

BAER SURVEY SPECIALIST REPORT

Resource Specialty: Roads and Bridges

Fire Name: Rim

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Report

- I. Potential Values at Risk (identified prior to the on-the-ground survey)
 - i. Critical Values
Transportation System Roads and Bridges within, and adjacent to, the fire area

II. Resource Condition Assessment

A. Resource Setting

Within the fire perimeter there are approximately 720 miles of Forest Service (FS) system roads. The FS transportation system consists of 5 categories of operational maintenance level (OML). The summary of surveyed and non-surveyed roads by ML is as follows: (NOTE: 1N07, 1S02, and several level 2 roads adjacent to Cheery Creek are not included here as these roads are maintained by the San Francisco Department of Water and Power (Hetch Hetchy) under agreement(s) with FS)

OML	Total (mi)	Surveyed (mi)	Non-Surveyed (mi)
1	80	0	80
2	502	325	175
3	51	51	0
4	20	20	0
5	50	50	0

Table 1: Summary of Surveyed and Non-Surveyed FS Roads by OML

OML 1 roads are all closed roads and were not surveyed. Of the 502 miles of OML 2 roads, 175 miles were not surveyed for one or more of the following reasons 1) Road was in low burn severity or unburned area, 2) Road was high on, or at the top of, a slope, 3) Road was inaccessible due to previous damage or heave overgrowth. All OML 3, 4, & 5 roads were surveyed.

Forest Service system roads by burn severity are as follows: 407 miles are in low and non-burn areas, 281 miles are in moderate burn areas, and 32 miles are in high burn areas.

B. Findings of the On-The-Ground Survey

The field survey was conducted on September 9 – 23, 2013 by truck and foot travel.

The geology of the burn area includes metasedimentary and igneous (granitic) bedrock.

Some of the soils are very susceptible to erosion degradation while others tend to impound water on the surface. Directed runoff features are critical to maintaining stable, sustainable,

and safe roadways. Uncontrolled runoff can result in significant damage and potential loss to the road system.

Seven (7) bridges within the fire perimeter were inspected. A scorched object marker at the South Fork Tuolumne River Bridge (1N10) and a damaged, structurally compromised, wing wall on the Niagara-Clavey Bridge (2N04) are the only significant bridge damage resulting from the fire. Charred guard-rail posts and wingwall components on the Joe Walt Run bridge (3N01) are not structurally significant.

1. The roads are at increased risk due to:
 - a. Additional erosion damage as a result of increased storm water runoff velocity and volume on and across the road templates.
 - b. Rock fall and landslide events.
 - c. Tree fall
2. The consequences of the fire on the roads will be:
 - a. Primarily manifest as increased storm water runoff erosion damage, including potential total loss to the surfaces and templates.
 - b. Secondary consequences to the system is to increase the adverse effects, and decrease control, of storm water runoff to adjacent watersheds.
 - c. Public Safety is affected due to a significantly increased hazard resulting from destabilized rock slopes, falling trees, and damage to traffic safety structures and signs.

C. Emergency Determination

Imminent hazards to the roads system vary from minor sloughing and culvert blockage to partial or total loss of road template. Specific assessment details for each road are noted in Appendix 1

III. Treatments to Mitigate the Emergency

- A. Treatment(s) will vary from culvert cleaning and culvert removal to replacement or up-sizing of drainage structures. In some locations, minor to intermediate road reconstruction is recommended. There is no anticipated need for relocation of roads or major reconstruction efforts. Specific treatment details for each road are noted in Appendix 1 Appropriate monitoring for specific roads is noted in Appendix 2
- B. To stabilize the transportation system roads and prevent further damage resulting from:
 1. Erosion and other effects of storm water runoff as a result of fire damage on adjacent lands.
 2. Traffic on the roads.
- C. Public Safety Hazards as a result of facilities or structures damaged or destroyed.
- D. Treatment Cost. See Appendix 2
- E. All roads with a Risk Assessment of Intermediate, High, or Very High are considered to have a significant hazard risk from falling trees. It is expected that this risk will remain for several years or until the trees are specifically removed through a Hazard Trees Timber Sale or other program.

IV. Discussion/Summary/Recommendations.

The base upon which the roads are built varies from bed rock to decomposed granite (DG) and alluvial deposits.

The weathered granitic rock (DG), which underlies much of the road system north of the Tuolumne River, is highly susceptible to water erosion. Lack of maintenance on many of the roads has resulted in significant surface and template degradation in numerous locations. Although it is recognized that BAER is not intended to correct past maintenance deficiencies, the drastically changed conditions resulting from wildfire impose an urgency for correction on some of those situations to avoid partial or complete loss of the road template. The work proposed herein is intended to stabilize the identified roads and structures in preparation for the anticipated increase in storm water runoff. Additionally, several work elements involve public safety hazards.

Monitoring of the roads, either under current condition or after mitigation work, needs to be accomplished to document and appraise treatment success and any adverse effects on adjacent lands and watersheds. Storm Inspection and Response efforts for open roads to maintain a safe and stable travel system.

V. References

- A. FSM 2500, Chapter 2520 – Watershed Protection and Management. 2523
2523 – Emergency Stabilization-Burned Area Emergency Response
- B. Standard Specifications for the Construction of Roads and Bridges on Federal Highway Projects, FP-03
- C. BAER Treatments Catalog, SDTDC
- D. FSM 7700 – Travel Management, Chapter 7730-Road Operation and Maintenance

VI. Appendices.

- Appendix 1. Emergency Determination Description
- Appendix 2. Treatments to Mitigate Emergency – Costs

Probability of Completing Treatment Prior to Damaging Storm or Event

All High Risk Roads: 85%
All Intermediate Risk Roads: 85%

Probability of Treatment Success

Risk Level	Year 1	Year 2	Year 3
High Risk Roads	90%	90%	85%
Intermediate Risk Roads	95%	90%	90%

Table 2: Estimated probability of treatment success by year

Summary of Work, Item Cost, and Justification for Treatments

Treatment ¹	Qty.	Estimated Cost ²	Justification
Restore drainage, Paved (MI)	68.9	REDACT	Protecting the significant investment in the primary transportation system routes. Maintain critical administrative and public access.
Restore drainage, Native (MI)	251.1	REDACT	Protecting the investment in principle and secondary routes. Maintain important and/or critical administrative and public access.
New or reconstructed Rolling Dip (EA)	400	REDACT	Minimize damage to the road surface and template by diverting storm water run-off flow off the road.
Armored Dip (EA)	7	REDACT	Minimize damage to the road surface and template by hardening road surface and diverting water off the road at intermittent channels. Minimizes fill-slope deterioration.
Armored Crossing (EA)	30	REDACT	To minimize or prevent the loss of road surface and template due to erosion of cross drains.
Water Bars	54	REDACT	To stabilize and protect the road surface and template from damage from over-winter erosion.
Rip Rap (CY)	1,885	REDACT	Protects upstream fill slopes and dissipates energy to minimize erosion and help prevent head cut on fill slopes.
Riser (Drop Inlet) (EA)	58	REDACT	Prevents culvert inlet obstruction in basin situations.
Flared End Section, Inlet (EA)	96	REDACT	Improves hydraulic capacity and enhances free debris passage capability of existing culverts. Reduces the probability of the culvert plugging.
Culvert Replacement(EA) (Upsizing)	10	REDACT	Increases the capacity of the drainage structure to handle the expected increase flows from the burned area. Decreases the probability of road failure.
Debris Rack (EA) ³	5	REDACT	Prevents burned area debris from plugging culverts which could cause road failure.
Guardrail with posts (LF)	24	REDACT	Restore public safety due to guardrail damage caused from fire.
Guardrail Post 8x8 (EA)	21	REDACT	Restore public safety due to guardrail post damage caused from fire. Burnt-out guardrail posts. Guardrail undamaged
Striping (MI)	1.0	REDACT	Restore public safety due to striping loss by fire.
Drop Inlet Cover (EA)	15	REDACT	Prevents culvert inlet obstruction in basin situations.
Reflectors (EA)	200	REDACT	Maintain public safety. Replace roadway delineators damaged or destroyed by fire.
Over side Drain (EA)	21	REDACT	Protection of fill slopes on outside of road form expected increase in run-off
Storm Inspection-Response (MI)	159.4	REDACT	Maintain transportation system integrity and protect public safety.

NOTES:

1. Treatments are detailed in Appendix 1
2. Estimated Cost is for public works (PW) contracts. Includes P&O and administrative costs (REDACT%). Costs DO NOT include contingency.. See Appendix 2
3. Suitability of site(s) for debris rack installation needs further engineering evaluation.

APPENDIX 1

Rim BAER - Roads

Stanislaus National Forest

Appendix 1 - Evaluation and Assessment

Roads Surveyed With No Proposed Treatment			
Road	Assessment	Risk	Treatment
1N01A	Low to Moderate burn severity	Low	No Treatment
1N01G	Low to Moderate burn severity	Low	No Treatment
1N01H	Low to Moderate burn severity	Low	No Treatment
1N01K	Low to Moderate burn severity	Low	No Treatment
1N02Y	Low to Moderate burn severity	Low	No Treatment
1N07Y	Low to Moderate burn severity	Low	No Treatment
1N09	Low to Moderate burn severity	Low	No Treatment
1N11	Low to Moderate burn severity	Low	No Treatment
1N13	Low to Moderate burn severity	Low	No Treatment
1N13A	Low to Moderate burn severity	Low	No Treatment
1N13B	Low to Moderate burn severity	Low	No Treatment
1N24A	Low to Moderate burn severity	Low	No Treatment
1N26B	Low to Moderate burn severity	Low	No Treatment
1N26C	Low to Moderate burn severity	Low	No Treatment
1N26D	Low to Moderate burn severity	Low	No Treatment
1N27	Low to Moderate burn severity	Low	No Treatment
1N27B	Low to Moderate burn severity	Low	No Treatment
1N28	Low to Moderate burn severity	Low	No Treatment
1N28A	Low to Moderate burn severity	Low	No Treatment
1N31YA	Low to Moderate burn severity	Low	No Treatment
1N31YB	Low to Moderate burn severity	Low	No Treatment
1N34Y	Moderate to high burn severity upslope of road	Low	No Treatment
1N35	Moderate to high burn severity upslope of road	Low	No Treatment
1N39Y	Low to Moderate burn severity	Low	No Treatment
1N40	Moderate to high burn severity upslope of road	Low	No Treatment
1N41	Low to Moderate burn severity	Low	No Treatment
1N43A	Low to Moderate burn severity	Low	No Treatment
1N43B	Low to Moderate burn severity	Low	No Treatment
1N43C	Low to Moderate burn severity	Low	No Treatment
1N43D	Moderate to high burn severity upslope of road	Low	No Treatment
1N44	Low to Moderate burn severity	Low	No Treatment
1N48	Moderate/High Sev Burn at top of water shed. Overgrown.	Low	No Treatment
1N48A	Moderate to high burn severity upslope of road	Low	No Treatment
1N49B	Low to Moderate burn severity	Low	No Treatment
1N50A	Low to Moderate burn severity	Low	No Treatment

1N50C	Low to Moderate burn severity	Low	No Treatment
1N56	Low to Moderate burn severity	Low	No Treatment
1N56A	Moderate to high burn severity upslope of road	Low	No Treatment

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Road	Assessment	Risk	Treatment
1N57	Low to Moderate burn severity	Low	No Treatment
1N58A	Low to Moderate burn severity	Low	No Treatment
1N60	Low to Moderate burn severity	Low	No Treatment
1N60A	Not maintained/used?- Could not drive	Low	No Treatment
1N61	Low to Moderate burn severity	Low	No Treatment
1N67	Moderate to high burn severity upslope of road	Low	No Treatment
1N72	Low to Moderate burn severity	Low	No Treatment
1N76A	Not maintained/used- Could not drive	Low	No Treatment
1N76B	Moderate to high burn severity upslope of road	Low	No Treatment
1N78	Low to Moderate burn severity	Low	No Treatment
1N82	Low to Moderate burn severity	Low	No Treatment
1N85	Low to Moderate burn severity	Low	No Treatment
1N94	road in poor condition prior to fire. Could use some water bars to protect as a trail.	Low	No Treatment
1N94A	High to moderate burn severity, moderate steep slopes	Low	No Treatment
1N96E	Rilling occurring over length of road	Low	No Treatment
1S09	Low to Moderate burn severity	Low	No Treatment
1S10	Moderate burn severity upslope of road	Low	No Treatment
1S11F	High to moderate burn on moderate slopes. Road is outside a campground	Low	No Treatment
1S12G	High watershed, Moderate to high burn.	Low	No Treatment
1S12H	High watershed, Moderate to high burn.	Low	No Treatment
1S23D	High watershed, Moderate to high burn.	Low	No Treatment
1S23G	Moderate/High Burn Severity (formerly manzanita)	Low	No Treatment
1S23X	Low to Moderate burn severity	Low	No Treatment
1S25Y	Recently Maintained Access To Powerline.	Low	No Treatment

1S25Y	moderate to high burn on mild to moderate slopes, roads access power lines & private structure	Low	No Treatment
1S25YB	High burn road leading down to creek on steep slope	Low	No Treatment
1S26C	Low to Moderate burn severity	Low	No Treatment
1S28B	Road is low point. High burn area at upper end of watershed	Low	No Treatment
1S30B	Low to Moderate Burn severity.	Low	No Treatment

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Road	Assessment	Risk	Treatment
1S48	Moderate to high burn on steep slopes	Low	No Treatment
1S53	Moderate to high burn on steep slopes	Intermediate	No Treatment
1S54	Moderate to high burn on steep slopes	Low	No Treatment
1S57	Low to Moderate burn severity	Intermediate	No Treatment
1S58	High watershed road along ridgeline in low to moderate burn	Intermediate	No Treatment
1S62YA	Low to Moderate burn severity	Low	No Treatment
1S63Y	Low to Moderate burn severity	Low	No Treatment
1S63YA	Low to Moderate burn severity	Low	No Treatment
1S68	Low to Moderate burn severity	Low	No Treatment
1S69	Low to Moderate burn severity	Low	No Treatment
1S70A	Low to Moderate burn severity	Low	No Treatment
1S70B	Moderate to high burn, steep to moderate slopes	Low	No Treatment
1S72Y	Low to Moderate burn.	Low	No Treatment
1S73	Low to Moderate burn.	Low	No Treatment
1S74	Low to Moderate burn.	Low	No Treatment
1S75A	Moderate to High burn	Low	No Treatment
1S84	Low burn	Low	No Treatment
1S84	Low to Moderate burn. Existing riling.	Low	No Treatment
1S88	Low to Moderate burn severity	Low	No Treatment
2N94	Low severity burn, road located on upper slope, low angle	Intermediate	No Treatment
2N04Y	High in water shed, low sev burn	Low	No Treatment
2N10	High burn area, mild slopes	Low	No Treatment
2N10Y	Moderate burn severity upslope of road	Low	No Treatment
2N11E	Moderate burn severity upslope of road	Low	No Treatment

2N29A	Moderate to high burn severity upslope of road	Low	No Treatment
2N29Y	Moderate to high burn severity upslope of road	Low	No Treatment
2N40	Moderate to high burn severity upslope of road	Low	No Treatment
2N48	Moderate to high burn severity upslope of road	Low	No Treatment
2N48A	Staked for timber sale, Low burn	Low	No Treatment
2N66	Low to Moderate burn severity	Low	No Treatment
2N69	Low to Moderate burn severity	Low	No treatment
2N85	Low to Moderate burn severity	Low	No Treatment
2N94	Mostly out of fire	Low	No Treatment

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Roads Surveyed With No Proposed Treatment			
Road	Assessment	Risk	Treatment
2S01A	Moderate burn severity upslope of road	Low	No Treatment
2S15Y	Moderate burn severity upslope of road	Low	No Treatment
2S19YA	Moderate burn severity upslope of road	Low	No Treatment
2S19YB	Low to Moderate burn severity	Low	No Treatment
2S35Y	Low to Moderate burn severity	Low	No Treatment
2S35YA	Low to Moderate burn severity	Low	No Treatment
2S51Y	Moderate burn severity upslope of road	Low	No Treatment
2S51YA	Low to Moderate burn severity	Low	No Treatment
2S60	Low to Moderate burn severity	Low	No Treatment
2S60B	Moderate burn severity upslope of road	Low	No Treatment
2S60C	Low to Moderate burn severity	Low	No Treatment
2S68	Moderate to high burn severity upslope of road	Low	No Treatment
2S88	Moderate to high burn severity upslope of road	Low	No Treatment
2S93	Moderate to high burn severity upslope of road	Low	No Treatment
3N01C	Low to Moderate burn severity	Low	No Treatment
3N01M	Moderate to high burn severity upslope of road	Low	No Treatment
3N01Q	Moderate to high burn severity upslope of road	Intermediate	No Treatment
3N56Y	Moderate to high burn severity upslope of road	Intermediate	No Treatment
3N56YA	Road in fair condition. Access to Quarry	Low	No Treatment

Appendix 1 - Evaluation and Assessment

Roads Surveyed With Proposed Treatment			
Number	Assessment	Risk	Treatment
1N01	Moderate to high burn severity upslope of road	Very High	59 rolling dips, add 10 culvert risers, 1 culvert replacement, restore drainage function of road
1N04 - W	Low burn along road. Steep slopes near the river to the upper east side of drainage	High	Replace (2) 13.5' sections of guardrail, 25 guardrail posts, replace 4 signs, 1 drop inlet cover and clean existing pipes and inlets. Storm Patrol
1N04 - E	High Severity Burn with moderate to steep slopes. Jawbone drainage likely to huge amounts of debris	Very High	Clean existing drainage features and Install (2) 24" risers. Replace 1.0 mile of striping, (3) drop inlet covers, (2) debris racks, armor at exiting inlets and outlets. Storm patrol
1N04Y	Moderate to high burn severity upslope of road	High	2 rolling dips, restore drainage function of road
1N05	Moderate to high burn severity upslope of road	Very High	5 rolling dips, 5 culvert risers, restore drainage function of road
1N07C	Moderate to high burn severity upslope of road	Very High	3 rolling dips, restore drainage function of road
1N08	Moderate to high burn severity upslope of road	Very High	4 rolling dips, restore drainage function of road
1N10	High Priority road for access, high burn steep slopes	Very High	Restore drainage function of road, construct twenty dips. Storm patrol
1N11Y	Moderate to high burn severity upslope of road	Very High	8 rolling dips, restore drainage function of road, add two culvert risers
1N12	Moderate to high burn severity upslope of road	Intermediate	4 rolling dips, restore drainage function of road
1N14	Moderate to high severity burn, road located on upper slope, medium angle	High	7 rolling dips, restore drainage function of road, armor dip lead off ditches with rip rap, add 1 culvert riser, replace 1 DI cover
1N16	Moderate to High burn severity upslope of road. Access to Duckwall Lookout.	High	Restore drainage function of road, construct five dips, Storm patrol
1N17	Moderate to High burn severity upslope of road	Intermediate	Restore drainage function of road
1N18	Moderate to High burn severity upslope of road	High	4 rolling dips, restore drainage function of road
1N24	Moderate to High burn severity upslope of road	High	22 rolling dips, restore drainage function of road
1N25	Low Severity Burn with erosive soils.	Intermediate	Restore Drainage on native surface
1N25Y	Moderate to High burn severity upslope of road	High	1 rolling dip, 1 FES, 10 yards rip rap
1N26	Moderate to High burn severity upslope of road	Very High	9 rolling dips, 9 culvert replacements, restore drainage function of road
1N36	Low to Moderate burn severity in area	High	Restore drainage function and close road.

1N36A	Low to Moderate burn severity upslope of road.	Very High	Restore drainage function and close road.
1N40Y	Low to Moderate burn severity upslope of road.	Intermediate	3 rolling dips, restore drainage function of road, add 2 DI covers

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Roads Surveyed With Proposed Treatment			
Number	Assessment	Risk	Treatment
1N43	Low to High burn severity upslope of road	Very High	9 rolling dips, 9 culvert Flared end sections, restore drainage function of road
1N46	Moderate to High burn severity upslope of road	High	4 rolling dips, restore drainage function of road, add 4 culvert flared end sections
1N49 So.	Moderate to High burn severity upslope of road	Very High	11 rolling dips, restore drainage function of road.
1N49 No.	Low to High burn severity upslope of road	Intermediate	Restore drainage function and close road
1N50	Low to High burn severity upslope of road. Drainage compramisied.	Very High	3 rolling dips, 3 culvert flared end sections, restore drainage function of road
1N58	Low to Moderate burn severity upslope of road.	Intermediate	Restore drainage function of road
1N76	Low to Moderate burn severity in area.	Very High	7 rolling dips, restore drainage function of road
1N79	Moderate to High burn severity upslope of road	High	7 rolling dips, 9 culvert risers, restore drainage function of road
1N82	Moderate to High burn severity upslope of road	High	Restore drainage function and close road.
1N83	High Severity Burn in area of HH facilities. Moderate to high burn with steep slopes other area	Very High	7 rolling dips, restore drainage function of road, storm patrol
1N96	High burn with steep to moderate slopes	Very High	18 rolling dips, 9 culvert risers, 2 FES, 1 armored crossing, restore drainage function of road, storm patrol
1N96E	Moderate burn severity upslope of road	Intermediate	Storm Patrol
1N97	High severity burn area. Road located on upper slope.	High	8 rolling dips, restore drainage function of road, armor dip lead off ditches with rip rap, add 2 culvert riser,
1S03	Low to High burn severity upslope of road. Drainage compramisied.	Very High	Construct 10 Dips, upsize 2 CMPs, install 2 end sections, unplug existing CMP's, clean out catch basins, and pull ditches
1S04	Moderate burn severity upslope of road	High	Install 24" CMP, armor 3 crossings blade and shape full length
1S04A	Low to Moderate burn severity upslope of road.	Intermediate	Blade & shape road entire length, re-establish drainage features

1S05	Moderate burn severity upslope of road	Very High	Re-establish 6 dips, install energy dissipaters, clean catch basins and existing CMPs, replace damaged CMP
1S11	Moderate to High burn, steep to moderate slopes	Intermediate	3 rolling dips, restore drainage function of road
1S12	Moderate to High burn severity upslope of road.	High	6 rolling dips, restore drainage function of road, add 2 culvert flared end sections, add 10 CY or rip rap
1S13	Moderate to High burn severity upslope of road.	Very High	34 rolling dips, restore drainage function of road, add 15 culvert flared end sections, 50 CY rip rap, 1 culvert riser

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Number	Assessment	Risk	Treatment
1S13Y	Moderate burn severity upslope of road.	High	Restore drainage full length and blade and shape, heavy riling taking place along full length
1S23	Moderate to High burn severity upslope of road.	Intermediate	1 rolling dip, Storm Patrol
1S23E	Moderate to High burn severity upslope of road.	Intermediate	Restore drainage function to road
1S23Y	Moderate Burn Severity. Debris in inlets and drainage ditch	Intermediate	Replace burnt sign, no additional treatment
1S26	Low to Moderate burn, mild to moderate slopes	Very High	4 Armored Crossings
1S28	Moderate burn severity upslope of road	High	Restore Drainage Function
1S30	High burn, no access	Very High	Construct 10 dips, armor catch basin inlets, pull ditches, clean existing culverts
1S30B	Low to Moderate Burn severity.		
1S36	Moderate burn severity	Intermediate	Armor (2)catch basin inlets & outlets in moderate burn areas
1S49	Low to High burn severity upslope of road.	Intermediate	8 rolling dips, restore drainage function of road, add 3 culvert flared end sections, add 8 overside drains
1S60	Low to High burn severity in area.	Very High	Construct 23 dips
1S78	Low to Moderate burn with moderate to high slopes	Very High	Construct (3) Armor crossings, blade and shape full length, existing riling will cause further damage over winter if not treated
1S83	Low to Moderate burn severity upslope of road	Very High	2 Armored crossings.
1S85	Low to Moderate burn severity upslope of road	Very High	Install 17 dips, pull ditches, re-shape lead off ditches

1S94	Moderate to High burn severity upslope of road	Intermediate	Storm proof full length constructing (4) armored crossings and installing 2 ends sections, replace 18" CMP from fire damage
2N05	Low to Moderate burn severity in area.	Intermediate	Daylight berms to restore drainage.
2N08Y	Moderate to High burn severity upslope of road	High	Restore drainage function to road. Construct 5 dips, 2 FES, armor 2 outlets with 10 CY Rip Rap
2N11	Low to High burn severity upslope of road	Very High	13 rolling dips, 1 culvert riser, restore drainage function of road, add 6 culvert flared end section, 7 armored crossings
2N11C	Low to Moderate burn severity upslope of road	Intermediate	Restore Drainage on native surface
2N14	Low to High burn severity upslope of road	High	Restore drainage function of road. 13 rolling dips,
2N22	Moderate to High burn severity upslope of road	High	Construct 4 Armored crossing, (2) 18" end sections, Replace culvert. Clean culvert inlets

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Number	Assessment	Risk	Treatment
2N24	Moderate severity burn, road located on upper slope, low angle	Intermediate	Restore drainage function of road, armor culvert outlet with 20 CY large rip rap, 5 CY of Rip Rap for burned out stump on shoulder
2N29	Low to High burn severity upslope of road	High	10 rolling dips, restore drainage function of road
2N46	Moderate to High burn severity upslope of road	Intermediate	Restore drainage on native surface
2N57	Low Burn, Staked for Timber Sale	Intermediate	Restore drainage function of road
2N58	Not Significant	Intermediate	Restore drainage function of road
2N58C	Waterfall access, Lots of rockfall on unpaved section	Intermediate	Restore drainage function of road
2N59	low severity, suppression rehab underway	Intermediate	2 culvert flared end sections, restore drainage function of road
2N60	Low to High burn severity upslope of road.	Very High	1 rolling dips, restore drainage function of road
2N78	High burn severity upslope of road.	Intermediate	Restore drainage function and close road
2N89	Moderate burn severity upslope of road	High	Restore drainage function of road
2S19Y	Low to High burn severity upslope of road.	Intermediate	5 rolling dips, restore drainage function of road, 40 CY rip rap. Close Roads
2S25	Low to High burn severity upslope of road.	Intermediate	9 rolling dips, 1 culvert replacement, restore drainage function of road, 1 culvert flared end section.

2S30	Low to High burn severity upslope of road.	High	Restore drainage function of road, 12 culvert flared end sections, storm patrol
2S40	Moderate burn severity upslope of road	Intermediate	6 rolling dips, 1 culvert flared end section
2S64	High to Moderate burn, steep slopes in drainages	High	Restore drainage function of road
2S65	Low to Moderate burn severity upslope of road.	Intermediate	Restore drainage function of road
2S89	Moderate burn severity upslope of road	Intermediate	Restore drainage, 6 culvert flared end sections
3N01	Moderate to High burn severity upslope of road	Very High	Install 8 flared end sections, install 3 debris racks, upsize 18" culvert, install 2 risers and 8 drop inlet covers & 1 reflector
3N01K	Moderate to High burn severity upslope of road.	Very High	Restore drainage function and close road
3N01N	Moderate to High burn severity upslope of road.	Very High	Restore drainage function and close road
3N01P	Moderate Burn Severity.	High	2 rolling dips, restore drainage function of road

																			REDACT
1N97	2		5.1	8			50	2											REDACT
1S03	3		11.6	10			310	1	2	2							11.6		REDACT
1S04	2		3			3	30		4	1							3		REDACT
1S04A	2		0.9														0.9		REDACT
1S05	2		4	6			110			1							4		REDACT
1S11	2		3.1	3															REDACT
1S12	2		5.4	6			10		2										REDACT
1S13	2		21.7	34			50	1	15										REDACT
1S13Y	2		1.2				60										1.2		REDACT
1S23	2			1													3		REDACT
1S23E	2		0.3														0.3		REDACT
1S23Y	2		0.7														0.7		REDACT
1S26	4		2.2			4											2.2		REDACT
1S28	4	0.8															0.8		REDACT
1S30	2		2	10			130		2								2		REDACT
1S36	2						40												REDACT
1S49	2		2.4	8					3							8			REDACT
1S60	2		1.9	23			230										1.9		REDACT
1S78	2		4			3											4		REDACT
1S83	4		0.8			2											0.8		REDACT

																				REDACT
2S40	2			6						1										REDACT
2S64	2		1.6																	REDACT
2S65	2		1.8																	REDACT
2S89	2		4.9							6										REDACT
3N01	5	32.8						150	2	8	1	3				8	1		32.8	REDACT
3N01K	2		0.7	7					7											REDACT
3N01N	2		0.8	2																REDACT
3N01P	2		0.4	2																REDACT
Total Units		68.9	251.1	415	7	30	54	1885	58	96	10	5	24	21	1	15	200	21	159.4	