



**COLORADO**  
Department of Transportation

Region 1 West Program  
425A Corporate Circle  
Golden, CO 80401

**I-70 and Denver West: Truck Escape Ramp –  
Final Design  
Scope of Work**

Project: I-70 and Denver West: Truck Escape Ramp  
Subaccount: 23772

January 14, 2022

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The Contract Administrator for this Task Order:

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## TABLE OF CONTENTS

<u>Description</u>		<u>Page</u>
Section 1	Project Specific Information	3
Section 2	Project Management and Coordination	4
Section 3	Project Description	6
Section 4	Known Existing Features	12
Section 5	Items to be Furnished by CDOT	13
Section 6	General Information	14
Section 7	Work Activity Assignments	15
Section 8	Submittals	24
Section 9	Contract Conclusion	28

**SECTION 1**  
**PROJECT SPECIFIC INFORMATION**

**1.0 Planned Improvements.**

The following improvements are proposed:

- Create a new runaway truck emergency escape ramp (EER) on Eastbound I-70 between MP 257 and 263
- Modify the existing Mt. Vernon EER at MP 257 for better functionality
- Provide associated lighting, signage, and ITS

**1.01 Project Goals.** This project is intended to meet the following goals:

- Improve highway safety by providing facilities that provide usable, functional means to arrest runaway trucks on the long steep downgrade approaching the congested urban area.
- Follow the environmental commitments and CSS process that is already established for this corridor.
- Minimize impacts to traffic.

**1.02 Work Duration.** Construction is planned for the Summer of 2022.

**1.03 Consultant Responsibility.** The Consultant is responsible for the following:

- Review the 30% FIR design prepared by Muller.
- 90% Final Office Review, and 100% PS&E packages.
- Coordinate with other projects in the corridor.
- Support the Context Sensitive Solutions (CSS) process – prepare for and participate in Project Leadership Team (PLT) and Issue Task Force (ITF) meetings.

**1.04 Work Product.** See section 3.03 WORK ELEMENTS for the Project Team work products. Detailed work product requirements are described in the following sections.

**1.05 Work Product Completion.** All submittals must be accepted by the CDOT Contract Administrator or their designee.

**SECTION 2**  
**PROJECT MANAGEMENT AND COORDINATION**

**2.01 CDOT Contacts.** The Contract Administrator for this project is:

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Day to day administration for CDOT will be handled by:

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**2.02 Project Coordination.** Coordination will be required with, but not limited to, the following known agencies:

- CDOT Specialty Units
  - Freight Services
  - Maintenance
  - ITS
  - Incident Command
  - Survey
  - Environmental
  - Geotechnical
  - Drainage
  - Utilities
  - Traffic
  - Bridge
- Adjacent Landowners
- All affected State and Federal Agencies
- Utility Companies
- Project Leadership Team (PLT) and Issue Task Force (ITF)
- Local First Responders
- Colorado State Patrol

- CDOT Project: I-70 and Genesee Wildlife Crossing (24666)
- CDOT Project: EB I-70 ATM (24417)
- CDOT Project: I-70 Resurfacing: Chief Hosa to Colfax
- FHWA

The Consultant should anticipate that design that affects an agency will need to be accepted by that agency prior to its acceptance by CDOT. Submittals to affected agencies will be coordinated with CDOT.

## **SECTION 3 PROJECT DESCRIPTION**

### **3.01 Background.**

I-70 is a critical national east-west transportation corridor that runs through the State of Colorado and serves as a gateway into the Rocky Mountains through Denver. This project is located on Eastbound I-70 between MP 252 and 261. Preliminary design for the scope described to FIR level will be completed by Muller Engineering Company prior to the anticipated execution of this contract. This task order will be for final design and design management for enhancements to the existing Emergency Escape Ramp (EER) at MP 257, and final design of a new EER in the vicinity of the I-70/C470 interchange. The design will include all disciplines required for the project to move from preliminary design to final PS&E. CDOT may elect to complete and/or assist with portions of the design and/or design management.

**3.02 Project Limits.** The project is located on I-70 Eastbound between MP 252 and MP 261

**3.03 Work Elements.** The basis of the work elements, scope and fee is based on the following:

### **PROJECT MANAGEMENT**

- Establish project goals and criteria; then review and document with CDOT.
- Develop Project Schedule for design and update monthly.
- Develop and track a design budget.
- Develop a Project Execution Plan to document the project plan and establish internal project management controls.
- Communicate project control requirements to the design team and ensure the established controls are followed.
- Coordinate activities with design leads and subconsultants.
- Provide acceptable monthly updates to CDOT on progress, schedule, budget and project issues.

### **PROJECT MEETINGS**

The consultant will attend corridor meetings arranged and managed by others. Those meetings include:

- FIR meeting
- PLT meetings

The Consultant will organize, attend, and manage meetings. The Consultant will prepare handouts, graphics and agendas for meetings, and produce meeting notes. Where practical the meetings will be virtual. Meetings include:

- Kickoff Meeting
- Final Office Review 90%
- PS&E Review 100%
- CDOT Specialty Group Meetings
- Bi-Weekly Progress Meetings
- I-70 Mountain Corridor Context Sensitive Solutions (CSS) related Meetings
- Public Meetings

## **SURVEY AND RIGHT OF WAY**

Survey and mapping (including existing ROW) were completed under previous task orders.

The following survey work will be completed by the Consultant: N/A

## **SUBSURFACE UTILITY ENGINEERING**

QL-B utility investigations have been completed under Muller's task order and will be provided to the Consultant. Under this scope of work, additional SUE services, utility plans and utility coordination services include the following:

- Prepare and provide final utility plans.
- Prepare and provide utility relocation plans for FOR and PS&E deliverables.
- SUE investigation at the existing Mt. Vernon EER.
- SUE QL-A includes 5 test hole locations.
- Finalize and seal SUE Plan.
- Coordinate proposed relocation designs.

## **ENVIRONMENTAL SUPPORT**

The following environmental resource studies required for the categorical exclusion and their respective support needs are identified below:

- **Archeology, Paleontology, SHPO:** No support needed
- **Air Quality:** No support needed
- **Noise:** No support needed
- **Non-Historic 4(f):** No support needed
- **Wetland Determination:** No support needed
- **Threatened and Endangered Species:** No support needed
- **Nationwide 404 Permit and Wetland Finding:** No support needed
- **Hazardous Waste:** EER spill containment
- **Stormwater/Erosion Control Plans:** The Consultant will develop the stormwater management plan based on CDOT's latest template. Assume over an acre of disturbance. The Consultant will create initial, interim, and final site plans.
- **Visual:** The consultant will identify and inventory the highway corridor landscape units/types/themes, and project view shed. Identify key views, including to and from the highway and other likely locations of viewers. Analyze existing visual resources, viewer response/exposure, and any impacts expected from the project referencing the Front Range Foothill Design Segment Aesthetic Guidelines and Areas Of Special Attention. The consultant will complete a visual impact assessment (VIA) memo using the Front Range Foothill Design Segment Aesthetic Guidelines and recommend and develop mitigation measures for identified impacts.

**CSS Process:** CDR will help facilitate the continuation of the CSS process for this project. The team plans the following meetings:

- PLT meeting to confirm the CSS work plan, including confirming the agreements from the 30 percent design effort and the outstanding issues to be resolved during this final design effort. Assuming two (2) PLT meetings.
- ITF meetings. Assuming (1) ITF meeting.

The Consultant will work with CDR and CDOT to prepare for, facilitate, and document these meetings. CDR will prepare a summary of the CSS process, agreements, and commitments that will accompany the final design and environmental clearance.

The Consultant will prepare a summary of design changes and evaluate any changes to environmental impacts and/or required mitigation that may result from those changes. The clearance will be revised if needed so that the project can be certified for construction. The Consultant will also identify required permits and/or provide input to the required permits that will be obtained by CDOT.

## **ROADWAY DESIGN**

The following work will be conducted by, or under the direct supervision of a registered Professional Engineer. AASHTO methodologies, CDOT Standards, CDOT's Access Code, the MUTCD, and AASHTO's Roadside Design Guide, CDOT's Region 1 Lane Closure Strategy will be used as design criteria and guidelines. CAD work will be completed in Microstation in accordance with CDOT's CADD Manual using the latest CDOT workspace. Design models will be prepared using OpenRoads.

Develop a roadway design criteria table that lists design speed, lane width, shoulder width, maximum superelevation rate, k values for vertical curves, side slopes, z-slope width and submitted to CDOT for review.

**Final Roadway Design and Roadside Development:** This work will develop the roadway design to a final level. For a sheet list, see the MAJOR DELIVERABLES section.

- Finalize the guardrail and roadside design.
- Finalize the OpenRoads model.
- Finalize roadway details.
- Develop traffic control and phasing plans using The CDOT Region 1 Lane Closure Strategy.
- Tabulate roadway quantities.
- Develop the final signing and striping plan and tabulations.
- Develop the Stormwater Management Plan, including the SWMP Site Map and Tabulation of Stormwater Management Items.
- Revise the Form 463 as necessary.
- Finalize the design details, typical sections, and plans.
- Write specifications for the project.

## **HYDROLOGY AND HYDRAULICS**

- **Roadside Drainage Design:** Roadside and EER drainage design for the proposed roadway modifications will be performed by the Consultant. Analysis under this task will consist of hydrologic investigation of the contributing area to the roadside drainage, sizing of the required ditches and cross culverts for hydraulic capacity and determining any erosion control measures required such as riprap or check structures.
- **Hydraulic Design Report:** Develop final Hydraulic Design Report following CDOT guidelines to document the hydrologic and hydraulic analyses.



## **STRUCTURAL DESIGN**

Structural elements identified in the preliminary design are:

- Median Wall (~14 feet high) at the proposed EER.
- Cantilever Sign Bridges.
- Rail anchor slab at Mt. Vernon EER.

The rail anchor slab improvements at the Mt. Vernon EER will be identified in a Technical Memo supplied by Muller.

A draft Structural Selection memo will be provided by Muller as part of the FIR level design for the median wall design.

The Consultant will further develop all structural designs considering constructability and maintenance of traffic issues. This scope assumes that the FIR level Structural Selection memo design will be developed through final design.

## **GEOTECHNICAL**

Preliminary geotechnical borings have been done by others as part of FIR level design.

The Consultant will perform the following:

- Provide foundation recommendations based on the boring data for the median wall structure.
- Manage additional borings, estimated to be two pavement borings, three foundation borings for cantilever sign bridges and four foundation borings for the rail anchor slab for the Mt. Vernon EER.
- Provide foundation recommendations for the cantilever sign bridges and rail anchor slab.
- Provide final pavement design recommendations and report.

## **LIGHTING DESIGN**

The Consultant will be responsible for continuing FIR level lighting design at the proposed new EER and Mt. Vernon EER.

This effort consists of:

- Finalize lighting layout.
- Finalize luminaire selection.
- Finalize Photometric calculations.
- Develop lighting power source.
- Utility coordination.

## **UTILITY COORDINATION**

The Consultant shall provide a design for installation of a new water line and hydrant at the proposed EER location.

See Section 4 for a list of potentially affected utilities. Current utility assumptions are:

- Develop a potholing plan, if necessary, and coordinate with the utility locating company and the surveyor.
- Coordinate utility relocations as required with the affected utility companies.

- Develop utility plans showing the quality level, pothole data, utility owners and relocations and adjustments.
- Tabulate appropriate pay items for utility relocations and adjustments.
- CDOT will write utility specifications.

## ITS

This project will include ITS devices throughout the project limits. A Variable Message Sign (VMS) will be placed on a sign bridge between the end of the proposed EER and Rooney Rd. Bridge (F-16-HQ). Other devices include speeding truck detection and electronic signs.

The Consultant will:

- Coordinate with the electric utility and CDOT ITS.
- Coordinate with the EB I-70 ATM Project (24417)
- Complete the CDOT SEA documentation for the project.
- Complete the electrical design: panel schedules, one-line diagrams, meter power pedestal (including voltage drop calculations and conduit sizing), electrical details.
- Develop specifications.

## COST ESTIMATES

- **90% (FOR) Cost Estimate**
  - CDOT Engineering Estimates and Market Analysis (EEMA) will provide unit prices for all bid items. The Consultant will provide all other estimate data.
  - A 10 to 20% contingency will be added to account for potential design changes.
- **Final Cost Estimate**
  - Revise the estimate at the PS&E submittal. No contingency.

## QUALITY CONTROL/QUALITY ASSURANCE

Perform quality assurance and cross disciplinary reviews for all related work. Quality control checking is included within the technical work tasks.

## MAJOR DELIVERABLES

- **Roadway Design Criteria Table**
- **Final Office Review (90%) Submittal will include the following:**
  - **Plans**
    - Title Sheet
    - Standard Plans List
    - Typical Sections
    - General Notes
    - Summary of Approximate Quantities
    - Tabulations – Earthwork, Removals, Surfacing, Guardrail, Drainage
    - Survey Control
    - Removal Plans
    - Geometric Layout
    - Plan and profile sheets. Include superelevation diagram on profile as needed. Show ROW lines.
    - Drainage Plan

- Drainage Culvert Sections, if required, and Drainage Details
- Geotechnical Plans and Boring Locations
- Structure Plans and Details
- Electrical Plans – panel schedules, one-line diagrams, lighting control centers (including short circuit calculations and feeder sizing), circuiting and conduit (including voltage drop calculations and conduit sizing), electrical details
- Stormwater Management Plan. Assume > 1 Acre
- SWMP Site Maps – Initial, Interim, and Final
- Signing and Striping Plans and Tabulations
- Construction Phasing Plans
- Traffic Control Plans and Tabulations
- Utility Plans and Tabulations
- Cross Sections at 50-foot intervals. Label slopes, breaklines, ROW, utilities.
- **Construction Cost Estimate**
- **Final Drainage Report**
- **Structure Selection Reports (as directed by CDOT)**
- **Pavement Design Report**
- **Visual Impact Assessment Report**
- **Right-of-Way Ownership Map: by CDOT**
  
- **Construction Plan Package and Final Cost Estimate**  
 The bid plan construction contract package shall consist of the revised FOR plans and will completely describe the work required to build the project including standard special provisions, project special provisions, and detailed quantities.
  - Electronic and hard copies of the following:
    - Roadway
      - *Horizontal and Vertical data*
      - *Staking data*
      - *Earthwork quantities*
      - *Cross sections*
  - Final Engineering Package. The Consultant shall submit copies, in electronic PDF format of the following:
    - All project calculations or worksheets
    - All final reports and their approvals
    - Copies of variances, design decisions, and variance approvals
    - Project meeting minutes
    - Utility clearance package
    - Utility agreements and information regarding the utility location and clearance conditions
    - Professional Engineer Stamped Record contract documents. Use Adobe Sign (per CDOT Procedural Directive 21.1) on the cover sheet (per AES Board Rules 1.5 A 2 a (1) (a))

**SERVICES AFTER DESIGN**

Not included

**SECTION 4**  
**KNOWN EXISTING FEATURES**

**4.01 Major Structures.**

- F-16-GT
- F-16-GS
- F-16-HQ
- F-16-KX
- F-16-KW
- F-16-AT
- F-16-AS
- F-16-XC

**4.02 Utilities.** Utility providers and the location and type of their infrastructure will be identified in the Utility Survey as defined below. At this time, it is anticipated that the following utility providers may be encountered in the project limits:

- CDOT ITS
- Electric

**4.03 Irrigation Ditches.**

- None

The above is a list of the known features in the area. It should not be considered as complete. The Consultant should be alert to the existence of other possible conflicts.

**SECTION 5**  
**ITEMS TO BE FURNISHED BY CDOT**

**5.01** Electronic CDOT Manuals, Specifications, Standards etc. can be obtained from the CDOT website. No hard copies will be provided.

**5.02 Project Specific Items provided by CDOT.**

- As-Constructed information as necessary
- Survey and existing ROW in OpenRoads format
- Certified QL-B utility drawing and list of utility owners including contact information at the proposed EER
- Draft geotechnical boring logs and report
- Draft Structure Selection Memo (Word)
- Traffic counts, including truck percentage, to calculate ESALs
- FIR Level Plans (pdf) and Specifications (Word) for proposed EER
- Mt. Vernon Improvements Technical Memo (pdf)
- Draft Drainage Report (Word)
- FIR level models and drawings in OpenRoads format
- Stantec's Site Evaluation
- Other applicable traffic reports as needed

**SECTION 6  
GENERAL INFORMATION**

**6.01 Authorization to Proceed.** Work will not commence until the written Notice-to-Proceed is issued by the State with certification from the Consultant that the work will be completed within the allotted time.

**6.02 Project Coordination.** The routine working contact will be between the CDOT Project Manager (CDOT/PM) and the Consultant Project Manager (C/PM). Each Project Manager will provide the other with:

- Copies of pertinent written communication

**6.03 Routine Reporting and Billing.** The Consultant will provide the following on a routine basis:

- Coordination of all contract activities by the C/PM
- The periodic reports and billings required by CDOT Procedural Directive 400.2 (Monitoring Consultant Contracts)
- Minutes of all Meetings: The minutes will be completed and will be provided to the CDOT/PM within five (5) working days after the meeting. When a definable task is discussed during a meeting, the minutes will identify the "Action Item," the agency responsible for accomplishing it and the proposed completion date
- In general, all reports and submittals must be accepted by CDOT prior to their content being utilized in follow-up work effort
- Submit an updated schedule on a monthly basis

**6.04 Personnel Qualification.** The Consultant Project Manager (C/PM) must be approved by the CDOT Contract Administrator. Certain tasks must be done by Licensed Professional Engineers or a Licensed Landscape Architects (registered with the Colorado State Board or Professional Engineers and Landscape Architects).

**6.05 CDOT Computer/Software Information.** The Project Team shall utilize the most recent CDOT adopted software. The primary types of software used by CDOT are:

Drafting	Microstation ORD
Specifications	Microsoft Word
Scheduling	MS Project
Misc	Excel, PowerPoint

**SECTION 7  
WORK ACTIVITY ASSIGNMENTS**

This list establishes the consultant's individual task responsibility. The consultant shall maintain the ability to perform all work tasks which are indicated below by an 'X' mark in the consultant column in accordance with the applicable CDOT standards. Selected work tasks shall be assigned only after coordination and consultation with CDOT. The Project Team is responsible for coordinating the required work schedule for those tasks accomplished by CDOT and other agencies.

**PRECONSTRUCTION**

	<u>CDOT/OTHER</u>	<u>CONSULTANT</u>
A. Project Initiation and Continuing Requirements:		
1. Initial Project Meeting	<u>X</u>	<u>X</u>
2. Review Environmental Mitigation Requirements	<u>X</u>	<u>X</u>
3. Independent Design Review	_____	<u>X</u>
4. Project Schedule	_____	<u>X</u>
5. Develop Design Criteria	_____	<u>X</u>
6. Initiate Survey (Map Preparation)	_____	_____
7. Right-of-Entry and Permits	_____	_____
8. Traffic Control	_____	<u>X</u>
9. Initial Submittals	_____	<u>X</u>
10. Progress Meetings	<u>X</u>	<u>X</u>
11. Structure Review Meetings	<u>X</u>	<u>X</u>
12. Project Management	<u>X</u>	<u>X</u>
B. Project Development:		
1. Communication and Consensus Building		
a. Contact List	<u>X</u>	<u>X</u>
b. Public Notices/Advertisements	<u>X</u>	_____
c. General Meetings		
(1) Small Group	<u>X</u>	<u>X</u>
(2) General Public	<u>X</u>	<u>X</u>
(3) Project Review	<u>X</u>	<u>X</u>
d. Communication Aids	_____	<u>X</u>
Graphics Support	_____	<u>X</u>
(1) Newsletter	_____	_____

		<u>CDOT/OTHER</u>	<u>CONSULTANT</u>
	(2) Wall Displays	_____	_____
	(3) Study Model	_____	_____
	(4) Local Office	_____	_____
2.	Project Review Team	_____	_____
3.	Route Location Surveys	_____	_____
	a. Presurvey Conference	_____	_____
	b. Survey Data Research	_____	_____
	c. Secure Rights of Entry	_____	_____
	d. Project Control Survey	_____	_____
	(1) Locate or establish HARN Stations	_____	_____
	(2) Monumentation	_____	_____
	(3) Project Control	_____	_____
	e. Photogrammetry	_____	_____
	(1) Camera Calibration Report	_____	_____
	(2) Flight Plan	_____	_____
	(3) Flight	_____	_____
	(4) Contact Prints	_____	_____
	(5) Negatives	_____	_____
	(6) Enlargements	_____	_____
	(7) Photo Index	_____	_____
	(8) Supplemental Survey (wing points)	_____	_____
f.	Supplemental Surveying	_____	_____
	f. Accuracy Tests	_____	_____
	g. Review (by Registered Professional Land Surveyor)	_____	_____
4.	Conceptual Design	_____	_____
	a. Aesthetics	_____	_____X
	b. System Feasibility	_____X	_____X
	c. Alternatives Analysis	_____	_____
	d. Final Alternatives Reports	_____	_____
	e. Interchange Approval Process	_____	_____



CDOT/OTHER

CONSULTANT

5. Data Gathering Analysis, and Mitigation Development

a. Traffic Related		
(1) Traffic Study	_____	_____
(2) Accident Study	_____	_____
(3) Noise Study	_____	_____
(4) Air Quality		
(a) Air Quality Monitoring	_____	_____
(b) Air Quality Analysis	_____	_____
(5) Alternate Transportation Sys.	_____	_____
b. Archeology		
(1) Gather Data & Analysis	_____	_____
(2) Mitigation Implementation	_____	_____
c. Paleontology		
(1) Gather Data & Analysis	_____	_____
(2) Mitigation Implementation	_____	_____
d. Initial Geology Investigation	_____	_____
e. Water Quality		
(1) Quality Analysis	_____	_____
(2) Quality Monitoring	_____	_____
f. Ecological Assessment	_____	_____
g. Historical		
(1) Historical Bridge Clearance	_____	_____
(2) Historical Study & Clearance	_____	_____
h. Floodplain and Drainage Assessment	_____	_____
i. Right-of-Way		
(1) Early ROW	_____	_____
(2) ROW Review	_____	_____
j. 4(f)/6(f) Activity		
(1) Evaluation	_____	_____
(2) Clearance/Concurrence	_____	_____
k. Threatened and/or Endangered Species		
(1) Determination of Presence	_____	_____
(2) Implement Mitigation	_____	_____
l. Wetlands		
(1) Wetlands Determination	_____	_____
(2) Wetlands Findings Report	_____	_____

	<u>CDOT/OTHER</u>	<u>CONSULTANT</u>
m. Hazardous Materials		
(1) Field Search	_____	_____
(2) Research	_____	_____
(3) Conduct in-situ tests	_____	_____
(4) Analyze and Assess Impacts	_____	X
n. Existing Roadway/Major Structure	_____	X
o. Construction Requirements	_____	X
p. Aesthetic Considerations	_____	X
q. Utilities	_____	X
r. Economics	_____	_____
s. Farmland	_____	_____
t. Energy Usage	_____	_____
6. Environmental Assessment (EA) Process	_____	_____
7. Environmental Impact Study (EIS) Process	_____	_____
8. Design Report Process	_____	_____
9. Obtain Permits	_____	_____
C. Preliminary Design:		
1. Design Field Surveys		
a. Presurvey Conference	_____	_____
b. Survey Data Research	_____	_____
c. Secure Rights of Entry	_____	_____
d. Project Control Survey		
(1) Locate or Establish HARN Stations	_____	_____
(2) Monumentation	_____	_____
(3) Local Project Control	_____	_____
e. InRoads TMOSS Survey	_____	_____
f. Terrain Survey	X	_____
g. Utility Survey	_____	_____
h. Hydraulic Survey	_____	_____
i. Material Survey	_____	_____
j. Supplemental Surveying	_____	_____
k. Survey Report	_____	_____
l. Accuracy Tests	_____	_____
m. Review (by Registered Professional Land Surveyor)	_____	_____
n. Wetland Boundary	_____	_____

	<u>CDOT/OTHER</u>	<u>CONSULTANT</u>
2. Traffic Engineering	_____	_____
3. Materials Engineering	_____	_____
a. Preliminary Soil Investigation	_____	<u>  X  </u>
b. Pavement Rehabilitation	_____	_____
c. New Pavement Structure	_____	_____
d. Pavement Justification	_____	_____
e. Pavement Design Report	_____	<u>  X  </u>
f. Existing Bridge Investigation	_____	_____
g. Foundation Investigation	_____	<u>  X  </u>
h. Geothermal	_____	_____
4. Hydrology/Hydraulics Engineering		
a. Hydrology	_____	_____
b. Hydraulics	_____	<u>  X  </u>
c. Preliminary Hydraulics Report	_____	_____
5. Utility Coordination		
a. Location Maps	_____	_____
b. Reviews and investigations	<u>  X  </u>	_____
(1) "Potholing"-Excavation	_____	<u>  X  </u>
(2) "Potholing"-Surveying Utility Locations	_____	<u>  X  </u>
c. Relocation recommendations	_____	<u>  X  </u>
d. Ditch Company coordination	_____	_____
6. Roadway Design and Roadside Development		
a. Roadway Design	_____	<u>  X  </u>
b. Roadside Development	_____	<u>  X  </u>
(1) Guardrail and delineator	_____	<u>  X  </u>
(2) Landscaping	_____	_____
(3) Sprinkler Systems/Liquid Anti-Icing	_____	_____
(4) Sound Barriers	_____	_____
(5) Bike paths	_____	_____
(6) Truck Escape Ramps	_____	<u>  X  </u>
(7) Rest Areas	_____	_____
(8) Safety analysis	_____	<u>  X  </u>
c. Lighting Plan	_____	<u>  X  </u>

	<u>CDOT/OTHER</u>	<u>CONSULTANT</u>
7. Right-of-Way		
a. Research	_____	_____
b. Ownership Map	_____	_____
8. Major Structural Design		
a. Structural Data Collection	_____	_____
b. Structure concept study	_____	_____
c. Value Engineering	_____	_____
d. Structure Selection Report	_____	_____X
e. Foundation Investigation Request	_____	_____X
9. Construction Phasing Plan	_____	_____
10. Preparation for the DOR	_____	_____
11. Design Office Review	_____	_____
12. Post DOR Revisions	_____	_____
D. Final Design:		
1. Project Review	_____	_____X
2. Design Coordination	_____	_____X
3. Utility Coordination	_____	_____X
4. Hydraulic Design		
a. Data Review	_____	_____X
b. Stormwater Pollution Prevention Plan	_____	_____X
c. Major Structure Channel Design	_____	_____
d. Final Hydraulics Report	_____	_____X
5. Interim Plans		
a. Initiate ROW Authorization Process	_____	_____
b. Final Utility Plans	_____	_____X
c. Final Railroad Plans	_____	_____
a. ROW Plans Content	_____	_____
b. Title Insurance and Closing Services	_____	_____
c. Authorization Plan	_____	_____
d. Appraisal Staking	_____	_____
e. ROW Plan Revisions (During Negotiations)	_____	_____

	<u>CDOT/OTHER</u>	<u>CONSULTANT</u>
7. Materials Engineering		
a. Materials Data	_____	<u>  X  </u>
b. Stabilization validity	_____	<u>  X  </u>
c. Stabilization Plan	_____	<u>  X  </u>
8. Traffic Engineering		
a. Permanent Signing/Pavement Marking Plans	_____	<u>  X  </u>
b. Signalized Intersections	_____	_____
c. Traffic Control Plan	_____	<u>  X  </u>
9. Roadside Planning		
a. Landscaping	_____	<u>  X  </u>
b. Other	_____	_____
(1) Sprinkler systems/Liquid Anti-Icing	_____	_____
(2) Bike paths	_____	_____
(3) Sound barriers	_____	_____
(4) Truck escape ramps	_____	<u>  X  </u>
(5) Rest Areas	_____	_____
(6) Guardrail and delineator	_____	<u>  X  </u>
(7) Safety analysis	_____	<u>  X  </u>
c. Lighting Plans	_____	<u>  X  </u>
10. Roadway Design	_____	<u>  X  </u>
11. Final Major Structural Design		
a. Structure Final Design	_____	<u>  X  </u>
b. Preparation of Structure Plans and Specifications	_____	<u>  X  </u>
c. Independent Design, Detail, and Quantity Check	_____	<u>  X  </u>
d. Bridge Rating and Field Packages	_____	_____
e. Structure Final Review Plans and Specifications	<u>  X  </u>	<u>  X  </u>
12. Construction Phasing Plan	_____	<u>  X  </u>
13. Plan Preparation for FOR	_____	<u>  X  </u>
14. Final Office Review	<u>  X  </u>	<u>  X  </u>
15. Construction Plan Package	_____	<u>  X  </u>

CDOT/OTHER

CONSULTANT

E. Corridor Management Support:

- 1. Design Control
- 2. Information Services
- 3. Budget Planning Support

_____	_____
_____	_____
_____	_____

F. Value Engineering

_____	_____
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**SERVICES AFTER DESIGN**

A. Review of Shop Drawings

_____	_____
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B. Construction Services

- 1. Coordinate Schedule
- 2. Provide field observation
  - a. Pile driving/caisson drilling
  - b. Major concrete pours
  - c. Placement of girders
  - d. Splicing of girders
  - e. Post-tensioning duct and anchorage placement
  - f. Post-tensioning operations
- 3. Technical assistance
  - a. Design Support during Construction
- 4. Submittals
  - a. Diary
  - b. Documentation/justification
  - c. Progress reports
  - d. Calculations, drawings, and specifications
  - e. Daily time sheets

_____	_____
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C. Post Design Plan Modifications

_____	_____
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D. Post Construction Services:

- 1. Final earthwork determination
- 2. As-built plans
- 3. Revisions to Right-of-Way Plans (Excess Land)
- 4. Monument ROW
- 5. Set Property Corners (Remainders)
- 6. Deposit ROW Plans

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

E. Construction Engineering

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**SECTION 8  
SUBMITTALS**

	<u>CDOT/OTHER</u>	<u>CONSULTANT</u>
<b>A. Project Initiation and Continuing Requirements:</b>		
1. Periodic Reports & Billings	_____	_____X
2. Meeting Minutes	_____	_____X
3. Project Schedule	_____	_____X
4. Completed Specific Design	_____	_____X
Criteria (Attachment A)	_____	_____
5. Survey Plan	_____	_____
6. Permissions to Enter (Form 730)	_____	_____
7. Traffic Control Plan	_____	_____X
8. Initial Submittal of InRoads TMOSS and/or MOSS Compatible Data	_____X	_____
9. Initial Submittal of an Original Plan Sheet	_____	_____
<b>B. Project Development:</b>		
1. Public Communication Contact List	_____	_____
2. Route Location Survey:		
Electronic Survey Files	_____X	_____
Survey InRoads TMOSS Data	_____X	_____
Monument Records	_____	_____
Control & Monumentation Plan Sheets	_____X	_____
Aerial Photography Index Map Sheets	_____	_____
Aerial Photography Contact Prints	_____	_____
Aerial Photography Negatives	_____	_____
Photogrammetry		
Electronic Data	_____	_____
Base Map Sheets	_____	_____
Base Map Index Sheet(s)	_____	_____
Rectified Photos with Mylar Originals	_____	_____
3. System Feasibility Study	_____	_____
4. Final Alternatives Report	_____	_____
5. System Feasibility Study	_____	_____
6. Noise Assessment Report	_____	_____
7. Air Quality Report	_____	_____



	<u>CDOT/OTHER</u>	<u>CONSULTANT</u>
8. Archeology Survey Report & Mitigation Plan	_____	_____
9. Paleontology Preliminary Report & Mitigation Plan	_____	_____
10. Water Quality Report (SCMP)	_____	_____
11. Ecology Report	_____	_____
12. Historical Bridge Clearance or Mitigation Plan	_____	_____
13. Historical Cultural Resources Report	_____	_____
14. Floodplain and Drainage Assessment Report & Mitigation Plan	_____	_____
15. ROW Report	_____	_____
16. 4(f)/6(f) Mitigation Plan	_____	_____
17. Threatened and/or Endangered Species Assessment	_____	_____
18. Wetlands Findings Report	_____	_____
19. Hazardous Materials Findings	_____	<u>  X  </u>
20. Visual Impact Assessment (VIA)	_____	<u>  X  </u>
20. Environmental Assessment (EA)		
a. Preliminary EA	_____	_____
b. Certified Verbatim Transcript	_____	_____
c. Finding of No Significant Impact (FONSI)	_____	_____
21. Environmental Impact Statement		
a. Draft EIS	_____	_____
b. Certified Transcript of Meeting	_____	_____
c. Final EIS	_____	_____
21. Design Report Process		
a. Preliminary Design Report	_____	_____
b. Final Design Report	_____	_____
22. Permits		
401 Permit	_____	_____
402 Permit	_____	_____
404 Permit	_____	_____
Wildlife Certification	_____	_____
NPDES StormWater Permit	_____	_____
23. Preliminary Design		
a. Electronic Survey	_____	_____
b. Traffic Data & Recommendations	_____	_____

	<u>CDOT/OTHER</u>	<u>CONSULTANT</u>
c. Soils Investigation Report	_____	<u>  X  </u>
d. Pavement Design Report	_____	<u>  X  </u>
e. Existing Bridge Condition Report	_____	_____
f. Foundation Investigation Report	_____	<u>  X  </u>
g. Engineering Geology Plan Sheet(s)	_____	_____
h. Preliminary Hydraulics Report	_____	_____
i. Utility Relocation Recommendations	_____	_____
j. Ditch Structure Plans	_____	_____
h. Stabilization Plan	_____	_____
i. FIR Plan Set	_____	_____
<b>24. Final Design</b>		
a. Corrected FIR Plan Set	_____	_____
b. Preliminary Cost Estimate	_____	<u>  X  </u>
c. List of Deviations from Standard Design Criteria	_____	<u>  X  </u>
d. Final Hydraulics Report	_____	<u>  X  </u>
e. Signing/Pavement Marking Plans	_____	<u>  X  </u>
f. Signal Warrants	_____	_____
g. Signalized Intersection Plans and specifications	_____	_____
h. Traffic Control Plan	_____	<u>  X  </u>
i. Structural Selection Report	_____	<u>  X  </u>
j. Foundation Investigation Request	_____	<u>  X  </u>
k. Structure Final Review Plans and Special Provisions	<u>  X  </u>	<u>  X  </u>
l. Construction Phasing Plan	_____	<u>  X  </u>
m. FOR Plan Sheets and Special Provisions	_____	<u>  X  </u>
n. FOR Cost Estimate	_____	<u>  X  </u>
o. FOR Revised Plans and Special Provisions	_____	<u>  X  </u>
p. Final Review Revisions	_____	<u>  X  </u>
q. Final Utility Plan Set	_____	<u>  X  </u>
<b>25. Roadside Planning</b>		
a. Landscaping Plans & Specs.	_____	<u>  X  </u>
b. Certification of plant Availability	_____	_____
c. Sprinkler System Plans & Specs.	_____	_____
d. Bike path Plans & Specs.	_____	_____

	<u>CDOT/OTHER</u>	<u>CONSULTANT</u>
e. Sound Barrier Plans & Specs.	_____	_____
f. Truck Escape Ramp Plans & Specs.	_____	<u>  X  </u>
g. Rest Area Plans & Specs.	_____	_____
h. Lighting Plans	_____	<u>  X  </u>
 C. Right-of-Way		
1. Title Commitments	_____	_____
2. Preliminary Ownership Map (include in the FIR plan set)	_____	_____
3. Area Calculations	_____	_____
4. Authorization Plans	_____	_____
5. Legal Descriptions	_____	_____
6. ROW Authorization Plans	_____	_____
 D. Construction Plan Package		
1. Roadway Design Data Submittal	_____	<u>  X  </u>
2. Major Structure Design Final Submittal	_____	<u>  X  </u>
3. Record Plan Sets	_____	<u>  X  </u>

## SECTION 9 CONTRACT CONCLUSION

**9.01 Supplemental Work.** Work on other investigations, coordination and design tasks as related to the project and as directed by the Resident Engineer shall be limited to the available budget to complete them under the approved task order.

A subsequent task order will be developed and processed for any additional work.

**9.02 Contract Completion.** This Contract will be satisfied upon acceptance of the following items if applicable:

- Project Schedule
- Project Progress Meeting Minutes
- All documents found in Research
- Completion of review of contract submittals
- Design Plans, Specifications, and Final Estimate

### SUBMITTALS

Project Initiation and Continuing Requirements

- Periodic Reports
- Meeting Minutes
- Project Schedule
- CDOT Forms 859, 463

Final Design

- Correspondence with Agencies, Entities, and Public
- Final Review Revisions

Construction Plan Package

- Final Plans, Specifications & Estimate Package for Ad
- Final Cross Sections
- Schedule of Quantities
- Design Decisions
- Variances
- Earthwork Quantities
- Project Calculations
- Worksheets
- Design Notes
- Record Plan Sets

Additionally, CDOT shall retain all work products should the contract be terminated.