

Twin Tunnels Design/Construction Technical Team Meeting #3

June 14, 2012
9:00AM – 12:00PM
Elks Lodge
1600 Colorado Blvd.
Idaho Springs, Colorado

FINAL

Agenda

1. Introductions and Overview
2. Other Corridor Projects
3. Responses to Technical Team Issues
4. Outcomes from June 7 ALIVE/SWEEP meeting
5. Review proposed solutions for:
 - I-70 Retaining wall aesthetics
 - Rockfall mitigation
 - Enhancement identification process
6. Develop criteria for:
 - Impacts to recreational users
 - Infrastructure required in median
 - Coatings
 - Lighting
 - Signing
7. Next Steps

Step 1
Define Desired Outcomes
and Actions

Step 2
Endorse the Process

Step 3
Establish Criteria

Step 4
Develop Alternatives and Options

Step 5
Evaluate, Select, and Refine
Alternatives and Options

Step 6
Finalize Documentation and
Evaluation Process

Other Corridor Projects

- Frontage Road
- Twin Tunnels EA
- Westbound Tunnel Repairs
- Rockfall Mitigation
- Expansion Joint Work
- Geotechnical Investigations



Core Values

- **Safety**
- **Mobility**
- **Gateway**
- **Wildlife**
- **The Creek**
- **Destination**
- **History**
- **Constructability**
- **Inclusivity**
- **Schedule**

Tentative Project Schedule

- **Package 1A**
 - » **Field Inspection Review Meeting – July, 2012**
 - » **Final Office Review Meeting – September, 2012**
 - » **Construction Notice to Proceed – November, 2012**
- **Package 1B**
 - » **Field Inspection Review Meeting – July/August, 2012**
 - » **Final Office Review Meeting – October, 2012**
 - » **Construction Notice to Proceed – November, 2012**



Tentative Project Schedule

- **Package 2**
 - » **Field Inspection Review Meeting – September, 2012**
 - » **Final Office Review Meeting – December, 2012**
 - » **Construction Notice to Proceed – March, 2013**
- **Package 3**
 - » **Field Inspection Review Meeting – April, 2013**
 - » **Final Office Review Meeting – May, 2013**
 - » **Construction Notice to Proceed – August, 2013**



Responses to Technical Team Issues

- » Issues Affecting C.R. 314 Alignment and Walls near Hidden Valley
- » CSS Compliance documentation – Appendix B
 - Project Team will provide quarterly updates
- » Proposed Twin Tunnels Technical Team (T4) meeting schedule
 - Plan to present aesthetic “packages” at key points

CSS Compliance – example new column

Design Criteria	Was this Design Criterion met on this project?	Results of the Environmental Phase	Results of the Design Construction Phase
Corridor Design Character	Yes	<p>The engineering of the road reflects the creek and the median.</p> <p>The Aesthetic Guidelines must be considered.</p> <p>The design of the portal should be simple and integrated</p>	<p>Design refinements are remaining out of the 100 yr flood plain, maintaining the median and minimizing cut walls.</p> <p>Adherence to Aesthetic Guidelines is a key criteria of each design decision.</p> <p>The portal design will be designed in accordance with the 106 Task Force and the “simple and integrated” criteria will be considered as part of the overall portal criteria.</p>

Issues Timeline



TWIN TUNNELS WIDENING ISSUES FOR TECHNICAL TEAM PRELIMINARY SCHEDULE																										
12-Jun-12	2012												2013													
	MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC		JAN		FEB		MAR		APRIL		MAY	
ISSUES	2ND	4TH	2ND	4TH	2ND	4TH	2ND	4TH	2ND	4TH	2ND	4TH	2ND	4TH	2ND	4TH	2ND	4TH	2ND	4TH	2ND	4TH	2ND	4TH	2ND	4TH
NOISE/ VIBRATION	—	*																								
TUNNEL LINING	—		*		●																					
RETAINING WALL RAILING	—	*																								
IMPACTS TO TRAFFIC	—	*	●		●																					
I-70 RETAINING WALL AESTHETICS	—	*	●	●																						
BRIDGE AESTHETICS	—	*	●																							
NEPA ANALYSIS OF CONSTRUCTION METHODS	—	*	●																							
ROCKFALL STRUCTURES	—	*	●																							
SIGNING			—	*	●																					
ADAPTIVE MITIGATION						*			●				●												●	
PUBLIC INFORMATION				—	*	●			●			●									●					
IMPACTS TO RECREATION USERS			—	*	●																●					
INFRASTRUCTURE IN MEDIAN			—			*	●																			
COATINGS (COLOR)			—				*	●																		
LIGHTING			—				*	●																		
LANDSCAPING			—				*		*		*		*													
TUNNEL PORTAL AESTHETICS			—		*	●	●	●																		
INCIDENT MANAGEMENT PLAN			—		*	●																				
C.R. 314 FRONTAGE ROAD RETAINING WALL FASCIA				—			*	●	●	●																
TRAILHEAD IMPROVEMENTS					*		●		●			●													●	
ENHANCEMENT OPPORTUNITIES			—				*		*		*		*												*	

AESTHETICS REVIEW
Creek Walls, Railing, Landscape
 AESTHETICS REVIEW
Bridge Area, Landscape
 AESTHETICS REVIEW
Portal Area, Landscape
 AESTHETICS REVIEW
Noise Walls, Gate, Overhead, Landscape

PACKAGE 1A PACKAGE 1 PACKAGE 2 PACKAGE 3

LEGEND:

- Shaded Items are Complete
- Discuss Criteria
- * Presentation of Concepts
- Follow-up (As Needed)

NOTE: FINAL DESIGN AND CONSTRUCTION WILL CONTINUE THROUGH MARCH 2014. AFTER FEBRUARY 2013, TECHNICAL TEAM MEETINGS WILL OCCUR ON AN AS NEEDED BASIS, LESS THAN ONCE A MONTH



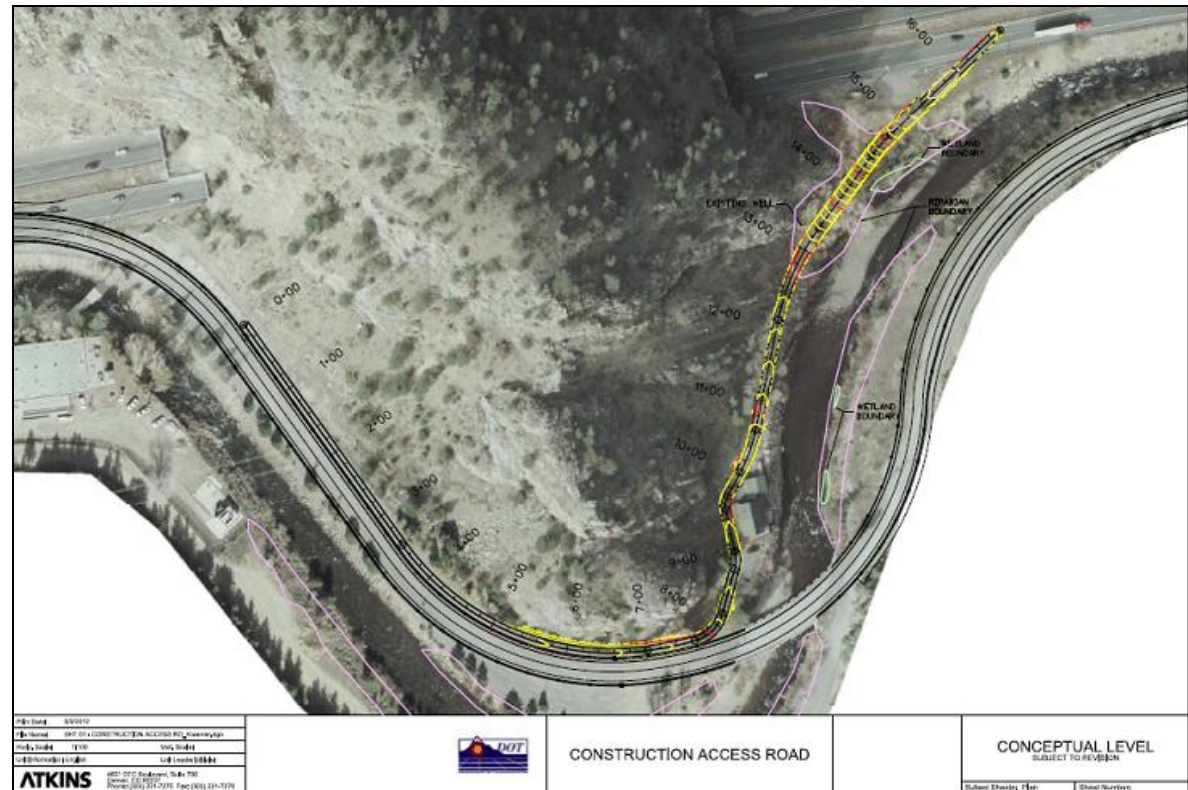
Outcomes from June 7th ALIVE/SWEEP Meeting

- SWEEP and ALIVE members support the approval process and the concept of the access road and the restoration mitigation
- SWEEP and ALIVE members support the permitting process for the stream crossing and the details of rockfall mitigation



Portal Access Road: Proposal

- Proposal: Construct access road beginning at the current West Portal, running through the Clear Creek property and up the embankment to the East Portal.
 - » Construction beginning February 2013
 - » Restoration beginning in September 2013



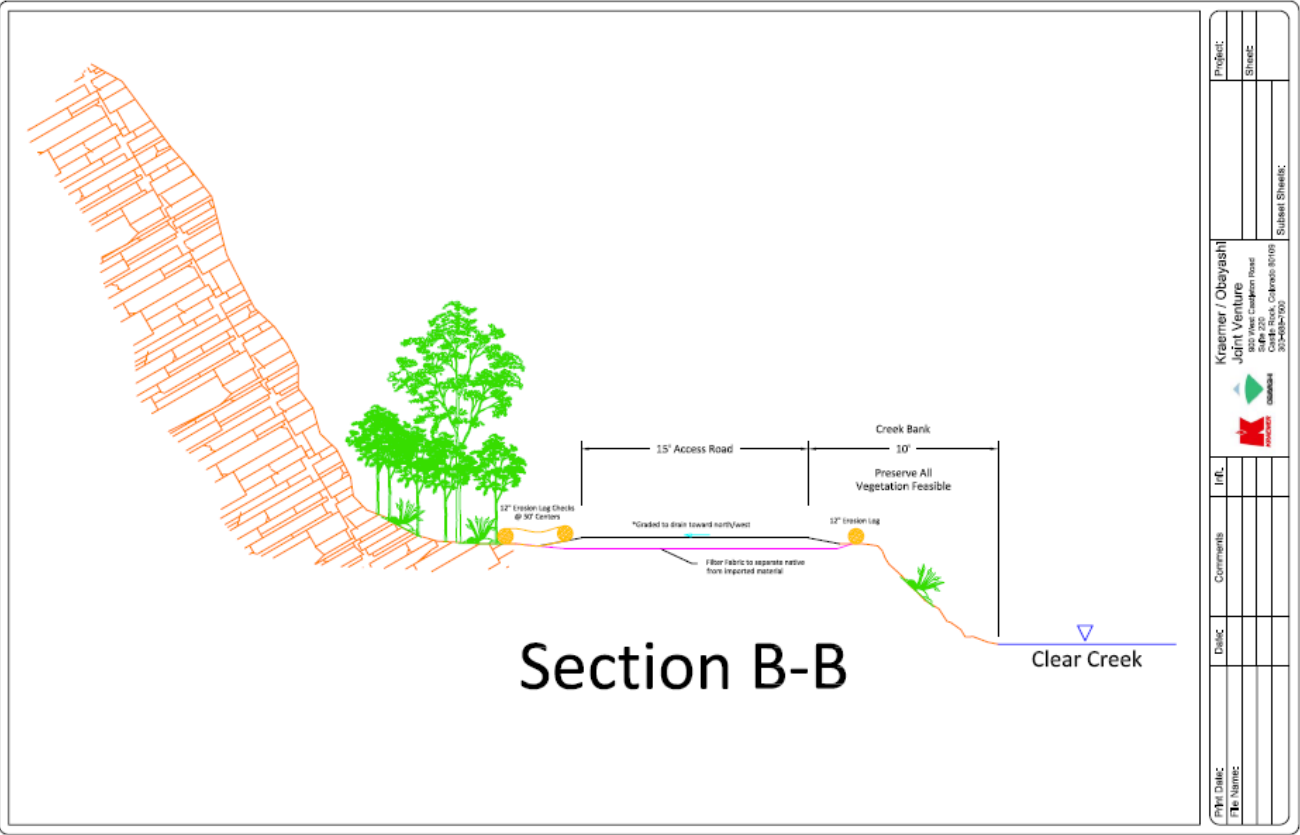
Portal Access Road: Proposal



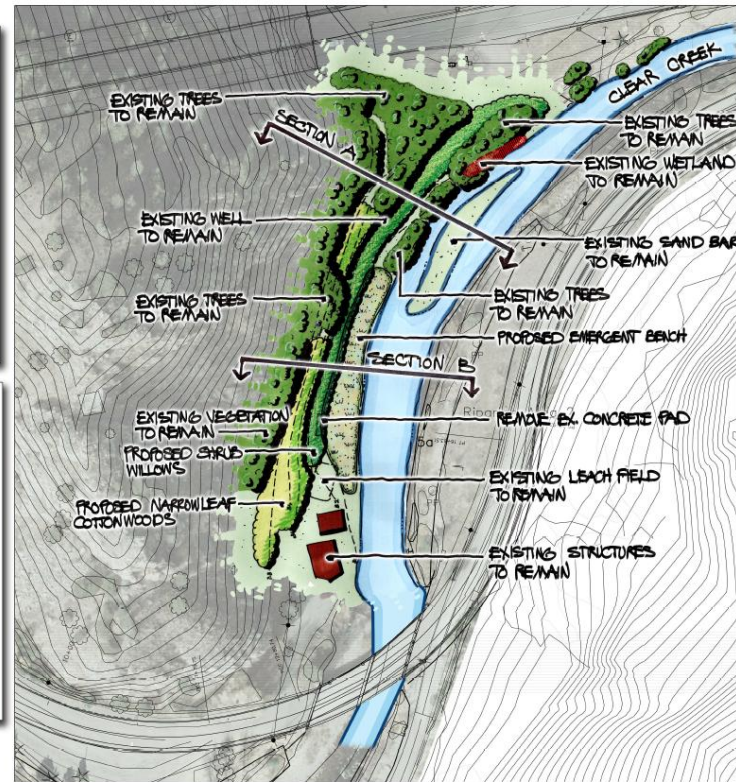
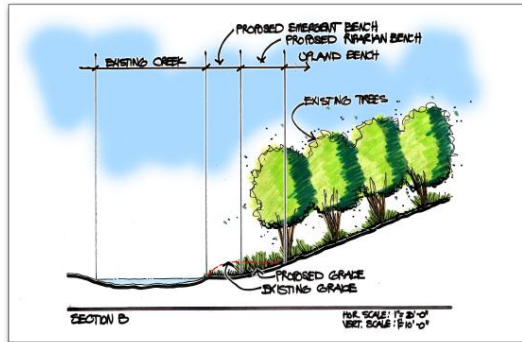
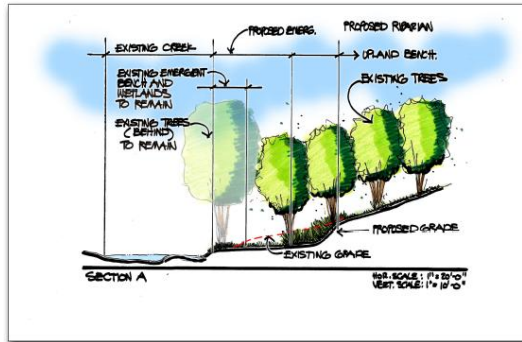
Portal Access Road: Cross Section



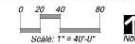
Portal Access Road: Cross Section



Portal Access Road: Mitigation Proposal



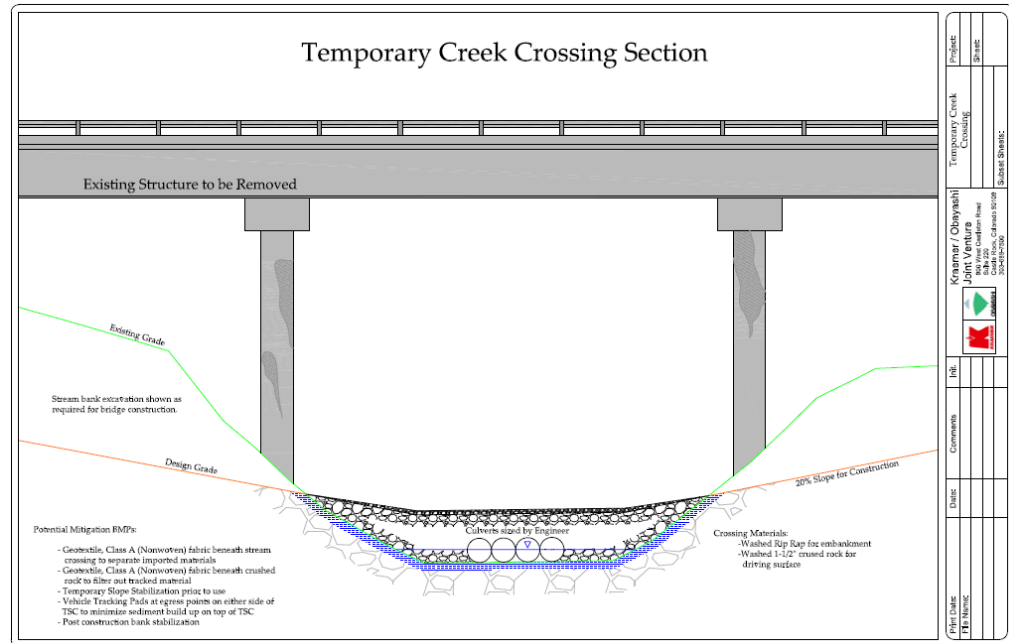
PORTAL TO PORTAL ACCESS ROAD MITIGATION
Clear Creek County, Colorado



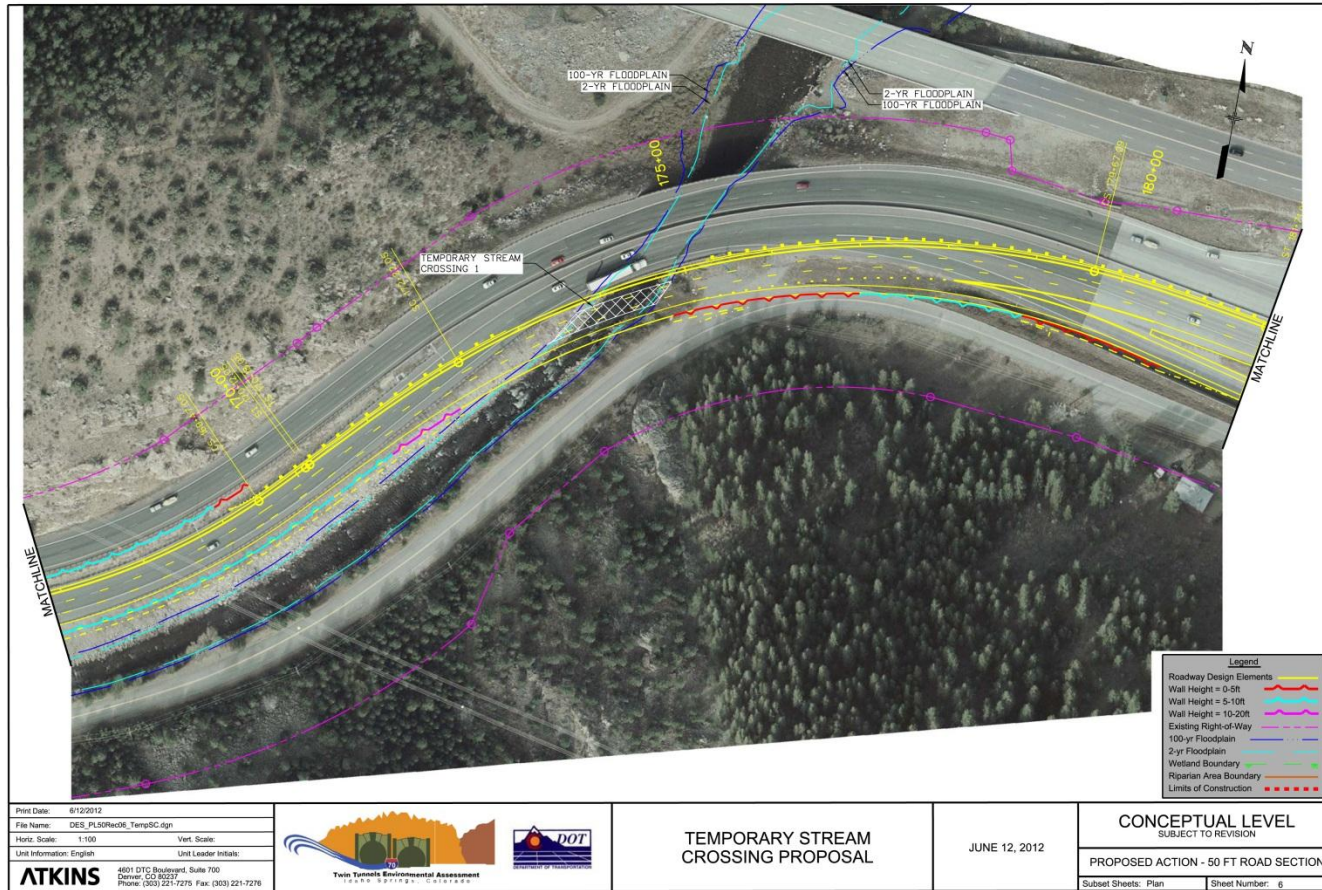
associates inc.
2000 South Main Street, Ste. 101
Boulder, Colorado 80501
MAY 31, 2012

Creek Crossing: Proposal

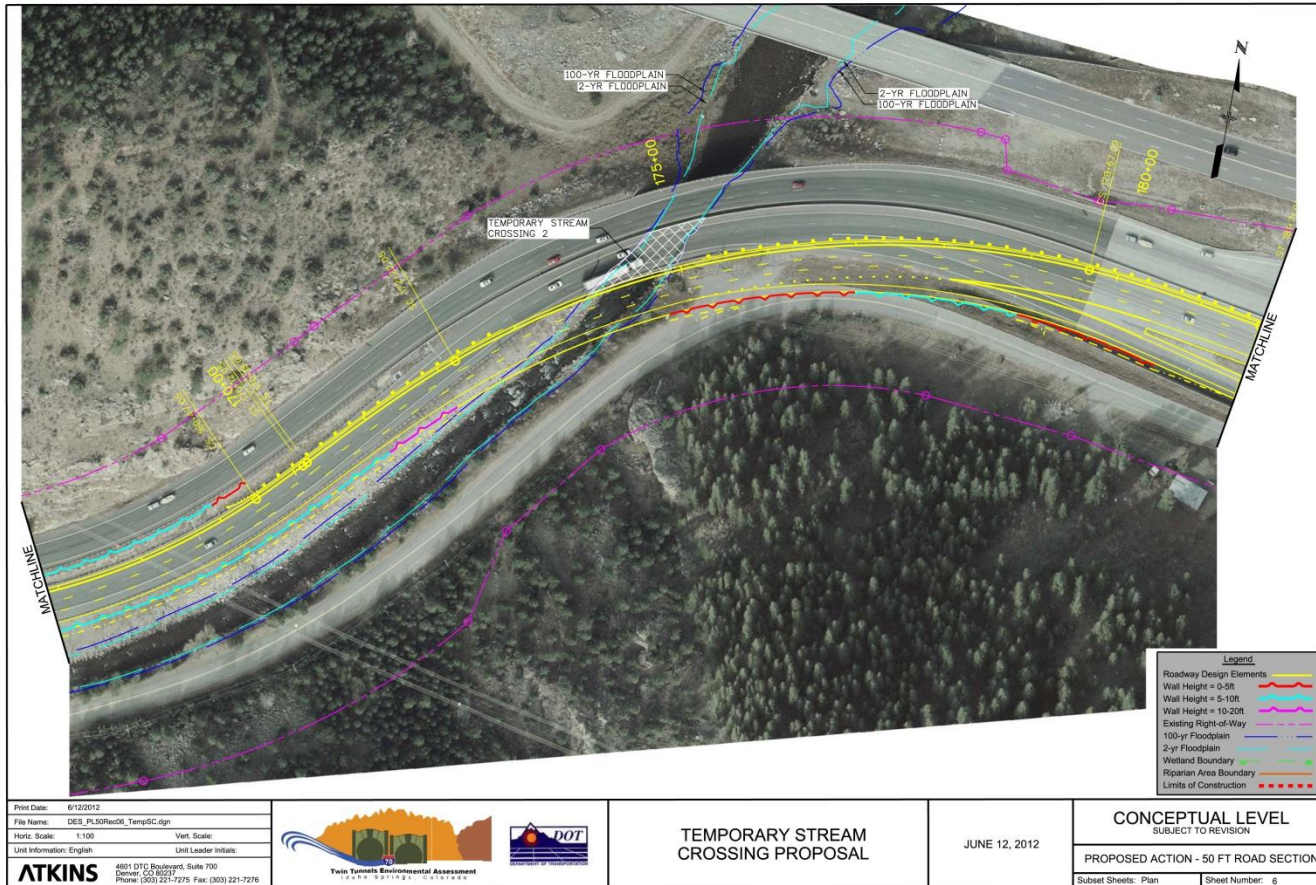
- Proposal: Provide a temporary creek crossing to assist with bridge construction and demolition
 - » Minimize schedule risk
 - » Minimize other potential impacts to natural resources



Creek Crossing: Phase 1



Creek Crossing: Phase 2



Process and Measures for Applying Design Criteria

Fair / Better / Best Rating System

Fair	Better	Best
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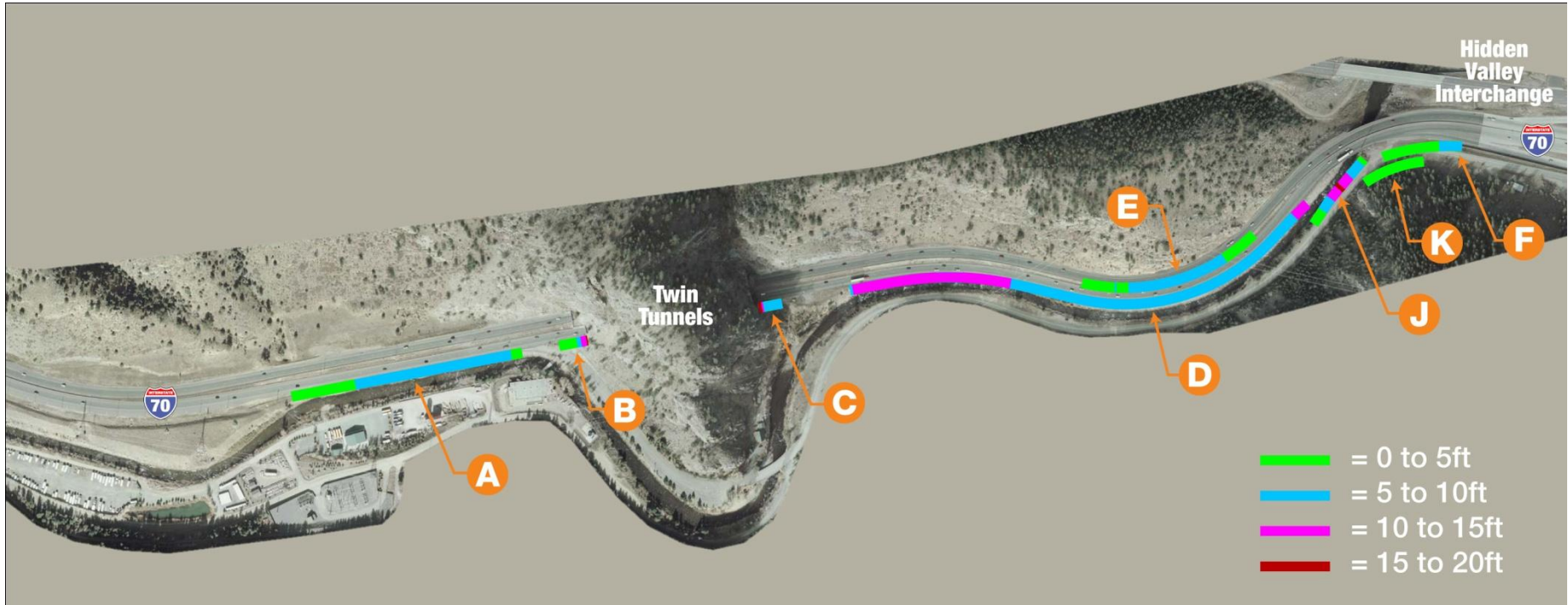
1. Proposed by Project Team
2. Augmented by the Technical Team
3. Utilized by the Project Team to develop solutions
4. Results presented to Technical Team
5. Technical Team offers feedback
6. As necessary, Project Team incorporates refinements

Refinements: Impacts to Traffic

- Beginning work on several traffic elements:
 - » Maintenance of Traffic (MOT)
 - » Incident Management Plan (IMP)
 - » Intelligent Transportation Systems
- Developing MOT plan to minimize diversion onto frontage road and Idaho Springs
- Will test MOT strategies with rockfall investigations in July



Twin Tunnels West Wall Locations



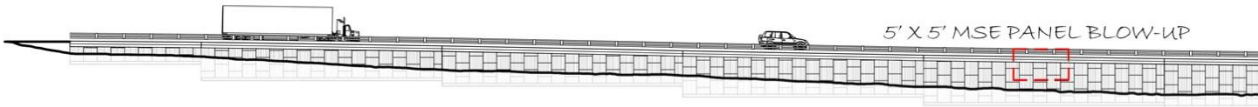
Twin Tunnels East Wall Locations



Proposed Solutions: I-70 Retaining Wall



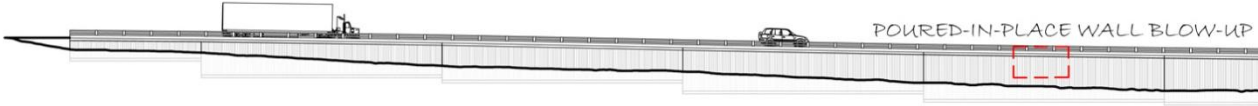
Proposed Solutions: Wall Elevations



5' X 5' MSE PANEL WALL ELEVATION

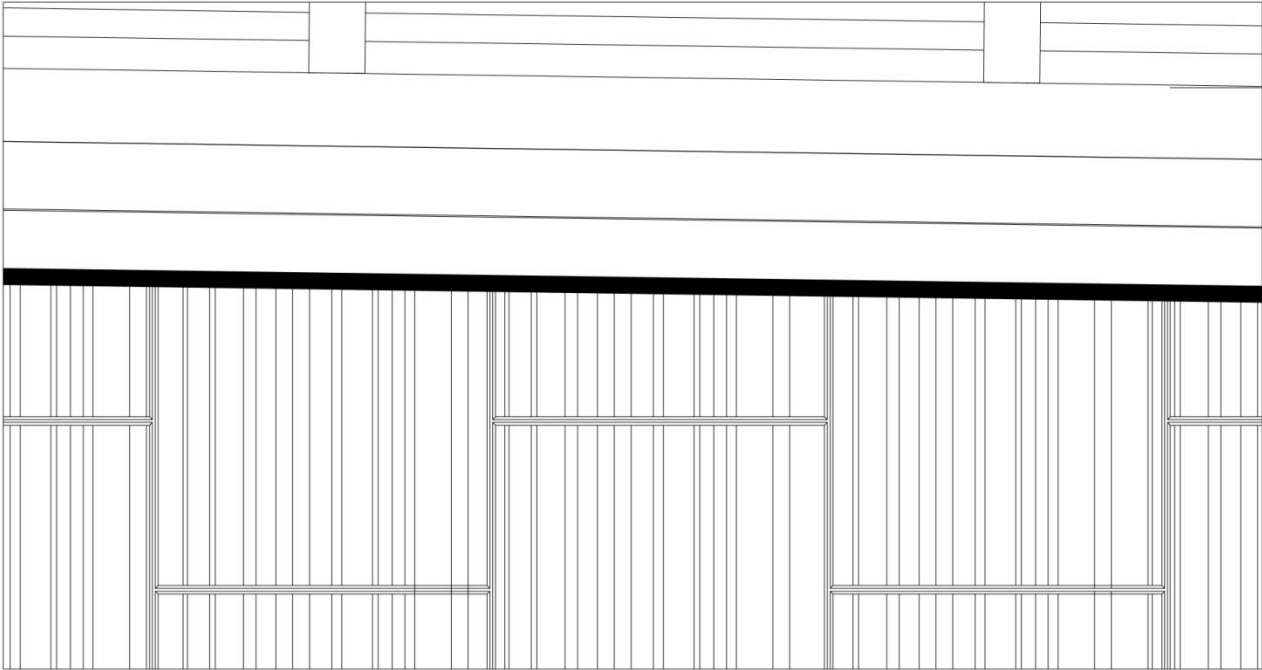


4' X 8' MSE PANEL WALL ELEVATION

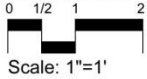


POURED-IN-PLACE WALL ELEVATION

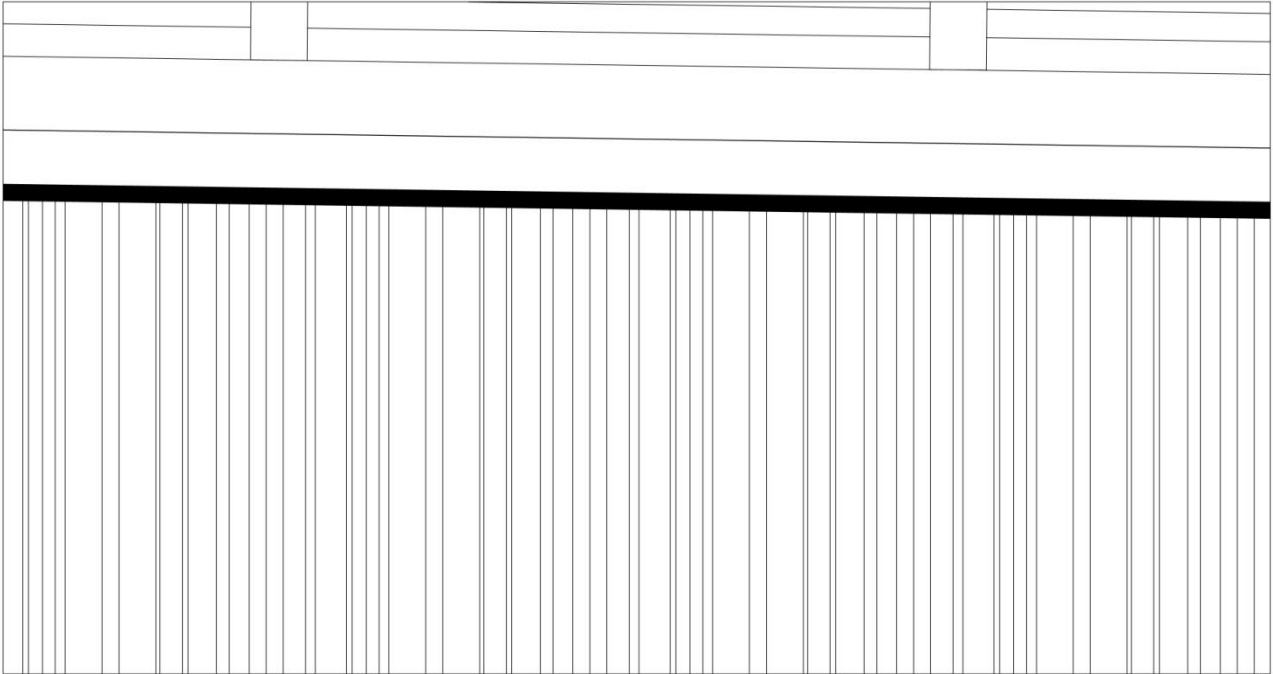
Proposed Solutions: Wall Elevations



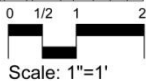
5' X 5' MSE PANEL BLOW-UP



Proposed Solutions: Wall Elevations



POURED-IN-PLACE WALL BLOW-UP



Proposed Solutions: Rock Fall Mitigation



Proposed Solutions: Enhancement Process

- Construction elements – required components of the transportation improvement project
- Mitigation elements – required components to reduce impacts and restore areas impacted by the transportation project
- Enhancement(s) – opportunities for the project partners to realize their vision by providing additional elements in the project area not required for construction or mitigation
 - » Technical Team will be asked to develop a list of possible enhancement opportunities
 - » Technical Team will develop a prioritization process beginning with core value criteria plus custom criteria
 - » Project Team will attempt to a) not preclude and b) incorporate into design where possible and cost neutral
 - Each enhancement will need to consider NEPA compliance requirements



Criteria: Impacts to Recreational Users

- How well are impacts to recreational users minimized?
- How well is the duration of impacts to recreational users minimized?
- How well can local recreational destinations be accessed?



Criteria: Infrastructure in Median

- How well do the guardrail, revegetation, drainage structures and signing in the median meet the PEIS, CSS and EA commitments and blend with the visual conditions of the corridor?
- How well does it meet the requirements of the SCAP?



Criteria: Signage

- How well does the signage blend with the visual condition of the corridor?
- How well does this signing plan minimize the number of sign structures?



Criteria: Lighting

- How well does the lighting blend with the safety and wildlife condition of the corridor?
- How does lighting affect the visual condition of the corridor?



Criteria: Coatings (Color)

- How easily are structure surfaces maintained?
- How compatible are the colors from the Frontage Road and I-70 project elements?

Next Steps

Agenda for June 28th Technical Team Meeting

- Develop initial performance measures for:
 - » Landscaping
 - » Tunnel Portal Aesthetics
 - » Public Information
 - » Incident Management Plan
- Present proposed solutions that meet criteria for:
 - » I-70 Retaining Wall Aesthetics
 - » Tunnel Lining
 - » Bridge Aesthetics
 - » Impacts to Recreation Users
- Follow-up on previous solutions that meet criteria:
 - » Rockfall Mitigation



END OF PRESENTATION

