



Sierra Pacific Industries

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November 6, 2013

Board of Forestry and Fire Protection
Attn: Eric Huff
Regulations Coordinator
P.O. Box 944246
Sacramento, CA 94244-2460

email to: board.public.comments@fire.ca.gov

Subject: Road Rules 2013 – Failure to conduct required economic analysis per Government Code section 11342.548 and 11346.36 and the OAL approved CCR Title 1, Division 3 Chapter 1 Section 2000 et seq.

Dear Chairman Gillless and Board of Forestry Members,

To provide the Board with a little background, SB 617 includes the following definition at Government Code Section 11342.548.

“Major regulation” means any proposed adoption, amendment, or repeal of a regulation subject to review by the Office of Administrative Law pursuant to Article 6 (commencing with Section 11349) that will have an economic impact on California business enterprises and individuals in an amount exceeding fifty million dollars (\$50,000,000), as estimated by the agency.

(Added by Stats. 2011, Ch. 496, Sec. 1. Effective January 1, 2012.)

Government Code 11346.5a(10) says

*“A statement of the results of the economic impact assessment required by subdivision (b) of Section 11346.3 **or the standardized regulatory impact analysis if required by subdivision (c) of Section 11346.3,.....**”*

And to be clear 11346.3(c) says:

*(c) (1) Each state agency proposing to adopt, amend, or repeal a major regulation on or **after November 1, 2013, shall prepare a standardized regulatory impact analysis in the manner prescribed by the Department of Finance pursuant to Section 11346.36.** The standardized regulatory impact analysis shall address all of the following:*

(A) The creation or elimination of jobs within the state.

*(B) The creation of new businesses or the **elimination of existing businesses within the state.***

*(C) The competitive advantages or **disadvantages for businesses currently doing business within the state.***

*(D) The increase or **decrease of investment in the state***

(E) The incentives for innovation in products, materials, or processes.

(F) The benefits of the regulations, including, but not limited to, benefits to the health, safety, and welfare of California residents, worker safety, and the state's environment and quality of life, among any other benefits identified by the agency.

(2) This subdivision shall not apply to the University of California, the Hastings College of the Law, or the Fair Political Practices Commission.

(3) Information required from state agencies for the purpose of completing the analysis may be derived from existing state, federal, or academic publications.

It is very clear based upon the **"FOCUSED EVALUATION OF THE POTENTIAL ECONOMIC EFFECTS RESULTING FROM THE ADOPTED "ROAD RULES, 2013" RULEMAKING PROPOSAL"** contained in the Board's Draft FSOR for the Road Rules 2013 package, that the Board recognizes its responsibility to conduct the required Standardized Regulatory Impact Assessment for Major Regulations (SRIA), but it chooses to ignore that responsibility. Nowhere in the Government Code does the option of doing a "focused evaluation" replace the required SRIA. The discussion/"focused evaluation" presented is nearly impossible to follow as it moves from statements of known costs to claims that it is too complicated to calculate net costs. The implementing regulations for SB 617 make it clear that one simply must state the assumptions made and then just do it, but does not allow the decision to be made that a SRIA can't be done. (The OAL approved regulations for implementing SB 617 are attached to this letter). One of the most obvious reasons to not produce a SRIA is that doing so would require the Board to clearly state the reason for the regulation, identifying the "need or purpose" and the benefit or the logic as to how the proposed rule will fix the "need". This could be hard when in much of the newly covered lands it would be impossible to estimate any new benefits since the beneficial uses of water objectives have been met for many years by the existing rules. This meeting of beneficial uses of water quality objectives has been reported for over a decade in the Sacramento River Watershed Monitoring reports, from 1996 through 2006. Note that these reports predate the ASP rules.

In this FSOR the Board clearly states that in the ISOR the Board found that ***"It is possible that the regulation would be of some unknown benefit to the state's environment."*** This is precisely the reason that the legislature passed SB 617 so that costly new regulations would have some rational connection to an impact that would be corrected. In fact, much of this discussion says that many of the impacts of this regulation are already being inflicted on those folks in the previously adopted "ASP" rule areas. It is just too bad that SB 617 didn't exist when those rules were passed as this requirement to clearly identify the need and the resulting benefit from the ASP rules would have been equally difficult.

In some regards, the FSOR does highlight the *"one feature of the adopted regulation most likely to affect planning and operational costs is the all-inclusive requirement for "hydrologic disconnection."* Any time an "all-inclusive requirement" for anything usually means that there are many places where it will be unnecessary. The Board has tried but failed to define correctly and in any meaningful way "Significant Sediment Discharge" or "Significant Existing or Potential Erosion Site" because the definitions do not provide any measureable standard or more importantly require the regulating agencies to demonstrate a CEQA significant adverse impact as part of the definition. Thus as the Board in the FSOR states *"It is therefore not hard to imagine 'hydrologic disconnection' as a similar source of spirited discussion between resource professionals in the field."* In fact, I would add it is also not hard to imagine spirited discussion between professionals over the subjects "significance" of any sediment. It is hard to understand how we have taken a natural process called "erosion" and only considered its negative connotations, when in fact spawning gravels, and valley creation are all the natural outcome of this same process. How does one separate what is natural or background erosion albeit from roads as compared to the historically regularly burned landscape? I am sure that "a visible increase in turbidity" occurs naturally when historically burned forests were visited by the first post-burn storm, and it seems that salmon have weathered those storms for generations.

In the road rules FSOR, released to the public on November 4, 2013, some cost estimates for various elements of the proposed rule package were indeed prepared and provided. Some of these cost elements highlighted the fact that significant costs could be incurred by forest landowners if this rule package were passed and implemented. SPI in March of 2012 provided directly measured cost estimates indicating that in non-ASP watersheds the costs associated with the new rules exceed \$650,000 in just 4 planning watersheds. SPI owns lands in some 662 non-ASP watersheds so the costs to just SPI could easily exceed \$50 million. Attached to this letter is a re-submission of that March 2012 letter and analysis. Tom Walz testified at the October Board meeting as to the cost of a 5.12 mile project to achieve "hydrologic disconnection" at a cost of \$23,437.50 per mile. This example shows the effort on just about 1 sq. mile of SPI lands. Again there are over 9,000 sq. miles of private lands outside of ASP rules and therefore well in excess of the threshold to conduct an SRIA. This example is also attached to this comment letter. It is very clear that this "Road Rules 2013" regulation exceeds the threshold for a "major regulation" and triggers the now required SRIA.

The Board when it conducts the required SRIA would be prevented from claiming that some people implement some of the proposed rules either voluntarily or through Agency Review Team recommendations and therefore there is no increase in costs. The difference is that the rule doesn't allow for such discretionary actions, they will now be required.

Finally in this "discussion/focused evaluation the Board states:

"...it is inconceivable a timberland owner of any size and in any Forest District would agree to harvest their timber at an economic loss or break-even figure. Where cost-prohibitive expectations for hydrologic disconnection are applied, timberland owners will be unable to press forward toward harvest plan approval. It is therefore incumbent upon all who operate under or enforce the adopted rule standards to maintain sight of the larger context. Hydrologic disconnection is a single, well-placed waterbreak and it is complete "storm-proofing" of a mile of road. The range of cost begins with a single person bearing a shovel and ends with multiple pieces of equipment, materials, and personnel. Cost effects of the adopted regulation will in large part be the result of fitting the most effective/least costly treatment to the site-specific condition."

It must be clearly pointed out that the regulated public is the one bearing the full costs without clear definitions that require those demanding treatments to prove a direct CEQA significant connection to "adverse impacts" before determining what is significant.

Given this lack of a complete financial assessment, Sierra Pacific Industries cannot support the final adoption of this rule package at this time. As such, we recommend the Board delay action on this rule package until such time as a thorough Standardized Regulatory Impact Assessment for Major Regulations can be prepared and released to the regulated community for review and analysis. One would hope that such a properly conducted assessment would cause the Board to reconsider these rules and take them back to committee with a clear determination of the "need" for them.



Sierra Pacific Industries

Attachment 1 - OAL Approved Regs - SB-617

DIVISION 3--DEPARTMENT OF FINANCE Chapter 1. Standardized Regulatory Impact Assessment For Major Regulations

ORDER OF ADOPTION

Adopt regulations in Title 1, Division 3, Chapter 1, of the California Code of Regulations, to read as follows:

Division 3. Department of Finance

Chapter 1. Standardized Regulatory Impact Assessment for Major Regulations.

2000. Definitions.

For purposes of this chapter:

(a) "Agency" has the meaning given to that term in Section 11342.520 of the code.

(b) "As estimated by the agency" means the agency has estimated the economic impact of a proposed action in the manner prescribed by section 2003.

(c) "Code" means the Government Code.

(d) "Department" means the Department of Finance.

(e) "Economic impact" means all costs or all benefits (direct, indirect and induced) of the proposed major regulation on business enterprises and individuals located in or doing business in California.

(f) "GO-Biz" means the Governor's Office of Business and Economic Development.

(g) "Major regulation" means any proposed rulemaking action adopting, amending or repealing a regulation subject to review by OAL that will have an economic impact on California business enterprises and individuals in an amount exceeding fifty

million dollars (\$50,000,000) in any 12-month period between the date the major regulation is estimated to be filed with the Secretary of State through 12 months after the major regulation is estimated to be fully implemented (as estimated by the agency), computed without regard to any offsetting benefits or costs that might result directly or indirectly from that adoption, amendment or repeal.

(h) "Notice of proposed action" means the notice required by Section 11346.5 of the code.

(i) "OAL" means the Office of Administrative Law.

(j) "SRIA" means the standardized regulatory impact assessment required by Section 11346.3(c) of the code.

NOTE: Authority cited: Section 11346.36, Government Code. Reference: Sections 11342.548 and 11346.36, Government Code.

2001. Notification; Public Input.

(a) (1) An agency that anticipates promulgating a major regulation shall provide the department, not later than February 1 of each calendar year, with a list of all major regulations that it anticipates proposing during that entire calendar year. The information shall be provided on a form prescribed by the department. The list shall specifically identify the following for each major regulation that the agency proposes to adopt, amend or repeal: subject matter, title and section of the California Code of Regulations that will be affected, statute or court decision being implemented, interpreted or made specific and the anticipated date on which the agency proposes to

publish the notice of proposed action for each major regulation. The list shall also contain the name of the agency, the responsible unit within the agency, and the name, telephone number, email, and mailing address of a contact person.

(2) In the event an agency determines after February 1 that it anticipates promulgating a major regulation, the agency shall submit to the department the information required in subdivision (a)(1) as soon as possible but in no event later than 60 days prior to filing a notice of proposed action with OAL.

(b) Within 15 days of receipt of a list of proposed major regulations, the department shall provide a copy of that list to GO-Biz and to any other agency that has requested a copy.

(c) Within 15 days of receipt of a list of proposed major regulations, the department shall post that list on its Internet web site.

(d) The agency shall also seek public input regarding alternatives from those who would be subject to or affected by the regulations (including other state agencies and local agencies, where appropriate) prior to filing a notice of proposed action with OAL unless the agency is required to implement federal law and regulations which the agency has little or no discretion to vary. An agency shall document and include in the SRIA the methods by which it sought public input.

NOTE: Authority cited: Sections 11346.3 and 11346.36, Government Code. Reference: Sections 11342.548, 11346.3 and 11346.36, Government Code.

2002. Standardized Regulatory Impact Assessment.

(a) An agency that anticipates promulgating a major regulation as defined in section 2000 shall, pursuant to Section 11346.3(f) of the code, submit its completed SRIA to the department within the following time frame:

(1) Not less than 60 days prior to filing a notice of proposed action with OAL if the agency has notified the department of the proposed regulation within the time prescribed by 2001(a); or

(2) Not less than 90 days prior to filing a notice of proposed action with OAL if the agency has not notified the department of the proposed major regulation within the time prescribed by section 2001(a);

(b) (1) The SRIA shall contain all of the information required by Section 11346.3(c) of the code, which shall have been prepared in compliance with section 2003.

(2) The SRIA shall also include a description and explanation of each of the following:

(A) The economic impact method and approach, including the underlying assumptions the agency used and the rationale and basis for those assumptions;

(B) The specific categories of individuals and business enterprises who would be affected by the proposed major regulation;

(C) The inputs into the assessment of the economic impact;

(D) The outputs from the assessment of the economic impact;

(E) The agency's interpretation of the results of the assessment of the economic impact.

(3) The SRIA shall also include documentation sufficient to substantiate compliance with the requirements of this section and section 2003.

(c) The SRIA shall be accompanied by a form prescribed by the department that includes all of the following:

(1) Name of the agency.

(2) The name, telephone number, email and mailing address of the contact person.

(3) Statement of the need for the proposed major regulation.

(4) [Reserved]

(5) [Reserved]

(6) Description of the 12-month period in which the agency estimates the economic impact of the proposed major regulation will exceed \$50 million.

(7) Description of the baseline that the agency used to compare proposed regulatory alternatives.

(8) [Reserved]

(9) Description of the methods by which the agency sought public input as required by section 2001, accompanied by documentation of that public outreach.

(10) A description of the economic impact method and approach, including the underlying assumptions the agency used and the rationale and basis for those assumptions.

(11) Date, printed name, and signature of the head of the agency.

(d) Within 10 days of receiving an SRIA, the department shall post a copy of the form required by subdivision (c) on its Internet web site.

(e) Within 10 days of receiving an SRIA, the department shall provide a copy of the form required by subdivision (c) to Go-Biz and any other agency that requests it. GO-Biz and any other agency may provide comment to the department within 10 days thereafter.

NOTE: Authority cited: Section 11346.36, Government Code. Reference: Sections 11342.548, 11346.3 and 11346.36, Government Code.

2003. Methodology for Making Estimates.

(a) In conducting the SRIA required by Section 11346.3(c) of the code, an agency shall use an economic impact method and approach that has all of the following capabilities:

(1) Can estimate the total economic effects of changes due to regulatory policies over a multi-year time period.

(2) Can generate California economic variable estimates such as personal income, employment by economic sector, exports and imports, and gross state product, based on inter-industry relationships that are equivalent in structure to the Regional Industry Modeling System published by the Bureau of Economic Analysis.

(3) Can produce (to the extent possible) quantitative estimates of economic variables that address or facilitate the quantitative or qualitative estimation of the following:

(A) The creation or elimination of jobs within the state;

(B) The creation of new businesses or the elimination of existing businesses within the state;

(C) The competitive advantages or disadvantages for businesses currently doing business within the state;

(D) The increase or decrease of investment in the state;

(E) The incentives for innovation in products, materials, or processes; and

(F) The benefits of the regulations, including but not limited to benefits to the health, safety, and welfare of California residents, worker safety, and the state's environment and quality of life, among any other benefits identified by the agency.

(b) The department's most current publicly available economic and demographic projections, which may be found on the department's website, shall be used unless the department approves the agency's written request to use a different projection for a specific proposed major regulation. Such approval shall be made on a case-by-case basis. An agency that anticipates that it will take more than one year to develop a major regulation is encouraged to work with the department in determining the most appropriate projections to use.

(c) Costs and benefits shall be separately identified for different groups of agencies, businesses and individuals if the impact of the regulation will differ significantly among identifiable groups.

(d) The agency shall compare regulatory alternatives with a baseline that reflects the anticipated behavior of individuals and businesses in the absence of the proposed major regulation and shall identify the baseline it used.

(e) In comparing proposed regulatory alternatives with an established baseline, an agency should consider including the following in its analysis:

(1) A description of feasible alternatives to the proposed major regulation and the rationale for choosing the proposed major regulation over the other alternatives considered. This description should also include:

(A) An explanation of how the need for the proposed major regulation affects the selection of regulatory alternatives;

(B) An evaluation of the legal and statutory constraints that limit the selection of regulatory alternatives.

(2) Whenever possible, at least two alternatives should be compared to the proposed major regulation, including:

(A) An alternative that could achieve additional benefits beyond those associated with the proposed major regulation; and

(B) A next-best alternative that would not yield the same level of benefits associated with the proposed major regulation, or is less likely to yield the same level of benefits.

(3) A comparison of the cost-effectiveness of different alternatives.

(A) Both total and incremental benefits and costs should be estimated. Incremental benefits and costs are the differences between the estimates associated with the alternatives considered.

(B) Whenever possible, final rather than intermediate outcomes should be used as measures of effectiveness.

(C) In cases where the proposed major regulation addresses more than one measure of effectiveness, weights should be applied to different categories of effects.

(D) The uncertainties associated with the estimates should be discussed.

(4) If there are significant differences between the incidence or timing of costs and benefits of a regulation, distributional effects should be addressed, including how the effects of the regulation are distributed, for example, by industry, income, race, sex, or geography, and how the effects are distributed over time.

(5) The assumptions, analytical methods, and data used in the analysis should be documented.

(A) To the extent possible, the analysis should rely on peer-reviewed literature.

(B) The source for all original information should be documented.

(f) An analysis of estimated changes in behavior by businesses and/or individuals in response to the proposed major regulation shall be conducted and, if feasible, an estimate made of the extent to which costs or benefits are retained within the business and/or by individuals or passed on to others, including customers, employees, suppliers and owners.

(g) For each assessment of the value of benefits of the proposed major regulation required by section 11346.3(c)(1)(F) of the code, the agency shall describe the applied analytical methods and data sources used and the results of that analysis.

(1) The agency's assessment may rely on current and (if applicable) projected market transaction data where a market exists that can directly reveal the quantity or monetary value of a projected benefit of the proposed major regulation.

(2) The agency may use an indirect approach (e.g., use values derived from related markets) in cases where the value of the benefits can be inferred from actual choices made by individuals in related markets. The assessment should rely on current and (if applicable) projected market transaction data.

(3) The agency may use a direct approach (e.g. use values from surveys), estimating the value of the benefits based on hypothetical choices made by individuals responding to a survey.

(4) The agency may estimate the value of the benefits based upon an existing study of another regulatory policy with similar subject or physical characteristics. This estimate should describe how the agency took into account the differences in the characteristics (such as time span, specific benefits to value, population, and other socio-economic factors) between the study and the proposed major regulation.

(h) In assessing the effects of a regulatory proposal on the General Fund and special funds of the state and affected local government agencies attributable to the proposed major regulation, including the cost of enforcement and compliance to the agency, an agency shall follow the Department of Finance instructions in the State Administrative Manual sections 6601, 6602, and 6604 through 6616.

NOTE: Authority cited: Section 11346.36, Government Code. Reference: Sections 11342.548, 11346.3 and 11346.36, Government Code.

2004. Failure to Comply with Requirements of this Chapter.

When an agency fails to comply in whole or in part with this chapter, the department shall identify in its comments the area(s) where the agency is out of compliance.

NOTE: Authority cited: Section 11346.36, Government Code. Reference: Sections 11342.548, 11346.3, 11346.36 and 11349.1.5, Government Code.



Sierra Pacific Industries

Tahoe District • P.O. Box 1450 • Cedar Ridge, California 95924 • (530) 272-2297

March 22, 2012

California State Board of Forestry and Fire Protection
Mr. Stan Dixon, Chairman
POBox 944246
Sacramento, CA 94244-2460

RE: Comments on the December 23, 2011 noticed "Road Rules, 2011" package

Dear Chairman Dixon and Board Members:

The noticed "Road Rules, 2011" proposal has finally come before you after many years of effort to consolidate the rules into one nested section. The original intent has evolved into a process and package that far exceeds the original intent of reorganization. It now includes significant new rule requirements and adds new definitions to the existing rules. As you now know, so many fixes are required of the noticed package that, at a minimum, one and more likely two additional 45 day notices will be necessary, if the Board chooses to move forward. If a Timber Harvest Plan was submitted (noticed), with this number of fixes, it would simply be returned as not acceptable for filing.

This comment letter briefly addresses these key concerns:

- Scope of review
- New information
- Sediment discharge
- Economic analysis
- Demonstrated need

The voluminous proposed rule package, for those not tracking the process, is difficult to understand with the relocation/convergence of old rules, new definitions, new rules, and a lack of clarity as to what is now required before plan submission and harvest activities.

Following the Road Rules 2011 noticing, a presentation was made to the Board Forest Practice Committee, in March 2012, by Mr. Cafferata. The presentation summarized the many past monitoring efforts over the last few decades, the ongoing review of thousands of road-related facilities, and it shows a consistent trend. Of all the timber operations monitored, road watercourse crossings and watercourses adjacent to roads showed the highest potential for sediment delivery. Causes of sediment transport to a channel were identified by contribution categories such as; design, construction, scour, maintenance, fill slope erosion, and most importantly, an assessment was made as to whether these

categories were departures from existing rules. The conclusions clearly pointed out that where the FPR's are properly implemented (no departures), the current rules are highly effective in preventing erosion, sedimentation, and sediment transport to channels. I am hopeful the Board considers this documented information when deciding on a course of action.

The many monitoring efforts demonstrate a positive trend toward improved water quality when the FPR's and other agency requirements are correctly implemented. We should build on this knowledge.

Chasing the last spoonful of sediment production from anthropogenic activities through some form of regulatory prescription will not work. The Board must balance the economic cost of reaching such a goal. We see no such cost benefit analysis in the noticed package. The finding erroneously states that the package can be implemented at no additional cost.

The Board should request that CalFire estimate compliance costs with these rules on its state forests or, to provide a site-specific example, estimate the maintenance costs of compliance for the Ponderosa Way Road in the greater Battle Creek watershed.

To provide a watershed-based example, we'd like to comment on what would be required in a watershed that has recently been the focus of an interagency review effort—Battle Creek. As you are aware, Shasta County has informed the Board of their road review in this watershed. They are developing funding sources and have proposed a 5 year plan for fixing their deferred maintenance roads and sediment contributor locations. Additionally, attached is a summary of road improvement expenditures Sierra Pacific Industries has undertaken in the greater Battle Creek watershed. SPI Lassen District Manager Mike Mitzel informed me that as participants in the Battle Creek Conservancy, special concerns were addressed in four approved THP's with regard to roads issues.

2-10-067-TEH Blue Ridge 1,212 acres

2-10-003-TEH Dry Gulch 1,048 acres

2-08-097-TEH LongRidge 1,313 acres

2-06-173-TEH Lookout 908 acres

Total 4,481 acres

The attached detailed road activity log documents the action and cost that SPI is incurring in this area and serves as a true cost estimate associated with the proposed Road Rules package. The total cost of all improvements is just over a million dollars or \$236/acre. It is estimated 35% of the cost is associated with current THP requirements and 65% would be associated with compliance of the noticed package. The 65% is aligned with outslipping roads, installing critical dips, hydrologic disconnection, rocking of approaches, and drainage structure upgrades. These costs are associated with the proposed new rule requirements, specifically in the two key areas of road watercourse crossings and watercourses adjacent to roads. Although many of these areas were not included in the Interagency Task Force Report – these are the areas that have publically been identified as lacking surface waters and therefore not high

priority treatment areas as they are not in close proximity to Class I or Class II watercourses. It is difficult for the landowner to pay for these additional road treatments knowing it is highly likely based on past and present monitoring efforts (without departures), that no significant improvement to water quality will result from the additional \$650,000 spent. It is vital that, whether in a Technical Rule Addendum, or a revised Road Package, assessing where improvements are necessary and appropriate must be site specific with a methodology and significance determination to prioritize the need for action. A perceived, generalized need is different than an actual on-the-ground need that can be quantified.

Two defining issues, "significant sediment discharge" and "hydrologic disconnection" remain extremely important and are key points that lack clarity. Additionally, how will sediment transport be measured against other watershed contributors in a meaningful manner? How will forested watersheds that include a road network with multiple owners, unconstrained public access, various road standards, with no control of road use during saturated soil conditions be addressed? These topics need further discussion.

In summary, working with the current rules remains far less confusing than trying to interpret the noticed rule package. The focus of the Board should be on enforcement of the current rules and narrowing the road rules package to improving drainage structures and hydrologic disconnection of roads near watercourses when necessary. The summarized monitoring results point you clearly in that direction. This is the true, scientifically verified demonstrated need. A more narrow focus on the demonstrated need will provide a better opportunity to identify areas of rule improvement. Once this is determined, a realistic economic cost benefit analysis can be performed. The Board should terminate its "Road Rules, 2011" noticing and return the rules package back to the Forest Practice Committee for further modification and refinement as directed by the board.

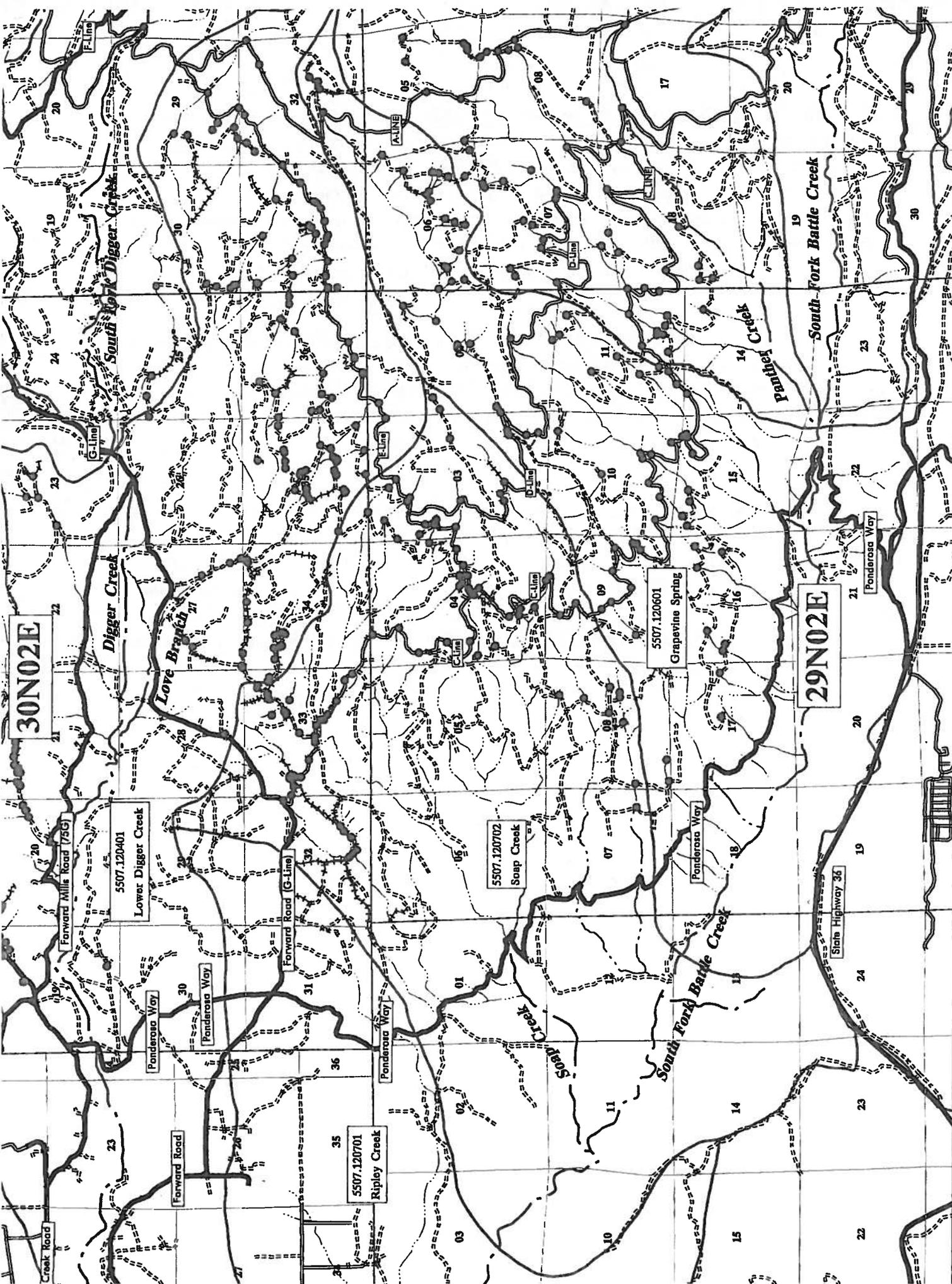
In our opinion, the "Road Rules, 2011" package is not ready for notice to the public and should be withdrawn.

Sincerely,



Timothy J. Feller
Tahoe District Manager
RPF #1931

Attachments: Greater Battle Creek Roadwork Analysis
Greater Battle Creek Roadwork Analysis Map



30N02E

29N02E

Forward Mills Road (756)

5507.120401
Lower Digger Creek

Ponderosa Way

Ponderosa Way

Forward Road (G-Line)

Ponderosa Way

5507.120701
Ripley Creek

5507.120702
Soap Creek

5507.120601
Grapevine Spring

Ponderosa Way

State Highway 36

Attachment 3 - New SPI Cost Estimate as testified by Tom Walz at October BOF Meeting

The attached listing is the work order and map for 5.12 miles of work in an ASP watershed. Total cost was \$120,000 or **\$23,437.50/mile**. The work consisted of two excavators, D6H cat, off-road dump truck, and grader. The final desired product was the same. An outsloped road surface with functioning drainage system. Work consisted of the excavator brushing the road, then intercepting inside ditches to force drainage across the road, which required installing either rock fords or burritos which required the second excavator to produce rock from the rock pits, hauling the rock with off highway trucks, and then placing the rock with the cat to create the functional drain. The cat followed the excavator building rolling dips in the road surface, thus cutting the rocked running surface requiring hauling more running surface rock generated from the on-site pits. The grader then followed shaping the road into a no inside ditch, outsloped rolling dipped running surface with rock armored cross drains, rock armored fords or rock armored burritos functioning to remove the water that was previously caught in an inside ditch and carried to the nearest culvert crossing. The way the total time for a forester to evaluate and come up with the road work order was 3 days at \$500/day.



Rd. POINTS COMPLETE & Rds BRUSHED

SEE MAP

August 2, 2013

5.12 MILES

Revision to road points:

\$ 4.43 / FT APPROX

94, 95, 96

1. Class III; Install rock rolling dip prior to crossing to disconnect road runoff from entering watercourse; clean out culvert inlet; rock armor inlet and outlet; install critical dip overtop culvert; out slope road and rock cap.
2. Class III; clean out culvert inlet; rock armor inlet and outlet; install critical dip and rock cap. At outboard edge of culvert outlet; excavate perched fill material; lay back slopes 2:1; realign channel to natural grade; stabilize all exposed soil. Haul spoils off site. Let's discuss prior to maintenance of perched fill slope material.
3. Class III. Crossing appears to be old Humboldt. Remove all large organics from road and fill slope. Construct rock ford, rock armor outlet of rock ford and rock approaches.
4. Ditch relief culvert (DRC). Clean out inside ditch associated with DRC.
5. Class III. Install rock ford. Rock armor ford outlet. Rock approaches.
6. Rock armor shotgun DRC. Evaluate inside ditch system leading to existing DRC. Ditch may require additional ditch relief culverts or rocked dips at other locations to breach ditch. Please discuss this possibility with the administrating forester prior to entering this road system.
7. Class II. Install critical dip. Slight culvert shotgun. Rock armor culvert outlet. Clean out culvert inlet. Inside ditch system leading into and exiting culvert Inlet. Ditch may require additional ditch relief culverts or rocked dips at other locations. Please discuss this possibility with the administrating

- forester prior to entering this road system. Critical dip at crossing must capture portion of inside ditch exiting culvert inlet.
8. Install rock ford. Rock approaches, remove inside berm immediately up road. Rock ford shall capture entire class III watercourse upslope and direct across road into historic drainage area.
 - 8a. Breach inside ditch with rock rolling dips. Rock armor rock rolling dip outlets.
 9. Remove existing culvert. Install rock ford. Rock ford approaches. Rock armor rock ford outlet.
 - 9A. Ditch Relief Culvert (DRC). Clean out culvert inlet, splash of rock at culvert rock outlet.
 10. Plugged cmp. Remove culver and install rock ford.
 11. Remove culvert. Install rock ford.
 12. Install rock ford.
 13. Clean out inside ditch.
 14. Remove culvert. Install rock ford.
 15. Remove culvert. Install rock ford.
 16. Diversion endpoint. Repair.

NOTE: At road points 14, 15 and 16. The diversion and road damage associated with these road points was partly caused by passed harvest operations that did not remove and stabilize a tractor crossing. Proper repair of these locations will require walking equipment upslope of the road via an old skid trail to access original diversion point. The historic tractor crossing shall be removed and stabilized, putting the associated watercourse back into its natural channel. Please contact forester for

assistance in locating upslope diversion point and road maintenance of this area.

17. Road spur overgrown. Remove vegetation from road way and install rolling dip drainage.
18. Left Road spur ends at landing. Please be aware that a class II spring is located in close proximity to the landing location. Please minimize vegetation of landing area when within 50 feet of live water associated with Class II spring.
19. Road spur has a several wind throws. If trees are sound, please process to appropriate log length and stage off to the side of road.
20. Clean out culvert inlet; rock armor outlet; install critical dip close as feasible overtop pipe to direct creek flows directly across road and into channel if culvert plugs.
21. Install rock ford; rock armor ford outlet; ford outlet should direct flows into natural channel/drainage below road.
22. USFS Property. Clean out culvert inlet and outlet; remove outer road berm; install critical dip.
23. Intentionally left blank.
24. Remove organics from road and fill slope. Install rock dip, rock approaches, rock armor outlet on fill slope. Maintain design of dip that captures inside ditch flow.
25. Shotgun culvert. Rock armor outlet; Clean out culvert inlet.
26. Install rock rolling dip, rock armor dip outlet.
27. Install rock ford. Rock armor ford outlets; Rock road approaches.
28. Install critical dip; clean out culvert inlet.
29. Install gate.

30. Clean out culvert inlet. Evaluate possibility of disconnecting ditch leading in culvert inlet. Contact Forester when working in this area to evaluate areas to breach inside ditch leading to culvert inlet.
31. Remove Humboldt. Install Rock burrito. Dip and rock cap.
32. Rock armor fill failure. Enhance ditch to newly installed rock burrito.
33. May be old Humboldt. Remove organic debris and install rock ford, rock approaches and rock armor ford outlet.
34. Intentionally left blank.
35. Intentionally left blank.
36. Install critical dip overtop existing culvert.
37. Install rock rolling dip or dips in a manner and frequency to capture and direct inside ditch across road prior to delivering into down road class III watercourse. Rock armor rock rolling dip outlet.
38. Rock armor culvert outlet.
39. Convert waterbar to rock rolling dip.
40. Overgrown road. Open road and install rolling dip drainage as needed. Road ends at landing. Overgrown road is flagged in orange ribbon.
41. Clean out culvert inlet. Move spoils offsite. Minimize disturbance. Install critical dip.
42. Install rolling dip.
43. Overgrown road. Brush road. Overbuilt drainage dips. Rework dips in a way to facilitate pickup travel without dragging under carriage of truck. Dips are a little too aggressive.
44. Remove existing culvert and install rock ford. Rock approaches, clean out inside ditch leading to ford.

45. Clean out culvert inlet. Rock armor outlet of shotgun culvert.
46. Enhance rolling dip; reconstruct dip to capture inside ditch and direct across road. Also, start cleaning inside ditch immediately down of gate location.
47. Clean out DRC (ditch relief culvert) inlet. Enhance rolling dip to direct surface runoff to outside of road. At DRC, make sure culvert is free of debris. Continue cleaning out inside ditch.
48. Plugged ditch relief culvert. Flush out DRC and rock armor culvert. Enhance rolling dip overtop DRC. If you can't clean out DRC, pull culvert and install rock rolling dip where DRC was.
49. Install rock rolling dip that captures inside ditch. Rock armor outlet. Continue cleaning out inside ditch.
50. Slight enhance of existing rolling dip. DO NOT capture ditch with rolling dip.
51. Construct rock rolling dip; capture inside ditch; heavily rock armor rock rolling dip out let to dissipate ditch flow. Continue to clean out inside ditch. Note: There is a hole on the outboard edge of the dip location. Excavate, may be organics in road?? Back fill with rock.
52. Enhance existing rolling dip. DO NOT capture ditch.
53. Maintain rolling dip. Note: This road spur does not need brushed.
54. Enhance rolling dip.
55. Enhance rolling dip.
56. Install rock rolling dip.
57. Install critical dip as close as feasible over top culvert.

58. Clean out culvert inlet and outlet. Install rolling dip 20 to 25 feet approximately above culvert on roadway to direct surface flow from entering culvert inlet.
59. Clean culvert inlet; install critical dip overtop culvert.
60. Clean out culvert inlet and outlet.
61. USFS property. Install rock rolling dip that captures inside ditch. Rock armor rolling dip outlet; clean out inside ditch back up to newly installed rock ford.
62. Starting at property line working east, start cleaning out inside ditch.
63. Install rock rolling dip.
64. Install rock rolling dip; capture ditch; discharge on existing rock armoring. Continue cleaning out inside ditch.
65. Existing Ditch Relief Culvert. Ensure that culvert is not plugged. No flag, DRC inlet is painted blue.
66. Install rock rolling dip that captures inside ditch. Continue cleaning out inside ditch.
67. Install rock rolling dip that captures inside ditch; rock armor outlet. Continue cleaning out inside ditch.
68. Existing DRC. Confirm culvert is functioning.
69. Install rock rolling dip; capture ditch; rock armor outlet; continue cleaning out inside ditch.
70. Install rock rolling dip; capture ditch.
71. Install rock rolling dip; capture ditch.
72. Don't clean ditch leading into watercourse; rock armor ditch leading into associated watercourse.

73. Clean culvert inlet of vegetation and debris; rock armor culvert outlet; enhance critical dip; rock cap critical dip and associated approaches.
74. Install rock rolling dip; DO NOT capture ditch.
75. Inside ditch leading into class II watercourse crossing. Starting approximately 50 feet from watercourse, lightly clean out inside ditch to facilitate ditch function; minimize disturbance; do not disturb ditch within 50 feet of class II watercourse channel. Maintain out slope road drainage.
76. Class II culvert crossing. Shotgun culvert; install culvert downspout or rock armor culvert outlet to dissipate flows; construct critical dip overtop culvert; rock cap critical dip and associated approaches 50 feet either side of culvert crossing.
77. Install rock rolling dip that captures ditch. Do not disturb ditch from rock rolling dip to watercourse. Above rock rolling dip; continue cleaning out inside ditch.
78. Install rock rolling dip that captures ditch; continue cleaning out inside ditch.
79. Install rock rolling dip that captures inside ditch; continue cleaning out inside ditch.
80. Install rock rolling dip that captures inside ditch; rock armor dip outlet.
81. Install rock rolling dip that captures inside ditch; rock armor dip outlet.
82. Existing ditch relief culvert. DRC culvert appears to be head of watercourse. Clean out inside ditch leading to DRC; minimize soil disturbance in this portion of ditch.
83. Install rock rolling dip that captures inside ditch; rock armor dip outlet.
84. Install rock rolling dip; rock armor outlet.

85. Class III culvert crossing; install critical dip and rock road over top crossing location.
86. Rock approach out to point #86. Do not clean out inside ditch leading into class III watercourse.
87. Install rock rolling dip that captures ditch.
88. Enhance existing kick out.
89. Install rock rolling dip; rock armor outlet.
90. Install rock rolling dip; capture inside ditch; rock armor outlet; slightly enhance inside ditch leading to class II watercourse and rock ditch.
91. Slumping road cut fill; excavate slumping material; end haul spoils to stable location without potential to deliver to a watercourse; rock armor fill slope.
92. Inside ditch on south side of road maintain as is; add rock to ditch on north side of road across and slightly above road intersection.
93. Class III; clean out culvert inlet and outlet; enhance critical dip overtop culvert; rock critical dip and approaches within 25 feet of crossing.
94. Existing CMP. Clean out inside ditch leading to CMP and install Critical dip as near overtop CMP as feasible. Clean out culvert inlet and outlet. Ditch leading into culvert is a Class III watercourse.
95. Install rock rolling dip; do not capture ditch; continue cleaning out inside ditch; minimize soil disturbance in ditch. Ditch is watercourse; out slope road.
96. Install rock rolling dip; Do Not capture ditch; rock armor outlet; Lightly clean out inside ditch; inside ditch is wet; ditch captures road cut seep; road cut shall not drain into ditch.
97. Clean out culvert inlet and outlet; rock armor outlet, install critical dip and rock cap; do not disturb inside ditches within 30 feet of culvert.

98. Install rock rolling dip that captures ditch; rock armor dip outlet; continue cleaning out inside ditch.
99. Clean out culvert inlet and outlet; install critical dip overtop culvert in a manner that if the culvert plugs the flow will be directed across road into channel below road.
100. Convert existing rolling dip to rock rolling dip; rock armor dip outlet.
101. Install rock rolling dip.
102. Install rock rolling dip.
103. Install rock rolling dip; rock armor rolling dip outlet with rock found locally at site of dip.
104. Armor rolling dip outlet.
105. Install new deck material on bridge.
106. Add rock to ditch leading to watercourse.
107. Install rock rolling dip that captures inside ditch; out slope road here.
108. Rock road crossing approaches 50 feet of culvert; rock armor culvert outlet; clean culvert inlet.
109. Install rock rolling dip that captures ditch; rock armor outlet; clean out ditch leading to point #109.
110. DRC; head of class III watercourse; rock armor DRC outlet; clean DRC inlet; clean ditch leading to DRC inlet; minimize soil disturbance in ditch.
111. Install rock rolling dip that captures ditch; rock armor dip outlet; clean out inside ditch.
112. Enhance kick out.
113. Install rock rolling dip that captures ditch; continue cleaning out inside ditch.

114. Install rock rolling dip that captures ditch; rock armor outlet.
115. Install rock rolling dip that captures ditch; rock armor outlet.
116. Existing DRC; may be head of class III; clean inlet and outlet; maintain blockage in ditch immediately down slope of DRC inlet.
117. Install rock rolling dip; capture ditch; rock armor outlet; continue to clean inside ditch.
118. Install rock rolling dip; capture ditch; rock armor outlet.
119. Install rock rolling dip; capture ditch; rock armor outlet.
120. Install rock rolling dip and rock armor outlet. Dip should act as a critical dip to associated culvert. If culvert plugs dip should direct flow across road and into channel below road.
121. Class III culvert; clean inlet/outlet; rock armor outlet; clean inside ditch.
122. Enhance existing rolling dip and rock; rock outlet; DO NOT capture ditch.
123. Clean out culvert inlet and outlet; maintain existing rocking.
124. Rock armor dip outlet.
125. Clean out culvert inlet and outlet; rock armor culvert inlet; enhance critical dip, remove outside berm; rock cap crossing and associated approaches to outside rolling dips. Clean out inside ditch; minimize soil disturbance in ditch.
126. Install rock rolling dip that captures ditch; rock armor outlet; clean out associated inside ditch.
127. Install rock rolling dip that captures ditch; rock armor outlet.
128. USFS. Install rock ford that captures ditch; rock approaches out to 25 feet of crossing; rock armor outlet.

129. USFS. Install rock ford that captures ditch; rock approaches out to 25 feet of crossing; rock armor outlet.
130. USFS. Remove plugged Ditch Relief Culvert (DRC). Open ditch to newly installed rock ford.
131. USFS. Install rock rolling dip. DO NOT CAPTURE DITCH.
132. USFS. Clean out inlet and outlet of DRC; Rock armor culvert outlet; clean out inside ditch.
133. USFS. Install rock rolling dip that captures ditch; rock armor outlet; continue cleaning out inside ditch.
134. USFS. Install rock rolling dip that captures ditch; rock armor outlet.
135. USFS. Install rock rolling dip; DO NOT capture inside ditch.
136. Install rock ford; rock armor ford outlet. DO NOT go beyond this point down road conducting road maintenance. Large class II crossings are pulled.
137. Install rolling dip.
138. Install rolling dip.
139. Enhance rolling dip.
140. Enhance rolling dip.
141. Maintain rolling dip.
142. Install rolling dip. Pull ditch from dip up to next rolling dip.
143. Install rolling dip.
144. Install rolling dip.
145. Install rock ford; rock approaches out to 25 feet of crossing; rock ford outlet; clean out inside ditch; minimize soil disturbance in ditch.
146. Install rock rolling dip.

147. Maintain rolling dip.
148. Remove Humboldt; install rock ford.
149. Install rolling dip. Brush landing immediately North West of this location. The landing location is the end of the road.
150. Install rolling dip.
151. Install rolling dip.
152. Install rolling dip.
153. Install rock ford. Rock approaches 25 feet of crossing location.
154. Maintain rolling dip.
155. Maintain rolling dip.
156. Enhance rolling dip; rock armor outlet with rock on site.
157. Install rock rolling dip to capture ditch and upslope drainage; rock armor outlet.
158. Install rock rolling dip to capture ditch; rock armor outlet.
159. Install rolling dip.
160. Maintain rolling dip.
161. Enhance rolling dip.
162. Maintain rolling dip.
163. Large rock protruding from road cut; remove portion of rock to widen road; if hammer is needed please notify forester prior to moving equipment on site.
164. Maintain rolling dip.
165. Maintain rolling dip; armor outlet.

166. Maintain rolling dip.
167. Install rolling dip
168. Class III; install rock ford and approaches out to 25 feet of crossing location; rock ford outlet.
169. Enhance rock rolling dip.
170. Class III; install rock ford; rock approaches 25 feet; rock armor outlet; at ford inlet excavate perched stream bank and remove off site; rock armor inlet over top exposed soil.
171. Install rock rolling dip that captures ditch; rock armor outlet.
- 171B. Maintain rolling dip; clean out ditch leading to rolling dip.
172. Class III; install rock ford; rock approaches 25 feet of crossing location.
173. Convert rolling dip to rock rolling dip.
174. Enhance rolling dip.
175. Install rolling dip.
176. Install rock rolling dip; rock armor outlet; rock uphill approach approximately 20 feet of dip location.
177. Widen road by gaining width in the road cut; NO SIDECAST; Maintain fill slope vegetation; rock portion of road starting at road intersection up to rock rolling dip at point 176.

