or fraction thereof.
	Soil Classification (AASHTO M145), Gradation, and Atterberg Limits	1 per 2,000 cu yds, with one additional test per change in material type. Minimum of one test per day.	1 per soil type.

-4-

Revision of Sections 105, 106, and 203
Conformity to the Contract of Embankment

Table 106-4 Excavation and Embankment Testing Schedule (Cont.)

	Element	Minimum Testing Frequency Contractor's Process Control	Minimum Testing Frequency
Soil Embankment with > 30% Retained on ¾-inch Sieve, Rock Embankment, & Rock Fill	Test Strip Construction and Acceptance	1 test strip required per change in material type.	Observation and acceptance of roller pattern, moisture conditioning, and proof rolling.
	Soil Classification (AASHTO M145), Gradation and Atterberg Limits	1 per 2,000 cu yds, with one additional test per change in material type. Minimum of one test per day.	1 per soil type.
	Slake Durability	1 per 2,000 cu yds, with one additional test per change in material type. Minimum of one test per day (for sedimentary rock only).	1 per stockpile / borrow source and 1 per material type for sedimentary rock only.

Qualifications for testing and personnel are contained in Section 203, Chapter 200 of the CDOT Field Materials Manual, CP-10, CP-13, CP-15, and CP-80, and the CDOT Inspectors Checklist.

Subsection 203.02 (a) shall include the following:

Unclassified Excavation shall include removal of unstable material within the roadway as determined and directed by the Engineer.

-5-

Revision of Sections 105, 106, and 203
Conformity to the Contract of Embankment

Subsection 203.02 (c) shall include the following:

Embankment material containing significantly more than optimum moisture that would become stable if dried shall not be unsuitable material.

In subsection 203.03, delete the third paragraph and replace with the following:

Non-durable bedrock shall be identified and classified using Colorado Procedure - Laboratory (CP-L) 3104. Any material classified as Soil-like Non-durable (S-N) as defined in the procedure shall be pulverized, broken down, and processed to 6-inch maximum particle sizes and a maximum of 30 percent retained on the 3/4-inch sieve before incorporation into embankment fill. These materials shall be placed and compacted as "soil embankment" per subsection 203.07(a). Non-durable bedrock particles in excess of 6 inches shall not be placed into embankment fill. Non-durable bedrock shall not be placed as rock fill or rock embankment.

In subsection 203.07(a) paragraph seven, delete the first sentence and replace with the following:

Non-durable bedrock shall be watered to promote slaking and break down and pulverized or processed to a maximum particle size of 6 inches and a maximum of 30 percent retained on the 3/4-inch sieve.

In subsection 203.07(a), delete the last sentence and replace with the following:

9. Non-durable bedrock shall not be placed within 4 feet of the bottom of the ABC Class 2 Subbase.

Subsection 203.11(b) shall include the following:

The disposal of unsuitable material and replacement of embankment will not be measured and paid for separately but shall be included in the work.

The Contractor's Process Control efforts will not be measured and paid for separately but shall be included in the work.

**Revision of Section 105
Segmental Concrete Control of Work**

Section 105 of the Standard Specifications is hereby revised for the project as follows:

Subsection 105.02 shall include the following:

The Contractor shall submit, as soon as possible, but not more than 120 calendar days following the "Notice to Proceed", complete final plans and computations for review and approval. These final plans must be approved before any approvals will be made on working and shop drawings. Plans and computations will be required for only those portions of the work that are modified, changed, or affected.

The submittal of the computations and drawings will not absolve the Contractor of any responsibility for fabrication plans required under Section 105 or elsewhere in these specifications.

The contract time shall apply. No extensions of these dates will be allowed for preparation, submittal, or approval of plans or computations.

The Contractor shall submit for review the information, which shall include, but not necessarily be limited to, the following:

- (1) Detailed shop drawings in accordance with Section 618.
- (2) Locations and layout drawing of the casting site.
- (3) Method and length of curing. Include complete details of the fabrication system to be used, including the forms, foundations, and geometry controls.
- (4) Details of handling, storing, and transporting segments.
- (5) Schedule of casting and erection of segments with approximate dates; the schedule shall show chronological order of every phase and stage of erection and construction of the superstructure and shall include a detailed plan for handling traffic during erection.
- (6) Concept drawings showing schematic methods for handling and erecting segments; these are not working drawings but are provided for information only. The Contractor shall submit for review, by CDOT, proposed erection details and appropriate calculations showing the methods, equipment, and construction loads analysis involved with the various bridge components. No erection of the precast segments will be permitted until the erection details are approved by the Contractor's Engineer.
- (7) A list of proposed handling and erection equipment. Proposed handling and erection equipment shall be consistent with the concept shown on the plans to assure compatibility with the overall design. The design and construction of special handling and erection equipment is the Contractor's responsibility.

-2-

**Revision of Section 105
Segmental Concrete Control of Work**

- (8) A casting curve prepared in accordance with casting and erection methods and schedule proposed by the Contractor. The casting curve shall be of sufficient accuracy to allow the determination of control point settings for accurately casting the segments. The preparation of the casting curve shall recognize all deviations from straight line and deformations due to the final required alignment and due to dead load, erection loads, post-tensioning stresses, including secondary moments, creep, and shrinkage.

Final Work Plan

It shall be the Contractor's responsibility to submit deflections and camber data for each stage of construction, as required, to construct the structure to its final grade. The procedure used shall account for the effect of time-dependent prestress losses, shrinkage, and creep which occur during the construction phase. The data for the entire bridge shall be submitted for approval by the Contractor's Engineer prior to commencing the erection.

The camber of the structure will be monitored at each stage and corrective actions, as approved by CDOT, shall be performed by the Contractor to assure proper erection of the structure to its final grade.

The final work plan shall include graphs, charts, or tables showing the theoretical location of forming. This data shall be furnished to CDOT for use in checking the erection.

The final work plan shall also include complete details of the system to be used, including all geometry controls.

Design Calculations

Design calculations shall be submitted for falsework, travelers, staging, forms, and any other temporary construction which may be required, and which will be subject to calculated stresses. Calculations also shall be submitted to support the system and method of stressing proposed by the Contractor. The calculations shall be done under the direct supervision of a professional engineer registered in the State of Colorado and shall be approved by him and contain his seal.

**Revision of Section 106
Control of Material (Sampling)**

Section 106 of the Standard Specifications is hereby revised for this project as follows:

In subsection 106.03, delete the fifth paragraph and replace with the following:

Samples will be taken by ICQC and CDOT, except that the Contractor shall sample the following:

- (1) Asphalt cement, asphalt rejuvenating agent, and emulsified asphalt in accordance with AASHTO T 40.
- (2) Hot mix asphalt items 403 in accordance with Colorado Procedure 41 (CP-41), Method B
- (3) A composite of aggregates for hot mix asphalt in accordance with Colorado Procedure 30 (CP-30).
- (4) Plastic Portland cement concrete in accordance with AASHTO T 141 and Colorado Procedure 61 (CP-61). The contractor shall transport the concrete sample to the place of testing.

ICQC will designate the sampling time, location, and sample size. The sampling will be conducted in the presence of CDOT.

**Revision of Section 107
Performance of Safety Critical Work**

Section 107 of the Standard Specifications is hereby revised as follows:

Add subsection 107.061 immediately following subsection 107.06 as follows:

107.061 Performance of Safety Critical Work. The following work elements are considered safety critical work for this project:

- (1) Overhead girder erection
- (2) Removal of portion of bridge P-05-AG
- (3) Temporary works: falsework, shoring that exceeds 5 feet in height, cofferdams, and temporary bridges
- (4) Work requiring the use of cranes or other heavy lifting equipment to set a girder, to make overhead repairs, or includes special provisions for Removal of Portion of Bridge. Also, when construction materials are being lifted that may fall onto active traffic lanes.
- (5) Excavation and embankment adjacent to the roadway, especially if it requires shoring
- (6) Work operations such as pile driving and jack hammering which may create vibration and cause debris to fall into traffic.
- (7) Rockfall mitigation

The Contractor shall submit, for record purposes only, an initial detailed construction plan that addresses safe construction of each of the safety critical elements. When the specifications already require an erection plan, a bridge removal plan, or a removal of portion of bridge plan, it shall be included as a part of this plan. The detailed construction plan shall be submitted two weeks prior to the safety critical element conference described below. The construction plan shall be stamped "Approved for Construction" and signed by the Contractor. The construction plan will not be approved by CDOT.

The Construction Plan shall include the following:

- (1) Safety Critical Element for which the plan is being prepared and submitted.
- (2) Contractor or subcontractor responsible for the plan preparation and the work.
- (3) Schedule, procedures, equipment, and sequence of operations that comply with the working hour limitations
- (4) Temporary works required: falsework, bracing, shoring, etc.
- (5) Additional actions that will be taken to ensure that the work will be performed safely.
- (6) Names and qualifications of workers who will be in responsible charge of the work:
 - A. Years of experience performing similar work
 - B. Training taken in performing similar work
 - C. Certifications earned in performing similar work
- (7) Names and qualifications of workers operating cranes or other lifting equipment
 - A. Years of experience performing similar work
 - B. Training taken in performing similar work
 - C. Certifications earned in performing similar work

-2-
Revision of Section 107
Performance of Safety Critical Work

- (8) The construction plan shall address how the Contractor will handle contingencies such as:
 - A. Unplanned events (storms, traffic accidents, etc.)
 - B. Structural elements that don't fit or line up
 - C. Work that cannot be completed in time for the roadway to be reopened to traffic
 - D. Replacement of workers who don't perform the work safely
 - E. Equipment failure
 - F. Other potential difficulties inherent in the type of work being performed
- (9) Name and qualifications of Contractor's person designated to determine and notify CDOT in writing when it is safe to open a route to traffic after it has been closed for safety critical work.
- (10) Erection plan or bridge removal plan when submitted as required elsewhere by the specifications. Plan requirements that overlap with above requirements may be submitted only once.

A safety critical element conference shall be held two weeks prior to beginning construction on each safety critical element. CDOT, the Contractor, the safety critical element subcontractors, and the Contractor's Engineer shall attend the conference. Required pre-erection conferences or bridge removal conferences may be included as a part of this conference.

After the safety critical element conference, and prior to beginning work on the safety critical element, the Contractor shall submit a final construction plan to CDOT for record purposes only. The Contractor's Engineer shall sign and seal temporary works, such as falsework, shoring etc., related to construction plans for the safety critical elements, (4) Removal of Portion of Bridge and (5) Temporary Works. The final construction plan shall be stamped "Approved for Construction" and signed by the Contractor.

The Contractor shall perform safety critical work only when the Contractor's Engineer is on the project site. The Contractor's Engineer shall be on site to inspect and provide written approval of safety critical work for which he provided signed and sealed construction details. Unless otherwise directed or approved, the Contractor's Engineer need not be on site during the actual performance of safety critical work, but shall be present to conduct inspection for written approval of the safety critical work.

When ordered by CDOT, the Contractor shall immediately stop safety critical work that is being performed in an unsafe manner or will result in an unsafe situation for the traveling public. Prior to stopping work, the Contractor shall make the situation safe for work stoppage. The Contractor shall submit an acceptable plan to correct the unsafe process before CDOT will authorize resumption of the work.

When ordered by the CDOT, the Contractor shall remove workers from the project that are performing the safety critical work in a manner that creates an unsafe situation for the public in accordance with subsection 108.06.

-3-
Revision of Section 107
Performance of Safety Critical Work

Should an unplanned event occur or the safety critical operation deviate from the submitted plan, the Contractor shall immediately cease operations on the safety critical element, except for performing any work necessary to ensure worksite safety, and provide proper protection of the work and the traveling public. If the Contractor intends to modify the submitted plan, they shall submit a revised plan to CDOT prior to resuming operations.

All costs associated with the preparation and implementation of each safety critical element construction plan will not be measured and paid for separately, but shall be included in the work.

Nothing in the section shall be construed to relieve the Contractor from ultimate liability for unsafe or negligent acts or to be a waiver of the Colorado Governmental Immunity Act on behalf of CDOT.

**Revision of Section 107
Legal relations and Responsibilities to the Public**

Section 107 of the Standard Specification is hereby revised for this project as follows:

Subsection 107.24 Air Quality Control shall add the following:

(a) Description

Senate Bill 21-260 was signed by Governor Polis June 17, 2021, and Section 30 of the bill is codified in the Colorado Revised Statute (CRS) 43-1-128. This project has been identified as a Regionally Significant Transportation Capacity Project in the 10 Year Plan and therefore requires compliance with Section 30, Part 4, included below:

4) If a planned transportation capacity project is a regionally significant project, as determined by the department with consideration given to federal law or regulations that define or describe such projects, the department shall, through its environmental study process:

(a) (Section 4a is not applicable for this project)

(b) Develop and implement a particulate matter construction plan to provide continuous monitoring and transparent public reporting of concentrations, public alerts issued as soon as possible when exceedance events occur, and action plans to address emission levels on construction projects prior to exceedances with particular focus on disproportionately impacted communities; and

(c) (Section 4c is not applicable for this project)

Section 4b Construction Requirements applicable to this project

The Contractor shall coordinate with the project engineer to implement the requirements of Part 4(b) of CRS 43-1-128, in compliance with specification 105.12, Cooperation Between Contractors.

Contractor Responsibilities. The Contractor shall:

- Provide phasing and construction information to CDOT Consultant (CDOT Consultant will draft a project specific Air Quality Construction Plan in conjunction with Sections 4b above).
- Implement the Air Quality Construction Plan and Fugitive Dust Control Plan, including mitigating air quality impacts associated with construction activities before an exceedance of the Public Alert Threshold occurs.
- Perform actions in compliance with the terms in the Air Pollution Emissions Notification (APEN) and permit issued by the Colorado Department of Public Health Air Pollution Control Division.
- Perform visual assessment of air conditions at the project site and perform mitigation actions as needed when an Internal Mitigation Alert is received to assure compliance with the permitted emissions guidelines and Regulation 1 and the Air Quality Construction Plan. The limits which trigger an Internal Mitigation Alert are described in Table 1 below. Mitigation actions are expected to consist primarily of spraying water for dust suppression and temporary stabilization of soil.

-2-

**Revision of Section 107
Legal relations and Responsibilities to the Public**

- In the case of exceedances of the Internal Mitigation Alert Threshold and the Public Alert Threshold (as measured by CDOT Consultant), the Contractor must update information on the CDOT Consultant managed / developed log regarding work being performed at the time of the exceedance, observations from visual assessment, as well as mitigation actions completed (e.g. water used for dust suppression), including date and time of visual assessment and mitigation actions completed.
- The Contractor shall accommodate CDOT and the CDOT Consultant in air quality monitoring operations throughout the construction period. This includes providing access and space for monitoring equipment.
- A PDF of the final log shall be submitted to the Engineer, upon project completion for acceptance.

Work Performed by Others (to be performed by CDOT or CDOT Consultant):

- Prepare project-specific Air Quality Construction Plan in coordination with the Contractor, which includes a particulate matter construction plan. This plan defines the actions that will be taken to mitigate air quality impacts on communities adjacent to the project area before an exceedance of the Public Alert Threshold occurs. This plan is expected to have similar mitigation requirements as the Fugitive Dust Control Plan required by the permit issued by the Air Pollution Control Division and Regulation 1..
- Determine the number of sensors and their locations.
- Provide power for air quality sensors.
- Perform the sensor installation, calibration, operation, maintenance, data collection and data validation throughout the project activities.
- Provide notification to the Contractor and CDOT if an Internal Mitigation Alert Threshold and/or Public Alert Threshold is exceeded.
- Notify the project team if the threshold concentrations for the Internal Mitigation Alert shown in Table 1 are met or exceeded.
- Provide interpretation and explanation of air quality monitoring data, including information related to activities occurring adjacent to the project area or regional events that may affect air quality within the project area.
- Provide notification to the public if the Public Alert Thresholds shown in Table 1 are met or exceeded (CDOT Public Information Manager will release the notice to the public).
- Investigate other sources of air quality monitoring data in the vicinity of the project area.
- Create and manage a running log which documents information related to exceedances of the Internal Mitigation Alert Threshold and information required for the Public Alert Threshold exceedance notifications, including information provided by the Contractor as shown above.

Project compliance is required for the parameters described in **Table 1**

-3-

**Revision of Section 107
Legal relations and Responsibilities to the Public**

Table 1. Air Quality Monitoring Parameters for Regionally Significant, Transportation Capacity Projects

Parameter	During Construction
Pollutants	PM ₁₀ and PM _{2.5} .
Meteorology Parameters	Wind direction ^{See Note 1} , wind speed, temperature, and relative humidity at a minimum.
Duration	Throughout construction
Number of Sensors Per Pollutant	Minimum of 2.
Number of Meteorology Monitors	Minimum 1; CDOT Air Quality Specialist must approve the number and type required.
Location of Air Quality Sensors	CDOT Air Quality Specialist must approve monitoring locations. Monitoring locations should be placed to identify the impact of construction emissions on local air quality, with consideration of impacts to sensitive receptors and DI communities.
Type(s) of Air Quality and Meteorology Sensors	CDOT Air Quality Specialist must approve type(s) used. For particulate matter, FEM or other sensors able to provide high quality, reliable data should be used.
Public Reporting of Monitoring Data	Required.
Method of Public Reporting	Preliminary pollutant monitoring data to a project-specific website in (near) real time. Note on the website that data has not been corrected or validated.
Public Alerts of Exceedances	Alert public of validated exceedances. This may include distributing an email to pre-registered users with a link to the project-specific website or posting the exceedance to a website.
Validating Public Exceedances	If the Public Alert Threshold is exceeded, a team (e.g., communications manager, project engineer, and air quality consultant) will determine if the exceedance is accurate and the public will be notified only of validated exceedances.
Timeframe to Notify Public	Public alerts will be made once per day, within 24 hours of the exceedance of the Public Alert Threshold, unless there is a unique situation as approved by CDOT Air Quality Specialist.
Public Alert Threshold, PM ₁₀	NAAQS Daily Average as AQI ^{See Note 2} ≥ 100
Public Alert Threshold, PM _{2.5}	NAAQS Daily Average as AQI ≥ 100

-4-

Revision of Section 107
Legal Relations and Responsibilities to the Public

Parameter	During Construction
Internal Mitigation Alert Threshold, PM ₁₀	135 micrograms per cubic meter (µg/m ³), measured over an 1 hour average.
Internal Mitigation Alert Threshold, PM _{2.5}	31.5µg/m ³ , measured over an 1 hour average.
Public Alert Content	Sensor location, pollutant, concentration, threshold exceeded. May include construction activities, other pollutant sources, wind speed, and wind direction at time of trigger, and mitigation actions taken.
Project-specific Air Quality Construction Plan	Create project-specific plan that addresses CRS plan requirements: particulate matter construction plan (covers monitoring, reports to the public, and public alerts); an action plan, and a plan to mitigate air quality impacts on communities. Also include or refer to the Fugitive Dust Control Plan, if required by APCD.
Primary contact for monitoring contractor(s)	CDOT project or resident engineer.

Note 1 Use a unit-vector algorithm for wind direction per EPA QA Handbook, EPA-454/B-08-002.

Note 2 Public alert thresholds use EPA's 24 hour NAAQS standard of Air Quality Index (AQI) of 100 for particulate matter. "An AQI value of 100 generally corresponds to an ambient air concentration that equals the level of the short-term national ambient air quality standard for protection of public health. AQI values at or below 100 are generally considered to be satisfactory."

Prior to the start of Construction, a conference shall be held with the Contractor's Supervisor, Project Engineer, and the CDOT Environmental Project Manager. This conference will discuss the Contractor's Air Quality Construction Plan and the roles and responsibilities of each entity listed above for air quality monitoring.

The Contractor is responsible for managing dust emissions from project activities in compliance with the APEN Permit, Fugitive Dust Control Plan, and Air Quality Construction Plan, and the requirements under Table 1 above. If construction activities result in a validated air quality exceedance in Table 1, or an order by the Project Engineer via a Form 105 requires that an action be taken immediately, it shall be understood that the Contractor shall at once begin affecting completion of the action and pursue it to completion in a timely manner acceptable to the Project Engineer.

The CDOT Consultant will prepare and submit an indexed Project Site Log at the end of the project. This log will include information related to sensor installation/replacement, calibration, operation, maintenance, data collection and data validation throughout the pre-construction and construction monitoring periods.

**Revision of Section 202
Removal of Asphalt Mat**

Section 202 of the Standard Specifications is hereby revised for this project as follows:

Subsection 202.01 shall include the following:

This work includes removal and disposal of existing asphalt mat within the project limits as shown on the plans or at locations directed by the Engineer.

In subsection 202.02 delete the seventh paragraph and replace with the following:

The existing asphalt mat, which varies in thickness from 2.5 inches to 6 inches, shall be removed in a manner that minimizes contamination of the removed mat with underlying material. The removed mat shall become the property of the Contractor and shall be either disposed of outside the project site or used in one or more of the following ways:

1. Used in embankment construction in accordance with subsection 203.07(c).
2. Placed in bottom of fills as approved by the Engineer.
3. Recycled into the hot mix asphalt.
4. Placed in the subgrade soft spots as directed by the Engineer.

**Revision of Section 202
Removal of Asphalt Mat (Planing)**

Section 202 of the Standard Specifications is hereby revised for this project as follows:

Delete subsection 202.09, and replace it with the following:

202.09 Removal of Asphalt Mat (Planing). The Contractor shall not start the planing operation until the hot mix asphalt (HMA) Mix Design (CDOT Form 43) has been Approved.

Prior to beginning planing operations, the Contractor shall submit a planing plan as part of the QMP. The planing plan shall include at a minimum:

- (1) The number, types, and sizes of planers to be used.
- (2) The width and location of each planing pass.
- (3) The number and types of brooms to be used and their locations with respect to the planers. The contractor shall have at least one back up broom on the project at all times in case one of the operating brooms breaks down.
- (4) The proposed method for planing and wedging around existing structures such as manholes, valve boxes, and inlets.
- (5) The longitudinal and transverse typical sections for tie-ins at the end of the day.
- (6) If requested by CDOT, a plan sheet showing the milling passes.

The QMP shall include, as a minimum:

- (1) The schedule for replacing the cutting teeth.
- (2) The daily preventive maintenance schedule and checklist.
- (3) Proposed use of automatic grade controls.
- (4) The surface testing schedule for smoothness.
- (5) The process for filling distressed areas.
- (6) Corrective procedures if the milled surface does not meet the minimum transverse or longitudinal surface finish when measured with a 10-foot straightedge.

Each planer shall conform to the following:

The planer shall have sufficient power, traction, and stability to maintain an accurate depth of cut. The propulsion and guidance system of the planer shall be maintained in such condition that the planer may be operated to straight and true lines.

Operation with broken or missing teeth will not be allowed. Worn teeth shall be replaced if the planer does not produce a uniform surface.

The planer shall be capable of operating with automatic grade controls (contact or non-contact) on both sides of the machine using a 30-foot averaging system or other approved grade control systems. The use of such controls shall be described in the QMP.

The planer shall be capable of picking up the removed material in a single operation.

A self-loading conveyor shall be an integral part of the planer. Windrows will not be allowed.

-2-
Revision of Section 202
Removal of Asphalt Mat (Planing)

The existing pavement shall be milled to the cross-slope as shown on the plans, and shall have a surface finish that does not vary longitudinally or transversely more than 3/8 inch from a 10-foot straightedge. A 10-foot straightedge shall be supplied by the Contractor.

All milled surfaces shall be broomed with a pick-up broom, unless otherwise specified, before being opened to traffic. A sufficient number of brooms shall be used immediately after planing to remove all milled material remaining in the roadway.

If the Contractor fails to adequately clean the roadway, work shall cease until CDOT has approved the Contractor's revised written proposal to adequately clean the roadway.

At the completion of each day's work, longitudinal vertical edges greater than 1 inch shall be tapered. No transverse vertical edges will be allowed. Longitudinal milled surface tie-ins to existing pavement shall be tapered to not less than a 3:1 slope; transverse milled surface tie-ins to existing pavement shall be tapered to not less than a 50:1 slope. Transverse tapered joints may be tapered with the planing machine, a temporary asphalt ramp, or other methods approved by CDOT. No longitudinal joint between the milled and existing surfaces shall fall between 1 to 5 feet of any lane line.

If the transverse joint is tapered with a temporary asphalt ramp, the milled surface at the joint shall be constructed as a butt joint, the full depth of the lift of asphalt to be placed on the milled surface. The Contractor shall be responsible for maintaining this asphalt ramp until all corresponding HMA is placed.

If the transverse joint is tapered with a planing machine, a butt joint shall be cut into the taper, the full depth of the lift of asphalt to be placed on the milled surface prior to commencement of resurfacing.

Other approved transverse joint tapers shall be maintained at the expense of the Contractor, and at a minimum shall incorporate a butt joint the full depth of the lift of asphalt to be placed on the milled surface prior to commencement of resurfacing.

Distressed or irregular areas identified in the planed surface by CDOT shall be patched.

The roadway shall be left in a safe and usable condition at the end of each workday. The Contractor shall take appropriate measures to ensure that the milled surface does not trap or hold water. All required pavement markings removed by the planing shall be restored before the roadway is opened to traffic.

All milled surfaces to be overlaid with HMA shall be covered with new asphalt within 5 working days.

All planing shall be completed full width and parallel to the travel lanes before resurfacing commences unless otherwise directed by CDOT.

All material generated by the planing operation shall remain the property of the Contractor.

**Revision of Section 202
Removal of Portions of Present Structure**

Section 202 of the Standard Specifications is hereby revised for this project as follows:

Subsection 202.01 shall include the following:

This work shall include the removal of all or portions of the following: Bridge rail on Structures P-06-AM and P-06-AN. Removal operations shall be conducted so that there will be the least interference with public traffic using the structure.

Subsection 202.02 shall include the following:

At least 10 days before beginning bridge removal, the Contractor shall submit to CDOT details of the removal operations showing the methods and sequence of removal and equipment to be used.

Steel Bridge rail post and railings shall be carefully dismantled and stockpiled at locations as designated. The Division will transport the material salvaged from the stockpile site to the maintenance yard. The Contractor will be required to load the material salvaged on the Division's hauling equipment.

All methods and equipment used to accomplish this item shall be approved by the Contractor's Engineer.

Within 24 hours before new concrete is placed, the entire surface upon which new concrete bonds shall be sandblasted to roughen the surface and remove all fractured or loose particles to promote good bond with the new concrete.

**Revision of Section 202
Plug Culvert**

Section 202 of the Standard Specifications is hereby revised for this project as follows:

Delete and replace the eighth paragraph in Subsection 202.02 with the following:

Where culverts are called out in the plans to be left in place and plugged, the Contractor shall plug the lower end of the culvert by a method agreed upon with the Project Engineer and completely fill the entire culvert volume with Flow-fill. The Contractor shall start filling at the lower end and work their way up to the upper end to ensure all voids are filled. Flow-fill shall be in accordance with Subsection 206.02. Plugging of culverts shall include removal of headwalls and other appurtenances where necessary to accommodate the work.

**Revision of Section 207
Stream Substrate**

Section 207 of the Standard Specifications is hereby revised for this project as follows:

Description

207.01 This work consists of excavating stream substrate from onsite locations, stockpiling, maintaining the stockpile, and placement of the stream substrate at location shown on the plans. Substitutions from this specification will not be allowed unless submitted in writing to the Engineer and approved by the Regional Environmental Staff.

Materials

207.02 General. Existing stream substrate, consisting of sand, gravel, cobble, boulders, and/or riprap shall be excavated from the bed of the Florida River where it needs to be excavated for the installation of bridge piers. Broken organic debris, trash, concrete, or asphalt pieces within the existing streambed shall not be salvaged for re-use. Substrate shall be excavated to the depth of where the underlying subsoil is reached or the depth of excavation required for placement of the piers, whichever is shallower.

Construction Requirements

214.03 Stockpiling. A separate stockpile for stream substrate shall be created at a location approved by the Engineer. Stockpiles shall not be located in areas that will damage existing vegetation or trees that are not scheduled to be removed, areas critical to the project completion, or areas having historic or environmental significance. Erosion control measures shall be employed around the stockpile(s) as necessary to prevent fines from washing out of the stockpile. The stream substrate stockpiles shall not be treated with herbicide. Weeds shall be hand pulled. Stockpiles shall not be used as perimeter erosion control or otherwise compacted.

207.04 Subgrade Soil Preparation. Depending on the depth of the existing stream substrate, subsoil may be needed between below the stream substrate to achieve the desired final grade. The subsoil should be compacted as practicable and not be ripped or otherwise de-compacted prior to the installation of the Stream Substrate.

207.05 Placement of Substrate. Upon final placement, the top of the stream substrate shall match the pre-existing grade of the streambed. Stream substrates shall not be mulched, conditioned, or seeded.

**Revision of Section 208
Construction Mats**

Section 208 of the standard specifications is hereby revised for this project to include the following:

Description

208.13 This work consists of furnishing and installing construction mats to support equipment working in wetlands, streams, and other locations designated on the plans while protecting the soils and vegetation beneath from damage.

Materials

208.14 Construction mats shall be capable of supporting the anticipated loads on the types of soil that will be encountered. Larger mats shall be used on soils with low bearing strength (e.g., muck or peat) to spread the weight over a larger area. Construction mats shall be free of leachable preservatives or other constituents harmful to aquatic environments. All treated wood shall contain a quality mark or letter of certification from a third party inspection agency assuring the product meets the minimum American Wood Protection Association (AWPA) Use Category 4A standard. The Contractor may fabricate the mats or use prefabricated mats designed for these purposes.

- (a) **Construction Mats Fabricated by the Contractor.** The construction mats shall be fabricated of wooden cants, sawn dense hardwoods, or round logs fastened together. The mats shall be fabricated of cants or logs of length, width, and thickness to meet anticipated loads, soil strength, and construction equipment sizes. Alternative materials may be used if approved by the Engineer.

The mats shall be capable of being connected using quick links or other heavy-duty connectors if needed for stability or to reduce movement.

The Contractor's mat design shall be submitted to the Engineer for review and approval at least three weeks before the mats are to be used on the project. The design shall include a list of equipment and materials to be placed on the mats and anticipated loading.

Mats that are determined to be inadequate to support the required loads or protect the soil and vegetation beneath shall be removed from the project and replaced with adequate mats at the Contractor's expense.

- (a) **Prefabricated Construction Mats.** Pre-fabricated mats shall be made of natural timber or other material approved by CDOT's Project Engineer. Mats shall be capable of assembly to form appropriate sized mats to be placed directly onto ground surfaces for the purposes of holding or transferring heavy equipment, preventing excessive rutting, and minimizing vegetation disturbance.
- (b) **Hardware.** Construction mats shall be supplied with all necessary hardware, including all bolts with nuts and washers, timber connectors, drift pins, dowels, nails, screws, spikes, metal pile protectors, steel anchor plates, and all other metal fastenings.

-2-
Revision of Section 208
Construction Mats

Construction Requirements

208.15 General. Prior to placement of mats, woody vegetation (willows, shrubs, trees, etc.) shall be cut or trimmed at or slightly above ground level. Vegetation shall not be uprooted, and the root mat of any vegetation shall not be disturbed.

Crossing sites shall be located where stream channel is narrow for the shortest possible clear span and where stream banks are stable and well defined. When feasible on large wetland complexes, structures shall be accessed from opposite sides to avoid crossing the entire wetland.

208.16 Installation. Mats shall be in good condition to ensure proper installation, use, and removal. Mats shall be inspected by the Engineer to ensure they are clean of soil and any invasive plant species seed stock or plant material from previous use. The spread of aquatic nuisance species, including the New Zealand mud snail, shall be prevented. Specifically, if heavy equipment (including mats) is used that was previously working in another stream, river, lake, pond, or wetland, it shall be cleaned using one of the following procedures:

- (1) Remove all mud and debris from equipment (tracks, turrets, buckets, drags, teeth, etc.) and spray/soak equipment with a solution of commercial grade quaternary ammonium disinfectant compound containing at least 8.0 percent active ingredient diluted in solution to achieve at least 0.8 percent concentration (roughly 12 ounces of product per gallon of water). Treated equipment shall be kept moist for at least 10 minutes, managing rinsate as a solid waste in accordance with local, county, state, or federal regulations, or;
- (2) Remove all mud and debris from equipment (tracks, turrets, buckets, drags, teeth, etc.) and spray or soak equipment with water hotter than 140 °F for at least 10 minutes.

Hand tools, boots, and any other equipment that will be used in the water shall be cleaned using option (1) or (2) as well. The equipment shall be dried before use. Equipment shall not be moved from one water body to another without cleaning.

Equipment and associated materials (including mats) shall not be stored, maintained, fueled, or repaired in waters of the U.S. or wetlands.

Operating heavy equipment on mats in wetlands shall be minimized.

Impacts to waters of the U.S. or wetlands areas shall be minimized during installation, use, and removal of construction mats. Mats shall be placed in a location that would minimize the amount needed for crossing the waters of the U.S. or wetlands.

Construction mats shall not be dragged into position. More than one layer of mats may be necessary in areas which are inundated or have deep organic wetland soils.

At crossings where no flow is present or anticipated during project construction, the mats may be placed directly onto the ground in order to prevent excessive rutting, provided stream banks and bottoms are not adversely altered.

-3-
Revision of Section 208
Construction Mats

For further protection, mats may be installed on top of nonwoven geotextile that covers the crossing area.

Construction mats may be used as a temporary bridge over a stream to allow vehicles access to the work site. Mats shall not be placed so that they restrict the natural flow of the stream. When used for flowing water crossings, small sections of mat shall be placed within and along the stream parallel to the flow of water. Mats shall then be placed perpendicular to the stream, resting on top of the initial construction mat supports. It may be necessary to place additional reinforcement for extra stability and to minimize the amount of sediment that could fall between the spaces of each timber.

In most cases, construction mats shall be placed along the travel area so that the individual cants or logs are resting perpendicular to the direction of traffic. Mats shall be placed far enough on either side of the stream or wetland to rest on firm ground.

Adequate erosion and sediment controls shall be installed at approaches to mats to promote a smooth transition to, and minimize sediment tracking onto, construction mats.

Matted crossings of waters of the U.S. or wetlands shall be monitored to ensure correct functioning of the mats. Mats shall be inspected during use for any defects or structural problems. Mats which become covered with soils or construction debris shall be cleaned, and the materials removed and disposed of in an upland location. The material shall not be scraped and shoveled into the resource area. Mats which become embedded shall be reset or layered to prevent mud from covering them or water passing over them.

208.17 Removal. Mats shall be removed by "backing" out of the site, removing mats one at a time. Construction mats shall not be dragged out of position. All other material placed for protection, such as geotextile fabric, straw, etc., shall then be removed. Any rutting or significant indentations identified during mat removal shall be regraded immediately, taking care not to compact soils.

Crossings shall be inspected following mat removal to determine the level of restoration required.

Mats shall be cleaned in an upland area which doesn't drain directly to waters of the U.S. or wetlands before transport to another wetland or stream location. Cleaning methods may include, but are not limited to, shaking or dropping mats in a controlled manner with a piece of machinery to knock off attached soil and debris, spraying with water or air, and sweeping.

208.18 Restoration. Upon removal of the construction mats, the Contractor and the Engineer shall examine the matted area together to determine what restoration, if any, is required. Restoration shall include, but is not limited to, the following:

**-4-
Revision of Section 208
Construction Mats**

Areas of disturbed soil located near waters of the U.S. or wetlands shall be promptly stabilized. Matted areas within wetlands shall be restored to their original condition and elevation. This may involve natural revegetation from existing root and seed stock of native plant species. Conditions may warrant planting and the broadcast of a wetland seed mix over the matted area to supplement the existing seed and rootstock. Seed mixes and vegetation shall contain only native plant species of the appropriate moisture tolerance regime. The use of mulch in wetlands shall consist of weed free mulch to mitigate the risk of the spread of invasive plant species.

**Revision of Section 208
Water Control**

Section 208 of the Standard Specification is hereby revised for this project as follows:

Subsection 208.01 shall include the following:

Water Control shall include all labor, equipment, materials, permits, and fees required to convey or divert water within the stream channel around or through the active construction area to protect water quality from construction pollutants (concrete, sediments, etc.). This work shall include, but not be limited to, installation of clean water diversions to divert flowing water around, under, or otherwise through areas of active construction so that flowing water does not contact disturbed soils. Depending on the location and nature of the work, this may also include the conveyance of overland surface runoff to prevent it from entering areas of active construction.

Subsection 208.06(c) shall include the following:

The Contractor shall submit a detailed method statement for acceptance that outlines the installation, operation, maintenance, and removal of the Water Quality Control system, 15 days prior to NTP2.

**Revision of Section 240
Protection of Migratory Birds
Biological Work Performed by the Contractor's Biologist**

Section 240 is hereby added to the Standard Specifications for this project as follows:

Description

240.01 This work consists of protecting migratory birds during construction.

Materials And Construction Requirements

240.02 The Contractor shall schedule clearing and grubbing operations and work on structures to avoid taking (pursue, hunt, take, capture, or kill; attempt to take, capture, kill, or possess) migratory birds protected by the Migratory Bird Treaty Act (MBTA). The Contractor shall retain a qualified wildlife biologist for this project. The wildlife biologist shall have a minimum of three years' experience conducting migratory bird surveys and implementing the requirements of the MBTA. The Contractor shall submit documentation of the biologist's education and experience to the Engineer for acceptance. A biologist with less experience may be used by the Contractor, subject to the approval of the Engineer based on review of the biologist's qualifications.

The wildlife biologist shall record the location of each protected nest, bird species, the protection method used, and the date installed. A copy of these records shall be submitted to the Engineer.

(a) Vegetation Removal. When possible, vegetation shall be cleared prior to the time when active nests are present. Vegetation removal activities shall be timed to avoid the migratory bird breeding season, which begins on April 1 and runs to August 31. All areas scheduled for clearing and grubbing between April 1 and August 31 shall first be surveyed within the work limits for active migratory bird nests. The Contractor's wildlife biologist shall also survey for active migratory bird nests within 50 feet outside work limits. Contractor personnel shall enter areas outside CDOT right of way only if a written, signed document granting permission to enter the property has been obtained from the property owner. The Contractor shall document all denials of permission to enter property. The Contractor shall avoid all active migratory bird nests. The Contractor shall avoid the area within 50 feet of the active nests or the area within the distance recommended by the biologist until all nests within that area have become inactive. Inactive nest removal and other necessary measures shall be incorporated into the work as follows:

1. Tree and Shrub Removal or Trimming. Tree and shrub removal or trimming shall occur before April 1 or after August 31 if possible. If tree and shrub removal or trimming will occur between April 1 and August 31, a survey for active nests shall be conducted by the wildlife biologist within the seven days immediately prior to the beginning of work in each area of tree and shrub removal or trimming. The survey shall be conducted for each phase of tree and shrub removal or trimming.

-2-

**Revision of Section 240
Protection of Migratory Birds
Biological Work Performed by the Contractor's Biologist**

If an active nest containing eggs or young birds is found, the tree or shrub containing the active nest shall remain undisturbed and protected until the nest becomes inactive. The nest shall be protected by placing fence (plastic) a minimum distance of 50 feet from each nest to be undisturbed. This buffer dimension may be changed if determined appropriate by the wildlife biologist and approved by the Engineer. Work shall not proceed within the fenced buffer area until the young have fledged or the nests have become inactive.

If the fence is knocked down or destroyed by the Contractor, the Engineer will suspend the work, wholly or in part, until the fence is satisfactorily repaired at the Contractor's expense. Time lost due to such suspension will not be considered a basis for adjustment of time charges, but will be charged as contract time.

2. Grasses and Other Vegetation Management. Due to the potential for encountering ground nesting birds' habitat, if work occurs between April 1 and August 31, the area shall be surveyed by a wildlife biologist within the seven days immediately prior to ground disturbing activities. The undisturbed ground cover to 50 feet beyond the planned disturbance, or to the right of way line, whichever is less, shall be maintained at a height of 6 inches or less beginning April 1 and continuing until August 31 or until the end of ground disturbance work, whichever comes first.

If birds establish a nest within the survey area, an appropriate buffer of 50 feet will be established around the nest by the CDOT biologist. This buffer dimension may be changed if determined appropriate by the CDOT biologist and approved by the Engineer. The Contractor shall install fence (plastic) at the perimeter of the buffer. Work shall not proceed within the buffer until the young have fledged or the nests have become inactive.

If the fence is knocked down or destroyed by the Contractor, the Engineer will suspend the work, wholly or in part, until the fence is satisfactorily repaired at the Contractor's expense. Time lost due to such suspension will not be considered a basis for adjustment of time charges, but will be charged as contract time.

- (b) Work on structures. The Contractor shall prosecute work on structures in a manner that does not result in a taking of migratory birds protected by the Migratory Bird Treaty Act (MBTA). The Contractor shall not prosecute the work on structures during the primary breeding season, April 1 through August 31, unless he takes the following actions:
 - (1) The Contractor shall remove existing nests prior to April 1. If the Contract is not awarded prior to April 1 and CDOT has removed existing nests, then the monitoring of nest building shall become the Contractor's responsibility upon Notice to Proceed.
 - (2) During the time that the birds are trying to build or occupy their nests, between April 1 and August 31, the Contractor shall monitor the structures at least once every three days for any nesting activity.

-3-

Revision of Section 240
Protection of Migratory Birds
Biological Work Performed by the Contractor's Biologist

- (3) If the birds have started to build any nests, they shall be removed before the nest is completed. Water shall not be used to remove the nests if nests are located within 50 feet of any surface waters.
- (4) Installation of netting may be used to prevent nest building. The netting shall be monitored and repaired or replaced as needed. Netting shall consist of a mesh with openings that are $\frac{3}{4}$ inch by $\frac{3}{4}$ inch or less.

If an active nest becomes established, i.e., there are eggs or young in the nest, all work that could result in abandonment or destruction of the nest shall be avoided until the young have fledged or the nest is unoccupied as determined by the wildlife biologist and approved by the Engineer. The Contractor shall prevent construction activity from displacing birds after they have laid their eggs and before the young have fledged.

If the project continues into the following spring, this cycle shall be repeated. When work on the structure is complete, the Contractor shall remove and properly dispose of netting used on the structure.

- (c) Bald Eagle Roosting. The wildlife biologist shall conduct dusk and dawn surveys of Bald Eagle roosts within seven days prior to the start of any construction during the winter season, November 15 to March 15. If a Bald Eagle roost is identified, construction activity shall not proceed within 0.25 mile of active nocturnal roost sites between November 15 and March 15.
- (d) Raptor Nesting. The wildlife biologist shall conduct raptor nest surveys within 0.5 mile of the construction site prior to the start of construction and prior to each construction phase from December 15 to July 15. This survey can be done with binoculars. If construction activities are located within the Colorado Parks and Wildlife (CPW) recommended buffer zone for specific raptors, "No Work" zones shall be established around active sites during construction according to the CPW standards or as recommended by the wildlife biologist in consultation with the CPW. The "No Work" zone shall be marked with either fencing or signing. Work shall not proceed within a "No Work" zone until the wildlife biologist has determined that the young have fledged or the nest is unoccupied.
- (e) Taking of a Migratory Bird. The taking of a migratory bird shall be reported to the Engineer. The Contractor shall be responsible for all penalties levied by the U. S. Fish and Wildlife Service (USFWS) for the taking of a migratory bird.

**Revision of Section 250
Environmental, Health, and Safety Management**

The scope of work for this project will encounter documented contamination and regulated materials and will potentially encounter undocumented contamination. These materials require additional sampling, management, and disposal by qualified personnel.

Section 250 of the Standard Specifications is hereby revised for this project to include the following:

Section 250.03

Known areas of contamination that will be encountered during this project include:

Bridge P-05-B

The green paint on the steel I-beams is classified as lead-based paint (LBP).

The gray paint on the steel I-beam is classified as lead-containing paint.

The caulking materials on the utility pipe were sampled and found to be non-detect for asbestos.

31505 East US Highway 160

The abandoned and dilapidated residential home is considered a "Major Asbestos Spill" due to the amount of significantly damaged friable asbestos-containing materials (ACM). Friable ACM includes window caulk, spray on texture, ceiling texture, and joint compound. Approximately 2,113 square feet of friable ACM is present, which exceeds the applicable trigger levels (Colorado Regulation No. 8, Part B). The presence of regulated asbestos contaminated soil (RACS) has not been determined on this property.

Paint on building materials in the residential home, pump house, barn, tank, shed, and other structures at this address have been identified as lead-containing and/or lead-based paint. Results of TCLP sampling indicate that the painted materials are non-hazardous and can be disposed of as construction & demolition (C&D) waste at a solid waste landfill.

Drums of unknown condition and contents were observed at 31505 East US Highway 160.

During all subsurface activities, workers shall be alert for visual and olfactory signs of contamination. If suspect contamination (not identified above) is encountered, work shall stop and procedures established in CDOT 250 spec shall be followed. Any suspect contaminated material shall be properly stored and sampled prior to disposal.

Suspect contamination that may be encountered during this project include surface soil, subsurface soil, groundwater, surface water, painted structures (i.e. cattle guards, light poles etc.), or any other media potentially contaminated with regulated and/or hazardous substances. Contamination may include petroleum products, metals, organic compounds, landfill material/solid waste, heavy metal-based paint, asbestos in building materials, asbestos in soil, or other regulated and/or hazardous substances.

-2-
Revision of Section 250
Environmental, Health, and Safety Management

When known or suspected contaminated materials are encountered, disturbed, or brought to the surface, CDOT Standard Specification 250 and this revised Specification 250 shall be followed.

The Contractor shall retain an environmental firm or provide trained environmental professional to screen for and manage potentially contaminated, hazardous, or otherwise regulated materials. The personnel shall meet the requirements for a Health and Safety Officer (HSO) and Monitoring Technician (MT) as stated in CDOT Standard Specification 250.03. The HSO and MT shall have applicable qualifications, experience, and education to address all activities involving heavy metal-based paint; asbestos containing building materials; soil and groundwater potentially contaminated with petroleum, organic compounds, metals, and inorganic compounds; and other suspect contaminated or regulated materials, if encountered. If regulated asbestos contaminated soil is encountered, personnel shall meet qualifications of CDOT 250.07(d). Qualifications of all personnel shall be provided at the pre-construction meeting and whenever additional/new personnel begin work on this project.

The Contractor shall review the following documents prior to preparation of project deliverables:

Modified Environmental Site Assessment, Elmore's Corner East (20980), La Plata County, CO, prepared for Colorado Department of Transportation (CDOT), prepared by SME Environmental, Inc., April 2025.

Modified Environmental Site Assessment, East Valley Project (20980), La Plata County, CO, prepared for Colorado Department of Transportation (CDOT), prepared by SME Environmental, Inc., April 2025.

Phase I Environmental Site Assessment, Robison Property, La Plata County, Colorado, prepared for Colorado Department of Transportation, prepared by SME Environmental, Inc., July 2025.

Letter to CDOT Region 5, from CDOT Property Management re: Asbestos-Containing Material (ACM) and Lead-Based Paint (LBP) Revalidation for CDOT Bridge P-05-B located at west and eastbound US-160 MM 93.79 over the Florida River east of Loma Linda, Colorado, June 18, 2025.

Lead-Based Paint & TCLP Inspection Report, 31505 E Hwy 160, Durango, CO 81301, prepared by On Point Environmental, presented to SME Environmental, Inc., dated February 15, 2015.

Asbestos Inspection, Jameson Property-Residence, 31505 East US Highway 160, Durango, Colorado, prepared by SME Environmental, Inc., dated February 2026.

Major Asbestos Spill Notification, 31505 Eash US Highway 160, Durango, CO, prepared by Clint Casey, Spill Discovery Date 2/5/2026.

Phase II Environmental Site Assessment, Jameson Property, La Plata County, CO prepared for Colorado Department of Transportation (CDOT), prepared by SME Environmental, Inc., April 2026.

CDOT Hazardous Materials Guidance, March 2025 or most recent version.

-3-

**Revision of Section 250
Environmental, Health, and Safety Management**

A project-specific hazardous materials Health and Safety Plan (HASP) shall be prepared by the HSO. The HASP will identify the appropriate level of worker Personal Protective Equipment (PPE) and procedures to eliminate the exposure pathways from hazardous materials. The HASP shall meet the following requirements: Occupational Safety and Health Administration (OSHA) Publication No. 3142 - Working with Lead in the Construction Industry, OSHA Guidance Manual for Hazardous Waste Site Activities, National Institute for Occupational Safety and Health (NIOSH) Publication No. 85-115, 29 CFR 1926.62, and 29 CFR 1926.1126. Additionally, the requirements of Colorado Regulation 8, Part B for asbestos, CDOT Regulated Asbestos Contaminated Soil (RACS) Standard Operating Procedure (SOP) shall be either included in the HASP or provided by the Colorado Certified General Abatement Contractor (GAC) and referenced in the HASP. The HASP shall also address screening procedures, worker hazards, documentation, and appropriate PPE associated with other potential contaminated and/or regulated materials. The HASP shall be submitted to the Engineer a minimum of 12 days prior to the start of work for acceptance and distributed by the Contractor as stated in 250.03(C).

A project-specific hazardous materials management plan (MMP) shall be prepared. The MMP shall provide details on the management, storage, characterization (sampling), transportation, and disposal/recycling of all contaminated and/or regulated materials (ref. CDOT 250.05 and 250.06).

The MMP shall include the detailed method statement for capturing, testing, and disposing of the heavy metal-based paint on P-09-B (ref. Spec 250.04(b)). The method statement shall discuss how the Contractor will prevent the release of paint and other contaminated materials into the environment and ensure proper waste containerization and disposal. All paint waste (chips, dust, spent abrasives, spent stripper etc.) materials shall be managed by the Contractor in accordance with all federal and state regulations. The heavy metal paint disposal decision document shall be included in the MMP or provided prior to disposal of materials with heavy metal paint (ref. Spec 250.04(c)).

The bridge removal plan (ref. CDOT Spec 202) shall include the above information on capturing, handling, and disposal of contaminated materials or reference the MMP.

The Contractor shall coordinate with the HSO and CDOT to prepare a Demolition Notification Application Form for Bridge P-09-B, the residential structure at 31505 East Highway 160, and other structures as applicable. The Contractor shall submit the form to CDPHE Air Pollution Control Division and pay all applicable fees within the timeframe specified in CDPHE Regulation 8, Part B. The Contractor shall comply with all other regulations related to asbestos abatement as applicable.

The Contractor shall coordinate with a solid waste landfill to obtain a waste manifest or approval for disposal of the painted building materials at 31505 East US Highway 160 (sampled in December 2025 and January 2026).

Additional sampling will likely be required for characterization and disposal of painted components on Bridge P-09-B (TCLP Pb and Cr of paint on P-05-B). Additional sampling may be required to characterize other potentially regulated or hazardous materials for disposal.

The HSO shall prepare a daily log of field activities and provide it to the Engineer at the end of every week that the HSO is used.

-4-

**Revision of Section 250
Environmental, Health, and Safety Management**

A qualified Monitoring Technician (MT) shall be designated to monitor project activities for hazardous substances during work on the project. The MT shall monitor all activities involving heavy metal paint, asbestos in building materials, regulated asbestos contaminated soil, and all other suspect contaminated or regulated hazardous materials. The MT shall prepare a daily log of field activities and provide it to the Engineer at the end of every week that the MT is used.

Groundwater is not anticipated; however, if it is encountered, it shall not be discharged without permit authority from CDPHE. The Contractor shall obtain a Construction Dewatering, Remediation, or Individual Permit from the CDPHE for any dewatering of groundwater during construction in accordance with Water Quality Control Division (WQCD) requirements.

The HSO shall prepare a Final Site Report in accordance with Specification 250. The Final Site Report shall include a discussion of "cradle to grave" generation, management, sampling, and disposal in addition to all supporting documentation for all suspect contaminated, hazardous, and/or regulated materials encountered or generated during the project.

The Contractor shall provide the following deliverables:

Deliverable	Due Date	Reference
Environmental Personnel Qualifications and Certifications	At Pre-Construction Meeting	250.03
Hazardous Materials Monitoring Plan (MMP)	Minimum of 2 Weeks Prior to Beginning Construction	250.03 and HM Guidance Document Section 4.7.4
Site Specific Hazardous Materials Health and Safety Plan (HASP)	Minimum of 12 Days Prior to Beginning Construction	250.03(c) and 250.04
HSO Daily Log of Field Activities	End of every week the MT is used	250.03(a)
MT Daily Log of Field Activities	End of every week the HSO is used	250.03(b)
Dewatering, Remediation, or Individual Permit for Groundwater	4 Weeks Prior to the start of groundwater discharge	250.05
Heavy Metal Paint Disposal Decision	10 Days Prior to Disturbance of Painted Materials	250.04
Final Site Report	As Soon As Possible after Project Completion	250.03(a)

**Revision of Section 304
Aggregate Base Course**

Section 304 of the Standard Specifications is hereby revised for this project as follows:

Subsection 304.02 shall include the following:

Materials for the subbase shall be Aggregate Base Course (Class 2) as shown in subsection 703.03.

Materials for the base course shall be Aggregate Base Course (Class 6) as shown in subsection 703.03.

Aggregate Base Course (RAP) shall not be used as Aggregate Base Course (Class 2) or (Class 6).

The Aggregate Base Course (Class 2) and (Class 6) must meet the gradation requirements and have a resistance value of at least 70 and 78 respectively when tested per AASHTO T-190.

**Revision of Sections 304, 403, and 601
Aggregate Base Course, Hot Mix Asphalt,
and Concrete Ticket Collection**

Sections 304, 403, and 601 of the Standard Specifications are hereby revised for this project as follows:

Subsections 304.08, 403.05, and 601.20 shall include the following:

The Contractor shall collect the scale/batch ticket on each load when it is delivered to the project site, and ensure that the information required in subsection 109.01 is shown on each ticket. Any adjustments to the load represented (i.e., waste, water added, etc.) shall be noted on the submitted ticket. The Contractor shall fill out CDOT Asphalt Paving Inspector's Daily Report (Form 282) as the material is placed.

The scale/batch tickets shall be available on site for CDOT personnel to inspect.

Each day, the Contractor shall provide to CDOT envelopes which contain the previous day's signed tickets, CDOT Form 282, and the following:

1. On each envelope: Project number, date of placement/paving, type of material, daily total, and cumulative total.
2. One of the following:
 - A. Two adding machine tape tabulations of the weight/volume tickets with corresponding totals run and signed by different persons,
 - B. One signed adding machine tape tabulation of the weight/volume tickets that has been checked and signed by a second person,
 - C. Signed check tape of computer scale tickets that have a cumulative total. These scale tickets must be consecutive and without voids adjustments.
3. A listing of any overweight loads on the envelope, including ticket numbers and amount over legal limit.
4. A comparison of the actual yield for each day's placement to the theoretical yield. Theoretical yield shall be based on the actual area placed/paved, the planned thickness, and the actual density of the mixture being placed. Any variance greater than +/- 2.5 percent shall be indicated on the envelope and a written explanation included.

The Contractor shall provide a vehicle identification sheet that contains the following information for each vehicle:

- (1) Vehicle number
- (2) Length
- (3) Tare Weight
- (4) Number of axles
- (5) Distance between extreme axles
- (6) All other information required to determine legal weight
- (7) Legal weight limit

If the Contractor fails to provide CDOT with the required information on a daily basis, placement or paving will not be allowed to resume unless approved by CDOT.

**Revision of Sections 304 and 703
Aggregate Base Course (Special)**

Section 304 of the Standard Specifications is hereby revised for this project as follows:

Subsection 304.01 shall include the following:

The work includes the preparation of the shoulder subgrade by blading to remove vegetation and to slope shoulders away from the edge of the pavement. Shoulder grading shall take place prior to placement of the topmost layer of pavement.

The Contractor shall place Aggregate Base Course (Special) within 3 calendar days of placing pavement materials unless otherwise approved by CDOT. Pavement edge drop-offs 2 inches or greater immediately adjacent to traffic (within 10 feet of the traveled way) shall not be left unprotected overnight without placement of warning signs, drum channelizing devices, and a wedge of adequate material installed as directed by CDOT.

Subsection 304.02 shall include the following:

Acceptable shoulder gravel alternatives are:

- (1) 100 percent asphalt millings that are well graded and a product from an asphalt milling machine.
- (2) 100 percent Aggregate Base Course (Class 6).
- (3) Any combination of #1 and #2 above.

Milled asphalt material used shall be 100 percent passing the 37.5 mm (1-1/2 inch) sieve.

The material shall not contain clay balls, organic matter, or other deleterious material.

Subsection 304.04 shall include the following:

Aggregate Base Course (Special) shall be placed using a device capable of placing this shoulder material in its final position at the required application rate. The device is subject to CDOT's approval prior to beginning the work. Shoulder gravel shall not be placed on the asphalt roadway surface.

Subsection 304.06 shall include the following:

Aggregate Base Course (Special) shall be compacted with rollers or wheel-rolled with equipment in a manner and to the extent deemed acceptable by CDOT.

**Revision of Section 401
Hot Mix Asphalt Compaction**

Section 401 of the Standard Specifications is hereby revised for this project as follows:

Subsection 401.17, first paragraph, shall include the following:

Both steel wheel and pneumatic tire rollers shall be required on this project. If the Contractor has demonstrated to CDOT that all of the manufacturer's recommendations were followed and the pneumatic tire roller is detrimental to the finished surface of the HMA, CDOT, in cooperation with the Contractor and the CDOT region materials engineer, may waive the pneumatic tire roller requirement. Steel wheel rollers shall not be operated in vibratory mode on bridge decks.

**Revision of Section 403
Hot Mix Asphalt**

Section 403 of the Standard Specifications is hereby revised for this project as follows:

Subsection 403.02 shall include the following:

The design mix for hot mix asphalt shall conform to the following:

Table 403-1

Property	Test Method	Value For Grading	
		SX(75)	SX(75) (Patching)
Air Voids, percent at: N (design)	CPL 5115	3.0 - 4.0	3.0 - 4.0
Lab Compaction (Revolutions): N (design)	CPL 5115	75	75
Stability, minimum	CPL 5106	28	28
Aggregate Retained on the 4.75 mm (No. 4) Sieve with at least 2 Mechanically Induced fractured faces, % minimum*	CP 45	60	60
Accelerated Moisture Susceptibility Tensile Strength Ratio (Lottman), minimum	CPL 5109 Method B	80	80
Minimum Dry Split Tensile Strength, kPa (psi)	CPL 5109 Method B	205 (30)	205 (30)
Grade of Asphalt Cement, Top Layer		PG 58-28	PG 58-28
Grade of Asphalt Cement, Layers below Top		PG 58-28	PG 58-28
Voids in the Mineral Aggregate (VMA) % minimum	CP 48	See Table 403-2	See Table 403-2
Voids Filled with Asphalt (VFA), %	AI MS-2	65-80	65-80
Dust to Asphalt Ratio Fine Gradation Coarse Gradation	CP 50	0.60 - 1.20 0.80 - 1.60	0.60 - 1.20 0.80 - 1.60

Note: AI MS-2 = Asphalt Institute Manual Series 2

Note: Mixes with gradations having less than 40% passing the 4.75 mm (No. 4) sieve shall be approached with caution because of constructability problems.

Note: Gradations for mixes with a nominal maximum aggregate size of one inch or larger are considered a coarse gradation if they pass below the maximum density line at the #4 screen.
Gradations for mixes with a nominal maximum aggregate size of 3/4" to 3/8" are considered a coarse gradation if they pass below the maximum density line at the #8 screen.
Gradations for mixes with a nominal maximum aggregate size of #4 or smaller are considered a coarse gradation if they pass below the maximum density line at the #16 screen.

*Fractured face requirements for SF may be waived by RME depending on project conditions.

-2-
Revision of Section 403
Hot Mix Asphalt

All mix designs shall be run with a gyratory compaction angle of 1.25 degrees and properties must satisfy Table 403-1. Form 43 will establish construction targets for Asphalt Cement and all mix properties at Air Voids up to 1.0 percent below the mix design optimum. CDOT will establish the production asphalt cement and volumetric targets based on the Contractor's mix design and the relationships shown between the hot mix asphalt mixture volumetric properties and asphalt cement contents on the Form 429. CDOT may select a different AC content other than the one shown at optimum on the Contractor's mix design in order to establish the production targets as contained on the Form 43. Historically, Air Voids adjustments typically result in asphalt cement increases from 0.1 to 0.5 percent. Contractors bidding the project should anticipate this change and factor it into their unit price bid.

Table 403-2

Minimum Voids in the Mineral Aggregate (VMA)			
Nominal Maximum Size*, mm (inches)	***Design Air Voids **		
	3.5%	4.0%	4.5%
37.5 (1½)	11.6	11.7	11.8
25.0 (1)	12.6	12.7	12.8
19.0 (¾)	13.6	13.7	13.8
12.5 (½)	14.6	14.7	14.8
9.5 (⅜)	15.6	15.7	15.8

- * The Nominal Maximum Size is defined as one sieve larger than the first sieve to retain more than 10%.
- ** Interpolate specified VMA values for design air voids between those listed.
- *** Extrapolate specified VMA values for production air voids beyond those listed.

The Contractor shall prepare a quality control plan outlining the steps taken to minimize segregation of HMA. This plan shall be submitted to CDOT for Acceptance at the pre-paving conference and at a minimum of 30 Days prior to beginning the paving operations. When CDOT determines that segregation is unacceptable, the paving shall stop and the cause of segregation shall be corrected before paving operations will be allowed to resume.

The hot mix asphalt may contain reclaimed asphalt pavement.

CDOT approved Warm Mix Asphalt (WMA) may be allowed on this project in accordance with CP 59. Unique requirements for WMA design, production, and acceptance testing as documented during CDOT WMA approval shall be submitted and approved prior to creation of the Form 43 and before any WMA production on the project. Delays to the project due to WMA submittal and review will be considered within the Contractor's control and will be non-excusable.

-3-
Revision of Section 403
Hot Mix Asphalt

Hot mix asphalt for patching shall conform to the gradation requirements for Hot Mix Asphalt (Grading SX).

A minimum of 1 percent hydrated lime by weight of the combined aggregate shall be added to the aggregate for all hot mix asphalt.

Acceptance samples shall be taken at the location specified in Method B of CP 41.

Hot Mix Asphalt (HMA) sampling according to CP-41 Method B Procedure 8.1 (windrow) will satisfy the split requirements of CP-17 Section 3.2 Blind Split Sample.

Subsection 403.03 shall include the following:

The Contractor shall construct the work such that all roadway pavement placed prior to the time paving operations end for the year, shall be completed to the full thickness required by the plans. The Contractor's Progress Schedule shall show the methods to be used to comply with this requirement.

**Revision of Section 412
Portland Cement Concrete Pavement**

Section 412 of the Standard Specifications is hereby revised for this project as follows:

Subsection 412.13 shall include the following:

(d) Pressure Relief Joints. Pressure relief joints in PCCP, as shown in the Book 4 drawing titled Concrete Expansion Joint Details, shall be installed 1) at a minimum of one per mile increments and 2) immediately adjacent to bridge Structures and installed to the requirements and included Pressure Relief Joint Standard Drawings included herein.

Preformed elastomeric joint seals shall conform to the requirements provided in Table 412-2.

General: This material is a flexible, low density, multicellular homogeneous neoprene foam. It must be designed to create constant compression with the concrete joint faces once it is installed. If there is a possibility that the pavement will contract and the seal will be required to act in tension, an epoxy adhesive must be used to secure the seal to the concrete joint. The joint seal is to be four inches wide and be inserted into a 3 ¾ inch joint gap. The depth and length shall be determined by the manufacturer. The product must conform to AASHTO M 220 and ASTM D 2628 when pertaining to pavement joints, or AASHTO M 297 and ASTM D 3542 if the product is intended for bridge use. Reinforcing steel shall be grade 60.

Table 412-2 Physical Requirements for Preformed Elastomeric Joint Seals

Property	Requirements	ASTM Method
Tensile Strength, min	2000 psi	D 412
Elongation at break, min	250%	D 412
Hardness Type A durometer, points	55 ± 5	D 2240 (modified) ^A
Oven aging, 70h at 212°F		D 573
Tensile Strength loss, max	20% max	
Elongation loss, max	20% max	
Hardness, Type A durometer, points change	0 to + 10	
Oil Swell ASTM Oil 3 70h at 212°F		D 471
Weight change max	45% max	
Ozone resistance		D 1149 (modified) ^B
20% strain 300 pphm in air 70h at 104°F	no cracks	
Low-temperature stiffening 7 Days at 14°F		D 2240
Hardness, Type A durometer, points change	0 to + 15	

-2-
Revision of Section 412
Portland Cement Concrete Pavement

Table 412-2 Physical Requirements for Preformed Elastomeric Joint Seals (Cont.)

Property	Requirements	ASTM Method
Low-temperature recovery, ^C 72h at 14°F, 50% deflection, min	88%	D 2628
Low-temperature recovery, ^C 22h at -20°F, 50% deflection, min	83%	D 2628
High-temperature recovery, ^C 70h at 212°F, 50% deflection, min	85%	D 2628
Compression-deflection at 80% of nominal width, min	3.5 lbf/in	D 2628

^A The term "modified" in the table relates to the specimen preparation. The use of joint seal as the specimen source requires that more plies than specified in either of the modified test procedures be used. Such specimen modification shall be agreed upon by the purchaser and seller prior to testing. The hardness test shall be made with the durometer in a durometer stand as recommended in Method D 2240.

^B Test in accordance with Procedure A of D 518.

^C Cracking, splitting, or sticking of a specimen during a recovery test shall mean that the specimen has failed the test.

All epoxies, adhesives, lubricants, cementing agents, etc., that are required for installation of the seals are to be specified and provided by the manufacturer. All installation is to be in strict accordance with the specified procedures and practices of the seal manufacturer.

Properly package all of these components and provide instructions for safe handling, storage, transport, proper disposal of component and container, emergency procedures, etc. Durably label all containers with name and address of the manufacturer, date of manufacture, shelf life or expiration date if applicable, a unique identifier such as a batch or lot number, and any other relevant information.

Openings for the joint material shall be formed or sawed. Prior to installation of the joint material, the faces of the joint shall be sandblasted, followed by an air blast to clean all dust and debris from the joint face. Sandblasting and air blasting shall be limited to the amount that may be sealed in the same workday. A foam spacer block may be used beneath the seal to provide additional stability, but the foam must be easily compressible, so not to interfere with the joint or the joint seal's compression. Application and installation equipment shall be provided by the manufacturer and shall be inspected to ensure that installation meets the design and manufacturer's requirements.

**Revision of Section 412
Tie Bar Inspection**

Section 412 of the Standard Specifications is hereby revised for this project as follows:

Subsection 412.13(b) 1 shall include the following:

If tie bars are inserted into plastic concrete with a tie bar insertion machine, tie bar location and concrete consolidation shall be subject to the following additional requirements:

Each 2500 linear feet of longitudinal weakened plane joint resulting from the procedure shall have one random location cored where the core intercepts an inserted tie bar. The core shall be six-inch diameter taken in the presence of CDOT.

If non-consolidated concrete is evident above the inserted tie bar, the Contractor shall cease paving operations and submit a corrective action plan in writing for approval. Correction of the joint and further paving shall take place only after written approval of the corrective action plan has been provided by CDOT. Additional coring may be required, as directed by CDOT.

Further failure to consolidate the concrete over the tie-bars will be justification to preclude the use of automatic tie-bar insertion for the remainder of the project.

**Revision of Section 420
Geotextile Mats in Wetland Areas**

Section 420 of the Standard Specifications is hereby revised for this project as follows:

Subsection 420.01 shall include the following:

This work shall include the installation of temporary geotextile mats in the wetland areas temporarily impacted by construction.

Subsection 420.02 shall include the following:

The Contractor shall cut existing vegetation within temporary impact wetland areas in a manner that the roots are left intact. All shrubs in temporary impact areas shall be trimmed to within 2 inches of the ground.

A silt fence and/or exclusion fence shall be installed in accordance with Section 208 to properly delineate the boundary of the temporary impact wetland areas and to protect the surrounding wetland areas.

Subsection 420.07 shall include the following:

The cleared temporary wetland impact areas shall be protected with geotextile (Erosion control)(Class A), followed by a 12-inch layer of loose certified weed-free straw and a minimum of 2 feet of soil. Construction equipment will be allowed to move across the site on top of this fill.

After construction activities are complete, soil, straw, and geotextile shall be carefully removed as directed. The final lift shall be removed using a toothless backhoe. Silt/exclusion fence shall be removed only after all activity in the wetland areas is complete. Straw and geotextile shall become property of the Contractor and shall be removed and disposed of outside of the project limits. All soil shall be removed and disposed of outside the project limits. Excess fill shall not be used in wetland areas.

**Revision of Section 420
Geogrid Reinforcement**

Section 420 of the Standard Specifications is hereby revised for this project to include the following:

Description

This work consists of furnishing and installing biaxial geogrid pavement reinforcement material within and below the pavement subbase, in accordance with these specifications and in conformity with the lines and grades shown on the plans or established.

Materials

Geogrid is a polymer biaxial grid structure specifically fabricated for use as a soil reinforcement. Geogrid reinforcement material shall have ultimate tensile strength, minimum average roll values (MARV), when tested in accordance with ASTM D 6637, of:

- 1,960 lb/ft or greater in the cross-machine direction (XMD)
- 1,300 lb/ft or greater in the machine direction (MD)

Additionally, geogrid shall have tensile strength at 5 percent strain (MARV) of:

- 1,330 lb/ft or greater in the XMD.
- 800 lb/ft or greater in the MD

Geogrid aperture size shall be 1 inch or greater in both the MD and XMD.

Geogrid that does not meet the ASTM requirements above shall be rejected.

The geogrid reinforcement shall contain stabilizers or inhibitors to prevent degradation of properties due to ultraviolet light exposure. The geogrid reinforcement shall be inert to all naturally occurring alkaline and acidic soil conditions.

Submittals

The manufacturer shall furnish certified test reports from an independent laboratory indicating that the material meets the requirements of the specification for the biaxial geogrid specified.

Construction Requirements

Geogrid pavement reinforcement shall be installed in accordance with the following:

- (a) Delivery, Storage, and Handling. Upon delivery, the Contractor shall check the geogrid to ensure the proper material has been received. Special care shall be taken in the handling of geogrids manufactured from polypropylene at temperatures at or below -18 °C (0 °F).
- (b) Geogrid Installation. Geogrid shall be laid at steps and alignment as shown on the Plans or as directed by the Engineer. Geogrid shall be oriented such that the strong direction (XMD) is perpendicular to the roadway alignment. Geogrid material shall be secured to the ground surface by placement of loose fill at the corners and edges or as directed by the Engineer.

-2-
Revision of Section 420
Geogrid Reinforcement

- (c) Geogrid shall be placed so that at the back of the excavation, a "tail" of geogrid is left extending beyond the new backfill material, to accommodate attachment between geogrids placed in separate construction sequences, if required. Adjacent sheets of geogrid shall be connected together as one continuous width (longitudinally along the roadway). The Contractor shall submit a connection method and detail a minimum of ten (10) working days prior to the start of geogrid placement for approval by the Engineer.
 - (d) Fill Placement Over Geogrid. Tracked construction equipment shall not operate directly upon the geogrid. A minimum fill thickness of 8 inches is required prior to operation of tracked vehicles over the geogrid. Rubber tire equipment may pass over the geogrid at slow speeds, less than 10 mph, if the underlying material is capable of supporting the loads without excessive rutting or causing damage to the grid. Operators shall avoid sudden braking or sharp turning.
 - (e) Fill material shall be back dumped from trucks riding on top of the reinforced fill and bladed onto the geogrid in such a manner that the fill rolls onto the grid ahead, e.g., by gradually raising dozer blade while moving forward. Material placed over the geogrid shall be compacted in accordance with the compaction requirements for this project or as directed. Care shall be taken to ensure the geogrid reinforcement is not damaged.
 - (f) Fill material shall be compacted in accordance with Section 304.
-

**Revision of Section 502
Drilling Holes to Facilitate Pile Driving**

Section 502 of the Standard Specifications is hereby revised for this project as follows:

Subsection 502.06 shall include the following:

When the plans call for drilled holes filled with slurry or mud made from clay or bentonite, the diameter of the drilled holes shall be at least two inches greater than either the pile diameter or the diagonal corner to corner measurement of the pile cross section, unless otherwise designated on the plans. Oversized holes due to sloughing, drifting, over-drilling, or other causes shall be filled with the accepted slurry or mud at the contractor's expense.

The following mixture will yield approximately 1.2 cubic yards of an acceptable slurry or mud:

- (a) 50 lbs. dry bentonite powder
- (b) Approximately 125 gallons of water (or sufficient amount to make a pourable mix)
- (c) 1 cubic yard of sand (approximately 2800 lbs.) reasonably free of material larger than 1/2 inch.

The sand need not be clean. Local soil reasonably free of material larger than 1/2 inch may be substituted for the sand. Cement, lime, flyash, or other pozzolanic or highly alkaline materials shall not be added.

This mixture may be mixed by auger in the drilled hole, by paddle type mortar mixers, by portable or semiportable concrete mixers, or by drum type concrete mixer trucks.

If the mixture is placed or mixed in the hole prior to pile driving, the top two to three feet of the hole may be filled with loose local soil to prevent splashing of the slurry or mud.

**Revision of Section 503
Drilled Caissons**

Revision of Section 503 of the Standard Special Provisions is hereby revised as follows:

Add the following sentence to beginning of the first paragraph of Subsection 503.21:

CSL testing is required for drilled caissons equal to or greater than 4 feet in diameter, at single shaft locations, and at river crossings.

**Revision of Section 504
Concrete Panel Facing Phased Built GRS Wall**

Section 504 of the Standard Specifications is hereby revised for this project to include the following:

Description

504.01 This work consists of constructing a Concrete Panel Facing Geosynthetic Reinforced Soil (GRS) Retaining Wall System at the locations and to the lines and grades shown on the plans. The Phase II (two) concrete panel facing installation can only be commenced till the major portion of Phase I (one) GRS wall settlement completion. Only geosynthetic reinforcement as specified in this specification may be used as GRS reinforcement in the reinforced structure backfill zone. The retained structure backfill zone is the structure backfill retained by the reinforced structure backfill zone, as shown on the plans.

Materials

504.02 Shop Drawings. Unless specified in the plans, shop drawings are only required for panel to wire basket connection of GRS walls with the default reinforcing spaced at 1 foot - 0 inches. If soil reinforcement spacing for phase I (one) wall requirement is not met (or as required to quantify and build the complete wall in one phase as dictated by special site geometry), the shop drawings will include the following.

The shop drawings shall provide the details necessary to demonstrate compliance with the Contract, including:

- (a) Wall Layouts. Wall layouts shall conform to lines and grades on the plans including start, corner, and end stations, leveling pad step breaks, total number of panels, and top and bottom of wall elevations. For walls with rail anchoring slabs, the top of panel elevations shall be within 8 inches of the elevation shown on the plans, measured from the bottom of anchoring slab. The construction batter required to achieve the batter shown on the plans shall be shown on the shop drawings. If temporary walls are required for the construction of permanent wall, the permanent wall vendor shall provide the shop drawings and certified material test reports for temporary walls.
- (b) Phase I Wire Basket Facing and Reinforcement Locations. Unless otherwise shown on the plans, each layer of soil reinforcement is required to form a soil wrap inside of and along the entire height of the basket for wrap around (terminating ~4 feet from the face of the wall). Secondary reinforcement, if required, will be detailed in the plans.

Phase II Panel to Wire Basket connection detail, and limits of special panels at curved wall corner shall be shown. The back of each panel shall be logically numbered with its location.

- (c) Wall Elevations. Except for the top of the leveling pad, wall elevations given on the plans are based on the desirable wall height. The actual panel and reinforcement elevations shall be marked on the shop drawings by taking into account the supplied panel as well as special panel heights for matching the front and top finished grade.

-2-

Revision of Section 504
Concrete Panel Facing Phased Built GRS Wall

- (d) Soil Reinforcement Material. The soil reinforcement type, Minimum Average Roll Value of the Ultimate tensile strength T_{ULT} (MARV) for geosynthetic soil reinforcement, spacing, lengths, elevations, and the corresponding wall design height shall be shown on the shop drawings. The starting and ending stations for change in grade of reinforcement material shall be shown for walls with different grade of reinforcement material at the same elevation. Material grade shall be clearly identified on each roll of reinforcement to avoid errors in placement. Spacing (1'-0" Typ.) of the reinforcement layers shall be as specified in the plans.
- (e) The soil reinforcement length (RL). The soil reinforcement length for phase I wire basket wall shall be measured from front face of wire basket to the end of soil reinforcement as measured to the neat end. Soil reinforcement lengths shall not be less than the lengths specified on the plans.

The Reinforcement Lengths shown on the shop drawings shall be the reinforcement length required for internal stability and pull out only. External Stability (bearing pressure, sliding, and overturning) and global stability shall already be checked by the design Engineer of record.

(f) Panel Size and Soil Reinforcement Spacing.

1. Except for full height panels, the maximum panel size is 50 square feet and the minimum panel height shall be 30 inches.
2. For full height panels, the maximum panel width shall be 10 feet and the maximum panel height shall be 28 feet. Differential deflection between adjacent panels shall be limited to 1/500. The vendor shall supply design calculations regarding panel concrete crack size control during shipment and construction and estimated joint width and differential deflection limits. The use of full height panels with widths greater than 10 feet or heights greater than 40 feet shall be as approved by CDOT.
3. The maximum vertical spacing between layers of adjacent soil reinforcement shall not exceed 12 inches. Except the half height panel used at the top and bottom of wall, including all partial and extended height panels at the top of wall, there shall be at least two connectors per panel/basket interface.
4. Shiplap joints shall be required at horizontal and vertical joints for segmental panel walls and all vertical joints for full height panel walls. The gap between two adjacent panels shall be ½ to 1 inch. Shiplap joints are not required at the vertical joints of segmental and full height panel. A minimum of 12 inches depth of continuous Class 2 Geotextile is installed behind the joints as shown in the plans prior to Class D concrete infill between the Phase I wire basket and the Phase II panel.
5. Geotextile (Class 2) will not be measured and paid for separately but shall be included in the work. Neoprene cushions shall be provided at all horizontal joints as shown in the plans.

-3-
Revision of Section 504
Concrete Panel Facing Phased Built GRS Wall

(g) Long Term Design Strength (LTDS) of Reinforcement.

1. The design charts on the plans define the strengths required for the zone of mechanical reinforcement of soil. Based on the total summed LTDS, the reinforcement proposed by the shop drawings for a specific wall height shall meet or exceed the total LTDS shown on the plans. This proposed reinforcement shall allow for a maximum of plus or minus 15 percent variation in each individual layer.
2. Metallic (Inextensible) Soil Reinforcement not allowed.
3. Geosynthetic Soil Reinforcement. Geosynthetic soil reinforcement shall be a woven geotextile. For polyester (PET), polypropylene (PP), and high-density polyethylene (HDPE) reinforcement, the LTDS of material shall be determined using the following K percentages to ensure the required design life. Unless otherwise specified, LTDS shall not exceed the following K percent of its ultimate tensile strength, T_{ULT} (MARV), i.e.

$$LTDS = K * T_{ULT} (MARV)$$

Alternative Text for above equation: L T D S equals K multiplied by T U L T, open parenthesis M A R V close parenthesis.

$$\text{Where } K = \frac{\phi}{RF(ID) \times RF(D) \times RF(CR)}$$

Alternative Text for above equation: K equals phi divided by the product of R F of I D, R F of D, and R F of C R

RF(ID): Installation damage reduction factor

RF(D): Durability reduction factor

RF(CR): Creep reduction factor

Meet AASHTO LRFD and/or FHWA GRS design method for 75 years design life.

(1) Geogrid or Geofabric sheet reinforcement (HDPE, PET, PP):

Products	K (Geogrid)	K (Fabric)
PE & PP	27%	18%
PET	35%	30%

-4-

Revision of Section 504
Concrete Panel Facing Phased Built GRS Wall

- (2) Woven Geotextile will meet minimum bi-axial MARV of ultimate tensile of 4800 pounds/feet and a minimum tensile strength of 2400 pounds/feet at 5 percent strain based on ASTM D4595.
- (3) All products not listed above: Follow AASHTO equations 11.10.6.4.3b-1 & 11.10.6.4.3b-2 using independently certified test results.
- (h) Design Heights and Supplied Reinforcing Material. Unless otherwise defined on the plans, the wall design height shall be measured vertically from the top of the leveling pad to the top of the concrete rail anchoring slab for walls with railing, or to the top of the precast concrete coping for walls without railing. For walls that are in front of a bridge abutment that is founded on a MSE foundation, the design height used to determine the soil reinforcement length shall be measured vertically from the top of the leveling pad to the top of the roadway carried by the bridge and the wall. Bridge approach slabs shall not be considered in the design of the GRS wall.
- For geosynthetic reinforcement, if the default geofabric with 1 foot - 0 inches spacing is not used, the required reinforcement LTDS and the supplied LTDS (determined in accordance with the K factors or depletion of material as defined above) with corresponding brand and grade of material shall be marked clearly on the elevation view or in a tabulation summary CDOT approval. The LTDS of the supplied reinforcement grade must meet or exceed the required LTDS corresponding to the reinforcement spacing provided.
- (i) Tiered Walls. For the reinforcement layouts of tiered walls, the overall geometry, the reinforcement length, and the sum of the LTDS provided from all layers in all tiers shall be in close conformity with the retaining wall system shown on the plans in order to ensure that local, global, and internal stability requirements have been met.
- (j) Obstructions. Details for the placement of soil reinforcement around obstructions (i.e., steel piles, concrete piers, concrete boxes, pipes, etc.) shall be shown on the shop drawings. Design calculations shall be provided showing that the internal stability of the wall meets the required safety factors in the area of the obstruction.
- (k) Table of Quantities. **Not Required if default Geofabric with 1 foot - 0 inches spacing is used.** A table comparing the Structural Backfill (Class 1), Mechanically Reinforced Soil (MRS), Geomembrane, and Panel Facing quantities shown on the plans to the quantities shown in the shop drawings and percent difference (positive percent indicates an increase in shop drawing quantities from the plans) shall be shown on the shop drawings. Structure Backfill (Class 1), Geogrid Reinforced Soil, Geomembrane, and Panel Facing quantities shall be calculated in accordance with the Contract.
- (l) Placement Schedule. **Not Required if default Geofabric with 1 foot - 0 inches spacing is used.** Geomembrane placement schedule and clearances to soil reinforcements shall be shown.
- (m) Vertical Slip Joints. Locations of vertical slip joints for differential settlement relief shall be as specified in subsection 504.16.

-5-
Revision of Section 504
Concrete Panel Facing Phased Built GRS Wall

504.03 Backfill. Unless otherwise specified on the plans, wall backfill material in the reinforced structure backfill zone and the associated trapezoidal retained structure backfill zone shall conform to the requirements for Structure Backfill (Class 1) of Section 206. For reinforcement tensile stress and associated pullout, a friction angle of 34 degrees shall be assumed for Structure Backfill (Class 1). With the installation of isolation geomembrane, Structure Backfill (Class 1) shall be considered to be non-aggressive soil for corrosion and durability computations. All reinforcing elements shall be designed to ensure a minimum design life of 75 years for permanent structures.

504.04 Leveling Pad. Concrete for the leveling pad shall be Concrete (Class D) conforming to the requirements of Section 601. Unless specified on the plans, the maximum vertical step shall be no greater than 36 inches. The leveling pad shall be reinforced only at the steps. When the toe of wall is founded on slope steeper than 1.5 (H) to 1 (V), the leveling pad shall be constructed with reinforced concrete with same reinforcing schedule as at its steps. Leveling pad concrete shall be cured for at least 12 hours before placement of the concrete panels. To avoid panel cracking from high contact points, a ¼ inch thick expansion joint material with the same thickness as the panels may be installed between the first layer of panels and the leveling pad.

504.05 Geomembrane and Joint. A Geomembrane shall be installed on all walls at the top of the reinforced structure backfill zone and retained structure backfill zone to intercept surface runoff and prevent salt penetration into the backfill of the wall, as shown on the plans. The Geomembrane shall meet the requirements of subsection 712.07 (a) for geomembrane and be LLDPE with a minimum thickness of 30 mils. It shall be spliced with a dual track field seamed joint in accordance with ASTM D4437 or ASTM D5820. For small local coverage areas, less than 30 square feet, the membrane may be spliced using a 6-inch minimum overlap and an adhesive or a single seam portable thermal welding tool, as suggested by the membrane manufacturer and approved by CDOT. Unless otherwise shown on the plans, the membrane shall have a minimum coverage length measured perpendicular to the wall face of at least the wall Design Height (DH) plus Soil Reinforcement Length (RL) plus 1.5 feet. The membrane shall be installed with a slope between 20:1 (minimum) and 10:1 (maximum), as shown in the plans, from the panel facing to a drainage system located at the cut or pre-filled slope as shown on the plans.

The drainage system shall consist of a 12-inch-wide Geo-Composite strip drain inserted into a slot in the Geomembrane, at 10-foot maximum spacing, that collects the water from the membrane and conveys it to a water collector system at the toe of the 1:1 slope as shown on the plans. The water collector system shall consist of a 4-inch diameter perforated collector pipe surrounded by Filter Material Class B and wrapped with Class 1 Geotextile. A 4-inch diameter non-perforated drain pipe, at 100-foot maximum spacing, shall be used to discharge the water in the water collector system out the face of the wall.

For complex geometry (such as structural skew, superelevation, tiered wall, and staged construction), a detailed layout of the membrane and drainage system shall be provided as working drawings in accordance with subsection 105.02 by the Contractor and as approved by CDOT.

-6-
Revision of Section 504
Concrete Panel Facing Phased Built GRS Wall

For tiered walls, a Geomembrane shall be installed between the top of the bottom wall and the toe of the top wall as shown on the plans.

504.06 Pre-Cast Concrete Panel Facing Unit and Panel Joint Material. The pre-cast concrete panels shall conform to the requirements shown on the plans and these specifications including the color, texture, dimensions, and pattern. These facing units shall be factory made with Class B Concrete with the following additional requirements:

- (1) Minimum Cementitious Content specified by contract. Approved mix design shall be used per the contract.
- (2) Ambient form temperature: shall be a minimum of 40° F and rising when casting panels.
- (3) Pre-cast panels shall be cured in accordance with NPCA, QC Manual Chapter 4, section 4.5.
- (4) NPCA, QC Manual shall contain: Safety, pre- and post-pour inspection criteria and procedures; applicable ASTM standards for concrete testing procedures, personnel qualifications, certifications, equipment calibrations, and repair procedures for precast units. The NPCA, QC Manual shall be submitted to the governing agency upon request. Proof of conformance to specific federal, state, or local standards shall be maintained on file at the fabrication location.
- (5) Lifting Inserts / Lifting Hardware materials used in precast concrete products shall be verified for capacity, and shall have an adequate factor of safety, taking into account the various forces acting on the device(s), including form release suction, impact, and various positioning of the product during handling. (OSHA 29 CFR 1926.704(d))
- (6) Pre-Pour / Post-Pour Operations inspections shall be performed and documented per the procedures outlined in the Quality Control Manual.
- (7) Hot and Cold Weather Precautions: During hot weather, the concrete temperature, at the time of placement, shall not exceed 90 degrees F. Hot weather is defined as: High ambient temperature, High concrete temperature, Solar radiation, and wind. During cold weather, the concrete temperature, at the time of placement, shall not be less than 50 degrees F. Cold weather is defined as: Average daily temperature is less than 45 degrees F. The ambient temperature is not greater than 50 degrees F. for more than one-half of any 24-hour period.
- (8) Concrete Curing: Moisture retention and control of hydration curing temperatures shall be maintained. The maximum hydration curing temperature shall not exceed 150 degrees F.

Reinforcing steel shall conform to the requirements of Section 602 of the specifications. The concrete in the pre-cast units shall be compacted using a vibrating table, grid vibrator, or screed vibrator. All panels shall be cast face down on flat, level surface.

Panel dimensions and facing treatment shall conform to the architectural requirements shown on the plans. Width of panel from center to center of joint shall be an even whole increment of the pattern dimensions selected to match the architectural treatment. Thickness shall be a minimum of 6 inches plus the depth of rustication. Panel shall be cast to the dimension that accommodates the architectural treatment.

-7-

Revision of Section 504
Concrete Panel Facing Phased Built GRS Wall

Panels may be longer than 5 feet, provided their section strength can be shown to accommodate handling and erection without cracking. Soil reinforcement attachment devices shall be within 1 inch of shop drawing locations. All unit dimensions shall be within ¼ inch of plan. Concrete surface for the front face of the wall shall match the architectural treatment requirements and structural concrete color shown on the plans. Squareness determined by the difference between two diagonals, shall not exceed ½ inch. Surface defects on the front face textured surface, shall not exceed $\frac{3}{16}$ inch when measured with a 5-foot straight edge, except when intentionally roughened.

CDOT shall be allowed access to the manufacturer's facilities to inspect and sample units from lots prior to delivery with a minimum of 2 working days' advance notice. CDOT will reject any concrete panels which do not meet the requirements of this specification. Panels shall not be shipped until the concrete strength, at the time of shipping, is greater than 0.9 times f'_c . The Contractor shall notify CDOT in writing at least 3 working days before shipment of panels begins.

At horizontal joints, a cellular type or molded expansion joint material shall be placed and shall be a size suggested by the supplier and approved by CDOT.

504.07 Certifications, Calculations and Testing Reports. The Contractor shall provide the following reports, certifications, calculations, and checklists as needed to accompany the shop drawing submittal. All engineering calculations, as stated in subsections 504.07(f), 504.07(g), 504.07(j), 504.07(k), 504.12(e), 504.12 (f), 504.12(g), and 504.12(i) shall be certified and stamped by a Professional Engineer licensed in the State of Colorado.

- (a) Certification of T_{ULT} (MARV). For geo-synthetic reinforced system only, the Contractor shall submit a certification letter from the manufacturer which provides the T_{ULT} (MARV) and certifies the T_{ULT} (MARV) of the supplied materials have been determined in accordance with ASTM D4595 or ASTM D6637 as appropriate.
- (b) Mill Report for Metallic Reinforcements and Connectors. This includes, but is not limited to, mill certifications on weldability, ultimate tensile, and yield strength.
- (c) Report of The Panel-Reinforcement Connection Test. ****Not required unless proposed soil reinforcement deviates from the standard plans.**** The test report shall be prepared and certified by an independent laboratory. The panel to reinforcement connection test method shall conform to the industrial standards. The report shall provide data on the ultimate as well as service limit state.
- (d) Report for Soil to Reinforcement Interface Pullout Test. ****Not required unless proposed soil reinforcement deviates from the standard plans.**** The test report shall be prepared and certified by an independent laboratory. The soil to reinforcement interface pullout test method shall conform to the requirements of ASTM D6706. Tests shall include the full range of overburden pressures defined by wall design heights.

-8-
Revision of Section 504
Concrete Panel Facing Phased Built GRS Wall

- (e) Certification of Facial Panel to Wire Basket Long-Term Connection Strength. ****Not required unless specified in the plans.**** Certification shall include calculations to demonstrate that the facial panel to reinforcement connection meets or exceeds current AASHTO 75 years design life requirements.
- (f) Certification of Reinforcement Pullout. ****Not required unless proposed soil reinforcement deviates from the standard plans.**** Certification shall be provided with detailed calculations to demonstrate that reinforcement pullouts meet or exceed current AASHTO requirements. For metal reinforcement breakage and pullout, calculations shall include a combination of 75 years material depletion of carbon steel and galvanization loss.
- (g) Report and Certification for the Initial Concrete Compression Strength, Shipping and Handling Stress. Cylinder compressive test is acceptable to verify the initial concrete strength of panel at time of shipping. Concrete tensile stress shall not exceed the modulus of rupture. Report shall include calculations of panel cracking stress according to the proposed method of lifting and shipping. Before panel shipping from precast yard to wall site, the Contractor's Engineer will approve the time of shipping, method of lifting, and supporting condition during shipping as well as storage condition at the site before panel installation. Products shall conform to PCI MNL 117, 120, 122, and 127 as applicable.
- (h) Calculations. ****Not required unless proposed soil reinforcement deviates from the standard plans.**** Calculation of the LTDS of reinforcement shall conform to AASHTO LRFD requirements.
- (i) Efflorescence and Air Content Test. Panel shall be visually efflorescence free. Efflorescence control agent shall be used in concrete mix design. When fly ash is used as the efflorescence control agent, the fly ash shall be ASTM C618 Class F fly ash and shall be a minimum of 20 percent by weight of the total cementitious material content. Air Content shall be determined in accordance with AASHTO T152. Concrete shall be tested a minimum of the first three batches each day and then once per five batches for the rest of the day to assure specified air entrainment.
- (j) Submittal Checklist. The Contractor shall submit the Panel Faced MSE (or as approved for GRS) Wall Submittal Checklist, Form 1402 with the Certifications, Calculations and Testing Report submittal package included with the shop drawing submittal.

504.08 Hybrid or Smaller Panel MSE Wall Systems.

Only Micropile A-Frame wall systems are allowed. System is subject to all requirements in this project special provision. Installation of micropiles through fabrics allowed with required pre-installed sacrificial pilot pipes.

The Contractor shall submit the dry cast facing MSE Wall Submittal Checklist, Form 1401 or the wet cast facing MSE Wall Submittal Checklist, Form 1402, with the Certifications, Calculations and Testing Report submittal package included with the shop drawing submittal.

-9-

Revision of Section 504
Concrete Panel Facing Phased Built GRS Wall

Construction Requirements

504.09 Approval and Qualifications of GRS (or MSE equivalent) Wall Installer. The job site wall foreman shall have experience in construction of at least five transportation related GRS walls within the last three years. Transportation related GRS walls are walls that carry or are adjacent to vehicular traffic and are constructed with MSE reinforcement in the reinforced structure backfill zone. The foreman must have prior experience or adequate training on the products that the Contractor elects to use in the project. The resume and credentials of the foreman shall be submitted to CDOT for approval prior to the pre-construction meeting. The foreman shall be on the site for 100 percent of time during which the work is being done.

504.10 Wall Test Segment. The wall test segment shall be the first segment of the wall constructed. The wall test segment shall be constructed in the presence of the Technical Representative and CDOT and shall include construction of each of the 5 elements listed in 504.15 below. The minimum length of the wall test segment shall be 40 feet or the full length of the wall if less than 40 feet. A wall test segment shall be constructed for the first wall constructed from each wall product used on the project.

504.11 Technical Representative of Wall Product Supplier. ****Not required unless specified in the plans.**** The Contractor shall arrange for a technical representative (Tech Rep) of the manufacturer of the selected wall products to be present during the construction of each wall test segment. If the selected wall products are supplied from different manufacturers, a Tech Rep from each wall product shall be present. The Tech Rep shall be present for construction of the wall test segment and each of the following elements:

- (1) Placement of a minimum of the first four layers of primary soil reinforcement and backfill,
- (2) If obstructions (i.e., steel piles, concrete piers/abutments, concrete boxes, pipes, etc.) exist, placement of primary soil reinforcement and backfill at obstructions,
- (3) Placement of a minimum of the first two rows of panels or a minimum of a 4-foot wall height,
- (4) If a vertical slip joint is required, construction of the vertical slip joint in a minimum of a two row portion of panels or a minimum of a 4-foot wall height, and
- (5) If corners are required, construction of a corner representative of the corners in the wall in the project, in a minimum of a two row portion of panels, or a minimum of a 4-foot wall height.

Before construction of the wall test segment, the Tech Rep shall provide the Contractor and CDOT the following:

- (1) Technical instructions as required in the construction of the earth retaining wall system.
- (2) Product specific specifications in the placement of the soil reinforcement and backfill in accordance with the wall system.
- (3) Guidelines in placing the facing units and attaching them to the soil reinforcement in accordance with the system requirements.

-10-
Revision of Section 504
Concrete Panel Facing Phased Built GRS Wall

- (4) Provide technical assistance to the facing unit fabricator.

At the completion of the wall test segment, the Tech Rep shall provide the following:

- (1) Documentation that the wall test segment was constructed in accordance with the product specific specifications. This documentation shall include a location description (starting and ending stations and elevations) of the wall test segment.
- (2) Documentation that the job site wall foreman is familiar with the wall products used to construct the walls on the project.

After completion of the wall test segment, the Tech Rep shall be available whenever there is any special field condition such as change of geological condition, when there are equipment or personnel changes, or when requested by CDOT.

504.12 Facial Panel Quality Control, Placing Plan and Daily Placement Logs. Before the start of wall construction, the Contractor shall provide a panel-placing plan and shall supply daily placement logs to CDOT weekly and at the completion of the wall. The daily placement log shall consist of an elevation view of the wall showing the dates, number of panels placed, and the serial numbers of the panels placed. The panel quality control shall contain multiple submittals if required by subsections 504.12(g) and (h). Panels shall be labeled with serial number for each panel and corresponding certification with one set of random samples tested for each 220 panels or 5500 square foot of wall face.

At least one certification with supporting test results is required for each wall. Test results will be reviewed and pre-approved by CDOT before shipment. The Contractor shall coordinate and mark the panel and backfill placing sequence on the daily placement logs. The log serves as means for CDOT to identify where each panel was placed.

504.13 Wall with Curved Alignments, Tight Curved Corners, and Sections Adjacent To Bridge Abutment. The Contractor shall provide a placement plan that shows curved layouts, special corner panel, sequence of panel placement, and construction offsets as recommended by the manufacturer. For tight curved corners, 8-foot radius or less, and dissimilar foundations such as bridge abutment, to avoid panels with random cracks, the Contractor shall install vertical slip joints as shown on the shop drawings.

504.13 Excavation and Backfill. The base of leveling pad shall receive the same compaction as cut area required by subsection 203.07. The Contractor shall report to CDOT in writing density test results for any unsatisfactory bearing material that does not meet the minimum 90 percent compaction for walls less than 16 feet high and 95 percent of T-180 for walls higher than 16 feet. If the excavation for the placement of the leveling pad exposes an unsatisfactory bearing material, CDOT may require removal and replacement of that material. The removed material shall be replaced with Structure Backfill (Class 1) compacted in conformance with subsection 206.03. CDOT, with the assistance of the geotechnical engineer of record, will provide the limits including the depth of removal. As directed by CDOT, and if required, Structure Backfill (Class 1) shall be reinforced with soil reinforcements in conjunction with wick drains and outlet pipes.

-11-
Revision of Section 504
Concrete Panel Facing Phased Built GRS Wall

The Contractor shall grade the foundation for the bottom of the wall for a width equal to or exceeding the limits of the Reinforcement Length (RL) plus 18 inches as shown on the plans. This graded area shall be compacted with an appropriate vibratory roller weighing a minimum of 8 tons for at least five passes or as directed by CDOT. For cut wall with continuous seepage, phasing of foundation construction or a different drainage and foundation improvement plan may be necessary.

The reinforced structure backfill zone and the retained structure backfill zone portion immediately behind the wall, as defined on the plans, shall be Structure Backfill (Class 1). Recycled asphalt, recycled concrete, and flow-fill material shall not be substituted for Structure Backfill (Class 1). Each compacted layer of backfill within a distance equal to the reinforcement spacing away from the back of the panels shall not exceed 4 inches. The triangular or trapezoidal portion behind the concrete panels and above the spill of backfill, as shown on the plans, shall be filled with $\frac{3}{8}$ " inch crushed rock, filter aggregates with filter fabric, or wall system specific fill as approved by CDOT.

Density tests behind and parallel to the wall in the triangular or trapezoidal portion above the backfill spill zone are not required. Each compacted layer of backfill shall be in even increments up to 8 inches thick. The fill and compaction operation shall start 3 feet from the wall back face and progress toward the end of the reinforcement. All Structure Backfill (Class 1), including fill material under the wall and on-site material as allowed by subsection 504.08, shall be compacted to a density of at least 95 percent of the maximum density according to AASHTO T 180. For on-site foundation material containing more than 30 percent retained on the $\frac{3}{4}$ inch sieve, a method of compaction consisting of a conventional heavy vibratory roller, starting with minimum 5 passes, shall be used to establish the number of passes required to exceed the 95 percent T180.

At least 6 inches of material shall be in place prior to operation of tracked vehicles over soil with reinforcement. Only power operated roller or plate compaction equipment weighing less than 1,000 pounds is allowed within 3 feet of the front of the wall face. The reinforcement shall not be connected to the wall until the compacted fill is at or slightly higher than the location of the connector.

Backfill containing frost or frozen lumps shall not be used. Backfill that has been placed and becomes frozen shall be removed and replaced at the Contractor's expense. If cold weather conditions prevent the placement of Structure Backfill (Class 1), the Contractor may use Filter Material Class B as backfill without compaction at the Contractor's expense and approved by CDOT. The Contractor shall provide a test report, prepared and certified by an independent laboratory, that the internal friction angle of soil for the Filter Material Class B meets or exceeds that shown on the plans.

-12-
Revision of Section 504
Concrete Panel Facing Phased Built GRS Wall

The Contractor shall place additional panels, including partial height panels and properly compacted fill material, to return the finished grade to the plan elevations if settlement, as determined by CDOT, has occurred. A final inspection before the installation of rail anchoring slab will be made after construction settlement, if any, has occurred or 30 days after the completion of the wall. The Contractor shall provide immediate temporary storm water protection and wind erosion control at the end of each day during construction. If settlement occurs as the result of loss of backfill due to wind or water erosion, nonconforming backfill such as frozen fill or over-saturated fill, or if the backfill does not meet compaction requirements, the Contractor shall remove the backfill, wash the soil reinforcement, and bring the elevation to the finished grade at the Contractor's expense. Before final project acceptance, the Contractor shall repair any backfill losses due to wind and water erosion.

To avoid the foundation of the leveling pad being washed out by rain, the area in front of the wall and around the leveling pad shall be backfilled as soon as practicable.

504.15 Reinforcement. Geosynthetic reinforcement shall be slightly pre-tensioned. The minimum coverage ratio for woven fabric reinforcement shall be 100 percent and an overlap between rolls is not required. Soil reinforcement shall not be cut to avoid obstruction unless shown on the shop drawings. Equivalent strength geogrid may be used above the waterproofing membrane.

504.16 Leveling Pad. The foundation of the leveling pads shall meet the requirement of subsection 504.09 for steel and concrete. The leveling pad shall be level within the tolerance of $\frac{1}{8}$ inch for any two points along the length of a panel, and within $\frac{1}{4}$ inch for any two points 10 feet apart. If the wall is not level, the panels will bind against each other causing spall of the edges and corners.

Cushion or shimming material (Expansion Joint Material, Concrete Mortar Grout, Roofing Felt, or Geosynthetic Reinforcement) shall be used to support panels directly founded on the leveling pad. Before starting a new course of panels, the Contractor shall take steps to ensure that the wall elevations are matched at the neighboring panels. Cushion or shimming material shall be used to obtain necessary panel elevations at next leveling pad step. No more than 2 shims (each 3/16-inch-thick) should be required to level the panels on the leveling pad.

504.17 Wooden Wedges. Wooden wedges are used to help to hold the panels at the correct batter during the backfill operation. The wooden wedges shall be made from hard wood (such as oak, maple, or ash). Wooden wedges shall be removed as soon as the precast panels above the wedged panels are completely erected and backfilled. There shall not be more than three rows of wooden wedges in place at one time. Panels that crack or spall due to failure to remove the wooden wedges shall be repaired or replaced.

-13-
Revision of Section 504
Concrete Panel Facing Phased Built GRS Wall

504.18 Panel Facing. For walls that support a roadway, the wall layout line at the leveling pad shall be setback and pre-measured with appropriate batter (5 to 8 percent) from the top of the panels according to the offset with respect to the centerline of the road. For walls adjacent to a roadway, the wall layout line at the leveling pad shall be directly offset from the centerline of the road. An overall negative batter (wall face leaning outward) between the bottom and the top of the wall is not allowed. Unless otherwise noted on the plans for battered walls, the final wall face shall be vertical, or have a positive batter of not greater than 5 percent for construction control purpose. The surface of the wall face shall be tested with a 10-foot straightedge laid along the surface in horizontal and vertical directions. Except as necessary for horizontal alignment of the wall, convex deviation of the wall face from the straightedge (belly wall) shall not be allowed, and concave deviation from the straightedge shall be less than 1/2 inch.

Walls without a rail-anchoring slab, cast-in-place reinforced concrete coping with uniform exposed height is required to match the required finished elevations as well as to retain the panels' lateral deformation. For walls with rail anchoring slabs, the top of panel elevations shall be within 8 inches of the bottom of the anchoring slab. Cast-in-place concrete or saw-cut partial height panels may be used to accomplish this.

Where the Geomembrane for drainage interferes with the continuation of reinforcement, the panels beyond the termination shall be reinforced with the same grade of additional soil reinforcing material to maintain the total amount of reinforcement per panel. To avoid leaking or soil erosion through the joint, a filter fabric at least 12 inches wide shall be glued to the panels behind all vertical joints.

As shown on the plans, facing panels directly exposed to spray from deiced pavements and indirect windborne spray shall have three coats of water resistant or repellant concrete sealer applied to the front face of the wall before the wall is opening to traffic.

For completed wall or parts of completed wall, before final payment, any damages including blemish and discoloring of panel shall be replaced or repaired. Sand blasting may be used if accepted by CDOT.

504.19 Fill under Leveling Pad. For walls requiring fill under the planned elevation of the leveling pad, the Contractor may lower the elevation of the leveling pad as approved by CDOT, except that the finished elevation at the top of the wall shall not be altered. As requested by the Contractor, and with CDOT's approval, the higher wall shall be redesigned with longer reinforcement length and revised reinforcement schedule.

Revision of Section 506
Riprap

Section 506 of the Standard Specifications is hereby revised for this project as follows:

Subsection 506.02, first paragraph, delete the third sentence and replace with the following:

The stone shall have a minimum specific gravity of 2.25. Where the specific gravity used in design is greater than the minimum, the stone shall meet the requirements of the design specific gravity.

Subsection 506.02, second paragraph, shall include the following:

Shale shall not be used as riprap.

Subsection 506.02, fourth paragraph, delete the first sentence and replace with the following:

The Contractor shall ensure the final placed product meets the gradation requirement. Control of gradation will be by Wolman count. For source approval, test individual riprap size by Wolman Count according to FLH T 521.

Riprap that segregates during transport shall require mixing or re-mixing on-site.

Subsection 506.03, first paragraph, delete the first sentence and replace with the following:

Place riprap to achieve gradation.

**Revision of Sections 509 and 708
Painting of Aluminum Access Doors for Steel Structures**

Sections 509 and 708 of the Standard Specifications are hereby revised for this project as follows:

Subsection 509.24 shall include the following:

Aluminum access doors shall receive a solvent cleaning to remove grease, oil, etc. (SSPC-SPI), followed by a brush blast to provide a profile similar to the structural steel. The access doors shall receive one coat of primer as described in the Revision of Section 708.03.

Subsection 708.03 shall include the following:

If Alternate 1, Alkyd System, is to be used on the structural steel, the aluminum access doors shall receive one coat of vinyl wash primer conforming to Mil-P-15328. Following the application of this primer, the doors will be painted the same as the structural steel (one field coat of primer followed by the top coat). Coating thicknesses shall be the same as specified for the structural steel.

If Alternate 2, Inorganic Zinc-Rich Polyurethane System, is used on the structural steel, the aluminum access doors shall receive one coat of vinyl wash primer conforming to Mil-P-15328. Following application of the vinyl wash primer, the same polyurethane top coat as used on the structural steel shall be applied to the access doors (minimum 3.0 mils dry film thickness).

The manufacturer of the primer shall certify in writing, that the primer used is compatible with the cleaned aluminum access doors and the polyurethane top coat to be used on the structural steel.

**Revision of Section 513
Bridge Drain**

Section 513 is hereby added to the Standard Specifications for this project as follows:

Description

513.01 This work shall consist of furnishing and placing bridge drains in accordance with the details shown on the plans and the specifications.

Materials

513.02 Pipe for bridge drains shall meet the requirements of ASTM A53 and shall be standard weight.

Down spout pipe shall be hot dipped galvanized after fabrication. Galvanizing shall meet the requirements of AASHTO M111.

Metal used in the manufacture of castings shall meet the requirements of ASTM A48 Class 35B.

Construction Requirements

513.03 Bridge drains shall be placed and secured at the locations shown on the plans prior to placement of concrete.

Prior to fabrication of this item, two sets of working drawings which comply with the requirements of Section 105 shall be submitted to CDOT for information only. The working drawings will not be approved or returned.

**Revision of Section 522
Environmental Stain (Galvanized)**

Section 522 of the Standard Specifications is hereby revised for this project to include the following.

Description

This work consists of applying an environmentally and animal safe, non-caustic, non-pigment based surface stain to all visible galvanized steel surfaces including galvanized steel supports to achieve the specified color, as shown on the Plans.

Materials

Environmental surface stain shall consist of a clear, soluble solution of natural elements and soft, buffered organic acids. No pigment based colorants shall be added to achieve the desired color. The stain shall react with the target surface over a period of 7 - 21 days to produce a consistent color and matte finish as specified on the plans, and as approved by CDOT. The stain shall be resistant to fading in the sun and have a minimum life expectancy of 25 years.

In all situations involving the approval of submittals, the Contractor shall coordinate with CDOT.

Construction Requirements

The Contractor shall submit a copy of the manufacturer's product Safety Data Sheet for all related products (including cleaning agents) together with instructions for application of stain a minimum of 5 days prior to staining the sample section. Proposed methods to control overspray, spillage, and protection of adjacent surfaces shall be submitted in writing for approval by CDOT. Staining shall not begin until written approval of these methods has been received.

- (a) **Stain Sample.** The Contractor shall apply stain to a minimum 12-inch sample section of galvanized metal. If staining will occur onsite, the Contractor shall stain the sample in the presence of CDOT. The Contractor shall notify CDOT a minimum of 7 days prior to staining the sample section. The Contractor shall prepare and stain the sample section with the same materials, tools, equipment, and methods to be used in staining final surfaces. The applied stain shall be allowed to cure for a minimum of 21 days. The sample shall be submitted to CDOT for approval. The cost of materials and labor necessary to achieve the accepted sample shall be included in the price of the work. In the event more than one sample section is required, each additional sample shall be included in the price of the work. The Contractor shall use the approved sample as the standard of comparison in determining acceptability of staining.
- (b) **Stain Application.** Prior to application of the stain onto the metal surface, excessive oils, dirt, and other contaminants shall be cleaned with cleaning agents conforming to the manufacturer's recommendations and approved by CDOT. All surfaces shall be dry before application of stain.

Stain shall be applied in accordance with manufacturer's recommendations to achieve a color consistent with the approved sample.

-2-
Revision of Section 522
Environmental Stain (Galvanized)

If spray application is used, the Contractor shall follow manufacturer's recommendations. The Contractor shall minimize overspray on undesired surfaces and protect adjacent surfaces from overspray. Spray application shall not be performed under windy or rainy conditions. Stain shall be applied uniformly, free from sags, runs, or defects of any kind. Irregularities shall be corrected according to the stain manufacturer's recommendations. Stained surfaces shall be kept dry for a period of 5 days following the application of stain.

If Immersion application is used, the Contractor shall immerse the structure in a controlled area following manufacturer's recommendations. The Contractor shall minimize splashing, dripping, and runoff on surfaces not intended for stain application. The structure shall have a uniform appearance, free from sags, runs, or defects of any kind. Irregularities shall be corrected according to the manufacturer's recommendations. Stained surfaces shall be kept dry for a period of 5 days following the application of stain.

- Multiple applications, per manufacturers' recommendations, may be required to achieve the color of the approved stain sample.
 - Final approval of products by CDOT will occur when stain has achieved the color of the approved stain sample.
 - All substandard items not achieving the color of the approved stain sample will be rejected.
- (a) Storage of Materials. Stained surfaces shall be stored properly at the construction yard after delivery, before, and up to the time of installation. If components stack (e.g., guardrail), spacers shall be placed between rows to allow for necessary airflow. Items shall be stacked perpendicular to the ground, sloped to allow for proper drainage. Items shall be elevated so they do not come into direct contact with soil or plant matter. The Contractor shall also conform to other standard storage procedures and manufacturer recommendations regarding storage. It is the responsibility of the Contractor to ensure that all components are stored properly on site.
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**Revision of Section 601
Painting of Aluminum Access Doors
For Concrete Structures**

Section 601 of the Standard Specifications is hereby revised for this project as follows:

Subsection 601.14(b)4 shall include the following:

Aluminum access doors shall receive a solvent cleaning to remove grease and oil (SSPC-SPI) followed by a brush blast.

The aluminum access doors shall receive one coat of vinyl wash primer conforming to Mil-P-15328. Following the application of this primer, the doors will be coated with Structural Concrete Coating conforming to Revision of Section 601 Structural Concrete Coating.

The manufacturer of the primer shall certify in writing, that the primer used is compatible with the cleaned aluminum access doors and the Structural Concrete Coating to be used on the Structural Concrete.

**Revision of Sections 601 And 708
Structural Concrete Stain**

Sections 601 and 708 of the Standard Specifications are hereby revised to include the following:

Subsection 601.01 is revised to include the following:

This work consists of: (1) Class 1 ordinary surface finish of concrete to receive Concrete Stain; (2) sandblasting to remove form release agents and other deleterious material (3) providing and applying an opaque structural concrete stain to all concrete surfaces previously designated in the Contract to receive a structure concrete stain; and (4) provide up to 5-gallons of pre-mixed touch-up stain in aerosol spray cans.

The structural concrete stain shall be one of the following products or approved equals:

1. RAINSTOPPER RS400 - Semi Transparent Stain
Textured Coatings of America
Pro-Coat Systems, Inc.
5775 Stapleton Drive North
Denver, Colorado 80216
303-322-9009
2. "Acrylic" Structural Concrete Stain
Anchor Paint Co. of Denver, Inc.
641 South Jason
Denver, Colorado 80223-2305
303-744-2361
3. Bridge and Highway Concrete Sealer, B97-Series
The Sherwin-Williams Company
543A Santa Fe Drive
Denver, Colorado 80204
303-893-1303

Subsection 601.03 is revised to include the following:

Structural Concrete Stain as specified in subsection 708.08.

Subsection 601.09(f) is revised to include the following:

All concrete forms shall be treated with a water based concrete form release agent prior to placing reinforcement for surfaces to which structural concrete stain is to be applied.

Subsection 601.14(b)4 is deleted and replaced with the following:

-2-
**Revisions of Sections 601 And 708
Structural Concrete Stain**

Unless otherwise shown in the Contract, the structural concrete stain shall be applied to all exposed concrete elements of the structure above the ground line, and shall extend 1 foot below the finished ground line. Bridge bearing devices, curb and barrier cover plates, fence, and steel bridge rail components shall be masked or otherwise protected to prevent structural concrete stain from coming into contact with them.

For Bridges, structural concrete stain (or paint for steel Structures) shall be applied to surfaces for each Structure and applied to exposed surfaces of bridge rails, exterior edges decks, deck overhangs, exterior girder outside and exposed flanges, exposed bottom flanges on interior girders, abutments to 1 foot below grade, pier columns to 1 foot below grade and wingwalls to 1 foot below grade. Stain limits on bridge rails shall apply to railings on approach slabs. All other visible, exposed, and accessible concrete surfaces shall have a surface treatment of structural concrete coating. Retaining walls, noise walls, and slope paving shall receive structural concrete coating unless noted otherwise.

The color of the Structural Concrete Stain shall have the written approval of CDOT prior to final batching and application on the project. The final color of the approved structural concrete stain shall be determined as follows:

1. The test panels shall be produced on the actual concrete surface on which the final product will be placed, at a location recommended by the Contractor and approved by CDOT. The stain shall be applied to the test panels by the same methods to be used in the final field application. CDOT will be allowed three business days for the stain to dry after stain application to the test panels.

Concrete finishing and curing shall be completed in accordance with the specification prior to the application of the Stain. The concrete finish to which the structural concrete stain is to be applied shall be a Class 1 Ordinary Finish, except as modified below:

1. Following curing of the concrete in accordance with Subsection 601.13, all projections and bulges shall be removed and the surface sandblasted. Sandblasting shall profile the concrete surface, remove all form release agents, and all other deleterious materials that would inhibit the bond of the Structural Concrete Stain. The profile of the sandblasted concrete surface shall be equivalent to Concrete Surface Profile Three (CSP 3) as defined in Technical Guideline No. 03732, "Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays" by the International Concrete Repair Institute. The Contractor shall provide a CSP 3 chip for use on the project.

A mortar mix, proportioned by volume, consisting of one part portland cement, two to three parts sand (conforming to the requirements of ASTM C 144), and an approved bonding agent shall be used to patch all holes produced by form ties, honeycombing, voids 1/2 inch or larger in any dimension, broken corners and edges, and other defects. The mortar mix shall include an approved bonding agent. The quantity and application procedure of the bonding agent shall be in accordance with the recommendations of the manufacturer of the bonding agent. Areas to be patched shall be moistened with water before the mortar is applied.

-3-
**Revisions of Sections 601 And 708
Structural Concrete Stain**

2. Patched area shall be float finished and left flush with the concrete surface without checking or cracking of patches. Patching shall be done when the ambient temperature is at least 40°F. Holes deeper than 3/4 inch shall be filled in layers that do not exceed 1/2 inch in thickness.
3. Within 24 hours prior to applying structural concrete stain, the concrete surface to be coated shall be cleaned by water blasting at a minimum pressure of 3,000 psi and at a rate of 4 to 14 gallons/minute, to remove dust, dirt, and other materials that would inhibit bonding of the coating. If the surface is contaminated before application of the coating, it shall be re-cleaned as required prior to application of the coating.

New concrete shall be at least 28 Days old or as approved in writing by the stain manufacturer before it is applied.

Two coats of stain shall be applied. Each coat shall be applied at a rate of 200 to 250 square feet per gallon. (Approximately 3 mils dry film thickness.) The second coat shall not be applied until at least 12 hours after the application of the first coat

If the surface is contaminated between coats, it shall be re-cleaned as stated above prior to application of the next coat.

The stain shall be mixed mechanically and applied by spraying. Workmanship shall be such that the final stained surface is colored uniformly and presents a pleasing appearance. Any areas determined by CDOT to be insufficiently stained shall be re-stained.

The stain shall be applied only when the ambient temperature is between 40°F and 90°F, and is anticipated to remain above 40°F for a minimum of twenty-four hours. The surface to be stained shall be dry and free of frost.

Subsection 708.08 is revised to include the following:

708.08 Structural Concrete Stain. The Stain shall be a one-component, non-vapor barrier, solvent based acrylic resin. No sand or other texturing agents will be permitted.

Physical Properties

Solid by Weight: 51 percent, plus or minus 2 percent

Solids by Volume: 34 percent, plus or minus 2 percent

A material safety data sheet (MSDS) prepared in accordance with Federal Standard 313 and a complete set of manufacturers' mixing and application instructions shall be submitted to CDOT before the Contractor begins applying the Stain.

**Revision of Section 603
Culvert Lining (UV-CIPP)**

Section 603 of the Standard Specifications is hereby revised for this project as follows:

Subsection 603.01 shall include the following:

This work consists of furnishing and placing UV Cured-in-Place Pipe (UV-CIPP) as shown on the plans or as directed by the Engineer.

This practice covers the procedures for the lining of conduits by the pulled-in place installation of a resin-impregnated, glass fiber tube into an existing conduit followed by its inflation with compressed air pressure to expand it firmly against the wall surface of the host structure. The photo-initiated resin system in the tube is then cured by exposure to ultraviolet (UV) light. When cured, the finished UV cured-in-place pipe will be a continuous and tight-fitting pipe within a pipe.

Materials

Subsection 603.02 shall include the following:

Complete physical properties of the UV-CIPP pipe liner system shall comply with ASTM D578, ASTM F2019, ASTM F1216, and all applicable standards.

Construction Requirements

Subsection 603.03 shall include the following:

The Contractor shall submit UV-CIPP Design Calculations for liner wall thickness, installation, and cure plan stamped by a Colorado Licensed Professional Engineer to the Project Engineer prior to 10-days prior to work beginning, including at minimum:

UV-CIPP liner:

- a) Verify the size of the existing culvert shown on the plans with multiple measurements through the host pipe alignment prior to ordering any material for work.
- b) Proposed liner thickness to carry the roadway loading (HL-93) without the support of the host pipe.
- c) If proposed UV-CIPP liner thickness is greater than ½ inch, provide approval by manufacturer and example projects the UV light method will cure the proposed liner thickness for performance as specified.

-2-
Revision of Section 603
Culvert Lining (UV-CIPP)

- 1) Installation Plan:
 - a. Include plan for inlet and outlet works for mobilizing and installing UV-CIPP
 - b. Demonstrate the proposed method is within working limits to withstand pulling and installation forces.
 - c. Void filling plan to include method of placement and method to seal holes in host pipe per manufacturer's recommendations for performance of the UC-CIPP liner.
 - d. Plan to include at minimum: access, materials, equipment, corrective actions to contain and remediate any accidental release of styrene-resin, and any other information as requested by Project Engineer.
 - e. The UV-CIPP liner will be continuous over the entire length of host pipe. Any deviation from a continuous liner will be submitted to the Project Engineer for approval.
 - f. Plan to protect UV-CIPP liner from damage caused by host pipe.
- 2) Cure plan:
 - a. Required pressure and methods to tightly fit liner to host pipe
 - b. Proposed UV-light timing
- 3) Restoration plan.
- 4) Any other information as requested by Project Engineer.
- 5) Size of the existing culvert pipe shall be shown on the plans. The Contractor shall measure the existing pipe at appropriate intervals throughout the length of the pipes and verify that the liner proposed on the plans will fit through the host pipe prior to ordering materials. It is the responsibility of the Contractor to verify the stationing/location of pipe dimensions and provide material and placement of the UV-CIPP accordingly. A minimum of 10 days prior to start of pipe preparation, the Contractor shall submit an outline of the methodology for performing the preparation work and the lining including the manufacturer's installation instructions. Work shall not begin until approval is received from the Project Engineer.

Prior to beginning any UV-CIPP sliplining work, the Contractor shall submit documentation to the Project Engineer certifying that individuals overseeing or performing the installation have successfully performed UV-CIPP work on at least five prior independent installations.

-3-
Revision of Section 603
Culvert Lining (UV-CIPP)

The Contractor shall coordinate and perform an inspection of the existing condition of the pipes with the Project Engineer available to view results. After inspection of the existing pipes, the Contractor shall develop a methods statement describing the planned operations to repair and clean the pipes, if necessary. At a minimum, the proposal shall describe perforations of existing culvert to be lined, their extent, and methods proposed for correction by the Contractor, including:

- Necessary void grouting and backfilling
- Cutting or removing any intrusions or sharp ends in the host pipe before installation. Cut host pipe bolts flush with the nut or as per manufacturer's recommendation.
- Pre-lining if groundwater is present. The proposal shall describe conditions found that may prevent proper installation of the pipe liner (such as any sharp or protruding appurtenances), and methods proposed by the Contractor for correction of the conditions. In addition, the proposal shall describe perforations of the existing culvert to be lined, their extent, and methods proposed for correction by the Contractor. The proposal shall describe the Contractor's proposed procedures and schedules for installing the pipe liner. Cost of preparing and submitting this proposal shall be included in the work. The proposal shall be reviewed and approved by the Project Engineer prior to work beginning.

During the installation of the UV-CIPP liner pipe, the Contractor shall provide all necessary protection to prevent damage to the UV-CIPP liner pipe and the existing culvert. UV-CIPP liner shall be installed per product manufacturer's requirements.

It shall be the Contractor's responsibility to take immediate and appropriate corrective actions to contain and remediate any accidental release of styrene-resin materials, effluent, or condensate into the environment in accordance with applicable local, state, or federal regulations. The cost for such remediation shall be at the Contractor's expense.

The Contractor shall provide for the control and diversion of flows in the existing culvert being rehabilitated. The bypass system shall be of adequate capacity and size to handle the flow. The bypass flow shall not cause additional erosion upstream and downstream of the culvert. Prior to beginning any flow diversion work, the Contractor shall submit a plan showing the intended work, any calculations supporting the sizing of the system, and a schedule indicating the duration of the flow diversion to the Project Engineer for approval.

-4-
**Revision of Section 603
Culvert Lining (UV-CIPP)**

The existing culvert to be lined shall be cleaned thoroughly prior to inserting the UV-CIPP liner. Cost of capturing and removing earthy material, trash, cuttings, and other waste materials from the existing culvert shall not be paid for separately but shall be included in the cost of the Clean Culvert item. All culverts shall be inspected prior to installing the UV-CIPP liner using a CCTV camera, and the inspection recorded shall be in an electronic documentation as approved by the Engineer.

The Contractor shall obtain the approval of the Project Engineer prior to beginning any repair work.

Any work necessary, as determined by the Project Engineer, to repair the host pipe prior to CIPP lining beyond the preparation described above will be measured and paid for with existing bid items or as extra work as provided in Section 109.04 of the Standard Specifications.

The entire UV-CIPP liner shall be inspected for defects (i.e., tears) and addressed prior to installation.

UV-CIPP liner will be cut at the inlet and outlet to conform to host pipe configuration.

Post Installation Inspection

The interior of the finished UV-CIPP liner shall be inspected by the Contractor by CCTV cameras.

The completed inspections shall certify that the installation has been performed in accordance with these specifications. A copy of the certification report, including any electronic documentation, shall be submitted to the Engineer prior to project acceptance of the UV-CIPP liner. Format of the electronic documentation shall be as approved by the Engineer.

The finished UV-CIPP liner shall be continuous over the entire length of the culvert and shall be free from visual defects such as foreign inclusions, concentrated ridges, discoloration, pitting, pin holes, cracking, and other deformities, as is commercially practicable. The liner shall be fabricated to a size that, when installed, will neatly fit the internal circumference of the existing culvert specified.

The bond between UV-CIPP layers shall be strong and uniform. All layers, after cure, must form one homogenous structural pipe wall with no indication that any part of the tube has less than 100 percent resin saturation.

-5-
Revision of Section 603
Culvert Lining (UV-CIPP)

Post Installation Repairs

Holes, tears, delaminating areas, or concentrated ridges or defects that would affect the performance of the UV-CIPP liner, as determined by the Engineer, shall be repaired at the Contractor's expense. A repair plan shall be submitted to the Engineer for approval.

Defects that are not repairable will be cause for rejection of the installation. At the discretion of the Engineer, in lieu of UV-CIPP liner replacement, concentrated ridges may be ground to conform to the dimensions of the UV-CIPP liner, provided that the Contractor can demonstrate that the proposed repair does not compromise the structural integrity of the UV-CIPP liner. The remaining surface of the concentrated ridge area shall be coated with a compatible resin approved by the manufacturer. Residue generated from the grinding operation shall be removed at the end of each day's work and shall be disposed of as approved by the Engineer and in accordance with state and federal environmental and solid waste/hazardous waste regulations. Internal repairs may be made to the UV-CIPP liner in accordance with the manufacturer's recommendations and approval by the Engineer. Internal repairs may be made using approved fabric and epoxy or epoxy-vinyl ester resins to restore strength and integrity.

**Revision of Section 604
Drainage Pipe**

Subsection 624.03 shall include the following:

The Contractor shall provide a mockup for any connection between varying pipe and structure materials (i.e., HDPE pipe and concrete drainage facilities) for CDOT Review and Acceptance prior to construction.

Joint systems for cross drains and storm drains shall be watertight. All storm drain and cross drain segments between junction structures, including inlets, and between the ends of cross drains must be video or television (TV) inspected following installation and backfill. Video/TV inspection shall be sufficient to clearly inspect the circumference of each joint to verify joint construction is in accordance with the manufacturer's recommendations and Contract Documents. The Contractor shall provide a DVD of videos and inspection reports for each inspected segment. Reports shall identify the location of any discovered deficiencies and the proposed method of correction. Prior to construction, the Contractor must submit a Method Statement for constructing watertight joints for Approval by CDOT. Construction and inspection of joints shall be performed by the Contractor in accordance with methods approved by CDOT. Should any installations fail to meet the requirements, it shall be corrected at the Contractor's expense so that inspection requirements are satisfied.

Joints for all circular and elliptical reinforced pipes shall be made with confined rubber gaskets. Reinforced concrete collars shall be required at all nonstandard joints (not tongue and groove or bell and spigot), and at all connections to existing pipe.

All welding of HDPE pipe and fittings shall be performed by qualified and certified personnel. Certifications shall be provided to CDOT prior to performing any welding for the Project.

**Revision of Section 604
Vane Grate Inlet**

Section 604 of the Standard Specifications is hereby revised for this project as follows:

Description

This work includes the furnishing and placing of approach slab vane grate inlets special in accordance with details shown on plans and specifications.

Materials

All vane grate inlet special, grates, and castings shall be grey cast iron class 35, meeting the requirements of ASTM A48-83, AASHTO M105-82.

Construction Requirements

Vane grate inlet special shall be installed at the location shown on the plans.

Prior to fabrication and construction of the Vane Grate Inlet Special item, two sets of working drawings which comply with requirements of section 105 shall be submitted to CDOT for information only. The working drawings will not be approved or returned.

**Revision of Section 604
Manhole (Traffic Management System)**

Section 604 of the Standard Specifications is hereby revised for this project to include the following:

Description

Manhole (Traffic Management System) shall include the installation of manholes for the Traffic Management System at locations approved by CDOT.

Materials

Manhole (Traffic Management System) shall be pre-cast concrete, circular or square, with a base and cast iron frame ring and cover. Each manhole, frame, and cover shall conform to American Association of State Highway and Transportation Officials (AASHTO) HL-93.

Pre-cast units shall be provided with factory-installed knockouts that will permit the installation of a minimum of six two-inch conduits. The factory-installed knockouts shall be at a depth of three feet below the top of the manhole. The manhole shall have a detachable cover that has a skid-resistant surface and have the words "CDOT COMM" physically impressed on its top. The cover shall be attached to the manhole body by screw-in, tamper resistant bolts.

Each Manhole shall include all hangers and hooks that accommodate all proposed fiber and communication cabling. Fiber management hangers and hooks for fiber coils and splice canisters shall be of sufficient quantity to hang each backbone and lateral cable installed in the manhole separately on its own set of hangers.

Each Manhole shall include a removable access ladder. The access ladder shall be engineered to support 300 pounds. An engineered hook support for the access ladder shall be secured to the wall of the manhole.

Construction Requirements

The Contractor shall neatly excavate the site of manhole installation. A minimum of 12 inches of $\frac{3}{4}$ inch granite-gravel shall be placed below the manhole.

In pavement and sidewalks, the top of the manhole shall be flush with the existing grade. The Contractor shall restore pavement and sidewalks to match the existing conditions. Outside of pavement and sidewalks, the top of the manhole shall be two inches above existing grade.

Backfill around the manhole excavation shall conform to Section 206, Structure Backfill (Class 2).

After conduit installation into manhole, the contractor shall grout both the inside and outside of the factory-installed knockouts around the conduits. The finished conduits shall extend 5 to 7 inches past the inner wall of the manhole. If hangers are not factory installed in the manhole, the bolts shall be installed in the manhole walls by means of either an epoxy compound or expansion type fitting. Conduit that enters the manhole base shall have sweeps attached so conduit entrance is elevated a minimum of six inches above the bottom of the manhole.

As-built locations of manholes shall conform to project survey requirements requiring Pointman.

**Revision of Section 607
Self Closing Gate**

Section 607 of the Standard Specification is hereby revised for this project as follows

Description

607.01 This work consists of furnishing, constructing, and installing self-closing gates.

Materials

607.02 Gate assemblies shall be fabricated from durable, corrosion resistant materials suitable for outdoor use and conditions.

Construction Requirements

607.03 Self-Closing Mechanism. The gate shall be equipped with a self-closing mechanism capable of automatically returning the gate to the fully closed position after opening without the use of electricity or solar power. The mechanism shall operate smoothly without slamming and shall function under all expected environmental conditions. The self-closing mechanism shall return the gate to the closed position from any open position and latch shall engage automatically when the gate closes. The gate shall open with a maximum opening force of 5 lbf (pound force), measured at the latch edge of the gate.

607.04 Geometry and Clearance.

- a) The gate opening shall provide a minimum clear horizontal width of 48-inches when the gate is in the open position at 90 degrees.
- b) The gate opening shall provide a minimum vertical clearance of 80-inches.
- c) The maximum longitudinal grade through the gate opening shall not exceed 5 percent. The cross slope through the gate opening shall not exceed 2 percent.
- d) The surface within the gate opening and the immediate approach shall be firm, stable and slip resistant meeting PROWAG surfacing requirements. Maneuvering clearance must be provided for both directions of travel.

607.05 Gates

- a) Gates shall be installed plumb, level and square to ensure proper operation.
- b) Gate shall open freely without binding or interference.
- c) Gate shall not remain open at any point during normal operation.

**Revision of Section 612
Location Markers**

Section 612 of the Standard Specifications is hereby revised for this project to include the following:

Description

Contractor shall furnish and install location markers for identifying fiber optic conduit and other utility conduit at locations shown on the plans.

Materials

Location Marker (Fiber Optic) (Dome) shall be made of non-conductive high-density polymer, and shall be integrally white in color with an orange cap. All colors shall be stabilized against ultraviolet light such that they will not fade under continuous exposure to direct sunlight and conform to the American Public Works Association (APWA) Uniform Color Code for delineating underground utility lines. The marker shall retain dimensional stability in temperatures ranging from -40° F to 175° F. In some instances, when markers are installed on National Forest Service Lands, the location marker may need to be brown (Federal Standard Color 20059 or approved by CDOT) in color, if required by the project.

The Location Marker (Fiber Optic) (Dome) shall include a label with CDOT contact information and the designation of "Fiber Optic Cable". The label shall have black lettering on an orange background. The label shall include the highway milepost of the Pull Box or Manhole (TMS). The mile post shall be to the nearest hundredth mile. This label shall be placed below the "Fiber Optic Cable" warning label. When markers are installed on National Forest Service Lands, the dome marker label may be required to have black lettering on a brown (Federal Standard Color 20059 or approved by CDOT) background. The Contractor shall provide the label submittal to CDOT for approval.

Location Marker (Utility) (Flat Slat) shall be made of fiberglass reinforced composite and shall be orange or red in color. The marker shall retain dimensional stability in temperatures ranging from -40° F to 175° F. In some instances, when markers are installed on National Forest Service Lands, the location marker may be required to be brown (Federal Standard Color 20059 or approved by CDOT) in color.

The Location Marker (Utility) (Flat Slat) shall include a label with CDOT contact information and the designation of "Electrical Cable" or "Telephone Cable". The label shall have black lettering on a red background for electrical and black lettering on an orange background for telephone. In some instances, when markers are installed on Forest Service Lands, the flat marker label may be required to have black lettering on a brown (Federal Standard Color 20059 or approved by CDOT) background. The Contractor shall provide the label submittal to CDOT for approval.

Concrete or a precast polymer concrete footing for dome marker shall be 18 inches x 18 inches x 12 inches per project detail. Concrete footing shall be Concrete Class B and shall be in accordance with Section 601. The gap between the concrete or precast polymer concrete footing and dome marker shall be a maximum of 1/4 inch.

The pre-cast polymer concrete footing shall be skid-resistant, non-metallic, non-conductive, and UV resistant, and shall include two lifting slots for placement in the field. The precast polymer concrete footing shall be similar nominal dimensions of the concrete footing shown on the Plans.

-2-
Revision of Section 612
Location Markers

Construction Requirements

Location Marker (Fiber Optic) (Dome) shall be installed at all fiber backbone Pull Box and Manhole (Traffic Management System) locations that contain fiber optic cable. Intermediate markers shall be installed at 1000-foot spacing along each conduit run. At manholes containing splices, the contractor shall use outdoor rated orange reflective tape to create two 1-inch-wide stripes below the mile point label.

Location Marker (Utility) (Flat Slat) shall be installed at utility pull box and manhole locations and utility point of service to identify both electric and telephone communication lines. Contractor shall designate the utility line with a marker installed mid-point between the utility point of service and the device.

**Revisions of Sections 613 and 715
LED Roadway Luminaires**

Sections 613 and 715 of the Standard Specifications are hereby revised for this Project as follows:

In subsection 613.02, delete (f) and replace with the following:

- (f) Luminaire. A complete luminaire includes the housing, lens, Light Emitting Diode (LED) luminaire, luminaire housing, ballast or power generator, slip-fitting clamp or approved manufacturer mounting, all necessary internal wiring, and photoelectric control. Luminaires shall operate at either 120 VAC, 60 Hz or 277 VAC, 60 Hz. Luminaires shall meet electrical utility company requirements.

In subsection 613.02(l), delete (4), (6), (7), and (8) and replace with the following:

- (4) Luminaire manufacturer's product information, including data in Illuminating Engineering Society of North America (IESNA) format, IESNA photometric distribution type for vertical and lateral distribution (example: full cutoff, Type III), and a photograph or line drawing.
- (6) Luminaire Lumen Range shall be no less than 8500 lumens and no greater than 10,500 lumens LED Driver or Power Supply.
- (7) Lighting Control Centers and Photoelectric Control Devices.

Subsection 613.02 shall include the following:

- (p) LED Luminaire Warranty. The Contractor shall ensure that the LED Roadway Luminaire has a minimum standard warranty of 10 years for all parts, materials, and shipping required to repair or replace the luminaire.

The warranty shall cover all failures including:

- a. Failure in luminaire housing, wiring, connections, drivers, and photoelectric control devices.
- b. More than 10 percent decrease in lumen output
- c. Significant change in color.

The warranty shall begin upon the date of receipt. Bill of lading shall be provided to the department prior to final payment of the lighting.

- (q) Technical Support. During the warranty period, technical support shall be available from the manufacturer via telephone within 24 hours of the time the call is made from the Department, and this support shall be made available from factory certified personnel or factory certified installers at no additional charge to the Department.

In subsection 613.06, delete the first paragraph and replace with the following:

613.06 Luminaires and Lamps. Roadway Luminaires shall be mounted on the mast arm by a slip-fitter clamp or other approved device. Luminaires shall be adjusted vertically and horizontally to provide the required orientation and maximum light distribution on the roadway and to meet Illuminating Engineering Society of North America (IESNA) TM-15 U0.

-2-
Revisions of Sections 613 and 715
LED Roadway Luminaires

In subsection 613.06, delete the fourth paragraph and replace with the following:

Luminaires of the specified type and lumen output shall be installed as shown on the plans. The type and lumen output shall be marked on each luminaire or pole in accordance with ANSI specifications. ANSI approved tags shall be provided and installed by the contractor.

In subsection 715.04(a), delete 2. and 4. and replace with the following:

2. Optical Chamber. The luminaire distribution shall be equal to or less than an Illuminating Engineering Society of North America (IES) TM15-11 Backlight Uplight and Glare (BUG) ratings listed below in Table 715-1 based on initial lumens or Light Loss Factor (LLF) = 1.0. Luminaires with a U value greater than U0 shall not be accepted. The optical chamber shall be completely sealed from the housing, or the housing shall be completely sealed. A seamless one piece memory-retentive gasket shall seal the optical chamber or housing against the luminaire lens door. All wires entering the optical chamber shall be gasketed at their point of entry. Socket mountings, rivets used in the construction or support of the reflector system, and all other penetrations into the optical chamber shall be completely sealed. The optical chamber shall be water tight when the luminaire door is closed.

Table 715-1: Backlight, Uplight and Glare (BUG) Values

Luminaire Mounting Location	Minimum Initial Luminaire Lumen Range	Backlight (B) Rating Maximum	Uplight (U) Rating Maximum	Glare (G) Rating Maximum
Non median-mounted	Less than 5,000	B2	U0	G1
	5,000 - 22,000	B3	U0	G2
	Above 22,000*	B3	U0	G3
Median mounted	Less than 5,000	B3	U0	G1
	5,000 - 22,000	B4	U0	G2
	Above 22,000*	B4	U0	G3
	*By special application only.			

-3-

Revisions of Sections 613 and 715
LED Roadway Luminaires

In subsection 715.04, delete (b) through (e) and replace with the following:

- (b) Roadway Luminaires. Roadway luminaires shall be LED type with integral driver, flat lens, aluminum housing, and be UL Listed for wet locations. All luminaires for the project shall be the same type and design unless the plans specify otherwise.
- (1) The luminaire and all components shall be UL or Intertek Testing Services (ETL) listed for Wet Location and shall have minimum Ingress Protection Rating of IP66.
 - (2) Light source shall be comprised of LED modules connected to a non-integrated driver and ready for connection to a production line luminaire. Luminaires utilizing integrated driver LED light sources, screw-based, or panel retrofit products shall not be accepted.
 - (3) The luminaire shall have a Type II or III distribution for non-median mounted luminaires, and Type II, III, IV, or V for median mounted luminaires.
 - (4) Transmissive optical components shall be applied in accordance with LED manufacturer's Original Equipment Manufacturer (OEM) design guidelines to ensure suitability for the environment in which the luminaire is installed.
 - (5) Luminaires shall utilize an adjustable slipfitter-type mounting system for installation on 1.25- inch (1.66-inch o.d.) to 2-inch (2.375-inch o.d.) outside diameter pipe tenons. Slipfitter shall consist of a two-piece clamp and four 9/16-inch hex bolts. Slipfitter shall allow for a vertical tilt adjustment of ± 5 percent in order to mount luminaire plumb for a U0 rating. Luminaires shall be equipped with integrated leveling bubble.
 - (6) Access to all internal parts requiring replacement shall not require tools (i.e., "tool-less entry").
 - (7) The luminaire housing shall be constructed of aluminum alloy.
 - (8) Power Supply/Driver shall be provided in compliance with section 715.05(a). Driver must be internal and thermally separated from LED compartment.
 - (9) Dimming photocell receptacle shall conform to (d) below.
 - (10) Luminaire finish shall be corrosion resistant Super triglycidyl isocyanurate TGIC polyester powdercoat. Color shall be gray.
 - a. Powder coat: Super TGIC polyester powder coat 2.5 mil nominal thickness.
 - b. Finish shall exceed a rating of six (6) per ASTM D1654 after 1000 hours of testing per ASTM B117.
 - c. The coating shall exhibit no greater than 30 percent reduction of gloss per ASTM D523, after 500 hours of QUV testing at ASTM G154 Cycle 6.
 - (11) Effective Projected Area (EPA) for wind-loading calculations shall be no greater than 1.2 square feet.
 - (12) Luminaire weight shall not exceed 45 pounds.

-4-

**Revisions of Sections 613 and 715
LED Roadway Luminaires**

- (13) Luminaire shall be tested in accordance with IES LM79 and TM21, certifying photometric performance and rated life, respectively. LM79 (performance) and TM21 (predicted life at 55°C) testing shall both be for the same luminaire's operating drive current as specified.
 - (14) Luminaire shall have a maximum Backlight rating as shown in Table 715-1, an Uplight rating of U0, and a maximum Glare rating as shown in Table 715-1.
 - (15) Luminaire system efficacy shall be no less than 68 luminaire lumens per input watt.
 - (16) Luminaire shall have an external label per ANSI C136.15 and internal label per ANSI C136.22.
- (c) Light Sources. LED luminaires shall not be retrofit to existing luminaire housing; the contractor shall replace housing along with the luminaire as a single unit. Light sources shall be compatible with dimmable drivers supplied with the luminaires in which they are to be installed. All light sources of a similar type shall be provided by the same manufacturer.
- LED light sources shall meet or exceed the following requirements:
- (1) CCT, CRI, and Flux:
 - a. Correlated Color Temperature (CCT) - All LED light sources shall emit white light and have a CCT no less than 2700K and no greater than 4000K nominal in accordance with ANSI C78.277.
 - b. Color Rendering Index (CRI) - All LED light sources shall have a minimum Color Rendering Index (CRI) of 70 per the LM79 test results.
 - c. Luminous Flux - LED light sources shall not exceed the junction temperature recommended by the LED manufacturer. Luminous flux differences between LEDs shall not exceed 10 percent.
 - (2) LEDs shall have a minimum rated life of 70,000 hours per IES TM-21 at 55°C at the normal operating driver current for the specific luminaire. The lumen output shall be maintained at 70 percent of initial rated lumens (L70) or greater at the rated life of the luminaire.
 - (3) LEDs shall be temperature rated for operation and storage within the range of -40°C to +50°C, and shall withstand low and high frequency vibration (ANSI C136.31 Vibration Level 3G) over the rated life of the light source.
 - (4) Cooling System
 - a. Mechanical design of protruding external surfaces (e.g., heat sink fins) shall facilitate hose-down cleaning and discourage debris accumulation.
 - b. The cooling system must be passive utilizing heat sinks, convection, or conduction.
 - c. Fans, diaphragms, pumps, or liquids shall not be acceptable.

-5-
Revisions of Sections 613 and 715
LED Roadway Luminaires

(d) Photocontrol Receptacle.

- a. Each roadway luminaire shall be furnished with a multi-contact twist-lock outdoor lighting dimming receptacle in accordance with ANSI C136.41.

**Revision of Section 613
ITS Electrical Conduit**

Section 613 of the Standard Specifications is hereby revised for this project to include the following:

Description

This work includes furnishing and installing new High-Density Polyethylene (HDPE) and Polyvinyl Chloride (PVC) electrical conduit and fittings for use with fiber optic cable, electrical conductors, and communications cabling.

Materials

All materials furnished, assembled, fabricated, or installed under this item shall be new, Underwriters Laboratories (UL) listed, corrosion resistant, and National Electric Code (NEC) compliant. Materials shall be submitted to CDOT for approval.

Electrical conduit shall be Schedule 80. Electrical conduit and fittings shall be UL listed.

HDPE conduit and fittings shall be certified by the manufacturer as meeting American National Standards Institute (ANSI) ANSI/UL 651A. PVC conduit and fittings shall be certified by the manufacturer as meeting ANSI/UL 651. The manufacturers shall be International Organization for Standards (ISO) ISO 9001 compliant.

All HDPE conduit shall be factory lubricated, low-friction, high-density conduit constructed of virgin high-density polyethylene resin. HDPE conduit shall be capable of being coiled on reels in continuous lengths, transported, stored outdoors, and subsequently used for installation, without affecting its properties or performance.

Each conduit shall be equipped with a pull tape. The pull tape shall have a minimum tensile strength of 1800 pounds and be of a design and manufacture that prevents cutting or burning into the conduit during cable installation. The pull tape shall include a continuous 22 gauge tracer wire. Splices in the pull tape and tracer wire may occur inside manholes and pull boxes and shall not be permitted inside conduit.

A minimum 12 gauge tracer wire shall be included in each group of conduits that are in a common trench or bore.

Construction Requirements

All conduit and fittings installation shall conform to the NEC.

Electrical conduit that is installed using a trenchless technology such as boring shall be HDPE. Electrical conduit that is installed using direct burial methods such as plowing, open trenching, or other excavation methods shall be PVC or HDPE.

Prior to construction, the Contractor shall submit a trenching and boring plan to CDOT for approval. The plan shall show the limits of the planned work areas and the areas of anticipated disturbance. All disturbances outside the planned work areas created by Contractor's operations shall be restored to their original condition at the Contractor's expense.

-2-
Revision of Section 613
ITS Electrical Conduit

During construction operations, the contractor shall maintain boring logs that include the depth at specific distances along the bore. Boring logs shall be submitted on a weekly basis.

Excavations and conduit installation shall be performed in a continuous operation. All trenches shall be backfilled by the end of each shift. Material from trenching operations shall be placed in a location that will not cause damage or obstruction to vehicular or pedestrian traffic or interfere with surface drainage.

The Contractor shall be responsible for damage due to over-excavating a trench and heaving damage to the existing asphalt and concrete mat caused by equipment directly and by dislodging rocks or boulders. All damage from over-excavation and heaving shall be repaired at the Contractor's expense. The Contractor shall bear the cost of backfilling all over-excavated areas with the appropriate backfill material approved by CDOT.

The Contractor shall restore all surface materials to their original condition or better, including but not limited to pavement, sidewalks, sprinkler systems, landscaping, shrubs, sod, and native vegetation that is disturbed by the conduit installation operation. All repairs shall be included in the cost of the conduit.

The Contractor shall use UL listed splice couplings that comply with the NEC. The coupling technology used to connect conduit ends shall require no special tools and form a watertight, airtight seal. The breaking force between segments shall exceed 250 pounds. Conduit splices shall be kept to a minimum and all such locations shall be approved and inspected by CDOT and the authority having jurisdiction. Additional pull boxes shall not be substituted for conduit splices.

Conduit plugs that are watertight, removable, mechanical, and equipped with a tie rope for connection to a pull rope and pull tape shall be supplied and installed in all open conduit ends immediately following conduit installation. Conduit shall be plugged at all termination points including, but not limited to pull boxes, manholes, controller cabinets, structures, poles, and node buildings. Conduits containing cable shall be plugged with durable and reusable split type plugs, fabricated without metallic parts. The plugs shall allow easy removal and reinstallation around in-place cables. Split type plugs shall provide a watertight and airtight seal of at least 22 pounds per square inch. They shall be installable by hand without using tools and without damaging the cable. All plugs shall be correctly sized to fit the conduit being plugged.

All conduits shall use sweeps to elevate the buried conduits to the final grade within a pull box or manhole. The sweeps shall be terminated within the pull boxes and manholes to allow for easy installation and removal of conduit plugs. The sweeps shall be set above the ground surface of the inside of the pull box at a height that does not interfere with coiling of the fiber optic cable.

All conduits terminating in a pole or sign structure shall extend to a point 6 inches below the handhole in the pole or structure.

-3-
Revision of Section 613
ITS Electrical Conduit

All conduit runs containing fiber optic cable shall have a limited number of bends. The sum of the individual bends on a single conduit run between any two pull points shall not exceed 270 degrees. No individual bend shall exceed 90 degrees. All conduit bends shall have a minimum acceptable radius of 48 inches for 90-degree bends and for conduit containing fiber optic cable, and 24 inches for all other bends. HDPE conduit minimum bending radius shall conform to Table 354.24 in the NEC.

New conduits may be installed into existing CDOT pull boxes, manholes, and cabinet bases, and the Contractor shall carefully excavate around the existing facility and install the new conduit as shown on the plans. The Contractor shall not damage the existing facility or its contents. If the existing conduit, pull box, lid, and concrete collars are damaged during conduit installation, the Contractor shall restore the damaged item or section to current CDOT requirements at no additional cost to the project.

Conduit shall always enter a pull box, manhole, cabinet base, or any other type structure from the direction of the run only.

All conduit ends shall be free from sharp edges and burrs.

As-built locations of conduit shall conform to project survey requirements requiring Pointman.

**Revision of Section 614
ITS Pull Boxes**

Section 614 of the Standard Specifications is hereby revised for this project to include the following:

Description

Contractor shall furnish and install fiberglass reinforced, polymer concrete pull boxes and concrete aprons.

Materials

Pull boxes shall be verified by a 3rd Party Nationally Recognized Independent Testing Laboratory as meeting all test provisions of American National Standards Institute/Society of Cable Telecommunications Engineers (ANSI/SCTE) 77, 2013 Specification for Underground Enclosure Integrity, Tier 22 rating. Pull boxes shall be Underwriters Laboratories (UL) listed. Certification documents shall be submitted with material submittals.

Each pull box shall have an Electrical Marker System (EMS) locator disk manufactured into the lid for communication line locating. The locator disk shall be compatible with a CDOT cable locator and utilize the APWA Uniform Color Code standard for visual reference, if disk is observable on the exterior of the lid. The locator disk shall utilize the proper locate frequency for the pull box type.

Pull boxes 24 inches by 36 inches and larger shall have removable split lids with a removable metal center support beam. Lid segment weight shall not exceed 100 pounds.

Pull box removable lids shall be provided with a skid-resistant surface and have the words "CDOT Comm" or "CDOT Elec", as well as "EMS Marker Embedded In Cover" and the tier level rating cast into the surface. Painting of words shall not be accepted. The cover shall be attached to the pull box body by means of tamper resistant stainless steel bolts.

One piece lids shall have a minimum of two lift slots per lid, while split lids shall have a minimum of one lift slot per lid. Lift slots shall be rated for 3000 pounds.

Test point locations shall be integrated into the pull box lids to provide for attachment of test leads of various connector types for underground conduit tracing. The minimum number of test point locations shall equal the number of conduit banks entering the pull box, up to a maximum of five test points. Pull boxes with split lids shall have the test points on one split lid section only. Pull box lids shall be furnished with 3/8 inch x 1/16 inch deep recesses at locations adjoining each test point for the application of direction arrow symbols indicating the direction of underground conduit exiting the pull box. Recesses shall be thoroughly cleaned with alcohol prior to applying arrow symbols.

Wire mesh shall be installed in a manner to completely surround the box. The wire mesh shall meet the material standard ANSI/American Society of Testing and Materials (ANSI/ASTM) A555-79 and made of T-304 stainless steel, 0.025 inch wire diameter minimum, and shall have a spacing of 10 mesh per inch.

Pull boxes installed in dirt or landscaped areas shall have a Class B concrete apron or a pre-cast polymer concrete apron. Class B concrete shall be in accordance with Section 601.

-2-
Revision of Section 614
ITS Pull Boxes

The pre-cast polymer concrete apron shall be non-metallic, non-conductive, and UV resistant, and shall include two lifting slots for placement in the field. The pre-cast polymer concrete apron shall be a minimum of 4 inches deep and shall extend a minimum of 11 inches from each side of the pull box. The gap between the pre-cast polymer concrete apron and outer wall of the pull box shall be a maximum of ½ inch.

Construction Requirements

A minimum of 12 inches of ¾ inch granite-gravel shall be installed as a base for the pull box. The granite-gravel shall be free of dirt and debris and spread evenly to facilitate a level base for the pull box. The Contractor shall ensure that sufficient compaction is met prior to the installation of granite-gravel to alleviate future settling.

Wire mesh shall be installed to completely surround the box. The wire mesh shall be installed prior to the installation of the pull box above the bed of ¾ inch granite-gravel and extending one foot past the outer edges of the concrete apron. The wire mesh shall be gently cut to allow only the entrance of the conduit through at the bottom of the box. All openings cut in the wire mesh that are larger than the diameter of the conduit shall be covered with additional wire mesh in a manner to completely surround the pull box with wire mesh.

Tracer wire shall be attached to the trace test points on the underside of the pull box lid. Each trace wire shall be attached to an individual trace point; no two wires shall be attached to the same point. The Contractor shall coil an additional 6 feet of tracer wire inside the pull box to ensure that the tracer wire will not disconnect from test points when the lids are removed.

At pull boxes installed in dirt and landscaped areas, the Contractor shall install a concrete apron or a pre-cast polymer concrete apron around the edges of the pull box. Three sides of the concrete apron shall measure 12 inches wide by 6 inches deep, and one side shall measure 18 inches wide by 6 inches deep. The apron side measuring 18 inches wide by 6 inches deep shall be located on the edge of the pull box furthest from the roadway, and shall contain a 4-inch diameter round knockout for fiber optic marker installation. Pull boxes shall not be installed above the grade of the apron. The concrete apron shall have a 1 percent slope away from the top of pull box to allow for drainage.

As-built locations of pull boxes shall conform to project survey requirements requiring Pointman.

**Revision of Section 614
Grounding And Bonding**

Section 614 of the Standard Specifications is hereby revised for this project as follows:

Description

This work consists of grounding and bonding requirements at the relocated advanced flashing beacon. The work covered in this section consists of labor, materials, and services required for a functional and unobtrusive grounding system.

1. General: Provide comprehensive grounding and bonding for ITS related equipment. CDOT's target resistance to ground value is equal to or less than 10 Ω .
2. Applicable Documents: Work performed in this section shall comply with the most current edition of the following codes and standards:
 1. IEEE 81 - Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Grounding System,
 2. IEEE C2 - National Electrical Safety Code,
 3. NEMA GR 1 - Grounding Rod Electrodes and Grounding Rod Electrode Couplings,
 4. NFPA 70 - National Electrical Code,
 5. NFPA 70E - Standard for Electrical Safety in the Workplace,
 6. NFPA 780 - Standard for the Installation of Lightning Protection Systems,
 7. TIA-607 - Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises,
 8. UL 96 - Lightning Protection Components,
 9. UL 96A - Installation Requirements for Lightning Protection Systems, and
 10. UL 467 - Grounding and Bonding Equipment.
3. Identify to CDOT any conflicts between the requirements of codes/standards development organizations and the specifications for this project.
4. Submittals:
 1. Provide cut-sheets of each type of product proposed for approval by CDOT prior to commencement of work.
 2. Provide a system plan, conductor routing, supports, connectors, and ground rods along with connection, mounting, and splicing details.

-2-
Revision of Section 614
Grounding And Bonding

Materials

Components.

1. Grounding electrodes (driven rods): Provide ground rods that meet or exceed the following requirements:
 - A. Preferred: Copper-clad steel ground rods (pointed) shall not be less than 0.625 inch diameter and a minimum of eight feet in length. It shall be UL certified and have a minimum plating thickness of 10 mil copper cladding.
 - B. Other Alternatives: Other ground rod types, such as chemical ground electrodes, may be considered based on site soil chemistry, adjacent electrically bonded structures, or if the installation must occur in a corrosive area. The Contractor shall obtain written permission from CDOT prior to using the previously mentioned alternatives.
2. Grounding Electrode Conductor: The grounding electrode conductor shall be solid or stranded copper with a minimum size of #6 AWG, unless otherwise specified. The Contractor shall size the grounding electrode conductor in accordance with Article 250.66 of the NEC. Bare and insulated grounding electrode conductors shall be permitted, as approved by CDOT. Insulated grounding electrode conductors shall be Type THWN and conform to the requirements of Article 310 of the NEC. Insulated grounding electrode conductors shall utilize a green jacket color. The grounding electrode conductor run shall be installed in one continuous run without a splice or joint, except as permitted in accordance with Article 250.64(C) of the NEC.
 - A. For bonding between a cabinet frame and busbar, a braided ground strap shall be utilized. The braided ground strap shall consist of non-insulated tinned copper flat braid wire with a minimum width of 0.5 inches and a thickness of 0.07 inches (based on estimated #6 AWG equivalence).
3. Grounding Connectors: Grounding connectors shall be provided for attachment to grounding electrodes, ground bus, and ground lugs. Grounding and bonding connections shall be made by means of a compression connector, a mechanical connector, or an exothermic weld. Mechanical and compression connectors shall have only one conductor installed unless designed or UL-listed for more conductors. Mechanical connections shall only be permitted when a compression or exothermic connection cannot be made. Provide exothermically welded connections or UL467 listed mechanical connections below grade and in areas exposed to visible moisture. Ground rings shall only use exothermic welded connections.
4. Ground Bus: Provide copper bar stock grounding busbar. The minimum size shall be 0.25 inch thick by 2 inches high by 6 inches wide and positions for five lugs, unless otherwise specified by CDOT. Hole patterns on the busbar shall accommodate two-hole lugs in accordance with TIA-607 and hole spacing should not be less than 0.75 inch. Busbar must be wall mountable and UL certified. Stand-off brackets shall also be included and brackets shall be manufactured from 300 series stainless steel with stainless steel bolts and lock washers.

-3-

**Revision of Section 614
Grounding And Bonding**

Construction Requirements

General: Install equipment, materials, and devices in accordance with equipment manufacturer's written instructions and in compliance with applicable installation standards.

1. Connections:
 - A. Provide exothermically welded connections or UL467 listed mechanical below grade and in areas exposed to visible moisture.
 - B. Provide heavy duty, bolted clamped connections, UL listed, above grade, and in areas where safety to personnel and structures dictate.
2. Installation:
 - A. Install one grounding electrode. Each grounding electrode shall be installed such that at least the entire length is in contact with the soil. Where a rock bottom is encountered, the grounding electrode installation shall conform to the requirements of Article 250.53(G) of the NEC. The grounding electrode system shall be installed within CDOT right-of-way.
 - B. Leave top of grounding electrode exposed for testing and for verifying quantities. Upon acceptance of testing and quantity verification, drive ground flush with grade.
 - C. Measure the resistance of the installed grounding electrode with respect to the surrounding soil using an earth ground resistance tester.
 - D. If the results exceed 10 Ω , install a second grounding electrode a minimum of one electrode length away from the first grounding electrode. The bonding jumper used to connect grounding electrodes shall be installed and sized in accordance with Article 250.53(C) of the NEC.
 - E. Measure the resistance of the installed grounding electrode system with respect to the surrounding soil using an earth ground resistance tester.
 - F. Record and report results to CDOT in writing. CDOT's target resistance to ground is equal to or less than 10 Ω ; however, after installing two grounding electrodes, a resistance to ground value equal to or less than 25 Ω will be accepted by CDOT. The Contractor shall be responsible for confirming the resistance to ground requirements with the various manufacturers of the equipment it procures for this project. Where manufacturers have more stringent resistance to ground requirements for operational performance and warranties, the Contractor shall be required to adhere to the manufacturer's requirements for acceptance by CDOT.

-4-

**Revision of Section 614
Grounding And Bonding**

- G. In the absence of low resistance soil conditions, CDOT, at their sole discretion, may allow the use of the following: bentonite to fill the ground rod hole; chemical electrodes; or ground enhancement material. The Contractor shall obtain written permission from CDOT prior to using the previously mentioned materials.

3. Surface Preparation

- A. **Ground Bus:** An abrasive pad shall be used to remove any dirt, grease, oil, and oxidation from the ground bus. A thin coating of antioxidant compound shall be applied to the connection point on the ground bus. Using stainless steel hardware, the Contractor shall tighten and torque to the value specified for the hardware grade, material, and size. Only one lug shall be installed per a two-hole mounting on a bonding surface. Lugs shall not overlap or use the same mounting holes on a bonding surface. Due to thermal cycling anticipated in the field environment, the lock washer shall be substituted with flat washers and a cupped spring washer (i.e., Belleville washer), with the cup against the head of the bolt.
- B. **Other Surfaces:** Clean the surface thoroughly where the grounding lug is to be connected. The grounding surface shall be clean of any paint, dirt, grease, oil, rust, and other oxidation. A thin coating of antioxidant compound shall be applied to the connection point on the surface. Using stainless steel or silicon bronze hardware, the Contractor shall tighten and torque to the value specified for the hardware material and size. Lugs shall not overlap or use the same mounting holes on a bonding surface. The lock washer shall be substituted with flat washers and a cupped spring washer, with the cup against the head of the bolt.
- C. **Ground Attachment to Structures and Poles:** The grounding electrode conductor shall be connected to the ground stud on a structure or within a pole using stainless steel nuts and cupped spring washers. The connector type for the grounding electrode conductor shall be a full circle connector sized appropriately for the diameter of the ground stud and the wire gauge of the conductor.
- D. **Where a ground stud does not exist on a structure or within a pole,** the Contractor shall install a tapped and threaded hole to accommodate the grounding electrode conductor and screw. The connector type for the grounding electrode conductor shall be a full circle connector sized appropriately for the diameter of the screw and the wire gauge of the conductor. Stainless steel screws and cupped spring washers shall be included.

-5-

**Revision of Section 614
Grounding And Bonding**

- E. Grounding Connectors: The lug size, configuration, and material for compression connectors shall be selected based on the grounding electrode conductor size and fastening conditions. The insulation shall be trimmed back so that the bared grounding electrode conductor is slightly longer than the barrel. After applying an antioxidant compound on the exposed grounding electrode conductor, insert the conductor so that it touches the end of the barrel as viewed through the inspection port. Ensure the grounding electrode conductor remains at the end of the barrel before making the first crimp nearest the tongue end and working toward the conductor with the remaining crimps. The lug manufacturer's instructions shall be followed for the number of crimps and their location on the barrel.

For exothermic welds to the grounding electrode conductor, select the mold and weld metal applicable to the conductor size and lug configuration. Clean and dry (using a torch) the grounding electrode conductor and the mold. Insert the conductor and lug into the mold. Close the handle clamp, lock the mold, and then insert the disk into the mold. Pour the weld metal into the mold and apply the starting material over the weld metal and on the lip of the mold. Close the cover and ignite using a flint igniter. After the reaction is complete, wait a minimum of 15 seconds and then open the mold and remove the finished lug connection. Clean any slag from the finished lug connection.

**Revision of Section 618
Prestressed Concrete**

Section 618 of the Standard Specifications is hereby revised for this project as follows:

Delete subsection 618.06(d)6 and replace with the following:

6. Product camber and length measurements shall be submitted to the QA Representative a minimum of seven calendar days prior to shipping. Deviation from this requirement shall require advance written notification to the QA Representative.

In subsection 618.07(a)9 delete the first paragraph and replace with the following:

Hold-down devices shall be placed: within a 20-inch horizontal tolerance from the locations shown on the plans if placement is moved toward the center of the girder; or within a 40-inch horizontal tolerance from the locations shown on the plans if placement is moved toward the girder ends. If minimum or maximum placement locations are shown on the plans, the placement tolerances shall not encroach beyond those locations.

Delete subsection 618.07(c)2(A) and replace with the following:

Alternative anchorage systems, including all associated anchor zone reinforcing steel associated with the alternative anchorage system, and all details of the alternative anchorage system shall be shown on approved shop drawings and signed and sealed by a Professional Engineer who is registered in the State of Colorado and who is an employee of the post-tensioning system supplier or anchorage supplier.

**Revision of Section 621
Detour Pavement**

Section 621 is hereby added to the Standard Specifications for this project and shall include the following:

Description

This work shall consist of designing and submitting a phasing plan for Review and Acceptance; constructing, maintaining, and removal of detour; and all required traffic shifts as required to maintain two-lane traffic on US 160 during construction. This item shall include all work and materials necessary to provide a detour roadway meeting or exceeding the requirements of Book 2, Section 17. The detour roadway shall be constructed so as to meet or exceed minimum design standards of A Policy on Geometric Design of Highways and Streets, 7th Edition (PGDHS, 2018).

Materials

The Contractor shall be responsible for quality control required to assure adequate detour construction. This includes, but is not limited to, embankments, subgrade, subbase, and Hot Mix Asphalt used in the construction of the detour.

Construction Requirements

The contractor shall complete and submit a detailed detour phasing plan consistent with the Transportation Management Plan per Book 2, Section 17 for CDOT Review and Acceptance. The Contractor's plan shall be submitted to CDOT a minimum of 14 Days prior to any detour construction activities. Any deviations from the Contractor's Accepted phasing plans and these specifications must be submitted to CDOT for Review and Acceptance.

The minimum lane width shall be per Book 2, Section 17.

The minimum thickness of Hot Mix Asphalt shall be 4 inches. If the materials used require that the Contractor provide thickness greater than the minimums to serve the life of the detour, these shall be provided at no additional cost. The Contractor shall utilize the existing pavement surface to the maximum extent practical. All pavement markings and other traffic control devices shall be provided in accordance with the traffic control plan. When it is no longer needed to maintain traffic, the Contractor shall remove and dispose of the detour pavement and return the ground to its original state or reconstruct the area in the manner as shown in the Final Design Documents.

Maintenance of Detour

The Contractor shall maintain detours per Book 2, Section 18.

**Revision of Section 625
Asset Geospatial Data Collection**

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

Description

Subsection 625.04 shall include the following:

The Contractor's surveyor shall conduct an as-constructed survey, as defined below, of all assets installed or relocated on this project within the project limits.

Construction Requirements

The Contractor's surveyor shall conduct an as-constructed survey of the following items: Installed or relocated utility lines as shown on the utility plans, including those installed or relocated by the Contractor or by others.

- (1) Installed or relocated water lines, sanitary sewer lines, culverts, conduit, inlets, or other drainage features.
- (2) Traffic signal heads, poles, pushbutton assemblies, and controller cabinets.
- (3) ITS fiber vaults, splice points, conduit, interfaces, nodes, and other assets.
- (4) Lighting, including pull boxes, conduit, meters, and light standards.

The as-constructed survey shall be completed in accordance with the CDOT Survey Manual, Chapter 6, Section 6.14. Item 4 is hereby deleted and replaced with:

4. Three-dimensional (containing northings, eastings, and elevations) data is to be submitted to CDOT's PointMan utility database. The Contractor's surveyor shall collect observations in accordance with all sections below. Accuracy requirements, projections, coordinate systems, and equipment requirements are outlined in Table 1 and Sections 1.1 - 1.4 below. Points and polylines shall be collected with the appropriately named survey codes identified in Table 3 below. Each observed point shall contain a description of what each point represents.

1.1. All utility and hydraulic installations within CDOT right of way shall be collected using CDOT's mobile application, PointMan. Download the PointMan mobile application from the Apple Store (iOS) or Google Play (Android). If required, please contact CDOT at cdotpointman@gmail.com in order to obtain new login and password information.

1.2. High-accuracy equipment requirement:

The Contractor shall use a device designed specifically for capturing GPS coordinates that is listed as compatible with CDOT's mobile application. Deviation from CDOT's list of accepted GNSS receivers must be requested and approved by the department in writing prior to submission of as-built data:

-2-
Revision of Section 625
Asset Geospatial Data Collection

Table 1: Compatible Devices

Trimble R1, R2, R10-2, R12, R12i (Android & iOS)-RTK Compatible	Emlid Reach RS2 and RS3
Trimble R8, R8s, R10, R580 (Android)-RTK Compatible	Leica Zeno FLX100 & GG04 Plus (Android & iOS)
Trimble SPS986, SPS985 and R780	JAVAD TRIUMPH 3-NR (Android)- RTK Compatible
Juniper Geode, GNS2, GNS3, GNS3M (Android & iOS)- RTK Compatible	ArduSimple (Android&iOS)-RTK Compatible
Topcon HiPer VR (Android)- RTK Compatible	Trimble Catalyst DA1 (Android), DA2 (Android & iOS)
Trimble SPS985, SPS986 (Android)	Bad Elf Flex & Flex Mini (Android & iOS) - RTK Compatible

Projections and Coordinate Systems

Horizontal Datum: The North American Datum of 1983, 2011 Adjustment (NAD 83) and the Geodetic Reference System of 1980 (GRS80). Please note that when project control diagrams are available, the project must be site calibrated within PointMan prior to starting data collection.

Vertical Datum: The North American Vertical Datum of 1988 (NAVD 88) RTK GPS is an acceptable method to derive NAVD 88 elevations and is the vertical datum to be used for all CDOT projects. Use the latest Geoid model from NGS to compute orthometric heights.

1.3. Positional Accuracy Specification

CDOT requires positional accuracy Level(s) 1, 2, or 3 for all Horizontal and Vertical positions collected for utilities and ITS assets installed within CDOT right of way. Accuracy level designations are shown in Table 1 below. Other assets may be collected at accuracies not to exceed 5. Utilizing CDOT's mobile application pedigree (survey record) will assist in determining the accuracy levels that must be assigned to the specific permitted installation by the utility company representative responsible for collection of as-built data.

-3-
Revision of Section 625
Asset Geospatial Data Collection

Table 2: Positional Accuracy Requirements

Positional Accuracy Level	Positional Accuracy (English Units)	Positional Accuracy (SI Units)
1	0.1 ft	25 mm
2	0.2 ft	50 mm
3	0.3 ft	100 mm
4	1 ft	300 mm
5	3 ft	1000 mm
0	indeterminate	indeterminate

At the 95 percent confidence level, use the root-mean-square error in accordance with FGDC-STD-007.3-1998. Positional accuracy is in direct reference to the actual geodetic positional coordinates referenced to the National Spatial Reference System maintained by the National Oceanic and Atmospheric Administration National Geodetic Survey. Geodetic positional coordinates (latitude, longitude, and orthometric heights) reference the official United States datum, currently the North American Datum of 1983 and the North American Vertical.

Datum of 1988. GPS coordinates shall be delivered in latitudes and longitudes, in decimal degree format.

Rigid above-ground features are subject to the same positional accuracy requirements as underground features. The positional accuracy of suspended aerial cables and wires is variable due to environmental factors, and therefore shall be classified as Level 0, except at the points where they are anchored to support structures such as poles.

For linear features, the depicted position must meet the tolerances as specified in Table 2 at every position along the length of the feature in order to be designated that accuracy level. Since survey-collected data and resulting 3D models are usually chorded, the point spacing must be close enough so that the true location and depicted location meet the tolerance along its entire length.

Documentation verifying the type of GPS unit being proposed for use, and the specifications of the unit, shall be provided to the Project Engineer for review prior to data gathering. The Contractor shall supply complete information for each device. For data collection, the Contractor shall use a fixed RTK/RTX correction solution only.

Please be advised that any deviation from using the department's approved mobile technology, including a GPS-collecting device, requires prior approval from the Project Engineer.

Any data collected outside of the department's approved mobile technology must be submitted to the Project Engineer as an ArcView/ArcGIS shape file.

-4-
Revision of Section 625
Asset Geospatial Data Collection

2.0 Utilities Collected

Table 3: Data Dictionary Codes

Utility Type	Feature Code	Description of Utilities
Test hole	5950	Point - Test hole physically locating X,Y,Z underground facility location.
Proposed running line/Bore log data	6001 or 6075	Line segment code 6001 - surface elevation of proposed HDD bore. Point - 6075 location bore log depth required for each observed
Communication	4210, 4410 4211	Line segment - all communication facilities, including fiber optic (4211), copper (4210), coaxial (4410), including appurtenances within defined size parameter.
Gas	4510, 4511	Line segment - low pressure (4510), high pressure (4511), natural gas transmission, distribution, service lines, and appurtenances within defined size parameter.
Electric	4310	Line segment - secondary electric or higher voltage.
Pipe (Oil)	4610 or 4611	Line segment - pipeline facilities including crude oil, refined oil, and all other types of oil pipeline transmission, distribution, service lines, and appurtenances within defined size parameter.
Propane	4512	Line segment - propane transmission, distribution, and service lines, and appurtenances within defined size parameter.
Sanitary Sewer	4811	Line segment - sanitary sewer facilities including all mains, collection system, force mains, services and leads, including appurtenances within defined size parameter. Combined sewer is classified as sanitary sewer.
Surface Elevation	6075	Point - X,Y,Z single observation for surface elevation.
Storm Sewer	2712	Line segment - storm sewer facilities including all mains and collection system, and appurtenances within defined size parameter. (Excludes underdrain).
Water	4710	Line segment - water transmission, distribution, service lines, and appurtenances within defined size parameter. (Excludes irrigation systems).
Unknown	6075 or 6001	Point and Line segment - this designation can be used for those facilities not covered by the feature codes above, including but not limited to industrial facilities of all types, and discovered utilities where the type of utility is unknown.

-5-
Revision of Section 625
Asset Geospatial Data Collection

2.1 A. All primary transmission, distribution, and collector system lines:

- a. Start and end points.
- b. A minimum of every 25 feet and at all points of intersection, with the following additional points:
 - i. Deviations in installation alignment (horizontal and vertical), including, but not limited to:
 - a. Intentional changes in geometry, such as directional shifts to circumvent obstacles.
 - b. Fittings, such as elbows (horizontal and vertical).
 - ii. Changes in facility characteristics (e.g., alterations in size, material, number of pairs, encasement size, or material).
 - iii. Start and end points for vaults.

B. Appurtenances installed concurrently with new main installations, defined as service leads and stubs:

- a. Tap-in at the main and at (or near) the right-of-way line.

C. New appurtenances from existing mains:

- a. All size and material types shall be meticulously documented for each utility type.
- b. Tap-in at the main and at (or near) the right-of-way line.

D. Transverse utility crossings installed via trenchless methods:

- a. All qualified utilities crossing roads at safe intervals outside the travel roadway template.
- b. 25-foot intervals across pavement sections when safely achievable.

For all transverse utility crossings installed using methods that permit direct survey observation, readings must be taken at intervals of no more than 25 feet when traversing a paved area. Furthermore, all utilities installed via methods allowing direct observation must be directly observed.

Utilities installed using trenchless technologies necessitate direct observation at the ground surface, directly above the installed utility. The depth to the utility must be recorded, and the "top of utility" elevation calculated from the most reliable depth readings, typically those obtained from the bore head during installation. The precision of these depth readings will vary based on the equipment employed during installation. Please utilize code 6075 - "Terrain Single Point Bore log" to document bore depth and associated attribute information.

-6-
Revision of Section 625
Asset Geospatial Data Collection

Direct survey observations are mandatory at all utility exposure points, including but not limited to tie-in locations, bore pits, hand holes, gate valves, storm inlets, fire hydrants, pull boxes, light poles, pedestals, meters, and any other unlisted above-ground infrastructure. Both alignment and depth must be documented during boring operations at the specified intervals. A method of field witnessing should be employed to mark the horizontal location and depth of the utility, based on readings from the equipment in use. Subsequently, the utility company can survey each marked location and calculate the elevation of the installed facility using the recorded depth readings at each surveyed point.

As a minimum requirement, alignment and depths must be physically documented at intervals not exceeding 25 feet, and at every change in horizontal and vertical alignment. A greater number of survey observations along a utility line will result in a more accurate representation of its true three-dimensional alignment. For instance, long and deep bores may create a parabolic curve, which would not be accurately depicted with point spacing at 25 feet. Therefore, professional judgment should be exercised to collect additional points at closer intervals to generate a more representative geometry of the utility.

Upon completion of the project, the Professional Land Survey shall certify as follows:

Colorado Professional Land Surveyors Certification:

I (**Colorado Professional Land Surveyor Name**), hereby certify that this survey fieldwork was done in accordance with CDOT's Revision of the 625-Construction Survey Specifications and that all accuracy levels have been achieved.

Survey Seal of Professional Land Surveyor in Responsible Charge

**Revision of Section 630
Uniformed Law Enforcement Coordination**

Section 630.01 shall include the following:

The Contractor shall employ off-duty police officers to provide traffic control and traffic enforcement throughout the Project as required.

This work consists of scheduling, coordinating, and furnishing a uniformed police agency officer from the Colorado State Patrol (CSP) to perform uniformed traffic control (UTC) for traffic control Activities designated by the Contractor.

Any Uniformed law enforcement personnel conducting law enforcement shall be duly appointed and designated to enforce the law by a government agency with jurisdiction over the project. Uniformed Law Enforcement as performed by uniformed law enforcement personnel, shall be performed as described in the latest edition of part VI of the MUTCD as adopted by CDOT.

Uniformed law enforcement personnel are expected to enforce the laws of the Roadway throughout the Work zone to ensure an additional level of safety for the construction workers. Citations for any traffic violation within the Work zone shall be at the discretion of law enforcement personnel. Each law enforcement personnel shall be equipped with a law enforcement vehicle to be supplied by the law enforcement agency. Vehicles shall meet the requirements of an emergency vehicle as defined by the Colorado Revised Statute 42-4-213.

**Revision of Section 630
Traffic Signal (Temporary)**

Section 630 of the Standard Specifications is hereby revised for projects as follows:

In subsection 630.01 shall include the following:

This work consists of furnishing and installing, temporary, portable traffic signals to control one lane alternating traffic as shown on the Contractor's approved plans or MHTs. The work includes all equipment, labor, signage, and materials to install and maintain a complete and operational system that accommodates the variations in traffic flow and removal of the installation.

The Contractor shall develop a maximum of six traffic signal timing plans based on current traffic count data, for review and approval by CDOT, and shall be responsible for implementing the timing and maintaining the traffic signals. Timing plans shall include provisions for weekend and weekday traffic variations and provide sufficient clearance time for vehicles through the work zone.

Subsection 630.04 shall include the following:

The Traffic Signal (Temporary) shall consist of a pair of portable traffic signals capable of radio communication, microwave or video vehicle detection for actuation, hardwire or CDOT approved interconnect method, multiple timing plans, manual operation, and a paging system. The signals shall operate by connection to a local power line with a transfer switch connecting the load to the power line when energized and disconnecting from the power line when power fails and connecting to the solar or generator power operation with battery back-up that will provide a minimum of five days of continuous operation. All electrical wiring, including connectors and switch controls necessary to allow all signal functions required by the specification shall be provided with each system. The Contractor shall maintain one operating and parts manual, wiring diagrams, and troubleshooting guide for each system. The portable traffic signal system shall be capable of maintaining operations at a temperature range of -60 degrees Celsius to 200 degrees Celsius.

The Traffic Signal (Temporary) shall be in satisfactory operating condition prior to installation. The Contractor shall demonstrate the satisfactory operating condition by operating the system prior to closing the road to one lane of traffic. The Contractor shall maintain and replace the Traffic Signal (Temporary) if the unit fails to operate satisfactorily to CDOT and shall be retested until a satisfactorily operating Traffic Signal (Temporary) is obtained and installed. The unit shall be kept in satisfactory operating condition during the duration of its use. The unit shall remain in place or remain available until all the work is completed at each location that requires one-lane operation or as deemed necessary by CDOT. The Traffic Signal (Temporary) shall include adequate spare parts and a source of replacement components such that the system is in operation continuously.

-2-
Revision of Section 630
Traffic Signal (Temporary)

Subsection 630.10 shall include the following:

4. MHT's detailing the portable traffic signals for one-lane alternating traffic, shall include provisions for the CDOT prequalified traffic signal contractor to be onsite during initial operation until traffic is serviced to the satisfaction of CDOT. The signal systems shall also be checked a minimum of daily for proper operation. Vehicle queue lengths shall not exceed 1000 feet and queued vehicles should clear the signal within two (2) cycles. The Contractor shall be on-site during both Friday and Sunday afternoons from 12 pm to 8 pm, or as directed by CDOT, during the first month of one-lane alternating traffic for observation, maintenance, and troubleshooting, including timing plan adjustments and queue dissipation by manual override. If issues continue beyond the first month, the contractor shall be onsite as listed above until the issues are resolved to the satisfaction of CDOT. The Contractor shall also provide two signs (24 inches x 36 inches) that shall be placed near each signal that provides a 7-day, 24-hour number that can be called if the signal malfunctions. The Contractor shall respond to signal malfunctions and arrive on-site within 1 hour of notification and shall establish traffic control with the use of flaggers. Flagger control of the site shall remain in place until the traffic signal has been restored and demonstrates satisfactory operation.

Flaggers shall control traffic during initial turn on of the signal. The flaggers shall remain on standby for 2 hours after the signal is turned on and operating properly.
