



United States
Department of
Agriculture

Forest
Service

Aspen-Sopris Ranger District

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P.O. Box 309
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File Code: 2810
Date: March 2, 2017

RECEIVED

MAR 24 2017

DIVISION OF RECLAMATION
MINING AND SAFETY

DIVISION OF RECLAMATION
MINING AND SAFETY

MAR 24 2017

RECEIVED

Robert Congdon
Mystic Eagle Quarry LLC
PO box 932
Carbondale Co 81623

CERTIFIED RETURN RECEIPT 7016 0600 0000 1115 7704

Dear Robert,

Thank you for meeting with myself, Erica Borum, Greg Rosenmerkel and Casey Loofbourrow on February 17, 2017.

The meeting was held to discuss Forest Service requirements to be met in order for development phase operations and future activities to proceed at the White Banks Quarry (BLM Lead File CMC #255401) located in Section 28, T. 9 S., R. 88 W on the Aspen/Sopris Ranger District, as outlined in the Plan of Operations (Plan) signed Jan 30, 2015, and the letter sent from this office on January 19, 2017.

This letter serves to summarize and document the topics and issues addressed in this meeting.

Thank you for providing us with documentation showing you have initiated the reactivation of your permit with the Colorado Division of Minerals and Geology.

You informed us that you are waiting on final MSHA approval for the initiation of underground operations, and expect to begin in the coming weeks. If MSHA requires the construction of a secondary escape way, the access road will need to be designed to Forest Service standards and bonded before construction can begin.

You also informed us you are planning to use a dump truck for the first six to eight months of operations, after which a highway-legal trailer will be utilized to transfer approximately 12-ton marble blocks off site, at no time exceeding legal vehicle weights for Colorado state highway use. The Forest Service has completed a load rating for the Avalanche Creek Road Bridge that found it suitable for highway-legal loads. Find the report included with this letter.



Caring for the Land and Serving People

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Though a road use permit will not be required, all aspects of road use and maintenance including shared road and bridge maintenance commensurate with use is still required as outlined in the Plan. Arrange to meet with our engineers to work the details of maintenance cost sharing. Also in lieu of a road use permit, please provide documentation of liability insurance for vehicles that will be using Forest roads for commercial purposes.

The following additional topics were addressed:

Re-route of NFSR 310

- Road design must be completed by a Colorado registered Professional Engineer. You estimated this could be completed by early April. Please provide us with these designs as soon as possible so we can determine compliance with agency standards so construction can begin on schedule.
- Reclamation bond for re-route or existing road must be furnished before construction begins.
- Before construction begins, please arrange with us to have timber re-marked.
- The Forest Service will loan you three agency-compliant traffic barricades to be used to secure access to the former road after the re-route is completed.

Structures

- Structure described as "bath house" in the POO will in fact be office space. Even if this structure is to be leased and bonded through the lessor, the Forest Service will still require a bond to be posted directly with either the State of Colorado, Division of Mining, Reclamation, and Safety, or the U.S. government, as an agreement between you and a lessor does not provide a material guarantee of reclamation to the United States as required by 36 CFR 228.13 (a).
- Portable toilet: current unit will be replaced and serviced under contract with a third party.

State of Colorado requirements

You were informed of State of Colorado regulations pertaining to commercial use of state highway 133. As discussed, the applicability of these requirements are dependent on traffic frequency and vehicle weight. Please ensure that you are in compliance with these regulations.

Mineral Classification

- You believe that within 6 to 8 months you will have enough market data to facilitate the classification of the brown and black marbles.
- If your consultant, Mike Doran, is able to visit the site in March please arrange for a meeting between yourself, Mr. Doran, and this office to support moving forward on mineral classification.

Sincerely,



KAREN SCHROYER
District Ranger

cc: Casey Loofbourrow, Chris McDonald, Olivia Garcia, Julien Shane, MSHA – Rocky Mountain District Office, Dustin Czapla, State of Colorado, Division of Reclamation, Mining, and Safety

Bridge Name: Avalanch CG
 Bridge Number: 310-1-0.0

Originator: SF Mitchell, PE
 Reviewer: JS Groenier, PE

Approver: SF Mitchell, PE
 Last Save: 2/21/17 2:12 PM

Comments

Bridge Girders were installed in 1985. Girders are 24F-V4, Deck Panels are Combination No 2. Deck Panels are interconnected with dowels. LRFD 7th Deck, Comb 2 $F_v=0.23$ KSI $F_b=1.8$ KSI, Girder 24F-V4 $F_v=0.265$ KSI $F_b=2.4$ KSI $E=1800.0$ KSI

Inputs

Rating Method:	Load and Resistance Factor Rating
	U.S. Customary
Deck Type:	Glulam Panels, Interconnected
Stringer Type:	Glulam Post-1970
Number of Lanes:	1
Number of Stringers:	4
Stringer Span:	39.31 (ft)
E of Stringer:	1,800.000 (ksi)
Stringer F_b :	2.400 (ksi)
Stringer F_v :	0.265 (ksi)
Deck Skew:	15.00 (deg)
Min. Panel Width:	48.00 (in)
Decking F_b :	1.800 (ksi)
Decking F_v :	0.230 (ksi)
Component Dead Loads:	96.60 (plf)
Wearing Surface Dead Load:	200.00 (plf)
Wheel/Track Gage:	6.00 (ft)
Effective Length of Deck Resisting Wheel Load:	57.00 (in)
Exterior Stringer Live Load Distribution Factor:	0.41 (wheel loads)
Interior Stringer Live Load Distribution Factor:	0.37 (wheel loads)
Stringer Width:	8.75 (in)
Stringer Depth:	27.00 (in)
C-C Ext. Stringers:	11.00 (ft)
Deck Thickness:	6.75 (in)
Deck Travel Clear Width:	13.71 (ft)
Total Deck Width:	15.00 (ft)
Component Dead Load Factor, γ_{DL} :	1.25
Wearing Surface Dead Load Factor, γ_{WS} :	1.50
Design Inventory γ_{LL}	1.75 (for design loads)
Design Operating γ_{LL}	1.35 (for design loads)
Legal Live Load Factor, γ_L :	1.30 (for legal loads)
Permit Load Factor, γ_{PL} :	1.10 (for permit loads)
Stringer Moment Resistance Factor, Φ :	0.85
Stringer Shear Resistance Factor, Φ :	0.75
Stringer Condition Factor Φ_C	Good or Satisfactory (6 or Higher)
Timber Deck Moment Resistance Factor, Φ :	0.85
Timber Deck Shear Resistance Factor, Φ :	0.75
Deck Condition Factor Φ_C	Good or Satisfactory (6 or Higher)
System Factor Φ_S	1.00

Bridge Name: Avalanch CG
 Bridge Number: 310-1-0.0

Originator: SF Mitchell, PE
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HL-93 LOADING - Live Loading Results

Span Length:	39.31 (ft)	
Maximum Moment:	566.27 (kip-ft)	
Maximum Moment Location From Left End:	19.15 (ft)	
Maximum Shear (at "3d" or "L/4"):	53.68 (kip)	
Max. Bridge Live Load Deflection:	2.51 (in)	L / 188
Maximum Reaction:	67.48 (kip)	

Load Info

Controlling Moment Load:	Design Tandem and Lane
Controlling Shear Load:	Design Truck and Lane
Controlling Reaction Load:	Design Truck and Lane

HL-93 LOADING - Stresses and Ratios

Dead Load Moment and Shear

	Stringer	Deck
Moment (DL + SDL)	40.88 (kip-ft)	0.16 (kip-ft)
Moment (WS)	9.66 (kip-ft)	0.06 (kip-ft)
Shear (DL + SDL)	3.68 (kip)	0.16 (kip)
Shear (WS)	0.87 (kip)	0.06 (kip)

Distributed Live Load Moment and Shear

	Interior		Exterior	
	Shear	Bending	Shear	Bending
Deck	9.33 (kip)	8.18 (kip-ft)		
Stringer	25.95 (kip)	207.63 (kip-ft)	27.16 (kip)	233.33 (kip-ft)

Inventory Rating Ratio

	Interior		Exterior	
	Shear	Moment	Shear	Moment
Deck	3.97	6.79		
Stringer	1.25	0.82	1.00	0.61

Operating Rating Ratio

	Interior		Exterior	
	Shear	Moment	Shear	Moment
Deck	5.15	8.80		
Stringer	1.63	1.06	1.29	0.79

Additional Information

Inventory GVW	N/A See Appendix C
Inventory Rating Factor	0.61
Operating GVW	N/A See Appendix C
Operating Rating Factor	0.79
Inventory γ_{LL}	1.75 (for design loads)
Operating γ_{LL}	1.35 (for design loads)
Multi-Presence Factor (Interior)	0.95
Multi-Presence Factor (Exterior)	1.14

Bridge Name: Avalanch CG
 Bridge Number: 310-1-0.0

Originator: SF Mitchell, PE
 Reviewer: JS Groenier, PE

Approver: SF Mitchell, PE
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TYPE 3 RATING VEHICLE - Live Loading Results

Span Length:	39.31 (ft)	
Maximum Moment:	341.14 (kip-ft)	
Maximum Moment Location From Left End:	21.39 (ft)	
Maximum Shear (at "3d" or "L/4"):	31.95 (kip)	
Max. Bridge Live Load Deflection:	1.51 (in)	L / 312
Maximum Reaction:	40.54 (kip)	

Load Info

Load Axle No. 1:	16.00 (kip)		
Load Axle No. 2:	17.00 (kip)	Spacing:	15.00 (ft)
Load Axle No. 3:	17.00 (kip)	Spacing:	4.00 (ft)

TYPE 3 RATING VEHICLE - Stresses and Ratios

Dead Load Moment and Shear

	Stringer	Deck
Moment (DL + SDL)	40.88 (kip-ft)	0.16 (kip-ft)
Moment (WS)	9.66 (kip-ft)	0.06 (kip-ft)
Shear (DL + SDL)	3.68 (kip)	0.16 (kip)
Shear (WS)	0.87 (kip)	0.06 (kip)

Distributed Live Load Moment and Shear

	Interior		Exterior	
	Shear	Bending	Shear	Bending
Deck	5.54 (kip)	4.74 (kip-ft)		
Stringer	15.44 (kip)	125.08 (kip-ft)	16.17 (kip)	140.56 (kip-ft)

Rating Factor Ratios

	Interior		Exterior	
	Shear	Bending	Shear	Bending
Deck	9.01	15.77		
Stringer	2.84	1.83	2.26	1.36

Additional Information

Rating GVW	34.01 (tons)
Safe Posting Load	N.A.
Rating Factor	1.36 Bridge need not be posted for this load.
YLL	1.30 (for legal loads)
Multi-Presence Factor (Interior)	0.95
Multi-Presence Factor (Exterior)	1.14

Bridge Name: Avalanch CG
 Bridge Number: 310-1-0.0

Originator: SF Mitchell, PE
 Reviewer: JS Groenier, PE

Approver: SF Mitchell, PE
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TYPE 3S2 RATING VEHICLE - Live Loading Results

Span Length:	39.31 (ft)	
Maximum Moment:	317.28 (kip-ft)	
Maximum Moment Location From Left End:	20.24 (ft)	
Maximum Shear (at "3d" or "L/4"):	28.57 (kip)	
Max. Bridge Live Load Deflection:	1.41 (in)	L / 335
Maximum Reaction:	38.34 (kip)	

Load Info

Load Axle No. 1:	10.00 (kip)		
Load Axle No. 2:	15.50 (kip)	Spacing:	11.00 (ft)
Load Axle No. 3:	15.50 (kip)	Spacing:	4.00 (ft)
Load Axle No. 4:	15.50 (kip)	Spacing:	22.00 (ft)
Load Axle No. 5:	15.50 (kip)	Spacing:	4.00 (ft)

TYPE 3S2 RATING VEHICLE - Stresses and Ratios

Dead Load Moment and Shear

	Stringer	Deck
Moment (DL + SDL)	40.88 (kip-ft)	0.16 (kip-ft)
Moment (WS)	9.66 (kip-ft)	0.06 (kip-ft)
Shear (DL + SDL)	3.68 (kip)	0.16 (kip)
Shear (WS)	0.87 (kip)	0.06 (kip)

Distributed Live Load Moment and Shear

	Interior		Exterior	
	Shear	Bending	Shear	Bending
Deck	5.11 (kip)	4.37 (kip-ft)		
Stringer	13.81 (kip)	116.34 (kip-ft)	14.46 (kip)	130.74 (kip-ft)

Rating Factor Ratios

	Interior		Exterior	
	Shear	Bending	Shear	Bending
Deck	9.76	17.12		
Stringer	3.17	1.97	2.53	1.46

Additional Information

Rating GVW	52.65 (tons)
Safe Posting Load	N.A.
Rating Factor	1.46 Bridge need not be posted for this load.
YLL	1.30 (for legal loads)
Multi-Presence Factor (Interior)	0.95
Multi-Presence Factor (Exterior)	1.14

Bridge Name: Avalanch CG
 Bridge Number: 310-1-0.0

Originator: SF Mitchell, PE
 Reviewer: JS Groenier, PE

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TYPE 3-3 RATING VEHICLE - Live Loading Results

Span Length:	39.31 (ft)	
Maximum Moment:	282.19 (kip-ft)	
Maximum Moment Location From Left End:	21.94 (ft)	
Maximum Shear (at "3d" or "L/4"):	26.88 (kip)	
Max. Bridge Live Load Deflection:	1.25 (in)	L / 377
Maximum Reaction:	35.85 (kip)	

Load Info

Load Axle No. 1:	12.00 (kip)		
Load Axle No. 2:	12.00 (kip)	Spacing:	15.00 (ft)
Load Axle No. 3:	12.00 (kip)	Spacing:	4.00 (ft)
Load Axle No. 4:	16.00 (kip)	Spacing:	15.00 (ft)
Load Axle No. 5:	14.00 (kip)	Spacing:	16.00 (ft)
Load Axle No. 6:	14.00 (kip)	Spacing:	4.00 (ft)

TYPE 3-3 RATING VEHICLE - Stresses and Ratios

Dead Load Moment and Shear

	Stringer	Deck
Moment (DL + SDL)	40.88 (kip-ft)	0.16 (kip-ft)
Moment (WS)	9.66 (kip-ft)	0.06 (kip-ft)
Shear (DL + SDL)	3.68 (kip)	0.16 (kip)
Shear (WS)	0.87 (kip)	0.06 (kip)

Distributed Live Load Moment and Shear

	Interior		Exterior	
	Shear	Bending	Shear	Bending
Deck	5.26 (kip)	4.49 (kip-ft)		
Stringer	12.99 (kip)	103.47 (kip-ft)	13.60 (kip)	116.28 (kip-ft)

Rating Factor Ratios

	Interior		Exterior	
	Shear	Bending	Shear	Bending
Deck	9.50	16.64		
Stringer	3.37	2.22	2.69	1.64

Additional Information

Rating GVW	65.78 (tons)
Safe Posting Load	N.A.
Rating Factor	1.64 Bridge need not be posted for this load.
YLL	1.30 (for legal loads)
Multi-Presence Factor (Interior)	0.95
Multi-Presence Factor (Exterior)	1.14

Bridge Name: Avalanch CG
 Bridge Number: 310-1-0.0

Originator: SF Mitchell, PE
 Reviewer: JS Groenier, PE

Approver: SF Mitchell, PE
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NRL - Live Loading Results

Span Length:	39.31 (ft)	
Maximum Moment:	523.85 (kip-ft)	
Maximum Moment Location From Left End:	20.55 (ft)	
Maximum Shear (at "3d" or "L/4"):	39.71 (kip)	
Max. Bridge Live Load Deflection:	2.32 (in)	L / 203
Maximum Reaction:	52.33 (kip)	

Load Info

Load Axle No. 1:	6.00 (kip)		
Load Axle No. 2:	8.00 (kip)	Spacing:	6.00 (ft)
Load Axle No. 3:	8.00 (kip)	Spacing:	4.00 (ft)
Load Axle No. 4:	17.00 (kip)	Spacing:	4.00 (ft)
Load Axle No. 5:	17.00 (kip)	Spacing:	4.00 (ft)
Load Axle No. 6:	8.00 (kip)	Spacing:	4.00 (ft)
Load Axle No. 7:	8.00 (kip)	Spacing:	4.00 (ft)
Load Axle No. 8:	8.00 (kip)	Spacing:	4.00 (ft)

NRL - Stresses and Ratios

Dead Load Moment and Shear

	Stringer	Deck
Moment (DL + SDL)	40.88 (kip-ft)	0.16 (kip-ft)
Moment (WS)	9.66 (kip-ft)	0.06 (kip-ft)
Shear (DL + SDL)	3.68 (kip)	0.16 (kip)
Shear (WS)	0.87 (kip)	0.06 (kip)

Distributed Live Load Moment and Shear

	Interior		Exterior	
	Shear	Bending	Shear	Bending
Deck	5.54 (kip)	4.74 (kip-ft)		
Stringer	19.19 (kip)	192.08 (kip-ft)	20.09 (kip)	215.85 (kip-ft)

Rating Factor Ratios

	Interior		Exterior	
	Shear	Bending	Shear	Bending
Deck	9.01	15.77		
Stringer	2.28	1.19	1.82	0.89

Additional Information

Rating GVW	35.44 (tons)
Safe Posting Load	33.48 (tons)
Rating Factor	0.89
Y _{LL}	1.30 (for legal loads)
Multi-Presence Factor (Interior)	0.95
Multi-Presence Factor (Exterior)	1.14

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Nominal Resistance

	Stringer	Deck
F_V Tab. Stress	0.508 (ksi)	0.386 (ksi)
F_b Tab. Stress	4.634 (ksi)	3.624 (ksi)
Nominal Capacity V_n	80.06 (kip)	99.01 (kip)
Nominal Capacity M_n	410.56 (kip-ft)	130.72 (kip-ft)

Shear Capacity

	Stringer	Deck
$\Phi * V_n$	60.04 (kip)	74.26 (kip)
Resistance Factor (Φ)	0.75	0.75

Moment Capacity

	Stringer	Deck
$\Phi * M_n$	348.97 (kip-ft)	111.11 (kip-ft)
Resistance Factor (Φ)	0.85	0.85

Section Properties

	Stringer	Deck
Area	236.25 (in ²)	384.75 (in ²)
MOI	X=14,352.19 (in ⁴) Y=1,507.32 (in ⁴)	1,460.85 (in ⁴)
Section Modulus	X=1,063.13 (in ³) Y=344.53 (in ³)	432.84 (in ³)
Q	797.34 (in ³)	N/A

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CFactors**Deck - Bending**

C_{λ} :	0.80
C_M :	0.80
C_{KF} :	2.94
C_d :	1.00
C_{fu} :	1.07
C_X :	1.00

Deck - Shear

C_{λ} :	0.80
C_M :	0.88
C_{KF} :	3.33
C_{GV} :	0.72
C_X :	1.00

Stringer - Bending

C_{λ} :	0.80
C_M :	1.00
C_{KF} :	2.94
C_L :	1.00
C_V :	0.82
C_X :	1.00

Stringer - Shear

C_{λ} :	0.80
C_M :	1.00
C_{KF} :	3.33
C_{GV} :	0.72
C_X :	1.00

Stringer - E

C_M :	1.00
C_X :	1.00