

Twin Tunnels Design/Construction Technical Team Meeting #10

**October 25, 2012
9:00AM – 11:00AM**

**CDOT
425 Corporate Circle
Golden, Colorado**

Agenda

1. Introductions
2. Other Corridor Project Updates
3. Twin Tunnels Project Updates
 - » Design Schedule
 - » Public Information
 - » Guard rail
 - » Speed limit signage
 - » Staging Area
 - » Median Barrier design
4. East Portal Aesthetics Review
5. CR 314 Wall Fascia Status

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 Project Updates

- Frontage Road
- Twin Tunnels EA
- Westbound Tunnel Repairs, Rockfall
- I-70 Expansion Joint Projects
- Master I-70 Schedule
- AGS Study
- Peak Period Shoulder Lanes
- Trailhead Partnership
- Co-Development RFP



The Twin Tunnels FONSI has been signed



Core Values

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



TWIN TUNNELS WIDENING
ISSUES FOR TECHNICAL TEAM PRELIMINARY SCHEDULE

October 25, 2012	2012												2013															
	MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC		JAN		FEB		MAR		APRIL		MAY			
	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		
ISSUES	WEEK		WEEK		WEEK		WEEK		WEEK		WEEK		WEEK		WEEK		WEEK		WEEK		WEEK		WEEK		WEEK			
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					■						*	*	●		●													
SOUTH SIDE OF W.B. BRIDGE OVER CLEAR CREEK							■		*																			
TRAILHEAD IMPROVEMENTS											*	●	●		●										●			
ENHANCEMENT OPPORTUNITIES			■				*		*		*	*			●										*		●	

AESTHETICS REVIEW
 Creek Walls, Railing, Landscape
 AESTHETICS REVIEW
 Bridge Area, Landscape
 AESTHETICS REVIEW
 East Portal Area, Landscape
 AESTHETICS REVIEW
 West Portal, Game Check, Landscape

PACKAGE 1A PACKAGE 1B PACKAGE 2 PACKAGE 3

LEGEND:

 Shaded Items are Complete	* Presentation of Concepts
 Discuss Criteria	● 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

Twin Tunnels Final Design Schedule

Package 1A (Early Paving Work)

- NTP: October 24, 2012

Package 1B (Tunnel prep work and other elements)

- FOR Meeting: October 24, 2012
- NTP: December 6, 2012

Package 2 (Tunnel construction)

- FOR Meeting: January 9, 2013
- NTP: February 28, 2013

Tentative Timelines for 3A and 3B

Package 3A (CR 314 wall fascia)

- Finalize concept to begin design: January 2013
- FIR Meeting: Spring 2013
- FOR Meeting: Summer 2013
- NTP: Fall 2013

Package 3B (reclamation/trailhead improvements)

- Finalize concept to begin design: March 2013
- FIR Meeting: Summer 2013
- FOR Meeting: Fall 2013
- NTP: Winter 2013



Public Information Update

- Communications Issues Task Force
Monday, Nov 5 from 11 - 1
- Initial Outreach Plan
 - Distribution of posters to local businesses/gov't buildings, etc.
 - Outreach letter to our program partners along with fact sheet



Public Information Update

TWIN TUNNELS *eastbound* IT'S ABOUT: TIME.

WHY ARE WE BUILDING THIS PROJECT? IT'S ABOUT:

YOUR TIME: Relieving roadway congestion, improving travel times and safety

OUR TIME: Preserving the history and environment

GO TIME: Launching the I-70 Mountain Corridor improvements

DURING CONSTRUCTION, IT'S ABOUT:

MOUNTAIN TIME: Always getting to your destination

TRAVEL TIME: Maintaining two lanes of traffic in each direction during peak hours (just like it is today)

HAMMER TIME: Preparing to stop up to 30 minutes for blasting during off peak hours

The Twin Tunnels Design and Construction Project is improving safety and mobility in the I-70 Mountain Corridor by adding one eastbound lane from the East Idaho Springs Interchange to US 6 including expanding the eastbound tunnel to accommodate three lanes. In order to minimize the impacts to the overall traveling public during construction, CDOT is constructing a detour that will shift all eastbound traffic onto the frontage road that parallels I-70 and Clear Creek. This is the first project under construction as part of the I-70 Mountain Corridor.

Twin Tunnels Project Updates

- W-beam (type 3) will arrive pre-painted forest service brown and will provide 10 additional segments for maintenance
- Speed limit
 - » Variable Speed Limit Sign is immediately east of exit 241
 - » Normal operations are 60MPH consistent with upstream speeds
 - » Speed limit is reduced when the chain law is in effect
 - » It needs to be downstream of the entrance ramp to alert traffic at an appropriate distance upstream from the chain station



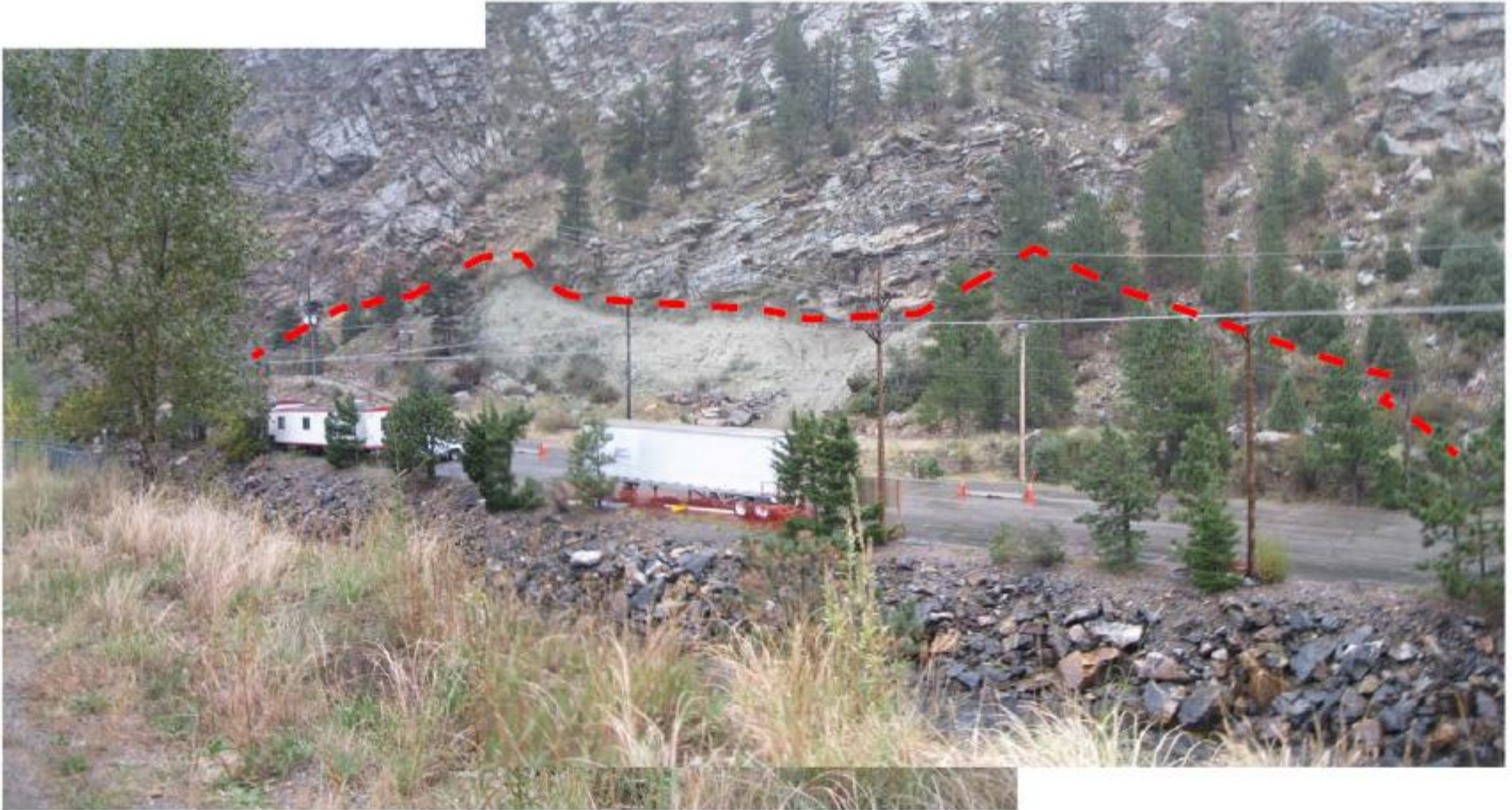
Staging Area Grading



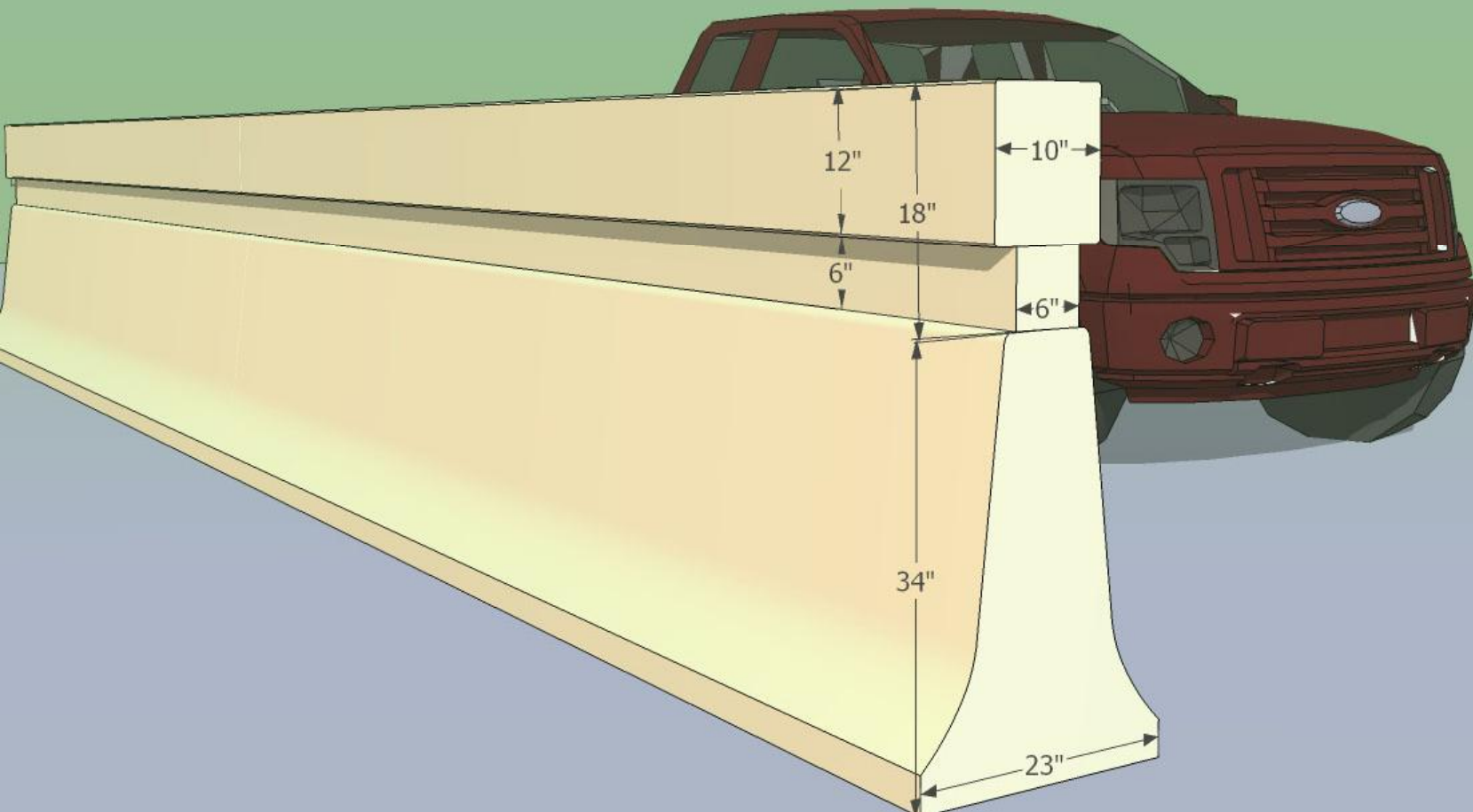
Staging Area Grading



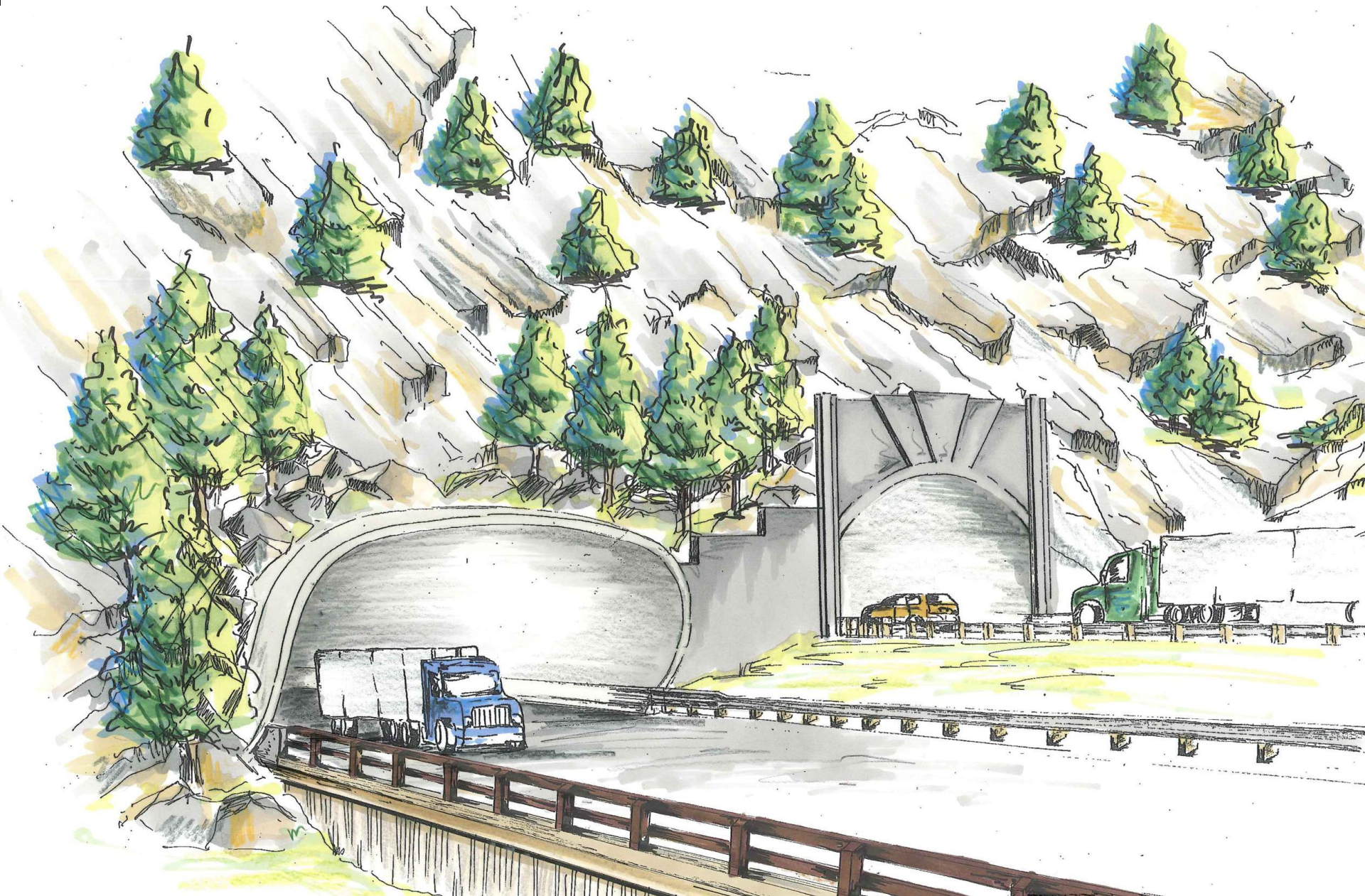
Staging Area Grading



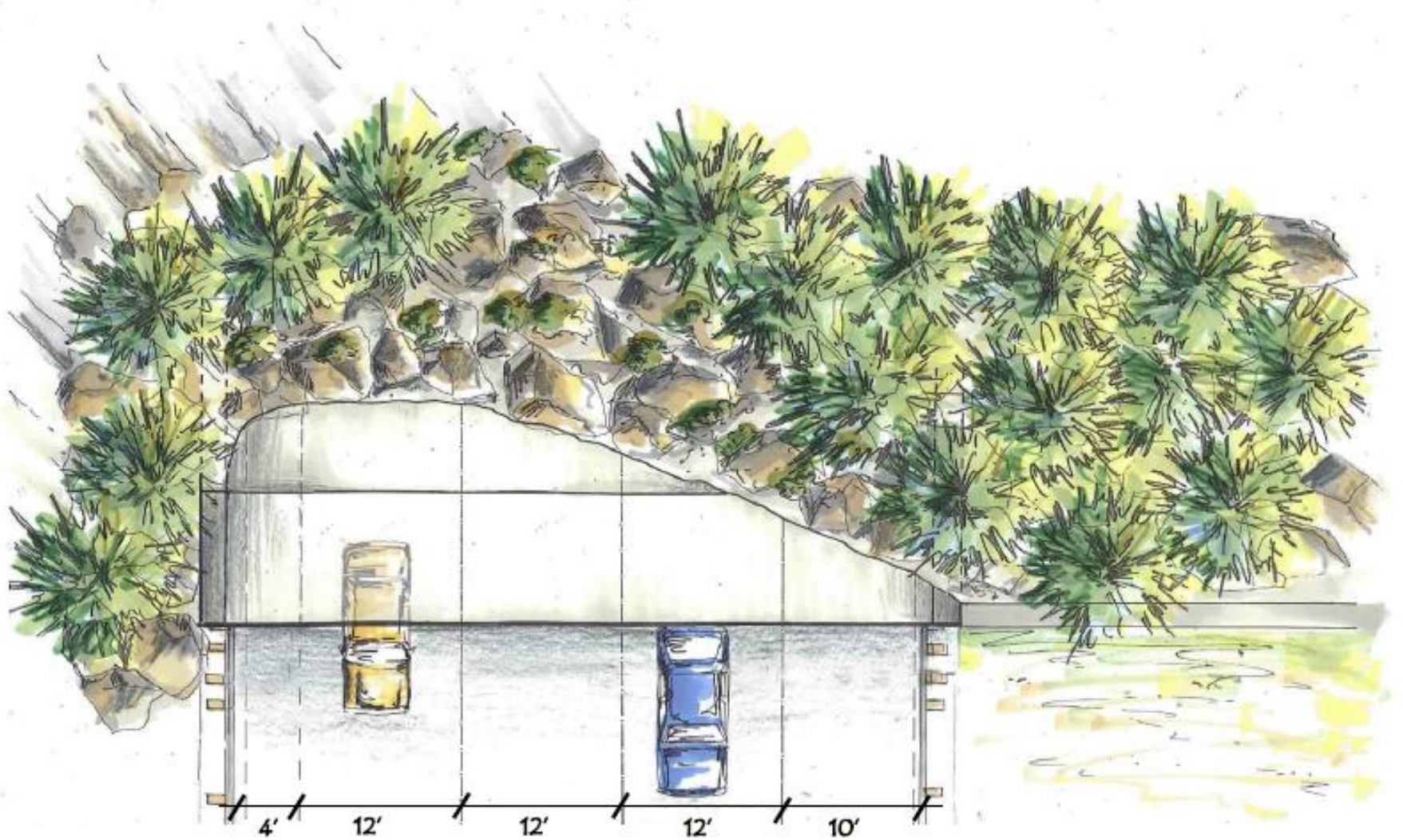
Median Barrier Design Update



Tunnel Portal Design Update



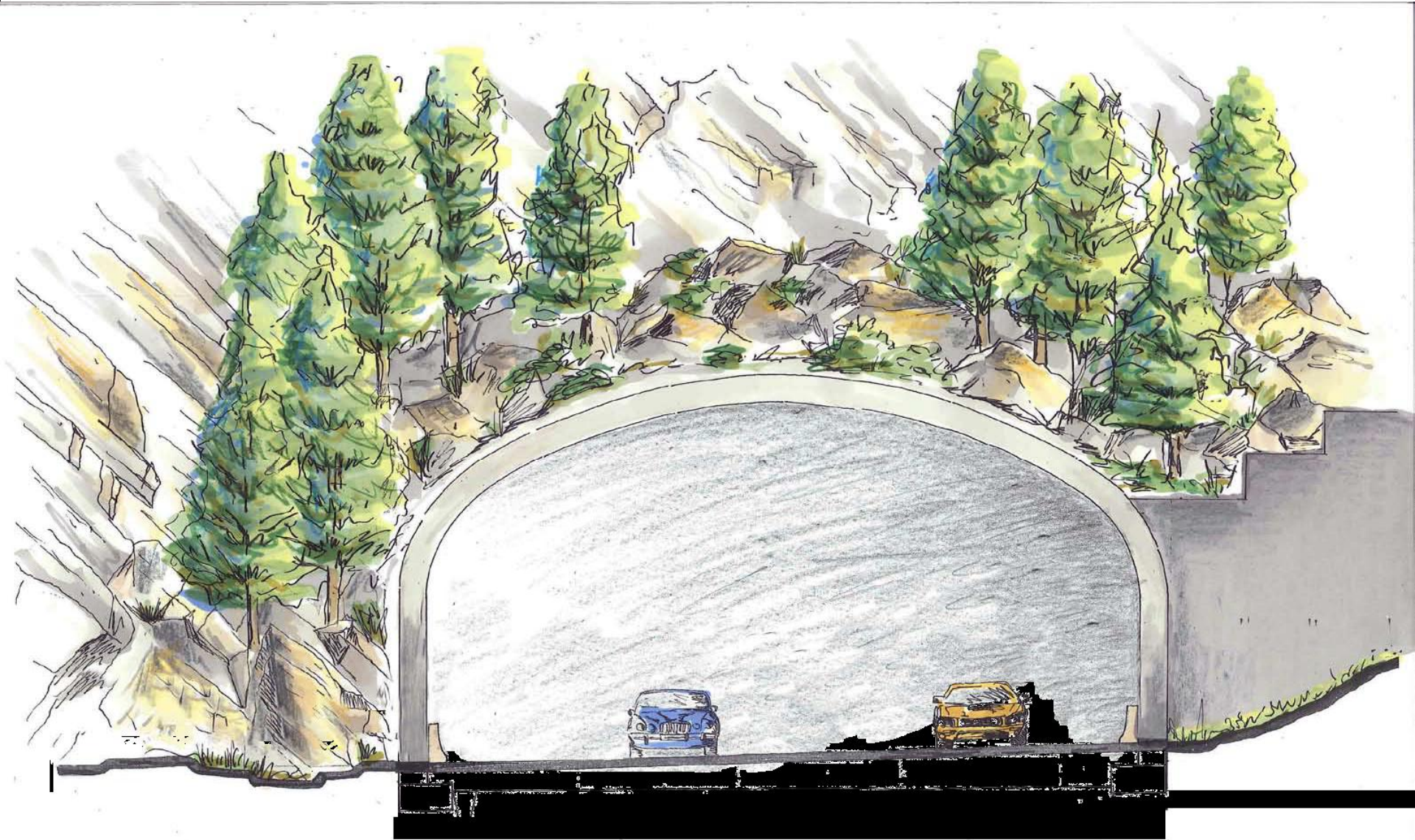
Tunnel Portal Design Update



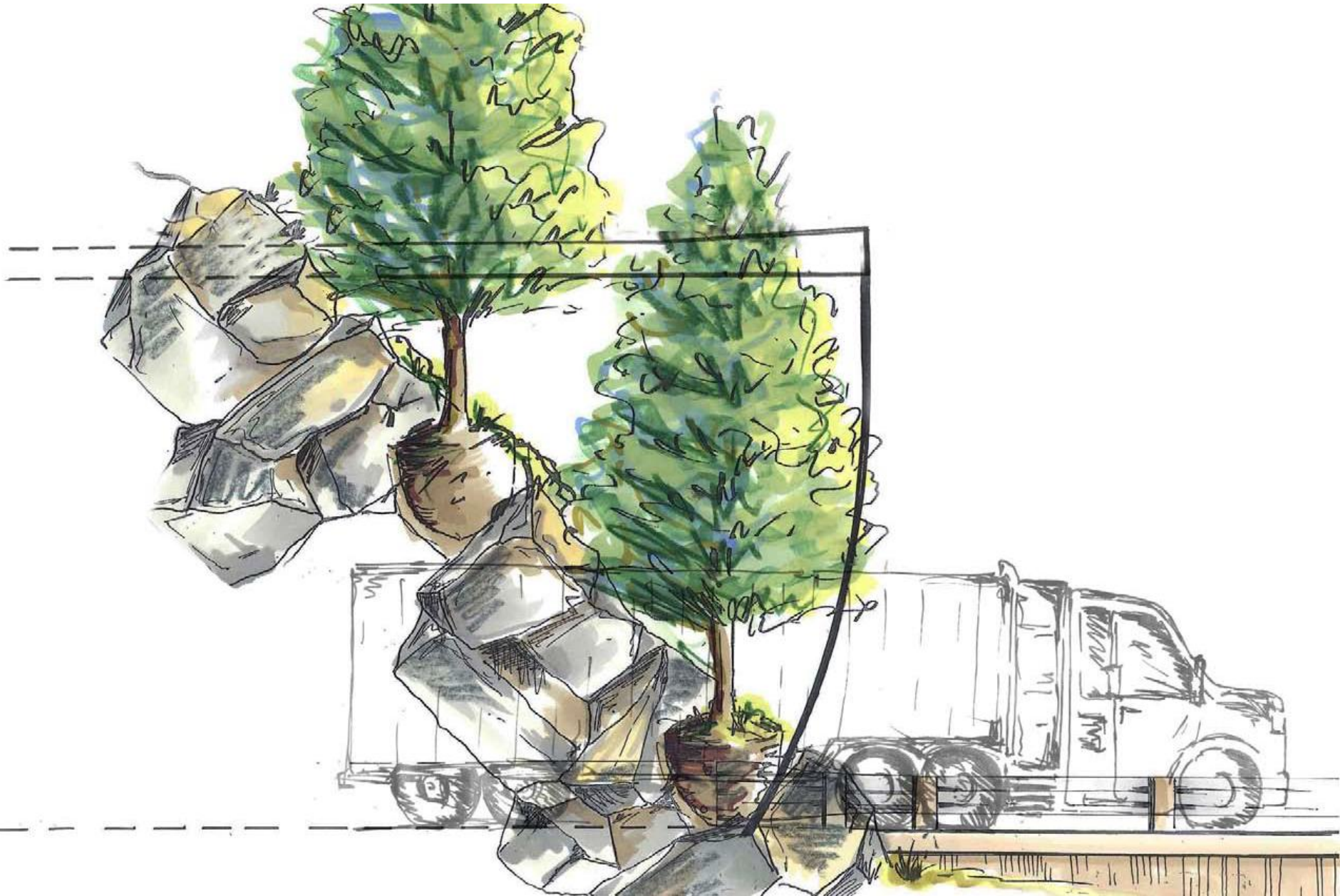
Twin Tunnels Option A

Plan View - East Portals

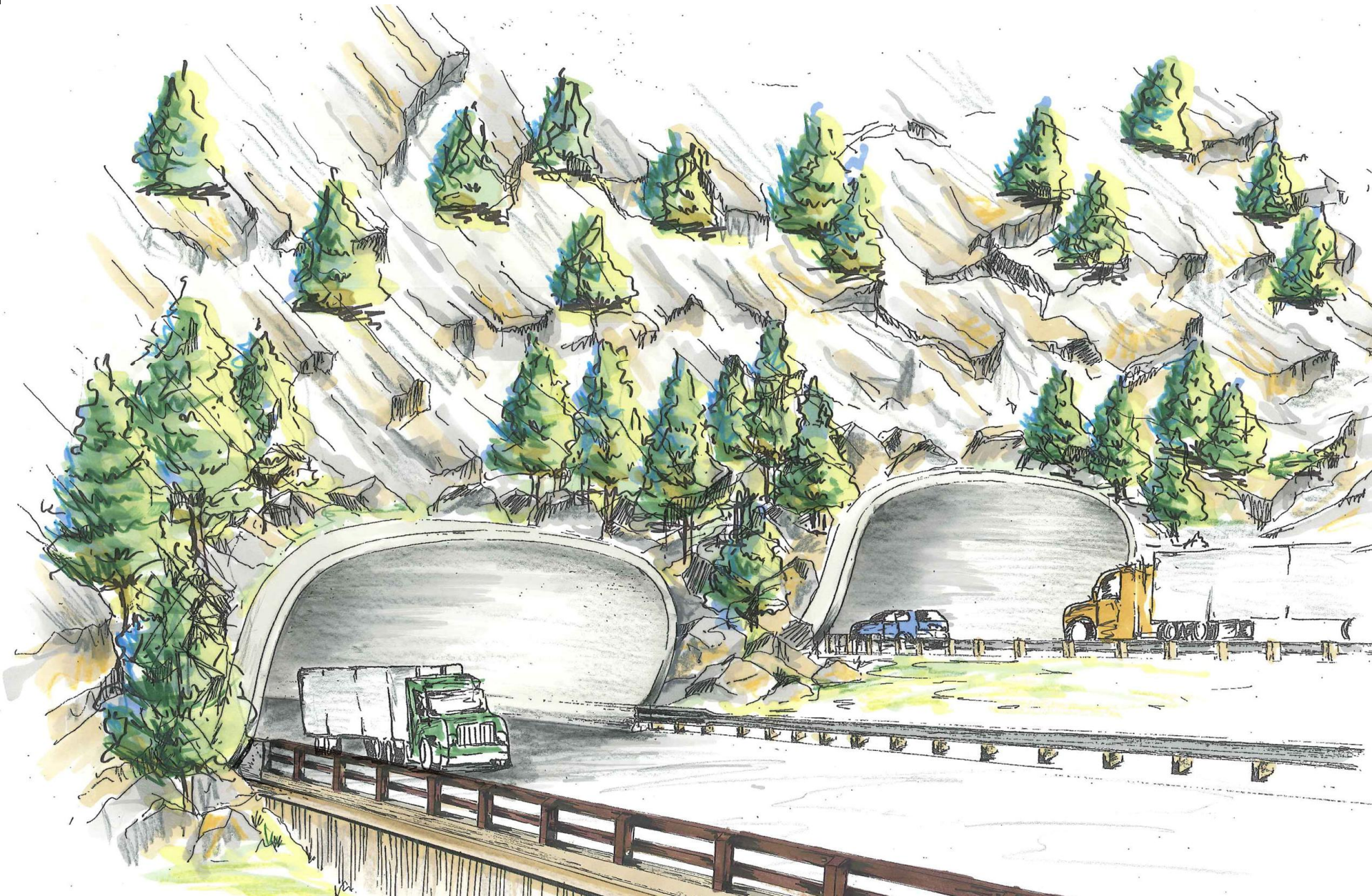
Tunnel Portal Design Update



Tunnel Portal Design Update



Tunnel Portal Design Update



Creekside willow planting examples



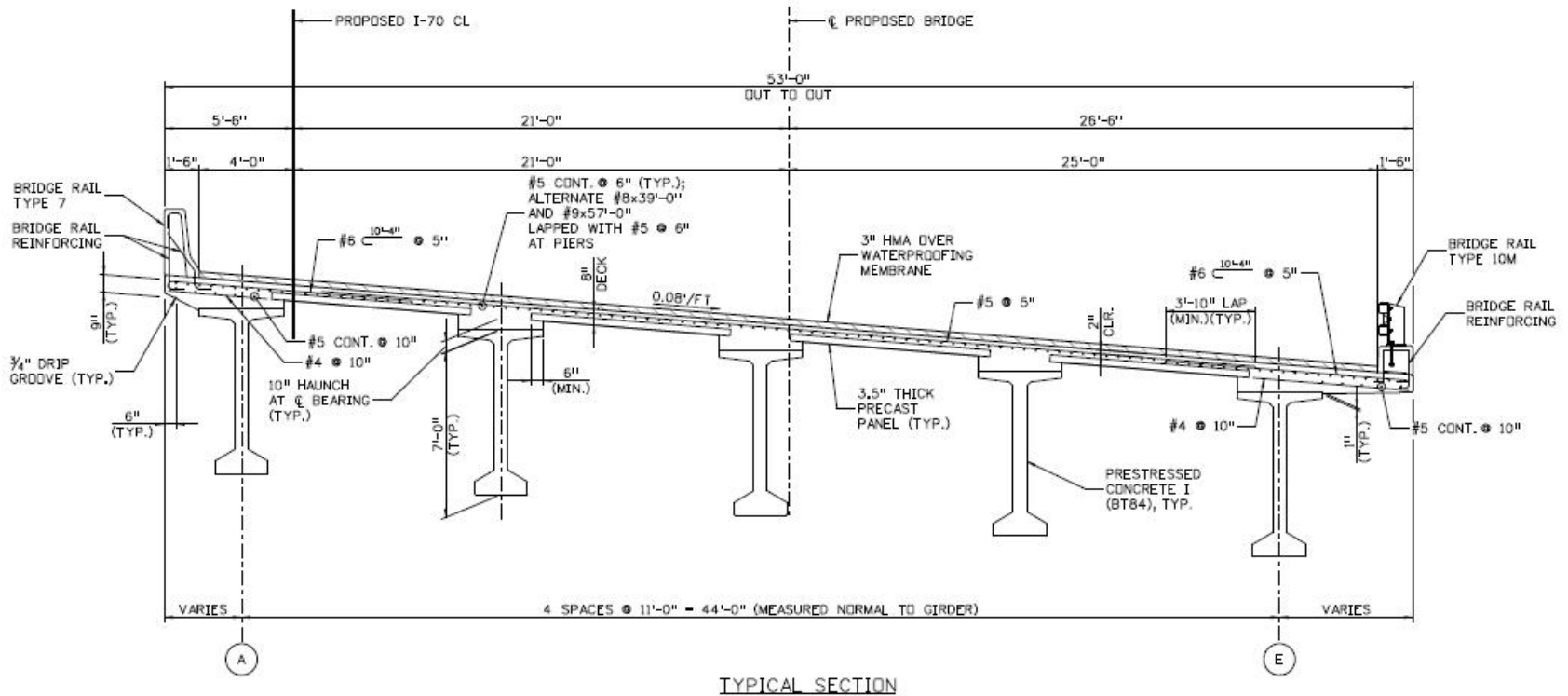
Creekside willow planting examples



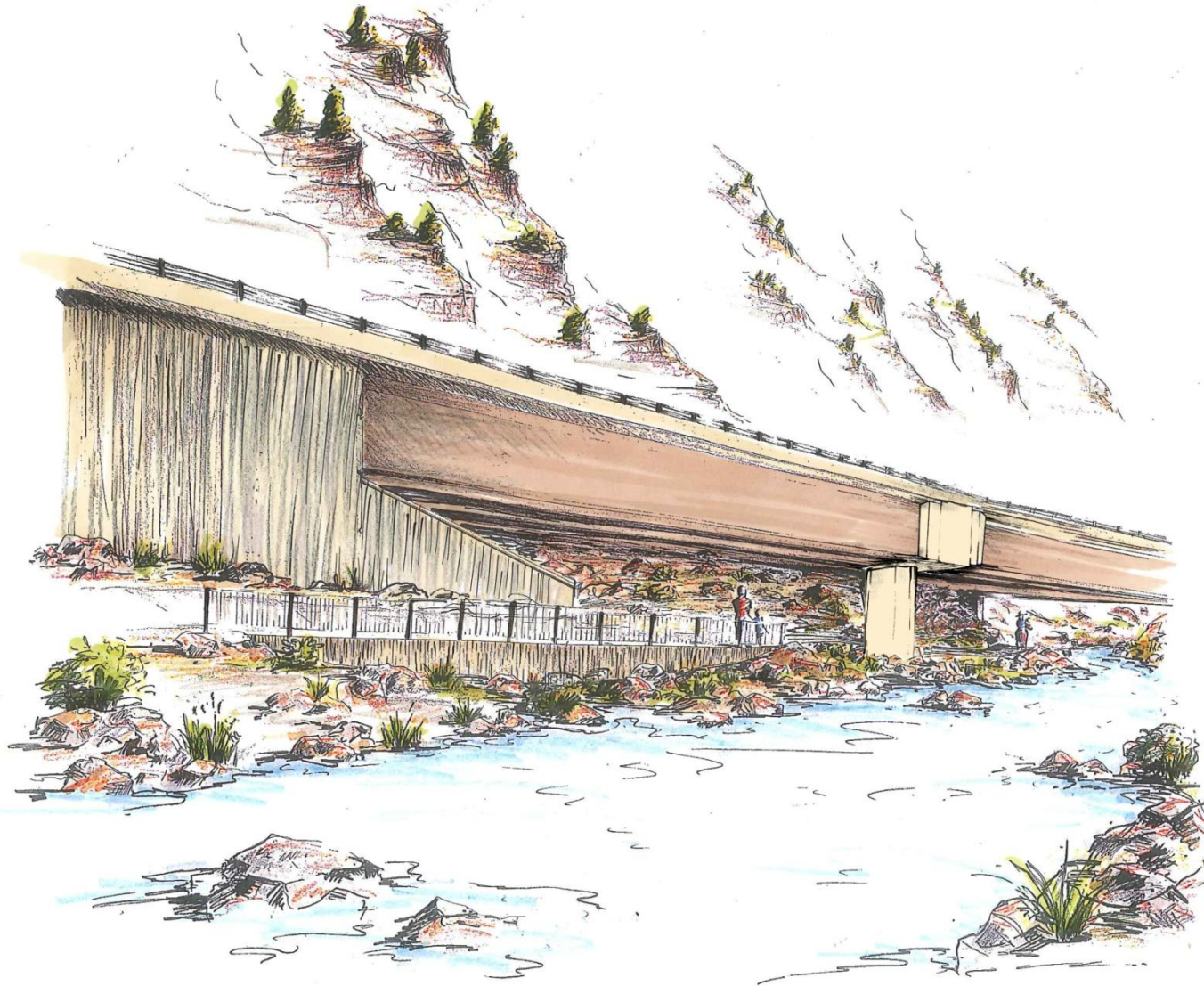
Creekside willow planting conditions



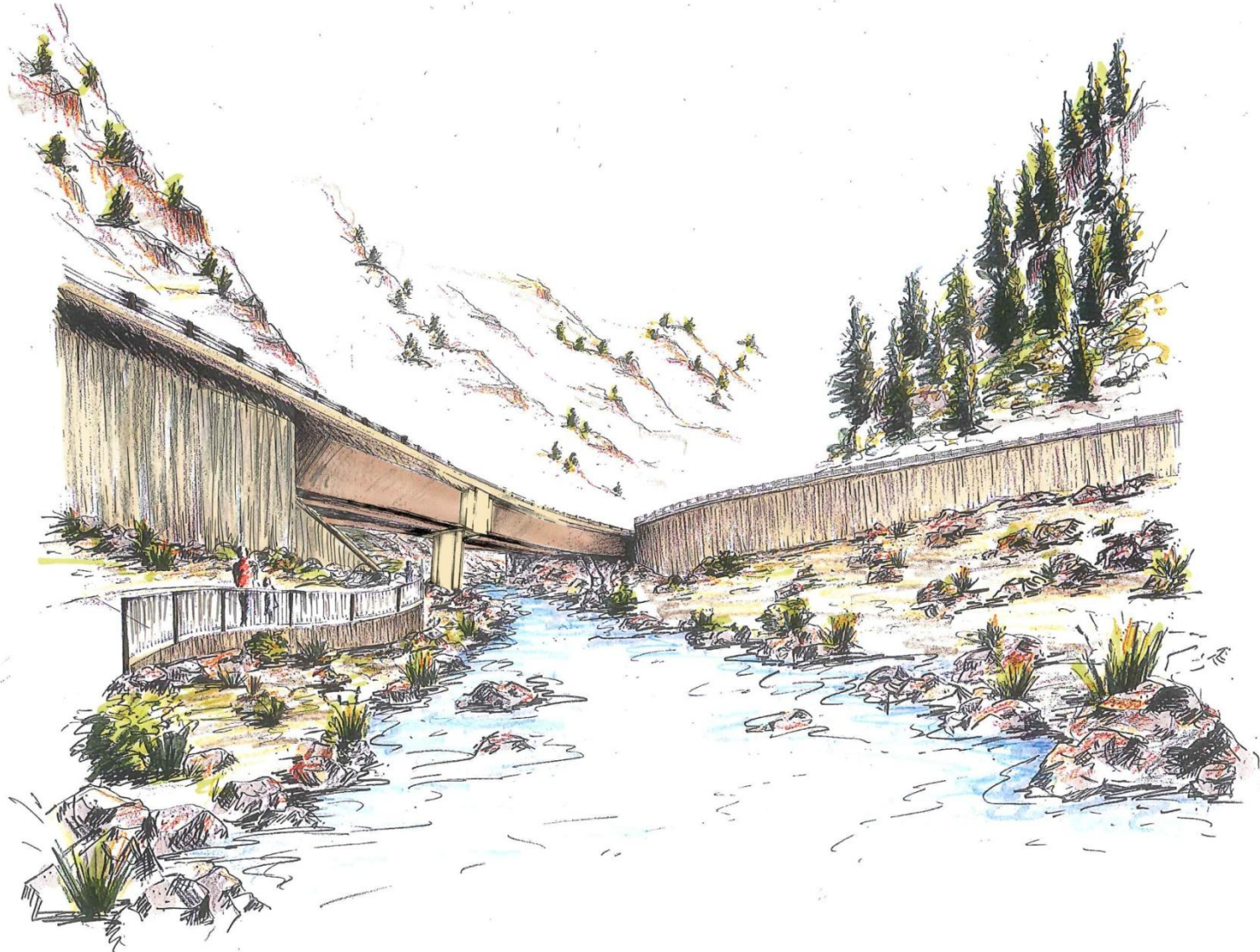
Refinements to Bridge Rail



Bridge



Bridge



CR 314 Cut Wall Fascia

Frontage Road recommendation

- January 2012: PLT reviewed cut wall options: rockery, shotcrete, formliner
- March 2012: PLT indicated preference for rock masonry aesthetic but deferred details of wall fascia construction to Twin Tunnels (Recent research indicates this is a stone veneer wall)
- On July 12, 2012 Twin Tunnels Tech Team added criteria “How well does the wall aesthetic adhere to the Frontage Road process?”

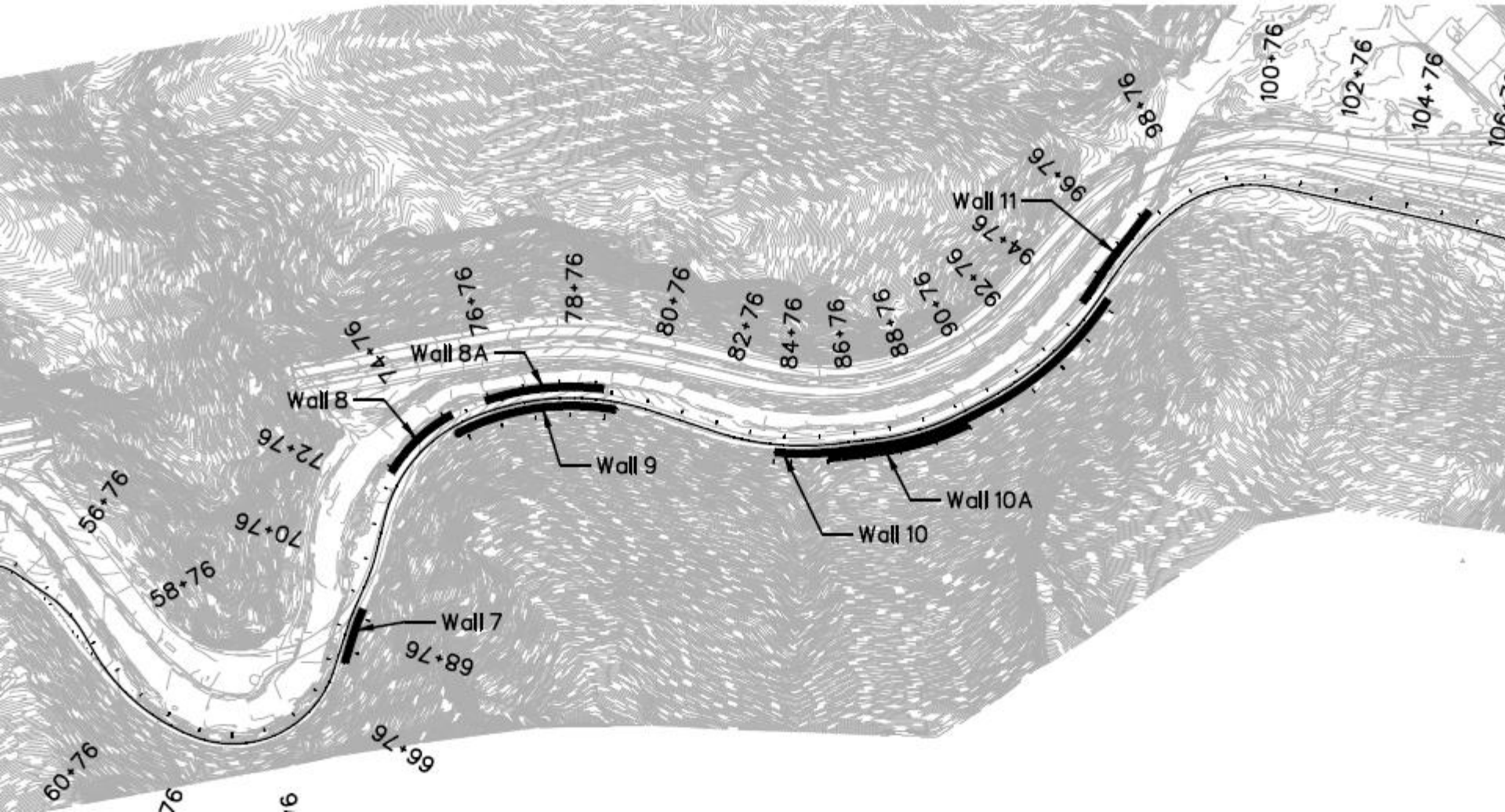


Cut stone masonry wall in Yellowstone Nat'l Park

CR 314 Cut Wall Fascia

- So why are we reviewing this project element?
 - Previous PLT felt rushed due to limited time and possible quality implications of low bid construction
 - Twin Tunnels CMGC allows time, expertise and perspective
 - Landscape architects are engaged
 - Kraemer /Obayashi can confirm quality
 - Frontage Road construction provides perspective – other wall locations are defined and CSS process has been applied, shotcrete walls are formed, areas of scarring and preserved vegetation are known

CR 314 Wall Locations



CR 314 Cut Wall Fascia Conditions



Twin Tunnels Design/Construction
Idaho Springs/Clear Creek County



DEPARTMENT OF TRANSPORTATION

CR 314 Cut Wall Fascia Conditions



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Twin Tunnels Design/Construction
Idaho Springs/Clear Creek County



DEPARTMENT OF TRANSPORTATION

CR 314 Cut Wall Fascia Conditions



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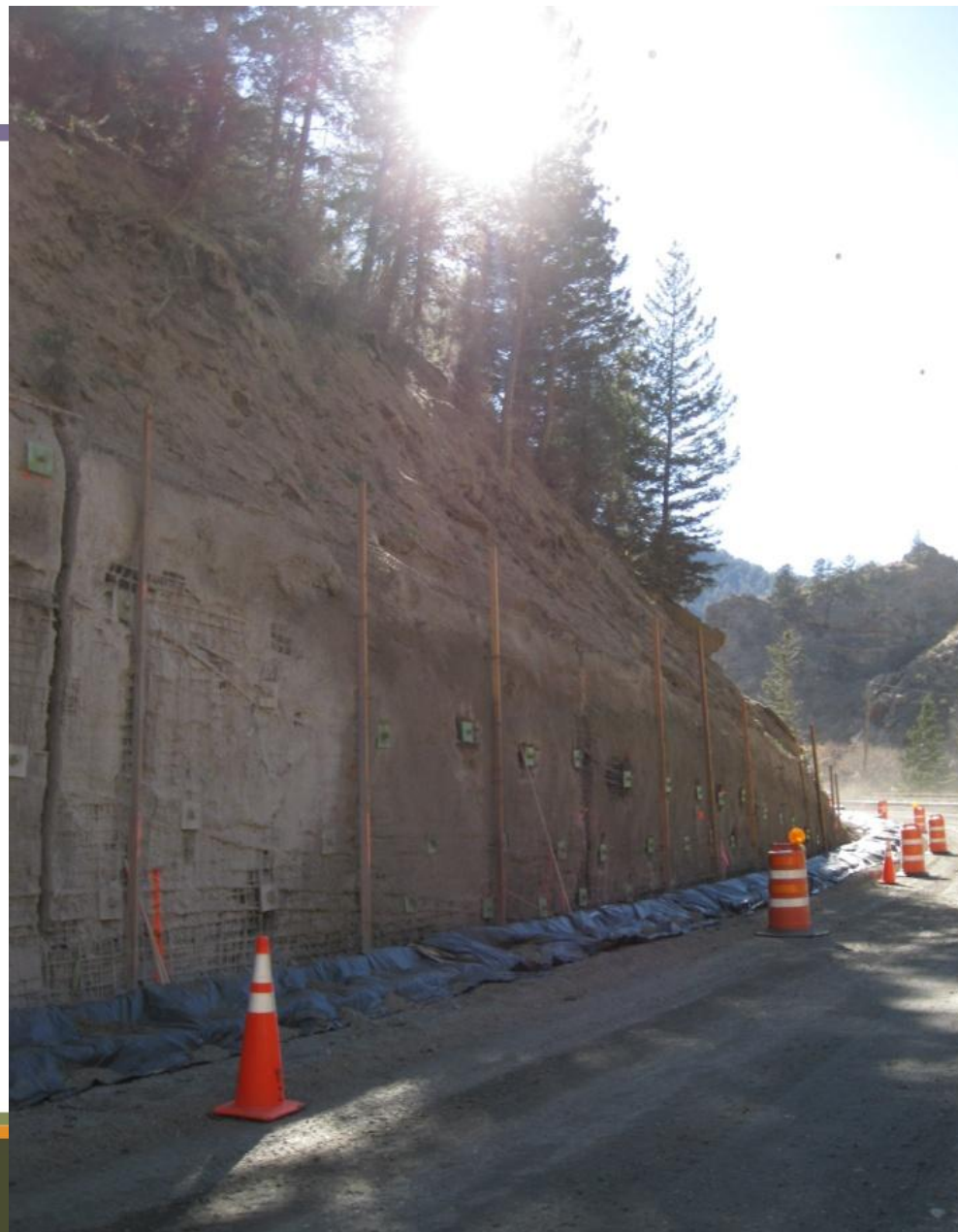
CR 314 Cut Wall Fascia Conditions



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Twin Tunnels Design/Construction
Idaho Springs/Clear Creek County



DEPARTMENT OF TRANSPORTATION

CR 314 Cut Wall Fascia Conditions



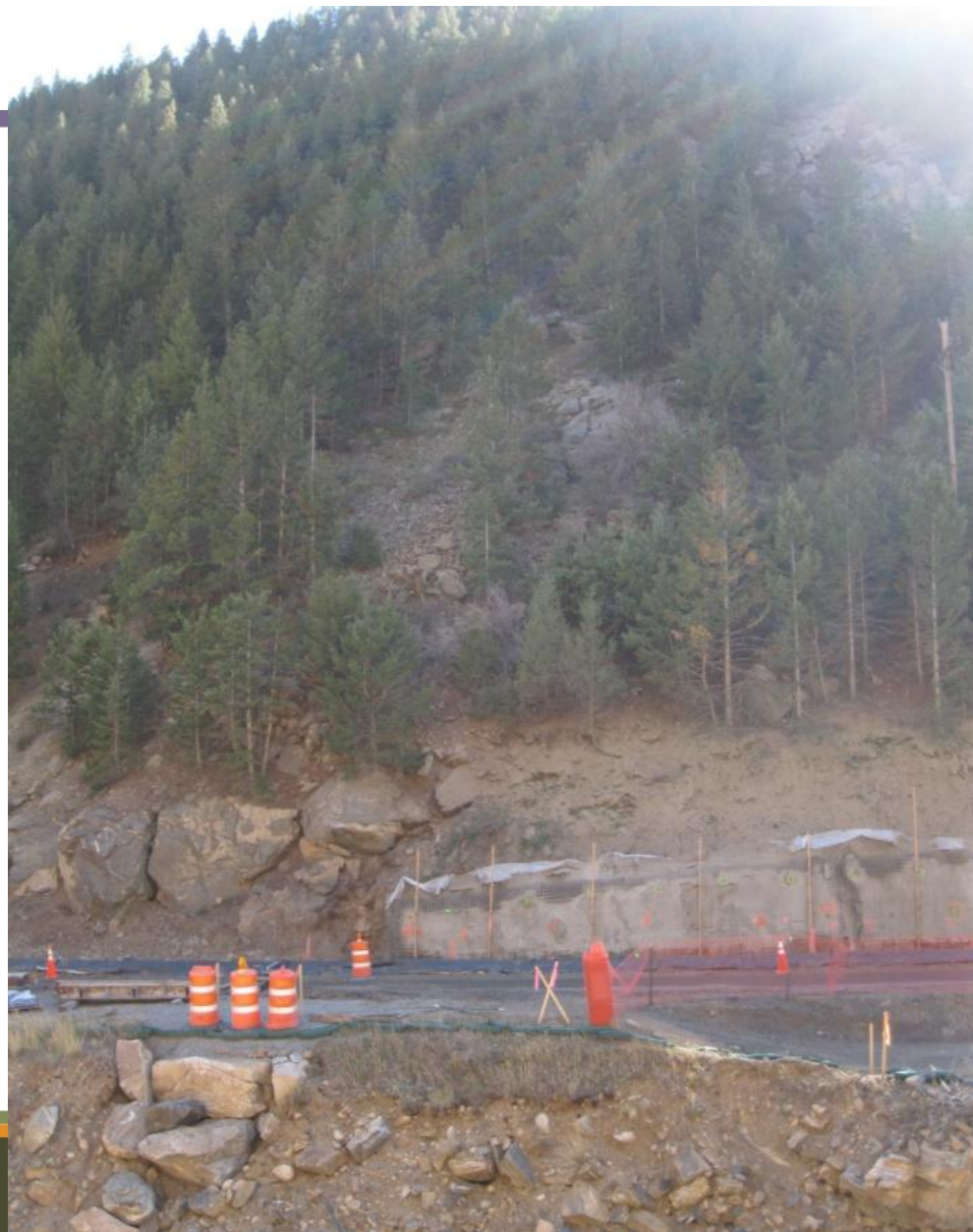
CR 314 Cut Wall Fascia Conditions



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CR 314 Cut Wall Fascia Conditions



CR 314 Wall Fascia Criteria

General: 1 of 2

Criteria: How well does this option...

1	Address safety?
2	Improve mobility?
3	Protect or create unique features for the area as a gateway?
4	Protect wildlife needs?
5	Protect Clear Creek?
6	Provide access and protect opportunities for enhancements to tourist destinations, community facilities, and interstate commerce?
7	Protect the defining historical elements of Clear Creek County?
8	Create infrastructure investments that are reasonable to construct and provide the best value for their life cycle, function and purpose?
9	Allow for a process to engage and communicate with all the local, regional and national users of the I-70 Mountain Corridor?

CR 314 Wall Fascia Criteria

General: 2 of 2

Criteria: How well does this option...	
10	Enable the project team to achieve the goal of opening the EB tunnel and 3 rd eastbound lanes by October 31, 2013?
11	Achieve the mountain mineral belt aesthetic guidelines?
12	Meet the I-70 Mountain Corridor design criteria?
13	Minimize the effort required to maintain the option?
14	Meet CDOT and industry standards?
15	Incorporate sustainability by using locally available materials and environmentally-friendly processes?
16	Coordinate with Frontage Road efforts, preserve opportunities for the AGS?
17	Create opportunities to "correct past damage"?

CR 314 Wall Fascia Criteria

Element Specific

314 Cut Wall Criteria

How well does the wall aesthetic adhere to the Frontage Road process?

Possible additional criteria

How well does the wall fascia blend or contrast with the other walls and features of the area?

How easily can the wall be accessed, inspected and repaired? (Safety / Mobility)

How well does the wall handle potential crash and fire impacts? (Safety, Mobility)

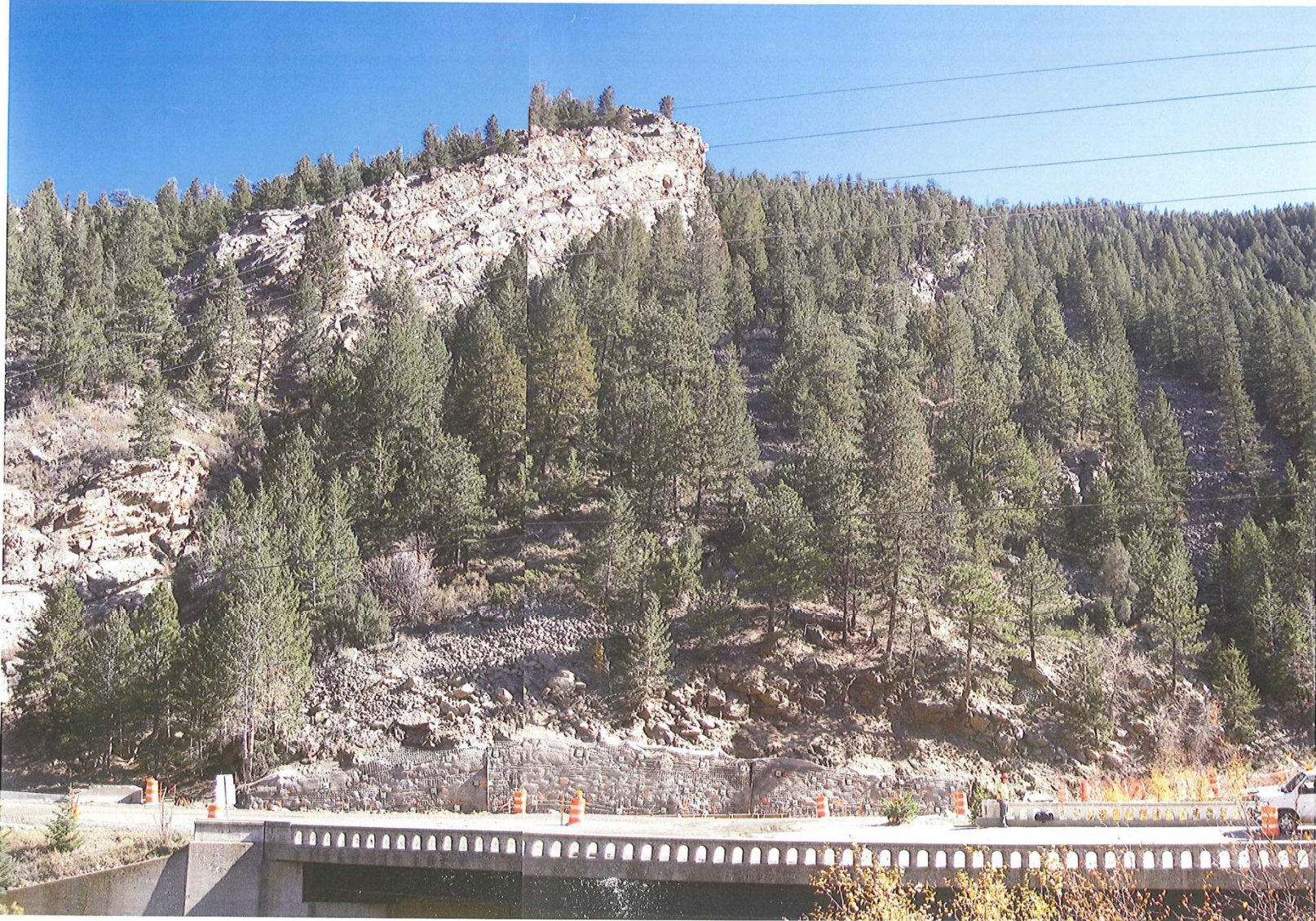
How easily can the wall be constructed? (Constructability)

How supportive is the community about the tunnel lining aesthetics? (Inclusivity)

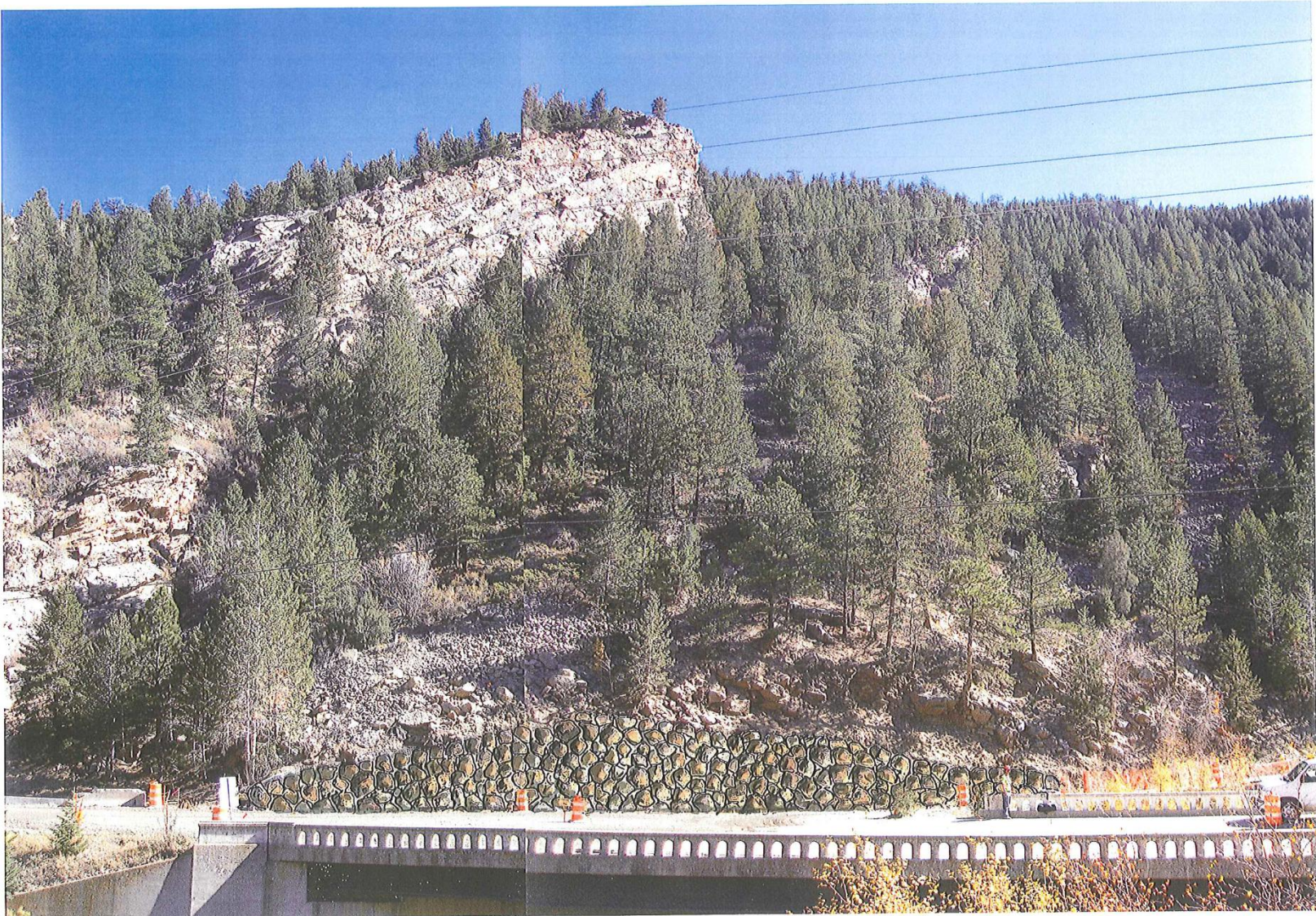
Maintenance Cost Difference to Option 1

Construction Cost Differences to Option 1

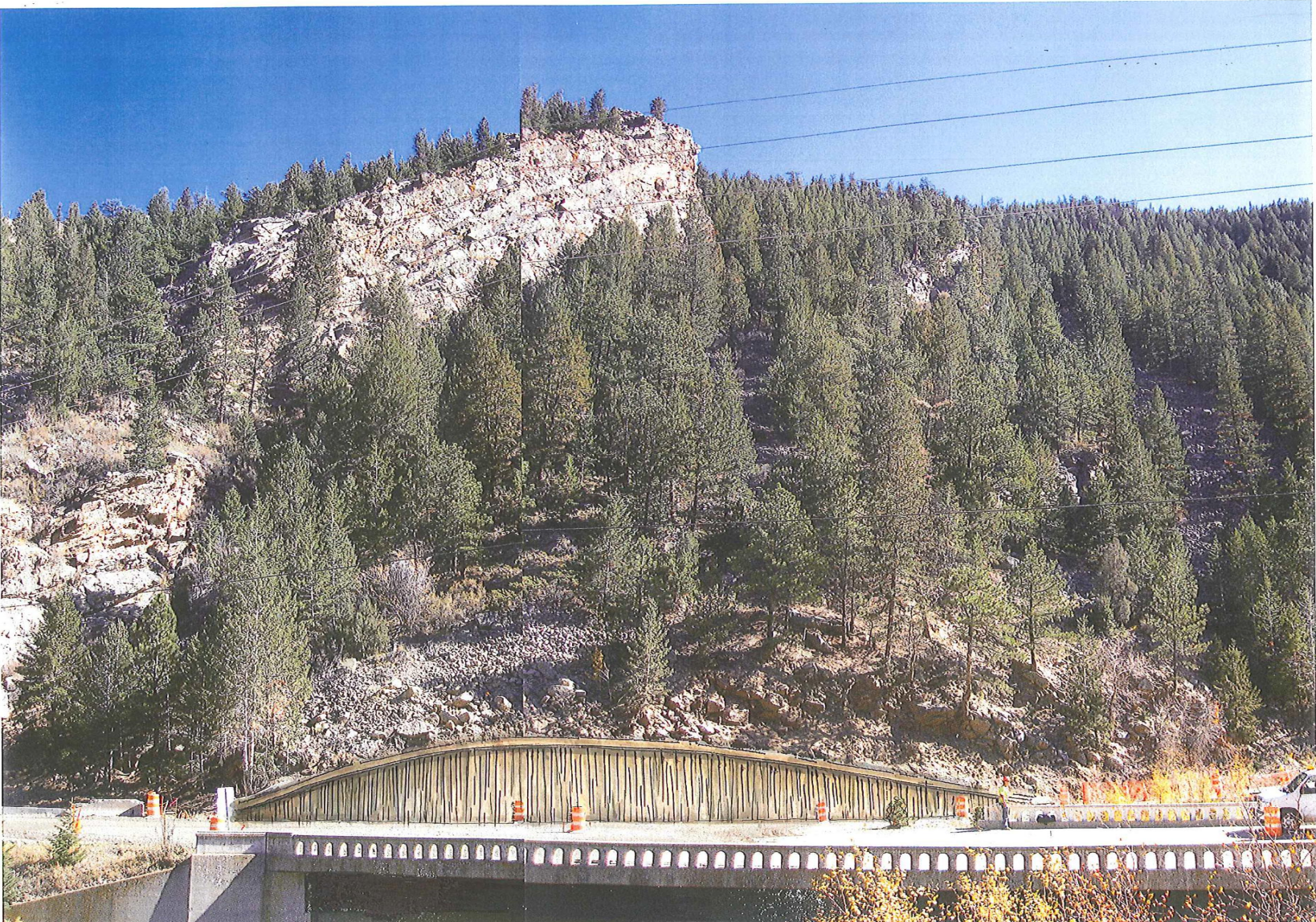
CR 314 Wall Fascia – Aesthetics & Context



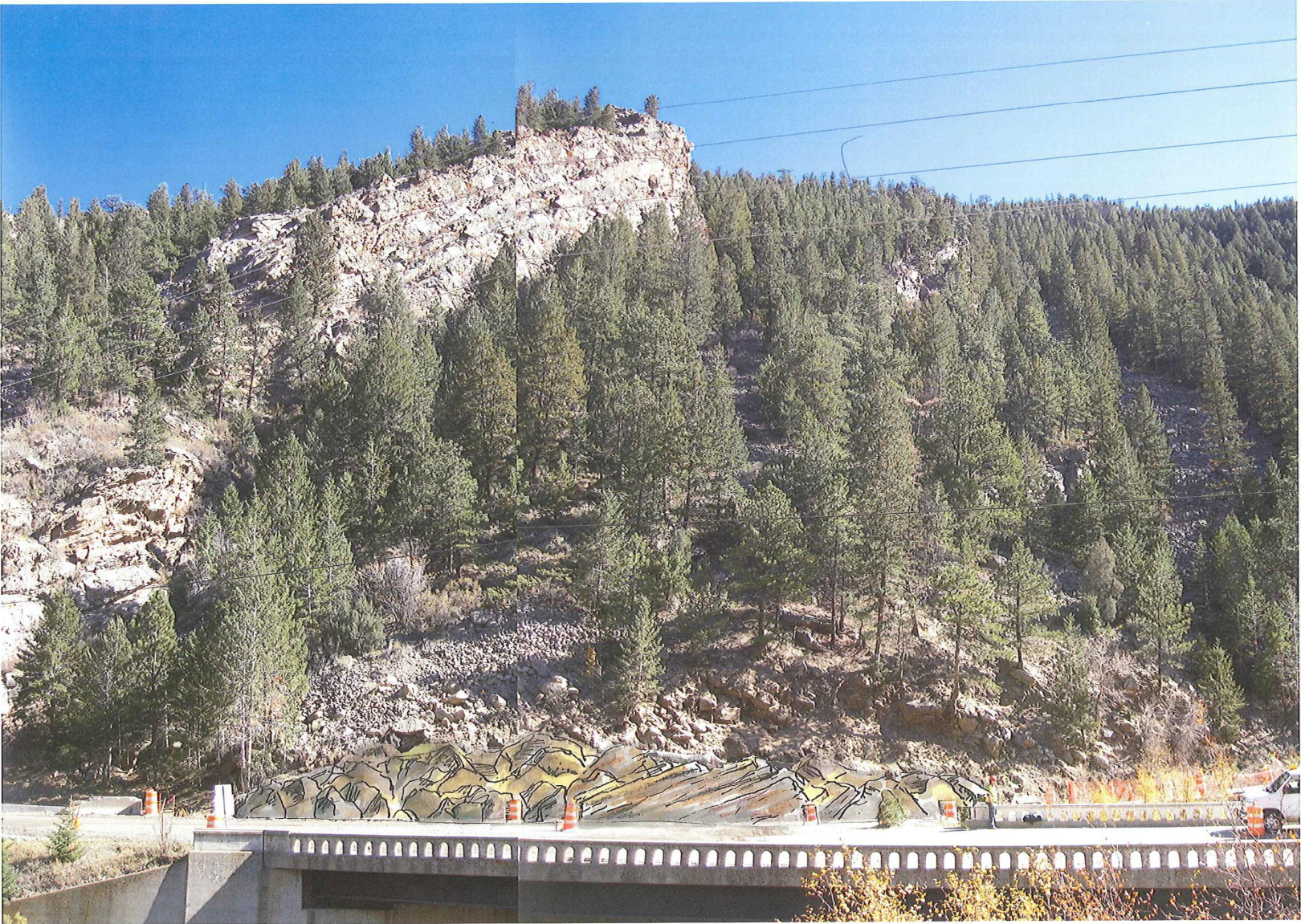
CR 314 Wall Fascia – Aesthetics & Context



CR 314 Wall Fascia – Aesthetics & Context



CR 314 Wall Fascia – Aesthetics & Context



CR 314 Cut Wall Fascia Conditions



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CR 314 Cut Wall Fascia Conditions



CR 314 Wall Fascia – Aesthetics & Context



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CR 314 Wall Fascia – Aesthetics & Context



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CR 314 Wall Fascia – Aesthetics & Context



CR 314 Wall Fascia – Aesthetics & Context



CR 314 Wall Fascia – Aesthetics & Context



CR 314 Wall Fascia Next Steps

- The Project team would like the Technical Team's support to refine 2-4 options for the aesthetics and construction techniques for the 314 cut wall fascia
- We can...
 - » Review refined design options and evaluation matrix Nov. 15
 - » Make a final recommendation in December or January
 - » Review a test panel and confirm selection in January



Next Steps

- Recap Action Items from Today's Discussion
- October 25th 11-12 Technical Team Trailhead Meeting in Golden
- November 15th 9-12 Technical Team Meeting at Idaho Springs Elks Lodge
 - West Tunnel Portal color
 - CR 314 cut wall fascia process
- Upcoming project meetings – only one per month:
 - » November 5th Communications ITF 11-1 Location TBD
 - » November 7th Rafting bicycling coordination meeting - 9am Dumont
 - » December Tech Team Meeting - TBD at November 15 Tech Team Meeting



END OF PRESENTATION

