



COLORADO
Department of Transportation
Region 3

Bridge Enterprise and Special Projects
714 Grand Avenue, P.O. Box 298
Eagle, CO 81631

Region 3

I-70 HLT Signage Project
Project Specific Scope of Work

Project No.: R300 216
Sub Account No.: 20438
Scope of Work Date: October 27, 2014

Section 1 Project Specific Information
Section 2 Project Management and Coordination



The Contract Administrator for this Project:
 Peter Lombardi, PE Resident Engineer
 Region 3 Bridge Enterprise and Special Projects Residency Phone: 970.328.9990

1 Section 1: Project Specific Information

1.01 Project Background:

- Planned Improvements:
 - Both bores of HLT are to have new VMS/LUS/CMS replaced.
- The Hanging Lake Tunnel Bores are located between MP 125 and 126 on I-70 in Glenwood Canyon in Garfield County. These tunnels were formally dedicated on October 14, 1992. The Hanging Lake Tunnels Traffic Operation Center (HLT-TOC), located within HLT, monitors the tunnels and displays information to the traveling public by way of existing Changeable Message Signs (CMS), Variable Message Signs (VMS) and LUS (Lane Usage Signal) located within and near the tunnel. These systems have been in use since the tunnels were originally constructed and have become unreliable and malfunctioning more with age. Due to the age of the system, replacement parts are no longer available and support for maintenance issues is logistically challenging. These lights and systems need to be replaced; new wiring may be required for all items and Ethernet connections may be required for at least the VMS. In an effort to have consistency throughout the state, the new signage may be the same as that installed in Eisenhower Johnson Tunnels. The new system will need to be able to communicate seamlessly with the existing HLT-TOC systems.
 - West Bound Tunnel, F-08-AQ, MP Reference Point: 125.243, Length 4,001', Year Built: 1992
 - East Bound Tunnel, F-08-AP, MP Reference Point: 125.233, Length 4,001', Year Built: 1992

1.02 Project Goals:

Preliminarily, this project is intended to produce the following improvements:

- Formulate best plan to replace electronic signs in Tunnels.
- Improve tunnel communication with traveling public in Hanging Lake Tunnels with new signage. Upgrade HLT system to be more modern with more-readily available replacement parts and better vendor and supplier support for trouble shooting and maintenance.
 - HLT improvements will require at a minimum the replacement of the following:
 - × 10 Variable Message Signs (VMS)
 - × 76 LUS units, which includes 60 double face and 16 single face
 - × 19 Changeable Message Signs (CMS); consider replacing all signs at 19 characters and same as VMS signs
- Improve Safety with better signage visualization
- Improve Maintenance life-cycles of facilities and operational costs
- Design and Construct a quality project
- Meet Schedule and Budget
- Facilitate and foster collaboration, communications, and partnerships among all members of the project team
 - Communication and coordination with Maintenance will be an important part of this project.



- Provide guidance that's promotes uniformity and consistency throughout CDOT's tunnel system.

1.03 Project Limits:

- The Project Limits are along I-70 with a majority of the design work confined to inside the Hanging Lake Tunnels. Some design work may be required outside of each tunnel for power supply and some VMS/CMS/LUS are located outside of the HLTs.
- Survey work may be required inside and outside of the tunnels.

1.04 Work Duration:

- Design Time: 18 Months
- Construction Time: 24 Months

1.05 Consultant Responsibility and Duties:

The Consultant is expected to provide the appropriate expertise to complete the Project. The following is a list of possible professional needs depending on the recognized work. The Task Orders will define the work.

- Provide a Schedule for design work including time allotted for CDOT Process
- **Project Manager**
 - A licensed Engineer to manage the Project and serve as Primary CDOT Contact. The Project Manager shall coordinate the plan set and project documents to ensure presentation in a standard CDOT format. The Project Manager shall provide overall project coordination with all applicable CDOT personnel and stakeholders.
- **Electrical Engineer**
 - A licensed Engineer to produce electrical one line drawings coordinated and compatible with CDOT systems.
 - Evaluation of the existing electrical system may be required to identify what changes might need to be made to serve the new lighting and signage system.
- **Mechanical Engineer**
 - A licensed Engineer.
- **Structural Engineer**
 - A licensed Engineer to provide custom design of LUS/CMS/VMS/LED mounting bracket system to existing tunnels. Design of lighting and electrical distribution mounting will also be required.
- **Traffic Engineer**
 - A licensed traffic engineer will be needed for evaluation of traffic volumes and allowable construction times, assembly of traffic related plans.
- **Surveyor**
 - A Professional Licensed Land Surveyor will be needed for survey work that may be required outside of the tunnels, as well as some possible survey work inside the tunnel. Utility locations for design purposes may be needed.
- **Information Technology System (ITS) Specialist**
 - Shall provide expertise for the systems compatibility and communication with CDOT's existing server.
 - A licensed engineer will be needed for the design of the LUS, VMS, CMS and other ITS related elements of the project.



- The Consultant is responsible for developing complete plans, specifications, and cost estimate package for advertisement and construction for the Project improvements.
- Design Support during construction
- Adhere to all applicable standards
 - CDOT
 - FHWA
 - NFPA 502
 - Applicable lighting guidance; ANSI/IESNA RP-22 Recommended Practice for Tunnel Lighting, CIE-88 Guide for the Lighting of Road and Tunnels and Underpasses and AASHTO Roadway Lighting Design Guide
 - AASHTO
 - TOMIE Manual
 - National Tunnel Inspection Standard
- Site visits for verification of as-builts and verification of existing conditions
 - Consultant Provided Traffic Control will be needed if maintenance is not available to assist.
- Attendance at Meetings
 - Project Kick Off, Pre-Scoping Presentation, Maintenance Meetings and Maintenance Coordination Meetings, FIR/FOR/DOR, and others as requested or required.

1.06 Work Product:

- The Consultant Work Products Are:
 - Reports
 - Scoping Presentation
 - Design Office Review Plans and Estimate
 - This step may be required to ensure proper coordination of work product with Maintenance
 - Field Inspection Review Plans (FIR), Specifications Outline and Estimate
 - Final Office Review (FOR) Plans, Specifications and Estimate
 - Final Construction Plan Package for Advertisement
 - Project Schedule
 - Meeting Minutes
 - Professional Engineer Stamped Record Sets

1.07 Work Product Completion:

1.08 Additional Information



2 Section 2: Project Management and Coordination

2.01 CDOT Contacts:

- The Contract Administrator for this project is:
 - Peter Lombardi
CDOT Region 3 Bridge Enterprise and Special Projects Resident Engineer
714 Grand Avenue
Eagle, CO 81631
Phone: 970.328.9990

- Active day to day administration and monitoring of this contract will be delegated to the following CDOT Employee:
 - John Kronholm, Project Manager, Phone: 970.328.9963

2.02 Project Coordination:

- CDOT Staff Bridge
- CDOT DTD/ITS
- CDOT Traffic
- CDOT Maintenance
- CDOT Residencies
- CDOT Specialty Units
 - Environmental
 - Utilities
 - Right of Way
- US Forest Service
- Garfield County Officials
- Mesa County Officials
- Utility Companies
- FHWA

