Kaiser East Fuels Reduction and Restoration Project Phase 1: 2026 Request for Proposal (RFP)

Project Overview

The Sierra Resource Conservation District is seeking proposals from qualified contractors to implement green tree thinning, biomass removal, and fuels reduction treatments on approximately 1,201 acres distributed across 19 treatment units. The purpose of this work is to reduce wildfire risk to forest resources, communities, and infrastructure while improving long-term forest resilience and ecosystem health.

The Kaiser East Fuels Reduction and Restoration Project Phase I is located east of Huntington Lake, between the Kaiser and Dinkey Lakes Wildernesses, and is part of the 53,932-acre Kaiser Restoration Project, which received NEPA clearance in 2025. Approximately 2,000 acres have been identified for treatment under Phase I, with implementation scheduled to begin in 2026.

This RFP solicits bids for treatment activities within a portion of the Phase I treatment area. Proposed activities include fuels reduction, green tree thinning, and biomass removal treatments intended to reduce stand density, modify fuel loading, and improve overall stand structure. Treatments are designed to move forest structure, stand density, and species composition toward the desired conditions identified in the Sierra National Forest Management Plan.

Statement of Work

The selected contractor(s) will be responsible for conducting timber and biomass removal on up to 1,201 acres of logging, mechanical and hand thinning, yarding, and fuels reduction work within the project area. The project also requires the removal and/or treatment of logging slash and downed wood debris accumulations throughout the project and maintain haul roads utilized throughout the project according to project specification (Appendix A). The selected implementation contractor will collaborate with Sierra RCD and contracted representatives to implement all aspects of the project in accordance with the attached appendices.

Timber cruising conducted in the project area estimates 90,000 tons of sawlogs that will be sold to the bidder by the RCD within the project area. Additionally, there is an estimated quantity of cull and biomass grade logs that can be sold to the bidder. The RCD makes no guarantee of this quantity and prospective bidders are urged to visit project units prior to making bids.

Timeline:

All proposals are due prior to October 13th 2026 at 11:59 PM PST. The Sierra RCD anticipates notifying contractor(s) regarding the selection by the end of October, with an anticipated project start date of November 2026, conditions permitting. Any changes or updates will be uploaded to the Sierra RCD website https://sierrarcd.com/kaiser.

I. PROJECT OVERVIEW AND REQUIREMENTS

a. **Description of Work** This RFP is for services on the Kaiser East Restoration Project Phase I, located on the High Sierra Ranger District. Project work will include mechanical thinning, slash and brush disposal, fuels reductions, road maintenance, and the removal of sawlogs and biomass material from National Forest Lands.
   i. Felling, decking, and removal according to Appendix A on up to 1,201 acres in accordance with attached appendices.
   ii. Removal of approximately 89,890 tons of sawlogs from landings within the project site to an area of the Contractor's choosing
   iii. Removal of at least 2,000 tons of cull logs, and non-merchantable biomass from landings within the project area to the Big Sandy Rancheria in Auberry, California.
   iv. Road maintenance on up to 27.5 miles according to specifications in Appendix B, H, and protection measures in Appendix E.

b. **Specifications**- Project work shall be accomplished in accordance with the following:
   Appendix A: Technical Specifications
   Appendix B: Timber Removal Specifications
   Appendix C: Project Maps
   Appendix D: Designation By Prescription
   Appendix E: Design Criteria and Best Management Practices
   Appendix F: Fire Plan
   Appendix G: Wet weather plan
   Appendix H: Road T-Specs

Bidders shall identify within submitted proposals what materials, labor, equipment, supplies, supervision, quality control, and incidentals required to complete the items described in this Scope of Work. Proposals should provide sufficient information to ensure that the selected contractor will be able to perform all work in a safe and consistent manner in accordance with industry standards.

c. **Project Location** Project units are located to the north and east of Huntington Lake along Highway 168 (Kaiser Pass Road) within the High Sierra Ranger District in Sierra National Forest. Work will occur in Fresno County.

d. **Work Schedule** The project is expected to begin in early November 2026 with project activities expected to continue as long as ground and weather conditions permit. The contract termination date will be December 15th, 2029. The completion date may be extended by mutual agreement, provided that the contract awardee has made acceptable progress towards project completion. The Sierra RCD and the winning bidder(s) will negotiate a schedule upon award with mandatory benchmarks to meet the Sierra RCDs objectives for the project.
   - **Project work shall commence within ten calendar days of the signing of the contract (conditions permitting).**
   - **December 15th 2026: Completion of 50 acres of work (conditions permitting).**
   - **September 15th 2027: Completion of 400 acres of work.**
   - **September 15th 2028: Completion of 750 acres of work.**
   - **December 15th 2029 Completion of all items agreed to in the Scope of Work.**

Other Project Requirements

Utilities/Work Site Conditions – In many locations there will be no or limited sanitation, water, electrical or housing services available. Bidders shall consider all relevant factors when submitting proposals for this work. Proposals should account for the need of the selected contractor to make its own arrangements for temporary facilities if required. Work will occur in close proximity to utility infrastructure, private property, communities, and popular recreation areas. Attention to detail and public safety is paramount during project operations.

Insurance Requirements

Upon being notified of bid selection, Bidder agrees that it has, or will procure, and shall maintain the insurance coverage indicated below. The effective date of all coverage shall precede the start of any work.

a. State minimum workers' compensation insurance coverage for its employees, if any.
b. Broad form general liability, property damage, and automotive liability insurance in the minimum amount of $1,000,000 for bodily injury, death, or damage to property of any person and $2,000,000 for bodily injury, death, or damage to property of more than one person. The selected Bidder shall name Sierra RCD an Additional Named Insured and provide the Sierra RCD with a certificate of insurance, evidencing such coverages, prior to the initiation of the Scope of Services.
c. If the Scope of Services includes professional services as identified herein, Bidders also agree to provide professional errors and omissions liability insurance. Professional services for purposes of this section include, but are not limited to performing architecture, engineering, landscape architecture, land surveying or planning, preparation and signing or stamping of drawings, maps, surveys or construction specifications, or design and development of computer software, programs or websites by the Bidder or by subcontractors on behalf of the Bidder, for which professional liability insurance would typically be required. The minimum coverage required is $1,000,000 for each claim and $1,000,000 annual aggregate.

Payment/Performance Security

If selected to contract with the Sierra RCD, Bidder(s) shall post cash, a letter of credit, bond, or other financial security that is easily convertible into cash in a form acceptable to the Sierra RCD, in its sole determination. The security will be used to ensure completion of the work required under any subsequent agreement and payment of all amounts lawfully due to all persons. All persons shall include, but not be limited to, those supplying or furnishing to the Bidder or Bidder's subcontractors with labor, laborers, materials, rental machinery, tools or equipment used or to perform the work. Bidders may incorporate required associated costs into mobilization costs or other approved expenses. Payment or performance security will be required in the following amounts as applicable:

a. For work that is classified as construction in accordance with the Miller Act or Little Miller Act or if required per conditions of the funding source, payment and performance bonding will be required in the full amount of any Agreement. For the purposes of this Request for Proposal, construction is defined as "any contract greater than $100,000 for the construction, alteration, or repair of any public building or public work where the federal government is the owner"; or
b. If Contractor is subcontracting 15% or more of the total contract value, or if the cost of materials is in excess of the larger of $100,000 or 50% of the contract total, payment and performance bonding will be required in the full amount of the agreement; or
c. If the value of the agreement is in excess of $250,000, Contractor will be required to post financial security in a form acceptable to the Sierra RCD in the amount of 5% of the total agreement value up to $250,000 in total financial security.

The Sierra RCD will not provide blanket waivers of payment/performance security requirements though reserves the right to negotiate payment and performance security terms and conditions with selected contractors based upon legal requirements and organizational needs and policies.

Prohibited Telecommunications Services and Equipment

Sierra RCD contractors are responsible for compliance with the prohibition on certain telecommunications and video surveillance services or equipment identified in 2 CFR 200.216.

Exclusion Verification

The selected Contractor will be required to affirm that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal or State department or agency.

Federal and State Flowdown Provisions

Any Agreement associated with this RFP may be subject to flowdown requirements under associated federal or state funding agreements, which are included and made part of by this reference. Federal flowdown requirements are not negotiable by the Sierra RCD and will not be removed or edited. While flowdown provisions may change depending on funding, the Sierra RCD has identified the following non-negotiable federal flowdown provisions as currently being required for this work and The Contractor shall incorporate the substance of this clause, including this paragraph, in all subcontracts, purchase orders, or other agreements entered in to for the performance of work under this Contract.

All subcontractors and lower-tier subcontractors performing work under this Contract shall comply with all applicable Federal statutes, regulations, executive orders, and policies governing work performed on lands administered by the United States Forest Service (USFS), U.S. Department of Agriculture (USDA). The Contractor is responsible for ensuring that subcontractors are aware of and comply with the provisions identified below, as applicable to the scope of work.

These requirements include, but are not limited to:

1. Equal Employment Opportunity
Subcontractors shall comply with the provisions of Executive Order 11246, as amended, and applicable regulations at 41 CFR Part 60, which prohibit discrimination in employment on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin.

2. Davis-Bacon Act (If Applicable)
For contracts involving construction, road work, or other covered activities, subcontractors shall comply with the Davis-Bacon Act (40 U.S.C. §§ 3141–3148) and implementing regulations at 29 CFR Part 5, including payment of prevailing wages and submission of certified payrolls when required.

3. Contract Work Hours and Safety Standards Act
Subcontractors shall comply with the Contract Work Hours and Safety Standards Act (40 U.S.C. §§ 3701–3708) regarding overtime compensation and labor standards for federally funded contracts.

4. Occupational Safety and Health Requirements
All work performed under this Contract shall comply with the Occupational Safety and Health Act of 1970 (29 U.S.C. Chapter 15) and applicable safety regulations. Forestry operations must also comply with OSHA standards applicable to logging operations (29 CFR 1910.266).

5. Environmental Protection and Resource Protection
Subcontractors shall comply with all applicable environmental protection requirements governing work on National Forest System lands, including but not limited to provisions associated with the National Environmental Policy Act (NEPA), Clean Water Act, Endangered Species Act, and any project-specific mitigation measures identified in the Contract or associated decision documents.

6. Debarment and Suspension
Subcontractors shall certify that they are not debarred, suspended, or otherwise excluded from participation in Federal programs pursuant to 2 CFR Part 180 and 2 CFR Part 417.

7. Drug-Free Workplace
Subcontractors shall comply with the Drug-Free Workplace Act of 1988 (41 U.S.C. §§ 8101–8106).

8. Compliance With Forest Service Operational Requirements
All subcontractors must adhere to operational requirements contained in the contract and associated Forest Service documents, including but not limited to specifications related to timber harvesting methods, fuels treatment prescriptions, road use and maintenance requirements, erosion control measures, slash disposal, fire prevention and control, and protection of cultural and biological resources.

9. Records and Access
Subcontractors shall maintain records sufficient to demonstrate compliance with the requirements of this clause and shall provide access to such records to the Sierra Resource Conservation District, Contractor, the U.S. Forest Service, and authorized federal representatives upon request.

The Contractor shall remain fully responsible for the performance of all subcontractors and for ensuring that subcontracted work complies with all terms and conditions of the prime Contract.

II. REQUIRED COMPONENTS

Failed Projects or Legal Actions

Bidders shall identify any past failed projects and the reasoning behind the failure or incompletion. Bidders shall also identify all current or pending legal matters in which the Bidder or any of its principals is involved.

Pricing Schedule

Bidders shall price work according to the schedule below. If Bidders believe that an alternative method of pricing is more applicable, they may also provide an alternative pricing schedule in addition to the format requested below. The Sierra RCD, in its sole discretion, reserves the right to utilize any alternative pricing schedule proposed by any Bidders.

Prevailing wages will be required per conditions of funding sources.

All quantities and measurements identified in this RFP are based upon the best knowledge available to the Sierra RCD and are subject to change. Payment will only be made for actual work to be completed. If the opportunity to add additional funding to the work described in this RFP arises, the Sierra RCD may increase the quantities of work to be performed as part of this project, as agreed upon by the Sierra RCD and the selected Bidder.

Limited Operating Periods

All operations shall comply with applicable **Limited Operating Periods (LOPs)** and seasonal restrictions. Equipment use, felling, skidding, landing construction, and hauling shall be prohibited or modified during designated LOP windows established for wildlife protection, soil moisture concerns, or other resource considerations. The contractor shall coordinate with the Sierra RCD representative to ensure awareness of unit-specific timing restrictions and shall suspend or adjust operations as required to remain in compliance.

Fire Requirements

The contractor must follow the fire plan associated with their activity **(Appendix F)**. The contractor shall provide applicable fire equipment per the attached fire equipment checklist. Note that the substitution of a Compressed Air Foam System (CAFS) for tank trailer requirements may be allowed per agreement with the USFS. If use of a CAFS is proposed, indicate this in the bid and provide unit specifications. Note the specifications must meet the minimum requirements listed in the fire plan to be considered.

Note that the fire plan requires the contractor to supply a means of communication for reporting fires. The treatment unit does not have cell phone coverage and thus an alternate communication means will be required which is capable of 2-way communication and capable of reporting a fire within the work area within 15 minutes.

When using a Masticator or Hotsaw, the contractor must meet the tank truck or trailer requirement (or CAFS substitute per agreement) with a unit capable of traversing all portions on the unit where masticators or hotsaws will be run. Examples of this type of equipment include a skigen, or dozer with affixed tank and pumper or CAFS. For hand thinning, hand thinning within a PAC, and roadside hand thinning units, in addition to the requirements of the fire plan, the operator is required to provide 1 filled 5-gallon backpack pumper and 1 shovel for every 2 sawyers, to be periodically mover through the unit as necessary to be within 100 feet of the work area.

Fire Plan Type	
Timber Fire Plan	Mechanical Thinning, Meadow Restoration
Fire Plan Mechanical Service Work	Small Trees Mechanical Thinning, Plantation Mastication Thinning, Road Work
Fire Plan Hand Service Work	Hand Thinning, Hand Thinning Within a PAC, Roadside Hand Thinning

III. CONTROL OF WORK

The Contractor agrees to conduct its operations under this contract and other related business activities in compliance with Federal, State, and local statutes, standards, orders, permits and other regulations.

The Contractor shall meet all State and local environmental quality laws applicable to National Forest system lands.

Work may be done any time during the term of the contract, except under the following conditions:

1. When conditions are such that operations shall be restricted or ceased due to increased fire risk.
2. A When red flag warnings are forecasted over the contract area by the National Weather Service, all mechanical operations shall cease regardless of the forecasted Project Activity Level (PAL). Activities shown under level “E” may continue.
3. When seasonal operating restrictions are in effect. All areas of restriction are shown on CAM.
4. When soil moisture conditions create excessive risk of damage to the soil. Work will be temporarily postponed if there is a 50% or greater forecasted rain event of 0.1 inches or greater (https://www.noaa.gov) and cease for 48 hours following rain events of 0.1 inches or greater unless approved by delegated Sierra RCD representative
5. When snow depth creates a situation where requirements cannot be met and/or work cannot be inspected, as determined by the Contract administrator.

6. Between Memorial Day and Labor Day, project activities within and directly adjacent to Lakeshore, Badger Creek, Kokanee Campground and other designated recreation sites will be restricted to weekdays only.
7. The government reserves the right to prioritize the order in which Units are treated.
8. If any cultural or archeological sites are discovered during operations of this contract, work will be suspended in the immediate vicinity of the site until a reconnaissance survey is completed by the Forest Archeologist. Areas excluded from treatment shall be deleted from the contract.
9. All work items will comply with the Design Criteria specified in Appendix E.

For All Work Items:

At any point during the project, the Contractor and/or Project Manager may request (documented through email, text, or hand-written request) an in-the-field consultation with the Sierra RCD to inspect work progress, review contract specifications, or clarify issues. The Sierra RCD shall respond to Contractor's request within 5 working days, excluding weekends and federal holidays.

Kaiser East Fuels Reduction and Restoration Project Phase 1: Bid Sheet

To submit a bid please fill out the bid sheet on the next page and send requested information by email to the Sierra Resource Conservation District at office@sierrarcd.com with a subject heading "Kaiser East Phase I Bid - *Contractor Name*."

Units are grouped into Mandatory and Optional Bid Groups bid groups. Bidders must complete bid sheet for all Mandatory and Optional Items (Appendix A). Bid items will be awarded at the discretion of the Sierra RCD which may award to multiple contractors, split by unit number.

Bid Table Sheet

Business Name	
Address, City, State Zip	
Tax ID Number	
Unique Entity ID (UEI)	
Phone/Cell Phone	
Email Address	

A. Stumpage and Biomass Bid table

The following stumpage and tonnage rates for green biomass rates shall be paid by the bidder to the Sierra Resource Conservation District (Sierra RCD). Amounts paid for stumpage and green biomass will be credited against amounts due to the bidder for contracted service work performed under this agreement. The buyer assumes all liability for reporting, calculating and paying California Timber Yield Tax.

Sawlog bid Schedule – (minimum bid of $0.10/ton)

Estimated Volume (green tons)	Bid Rate ($/ton)	Extended Bid Value ($)
89,980		

Biomass Bid Schedule (minimum bid of $0.10/ton) – tonnage should match hauling bid

Estimated weight (tons green)	Bid Rate ($/ton)	Extended Bid Value ($)
Mandatory (2,000):	_____	_____

Species Volume Table for Reference Purposes Only, the Sierra RCD does not guarantee these volumes

Species	Volume net million board feet
White fir/red fir	10.2
Lodgepole pine	3.0
Jeffrey pine	2.0

Total volume	15.2

Sawlog hauling costs should be incorporated into the service work items below. Note: The small trees mechanical thinning units are primarily non-merchantable harvesting with limited incidental sawtimber removal to facilitate the removal of sub merchantable material.

B. Mandatory Service Work Items (paid by Sierra RCD to Contractor)

Bid Category	Units / Proposed Units	Quantity	Bid Rate	Extended Bid
Mandatory Items 1–4 (Appendix A)	Units 1–16	1,044 acres	$_____ / acre	$_____
Mandatory Item 5: Biomass Removal	List proposed biomass-removal units: _____	2,000 tons	$_____ / ton	$_____
Mandatory bid sub-total (items 1-5				$_____

C. Optional Service Work Items (paid by Sierra RCD to Contractor)

Unit	Appendix A Item	Unit Acres	Bid $/Acre	Extended Bid
17	6	49.8	$_____	$_____
	7		$_____	$_____
	8		$_____	$_____
18	6	23.9	$_____	$_____
	7		$_____	$_____
	8		$_____	$_____
19	6	83.5	$_____	$_____
	7		$_____	$_____
	8		$_____	$_____
Total unique optional unit acreage		157.2	Optional Items 6–8 subtotal	$_____

Bid Category	Proposed tons Removed	Bid $/Ton	Extended Bid
Optional Item 9 – Biomass Removal	_____	$_____	$_____

D. Bid Summary

Calculation	Amount
Mandatory Service Work	$_____
Plus: Optional Service Work	+ $_____
Less: Stumpage and Biomass Bid	– $_____
TOTAL PROJECT BID	**$_____**

Technical Proposal

Bidders shall attach a technical proposal for the work described in this RFP. At a minimum, each proposal must include the following:

1. An overview and description of the services provided by the Bidder that align with the requests in this RFP.
2. A description of the project management or administration approach that will be followed by the Bidder to ensure that the identified work is completed on time and within budget.
3. A project work plan and schedule that lists in detail the stages of work expected to be completed in this project, all identifiable deliverables, and the dates on which the Bidder would anticipate being able to complete delivery of the work. The work plan should include a tentative unit-by-unit plan that proposes approximate proposed dates, treatment methods, and logging equipment to be utilized.
4. A project personnel overview identifying key personnel to be utilized if selected to perform the work described in this RFP and any relevant or required credentials or certifications held by the key personnel.
5. The project area is in an area that has significant recreational infrastructure and is heavily visited by the public during summer months. The contractor should include a traffic control and signage plan for heavy and moderate use areas within the project area.

Bidders may also include the following items in proposals as applicable:

1. Any change or risk management approaches utilized by the Bidder when completing projects of the type described in this RFP.
2. Bidder Qualifications Bidders shall submit a statement of their qualifications for the work described in this RFP. The statement should include the following items in narrative format
    a. A brief explanation of previous work experience with land management agencies, noting specifically any work performed on National Forests or Grasslands.
    b. Please provide a listing of relevant projects of similar size, scope, and total value performed by the Bidder within the past 5 years.

c. Please provide three professional references, identifying as applicable any government or conservation nonprofit references. Provide the name, email address, and telephone number for each reference, as well as the dates of the projects during which the Bidder worked with each reference.
d. The technical proposal shall include a quality control plan that addresses how the contractor will adhere to the Designation by Prescription (Appendix D), LOPs, watercourse protections, and other project requirements.

APPENDIX A
TECHNICAL SPECIFICATIONS FOR SERVICE WORK ITEMS

DESCRIPTION OF WORK:

The objectives of this project are to increase forest health and reduce the threat of catastrophic wildfire within the Kaiser East Fuels Reduction and Restoration by accomplishing the following:

1. Thinning live conifer trees to the specifications described in Appendix B.
2. Cutting and decking of sound snags greater than 16" DBH in areas where snag density exceeds the required residual snags per acre. See Appendix B for snag selection guidelines.
3. Removal of saw timber and at least 2000 tons of biomass logs from the Contract Area.
4. Cutting and machine piling of felled snags too unstable to be skidded and small diameter trees (green trees less than 10" DBH as well as snags less than 16" DBH)
5. Pile non-activity generated fuels for future burning.
6. Reconstruct and maintain roads to enable safe access to the Contract Area.

Mandatory Unit Work Items:

Units 1,2,3,4,5,6,7,8,9,10,12,14,15,16 (1,044 acres)

Unit Number	Acres
1	52.03
2	35.15
3	105.56
4	107.36
5	63.58
6	124.41
7	81.05
8	88.12
9	23.03
10	61.32
12	69.44
14	89.70
15	51.46
16	91.61

Mandatory Item #1: Cut, skid, and remove sawlog and biomass trees:

1. Cut, skid, and remove from the designated units, sawtimber and biomass grade trees that meet the minimum tree specifications as identified in Appendix B, Division A.2. All logs meeting sawtimber specifications will be transported to a receiver selected by the Contractor and agreed to by the Sierra RCD.
2. Biomass quality trees may be machine piled or removed to the Big Sandy Rancheria as specified by Mandatory Item 5 and Optional Item 9. Trees are selected for removal according to a Designation by Prescription (DxP), that prioritizes species for removal, sets residual basal area, and imposes diameter limits for snags and live trees.
3. Skid and remove trees meeting merchantability standards that were cut by Southern California Edison (SCE) in areas adjacent to powerlines running though the unit.

Mandatory Item #2: Cut, skid, and deck snags/cull logs:

1. Cut, skid, and deck cull logs > 16" inches DBH to landings or other disposal sites. The residual snag density outside of designated hazard tree mitigation areas should be an average of 3-4 per acre on a per unit basis.
2. Skid, and deck cull logs >16" DBH to landings or other disposal sites that have been felled by SCE in areas adjacent to powerlines.
3. Machine pile cull logs and biomass within canopy gaps in instances where landing space is limited.
4. All snags and live hazard trees as defined by Appendix B, Division C2.35 within 200 feet of any road within these units shall be felled and treated according to utilization standards in Appendix B.
5. Snags over 45" DBH shall be retained unless they are within 200 feet of a road or felling is necessary for operational safety.

Mandatory Item #3: Cut and pile non-merchantable material and piling of non-activity fuels.

1. Cut and pile non-merchantable trees, as well as logging slash and breakage, from felling and skidding that do not meet minimum tree removal specifications as identified in Appendix B, Division A.2.
2. Non-merchantable material includes live conifer trees less than 10" DBH, live hardwood trees less than 12" DBH, snags less than 16" DBH. Any leave trees less than 10" DBH should be spaced off the residual leave trees from item 1 or additional leave trees less than 10" DBH to achieve the desired spacing. If an area of the unit has no trees greater than 10" DBH, select leave trees to achieve a 20' by 20' spacing with a 50% variance. Preferences for leave trees are described in the DxP prescription (Appendix D)
3. Pile any material, as well as any residual logging slash left over after whole tree yarding, any pieces less than 6 feet in length resulting from breakage in item 2, and additional non-activity fuels in the units including residual material from trees felled by SCE crews adjacent to powerlines. Pile all material greater than 3" diameter and at least 3 feet in length. This material is not required to be removed from the contract area but may be agreed under Timber Subject to Agreement. An average of 5 logs per acre greater than 20" diameter and longer than 8' will not be piled and will be left on site for erosion control and wildlife habitat.

Mandatory Item #4 : Road Maintenance

Conduct maintenance activities specified in Road T-Specs (Appendix H) for forest service roads utilized for log hauling and unit access.

Mandatory Item #5: Removal of Cull Logs/Biomass from National Forest Lands (2000 Tons)

1. Cull Logs and/or biomass material shall be removed from project landings and hauled off National Forest Lands to the Big Sandy Rancheria at 33071 Auberry Road, Auberry, CA, 93602. The contractor is responsible for offloading and decking biomass material at the receival facility.
2. The schedule for the removal of cull logs and biomass material removal schedule will be subject to coordination between the Contractor and the Sierra Resource Conservation District.

Optional Unit Work Items:

Units 17, 18, 19 (157 acres)

Unit Number	Acres
17	49.83
18	23.93
19	83.52

Optional Item #6: Optional Cut, Skid, and Remove Sawlogs from National Forest Lands

1. Cut, skid, and remove from the designated units, sawtimber and biomass grade trees that meet the minimum tree specifications as identified in Appendix B, Division A.2. All logs meeting sawtimber specifications will be transported to an agreed upon receiver.
2. Skid and remove trees meeting merchantability standards that were cut by Southern California Edison (SCE) in areas adjacent to powerlines running though the unit
3. Biomass quality trees may be machine piled or removed to an agreed upon receiver as specified by Optional Item 8. Trees are selected for removal according to a Designation by Prescription (DxP), that prioritizes species for removal, sets residual basal area, and imposes diameter limits for snags and live trees.

Optional Item #7: Cut, Skid and Deck Snags/Cull Logs

1. Cut, skid, and remove from the designated units, sawtimber and biomass grade trees that meet the minimum tree specifications as identified in Appendix B, Division A.2.
2. All logs meeting sawtimber specifications will be transported to an agreed upon receiver. Biomass quality trees may be machine piled or removed to an agreed upon receiver as specified by Optional Item 8.
3. Machine pile cull logs and biomass within canopy gaps in instances where landing space is limited.
4. Skid and deck cull logs that were cut by Southern California Edison (SCE) in areas adjacent to powerlines running though the unit.
5. Trees are selected for removal according to a Designation by Prescription (DxP), that prioritizes species for removal, sets residual basal area, and imposes diameter limits for snags and live trees.

Optional Item #8: Optional Cut and Pile Non-Merchantable Materials and Piling of Non-Activity Fuels

1. Cut and pile non-merchantable trees, as well as logging slash and breakage, from felling and skidding that do not

meet minimum tree removal specifications as identified in Appendix B, Division A.2.

2. Non-merchantable material includes live conifer trees less than 10" DBH, live hardwood trees less than 12" DBH, snags less than 16" DBH. Any leave trees less than 10" DBH should be spaced off the residual leave trees from item 1 or additional leave trees less than 10" DBH to achieve the desired spacing. If an area of the unit has no trees greater than 10" DBH, select leave trees to achieve a 20' by 20' spacing with a 50% variance. Preferences for leave trees are described in the DxP prescription (Appendix D).
3. Pile any material, as well as any residual logging slash left over after whole tree yarding, any pieces less than 6 feet in length resulting from breakage in item 2, and additional non-activity fuels in the units including residual material from trees felled by SCE crews adjacent to powerlines. Pile all material greater than 3" diameter and at least 3 feet in length. This material is not required to be removed from the contract area but may be agreed under Timber Subject to Agreement. An average of 5 logs per acre greater than 20" diameter and longer than 8' will not be piled and will be left on site for erosion control and wildlife habitat.

Optional Item #9: Optional Removal of Cull Logs/Biomass from National Forest Lands (Any Amount Additional to Mandatory Item #8 Subject to Agreement by Both Parties)

1. Cull Logs and/or biomass material shall be removed from project landings and hauled off National Forest Lands to the Big Sandy Rancheria at 33071 Auberry Road, Auberry, CA, 93602. The contractor is responsible for offloading and decking biomass material at the receival facility.
2. The schedule for the removal of cull logs and biomass material removal schedule will be subject to coordination between the Contractor and the Sierra Resource Conservation District.

APPENDIX B – SCALED

STEWARDSHIP CONTRACT - TIMBER REMOVAL SPECIFICATIONS

B1.0 CONTRACT AREA
B1.1 Contract Area Map
B1.2 Claims
B2.0 TIMBER SPECIFICATIONS
B2.1 Included Timber
B2.11 Standard Timber
B2.12 Substandard Timber
B2.13 Damaged Timber
B2.131 Damaged by Contractor
B2.132 Negligent or Willful Damage
B2.134 Minor Damage by Natural Causes
B2.14 Unintentionally Cut Timber
B2.15 Construction Timber
B2.16 Other Material
B2.2 Utilization and Removal of Included Timber
B2.3 Timber Designations
B2.31 Clearcutting Units
B2.32 Construction Clearing
B2.33 Overstory Removal Units
B2.34 Understory Removal Units
B2.35 Individual Trees
B2.37 Minor Changes
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C6.817 Load Count Services (7/22)
C8.66 Use of Timber (Option 1) (9/04)

DIVISION A- Specific Conditions. The following conditions apply to the indicated portions.

B.1 Location and Area:

This Contract Area is comprised of 1,201 acres is located in Sections 2-9, T.08S., R.26E.; Sections 32-35, T.07S., R.26E; Mount Diablo Principal Meridian. Fresno County, California.

A.1 Volume Estimate and Utilization Standards

Species Group	Product	Estimated Quantity	Unit of Measure	Minimum Specifications				
				Merchantable Tree		Piece Required to be Removed		
				Diameter Breast High (DBH) *(inches)*	Number of Minimum Pieces per Tree	Length *(feet)*	Diameter Inside Bark at Small End *(inches)*	Net Scale in % Gross Scale 1/
Combined Softwood	Sawlog	89,890	Tons	10.0	1.0	10.0	6.0	25
Timber Subject to Agreement								
Combined Softwood	Cull Log	2,000	Tons	16.0	1.0	10.0	10.0	0
Total Quantity		91,890						

1/ Enter Merchantability Factor (Merch. Factor) or Net Scale in % of Gross Scale, whichever is appropriate.

A.2 Timber Designations, acres are approximate: 1,201.5 Acres

Designation by Description or Prescription (C2.351-C2.355)

A.3 High Stumps

Species	Product	Maximum Stump Height *(inches)*
All	All	12.0
All	All	6.0 (As shown on CAM, 200 feet from trails and some roads)

A.4 Roads

Name and Date of Governing Road Specifications:

Road No.	Name	Class	Approx. *(mi./km.)*	Sheet Numbers and Approval Date	Performance Responsibility 1/		
	Project	Design	Length		Survey	Design	Staking Const.
NA	NA	NA	NA	NA	NA	NA	NA

1/ Indicate timing, i.e., before clearing (BC) or after clearing (AC).

Specification sheets with itemized construction codes also attached

A.5 RESERVED

A.6 Scaling Instructions and Specifications

Name and Date of Governing Instructions:

National Forest Log Scaling Handbook, FSH 2409.11, as amended.

Scribner Decimal C Log Rule as authorized by Regional Forester, October 2006

Scaling Specifications

Species	Product	Maximum Scaling Length *(feet)*	Trim Allowance		
			Diameter Range *(inches)*	Length Range *(feet)*	Trim Allowance *(inches)*
All	All	20.0	All	All	6.0

A.7 Scaling Services

Sawlog Scaling Specifications

Unit of Measure	Site and Geographic Location	Method	Standard Estimated Cost per Unit $
Tons	Purchaser's Millyard or certified public scale per written agreement	Weight Scale or load count per agreement	NA

Cull and Biomass Scaling and Measurement Specifications

Unit of Measure	Site and Geographic Location	Method	Standard Estimated Cost per Unit $
Truckload	33071 Auberry Road Auberry CA 93602	Conventional log truckload is assumed to have a weight of 20 green tons*	NA

* Non-conventional truckload volume estimates (grapple truck, short-logger) are subject to agreement between both parties.

APPLICABLE REGIONAL CLAUSES MAY BE ADDED

UNITED STATES DEPARTMENT OF AGRICULTURE
Sierra Resource Conservation District (RCD)

TIMBER REMOVAL SPECIFICATIONS
CLAUSES FOR SCALED TIMBER REMOVAL CONTRACTS
(Applicable to Contracts to be Measured After Felling**)**

This Division is organized into Parts, Sections, Subsections, and Items. These are numbered in accordance with the following scheme: Part B1.0, Section B1.1, Subsection B1.11, and Item B1.111. References to Part include all Sections, Subsections, and Items within that Part; references to a Section include all Subsections and Items within that Section; and references to a Subsection include all Items within that Subsection. Cross-references within this contract cite the reference number of the applicable Division, Part, Section, Subsection, and Item. Descriptive headings used are not to be considered in determining the rights and obligations of the parties hereunder.

The Standard Clauses in this Division are subject to Specific Conditions of the contract stated in Division A. Wherever appropriate, Specific Conditions established in Division A are herein cited by reference number. References to Standard Clauses also apply to Special C Clauses with the same numbers. These clauses are applicable only to the timber removal portion of the **Sierra RCD Stewardship Contract** except where otherwise specifically referenced. "Timber" when used in this appendix includes timber and other products.

B1.0—CONTRACT AREA

B1.1 Contract Area Map.

The boundaries of "Contract Area" and any subdivision thereof, are as shown on the attached "Project Map" in Appendix C that is made a part hereof, and were, before contract solicitation, designated on the ground by Sierra Resource Conservation District (Sierra RCD) to meet the anticipated needs of the parties. The location of Contract Area and its approximate acreage are stated in Division A. Subdivisions may be revised, and additional ones may be established only by written agreement.

Where applicable, the following are also identified on Project Map (Appendix C):

(a) Identified claims limiting Contractor's rights under B1.2
(b) Subdivisions defined in B2.3 where timber is to be Marked after date of contract solicitation
(c) Boundaries of Clearcutting Units, Overstory Removal Units, and Understory Removal Units under B2.3
(d) Diameter limits for Overstory Removal Units and Understory Removal Units under B2.33 and B2.34
(e) Areas where leave trees are Marked to be left uncut under B2.35
(f) Roads
(g) Sources of base course, surface rock, and rock riprap listed in the Schedule of Items
(h) Roads where log hauling or use is prohibited or restricted
(i) Roads and trails to be kept open
(j) Improvements to be protected
(k) Locations of known wildlife or plant habitat and cave resources to be protected
(l) Locations of areas known to be infested with specific invasive species of concern
(m) Maximum stump heights when more than one height is listed by areas in Division A6 under B6.412
(n) Skidding or yarding methods specified under B6.42
(o) Stream courses to be protected

(p) Locations of meadows requiring protection
(q) Locations of wetlands requiring protection
(r) Locations of temporary roads to be kept open; and
(s) Other features required by Division B or C.

B1.2 Claims. Valid claims are excluded from the Contract Area, except those on which timber cutting is authorized in writing by the claimant and except mining claims on which cutting is authorized by the Act of July 23, 1955 (30 USC 614). Claims that limit Contractor's rights to operate under this contract and that Sierra RCD has been able to identify are shown on Project Map. Contractor is not obligated to operate contrary to existing claim limitations. Sierra RCD shall designate boundaries of claims on the ground to the extent necessary to identify the Included Timber.

B2.0—TIMBER SPECIFICATIONS

B2.1 Included Timber. "Included Timber" consists of:

B2.11 Standard Timber Live and dead trees and portions thereof that meet Utilization Standards under B2.2 and are designated for cutting under B2.3.

B2.12 Substandard Timber. Live and dead trees that do not meet Utilization Standards.

B2.13 Damaged Timber.

B2.131 Damaged by Contractor. Undesignated live trees meeting Utilization Standards that are:

(a) Damaged by Contractor in logging or stewardship project operations and are subsequently marked before Contractor has completed work in the immediate area.
(b) By agreement, such trees may be left without charge if their removal would cause undue damage or be grossly uneconomic.

B2.132 Negligent or Willful Damage. Undesignated timber meeting Utilization Standards and unnecessarily damaged or negligently or willfully cut by Contractor, if included by Sierra RCD.

B2.134 Minor Damage by Natural Causes. Undesignated trees within Contract Area and meeting Utilization Standards, that become insect infested, wind-thrown, suffer serious damage, or die, as designated by agreement.

B2.14 Unintentionally Cut Timber. Trees, within or immediately adjacent to Contract Area or other authorized clearing outside Contract Area, not designated for cutting under B2.3 but that are cut through mistake by Contractor, when included by Sierra RCD.

B2.15 Construction Timber. Trees to be used for construction under this contract.

B2.16 Other Material. Species or products not listed in the contract, upon written approval of Sierra RCD.

B2.2 Utilization and Removal of Included Timber. "Utilization Standards" for trees and minimum pieces are stated in Division A2. To meet minimum tree specifications, trees must equal or exceed tree diameters listed in Division A2

and contain at least one minimum piece. Except for timber required or authorized to be left Contractor shall fell and buck such trees and shall remove from Contract Area and present for Scaling all pieces that:

(a) Meet minimum piece standards in Division A2 or

(b) Do not meet such standards but would have qualified as part of minimum pieces if bucking lengths were varied to include such material.

B2.3 Timber Designations. Timber designated for cutting shall be confined to the Contract Area, except as otherwise provided. Project Map indicates subdivisions, if any, where Marking is to be done after contract solicitation, except for construction clearing, minor changes, and damaged timber. Unit and prescription boundaries have been delineated virtually before contract advertisement and are shown on Project Map. Boundary trees shall not be cut. The number of units and approximate acreage of timber designations are stated in Division A3.

B2.35 Individual Trees. All trees will be designated by description for cutting

B2.37 Minor Changes. Within Contract Area, minor adjustments may be made in boundaries of cutting units or in the timber individually Marked for cutting when acceptable to Contractor and Sierra RCD.

B2.4 Volume Estimate. The estimated volumes of timber by species designated for cutting under B2.3 and expected to be cut under Utilization Standards are listed in Division A2. If Project Map indicates that there are incompletely Marked subdivisions, the objective of Sierra RCD shall be to designate for cutting in such subdivisions sufficient timber so that Contract Area shall yield the approximate estimated volume by species or species groups stated in Division A2. However, the estimated volumes stated in Division A2 are not to be construed as guarantees or limitations of the timber volumes to be designated for cutting under the terms of this contract.

B3.0—RATES OF PAYMENT

B3.1 Current Contract Rates. Included Timber that is removed by Contractor and presented for Scaling in the product form stated in Division A2 shall be paid for at Current Contract Rates determined under this Section. "Current Contract Rates" shall be Flat Rates. Flat Rates shall be those listed in the Schedule of Items – Timber/Product Removal Price Schedule. In the event contract time is adjusted, Current Contract Rates shall be continued in the same manner as immediately prior to the adjustment period. In addition, Required Deposits, if applicable, shall be made as listed in C5.32# and C6.816#.

B3.4 Other Payment Rates.

B3.41 Material Not in Division A2. Incidental amounts of products or portions of trees of species that do not meet Utilization Standards may be removed without charge. Such material may be purposely removed in more than incidental amounts without charge upon written approval of Sierra RCD, and subject to agreement on deposits if needed for road maintenance and use. Other species or products not listed may be cut and removed upon written approval of Sierra RCD and subject to agreement on rates of payment. Timber for which the quantity is not included in the estimate, shall be paid for at Current Contract Rates and Required Deposits.

B3.42 Timber Cut Through Mistake. Undesignated timber meeting Utilization Standards, cut by Contractor through mistake and included by Sierra RCD under B2.14, shall be removed and paid for at Current Contract Rates and Required Deposits, unless such material is not listed in Division A2. In such event, Sierra RCD, in accord with standard National Forest methods, shall establish rates to be paid.

B3.43 Designated Timber Cut But Not Removed. Standard timber shall be removed, as provided in B2.2, prior to acceptance of a subdivision. There shall be no charge when:

(a) The leaving of incidental material is justified under existing conditions, or

(b) Cut timber is left by option or requirement.

B3.44 Undesignated Timber Damaged Without Negligence. Undesignated timber meeting Utilization Standards, damaged without negligence by Contractor and designated by Sierra RCD under B2.131, shall be cut, removed, and paid for at Current Contract Rates and Required Deposits.

B3.45 Undesignated Timber Unnecessarily Damaged or Negligently or Willfully Cut. Undesignated timber meeting Utilization Standards and unnecessarily damaged or negligently or willfully cut by Contractor, if included by Sierra RCD, shall be cut, removed, and paid for at Current Contract Rates and Required Deposits that are in addition to liquidated damages under B3.46.

If such timber is of a species or size not listed in Division A2 or is of a quality different from designated timber, Sierra RCD shall establish payment rates in accord with standard Forest Service methods.

B3.46 Liquidated Damages. Unnecessary damage to or negligent or willful cutting of undesignated timber, as described in B3.45, on portions of Contract Area cut over under this contract is likely to cause substantial silvicultural or other damage to the National Forest. It will be difficult, if not impossible, to determine the amount of such damage. Therefore, Contractor shall pay as fixed, agreed, and liquidated damages an amount equivalent to the amount payable at Current Contract Rates. If designated by Sierra RCD, Contractor shall remove such damaged or cut timber and pay for it at Current Contract Rates.

B3.47 Defect Caused by Abnormal Delay. Scaling deductions made for rot, check, or other defect resulting from abnormal delay in Scaling caused by Contractor shall be recorded separately and charged to Integrated Resource Account at Current Contract Rates and applicable deposits.

B4.0—PAYMENTS

B4.1 Amount Payable for Timber. Current Contract Rates and Required Deposits in effect when the timber is scaled shall be applied to the scaled volume to determine the amount Contractor shall pay.

B4.2 Integrated Resource Account. "Integrated Resource Account" is an account maintained by the Sierra RCD of all Contractor's deposits, credits, payment guarantees, and the charges for:

(a) Timber at Current Contract Rates
(b) Slash disposal, road maintenance at Required Deposit rates
(c) Stewardship Credits established
(d) Contract Scaling Deposits, and
(e) Other charges provided in this contract.

Cash deposits and Stewardship Credits earned shall be recorded currently in such account.

Charges for timber cut shall be made when Sierra RCD prepares and furnishes to Contractor periodic statements of volume and value of such timber cut and scaled. Charges against Stewardship Credits shall be limited to timber value in excess of Required Deposits. Required Deposits, and Other Charges shall be paid in cash.

B4.21 Cash Deposits. Within the limitations of this Subsection, Contractor shall make cash deposits to meet Contractor's obligations within 15 days of billing by Sierra RCD. Deposits shall be made to Sierra RCD by mail or delivery to the address to be furnished by Sierra RCD. Sierra RCD shall explain the bill at the time it requests each deposit.

B4.215 Deposits When Payment Guaranteed. To the extent payment guarantee is provided under Clause entitled, "PRODUCT PAYMENT GUARANTEE" requirements for advance cash deposits shall be waived for the value of Product on contract area that is cut, but not removed, and for the value of Products removed from contract area, up to limit of remaining stewardship credits to be earned and exchanged for value of included product except for Required Deposits and Associated Charges. Associated charges shall be waived for not more than one monthly billing period.

B4.218 Cooperative Deposits. On a basis of cooperation or assistance (16 USC 572) and by a written agreement, Sierra RCD or the Forest Service shall perform all or portions of the work that Contractor is obligated to perform under this contract, as well as furnish other Services in connection with activities under this contract. When Forest Service is to perform such work, Contractor shall make one or more deposits to cover the estimated cost of the work. On request of Contractor, Forest Service shall render monthly accounts, as may be specified in such agreement.

B4.24 Refund after Scaling Completed. Any cash deposit, in excess of that required to meet charges under B4.2, shall be refunded or transferred within 15 days of Contractor's request after Scaling is completed, except for amounts estimated to be required under B9.5.

B4.4 Payments Not Received. (a) Payments are due and payable on the date of issue indicated on the bill for collection. When a payment for timber cut and other charges is not received by Sierra RCD by the date specified in the bill for collection for receipt of payment, Sierra RCD will suspend all or any part of Contractor's Operations until payment or acceptable payment guarantee is received. Other charges include, but are not limited to:

(i) Slash disposal, road maintenance, and contract Scaling deposits;

(ii) Cooperative work at rates established by specific agreement under B4.218; and

(iii) Other mandatory deposits.

(b) Failure to pay amounts due by the date specified in the bill for collection for receipt of payment shall be considered non-compliance. The non-compliance shall be remedied within 30-days which begins to run as of the end of business on the date specified for receipt of payments. If the performance or payment is guaranteed by surety bond, the surety will receive a copy of the written notification of non-compliance. Demand will be made on the surety or other institution providing the guarantee or bond instrument for immediate payment 10 days after issuance of written notification of the breach.

(c) Pursuant to the Debt Collection Improvement Act of 1996, as amended, if payment is not received by Sierra RCD within 15 days after the date of issue indicated on the bill for collection:

(i) Simple interest shall be assessed at the Current Value of Funds Rate as established by the Secretary of the Treasury. Interest will begin to accrue as of the date of issue indicated on the initial bill for collection.

(ii) Debtors will be assessed administrative charges, in addition to the delinquent amount due. Administrative charges are those additional costs incurred by the Government in processing, handling, and collecting delinquent debts.

(iii) A penalty charge of six (6) percent per annum will be assessed on any portion of a debt delinquent for more than 90 days. This penalty charge is in addition to interest and administrative charges under paragraphs (c)(i) and (c)(ii). The penalty charge shall accrue from the date of issue indicated on the bill for collection and shall be assessed on all outstanding amounts, including interest and administrative costs assessed under paragraphs (c)(i) and (c)(ii).

(iv) Payments will be credited on the date received by the Federal Depository or Collection Officer designated on the bill for collection.

(d) Forest Service remedies for Contractor's failure to make payment for timber cut and other charges when due, except for accrual of interest, suspension of all or any part of Contractor's Operations, and administrative offset,

shall be stayed for so long as:

(i) A bona fide dispute exists as to Contractor's obligation to make such payment and

(ii) Contractor files and prosecutes a timely Claim.

B5.0—TRANSPORTATION FACILITIES

B5.1 Authorization. Contractor is authorized to maintain roads, bridges, and other transportation facilities, as needed for harvesting Included Timber and completing stewardship service items on National Forest and other lands where Forest Service has such authority. Maintenance shall be governed by Appendix C. The location and clearing widths of all Temporary Roads or facilities shall be agreed in writing before construction is started. "Temporary Roads" are roads other than roads listed in Appendix H that are constructed by Contractor for the purpose of harvesting Included Timber or completing stewardship service items. Contractor is authorized to cut and use for construction, without charge, construction timber designated by agreement.

B5.12 Use of Roads by Contractor. Except as provided herein, Contractor is authorized to use existing National Forest system roads when Forest Service determines that such use will not cause damage to the roads or National Forest resources. C5.12# lists existing roads shown on Project Map that for such reasons as limitations in structural capacity, safety, and protection of soil, water, and roads:

(a) Cannot be used for log hauling or

(b) May be used only under the restrictive limitations stated therein.

B6.0—OPERATIONS

B6.3 Control of Operations. Under this contract, "Contractor's Operations" shall include activities of or use of equipment of Contractor, Contractor's employees, agents, Subcontractors, or their employees or agents, acting in the course of their employment in operations hereunder on National Forest lands or within area covered by Sierra RCD's stewardship agreement (unless acting under the immediate supervision of Forest Service).

Contractor's Operations shall be conducted in a workmanlike and orderly manner. The timing of required Sierra RCD designation of work on the ground and the performance of other Sierra RCD work shall not be such as to cause unnecessary delay to Contractor.

B6.33 Safety. Contractor's Operations shall facilitate Sierra RCDs safe and practical inspection of Contractor's Operations and conduct of other official duties on Contract Area. Contractor has all responsibility for compliance with safety requirements for Contractor's employees.

If Sierra RCD identifies a conflict between the requirements of this contract or agreed upon methods of proceeding hereunder and State or Federal safety requirements, the contract shall be modified and Contractor may request an adjustment in Current Contract Rates to compensate for the changed conditions.

Unless otherwise agreed in writing, when Contractor's Operations are in progress adjacent to or on Forest Service controlled roads and trails open to public travel, Contractor shall furnish, install, and maintain all temporary traffic controls that provide the user with adequate warning of hazardous or potentially hazardous conditions associated with Contractor's Operations. Contractor and Sierra RCD shall agree to a specific Traffic Control Plan for each individual project prior to commencing operations. Devices shall be appropriate to current conditions and shall be covered or removed when not needed. Except as otherwise agreed, flagmen and devices shall be as specified in the "Manual on Uniform Traffic Control Devices for Streets and Highways" (MUTCD) and as shown on Plans, Project Map, Traffic Control Plan, or in specifications attached hereto.

B6.341 Prevention of Oil Discharges. If Contractor maintains storage facilities for oil or oil products on Contract Area, Contractor shall take appropriate preventative measures to ensure that any harmful discharge of such oil or oil products does not enter into or upon any navigable waters, adjoining shorelines, or other waters of the United States, as prescribed in 40 CFR 110. As soon as Contractor has knowledge that measures, as described in the Sanitation and Servicing clause fail to prevent a discharge into or upon navigable waters or adjoining shorelines of the United States, Contractor shall notify the Contract Officer or Contract Officer Representative, the National Response Center and any other appropriate State agencies. In accordance with 40 CFR 110.6, all harmful discharges that occur as a direct or indirect result of Contractor's operations, regardless of whether such discharges are caused by Contractor's employees, agents, Subcontractors, or their employees or agents, directly or indirectly, as a result of Contractor's Operations must be reported.

Harmful discharges of oil are those that violate applicable State water quality standards, cause a film or sheen on the water's surface, or leave sludge or emulsion beneath the surface of the water or adjoining shorelines regardless of the amount of material discharged (40 CFR 110.3). As such reporting is not triggered by the amount of the discharge but by the presence of the criteria prescribed in 40 CFR 110.3. Harmful discharges meeting the criteria in 40 CFR 110 must be reported by Contractor. Contractor shall take whatever initial action may be safely accomplished to control all reportable discharges. Appropriate actions include but are not limited to containment, sorbents or dispersants as needed or as prescribed by the Spill Prevention Control and Countermeasures Plan pursuant to 40 CFR 112. Contractor shall prepare a Spill Prevention Control and Countermeasures (SPCC) Plan pursuant to EPA requirements as stated in 40 CFR 112 when the following conditions are met:

(a) Contractor maintains above ground storage facilities, including mobile storage, for oil or oil products on the Contract Area and the total storage capacity for these products exceeds 1,320 gallons in either a single container of greater than 1,320 gallons, or in multiple containers of 55 gallons or greater, and

(b) there is a reasonable expectation that a harmful discharge could reach navigable waters of the United States, adjoining shorelines or other waters as prescribed in 40 CFR 112.

Reasonable expectation for a discharge reaching navigable waters is based on the location of the storage facility to streams, ditches, gullies, or permanent water bodies that could be impacted as well as drainage patterns, soil conditions, precipitation runoff and the volume of material potentially spilled. The SPCC Plan shall outline measures which will prevent discharges from reaching navigable waters, adjoining shorelines, or other waters of the United States. According to §112.1(d)(1)(i), the determination of reasonable expectation for a harmful discharge must be based solely upon consideration of the geographical and locational aspects of the facility. If a Contractor makes a determination that, due to the location, the facility cannot reasonably be expected to discharge oil as described in §112.1(b), Contractor should be prepared to provide the rationale and any supporting documentation, if requested by the Sierra RCD, that explains why the facility does not have an SPCC Plan.

B6.342 Hazardous Substances. Contractor shall notify the Sierra RCD of all releases of reportable quantities of hazardous substances on or in the vicinity of Contract Area that are caused by Contractor's employees, agents, Subcontractors or their employees or agents, directly or indirectly, as a result of Contractor's Operations, in accordance with 40 CFR 302.

B6.36 Acceptance of Work. Upon Contractor's written request and assurance that work has been completed, Sierra RCD shall perform an inspection within 5 days, excluding weekends and Federal holidays, so as not to delay unnecessarily the progress of Contractor's Operations. Such a request may be for acceptance of:

(a) Specific requirements on a subdivision of Contract Area (such as logging, slash disposal, erosion control, or snag felling); or

(b) All contract requirements on a subdivision of Contract Area.

Sierra RCD may perform such inspections without request from Contractor.

Within 2 days of inspection, excluding weekends and Federal holidays, Sierra RCD shall furnish Contractor with written notice either of acceptance or of work remaining to be done.

If Sierra RCD is unable to make such inspection within 5 days of Contractor's request, Contractor shall be notified in writing of necessity for postponement and time when inspection can be made.

B6.4 Conduct of Logging. Unless otherwise specifically provided herein, Contractor shall fell trees designated for cutting and shall remove the portions which meet Utilization Standards, except for occasional trees inadvertently not cut or trees or pieces not removed for good reason, including possible damage to forest resources or gross economic impracticability at the time of removal of other timber. Logging shall be conducted in accordance with the following, unless other clauses set forth requirements to meet special or unusual logging conditions:

B6.41 Felling and Bucking. Felling shall be done to minimize breakage of Included Timber and damage to residual timber. Unless agreed otherwise, felling shall be done by saws or shears. Bucking shall be done to permit removal of all minimum pieces set forth in Division A2. Contractor may buck out cull material when necessary to produce pieces meeting Utilization Standards. Such bucked out material shall contain a minimum amount of sound wood, not in excess of the net scale in percentage of gross scale, or based on the merchantability factor, whichever is stated in Division A2. If necessary to assess the extent of defect, Contractor shall make sample saw cuts or wedges.

B6.411 Felling in Clearings. Insofar as ground conditions, tree lean, and shape of clearings permit, trees shall be felled so that their tops do not extend outside Clearcutting Units, construction clearings, and areas of regeneration cutting.

B6.412 Stump Heights. Stumps shall not exceed, on the side adjacent to the highest ground, the maximum heights set forth in Division A6, except that occasional stumps of greater heights are acceptable when Contractor determines that they are necessary for safe and efficient conduct of logging. Unless otherwise agreed, Contractor shall re-cut high stumps so they will not exceed heights specified in Division A6 and shall dispose of severed portions like other logging debris. The stump heights shown in Division A6 were selected with the objective of maximum reasonable utilization of the timber, unless Project Map shows special areas where stump heights are lower for aesthetic, land treatment, or silvicultural reasons.

B6.413 Bucking Lengths. Trees shall be bucked in various lengths to obtain the greatest utilization of material meeting Utilization Standards.

B6.414 Limbing. When Sierra RCD determines it is necessary to minimize damage to the residual stand during skidding, Contractor shall cut exposed limbs from products prior to skidding. Contractor may leave uncut limbs that cannot be cut with reasonable safety.

B6.42 Skidding and Yarding. Methods of skidding or yarding specified for particular areas, if any, are indicated on Project Map. Outside Clearcutting Units and construction clearings, insofar as ground conditions permit, products shall not be skidded against reserve trees or groups of reproduction and tractors shall be equipped with a winch to facilitate skidding.

B6.421 Rigging. Insofar as practicable, needed rigging shall be slung on stumps or trees designated for cutting.

B6.422 Landings and Skid Trails. Location of all landings, tractor roads, and skid trails shall be agreed upon prior to their construction. The cleared or excavated size of landings shall not exceed that needed for efficient skidding and loading operations.

B6.423 Skidding on Roads. Products may be skidded on permanent roads authorized for hauling only by prior written agreement.

B6.424 Arches and Dozer Blades. Skidding tractors equipped with pull-type arches or dozer blades wider than tractor width or C-frame width, whichever is greater, shall not be used except on constructed tractor roads or landings, unless there is written agreement that residual timber will not be damaged materially by such use.

B6.63 Temporary Roads. As necessary to attain stabilization of roadbed and fill slopes of Temporary Roads, Contractor shall employ such measures as outsloping, drainage dips, and water-spreading ditches.

After a Temporary Road has served Contractor's purpose, Contractor shall give notice to Sierra RCD and shall remove bridges and culverts, eliminate ditches, outslope roadbed, remove ruts and berms, effectively block the road to normal vehicular traffic where feasible under existing terrain conditions, and build cross ditches and water bars, as staked or otherwise marked on the ground by Sierra RCD. When bridges and culverts are removed, associated fills shall also be removed to the extent necessary to permit normal maximum flow of water.

B6.64 Landings. After landings have served Contractor's purpose, Contractor shall ditch and slope them to permit water to drain or spread. Unless agreed otherwise, cut and fill banks around landings shall be sloped to remove overhangs and otherwise minimize erosion.

B6.65 Skid Trails and Fire Lines. Contractor shall construct cross ditches and water-spreading ditches on tractor roads and skid trails, where staked or otherwise marked on the ground by Sierra RCD. Sierra RCD shall designate cross ditching on Contractor-built fire lines prior to or during construction. By agreement, Contractor may use other comparable erosion control measures, such as backblading skid trails, in lieu of cross ditching.

B6.66 Current Operating Areas. Where logging, road construction, or other stewardship project work is in progress but not completed, unless agreed otherwise, Contractor shall, before operations cease annually, remove all temporary log culverts and construct temporary cross drains, drainage ditches, dips, berms, culverts, or other facilities needed to control erosion.

Such protection shall be provided, prior to end of ***October 31*** for all disturbed, unprotected ground that is not to be disturbed further prior to end of operations each year, including roads and associated fills, tractor roads, skid trails, and fire lines. When weather permits, operations during ***November 1 – May 31*** Contractor shall keep such work on any additional disturbed areas as up to date as practicable.

B6.67 Erosion Control Structure Maintenance. During the period of this contract, Contractor shall provide maintenance of soil erosion control structures constructed by Contractor until they become stabilized, but not for more than 1 year after their construction. Contractor shall not be responsible for repair of such structures damaged by other National Forest users whose activities are not a part of Contractor's Operations.

B6.7 Slash Disposal. Contractor's timing of product removal and preparatory work shall not unnecessarily delay slash disposal. Specific slash disposal measures to be employed by Contractor are stated in elsewhere herein and are in addition to Required Deposits for slash disposal.

B6.8 Scaling. "Scaling," as used herein, involves:

(a) Various volume determination methods, such as log rule, sampling, measuring, linear measuring,
(b) Various sites, such as truck Scaling stations, rollways, weighing stations, woods landings, water Scaling

stations, or other sites; and

(c) Various geographic locations.

B6.81 Scaling Services. Scaling services shall be performed by Forest Service personnel or parties under contract to Forest Service, except that weighing services may be performed by personnel or parties approved by Forest Service. Scaling shall be provided in accordance with the instructions and specifications in Division A9. Scalers shall be currently certified to perform accurate Scaling services. The Scaling services provided shall be selected exclusively by Forest Service.

Scaling services may be Continuous, Intermittent, or Extended. "Continuous Scaling Services" is Scaling at one site five (5) 8-hour shifts a week, exclusive of Sundays and Federal holidays. "Intermittent Scaling Services" are non-continuous Scaling services. "Extended Scaling Services" are Scaling services exceeding Continuous Scaling Services and may include Sundays and designated Federal holidays.

Upon written request of Contractor and approval of Sierra RCD, Forest Service may provide other services, such as but not limited to grading, tagging, or marking of Scaled logs.

B6.811 Scaling Location. Forest Service shall provide Scaling services at the Scaling site(s) shown in Division A10. The Scaling site(s) shown in Division A10 normally will be a non-exclusive site where more than one National Forest contractor may be served.

Contractor may request, in writing, an alternate Scaling site, such as at a private mill yard, private truck ramp, or a privately operated log transfer facility. Sierra RCD may approve an alternate Scaling site, when Sierra RCD determines that Scaling conditions at an alternate site are acceptable. Such conditions shall include at a minimum:

(a) Scaler safety and comfort,

(b) Product accountability and security,

(c) Facilities and practices conducive to accurate and independent Scaling, and

(d) The ability to provide remote check scaling. Upon approval of an alternate Scaling site, Sierra RCD and Contractor shall enter into a written memorandum of agreement governing Scaling at that alternate location. Contractor agrees that Forest Service personnel or persons under contract with Forest Service shall perform Scaling services at an alternative Scaling site. In no instance shall Contractor or employees of Contractor perform Scaling services.

B6.812 Scaling Adjustments. Sierra RCD shall check the accuracy of the Scaling performed on National Forest logs. Scaling will be satisfactory if performed within the accuracy standards stated in governing instructions identified in Division A9. In the event Sierra RCD check Scale(s) shows a variance in net Scale in excess of the allowable variance, an adjustment to volume reported Scaled may be made by Sierra RCD.

Such adjustment will be based on the difference between Sierra RCD check Scale(s) and original Scale for contract volume Scaled within the adjustment period. The volume to which this difference will be applied will be:

(a) One-half of the volume Scaled between the last satisfactory check Scale and the first unsatisfactory check Scale or, if a period of 120 days or more occurs without Scaling National Forest timber for stumpage, the adjustment will be applied to 100 percent of the volume Scaled after this period and

(b) 100 percent of the volume Scaled between unsatisfactory check Scales and

(c) One-half of the volume Scaled between the last unsatisfactory check Scale and the next satisfactory check Scale, or if no satisfactory check Scale is completed and a period of 120 days or more occurs without Scaling of National Forest timber for stumpage, the adjustment will be applied to 100 percent of the volume Scaled

since the last unsatisfactory check Scale.

Adjustments may increase or decrease the original Scaled volume. Adjustments will be applied to Integrated Resource Account to correct charges for Included Timber, plus deposits, Scaled during the adjustment period.

B6.813 Delayed or Interrupted Scaling Services. In the event Scaling services are delayed or interrupted, Contractor shall discontinue hauling. Contractor further agrees that no logs will be presented for Scaling outside agreed upon Scaling services schedule.

B6.814 Weighing Services. Weighing services for stumpage payment purposes may be provided by either public or privately owned and operated weighing facilities. A "Weighing Services Agreement," approved by the Sierra RCD, must be executed at each weighing facility providing weighing services.

Scales used to weigh National Forest products for payment purposes must be a currently certified scale in accordance with State law and be capable of weighing the entire load of logs in a single operation. The weighing of less than the entire load or weighing two loads at once is prohibited. Unless otherwise agreed, the minimum sized weighing facility shall be a 60-ton capacity scale with a 10-foot by 70-foot platform or larger. The weigh master must work in a position where it is possible to verify that the truck wheels are on or off the scales.

Weighing facilities shall meet the following minimum requirements:

(a) Be an electronic design,
(b) Use electronic load cells or have a fully enclosed and sealed weigh-beam,
(c) Have digital weight meters sealed with a seal approved by the State,
(d) Have a zero-interlocking device on the printer,
(e) Have an automatic zero-setting mechanism,
(f) Have an automatic motion-detecting device,
(g) Be shielded against radio or electromagnetic interference, and
(h) Have a date and time stamp and gross and tare weights that print electronically with each weighing.

Sierra RCD may waive electronic printing for public or third-party weighing facilities. Contractor shall bear all charges or fees for weighing services.

B6.82 Presentation for Scaling. Contractor shall present products so that they may be Scaled in an economical and safe manner. If prior to Scaling, Included Timber is to be mixed with other timber, Contractor shall, prior to mixing, provide for distinguishing, by means approved by Sierra RCD, each product included in this contract.

Trees or pieces presented for Scaling that have not been bucked to separate material meeting minimum piece standards from material not meeting minimum piece standards due to diameter, shall be Scaled as though such bucking had been done.

Deductions made for rot, check, or other defects resulting from abnormal delay in Scaling caused by Contractor shall be recorded separately and charged to Integrated Resource Account under B3.47.

Any timber that has been removed from the Contract Area during the period of this contract, but remains unscaled after the Period of Performance Date, shall be Scaled at the earliest reasonable date.

B6.83 Scaling Other Products. The Scaled volume of material presented for Scaling in forms other than those stated in Division A2, when appropriate, shall be converted to the Division A2 unit of measure by the application of standard converting factors and procedures in effect at the time the contract was sold. Other converting factors may be used by written agreement.

B6.84 Accountability. When Scaling is performed away from Contract Area, products shall be accounted for in accordance with Sierra RCD written instructions or an Accountability Agreement between Sierra RCD and Contractor and as follows:

(a) Contractor shall plainly mark or otherwise identify products prior to hauling in accordance with B6.842.

(b) Sierra RCD shall issue removal trip ticket books and receipts to Contractor. Contractor shall assign a competent individual at the landing to complete removal receipts and attach them to each load of products removed from Contract Area.

(c) Contractor shall provide SRCD representative with daily log scale and weight information for each load delivered to the final delivery location.

(d) Removal receipts shall be returned to Sierra RCD at periodic intervals.

(e) A Scaler Information Form will be jointly developed between Sierra RCD and the Contractor prior to hauling any forest products off National Forest Lands.

(f) When products are in transit, the truck driver shall possess or display removal receipt and show it upon request as evidence of authority to move products.

(g) The scaler's portion of removal receipt shall be surrendered at point of Scaling, the unloading point, or as requested by Sierra RCD; and

(h) Contractor shall notify Sierra RCD of lost or off-loaded logs and their location within 12 hours of such loss.

Contractor shall not place products in storage for deferred Scaling until an accountability system has been agreed to in writing for a stated period.

B6.841 Route of Haul. As part of the annual Operating Schedule, Contractor shall furnish a map showing and designating the route of haul over which unscaled products will be transported from Contract Area to the approved Scaling location. A written description of the haul route will not be accepted as a substitute for a map. Such a designated route of haul shall be the most economical haul route available between the points. The estimated average haul time from the Contract Area to the approved scaling location shall be documented on the map showing the route of haul.

Upon advance written agreement, other routes may be approved. All unscaled products removed from Contract Area shall be transported over the designated routes of haul.

Contractor shall notify Sierra RCD when a load of products, after leaving Contract Area, will be delayed in reaching Scaling location by more than 12 hours past the estimated average haul time documented on the map showing the route of haul.

Contractor shall require truck drivers to stop, if requested by Sierra RCD, for accountability checks when products are in transit from Contract Area to the designated Scaling location.

Contractor and Sierra RCD shall agree to locations for accountability checks in advance of haul. Such locations shall be established only in areas where it is safe to stop trucks. Sierra RCD shall notify Contractor of the methods to be used to alert truck drivers of an impending stop.

B6.842 Product Identification. Before removal from Contract Area, unless Sierra RCD determines that circumstances warrant a written waiver or adjustment, Contractor shall:

(a) Hammer brand all products that are ten (10) feet or more in length and one-quarter(1/4) or more sound, on each end that is seven (7) inches or more in diameter.

(b) West of the 100th meridian, paint with a spot of highway-yellow paint all domestic processing products that

are ten (10) feet or more in length and one-quarter (1/4) or more sound, on each end that is seven (7) inches or more in diameter. Each paint spot must be no less than three (3) square inches in size.

(c) Sierra RCD shall assign brands. Contractor shall use assigned brand exclusively on logs from this contract until Sierra RCD releases brand. Contractor will furnish and apply highway-yellow paint of a lasting quality (oil-base or equivalent).

All hammer brands and/or highway-yellow paint must remain on logs until they are domestically processed. Contractor shall replace identifying marks if they are lost, removed, or become unreadable. Contractor may remanufacture products into different log lengths. Except for logs remanufactured as part of the mill in-feed process immediately before processing, remanufactured products must be rebranded with the assigned contract brand and repainted with highway-yellow paint, unless otherwise agreed to in writing by Sierra RCD. For such remanufactured products, Sierra RCD may approve use of a brand to be used exclusively as a catch brand, in lieu of the assigned contract brand.

B6.85 Scaling Lost Products. The volume of lost products shall be determined by the best methods currently available, using data from the records for the period in which the loss occurred or the most applicable period if loss should occur substantially after cutting. In the absence of specific information indicating size or species of lost products, species distribution and volume for entire truckloads shall be assumed to be the same as the average volume Scaled per truck during the report period, and for individual products it shall be assumed that the volume and species were the average volume of the highest priced species Scaled during the report period.

B6.851 Scaling Lost Sample Loads. If Scaling is being done by sampling loads of logs, Contractor shall present such sample loads for Scaling by Sierra RCD. If loads of logs selected to be sample Scaled are placed in the decks before they are Scaled, they will be considered as lost sample loads. It will be difficult, if not impossible, to determine the volume and species contained in such loads for payment purposes. Therefore, lost sample loads will be deemed to have a Scale volume and species composition equal to that of the highest value load Scaled during the sampling period, as established by Sierra RCD. If no sample loads were Scaled during the period, the Scale data for the high valued load will be taken from the most current preceding sampling period with Scale. Sample loads lost as a result of Sierra RCD actions shall be treated as non-Scaled loads.

B6.86 Scale Reports. Sierra RCD shall provide Contractor a copy of scaling bureau record, if requested in writing.

B8.0—OTHER CONDITIONS

B8.1 Title and Liability.

B8.11 Title Passage. All right, title, and interest in and to any Included Timber shall remain in Sierra RCD until it has been cut, Scaled, removed from Contract Area or other authorized cutting area, and paid for, at which time title shall vest in Contractor. Timber cut under the terms of clause titled Product Payment Guarantee, shall be considered to be paid for. Title to any Included Timber that has been cut, scaled and paid for, but not removed from Contract Area or other authorized cutting area by Contractor on or prior to contract termination, shall remain in Sierra RCD.

B8.12 Liability for Loss. If Included Timber is destroyed or damaged by an unexpected event that significantly changes the nature of Included Timber, such as fire, wind, flood, insects, disease, or similar cause, the party holding title shall bear the timber value loss resulting from such destruction or damage; except that such losses after removal of timber from Contract Area, but before Scaling, shall be borne by Contractor at Current Contract Rates and Required Deposits. Deterioration or loss of value of salvage timber is not an unexpected event.

In the event Included Timber to which Sierra RCD holds title is destroyed, Contractor will not be obligated to remove

and pay for such timber. In the event Included Timber to which Sierra RCD holds title is damaged, Sierra RCD shall make an appraisal to determine for each species the difference between the appraised unit value of Included Timber immediately prior to the value loss and the appraised unit value of timber after the loss. Current Contract Rates in effect at the time of the value loss shall be adjusted by differences to become the redetermined rates.

There shall be no obligation for Sierra RCD to supply, or for Contractor to accept and pay for, other timber in lieu of that destroyed or damaged. This Subsection shall not be construed to relieve either party of liability for negligence.

B8.32 Modification for Catastrophe. In event of Catastrophic Damage, Sierra RCD, in consultation with Contractor, shall outline on Project Map:

(a) Any areas of catastrophe-affected live and dead timber meeting Utilization Standards and having undesignated timber so situated that it should be logged with the designated timber;

(b) If needed, any such areas where the damaged undesignated timber can reasonably be logged separately; and

(c) Areas of affected or unaffected timber that are to be eliminated from Contract Area.

Sierra RCD shall locate and post the boundaries of all such areas, as needed.

After Project Map has been outlined under this Subsection, Sierra RCD may propose contract modification to permit the harvest of catastrophe-affected timber. If Contractor accepts Sierra RCD proposed modifications, this contract shall be modified per FAR 52.212-4 and other related revisions as necessary, such as revision of Operating Schedule to ensure prompt removal of affected timber when necessary
to avoid further loss and provision for additional contract time, if needed.

B8.5 Sale of Other Materials. Sierra RCD reserves the right to sell from Contract Area during the period of this contract any materials or products not subject to its terms, but shall not permit removal, possession, or use thereof that will materially interfere with Contractor's Operations. The contractor shall not be obligated to do any work made necessary by the action of others.

B9.0—PERFORMANCE AND SETTLEMENT

B9.5 Settlement. If obligations of Contractor have not been fully discharged by Period of Performance, any money advanced or deposited hereunder shall be retained and applied toward unfulfilled obligations of Contractor without prejudice to any other rights or remedies of Sierra RCD. Such funds may be treated as cooperative deposits under B4.218 for uncompleted work 30 days after receipt of written notice from Sierra RCD to Contractor of work to be done and Contractor's failure to deny the obligation or to do the work.

B9.6 Contract Closure. Sierra RCD shall give appropriate written notice to Contractor when Contractor has complied with the terms of this contract. Contractor shall be paid refunds due from Integrated Resource Account under B4.24 and excess cooperative deposits under B4.218.

C2.11 TIMBER SUBJECT TO AGREEMENT. (9/04) In addition, there is within Contract Area an un-estimated quantity of:

Species	Product
Combined Softwoods	18 – Cull Logs

that shall be Included Timber upon written agreement.

C2.30 CUTTING UNIT BOUNDARIES. (10/20) Notwithstanding B2.3, the boundaries of cutting units, or portions of cutting units, are identified as shown on the Cutting Unit Boundary Designation Table below and the Project Map.

Cutting Units	Paint Color	Designation Method	Description
4, 8, 12, 15, 16, 17, 19	**N/A**	**Geo - Fence**	Portions of the 300 foot roadside buffer in these units will utilize virtual boundaries

Marked boundary trees shall not be cut.

Discernable Boundaries are boundary locations that are readily identifiable features on the ground in locations shown on the Project Map.

A Geo-Fence is a location on the ground corresponding to the boundary location shown on a mobile mapping device using a Global Positioning System (GPS) Receiver using the digital vector file/shapefile named KaiserEastProjects.gdb. The digital vector file/shapefile will be provided to the Contractor by the Forest Service. A digital list of the coordinates can be provided upon request.

Included Timber is located within and not past the boundary as shown on the mobile mapping device using the digital vector file/shapefile listed above. Contractor is responsible for obtaining a GPS receiver(s) that is capable of determining the location of the true Geo-Fence within the contract tolerance. Allowable contract tolerance is 30 feet for unit boundaries

Forest Service inspection of cutting Included Timber to determine if cutting is within allowable contract tolerance, shall use the digital vector file/shapefile named and dated above using a GPS Receiver with a minimum, tested accuracy in a **Light-Medium** canopy of **19 feet**.

National Technology Development Program GPS Receiver accuracy reports by GPS manufacturer and model are available at: https://www.fs.usda.gov/database/gps/mtdcrept/accuracy/index.htm. Forest Service determination of boundary location will be final.

As an operational convenience and subject to written agreement by the Forest Service, in advance of marking, Contractor may mark Geo-Fence boundaries on the ground with Contractor's non-tracer paint. Boundary trees shall not be identified with paint applied below stump height. Contractor shall bear all costs associated with painting used to visually identify boundaries. Forest Service will not approve or accept the boundaries identified on the ground by the Contractor in advance of cutting.

In case of a major disruption in GPS service, or lack of GPS coverage on the Contract Area beyond the control of the Contractor, as determined by the Sierra RCD, extension of time may be granted by Sierra RCD when requested in writing by Contractor in accordance with 52.212-4 (f) Excusable Delays. To resolve major disruption of GPS service, or lack of GPS coverage on the Contract Area, the Forest Service may elect to Mark Geo-Fence boundaries on the ground, in which case the Forest Service's determination of boundary location will be final.

C2.35 DESIGNATION OF TIMBER, CUTTING UNIT BOUNDARIES, AND SUBDIVISION/PAYMENT UNIT

BOUNDARIES (6/2012) Trees are designated for cutting under B2.35 only if designated as shown in the Timber Designation table below. The boundaries of Subdivisions/Payment Units and Cutting Units are designated as shown in the Boundary Designation table below. Trees used for boundary designation are not to be cut.

SPECIFICATIONS PURSUANT TO C2.35 DESIGNATION OF TIMBER, CUTTING UNIT BOUNDARIES, AND SUBDIVISION/PAYMENT UNIT BOUNDARIES

Timber Designation Table

Cutting Unit/ Subdivision/Area/Payment Unit	**Tree Paint Color**	**Designation or Specification**
Contract Area	Blue	**Hazard Tree**. Notwithstanding B2.32 all dead and unstable live trees which are leaning towards a road or are otherwise hazardous to a road and are sufficiently tall to reach Contractor's landings or the roadbed of National Forest System roads within Contract Area, shall be felled by Contractor. These trees may be marked in the specified paint color above and below stump height by Sierra RCD in advance of felling any other timber in the vicinity as a convenience. Pieces meeting Utilization Standards from such dead and unstable live trees shall be removed unless Contractor is notified in writing that removal would cause unacceptable damage to areas requiring special protection such as residual timber, roads, administrative sites, streamside management zones, and areas identified on Project Map or on the ground.
N/A		Individual Tree Mark. Individual trees are designated for cutting only if marked above and below stump height with the specified paint color.
N/A		Leave Tree Mark. All live trees are designated for cutting unless Marked as leave trees. Leave trees are Marked above and below stump height with the specified paint color. Project Map indicates areas plainly identified on the ground where leave trees are Marked to be left uncut.
All Units	Orange	Wildlife Trees. Notwithstanding the designation for cutting under B2.31, B2.32, B2.34, or B2.35, trees which are identified by standard Forest Service metal wildlife tree sign or painted with the specified paint color on the uphill and downhill side, shall be left uncut. In event such trees are destroyed in Contractor's Operations, Sierra RCD may designate alternate trees to be saved.
Contract Area	Black	Marked Out Tree. When it is necessary to delete previously marked trees, a unique tree marking paint color will be Marked over or adjacent to the original mark but will not obscure the original marking. Trees Marked with the original marking paint color and the unique tree marking paint color are not included Timber.
All Units		Designation by Prescription, C2.355

Subdivision/Payment Unit and Cutting Unit Boundary Designation Table

Cutting Unit	Boundary Paint Color	Boundary Designation
All units operated	Orange	Three horizontal lines facing into the units with directional dots on the sides of the boundary trees pointing between trees
Roadside Units	None	300-foot distance from shoulder of adjacent road

C2.355 Designation by Prescription – See Appendix D

C5.12 USE OF ROADS BY CONTRACTOR. (9/04) Contractor's use of existing roads identified on Project Map by the following codes is prohibited or subject to restrictive limitations, unless agreed otherwise:

Code	Use Limitations
X	Hauling prohibited
R	Hauling restricted
U	Unsuitable for hauling prior to completion of agreed reconstruction
P	Use prohibited
A	Public use restriction
W	Regulation waiver

Roads coded at A will be signed by Sierra RCD to inform the public of use restrictions. Contractor's use of roads coded R, A, or W shall be in accordance with the following restrictions:

Restricted Road List

Road Number	Road Name	Termini			Description of Restrictions
		From	To	Length	
5S080	KAISER PASS	0.00	5.60	5.60	Any loads over state legal load limit requires an overload permit. Roads may not be used for hauling prior to pre-haul maintenance. 1/ See additional restrictions in table below. Roads may not be used for hauling prior to pre-haul maintenance.
5S080	KAISER PASS	5.60	7.60	2.00	
5S080E	D&F PACK STATION	0.00	0.20	0.20	
5S080J	HIGHWAY SPUR	0.00	0.20	0.20	
5S080J	HIGHWAY SPUR	0.20	0.27	0.07	
5S080M	BADGER FLAT CG	0.00	0.20	0.20	
5S080Q	KAISER MDW SPUR	0.00	0.30	0.30	

7S032	DUCY-ERSHIM OHV RT	0.00	1.40	1.40	
7S032A	KASIER PASS OVERLOOK	0.00	0.15	0.15	
7S032ATO.16	OHV RT. SPUR A T	0.00	0.10	0.10	
7S032ATO.19	OHV RT. SPUR A T	0.00	0.10	0.10	
7S032D	DEER LAKE OVERLOOK	0.00	0.34	0.34	
7S036	BADGER GROUP CG	0.00	0.40	0.40	
7S036A	BADGER SPUR A	0.00	0.25	0.25	
8S015	MIDGE CREEK	0.00	0.26	0.26	
8S015A	DUMP	0.00	0.20	0.20	
5S080	KAISER PASS	0.00	0.07	0.07	
5S080	KAISER PASS	0.00	0.20	0.20	
8S020	HUNT. LK EASTWOOD	0.00	0.40	0.40	
8S029	WARDENS CABIN	0.00	0.45	0.45	
8S029	WARDENS CABIN	0.00	0.10	0.10	
8S031	BEAR BUTTE	0.00	0.10	0.10	
8S031	BEAR BUTTE	0.00	0.50	0.50	
8S031A	RELOCATION SPUR	0.00	0.10	0.10	
8S031B	BRUIN	0.00	0.13	0.13	
8S020	HUNT. LK EASTWOOD	0.00	0.50	0.50	
8S029	WARDENS CABIN	0.00	0.07	0.07	
8S029	WARDENS CABIN	0.00	0.08	0.08	
8S031	BEAR BUTTE	0.00	0.13	0.13	
8S031	BEAR BUTTE	0.00	0.50	0.50	
8S031A	RELOCATION SPUR	0.00	0.13	0.13	
8S031B	BRUIN	0.00	0.38	0.38	
8S031T2.27	BEAR BUTTE T1	0.00	0.15	0.15	
8S034	NORTH SHORE	0.00	0.06	0.06	
8S060	KOKANEE WORK CENTER	0.00	0.07	0.07	
8S060A	KOKANEE SPUR A	0.00	1.20	1.20	

8S060B	KOKANEE SPUR B	0.00	0.10	0.10	
8S075A	RANCHERIA TRACY	0.00	5.60	5.60	
8S075B	RANCHERIA RESORT	5.60	7.60	2.00	
8S075C	COLLEGE CG	0.00	0.20	0.20	
8S075D	LOWER DEER CREEK	0.00	0.20	0.20	
8S075DA	SUMMER SCHOOL LANE	0.20	0.27	0.07	
8S075E	WHISPERING PINES L	0.00	0.20	0.20	
8S075F	UPPER LAKESHORE	0.00	0.30	0.30	
8S075G	LOWER LAKESHORE	0.00	1.40	1.40	
8S075GA	BOAT DOCK	0.00	0.15	0.15	
8S076C	DEER CREEK WATERTANK	0.00	0.10	0.10	
8S085	SCE POWERLINE	0.00	0.10	0.10	
8S303	RANCHERIA OVERFLOW	0.00	0.34	0.34	

	Restriction
1	Speed is limited to 10 mph within Yosemite Toad Occupied Habitat. No hauling from one hour before sunset through sunrise. Watering road for dust abatement will occur as late in the morning as possible. Work will be temporarily postponed if there is a 50% or greater forecasted rain event of 0.1 inches or greater (https://www.noaa.gov) and cease for 48 hours following rain events of 0.1 inches or greater unless approved by delegated Sierra RCD representative. All roads are subject to seasonal restrictions and no hauling may occur on weekends or federal holidays

C5.35 ROAD AND WATER SUPPLY USE. (5/2008) National Forest water supply locations, access, method of filling trucks, period of water availability and procedures designed to maintain water quality at each location shall be agreed in advance of use. Such use shall at no time reduce water supplies to the level that further use may be detrimental to aquatic resources or other established use. Waterholes and other improvements relating to said water supplies shall be put into condition, prior to expected seasonal periods of precipitation or runoff, to avoid resource damage.

Damage to resources at such locations caused by Contractor's Operations, other than fire suppression activities, shall be repaired by Contractor in a timely and agreed manner to the extent practicable to restore and prevent further resource damage.

Unless otherwise agreed, Contractor’s use of roads and other water supply requirements shall conform to the following table.

SPECIFICATIONS PURSUANT TO C5.35 REQUIREMENTS OF ROAD AND WATER SUPPLY USE

Load Limitations	Contractor shall notify Sierra RCD in writing of the planned size and load distribution for equipment which exceeds the State of California Vehicle Code legal size and weight, and the National Forest System roads to be used. Such notice may be part of plan of operation under B6.311. Within 15 days after receipt of the written notice Sierra RCD shall notify Contractor in writing of any regulations or restrictions that may be needed to protect National Forest Transportation Facilities. A written permit shall be required for moving any vehicle which is in excess of the established legal size and weight which is not listed in the above plan, except as may be authorized in prior written agreements.
Existing Non-National Forest System Roads	Roads not shown on Project Map may be used as Temporary Roads if there is agreement before use is started.
Snow Removal	If Contractor removes snow from roads, such work shall be done with Sierra RCD approval and in a manner that will protect roads and adjacent resources. Snow berms shall be removed or placed to avoid accumulation of melt water on the road and prevent water concentration on erosive slopes or soils. Snow must not be removed to the road surface. A minimum **6.0** inch snow depth must be left to protect the roadway. If the road surface is damaged, Contractor shall replace lost surface material and repair structures damaged in blading operations prior to hauling, unless climatic conditions prevent necessary work from being accomplished or as otherwise agreed in writing.
	Single lane roads shall be plowed full width including turnouts. In event double lane roads are not plowed to full width, warning signs shall be required and plowing shall be no less than single lane (12 feet) with intervisible turnouts.
Water Supply Deposits	N/A
Surface Replacement Deposits	N/A

C6.311 LOG TRUCKING. (2/2005) To promote safe operations on National Forest roads and on Specified Roads, loads shall be safely secured before trucks move from the landing or loading location.

C6.36 ACCEPTANCE OF WORK.

Upon Contractor's written request and assurance that Designation by Prescription (DxP) end results has been completed in a unit in accordance with **C2.355 DESIGNATION BY PRESCRIPTION (7/22)**, the Sierra RCD shall perform an inspection within 5 days, excluding weekends and federal holidays, so as not to delay unnecessarily the progress of purchaser's operations. Such a request will be for acceptance of end results of Contractor's operations. Within 2 days of inspection, excluding weekends and Federal holidays, Sierra RCD will furnish Contractor with written notice of either of acceptance or of work remaining to be done. Sierra RCD may perform such inspections without request from Contractor. Unless otherwise agreed in writing, procedures for inspecting Contractor Cutting under C2.355 are as follows:

Inspection

The Sierra RCD shall inspect Designation by Prescription Units the contractor is actively working in or has recently completed for compliance with prescription. At a minimum, 1 plot every 5 acres will be measured to check compliance of

the following elements. For inspection of the 1st cutting unit (in each year) operated in by any operational side working for the contractor, 1 plot every 2 acres will be measured to ensure compliance.

Inspection Elements:

a) Residual basal area of trees greater than 10" DBH

b) Application of species preference, tree removal priorities, and diameter requirements listed in C2.355

c) Stump diameters to confirm no oversized trees were removed.

d) Inspection of other work items listed in section 2 of appendix A will be nested at plot center for all DxP inspection plots. See section 4 of appendix A for details on the other nested plots.

Plot Method:

a) All units will be inspected individually by the Sierra RCD.

b) The method of inspecting Contractor's cutting of Designation by Prescription by the Sierra RCD shall be done by variable radius plots for residual basal area measurement using a 20 BAF. A nested, fixed radius 1/5th acre (52.7 foot radius) plot will be used to measure other inspection elements

c) Variable radius plots shall be used to determine residual basal area of the stand to meet prescription requirements within the stand. All residual live conifers greater than or equal to 10.0" DBH will be included in these plots.

d) Plot locations will be created for each unit on a grid in GIS prior to inspection.

e) Plot centers will be designated with a pin flag at plot center and a WHITE ribbon hanging adjacent to plot center. Plot number, unit number, date, and inspectors' initials will be written on pin flag.

f) Stump diameters will be measured at 6 inches from the uphill side of the tree and outside of bark.

Plot Inspection Guidelines for all units:

1. Within variable radius plots, count, and record all "in" live conifer trees 10.0 inches or greater DBH using a 20 BAF.
   a) Residual basal area for plots located within CSO territory shall be between 160-200 ft2 per acre with up to 25% of plots in any unit may have a residual basal area of between 140 –160 or 200-220 ft2 per acre.
   b) Within units where the prescription calls for a residual basal area of 120 – 140 ft2 per acre, up to 25% of plots may have a measured basal area of 100-120 ft2 per acre or 140-160 ft2 per acre.
   c) Within units where the prescription calls for a residual basal area of 60 ft2 per acre, up to 50% of plots may have a measured basal area of 40-50 ft2 per acre or 70-80 ft2 per acre.

2. Exceptions are made for plots under the following circumstance:
   a) Adherence to diameter limits requires that residual basal area greater than the prescription describes. These plots will not be considered in the calculation for average unit basal area.
   b) Plots landing within natural openings/gaps with less residual basal area than the prescription describes or where green tree hazard trees have been identified for removal and marked in blue tracer paint. These plots will not be considered in the calculation for average unit basal area.

3. Using a fixed 1/5th acre plot, inspect and measure stumps from felled live conifers to ensure trees larger than our diameter limits were not cut. Data was collected for DBH and diameter at 6" (stump height) from large

trees of all species within the contract area. Using linear regression, the following DBH to stump relationships were calculated.

Species	Stump diameter for 30" DBH tree	Stump diameter for 40" DBH tree
WF/RF/PP/JP/LP	36”	49”
IC / SP	35”	46”

a) Trees up to 40” DBH may be cut in units or portions of units outside of a CSO territory In these units, if a WF/RF/JP/PP/LP stump larger than 49” is found, or if an IC / SP stump larger than 46” is found, the plot fails. In these units, if a WF/RF/JP/PP/LP stump larger than 36” is found, or if a IC / SP stump larger than 35” is found, the plot still may pass. Inspect cutting and residual trees adjacent to stumps in this range. The plot fails if conditions for cutting trees between 30” and 39.9” DBH as listed in C2.355# are not met.

b) Trees up to 30” DBH may be cut within CSO territory. If a WF/RF/JP/PP/LP stump larger than 36” is found, or if an IC / SP stump larger than 35” is found, the plot fails.

c) Exceptions are made for stumps that have a butt mark of blue paint. This indicates the tree was a hazard tree. If the stump is within 200’ of a road, determine if the tree was live or dead. Exceptions are made for dead trees within 200’ of a road.

d) Note any plots where a WF/RF/JP/PP/LP stump larger than 36” is found or where an IC / SP stump larger than 35” is found and report to the COR. Although the plot may still pass based on the above conditions, data for large trees must be collected for regulatory compliance.

4. Using a fixed 1/5th acre plot, inspect tree removal priorities, residual trees, and desired stand conditions.

   a) Multi-layer canopy- Use the below questions to answer if the plot passes or fails. A fail of one of the below will mean a fail of multi-layer canopy.
      i. Were ladder fuels left adjacent to a large pine ? If yes, then this the plot is a fail, if no then it is pass. Ladder fuels will be defined as any conifer touching a pine bole or crown and within the drip of its branches.
      ii. Is a shade tolerant species overtopping pine? If there are any IC/RF/WF overtopping any pine species DBH greater than 5” DBH, than the plot will fail inspection. If this is not present, then it is a pass.

   b) Retention of a healthy vigorous stand. - Use the questions below to answer if the plot passes or fails.
      i. Are trees with disease retained with the plot? If yes look to see if the disease is persistent within the entire stand and if cutting it out would result in a basal area being below desired thresholds. If this is the case, mark yes, but do not fail this section. If one or more diseased tree remains, and its removal is within all acceptable cutting criteria (acceptable DBH, BA range would still be appropriate) then this will result in a fail plot. If one or more diseased tree remains, and its removal would cause the fail (DBH greater than 30” or 40”, BA would be to low), the plot still passes
      ii. Are damaged tree within the plot? If there is recent damage (truck or basal scar, broken top, ect) in retention trees within the plot then this will result in a fail.

5. Plots may be completed as logging progresses in any unit, along with walk-through inspections.
6. Visual walk-thru inspections will also be utilized but will not determine pass or fail.

7. In order for a unit to pass inspection, 90% or more of the plots must pass.

CONTRACTOR QUALITY CONTROL PLAN

The Contractor shall conduct inspections on all units in accordance with his/her Quality Control Plan (QCP). The Contractor's Quality Control Plan shall be submitted and accepted by the Sierra RCD prior to any work starting. SRCD inspections are for the purpose of satisfying the SRCD that the services are acceptable and do not relieve the Contractor of responsibility for maintaining quality control.

If inspection results show unsatisfactory compliance with the requirements of C2.355, Contractor will be allowed 5 working days to correct unsatisfactory work, unless otherwise agreed in writing. Failure to provide a satisfactory remedy may result in the issuance of a notice of noncompliance or cure notice.

C6.41 FELLING, BUCKING, AND LIMBING. (8/2007) Unless otherwise agreed in writing, Contractor's felling, bucking, and limbing operations shall be conducted as specified in the table below.

SPECIFICATIONS AND TREATMENTS PURSUANT TO C6.41 FELLING, BUCKING AND LIMBING

Treatment Method	Felling, Bucking and Limbing Specifications
No Lop "No Lop"	Within units or subdivisions designated NO LOP on Project Map, trees shall be skidded/yarded to agreed landing locations prior to lopping.
Whole Tree Yarding "Whole"	Notwithstanding the requirements above, within units or subdivisions designated "Whole" on Project Map, trees smaller than 22 inches DBH shall be skidded/yarded to agreed landing locations prior to limbing, bucking, and lopping. Trees larger than or equal to 22 inches DBH shall be bucked into two or more pieces with the butt portion being no longer than 41 feet prior to skidding/yarding. The butt log shall not be limbed prior to skidding/yarding.
Directional Felling	Within areas designated DF on Project Map, Included Timber shall be directionally felled away from meadows, roads, stumps flagged and protected as identified in section 8 of the BPA call, springs and seeps, section corners, stream courses, water drafting sites, communications equipment, trailhead improvements, fences, corrals, hiking trails, and campground related infrastructure including but not limited to fire rings, picnic tables, outhouses, trash cans, and campground related signage with the use of specialized equipment. Such directional felling shall not be required when in the faller's judgment it is unsafe to do so, and shall be left standing.
Treatment of Stumps	Within areas shown on Project Map, Contractor shall treat stumps of live conifer trees as described below. Treatment shall be with a borate compound registered by EPA in the State of California for prevention of annosus root disease. Utilize Borate stump treatment on tree stumps from green trees and recent (<18 months) mortality, outside of mechanical equipment exclusion zones (EEZs) and in the following areas: • All stumps from live hazard trees greater than 3" diameter within 300 feet of road (60 ft^2 basal area retention areas).

	Treatment shall consist of removal of sawdust and other loose debris from the cut surface of the stump and application of a thin layer of the borate compound uniformly over the entire cut surface, including exposed wood surfaces on the stump sides, at the rate specified on the product label. Any surface irregularities on the stump preventing application of a uniform layer of borate compound shall be cut level prior to treatment. Unless waived in writing, Contractor shall also apply an approved colorant mixed with the borax to insure complete coverage. Treatment should be done as soon as possible but shall be completed no later than 6 hours after felling, otherwise stumps shall be re-cut and treated. Contractor shall not apply borate compound during heavy rain fall or when such precipitation rate is predicted within 24 hours of application. Treatment shall consist of removal of sawdust and other loose debris from the cut surface of the stump and application of a thin layer of the borate compound uniformly over the entire cut surface, including exposed wood surfaces on the stump sides, at the rate specified on the product label. Any surface irregularities on the stump preventing application of a uniform layer of borate compound shall be cut level prior to treatment. Unless waived in writing, Contractor shall also apply an approved colorant mixed with the borax to insure complete coverage. Treatment should be done as soon as possible but shall be completed no later than **6** hours after felling, otherwise stumps shall be re-cut and treated. Contractor shall not apply borate compound during heavy rain fall or when a precipitation rate of greater than ¼ inch predicted within **24** hours of application to cause borate compound to be flushed off the stump and become ineffective, in that case treatment shall be reapplied. Application shall be completed within 24 hours of the precipitation having ceased. Borate compound also shall not be applied to stumps located within **10.0** feet of live stream courses and meadows/wetlands shown on Project Map and/or **5.0** feet of sensitive plant location boundaries as flagged on the ground. Contractor shall provide the borate compound and colorant and apply it in compliance with the State of California laws and regulations pertaining to pesticides and pest control operations. Borate compound storage shall be located such that any spillage will not contaminate water. All spills shall be promptly cleaned up and spilled material disposed of according to the product label. All spills occurring in water or over 1.0 pounds shall be reported to Sierra RCD within 6 hours. Contractor shall submit at the end of each month a “Monthly Summary of Pesticide Use Reports” to the appropriate County Agricultural Commissioner with a copy to the District Ranger.

C6.42 GROUND BASED SKIDDING. (12/2006) Unless otherwise agreed in writing, the method of skidding Included Timber shall be as shown on the Project Map, by areas, with symbols defined in the following table:

Ground-Based Skidding Table - C6.42

Map Symbol	Requirements
TRAC	Skid road pattern shall be agreed in advance of felling and main skid roads shall be flagged on the ground in advance of felling. Contractor shall stage-log by felling and skidding Included Timber in two or more separate operations when necessary to prevent undue damage to the resources or residual stand. Needed tractor trails shall be constructed in advance of skidding. Products shall be end-lined as needed to protect resources or residual timber from unnecessary damage. The number of chokers shall be limited as necessary to avoid unnecessary damage to resources or residual timber. By agreement, tractors may be used to separate products to prevent stain.
SUSP	Products shall be skidded with leading end clear of ground.
SPACE	Skid roads will average 120 feet from center to center, except where converging.
ENDL	Endlining shall not be required for distances in excess of **150** feet uphill, and **150** feet downhill.
MH	Contractor shall cut Included Timber and move it to designated skid trails using equipment with a boom having an operating radius of at least **25** feet for bunching trees, capable of severing, lowering, and placing trees up to **22** inches diameter at stump height on the ground prior to skidding. Such equipment must be capable of operating on slopes up to **35** %. Notwithstanding above, hand felling using chainsaws may be required in or adjacent to sensitive areas to protect resources from unnecessary damage. Trees which exceed capability of specified equipment may be felled, bucked and skidded in a manner consistent with the requirements of B6.41 - Felling and Bucking, C6.41# - Felling, Bucking, and Limbing Requirements and the above "TRAC", "SUSP", "SPACE", "ENDL", and requirements.

C6.5 Streamcourse Protection. (2/2005) Unless otherwise agreed in writing, wheel or track laying equipment shall not operate within "Buffer Strips" except as necessary for fire suppression activities. "Buffer Strips" are areas marked on the ground or are within the distances identified on the Project Map measured from the apparent high-water mark of streamcourses. Boundaries of Buffer Strips may be modified by agreement in writing to meet unforeseen operating conditions.

Culverts, bridges, or other suitable structures shall be required on skid roads and trails only at points where it is necessary to protect Stream courses. The type of crossing structures, method of installation and removal shall be determined by agreement. Contractor in accordance with C6.6# - Erosion Prevention and Control, shall remove such structures and associated fills.

Damage to Stream course or Buffer Strips caused by unauthorized Contractor's Operations shall be repaired by Contractor in a timely and agreed manner to the extent practical as determined by Forest Service to restore and prevent further damage to Stream courses.

C6.6# - EROSION PREVENTION AND CONTROL. (5/2008) Erosion prevention and control work, including Stream course protection and B6.6 shall be completed within 15 calendar days after skidding operations related to each landing are substantially completed or after Sierra RCD designation on the ground of work where such designation is required hereunder. Said time limit shall be exclusive of full days lost in Contractor's Operations due to causes beyond Contractor's control. Such on the ground designation shall be done as promptly as feasible unless it is agreed that the location of such work can be established without marking on the ground. After September 15 and as long thereafter as operations continue, the work shall be done as promptly as practicable. Damage resulting from Contractor's Operations due to failure

to perform required work shall be repaired by Contractor.

Notwithstanding other provisions in this contract and unless otherwise agreed in writing, any hay, straw, or mulch used in this contract shall be State of California certified weed free.

Additional erosion control requirements of this contract are listed in the following table.

SPECIFICATIONS PURSUANT TO C6.6 EROSION PREVENTION AND CONTROL.

Special Erosion Prevention Measures Contractor shall give adequate treatment by spreading slash or wood chips or by agreement giving other treatment to portion of tractor roads, skid trails, landings, cable yarding corridors, tractor-end lined corridors and Temporary Road fills where necessary to supplement other erosion prevention measures required elsewhere in this contract. In no event shall Purchaser be required to treat more acres than that shown in the legend of Project Map. The specific locations to be treated shall be designated on the ground by Sierra RCD. These special erosion prevention measures are to be done within the same date and time periods as stated above.

Soil Scarification. In addition to meeting the requirements of B6.63 and B6.64, Contractor shall scarify the following areas; unless otherwise agreed:

a) Traveled Way of National Forest System roads used by Contractor.

b) Roadbeds of any Temporary Roads used for log hauling by Contractor.

c) Landings or portions thereof located outside Roadbed limits of National Forest System roads not designated for scarification.

Scarification shall be to a depth of 6 inches, with intervals between striations not to exceed l2 inches, unless otherwise agreed.

Backblading Within recreation development sites and public use areas designated on Project Map, Purchaser shall, at Sierra RCD request, backblade skid trails in lieu of cross ditching.

C6.7# - SLASH TREATMENT. (12/2006) Contractor shall pile, scatter, yard, construct firelines or otherwise treat slash defined in specifications below, within designated areas. Work required of Contractor shall be in accordance with the following slash plan and specifications, and the Project Map.

All vegetative debris associated with construction of Specified Roads such as unutilized timber, brush and grubbed stumps is Construction Slash. Measures to be taken by Contractor for treatment of Construction Slash are set forth in the attached road construction specifications and in the attached slash treatment specifications.

Vegetative debris larger than 1 inch in diameter outside bark and 3 feet long resulting from Contractor's Operations, other than Construction Slash, is Logging Slash. Measures to be taken by Contractor for treatment of Logging Slash are set forth below unless otherwise agreed in writing.

Sierra RCD and Contractor shall jointly develop a schedule for completion of slash treatment on the various portions of Project Area prior to Contractor's Operations.

Removing may be substituted for treatment of any other specified method. By agreement in writing, certain slash may be left for fuelwood. When the specified treatment is by a combination of methods, Logging Slash not treated by one of the methods and shall be treated by the other(s).

See the slash treatment specification table below.

SPECIFICATIONS PURSUANT TO C6.7 SLASH TREATMENT (*12/2006)*

Slash Treatment Methods

Method and Symbol		**Definition**
Deck	"Decking" large material	Logging Slash ***16*** inches or larger in large end d.o.b. and 12 feet or more in length shall be Decked for disposal by Forest Service by piling pieces parallel to each other.
Mach	Machine Piling	Concentrations of Logging Slash, excluding scattered individual pieces, shall be Machine Piled by tractor equipped with brush rake for disposal by Sierra RCD.
Fell	"Damaged Small Trees"	Unless treated under other provisions, all trees smaller than the minimum DBH in A2, over 5 feet in height, and damaged beyond recovery by Contractor's Operations shall be felled. Such trees shall be limbed to a stem diameter outside bark of approximately 3 inches, at which point the top shall be cut from the remainder of the stem, and shall be bucked into lengths not exceeding 20 feet.

PILING SPECIFICATIONS.

1. All piles shall be reasonably compact and free of soil to facilitate burning and shall be constructed of such size and at such distance from trees so that burning shall not result in unnecessary damage to residual timber.
2. The Contractor shall clear and pile at least 90 percent of all slash exceeding 3 feet in length and 3 inches in diameter and shall pile all dead and live vegetation specified for treatment. Materials less than 3 inches in diameter and less than 3 feet in length may be left to help retain required ground cover.
3. Maximum width of tractor, with brush rake attached, shall not exceed **144** inches.
4. An excavator is the preferred piling equipment. Equipment equipped with a bucket and thumb or brush grapple is acceptable. Operations shall retain approximately 50 percent soil, duff, and fine-material ground cover, provided that retained material does not impede planting or create a fuel hazard. If slash cover exceeds 50 percent, the Contractor shall pile smaller fuels as needed to meet this requirement.
5. Slash and vegetation may remain where removal would damage leave trees. Leave trees and vegetation not specified for treatment shall remain undisturbed.
6. Machine Piling is not required on areas where use of tractors would cause damage to residual timber or where slopes exceed **35** percent.
7. Piles shall be located at a distance of at least twice their height from the outer edge of tree crowns or snags.
8. Piles shall be no less than four feet in height or greater than **25** feet in height.
9. Material overhanging or extending beyond the pile edge by more than 6 feet shall be cut off and placed within the pile.
10. An eight-foot fuelbreak shall be cleared of all but fine material around each Machine Pile, and an 18-inch wide fireline shall be cleared to mineral soil around the outer ring of the fuelbreak.
11. For hand piles, Contractor shall construct a fireline cleared to mineral soil and at least 3 feet wide around each pile.
12. In areas where there is a potential for burning material to roll, firelines, including those for Machine Piles, shall be trenched on the downhill side of each pile to adequately prevent material from crossing firelines.
13. Trenches shall be constructed by hand unless otherwise agreed.

LOCATION OF PILES.

1. No piling within meadows, streams, within riparian vegetation.

2. Piles will be kept at least 50 feet away from all streams, meadows, springs, seeps, and other sensitive aquatic areas. Greater distances may be required in known occupied Yosemite Toad (YOTO) habitats as determined by project COR.
3. If piles are within 4101 feet (1250 meters) of suitable YOTO meadows or in suitable upland habitat, avoid piling in open dry areas with lupine unless the area has been surveyed and approved by COR.
4. Where piling occurs within known occupied habitats of the YOTO, coordinate implementation with delegated Sierra RCD personnel. In known YOTO occupied habitat, piles shall be constructed at least 20 feet from old stumps (for protection of summer and overwintering YOTO habitats). High-quality cover and burrows will be flagged for avoidance prior to project implementation.
5. Piles cannot be made on top of rock or outcroppings.
6. Piles or any portion thereof shall be located at least 15 feet from the nearest residual or leave tree greater than 10 inches DBH, Control Areas (CA), unit boundaries, or other protected improvements, and at least 30 feet from the nearest residual snag. The 50-foot minimum buffers specified above for streams, meadows, springs, seeps, and other sensitive aquatic areas remain controlling.
7. Piles or any portion thereof shall be located at least 25 feet from all roads and trails.
8. Where feasible, burn piles would be located where they would not be visually evident to the casual forest visitor from a road or trail (e.g., behind vegetation or landform for screening).
9. There may be areas where pile placement is difficult because of the remaining trees. The contractor may have to push/carry the material a reasonable distance to a suitable pile location. A suitable location is one where the pile may be burned without damaging residual trees.
10. In lieu of piling all material in a unit, the contractor may choose to skid this material to a landing and pile it in the landing pile if the landing size as large enough to do so.

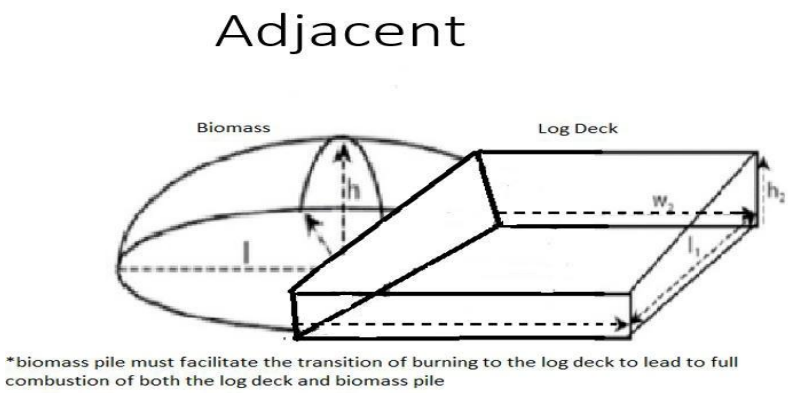
CONSTRUCTION AND SIZE OF PILES

1. Piles shall be constructed in a manner which provides for rapid ignition and complete consumption of all piled material.
2. Piles shall be constructed in haystack like fashion. See **Exhibit B.**
3. The length of each pile shall be approximately equal to its width, and the height shall be at least one-half of its diameter. Piles shall be constructed in a compact beehive, dome, or haystack shape appropriate to the available opening.
4. The size of the pile shall be adjusted to the size of the opening. If the opening is large the pile may be large, if the opening is small the pile size must be adjusted. The size of the surrounding trees also is a consideration for the pile size. If the trees are large and the limbs are farther from the ground the pile may be larger but if the surrounding trees are smaller with the crown near the pile the pile must be smaller. More space is required above (uphill) the pile than below. The piles should be worked from all sides.
5. Piles shall be compact and at least 90 percent free of soil. Piles containing excessive soil, as determined by the Contract Administrator or COR, shall be broken apart, re-piled, and the soil dispersed over the surrounding area.
6. Materials overhanging the pile edge by more than 6 feet (2 meters) shall be cut off and placed within the pile.
7. Piles shall be a mixture of all fuel size classes. A relatively even combination of logs and slash is preferred.
8. All materials partially pushed over, hung up, left in an unsafe position, shall be either reworked with the tractor or felled by hand.
9. It is preferred that the machine piles will be created using a skid steer loader, excavator or other similar equipment, with a log bucker present to buck cull logs into manageable pieces. Dozer piling is the least preferred method.
10. When grapple piling is used, the same requirements as for tractor piles apply. The operator shall maximize use of the boom, minimize the area tracked by the machine, and work each pile from all sides. Piles shall not connect to unpiled material, non-work areas, snag patches, or streamside zones.
11. Where machine or grapple piling is not permitted, hand piling shall be performed. All felled material below 15 inches DBH shall be bucked into manageable lengths and piled. Bucked live material averaging less than 15 inches DBH shall be

incorporated into piles.

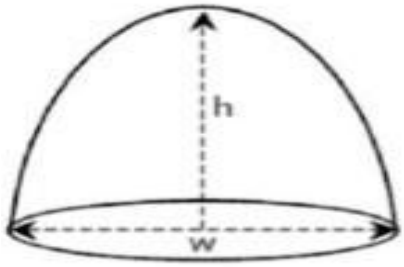
12. Soil disturbance caused by operations that may result in erosion shall be cross-raked on the contour. Existing water bars shall remain intact; damaged water bars and other erosion-control structures shall be restored at no additional cost and maintained in working condition before forecast precipitation.
13. Firelines shall avoid damage to leave trees, follow the provided GPS alignment as closely as practicable, and be cleared to mineral soil. Water bars shall be installed as needed before rain events. Roads and natural barriers may be incorporated where appropriate. Work in a unit is not complete until required fireline construction is complete.
14. Mechanical piling equipment shall not operate in portions of units that are greater than 35% slope. Piles shall be constructed by hand if piles need to be constructed in these areas of treatment units.
15. Slash shall be cut to lengths permitting safe piling and burning without damage to residual trees or vegetation. Longer material may be piled where no standing live trees or protected vegetation could be damaged. Log-like material shall be secured to minimize rolling during construction and burning.

Exhibit A - Decked material with landing pile adjacent to the deck.



*biomass pile must facilitate the transition of burning to the log deck to lead to full combustion of both the log deck and biomass pile

Exhibit B - Piles will have the following appearance and shape.



LANDINGS AND DISPOSAL SITES. Unutilized logs accumulated at landings and disposal sites shall be decked by Contractor for disposal by others. The maximum height of decks is shown in the following table. Other slash accumulated at landings and disposal sites shall be kept separate from unutilized logs and treated by the method shown in the following table.

		SLASH TREATMENT	
	Subdivision or Unit No.	***Specified Method***	***Maximum Height of Decks***
Landings	***All Units***	***MACH, DECK***	**By agreement with delegated Sierra RCD Personnel**
Disposal Sites			

TREATMENT ALONG PERMANENT ROADS Permanent roads that require roadside slash treatment are listed in the attached table and shown on Project Map. All Logging and Construction Slash within Required Disposal Strips shall be treated by Contractor. "Required Disposal Strips" are those areas adjacent to permanent roads where slash treatment is required for resource objectives. The width of Required Disposal Strips is shown in the attached table and is measured in slope distance from Roadbed edges of permanent roads. By agreement the location of Required Disposal Strips may be adjusted from side to side without materially changing the total work required.

Slash treatment in Required Disposal Strips shall be accomplished without affecting the proper functioning of channels leading to and from drainage structures.

Logging Slash larger than treatment size requirements of the specified method shall either be Scattered outside Required Disposal Strip, within Required Disposal Strip or Decked at agreed locations as shown in the attached table.

			SLASH TREATMENT	
Road No.	***Subdivision and/ or Unit No. or Road Junctions (From To)***	***Width of Required Disposal Strip***	***Specified Method***	***Slash Larger Than Treatment Size Requirements of Specified Method***
NA	NA	NA	NA	NA

TREATMENT ALONG TEMPORARY ROADS. All trees felled or pushed over and trees damaged beyond recovery by Temporary Road construction shall be felled, limbed to a stem d.o.b. of approximately 3 inches, at which point the top shall be cut from the remainder of the stem, and stem shall be bucked into lengths not exceeding **20** feet. Such slash shall be Scattered free of soil to reduce concentrations unless treatment is required by another specified method.

C6.815 – WEIGHT SCALE MEASUREMENT AND REPORTING. Notwithstanding the Scaling requirements under B6.81, all designated material identified in Division A10 shall be measured by weight using a certified commercial or public vehicle scale approved by Sierra Resource Conservation District (Sierra RCD).
Contractor shall bear all costs associated with weighing. Each load shall be weighed to determine gross, tare, and net weight, and shall be accompanied by a legible scale ticket identifying, at a minimum, the contract or project name, date and time, truck or trailer identification, material type, source unit, destination, gross weight, tare weight, and net weight. Contractor shall maintain complete weight records and submit copies of all scale tickets, together with a summary of loads and total net weight, to Sierra RCD on a biweekly basis. Sierra RCD may reject incomplete, illegible, altered, or otherwise unverifiable scale tickets. Material supported by rejected or missing scale tickets will not be accepted for payment or credited toward contract requirements unless Sierra RCD approves an alternative means of verification in writing.
If the approved scale becomes unavailable, hauling operations shall be suspended until Contractor and Sierra RCD agree in

writing to an alternate certified scale or other acceptable measurement procedure. Any change in the weighing or reporting method must be authorized in writing before hauling resumes.

C6.817 (Option 2) Load Count Services. (7/2022)

Stumpage payments shall be based on 25 tons per load of sawtimber products, and 20 tons per load of biomass that leaves the Contract Area unless otherwise agreed to in writing. Volume for each payment period shall be calculated by multiplying the number of loads delivered to load count locations by the specified volume and unit of measure listed above.
Special Load Count Product Removal Permits will be issued for load count product loads. Product Removal Permits shall be completed by an assigned individual on the landing following the instructions on the inside cover of the product removal book. The truck driver shall sign for the load. For van loads the Product Removal Permit will be stapled to a piece of wood or similar material attached to the lower front of the van on the driver's side. For log truck loads, the Product Removal Permit will be stapled to the driver's side bunk log of the trailer portion of the load. If a loaded truck is staged on the Contract Area or any other approved location, the driver, prior to moving the load, shall record the removal date, and sign on the outside of the attached ticket as instructed on the inside cover of the Product Removal Permit Book, section II.A.5. Truck drivers are responsible for ensuring the Product Removal Permit.

C8.66 USE OF TIMBER (Option 1). (9/04) This contract is subject to the Forest Resources Conservation and Shortage Relief Act of 1990, as amended (16 USC 620, *et seq.*).

(a) Except for **NONE** determined pursuant to public hearing to be surplus, unprocessed Included Timber shall not be exported from the United States nor used in direct or indirect substitution for unprocessed timber exported from private lands by Contractor or any person as defined in the Act (16 USC 620e).
(b) Timber in the following form will be considered unprocessed:

(i) Trees or portions of trees or other roundwood not processed to standards and specifications suitable for end product use.

(ii) Lumber, construction timbers, or cants intended for remanufacturing not meeting standards defined in the Act (16 USC 620e); and

(iii) Aspen or other pulpwood bolts exceeding 100 inches in length.

(c) Unless otherwise agreed in writing, unprocessed Included Timber shall be delivered to a domestic processing facility and shall not be mixed with logs intended for export. Prior to award, during the life of this contract, and for a period of 3 years from Termination Date, Contractor shall furnish to Sierra RCD, upon request, records showing the volume and geographic origin of unprocessed timber from private lands exported or sold for export by Contractor or affiliates.

(d) Prior to delivering unprocessed Included Timber to another party, Contractor shall require each buyer, exchangee, or recipient to execute an acceptable agreement that will:

(i) Identify the Federal origin of the timber.

(ii) Specify domestic processing for the timber involved.

(iii) Require the execution of such agreements between the parties to any subsequent transactions involving the timber.

(iv) Require that all hammer brands and/or yellow paint must remain on logs until they are either legally

exported or domestically processed, whichever is applicable; and

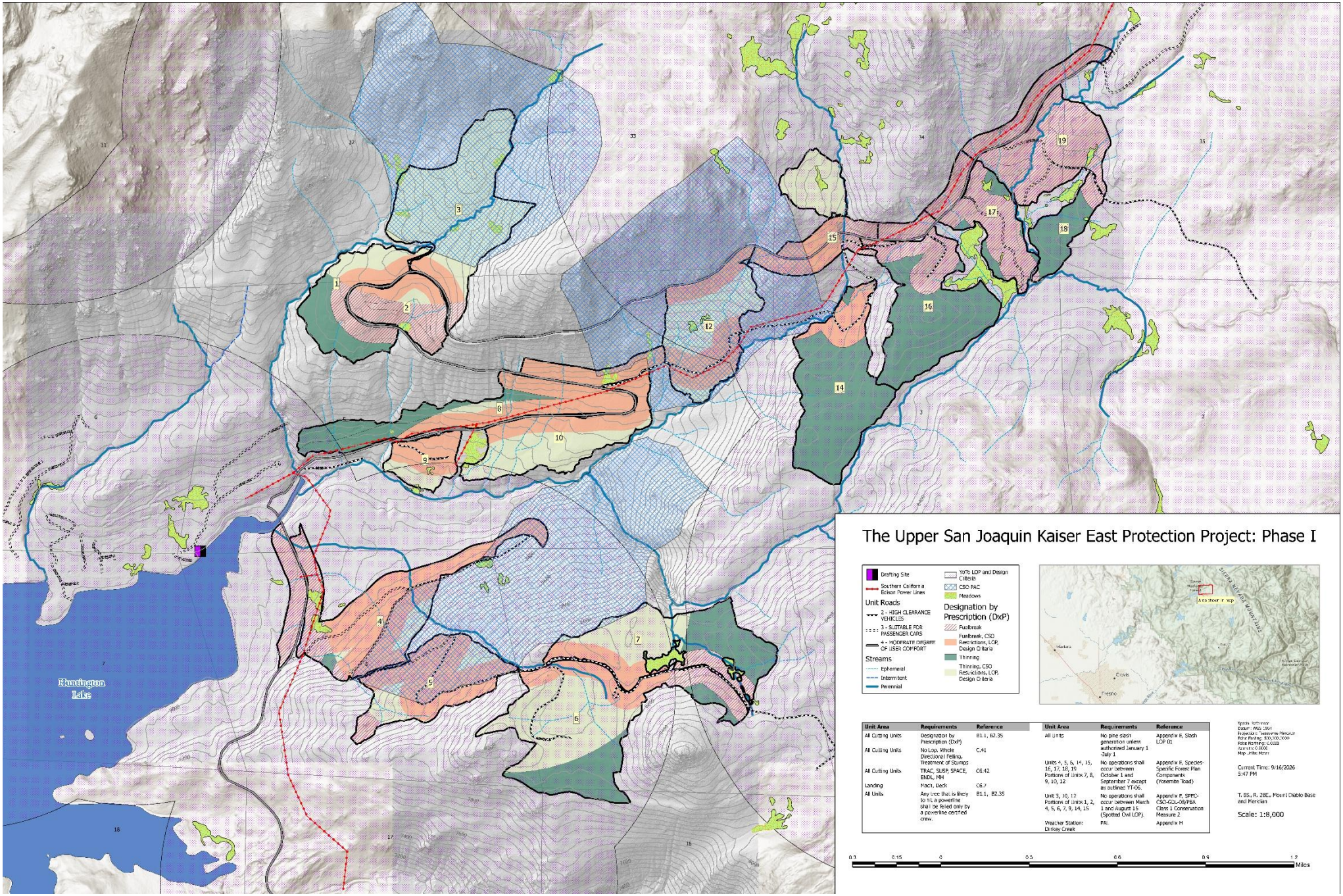
(v) Otherwise comply with the requirements of the Act (16 USC 620d).

(e) No later than 10 days after the execution of any such agreement between Contractor and another party, Contractor shall furnish to Sierra RCD a copy of each such agreement. Contractor shall retain, for 3 years, from Termination Date, the records of all sales, exchanges, or dispositions of all Included Timber.

(f) Upon request, all records dealing with origin and disposition of Included Timber shall be made available to Sierra RCD.

(g) For breach of this Subsection, Sierra RCD may terminate this contract and take such other action as may be provided by statute or regulation, including the imposition of penalties. When terminated by Sierra RCD under this Subsection, Sierra RCD will not be liable for any Claim submitted by Contractor relating to the termination.

APPENDIX C: PROJECT MAP



APPENDIX D: DESIGNATION BY PRESCRIPTION

Within Subdivision(s) or cutting unit(s) **listed below**, as shown on Project Map, the following criteria describing the desired end results shall be used by Contractor to designate trees and other products for cutting and removal that meet Utilization Standards:

The Contractor is not required to mark cut or leave trees meeting the criteria in (a) in advance of felling. As an operational convenience and upon approval of the Sierra RCD, may mark leave trees and/or cut trees Contractor identifies in criteria (a). Leave trees may be marked with Contractor 's non-tracer **orange** paint. Cut trees may be marked with Contractor's non-tracer **blue** paint. Cut trees shall not be marked with paint applied below stump height. Contractor shall bear all costs associated with such marking.

Sierra RCD will not approve or accept Contractor's tree marking in advance of cutting.

Unit / Location	Description of Treatments
All Units	General species retention prioritization is: 1. Sugar pine free of blister rust (SP), 2. Western White pine free of blister rust (WWP) 3. Jeffery Pine (JP), 4. Juniper (JUC) 5. Red Fir (RF), 6. White Fir (WF) 7. Lodgepole Pine (LP) 8. Western White Pine with Blister Rust (WWPB) 9. Sugar Pine with Blister Rust (SPB). Tree removal priorities are: 1. WF, IC, RF, WWPB, and SPB that overtop healthy SP, WWP, or JP. This is regardless of the size of the pine. 2. Suppressed or intermediate conifers (while applying species preference) 3. Diseased or damaged trees less than 30" DBH within CSO territory. 4. Diseased or damaged trees less than 40" DBH outside of CSO territory. 5. Trees that are causing a fuel ladder to larger trees greater than 30" DBH 6. Thin additional trees to achieve the basal areas and spacing guidelines discussed below. Residual trees left after thinning should not: • overtop a healthy pine • be a fuel ladder to a pine • be diseased or damaged • be suppressed Pine clumps are defined as at least 4 pine trees (excluding Lodgepole Pine) greater than 10" DBH within a 1/5-acre area (52.7-foot radius). Fir clumps are defined as at least 5 fir and or incense cedar trees greater than 10" DBH within a 1/5-acre area (52.7-foot radius).

	Cut, all dead and dying trees hazard trees that jeopardize public safety up to 200 feet from specified roadways that threaten roadways, landings, and infrastructure. Skid and deck all trees that meet utilization guidelines. Work is restricted within 10 feet of any powerline. Any tree that is likely to hit a powerline shall be felled only by a powerline certified crew. Within Riparian Equipment Exclusion Zones (EEZs), thin from below following species preference to a residual basal area as close to 200 as operationally feasible. Desired conditions in residual stands: • A multi-layered canopy • A live crown ratio >35% • Healthy SP, WWP, or JP greater than 5" DBH not overtopped by WF, RF, WWPB, or SPB.
Thinning Units	<u>Unless marked with blue tracer paint, retain all:</u> • Live conifer trees ≥40" DBH • Live hardwood trees ≥12" DBH Units should be thinned according to the species preference and the tree removal priorities list to a residual basal area of 100-180. Clumps of pine should be thinned to 80-100 residual basal area. Fir clumps with no pine present should be thinned to a basal area of 120 to 140 ft^2 /acre. When not in a defined "clump", thin to a residual basal area of 140-180 ft^2 /acre. Maps detailing the location and extent of these prescriptive areas are provided in Appendix C of the bid packet and georeferenced pdfs will be provided to the selected contractor for use on mobile mapping applications. Removal of trees between 30" and 39.9" DBH should be implemented on a case-by-case basis using the following criteria: 1) The removal of trees within this size class is required to reduce basal area to 140 ft^2 per acre. 2) The removal of a tree within this size class will help promote the growth of even larger shade-intolerant trees (PP, JP, SP) nearby to meet tree species composition and forest structure restoration goals. 3) Tree removal promotes the establishment, growth, and development of shade-intolerant species (PP, JP, SP) through the creation of small gaps (>0.5 acre) in portions of stands dominated by shade-intolerant species (WF, RF). 4) To improve the growth and vigor of healthy, cone bearing sugar pine trees that do not have blister rust greater than 16 inches in diameter by reducing competition from surrounding trees.
Fuelbreak	Within project areas that are within 300 feet of the roads specified below, thin to a residual basal area of 60 ft^2 / acre. • Fresno Huntington Highway (eastside of road) • Bear Butte Rd

	• Relocation Spur (northside of the road) • Huntington Lake Road • Rancheria Tract • Kaiser Pass Road • Warden's Cabin • S.C.E. Powerline • D&F Pack Station • Badger Flat Campground Rd • Badger Group Campground • Badger Spur Rd • Highway Spur Maps detailing the location and extent of these prescriptive areas are provided in Appendix C of the bid packet and georeferenced pdfs will be provided to the selected contractor for use on mobile mapping applications. Removal of trees between 30" and 39.9" DBH should be implemented on a case-by-case basis using the following criteria: 5) The removal of trees within this size class is required to reduce basal area to 140 ft^2 per acre. 6) The removal of a tree within this size class will help promote the growth of even larger shade-intolerant trees (PP, JP, SP) nearby to meet tree species composition and forest structure restoration goals. 7) Tree removal promotes the establishment, growth, and development of shade-intolerant species (PP, JP, SP) through the creation of small gaps (>0.5 acre) in portions of stands dominated by shade-intolerant species (WF, RF). 8) To improve the growth and vigor of healthy, cone bearing sugar pine trees that do not have blister rust greater than 16 inches in diameter by reducing competition from surrounding trees.
Thinning, CSO Restrictions	<u>Unless marked with blue tracer paint, retain all:</u> • Live conifer trees ≥30" DBH and greater • Live hardwood trees ≥12" DBH Units should be thinned according to the species preference and the tree removal priorities list to a residual basal area of 120-200. Clumps of pine should be thinned to 120-140 residual basal area. Fir clumps with no pine present should be thinned to a 160 -180 square foot per acre basal area. When not in a defined "clump", thin to a residual basal area of 160-200 square feet per acre. A georeferenced PDF map will be provided to the purchaser detailing the extent of CSO territory areas. Where possible, retain clumps of trees greater than 24 inches diameter at breast height with canopy cover greater than 60 percent.
Fuelbreak, CSO Restrictions	<u>Unless marked with blue tracer paint, retain all:</u> • Live conifer trees ≥30" DBH and greater • Live hardwood trees ≥12" DBH Within project areas that are within 300 feet of the roads specified below, thin to a residual basal area of 60

	ft^2 / acre. • Fresno Huntington Highway (eastside of road) • Bear Butte Rd • Relocation Spur (northside of the road) • Huntington Lake Road • Rancheria Tract • Kaiser Pass Road • Warden's Cabin • S.C.E. Powerline • D&F Pack Station • Badger Flat Campground Rd • Badger Group Campground • Badger Spur Rd • Highway Spur Where possible, retain clumps of trees greater than 24 inches diameter at breast height with canopy cover greater than 60 percent.

Marked boundary trees shall not be cut.

Discernable Boundaries are boundary locations that are readily identifiable features on the ground in locations shown on the Project Map.

Operators shall receive a digital file (geo-fence) displaying prescription area boundaries and are required to implement the DxP based on these digital boundaries. A geo-fence is a location on the ground corresponding to the boundary location shown on a mobile mapping device or application such as Avenza, Field Maps or equivalent using a Global Positioning System (GPS) Receiver displaying a digital vector file/shapefile named KaiserEastProjects.gdb and dated 09/15/2026. The digital vector file/shapefile will be provided to the Contractor by Sierra RCD. A digital list of the coordinates can be provided upon request.

Included Timber is located within and not past the boundary as shown on the mobile mapping device using the digital vector file/shapefile listed above. Contractor is responsible for obtaining a GPS receiver(s) that is capable of determining the location of the true Geo-Fence within the contract tolerance. Allowable contract tolerance is 30 feet for unit boundaries.

Sierra RCD and Forest Service inspection of cutting Included Timber to determine if cutting is within allowable contract tolerance, shall use the digital vector file/shapefile named and dated above using a GPS Receiver with a minimum, tested accuracy in a **Light-Medium** canopy of **19** feet.

National Technology Development Program GPS Receiver accuracy reports by GPS manufacturer and model are available at: https://www.fs.usda.gov/database/gps/mtdcrept/accuracy/index.htm. The Sierra RCDs determination of boundary location will be final.

As an operational convenience and subject to written agreement by Sierra RCD and the Forest Service, in advance of marking, Contractor may mark Geo-Fence boundaries on the ground with Contractor's non-tracer paint. Boundary trees shall not be identified with paint applied below stump height. Contractor shall bear all costs associated with painting used to visually identify boundaries. Sierra RCD and the Forest Service will not approve or accept the boundaries identified on the ground by the Contractor in advance of cutting.

In case of a major disruption in GPS service, or lack of GPS coverage on the Contract Area beyond the control of the Contractor, as determined by the Sierra RCD, extension of time may be granted by Sierra RCD when requested in writing by Contractor in accordance with 52.212-4 (f) Excusable Delays. To resolve major disruption of GPS service, or lack of GPS coverage on the Contract Area, the Sierra RCD and the Forest Service may elect to Mark Geo-Fence boundaries on the ground, in which case the Sierra RCD's determination of boundary location will be final.

APPENDIX E: DESIGN CRITERIA

Kaiser East Fuels Reduction and Restoration Project Phase 1

Management Requirements/Design Criteria

The following management requirements listed below apply to the project and are designed to meet requirements in the Forest Plan or reduce or prevent potential adverse effects associated with the proposed activities. Project numbering corresponds to the Kaiser East Fuels Reduction and Restoration Project Decision Memo. Some Design Criteria have been omitted due to inapplicability.

Aquatic Wildlife (Aquatic Species)

AQ-01 If new occurrences of federally listed, threatened, endangered, proposed, candidate aquatic species are found within the project area during preparation and implementation, all design criteria and especially species-specific design criteria will apply.

AQ-02 Discovery of amphibians or reptiles (e.g., frogs, toads, salamanders, and turtles) during project implementation will be reported to the district aquatic biologist within 24 hours.

AQ-03: No end-lining or skidding across meadows or streams. If removal is needed in these locations, materials will be removed in a way where no soil disturbance occurs (i.e., lined up or suspended) and coordinated with a qualified USFS hydrologist and aquatic biologist (USFS 2023).

AQ-04: Stream crossing structures (i.e., culverts), temporary crossings, or in-stream habitat improvements (including during implementation) will not create barriers to upstream or downstream passage for aquatic-dependent species except when it benefits listed native species (USFS 2023).

AQ-05: Temporary stream crossings for perennial or intermittent streams will be approved by the district hydrologist and aquatic biologist. Crossings will be identified in locations where risk of aquatic species impacts is minimized, and short-term sedimentation and erosion are minimized through implementation of BMPs (USFS 2023).

AQ-06: Wildfire control lines in RCAs will not be built with mechanical equipment such as dozers. Construct hand lines within the project designated no-mechanical equipment zones unless field reviewed and authorized by the district hydrologist and aquatic biologist (USFS 2023).

AQ-07 Herbicides: Clean up any spills of borate compound (i.e., Sporax / Borax) immediately (USFS 2022).

AQ-08 Herbicides: For herbicide and fungicide use treatment within occupied threatened, endangered, or sensitive habitats will follow national best management practices and state of California requirements, and other protections listed in the project biological assessment.

AQ-09 Herbicides: At a minimum the following requirements would apply for herbicide use within sites known to be occupied by federally listed aquatic species:

a. Only use limited directed spray (use of backpack sprayer or handheld nozzle to aim application at specific target species) to apply herbicides, as permitted by the product label and project design features.

b. **AQ-10 Mechanical Equipment in EEZ:** Access to materials by mechanical equipment within designated EEZ can occur under the following conditions (USFS 2022):

a. Equipment will not be allowed within 50 feet of perennial streams or meadows and 25 feet for all other streams unless an approved Yosemite toad monitor is on-site to flag microsites to avoid.

a. Equipment may only operate in the EEZ where slopes are less than 15%.

b. Areas of no equipment zones may still be identified in sensitive areas.

c. Equipment entries into the EEZ are limited to no more than one entry every 30 feet along. The effectiveness of the 30-foot spacing may be modified if issues arise with excessive soil disturbances.

d. No turning of equipment in the EEZ. Equipment may only move in and out, and within the same path per entrance.

e. Side-hilling in the RMA is limited to a maximum of 20% of the EEZ.

f. Disturbance (i.e., gouging from equipment) in the EEZ that is greater than or equal to 10 feet long and 6 inches deep in soil (as opposed to litter or duff) will be immediately rehabilitated by hand to replace soil and provide a minimum of 50% ground cover.

The following apply to any **water drafting** needs in or around the project area:

AQ-11: Follow Appendix C - Drafting Requirements (2016) supported by Regional BMPs (WTR-RCA-STD 01, WTR-RCA-STD 06, 08, SPEC-FW-GDL 06) supported by Regional BMPs.

AQ-12: Water drafting sites will be established prior to operations by coordination between the Sale Administrator, USFS district hydrologist and district aquatic biologist to determine appropriate and authorized drafting site locations that minimize impacts to at-risk species (USFS 2023) (SPEC-FW-GDL 01).

a. If suitable drafting locations are only available in occupied at-risk species habitats, pre-determined designated locations will be developed by the district aquatic biologist. Drafting sites shall be visually surveyed by the district aquatic biologist or trained personnel for at-risk species life stages (egg masses, tadpole) before drafting begins. If individuals are observed, the district aquatic biologist will be notified immediately, and a different location will be used (USFS 2023).

AQ-13: Water sources for drafting located outside of the project site will be approved by the district aquatic biologist to help prevent the spread of chytrid fungus (USFS 2023).

AQ-14: Diversions used for water drafting will not dewater aquatic and riparian habitats where at-risk species occur (USFS 2023).
Botanical Resources Forest Plan Components

AQ-17: Meadow Restoration: For chainsaw use in meadows and within 100 feet of meadows, bar oil and lubricants will be vegetable based an non-toxic (i.e., STILH BioPlus, DeWalt biodegradable chainsaw oil).

Relevant forest plan components from the SNF LMP listed in this section are generally applicable to all treatment units (**Error! Reference source not found.**).

Botanical Resources (At-Risk Plant Species)

BOT-01: Avoidance of SCC in management units. Any SCC occurrences known to occur or found within the project area prior to commencement of work will have an avoidance area delineated with lime-glo green and white flagging tied together. If new populations of at-risk plants or invasive plant species are discovered prior to or during implementation they will be reported to the USFS botanists and avoided to the greatest extent possible. Any areas marked with such flagging will be avoided (minimum distance of 50 feet) by equipment, vehicles, and other project activities unless cleared with a USFS botanist.

BOT-02 Avoidance of SCC in meadows. Prior to project work in any meadow not previously surveyed for SCCs, a USFS Botanist or USFS-approved botanist will conduct a botanical survey covering the area of proposed work. The survey will be conducted during the period of approximately July through August, when the plants are in bloom or otherwise evident and identifiable. Any populations of SCCs documented during the survey would be protected as described in BOT-01.

BOT-03 Avoidance of SCC in streams and riparian corridors. Prior to project work in any stream or riparian habitat not previously surveyed for SCCs, a USFS Botanist or USFS approved botanist will conduct a botanical survey covering the area of proposed work. The survey will be conducted during the period of approximately July through August, when the plants are in bloom or otherwise evident and identifiable. Any populations of SCCs documented during the survey would be protected as described in BOT-01

BOT-04 Special Protections for the Western Waterfan Lichen. When possible, avoid crossing streams with heavy equipment to protect unmapped populations of western waterfan lichen (*Peltigera gowardii*) and its habitat. In situations when stream crossings cannot be avoided, all personnel must adhere to the Hydrology and Watersheds Design Criteria. These guidelines minimize the frequency of crossings to a quantifiable impact area to reduce widespread impacts to potential occurrences of western waterfan lichen.

BOT-05 Avoidance of Special Habitats in management units. Avoid driving vehicles or staging equipment in Special Habitats (granitic outcroppings, rocky flats with shallow sandy or gravelly soils). These areas support a variety of uncommon species, many of which are SCC. Avoiding compaction or displacement of these habitats would minimize impacts to these species and their specialized habitat.

BOT-06 Aquatic Habitat Modification Design Review for protection of SCC. Any proposed hydrological enhancement for meadow or stream restoration (e.g., beaver dam analog, placement of wood within streams) should be reviewed by a USFS botanist to verify that anticipated habitat changes will not substantially impact SCC plants that may occur in the affected habitat and not tolerate the new condition.

BOT-07: Erosion Control Specifications to protect plant SCC. The Proposed Action does not identify any seeding, planting, or mulching for erosion control. This DC must be followed should a need for erosion control arise where the IDT recommends special measures. Any seeding or planting for erosion control should be with locally native plants that are genetically appropriate for the site as per Forest Service Handbook 2609.26, Chapter 40. As soon as the need for plant materials becomes known, consult a USFS botanist to determine the appropriate course of action and to ensure that plant materials are locally sourced and are in compliance with the LMP and Forest Service Handbook.

WBP-01: Live, reproductively mature whitebark pine trees will be retained and protected from damage during all thinning, cutting, limbing and standing dead tree removal operations, in all locations where whitebark pine occurs. Limited exceptions may be made to remove hazard trees or pine beetle infested trees that are actively infested and dying.

WBP-02: Contracts will include protection/avoidance clauses for whitebark pine (including seedlings/saplings of five-needle pines that could be whitebark pine) to meet the intent of whitebark pine design features.

WBP-03: Identification and avoidance of whitebark pine will be accomplished through action such as field surveys prior to implementation, flagging, or marking areas with whitepark pine, training workers to identify five-needled pines including whitebark pine specifically, or other accurate method. If identification of a five-needle pine seedling or sapling is unclear, it will be assumed to be a whitebark pine.

WBP-04: A designee of the Sierra RCD will be consulted on equipment operations, including placement of skid trails and landings, to ensure no live, mature whitebark pine trees and minimal seedlings and saplings are impacted.

WBP-05: Mechanized equipment tracks and tires may be excluded from portions of implementation units to reduce damage to whitebark pine seedlings and saplings, depending on regeneration density and distribution. These areas will be identified by the Sierra RCD.

WBP-06: Felling of trees and limbing will be done in a manner to ensure no live, mature whitebark pine trees and minimal seedlings and saplings are damaged.

WBP-07: Placement of cut boles, limbs, and burn piles will avoid live, mature whitebark pine trees and whitebark pine seedlings and saplings.

WBP-08: Burn pile size and placement will be determined such that no live, mature whitebark pine trees and minimal seedlings and saplings are damaged by direct or latent heat. Typically, this would be at least 1.5 times the pile diameter away from the protected tree (e.g. if the pile is 10 ft diameter it will be located at least 15 ft away from the canopy of any whitebark pine tree of any size).

Cultural Resources

Standard Protection Measure Class I: Avoidance Measures, 1.3 (1-3): All historic properties within the Area of Potential Effects (APE) shall be clearly delineated prior to implementing any associated activities that have the potential to affect historic properties. Historic property boundaries shall be delineated with coded flagging and/or other effective marking. Historic property location and boundary marking information shall be conveyed to appropriate Forest Service administrators or employees responsible for project implementation so that pertinent information can be incorporated into planning and implementation documents, contracts, and permits (e.g., clauses or stipulations in permits or contracts as needed) (U.S. Forest Service (USFS) 2018b).

Standard Protection Measure Class II: On-Site Historic Property Protection Measures, 2.2(a)(1)(3-6): Felling and removal of hazard, salvage, and other trees within historic properties under the following conditions:

1. Trees may be limbed or topped to prevent soil gouging during felling;
2. Felled trees may be removed using only the following techniques: hand bucking, including use of chain saws, and hand carrying, rubber-tired loader, crane/self-loader, helicopter, or other non-disturbing, HPM-approved methods;
3. Equipment operators shall be briefed on the need to reduce ground disturbances (e.g., minimizing turns);
4. No skidding nor tracked equipment shall be allowed within historic property boundaries; and
5. Where monitoring is a condition of approval, its requirements or scheduling procedures should be included in the written approval (U.S. Forest Service (USFS) 2018b).

Class II: On-Site Historic Property Protection Measures, 2.2(b)(1(a)-(c);(2)(3): For fire, and hazardous fuels and vegetation management projects, HPM/DHPS , in conjunction with fuels, vegetation management, or fire specialists as necessary, shall

develop treatment measures for *at-risk* historic properties (as defined in SHPO approved Region 5 modules and agreements) designed to eliminate or reduce potential adverse effects to the extent practicable by utilizing methods that minimize surface disturbance, and/or by planning project activities in previously disturbed areas or areas lacking cultural features.

The following standard protection measures apply to fire, hazardous fuels, and vegetation management projects:

1. Firelines or breaks may be constructed off sites to protect at-risk historic properties
2. Vegetation to be burned shall not be piled within the boundaries of historic properties unless locations (e.g., a previously disturbed area) have been specifically approved by HPMs or qualified Heritage Program staff.
3. Mechanically treated (crushed/cut) brush or downed woody material may be removed from historic properties by hand, through the use of off-site equipment, or by rubber-tired equipment approved by HPMs or qualified Heritage Program staff. Ground disturbance shall be minimized to the extent practicable during such removals.
4. Woody material may be chipped within the boundaries of historic properties so long as the staging of chipping equipment on-site does not affect historic properties and staging areas are specifically approved by HPMs or qualified Heritage Program staff.
5. HPMs shall approve the use of tracked equipment to remove brush or woody material from within specifically identified areas of site boundaries under prescribed measures designed to prevent or minimize effects. Vegetative or other protective padding may be used in conjunction with HPM authorization of certain equipment types within site boundaries (U.S. Forest Service (USFS) 2018b).

HPMs or qualified Heritage Program staff shall determine whether fire, prescribed fire, or mechanical equipment treatments within site boundaries shall be monitored, and how such monitoring shall occur.

Use of any standard protection measures on historic properties for fire, hazardous fuels, and vegetation experimental mechanical treatments shall be documented in heritage program reports, detailing equipment type, extraction techniques, conditions of use, environmental conditions, project results, effectiveness of protection measures, need for changes, and recommendations for future use.

Additional Design Criteria

The additional design criteria listed below are either modified from the Region 5 Programmatic Agreement or developed to further mitigate potential project-specific effects. Unique identifiers have been assigned to these criteria to distinguish them from those found in the Programmatic Agreement.

HR-01 Prior to initiating Project activities, the Heritage Program Staff1 will be contacted to ensure appropriate protection measures for cultural resources are in place and understood (U.S. Forest Service (USFS) 2018b).

HR-02 Applications of chemicals, pesticides, biocontrol agents, or herbicides is permitted provided that they do not have the potential to affect access to or use of resources by Indians based on the nature of the undertaking or prior or current consultation with Indian tribes (USFS 2018b).

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[1] *Heritage Program Staff* are trained in trained in historic preservation specialties, such as historic or prehistoric archaeology, history, anthropology ,ethnography, or architectural history, who may conduct literature searches and heritage resource inventories, record and monitor sites, excavate, process and analyze heritage resource data, maintain heritage databases, maintain heritage records and collections, write reports, stabilize sites, or assist Heritage Program Managers or other Heritage Program staff with historic preservation tasks. Heritage Program staff must meet at least Office of Personnel Management X118 GS-170/190/193-9 level qualifications to be delegated HPM responsibilities and have the experience and skills pertinent to his or her job duties and responsibilities under the Programmatic Agreement (USFS 2018b).

HR-03: Chemical applications for treatment of vegetation (site preparation and release) and noxious weed control may not affect historic properties where the application of pesticides does not have the potential to affect access to or use of resources by Indians based on the nature of the undertaking and project consultation (USFS 2018b).

Riparian Conservation Areas Fuel Treatments

RCA-FUEL-01: Tracked Based Logging/Fuels Operations. Equipment can enter where the slope is less than 15% with guidance from the following criteria:

g. Tracked equipment may access the EEZ up to within 15 feet of the established stream channel where sustained slopes are less than 15% (USFS 2023).

h. Utilize the equipment boom to remove material within the 15-foot buffer minimizing stream bank/flood plain impacts (USFS 2023).

i. Rehabilitate soil gouging/trenching by recontouring the areas and revegetating where applicable (USFS 2023).

j. No side hilling within the EEZ (USFS 2023).

k. Ingress and egress should be perpendicular to the EEZ and stream channel (USFS 2023).

l. Entries and exits can occur at or greater than 25-foot intervals along the EEZ (USFS 2023).

m. Additional entries/exits can occur at intervals less than 25 feet apart, as long as soil disturbance does not exceed 20% within the RCA. For example, if two entries occur at widths of 10 feet apart, the next two entries should occur 40 feet apart. The main requisite is that total disturbance is kept under 20% (USDA USFS 2023).

n. Contractors may exceed the 20% soil disturbance threshold for a given stream's RCA with watershed staff approval if the average amount of soil disturbance for all the RCAs within the project area comes out to less than 20% (USFS 2023).

RCA-FUEL-02: Tether-Tracked Based Logging/Fuels Operations, greater than 15% Slope (USFS 2023):

Tracked equipment may access areas greater than 15% slope when using tethered cable systems but must stay out of the EEZ where sustained slopes are greater than 15%.

RCA-FUEL-03: Helicopter Based Logging/Fuels Operations (greater than or equal to 15% Slope):

o. Aerial operations may remove material within the EEZ up to 15 feet away from the established stream channel on slopes greater than 15% as long as trees contributing to streambank stability are retained (WTR-RCA-STD 12, USFS 2023).

p. Rehab soil gouging/trenching when it occurs (USFS 2023).

RCA-FUEL-04: Coarse Woody Debris Retention:

q. Remove debris classes 1 and 2 (USFS 2023).

r. From a fuel management perspective, leave the less desirable debris classes 3 to 5 for CWD retention while still maintaining fuel management objectives (USFS 2023).

s. Buried material or material that could compromise the stream bank/flood plain if removed needs to be left in place (USFS 2023).

t. Hand piling of smaller diameter material may occur within the EEZ except within the inner 15-foot buffer, unless the EEZ is less than 15 feet (USFS 2023).

RCA-FUEL-05: Mid-Project Modifications:

u. If contractors encounter streams or water features within the project area during implementation that are unmapped, protections should be implemented treating as a perennial stream or special aquatic feature under the guidelines in Table A-1: RCA and EEZ widths (USFS 2023).

Invasive Plants

INV-01: All equipment will be free of mud, seeds, and propagative plant parts prior to entering the project area. This applies to all logging, planting, and road construction or maintenance equipment. Ensuring the cleanliness of all vehicles will protect the integrity of the Forest by reducing the risk of introducing new infestations of invasive plants into the project area. A qualified representative of the Sierra RCD will conduct vehicle inspections to ensure that mud, seeds, and propagative material are not brought into the forest. If implementation personnel lack the resources to comply with this requirement, a botanist should be brought in to inspect staged equipment. If inspection finds vehicles or equipment to be insufficiently clean of mud, seeds, and propagative plant parts, these vehicles will be cleaned and re-inspected prior to accessing the project area.

INV-02: Any new infestations of invasive plant species found in the project area prior to or during the period of project execution will be reported to a USFS botanist, mapped, and avoided until treated by whatever methods a botanist or other resource specialist deems appropriate for control. Occurrences will be flagged with noxious weed flagging- orange and black with the words “Noxious weeds” on it. If the infestation is a California Department of Food and Agriculture A-rated noxious weed or is considered extremely problematic, no project work should occur in that area until the occurrence is controlled (with botanist monitoring).

Range

RNGE-01: Protect range improvements (Range Fence, Corrals, Cabin) during project implementation which are associated with the Kaiser and Blasingame Allotments and located within the project area: Willow Camp aka Rattlesnake Cow Camp including Cabin, Pasture Fence, Barn, Cook Shack and Water System (Storage Tank and Line):

1. Avoid piling and/or obstructing access to these improvements;

2. Mitigate safety hazards and impacts to permitted grazing operations by felling and removing hazard trees within and adjacent to range improvements and pile slash for subsequent pile burning; and

3. Notify District Rangeland Management Specialist in advance of treatment implementation schedules to allow for coordination with permittee.

Recreation

REC-01: To minimize disturbance and avoid conflicts with Forest visitors, a LOP restricting project activities to weekdays would be established during the recreation peak season months which is between Memorial Day and Labor Day for project activities within and directly adjacent to the recreation sites.

REC-02: Structures and amenities (e.g., picnic tables, barriers, toilet buildings, interpretive trails, trail signs, bulletin boards, etc.) within the recreation sites will be protected from damage resulting from project activities and, in case of damage, would immediately be repaired or replaced to pre-project condition.

REC-03: If felling hazard trees while recreation sites are open to the public, control perimeter with signs and flaggers to keep the public safe. Flagging and traffic control should be used to ensure public safety within the target area.

REC-04: During project activities, access to developed recreation sites that are on designated roads or designated trails would continue contingent upon the safety of the public.

Terrestrial Wildlife (General Wildlife)

WL-01: Retain a patchy mosaic of shrubs and understory vegetation separated by more open areas, with a goal of 10% to 20% shrub cover.

WL-03: As required in FSM 2670.22 and FSM 2670.31, If new occurrences of federally listed threatened, endangered, proposed, candidate, or a USFS SCC terrestrial wildlife species are found within the project are during preparation and implementation, a report will be filed immediately with the assigned wildlife biologist. All design criteria, particularly species-specific criteria, will apply.

WL-04: Retain three to four snags per acre in the largest size classes available. Preferentially retain conifer snags greater than 35 inches in dbh and hardwood snags greater than 27 inches in dbh and those that have fisher den tree characteristics. Snags should occur in a widely dispersed, clumped pattern on the landscape.

WL-05: Retain five large logs per acre. Logs should be greater than 20 inches in diameter and greater than 8 feet long. Logs should occur in a widely dispersed but clumped pattern on the landscape, PBA Class 1,1ciii.

Vegetation

SILV-01: Limit retention of snags as much as possible in areas planned for reforestation or prescribed fire for worker safety (USFS 2023).

SILV-02: Where prescribed, reforestation minimums should align with Table 26, Appendix D of the Sierra National Forest LMP (USFS 2023).

SILV-03: Hazardous green trees adjacent to roads or trails where they pose risk to public should be removed (USFS 2023).

SILV-04: Retain all live conifers above 30 inches in dbh unless (USFS 2023):

v. Imminent threat to life and property

w. Needed for rejuvenation of desired hardwood species

x. Would promote regeneration of shade-intolerant species

y. Overly dense clusters results in competition

z. Would increase vigor of healthy rust resistant sugar pine greater than 16 inches in dbh

aa. Are within meadow restoration treatment units

SILV-06: Retain all live hardwoods above 12 inches in dbh (8 inches in dbh for blue oak) unless essential for operations and safety (USFS 2023).

SILV-07: In community buffer areas fuels treatments take precedent over RCAs (USFS 2023).

SILV-08: Construction of burn piles will only be in large open spaces with little chance of crown scorch of remaining live trees (USFS 2022).

SILV-09: Any marked or identified western white pine for major gene resistance screening should not be cut and treatments will need to be conducted in a manner that avoids excessive damage.

SILV-10: Any work that produces green pine slash will be prohibited between January 1st – July 1st unless expressly modified by Sierra RCD Contact representative. Green pine slash is considered any material exceeding 8" in diameter and 3' in length.

Wildlife (Species-Specific)

Species-Specific Forest Plan Components (California Spotted Owl)

LMP SPEC-CSO-STD-02 / Draft PBA Class 1 Conservation Measure 5: For CSO-protected activity centers identified within the Project Area, the proposed management activities and treatments will maintain or improve habitat quality in the highest quality nesting and roosting habitats. Throughout protected activity centers all vegetation treatments will follow the below design criteria:

bb. Avoid creating new landings, new temporary roads, or canopy gaps larger than 0.25 acre (LMP SPEC-CSO-STD-02);

a) In community buffers, this standard may be modified as necessary to meet safety objectives.

SPEC-CSO-STD-04 : When mechanical treatments create canopy gaps within CSO territories, but outside of protected activity centers, openings for newly created landings shall not exceed 1.25 acres (and should generally not exceed 0.5 acre) and shall not comprise more than 20% to 30% of the total area in the territory. This includes openings created for the construction of landings or temporary roads (restricted to 0.57 mile or less). This criterion does not apply in community buffers.

***SPEC-CSO-GDL-08/PBA Class 1 Conservation Measure 2**: Implement a limited operating period within 0.25 mile of an active nest or roost site (if known) or within a PAC (if active nest/roost site is not known), or in and within 0.25 mile of nesting/roosting habitat (if surveys were not conducted in habitat).

For activities that only generate noise (e.g., hand thinning of small diameter trees [<11 inches dbh]) or smoke (i.e., prescribed burning), implement a limited operating period from March 1 through July 9.

For habitat-manipulating activities (e.g., mechanical treatments, large-scale hazard tree removal, helicopter logging), implement a limited operating period from March 1 through August 15.

i. Limited operating periods may be discontinued in a given year if protocol-level surveys for determining reproductive status confirm owls are not nesting or fledglings have dispersed in that calendar year.

ii. Outside of the nest stand, transient, short duration activities that take place over the course of one day or less do not need to follow the limited operating periods (for example, clearing a few hazard trees using a chainsaw along a trail, repairing potholes along a road). The Forest Service may coordinate with the Fish and Wildlife Service to ensure proposed activities fit within this exception to the limited operating period.

Design Criteria

The additional design criteria listed below are either modified from the SNF LMP and PBO or to further mitigate potential project-specific effects. Unique identifiers have been assigned to these criteria to distinguish them from those found in the SNF LMP.

WL-CSO-01 / Draft PBA Class 1 Conservation Measure 5: To minimize loss or damage to known nest and roost trees, include mitigation measures when conducting prescribed fire in protected activity centers.

cc. Rake liter and duff away (from the base of the tree) (Draft PBA Class 1 5f).

dd. Build line (excluding tree removal) around the base using a radius away from the tree equal to the tree's height (USFS 2018).

ee. Use chainsaws to remove ladder fuel directly in contact with the nest tree (USFS 2018);

ff. Adjacent large trees that create significant protection over the nest cavity should be protected by constructing fireline around the tree(s) or lightly backfiring out from the nest (USFS 2018).

Species-Specific Forest Plan Components (Fisher)

Relevant design criteria from the SNF LMP listed in this section are generally applicable to all treatment units (USFS 2023a). The following design criteria were developed to minimize potential adverse impacts on general wildlife species including fisher. In some cases, wording has been altered to add clarity or brevity to the design criteria but are based on SNF LMP and Draft Programmatic Biological Assessment (PBA) conservation measures. Asterisks (*) notes where references to SNF LMP or PBAs are not word for word but general.

Relevant design criteria from the *Land Management Plan for the Sierra National Forest* (SNF LMP; USFS 2023a) and *Programmatic Biological Assessment* (PBA) *for the Southern Sierra Nevada DPS of Pacific fisher* Conservation Measures (USFS 2023b (listed in this section are applicable to Treatment Units 1 through 6, 8 through 10, 12, 14, and 30 (Figures 1 and 2 in Appendix D). These criteria have been slightly modified or paraphrased from the SNF LMP to further mitigate potential Project-specific effects.

SPEC-FSHR-GDL 01 = Species – Fisher – Guideline 01: To increase habitat sustainability while minimizing short-term habitat impacts, vegetation management activities in potential fisher denning habitat should be designed to maintain habitat quality in larger blocks (greater than 25 acres), especially in high-quality denning habitat; and maintain and increase average tree size.

a. Within high-quality denning habitat, where possible, limit vegetation management to patchy treatment of surface and ladder fuels to achieve fuels objectives and reduce fuel continuity, while still meeting high-quality denning habitat classification criteria and (PBA Class 1, 2a):

i. Do not decrease the existing CWHR size or canopy class (trees larger than size class 4) unless reducing low canopy cover (e.g., clearing choked-out pole stand).

ii. Where present, retain multistory conditions in stands with canopy greater than 60% (PBA Class 1, 3a).

b. Within potential denning habitat (which includes high-quality denning habitat and other denning habitat), if habitat quality reduction is necessary while achieving fuels objectives, and increasing habitat resilience and average tree size (PBA Class 2, 2a):

i. High-quality denning habitat must still meet potential denning habitat criteria post-treatment; similarly, other denning habitat must still meet suitable habitat criteria post-treatment.

ii. Habitat quality reduction is limited to no more than 50% of the potential denning habitat available within the immediate fisher home range-sized area .

iii. Avoid reducing habitat quality in the largest patches of potential denning habitat within the home range-sized area.

Design Criteria

The additional design criteria listed below are either modified from the SNF LMP or developed to further mitigate potential project-specific effects. Unique identifiers have been assigned to these criteria to distinguish them from those found in the SNF LMP.

WL-FSHR-01: Maintain habitat connectivity as follows:

a. When treating in reproductive habitat, leave travel corridors (forested linkages) with a minimum 40% canopy (60% preferred) within the project area to facilitate travel patterns. Availability of riparian areas or other cooler microsites should be considered when considering fisher travel routes. (PBA Class 1, 3a).

b. When working in reproductive habitat, implement measures to ensure that the resulting landscape is heterogeneous at a fine spatial scale, and retains critical features such as clumps of large trees, areas of dense canopy, and a diverse understory. Post-treatment stands should contain patchy understory, sufficient downed woody material, and multistory conditions for escape and thermal cover. (PBA Class 2, 2a, 2b)

c. Avoid creating permanent new linear or otherwise continuous areas of open canopy habitat in or adjacent to reproductive habitat or key linkage areas that would isolate the habitat or substantially increase predator access. When creating fuel breaks, use shaded fuel breaks maintaining >40% canopy cover. Where temporary linear features are necessary for project implementation, insure post-project rehabilitation and/or revegetation (PBA Class 1, 3c).

WL-FSHR-02: Fisher limited operating periods (LOPs) will be implemented as follows:

a. Within den clusters and 5D habitat between March 1 and June 30 for disturbance-producing vegetation treatments (PBA Class 2, 4a)

b. In and within 0.25 mile of all potential denning habitat but outside of den tree clusters, 5D habitat (PBA Class 2, 4c).

c. March 1 to May 1 for prescribed fire (PBA Class 2, 4c, SPEC-FSHR-GDL-03).

d. March 1 to June 1 for disturbance-producing vegetation treatments (PBA Class 2, 4c, SPEC-FSHR-GDL-03).

e. For roadside (or other infrastructure-related) tree removal, minimize the amount of work done along secondary roads and in areas removed from human activity or development between March 15 and May 31. Instead, focus tree removal work along primary or high traffic roads, or near occupied human structures, where female fishers are less likely to den (PBA Class 2, 4d)

WL-FSHR-03: Environmental awareness training will be required for all contractors involved in tree removal activities or determining which trees remain or will be cut for removal of large trees between 30- and 40 inches in dbh on design by prescription (DxP) projects. This will involve a thorough review of *A Photographic Field Guide to Fisher Rest and Den Sites in the Sierra National Forest* (Green et al. 2015). A copy will be provided and should be on hand while contactors are working. Potential fisher den and rest trees will be identified in the field for contractor education. Fisher identification characteristics, habitat characteristics and requirements to report fisher observations will be covered – Class2, 1bii (USFS 2024c).

WL-FSHR-04: A wildlife biologist will be present during some randomized post treatment inspection surveys (DxP Compliance Plots) to record the number of large trees (30–40 inches in dbh) removed by species, take photographs, and record location data – Class2, 1bii (USFS 2024c).

WL-FSHR-05: A summary report will be provided to USFWS with the dates and times of the trainings/inspections, known number of large trees removed, species, photographs, and locations – Class 2,1e (USFWS request 2024). This design criteria applies to removal of large trees between 30 and 40 inches in dbh on DxP projects.

WL-FSHR-06: Within known (or potential) fisher den clusters rest trees, including surrounding trees that provide beneficial thermal or predatory protection, should not be purposefully removed, with the exception of the reasonably unavoidable removal of hazards in the immediate vicinity of human activity in order to maintain, and retain habitat quality within suitable fisher habitat:

a. When treatment is necessary, focus on reducing surface and ladder fuels in a patchy pattern, through hand treatments and prescribed fire (SPEC-FSHR-STD-01a).

b. Within treated units that are CWHR 4M, 4D, 5M, 5D, or 6, do not decrease the existing CWHR size or canopy class (SPEC-FSHR-STD-01b).

1. Retain conifer snags greater than 35 inches in dbh, and hardwood snags greater than 27 inches in dbh and those that have den tree characteristics described in regional guidance documents (SPEC-FSHR-STD-01c).

A. Where present, retain multistory conditions in stands with canopy greater than 60% (SPEC-FSHR-STD-01d)

e. Construct no new permanent or temporary roads (PBA Class 1, 2c, SPEC-FSHR-STD-01e).

WL-FSHR-07: Trees between 30 – 40" dbh that have potential to be den or rest trees will not be removed (in accordance with U.S. Fish and Wildlife Service [USFWS] request 2024).

WL-FSHR-08: Forest Service (or contractor) staff will document all large (30 – 40"dbh) non-hazard trees during post treatment inspections, including species and location (USFWS request 2024).

Species-Specific Forest Plan Components (Great Gray Owl)

Relevant forest plan components from the LMP listed in this section are applicable to areas where great gray owls are found nesting.

SPEC-GGO-GDL-02: To minimize disturbance that may lead to breeding failure, during the nesting and breeding season (February 15 to August 15, or according to current Pacific Southwest regional guidance), apply a LOP of an active great gray owl nest stand (i.e., not during an inactive nesting year) prohibiting:

a. road construction or extensive heavy mechanized equipment within approximately 0.25 mile of the nest or known roost site;

b. power equipment such as chainsaws or pole pruners within 300 feet of the nest site or known roost site;

c. discretionary low-level helicopter flights over nests;

d. discretionary landing of helicopters within 0.25 mile of the nest; or

e. extensive hand tool activities, such as fireline construction for prescribed burning or trail construction, maintenance, or repair, within 300 feet of the nest site.

Where the location of a nest site within a protected activity center is unknown, apply the LOP to the protected activity center, or determine the nest stand location. The LOP may be waived for projects of limited scope and duration, if a biologist determines chicks have fledged or that such projects are unlikely to result in breeding disturbance considering the intensity, duration,

timing, and specific location of the project. If a biologist concludes that a nest site would be shielded from planned activities by topographic features that would minimize disturbance, the LOP buffer distance may be reduced.

Species-Specific Forest Plan Components (Sierra Marten)
Relevant forest plan components from the LMP listed in this section apply to all treatment units in the action area.

SPEC-SM-GDL-01 Potential Management Approach: Where appropriate, consider maintaining or increasing understory heterogeneity in marten denning habitat to promote hiding cover such as shrub patches, coarse woody debris, and slash piles following vegetation treatments. Design projects to have non-linear edges.

Species-Specific Forest Plan Components (American [Northern] Goshawk)
Relevant forest plan components from the SNF LMP listed in this section are applicable to areas where goshawks are found to be nesting.

SPEC-NG-GDL-01: To minimize disturbance that may lead to breeding failure, during the nesting and breeding season (February 15 to September 15 or follow current Pacific Southwest regional guidance), apply a LOP operating period of an active nest site prohibiting:

a. road construction or extensive heavy mechanized equipment within approximately 0.25 mile of the nest site, unless northern goshawks are not nesting;

b. power equipment such as chainsaws or pole pruners within 300 feet of the nest site or known roost site;

c. extensive hand tool activities, such as fireline construction for prescribed burning or trail construction, maintenance, or repair, within 300 feet of the nest site. Where the location of an active nest site within a protected activity center is unknown, apply the LOP to the protected activity center, or determine the nest stand location.

The LOP may be waived for projects of limited scope and duration, if a biologist determines that such projects are unlikely to result in breeding disturbance considering the intensity, duration, timing, and specific location of the project. If a biologist concludes that a nest site would be shielded from planned activities by topographic features that would minimize disturbance, the LOP buffer distance may be modified. Breeding season LOP restrictions may be waived, where necessary, to allow for use of early season prescribed fire in up to 5% of any northern goshawk protected activity centers per year on a national forest.

This criterion does not apply in community buffers where they do not overlap with Wildlife Habitat Management Areas.

Species-Specific Forest Plan Components (Yosemite Toad)
The forest plan components listed in this section are applicable to all treatment units and were either modified from the SNF LMP or developed to further mitigate potential project-specific effects (**Error! Reference source not found.**). Unique identifiers have been assigned to these criteria to distinguish them from those found in the SNF LMP.

YT-01: Start and completion of activities will be coordinated annually between Project leaders and the district aquatics biologist to address new species information or habitat changes associated with the project area, appropriate start dates to accommodate Yosemite toad dispersal timeframes, and best management practices (BMPs) and possible monitoring reports required by the USFWS.

YT-02: Monitoring of Yosemite toad and Sierra Nevada yellow-legged frog habitats will occur to ensure stated objectives are met and conform to the below guidelines prior to approving completed work. (PRE, DURING, POST) (USFS 2023).

YT-03: Before any work occurs in the project area, including equipment staging or road maintenance to access sites, all Project personnel, including contractors, will participate in an environmental awareness training from a qualified expert regarding the Yosemite toad and its sensitive habitats present in the project area. As part of the training, handouts will be provided to all personnel that describe and illustrates a description of the Yosemite toad and their habitats, the specific measures that are being implemented to conserve the species for the project, and the boundaries of the project area. If new personnel are added to the Project, they must receive the mandatory training before starting work (USFS 2022)

YT-04: Follow Appendix A, "Guidelines for Capture, Moving, and Re-release of the Four Listed Sierra Nevada Amphibians Authorization to handle and move the four listed Sierra Nevada amphibians", of the *Amendment of the Programmatic Biological Opinion on Nine Forest Programs on Nine National Forests in the Sierra Nevada of California for the Endangered Sierra Nevada Yellow-legged Frog, Endangered Northern Distinct Population Segment of the Mountain Yellow-legged Frog, Threatened Yosemite Toad and Threatened North Feather Distinct Population Segment and Endangered South Sierra Distinct Population Segment of the Foothill Yellow-legged Frog*. If appropriate, the USFS shall move the four listed species from within project sites to a safe location if they are in danger.

The following will occur for any Yosemite toad individuals observed, handled, or moved:

d. Record a GPS point of location (North American Datum 83 conus),

e. Photograph individual for identification (at minimum, the of top of individual),

f. Photograph habitat where located (up close, and general habitat) including proximity to Project actions, and

g. Report within 24 hours, or as soon as in cell service to the High Sierra district aquatic biologist.

YT-05: A USFS-approved qualified biological monitor(s) trained in identification of the Yosemite toad and handling procedures will be present in units with high potential for toad presence, and during any meadow restoration actions (USFS 2023). This may apply to portions to all Units 4, 15-19. Biological monitors will at a minimum:

a. Identify any high-quality habitat for possible avoidance.

b. Pre-survey areas for toad presence and move Yosemite toad individuals found in the project site if appropriate.

c. Document any Yosemite toad individuals found during implementation following Design Criteria YT-05a.

d. In areas along Kaiser Pass Road the following measures will apply:

a. Where applicable, seasonal restrictions may be implemented in or through areas where Yosemite Toad mortality may occur as a result of project activities. Locations and timing will be identified annually by the district aquatic biologist (By May 1 of each year).

b. Speed limit of 5-10 MPH will be followed when driving through occupied Yosemite toad habitat (where feasible, but especially the ½ mile of Kaiser Pass Road parallel to Kaiser Pass Meadow).

c. When driving on roads that parallel known occupied Yosemite toad meadows (i.e. Kaiser Pass Road/Kaiser Pass Meadow) contractors will be alert for toads that may be on the road so toads can be avoided.

d. Any large equipment that needs to access Kaiser Pass Road parallel to Kaiser Pass Meadow within the 60-day dispersal period will have a biological monitor or trained person walk in front of equipment for equipment avoidance of Yosemite toad individuals on the road unless coordinated with the HSRD aquatic biologist.

e. No storage of equipment along Kaiser Pass meadow unless coordinated with the district aquatic biologist.

YT-06: For implementation of project actions located within occupied habitat of the Yosemite toad, work timing in occupied units will be adjusted according to project needs following one or more of the following (USFS 2022):

a. Operations in known occupied habitat, including access through known occupied habitat, shall start 60 days after Yosemite toad breeding is completed (Liang et al. 2010) unless coordinated with the district aquatic biologist. Occupancy and timing of breeding will be determined annually by the district aquatic biologist. Work in selected units may to occur prior to the 60-day dispersal period may be approved on a case-by-case basis by the district aquatic biologist as coordinated with authorized contract administrators. If approved, implementation of project actions will start:

   i. At a minimum, 30 days after Yosemite toad breeding is completed (Liang et al. 2010)

   ii. Not interfere with breeding or the predicted main dispersal period to meadows (as determined locally by the district aquatic biologist and annually)

   iii. If hydrologically connected to pools or streams associated with Yosemite toad breeding or tadpole presence, when tadpole metamorphosis is complete

   If approved for an earlier start date, the following will also be implemented:

   i. A USFS–qualified biological monitor(s) trained in identification of the Yosemite toad and handling procedures will be present while working in known occupied habitats. Biological monitors will at a minimum:

      - Identify any high-quality habitat for possible avoidance.
      - Move Yosemite toad individuals found in the project site if appropriate.
      - Document any Yosemite toad individuals found during implementation following Design Criteria AQ-06b. Sightings will be reported within 24 hours to the district aquatic biologist.

b. Operations within occupied Yosemite toad habitats should be completed by October 1 to minimize interference with Yosemite toad overwintering migrations. Restoration actions that need to occur after October 1 will be coordinated with the district aquatic biologist to determine locations that can continue operations which will not interfere or impact dispersing or overwintering toads. At a minimum, work will need to halt when any amount of snow is covering the ground unless pre-survey of the area has been conducted to identify and flag overwintering habitats to avoid.

YT-07: Locations for storage of all equipment in occupied or suitable Yosemite toad habitat or SNYLF potential habitat will be pre-identified and coordinated with the district aquatic biologist prior to approval (USFS 2023). The following, at a minimum, will apply:

a. Check around equipment for Yosemite toad individuals prior to moving equipment and follow approved handing guidelines if moving individuals is necessary.

b**.** If numerous Yosemite toad individuals are located, temporary fencing may be required around the equipment overnight.

c. All equipment must be inspected daily for leaks and repaired immediately to prevent petroleum leaks. Any spill regardless of size will be cleaned up immediately and taken off site.

YT-08: During daily or weekly equipment maintenance sessions, the following will apply:

a. Use a spill pad under all areas to catch all grease, gas, or petroleum products.

b. Any spills regardless of size will be cleaned up immediately and taken off site.

YT-09: To limit exposure of toxic materials to Yosemite toad and other at-risk species; Fuels and other toxic materials will be stored outside of associated riparian conservation areas (RCAs) unless locations are coordinated with the district aquatic biologist and district hydrologist (USFS 2023).

YT-10: For chainsaws and other gas-powered equipment:

c. Do not refuel within RCAs unless no other reasonable alternatives are available. At a minimum refueling will occur:

   i. 100 feet from perennial or intermittent streams, springs, seeps, or meadows.

   ii. 25 feet from ephemeral drainages.

   iii. On roads or other existing disturbed locations (i.e., landings, turnouts).

d. All refueling of small equipment in occupied Yosemite toad habitat will occur with the use of an absorbent spill pad or catch basin to eliminate soil contamination (USFS 2022).

YT-11: The following slash piling treatments will be prescribed in known occupied habitat for the Yosemite toad (at-risk species) and in RCAs when appropriate (USFS 2022):

e. All piles will be kept at least 50 feet away from all perennial streams, meadows, springs, seeps, and other sensitive aquatic areas. Greater distances may be required in known occupied Yosemite toad habitats as determined by the district aquatic biologist.

f. Mechanical or hand piles needed within occupied Yosemite toad upland habitat, avoid piling in

   i. Open dry areas, especially those with lupine, unless area is surveyed first. Coordinated with the district aquatic biologist for use prior to approval.

   ii. Meadows.

   iii. Directly in riparian vegetation (protection of Yosemite toad adult terrestrial habitats)

g. Do not pile on or around old stumps for up to 20 feet (for protection of Yosemite toad summer and overwintering terrestrial habitats).

h. Where mechanical piling is necessary within known occupied habitats of the Yosemite toad, coordinate implementation with the district aquatic biologist. High-quality cover and burrows will be flagged for avoidance prior to project implementation.

i. Minimize impacts to Yosemite toad upland habitat by limiting the soil disturbance footprint when mechanically creating piles or lining piles.

YT-14: For protection of Yosemite toad adults in terrestrial habitats, slash/brush piles shall be ignited using a pattern that allows animals to escape the fire. For example, light the pile from the top, or light from one side, leaving an unignited section that serves as an escape route (SPEC-YT-DC 02, Potential Management Approaches. For protection of Yosemite toad adults in terrestrial habitats) (USFS 2023).

YT-15: Avoid direct lighting within riparian vegetation, however, allow fire to burn in riparian ecosystems when fire effects are expected to be within the natural range for the ecosystem to improve riparian ecosystem function (USFS 2023).

YT-16: Ping pong balls will not be used to start prescribed fire in known occupied Yosemite toad habitat that include units (WTR-RCA-GDL 07, SPEC-FW-GDL 01) (USFS 2023).

YT-18: To ensure dispersal barriers are not created from project slash, no lop and scatter of materials, including chipping will occur unless coordinated with the district aquatic biologist to ensure this action meets Yosemite toad conservation and recovery in the proposed locations (USFS 2023).

YT-19: Erosion control materials will be coordinated with the district aquatic biologist (USFS 2022). The following will apply as a minimum:

j. Tightly woven fiber netting or similar material shall not be used for erosion control or other purposes where the nine Forest programs are implemented within suitable habitat to ensure that the four listed species do not get trapped, injured, or killed. Plastic monofilament netting or similar material shall not be used at any of these projects because individuals of these listed species may become entangled or trapped in it

k. Any wattles or straw mats used need to be weed and chemical free (USFS 2022).

YT-20: All operations in known occupied Yosemite toad habitat will cease for up to 48 hours after rain events (especially summer thunderstorm events) to allow for Yosemite toad dispersal across upland/terrestrial habitats. Coordinate with the district aquatic biologist for site specific adaptions where possible (USFS 2022).

YT-21: In or through known occupied Yosemite toad habitat, work will be temporarily postponed if the National Oceanic Atmospheric Administration's (NOAA's) website forecasts a 50% or greater forecasted rain event of 0.10 inches or greater, in order to protect soils and prevent dispersing Yosemite toad individuals. Coordinate with the district aquatic biologist for site-specific adaptions where possible (USFS 2022).

YT-22: Only use water as dust abatement in RCAs known to be occupied with special-status species (such as threatened, endangered or USFS Sensitive) and a toad dispersal distance from occupied meadows (USFS 2023). Water sources will be approved by the district aquatic biologist.

YT-23: Operations will cease one hour before sunset and not continue until after sunrise to protect dispersing Yosemite toad individuals unless coordinated with the district aquatic biologist.

a. For protection of adults dispersing during the evening and mornings, logging trucks will:

i. Follow a speed limit of 10 miles per hour (mph) or less (YT-24) (USFS 2022).

ii. Look for Yosemite toad to avoid in the roads and follow YT-05 if found (USFS 2022).

iii. Watering roads for dust abatement will occur as late in the morning as possible (USFS 2022).

YT-24: When driving through known occupied Yosemite toad upland habitats, reduce speed to 5- 10 mph or less and avoid all Yosemite toad individuals on the road. This applies to (Kaiser Pass Scenic Byway, Bear Butte Road, FS8S42, FS8S31, FS7S32) and any other main roads that become identified as occupied during implementation (USFS 2023). Kaiser Pass Road from mile marker 0 to about 3.0 just prior to the elephant gate is exempt.

a. Appropriate temporary signage that is visible day and night to all contractors (including logging trucks) will be put in place during implementation of the project.

b. Contractors will ensure all personnel understand and comply with the posted speed limits.

YT-25: For protection of potential adult microsites, apply the following to open, dry lupine areas if multiple rodent burrows or other suitable cover components are present (USFS 2022):

a. Where appropriate, flag open dry lupine areas as avoidance locations.

b. Avoid working or walking in or crossing open dry areas where numerous rodent burrows and lupine are observed. If crossing is needed, minimize trips and select one route across that would have the least impact to habitat or individuals.

c. Do not use open and dry lupine areas as turn-around locations, vehicle storage, or equipment staging sites unless surveyed first to confirm no rodent burrows are observed.

To minimize impacts to occupied Yosemite toad habitats the following will occur when developing landings, skid trails, temp roads, or skidding:

YT-26: All landings (new and existing) and expansion of landings will be coordinated between the Sale Administrator and district aquatic biologist and district hydrologist after on-site review to ensure minimal conflicts or impacts with Yosemite toad individuals or habitat occurs with use. All landings in unknown occupied Yosemite toad habitat will utilize existing landing sites when possible and follow National BMP Veg-6 for creation of new landings (USFS 2023).

YT-27: At a minimum, location of skid trails and temporary roads (new and existing) that overlap high-quality or ideal Yosemite toad habitat will be reviewed in the field by the district aquatic biologist and agreed on prior to approval by the sale administrator (USFS 2023).

YT-28: Limit construction of new skid trails or temporary roads for access to units in occupied Yosemite toad habitat as well as RCAs to less than 20% of the project area acres (USFS 2023).

YT-29: Prior to reconstruction of existing roads (i.e. level 1 roads), roads that overlap high-quality or ideal Yosemite toad habitat will be field reviewed to identify areas where Yosemite toad habitat will be removed or permanently lost (USFS 2022).

Water

WTR-01: RCAs and Equipment Exclusion Zones (EEZs) will follow RCA-01 through RCA-05 design criteria and as listed in RCA section below (and Table A-1), as well as shown in the proposed treatment area boundaries The RCAs and EEZs are generally defined with buffers in the LMP, and RCAs exist throughout the project area associated with streams (both perennial and seasonal), lakes, special aquatic areas, and inner gorge areas. RCAs can be adjusted on-site as appropriate after consultation with the District hydrologist. The RCAs and EEZs specific to this project area will be provided to the District and the Biologist for Yosemite Toad and other aquatic and riparian species considerations, for review and adjustments if deemed appropriate in support of the Biological Assessment (BA) and may be refined on-site during review of on the ground treatment boundaries and conditions.

WTR-02: The Sale Administrator will coordinate with the forest hydrologist and contractor(s) prior to constructing new temporary roads or enlarging landings within RCAs, if these developments are needed in support of this project. Temporary roads or enlarging landings will follow, at a minimum, species-specific design limitations specified within these Design Criteria which may provide specific requirements and limitations relating to size and mileage allowances so as not to affect species habitats and Desired Conditions (USFS 2023; USFS 2012: Plan-3, Aquatic Management Zone Planning).

WTR-05: Any refueling site needed within the RCA will be inspected by a qualified USFS hydrologist prior to approval (USFS 2023; USFS 2012: Chem-1, Chemical Use Planning and Chem-2, Follow Label Directions).

a. Where applicable, ensure that fuel spill and erosion control plans are reviewed, up to date, and determined sufficient to protect soils and aquatic resources (USFS 2023; USFS 2012: Chem-3, Chemical Use Near Waterbodies).

WTR-06.1: Soil disturbances within RCAs, where overlapping with project treatments, will be limited to 20%. All disturbances will focus, if possible, on areas with low to moderate erosion index rating and will incorporate the following project-specific measures (USFS 2023):

b. Ground-based mechanical operations should minimize soil surface displacement (A horizon) and the subsoil (B horizons and below) should not be fully exposed. Mixture of the surface soil (A horizon) and the subsoil (B horizons and below) should be kept to a minimum, and if road cuts and topsoil salvage is conducted, these layers will be stored and labelled separately for later reuse post operations. Roads, skid trails, firelines, and log landings are exceptions (USFS 2023).

c. For the purposes of this project, soil disturbance is defined as depressions, gouging, and/or removal of soil to a depth of 6 inches or greater. This is in accordance with Soil Disturbance Class 3, as found in the Forest Soil Disturbance Monitoring Protocol (USFS 2009).

d. Soil disturbance will be monitored in accordance with the Forest Soil Disturbance Monitoring Protocol, Transect Option no. 1 (USFS 2009).

e. To reduce soil disturbance within the RCA, the heavy equipment used should have a psi of 8.5 or less (USFS 2023).

WTR-07.1 (USFS 2023, USFS 2012; Plan-3**)** The condition of vegetation in RCAs, including riparian species composition, stand density, and fuel loading, will be planned to be consistent with healthy riparian systems as well as through the project design in the Proposed Action, will reduce overall risks from uncharacteristic wildfire in the watershed, and will include the following specific activities:

a. Avoid or minimize impacts to riparian vegetation, groundwater recharge areas, steep slopes, highly erodible soils, or unstable areas.

b. Maintain or provide sufficient ground cover to encourage infiltration, avoid or minimize erosion, and to filter pollutants.

c. Avoid, minimize, or restore detrimental soil compaction.

d. Retain trees necessary for shading, bank stabilization, and as a future source of large woody debris.

e. Retain floodplain function.

f. Restore existing disturbed areas that are eroding and contributing sediment to the waterbody.

g. Mark sensitive areas (RCA, wetlands, unstable slopes, etc.) prior to ground disturbing activities to avoid impacts to sensitive resources and watersheds during construction activities.

WTR-06.2: Hazard tree removal within the RCA can occur where proposed within the Proposed Action (i.e., where indicated within Appendix D of the LMP [USFS 2023] and as described in the Proposed Action where necessary within 200 feet of roads and infrastructure). Low ground pressure equipment will be utilized or other non-ground disturbing actions where activities are off of existing Forest roads network (USFS 2023; USFS 2012: Veg-2, Erosion Prevention and Control).

WTR-07.2: Erosion control measures will be installed on all skid trails. These measures may include, but are not limited to, cross ditches (water bars), organic mulch, or ripping. Cross ditches will be spaced based on percent slope, maintained in functioning condition, and placed in locations where drainage would naturally occur (i.e., swales). The level of maintenance will be contingent upon existing or predicted weather patterns as determined by the sale administrator (USFS 2023; USFS 2011a: BMP 1.17 Erosion Control on Skid Trails; USFS 2012:Veg-2, Erosion Prevention and Control and Veg-4, Ground-Based Skidding and Yarding Operations).

WTR-08: Riparian protection buffers were reviewed and have been specifically designated for this project area. RCAs and EEZs are as listed in Table A-1 (USFS 2023) and are based on implementation of project design criteria above (i.e., #4). The EEZ buffers

were set based upon the high rate of percolation, relatively deep soils of the project area, and the low erosion rates when adequate- ground cover is provided (Bales et al. 2011).

WTR-09: Essential riparian processes and conditions (including slope stability, vegetation root strength, wood delivery to waters and associated floodplains, leaf and organic debris input into aquatic and terrestrial systems, solar shading, microclimate, and water quality) will be upheld to operate consistent with local disturbance regimes (USFS 2023).

Table A-1. RCA and EEZ Buffers

Feature Type	RCA (feet)	Stream Class	Equipment Exclusion Zone (EEZ) (feet)*	Stream Class/Herbicide Buffer (feet)*
Perennial Streams	300	III-V	150	150
Seasonally Flowing Streams	150	I	25	25
		II	75	75
Special Aquatic Features (fens, bogs, springs, seeps, lakes, ponds, wetlands, etc.)	300	N/A	150	150
Perennial Streams with Riparian conditions extending more than 150 feet from edge of streambank	300	I	50	50
Seasonally Flowing Streams with Riparian conditions extending more than 50 feet from edge of Streambank	300	I	50	50

* These buffers can be adjusted on site, and work can be allowed within the buffer following project specific design criteria with watershed or aquatics staff approval (WTR-RCA-STD-12).

APPENDIX F: Fire Plan

H1 - SPECIFIED FIRE PRECAUTIONS (06/2012)

Contractor or a designated Contractor's Representative shall certify compliance with specific Contract and California Public Resources Code (CPRC) fire precautionary measures In Appendix F, H1 and H2. Certification shall be provided prior to starting operations during Fire Precautionary Period and shall be updated as needed.

Listing of specific fire precautionary measures in the following subsections is not intended to relieve Contractor in any way from compliance with State fire laws covering fire prevention and suppression equipment applicable to Contractor's Operations.

Upon request of Sierra RCD or the Forest Service, Purchaser shall permit and assist in periodic testing and inspection of required fire equipment.

The following definitions shall apply to Appendix H1 and H2:

> **Active Landing:** A location Contractor is skidding logs into, or performing other operations such as delimbing, log manufacturing, and chipping logs.
>
> Except for EV and E days, loading logs or stockpiled chips only on a cleared landing does not constitute an Active Landing.
>
> **Hot Saw:** A harvesting system that employs a high-speed (>1100 rpm) rotating felling head (i.e., full rotation lateral tilt head).
>
> **Mechanical Operations:** The process of felling, skidding, chipping, shredding, piling, log processing and/or yarding which requires the use of motorized power which includes, chainsaws, chippers, motorized carriages, masticators, stroke delimbers, skidders etc.

Specific equipment requirements and fire precautionary measures are shown in the following table and in H2:

A. Fire Tools and Equipment	Contractor shall meet applicable parts of Section 4428 of the CPRC. Unless agreed otherwise, Fire tools kept at each Active Landing shall be sufficient to equip all employees in the felling, yarding, loading, chipping, and material processing operations associated with each landing. Fire equipment shall include two tractor headlights for each tractor dozer used in Contractor's Operations. Tractor headlights shall be attachable to each tractor and served by an adequate power source. Fire tools shall be kept in a sealed fire tool box adjacent to the Active Landing and readily accessible in event of fire. Where cable yarding is used, Contractor shall provide a size 0 or larger shovel with an overall length of not less than 46 inches and a serviceable 5 gallon backpack pump filled with water or a fire extinguisher bearing a label showing at least a 4-A rating must be within 25 feet of each tail and corner block. Trucks, tractors/skidders, pickups and other similar mobile equipment shall be equipped with and carry at all times a size 0 or larger shovel with an overall length of not less than 46 inches and a 2-1/2 pound axe or

<table>
<tr><td></td><td>larger with an overall length of not less than 28 inches.

All required fire tools shall be maintained in suitable and serviceable condition for fire fighting purposes.</td></tr>
<tr><td>B. Fire Extinguishers</td><td>Contractor shall equip each internal combustion yarder, fuel truck, and loader with a (4-A:60-B:C) fire extinguisher for oil and grease fires.

Skidders and tractors shall be equipped with a minimum 5-BC fire extinguisher.

Fire extinguishers shall be mounted, readily accessible, properly maintained and fully charged.

Contractor shall equip all mechanized harvesting machines and log processors with hydraulic systems, powered by an internal combustion engine (e.g. masticator, chipper, feller/buncher, harvester, forwarder, Hot Saw, stroke delimber, etc), with at least two 4-A:60-B:C fire extinguishers or an acceptable CAFS substitute.</td></tr>
<tr><td>C. Spark Arresters and Mufflers</td><td>Except for tractors and other equipment with exhaust-operated turbochargers, Contractor shall equip each operating tractor and any other internal combustion engine with an approved spark arrester. There shall be no exhaust bypass on any system.

Spark Arresters shall be a model tested and approved under Forest Service Standard 5100-1a as shown in the National Wildfire Coordinating Group Spark Arrester Guide, Volumes 1 and 2, and shall be properly mounted and maintained according to manufacturer’s specifications.

Every motor vehicle subject to registration shall at all times be equipped with an adequate exhaust system meeting the requirements of the California Vehicle Code.</td></tr>
<tr><td>D. Power Saws</td><td>An Underwriters Laboratories (UL) approved fire extinguisher containing a minimum 14 ounces of fire retardant shall be kept with each operating saw.

A size 0 or larger shovel with an overall length of not less than 38 inches shall be kept with each gas can, but not more than 300 feet from each power saw when used off cleared landing areas.</td></tr>
<tr><td>E. Fire Supervisor & Fire Patrolperson</td><td>Contractor shall designate in the fire plan required by Appendix F and furnish on Contract Area during operating hours a fire supervisor, named in writing and authorized to act on behalf of Contractor in fire prevention and suppression matters.

Unless agreed otherwise, Contractor shall furnish and designate in writing, a Fire Patrolperson each operating day when Project Activity Level C or higher is in effect. When on duty, the Fire Patrolperson is required to patrol the operation for the prevention and detection of fires, to take suppression action where necessary and to notify Sierra RCD and the Forest Service as required under Sections I. Reporting Fires and L. Communications. This Fire Patrol is required on foot, unless otherwise agreed.

By written agreement, one Fire Patrolperson may provide patrol on this and adjacent projects or sales. No Fire Patrolperson shall be required on Specified Road construction jobs except during clearing operations unless otherwise specified.</td></tr>
<tr><td>F. Seasonal Permits</td><td>Contractor shall obtain written permits from Forest Service before allowing welding, warming fires or burning, subject to Appendix F H.2 – Emergency Precautions</td></tr>
<tr><td>G. Clearing of Fuels</td><td>Contractor shall clear away, and keep clear, fuels and logging debris as follows:<table><tr><td>Welding equipment and stationary log loaders, yarders and other equipment listed in California State Law:</td><td>10 feet slope radius</td></tr></table></td></tr>
</table>

	Tail or corner haulback blocks:	All running blocks on a cable yarding operation shall be located in the center of an area that is cleared to mineral soil at least 15 feet in diameter.
	Lines near, between or above blocks:	Sufficient clearing to prevent line from rubbing on snags, down logs and other dead woody material.

H. Smoking

All smoking shall be confined within a car, truck, crew rig or other enclosed cab after 1:00 PM on Ev days and all hours on E days H2. At other times, any smoking shall be done while sitting in an area at least 3 feet in diameter, cleared of flammable materials. Burning tobacco and matches shall be extinguished before they are properly disposed.

I. Reporting Fires

As soon as feasible, but no later than **15 minutes** after discovery, Contractor shall notify Forest Service and Sierra RCD of any fires on Contract Area or along roads used by Contractor.

J. Tank Truck

Contractor shall provide a water tank truck or trailer on or in proximity to Contract Area during Contractor's Operations hereunder during Fire Precautionary Period unless otherwise agreed.

Tank truck or trailer shall contain at least 300 gallons of water and comply with the following requirements:

1. Pump, which at sea level, can deliver 23 gallons per minute at 175 pounds per square inch measured at the pump outlet. Pumps shall be tested on Contract Area by Forest Service using a 5/16 inch orifice with a one inch in line test kit and shall meet or exceed the pressure values identified in the following table for nearest temperature and elevation:

Temp	Sea Level		1000 Feet		2000 Feet		3000 Feet		4000 Feet		5000 Feet		6000 Feet		7000 Feet		8000 Feet		9000 Feet		10000 Feet	
55	179	23	174	23	169	23	165	22	161	22	157	22	153	22	150	21	146	21	142	21	139	21
70	175	23	171	23	166	22	162	22	158	22	154	22	150	21	147	21	143	21	139	21	136	20
85	171	23	168	23	163	22	159	22	155	22	151	21	147	21	144	21	140	21	136	20	133	20
100	168	23	164	23	159	22	155	22	152	22	148	21	144	21	141	21	137	20	133	20	131	20
	PSI	GPM	PSI	GPM	PSI	GPM	PSI	GPM	PS	GPM	PSI	GPM	PSI	GPM	PS	GPM	PSI	GPM	PSI	GPM	PSI	GPM

The pump outlet shall be equipped with 1-1/2 inch National Standard Fire Hose thread. A bypass or pressure relief valve shall be provided for other than centrifugal pumps.

2. 300 feet of 3/4-inch inside diameter rubber-covered high- pressure hose mounted on live reel attached to pump with no segments longer than 50 feet, when measured to the extreme ends of the couplings. Hose shall have reusable compression wedge type 1-inch brass or lightweight couplings (aluminum or plastic). One end of hose shall be equipped with a coupling female section and the other end with a coupling male section. The hose shall, with the nozzle closed, be capable of withstanding 200 PSI pump pressure without leaking, distortions, slipping of couplings, or other failures.
3. A shut-off combination nozzle that meets the following minimum performance standards when measured at 100 P.S.I. at the nozzle:

	G.P.M.	Horizontal Range
Straight Stream	10	38 feet

	<table><tr><td>Fog Spray</td><td>6 - 20</td><td>N/A</td></tr></table> 4. Sufficient fuel to run pump at least 2 hours and necessary service accessories to facilitate efficient operation of the pump. 5. When Contractor is using Hot Saws or Masticators an additional 250 feet of light weight hose, approved by Forest Service, shall be immediately available for use and be capable of connecting to the 300 feet of hose and appurturances in (2) and (3) above. 6. This equipment and accessories shall be deliverable to a fire in the area of operations and is subject to the requirements for each specific activity level identified in H2.
K. Compressed Air Foam System (CAFS)	A fire suppression system where compressed air is added to water and a foaming agent. By agreement, Contractor may substitute a CAFS or functional equivalent in lieu of the tank truck, trailer or fire extinguishers, provided it meets or exceeds the following specifications and requirements: 1. Variable foam expansion ratio – 10:1 to 20:1. 2. Units shall be kept fully charged with air; water and foam concentrate as recommended by the manufacturer and have the appropriate tools to service the system. 3. The unit shall contain enough energy to empty tank and clear hose prior to exhausting propellent. 4. The unit shall be capable of being completely recharged within 10 minutes. 5. When used on cable yarding landings, the unit shall be outfitted for immediate attachment to carriage and transported without damage to the unit. Fire extinguishers required for Hot Saws, Masticators and similar equipment identified in Section B. above may be substituted with a 3 gallon CAFS. Tank truck, trailer or equivalent may be substituted with a 30 Gallon CAFS with at least 550 feet of one inch hose and an adjustable nozzle with enough water, air and foam concentrate for at least one recharge. This equipment and accessories shall also be deliverable to a fire in the area of operations and subject to the requirements for each specific activity level identified in Emergency Precautions.
L. Communications	Contractor shall furnish a serviceable communications system such as a telephone, radio-telephone, radio system or satellite phone connecting each operating side within the Contract Area with Contractor's headquarters, and capable of notifying Forest Service within **15 minutes** of discovery of any fires on the Contract Area or along Contractor's haul route. When such headquarters is at a location which makes communication to it clearly impractical, Forest Service may agree to a reasonable alternative notification method. A Citizen's Band (CB)radio is not acceptable communications.
M. Cable Yarding Tank Unit	When all or part of Included Timber will be harvested by a long span (over 1,500 feet) cable yarding operation, Contractor shall provide at each active cable yarding landing a tank truck, trailer or acceptable CAFS substitute which can be lifted and transported by the carriage. The unit shall meet the same requirements as specified for the tank truck, trailer or approved CAFS substitute.
N. Helicopter Yarding Fire Precautions	Contractor shall provide and maintain fire equipment as follows: 1. The fire tool box required under this provision shall be equipped for attachment to the helicopter long line so that it may be hauled to needed locations. Such attachment device shall not interfere with access to fire tools. Unless agreed otherwise, the fire tool box shall be located at the Active Landing ready for immediate dispatch. 2. An external helibucket readily attachable to the helicopter, with a capacity of at least 500 gallons, and having a remote control door mechanism adequate for rapid dropping of water.

	The helibucket shall be located at the helicopter service landing and shall be filled with water ready for immediate dispatch unless otherwise agreed. 3. All aircraft used in conjunction with Contractor's Operations shall be equipped with an operable radio system capable of meeting Region Five avionics requirements. 4. For protection of fuel servicing operations, fire extinguishers which have the following ratings based on the open hose discharge capacity, i.e., "broken hose," of the aircraft fueling system shall be readily available: a) Where said capacity does not exceed 200 gallons per minute, at least one approved extinguisher having a minimum rating of 20-B; b) Where said capacity is in excess of 200 gallons per minute, but not over 350 gallons per minute, one approved extinguisher having a minimum rating of 80-B; c) Where said capacity is in excess of 350 gallons per minute, two approved extinguishers, each having a minimum rating of 80-B. 5. By agreement, a suitable CAFS may also be used in lieu of the above extinguishers. 6. Extinguishers of over 50 pounds gross weight shall be of wheeled type or be mounted on carts to provide mobility and ease of handling.

H2 EMERGENCY PRECAUTIONS. (06/2012) Contractor's Operations shall conform to the limitations or requirements in the Project Activity Level (PAL) table below. Unless otherwise agreed in writing, Project Activity Levels applicable to this project shall be the predicted levels for the Fire Danger Rating Area(s), or fire weather station(s) stated in the Project Map legend.

Forest Service, in its sole discretion, may change the predicted activity level if the current fire suppression situation, weather and vegetation conditions warrant an adjustment. If practicable, Forest Service will determine the following day's activity level by 6:00 PM. Contractor shall obtain the predicted Project Activity Level from the appropriate Ranger District Office before starting work each day.

Forest Service may change the Project Activity Level Table to other values upon revision of the National Fire Danger Rating System. When Contractor is notified, the revised Project Activity Levels will supersede the levels in the Project Activity Level Table below.

PROJECT ACTIVITY LEVEL (PAL) – H2 - EMERGENCY PRECAUTIONS

PROJECT ACTIVITY LEVEL TABLE

Level	Project Activity Minimum Requirements and Restrictions. Restrictions at each level are cumulative.
A	Minimum required by H2.
B	1. Tank truck, trailer, or approved CAFS substitute shall be on or adjacent to the Active Landing.
C	1. When Hot Saws or Masticators are operating, a tank truck, trailer or approved CAFS substitute shall be within ¼ mile of these operations. Effective communications shall exist between the operator and the Active Landing. 2. Immediately after Mechanical Operations cease, Fire Patrol is required for two hours.

D	1. Immediately after Hot Saw or Masticator operations cease, Fire patrol is required for three hours. 2. No Dead Tree felling after 1:00 PM, except recently dead. 3. No Welding or cutting of metal after 1:00 PM, except by special permit.
Ev	1. The following activities may operate all day: a) Loading and hauling logs decked at approved landings. b) Loading and hauling chips stockpiled at approved landings. c) Servicing equipment at approved sites. d) Dust abatement, road maintenance (Chainsaw use prohibited), culvert installation within cleared area, chip sealing, paving, earth moving or rock aggregate stock pile loading and installation (does not include pit or quarry development). e) Chainsaw and log processing operations associated with loading logs or other forest products at approved landings. 2. Hot Saws or Masticators may operate until 1:00 PM; provided that: a) A tractor or other equipment with a blade capable of constructing fireline is on or adjacent to the active landing or within ¼ mile of the operating equipment. This piece of equipment shall have effective communication with the Hot Saw or Masticator. b) Any additional restrictions specified by the Forest. 3. All other conventional Mechanical Operations are permitted until 1:00PM **4. Some operations may be permitted after 1:00pm, on a case-by-case basis; under the terms of a PAL Ev Variance Agreement. Activities for which a Variance may be issued are:** **a) Rubber Tire Skidding** **b) Chipping on Landings** **c) Helicopter Yarding** **d) Fire Salvage** When approved by a Line Officer, a Variance Agreement can be implemented when the criteria specified in the agreement are met and mitigation measures are in place. This approval is good for ten (10) days unless cancelled sooner or extended by the Sierra RCD for an additional ten (10) days. Variance approval can be withdrawn at the sole discretion of Forest Service. Variance approval is contingent on the 7-day fire weather forecast, fuel conditions, site characteristics, current fire situation, state of Contractor's equipment for prevention and suppression readiness, type of operation and social and community considerations etc. (See attached Project Activity Level Variance Agreement)
E	The following activities may operate all day: 1. Loading and hauling logs decked at approved landings. 2. Loading and hauling chips stockpiled at approved landings. 3. Servicing Equipment at approved sites. 4. Dust abatement, road maintenance (chainsaw use prohibited) or loading stock piles and rock aggregate installation (does not include pit or quarry development). 5. Chainsaw operation associated with loading at approved landings. All other activities are prohibited.

Project Activity Level Climatology								
Fire Danger Rating Area/Weather Station		**TNF Westside Group**			Years Analyzed		**1996-2016**	
	A	**B**	**C**	**D**	**Ev**	**E**	Days	
Month	Expected Days per Month at Each PAL Value						Analyzed	
May	12.7	7.4	10.6	0.3	0.0	0.0	333	31
June	3.6	7.4	16.3	2.2	0.4	0.0	403	30
July	0.1	2.0	18.5	7.8	2.7	0.0	430	31
August	0.3	1.8	7.8	11.4	9.1	0.6	431	31
September	1.2	2.6	8.2	8.7	5.7	3.6	419	30
October	4.4	4.7	10.9	8.0	2.9	0.0	406	31
November	11.5	9.0	8.4	1.0	0.0	0.0	292	31

SPECIFICATIONS PURSUANT – EMERGENCY PRECAUTIONS. (10/2010)

Region 5 Project Activity Level (PAL) Ev Variance Application/Agreement

Project Name: _____
Contract Number: _____
Purchaser/Contractor Name: _____
Request #_, for period: _____
Units/Subdivisions Affected: _____

Location of operation:	
Slope	
Aspect	
Elevation	
Fuels on site	
Fuels in surrounding area	
7 Day PAL Outlook	
Short range predictions (Red Flags)	
Fuel Moistures	
Response time of suppression resources	
Potential for ignition	
RAWS location	
Current Fire Situation:	
Draw down information	
National Readiness Level	
Contractual considerations:	
Normal Operating Season	
Frequency of recent contract fires in area	
Type of operation	
Purchaser/Contractors past/current performance & equipment readiness	
Other site specific mitigation or precaution (i.e. Purchaser/Contractors proposals)	
Social & Community Considerations:	
Proximity of high value resources	
Sensitivity of location	

Remarks:

Ev Proposed Actions

- ☐ **Rubber Tired Skidding**
- ☐ **Chipping on Landings**
- ☐ **Helicopter Yarding**
- ☐ **Fire Salvage**

Description of Mitigation Measures

Fire Management Officer Concurrence Date

Line Officer Approval Date

I have considered the above request and determined the specified mitigation measures or actions must be implemented to continue operations in Project Activity Level Ev. Unless extended, the approval remains in effect for ten (10) calendar days unless cancelled sooner or extended by the Forest Service for an additional ten (10) days. At the sole discretion of the Forest Service, this variance can be modified and/or cancelled at no cost to the government.

Sierra RCD Date

Purchaser/Contractor Rep. Date

Fire Plan Mechanical Service Work

1. SCOPE:

The provisions set forth below outline the responsibility for fire prevention and suppression activities and establish a suppression plan for fires within the contract area. The contract area is delineated by map in the contract. The provisions set forth below also specify conditions under which contract activities will be curtailed or shut down.

2. RESPONSIBILITIES:

Contractor

a) Shall abide by the requirements of this Fire Plan.
b) Shall take all steps necessary to prevent his/her employees, subcontractors and their employees from setting fires not required in completion of the contract, shall be responsible for preventing the escape of fires set directly or indirectly as a result of contract operations, and shall extinguish all such fires which may escape.
c) Shall permit and assist in periodic testing and inspection of required fire equipment. Contractor shall certify compliance with specific fire precautionary measures in the fire plan, before beginning operations during Fire Precautionary Period and shall update such certification when operations change.
d) Shall designate in the Fire Plan and furnish on Contract Area, during operating hours, a qualified fire supervisor authorized to act on behalf of Contractor in fire prevention and suppression matters.

Forest Service

a) The Forest Service may conduct one or more inspections for compliance with the Fire Plan. The number, timing, and scope of such inspections will be at the discretion of agency employees responsible for contract administration. Such inspections do not relieve the Contractor of responsibility for correcting violations of the fire plan or for fire safety in general, as outlined in paragraph 2.A above.

3. DEFINITIONS:

The following definitions shall apply:

Active Landing: A location the contractor may be skidding logs into, or performing other operations such as delimbing, log manufacturing, and chipping logs. Except for EV and E days, loading logs or stockpiling chips only, on a cleared landing, does not constitute an Active Landing.

Hot Saw: A harvesting system that employs a high-speed (>1100 rpm) rotating felling head, i.e., full rotation lateral tilt head.

Mechanical Operations: The process of felling, skidding, chipping, shredding, masticating, piling, log processing and/or yarding which requires the use of motorized power which includes, chainsaws, chippers, motorized carriages, masticators, stroke delimbers, skidders , dozers etc.

4. TOOLS AND EQUIPMENT:

The Contractor shall comply with the following requirements during the fire precautionary period, as defined by unit administering contracts:

The Fire Precautionary Period is set by the State of California which is April 1 through December 31 inclusive.

This contract ☒ requires ☐ does not require a Fire Box and associated Fire Tools according to CPRC Section 4428.

A. **Fire Tools and Equipment:** Contractor shall meet minimum requirements of Section 4428 of the California Public Resources Code (C.P.R.C.). Fire tools kept at each operating landing shall be sufficient to equip all employees in the felling, yarding, loading, chipping, and material processing operations associated with each landing. Fire equipment shall include two tractor headlights for each tractor dozer used in Contractor's Operations. Tractor headlights shall be attachable to each tractor and served by an adequate power source. All required fire tools shall be maintained in suitable and serviceable condition for firefighting purposes.

Trucks, tractors, skidders, pickups and other similar mobile equipment shall be equipped with and carry at all times a size 0 or larger shovel with an overall length of not less than 46 inches and a 2-1/2 pound axe or larger with an overall length of not less than 28 inches.

Where cable yarding is used, Contractor shall provide a size 0 or larger shovel with an overall length of not less than 46 inches and a filled backpack can (4 or 5 gallon) with hand pump within 25 feet of each tail and corner block.

B. **Fire Extinguishers:** Contractor shall equip each internal combustion yarder, fuel truck, and loader with a fire extinguisher for oil and grease fires (4-A:60-B:C).
Skidders and tractors shall be equipped with a minimum 5-BC fire extinguisher.
All Fire Extinguishers shall be mounted, readily accessible, properly maintained and fully charged.
Contractor shall equip each mechanized harvesting machine with hydraulic systems, powered by an internal combustion engine (chipper, feller/buncher, harvester, forwarder, hot saws, stroke delimber, etc.), except tractors and skidders, with at least two 4-A:60-B:C fire extinguishers or equivalent.

C. **Spark Arresters and Mufflers:** Contractor shall equip each operating tractor and any other internal combustion engine with a spark arrester, except for motor vehicles equipped with a maintained muffler as defined in C.P.R.C. Section 4442 or tractors with exhaust-operated turbochargers. Spark Arresters shall be a model tested and approved under Forest Service Standard 5100-1a as shown in the. National Wildlife Coordinating Group Spark Arrester Guide, Volumes 1 and 2, and shall be maintained in good operating condition. Every motor vehicle subject to registration shall at all times be equipped with an adequate exhaust system meeting the requirements of the California Vehicle Code.

D. **Power Saws:** Each power saw shall be equipped with a spark arrester approved according to C.P.R.C. Section 4442 or 4443 and shall be maintained in effective working order. An Underwriters Laboratories (UL) approved fire extinguisher containing a minimum 14 ounces of fire retardant shall be kept with each operating power saw. In addition, a size 0 or larger shovel with an overall length of not less than 38 inches shall be kept with each gas can but not more than 300 feet from each power saw when used off cleared landing areas.

This contract ☒ requires ☐ does not require Section 4E of the Fire Plan.

E. **Tank Truck or Trailer:** Contractor shall provide a **water tank truck or trailer** on or in proximity to Contract Area during Contractor's Operations hereunder during Fire Precautionary Period. When Project Activity Level B or higher is in effect, a tank truck or trailer shall be on or immediately adjacent to each active landing, unless otherwise excepted when Hot Saws or Masticators are being used. See Section 6 for specific contract requirements.

The tank shall contain at least 300 gallons of water available for fire suppression. Ample power and hitch shall be readily available for promptly and safely moving tank over roads serving Contract Area. Tank truck or trailer shall be equipped with the following:

1. Pump, which at sea level, can deliver 23 gallons per minute at 175 pounds per square inch measured at the pump outlet. Pumps shall be tested on Contract Area using a 5/16 inch orifice in the Forester One Inch In-Line Gauge test kit. Pump shall meet or exceed the pressure value in the following table for nearest temperature and elevation:

Temp	Sea Level		1000 Feet		2000 Feet		3000 Feet		4000 Feet		5000 Feet		6000 Feet		7000 Feet		8000 Feet		9000 Feet		10000 Feet	
55	179	23	174	23	169	23	165	22	161	22	157	22	153	22	150	21	146	21	142	21	139	21
70	175	23	171	23	166	22	162	22	158	22	154	22	150	21	147	21	143	21	139	21	136	20
85	171	23	168	23	163	22	159	22	155	22	151	21	147	21	144	21	140	21	136	20	133	20
100	168	23	164	23	159	22	155	22	152	22	148	21	144	21	141	21	137	20	133	20	131	20
	PSI	GPM	PSI	GPM	PSI	GPM	PSI	GPM	PSI	GPM	PSI	GPM	PSI	GPM	PSI	GPM	PSI	GPM	PSI	GPM	PSI	GPM

The pump outlet shall be equipped with 1-1/2 inch National Standard Fire Hose thread. A bypass or pressure relief valve shall be provided for other than centrifugal pumps.

2. 300 feet of 3/4-inch inside diameter rubber-covered high-pressure hose mounted on live reel attached to pump with no segments longer than approximately 50 feet, when measured to the extreme ends of the couplings. Hose shall have reusable compression wedge type 1-inch brass or lightweight couplings (aluminum or plastic). One end of hose shall be equipped with a coupling female section and the other end with a coupling male section. The hose shall, with the nozzle closed, be capable of withstanding 200 PSI pump pressure without leaking, distortions, slipping of couplings, or other failures.
3. A shut-off combination nozzle that meets the following minimum performance standards when measured at 100 P.S.I. at the nozzle:

	G.P.M.	Horizontal Range
Straight Stream	10	38 feet
Fog Spray	6 - 20	N/A

4. Sufficient fuel to run the pump at least 2 hours and necessary service accessories to facilitate efficient operation of the pump.

   When Contractor is using Hot Saws or Masticators, an additional 250 feet of light weight hose, approved by the Forest Service, shall be immediately available for use and be capable of connecting to the 300 feet of hose and appurtenances in (2) and (3) above.

   This equipment and accessories shall be deliverable to a fire in the area of operations and is subject to the requirements for each specific activity level identified in Section 6.

F. **Compressed Air Foam System:** A Compressed Air Foam System (CAFS) is a fire suppression system where compressed air is added to water and a foaming agent. By agreement, Contractor may substitute a CAFS or functional equivalent in lieu of the tank truck, trailer or fire extinguishers, provided it meets or exceeds the following specifications and requirements:
   1. Variable foam expansion ratio – 10:1 to 20:1.
   2. Units shall be kept fully charged with air; water and foam concentrate as recommended by the manufacturer and have the appropriate tools to service the system.
   3. The unit shall contain enough energy to empty tank and clear hose prior to exhausting propellant.

4. The unit shall be capable of being completely recharged within 10 minutes.
5. When used on cable yarding landings, the unit shall be outfitted for immediate attachment to carriage and transported without damage to the unit.

Fire extinguishers required for Hot Saws, Masticators and similar equipment identified in Section 4 B. above may be substituted with a 3 gallon CAFS.

Tank truck, trailer or equivalent may be substituted with a 30 Gallon CAFS with at least 550 feet of one inch hose and an adjustable nozzle with enough water, air and foam concentrate for at least one recharge.

This equipment and accessories shall also be deliverable to a fire in the area of operations and subject to the requirements for each specific activity level identified in Section 6.

5. GENERAL

A. **State Law:** In addition to the requirements in this Fire Plan, the Contractor shall comply with all applicable laws of the State of California. In particular, see California Public Resource Codes.

B. **Permits Required:** The Contractor must secure a special written permit from the District Ranger or designated representative before burning, welding or cutting metal or starting any warming fires. If contract requires Blasting and Storing of Explosives and Detonators, an Explosives Permit may be required pursuant to the California Health and Safety Code, Section 12101.

C. **Blasting:** Contractor shall use electric caps only unless otherwise agreed in writing. When blasting is necessary in slash areas, a Fire Patrolperson equipped with a size 0 or larger shovel with an overall length of not less than 46 inches and a filled backpack can (4 or 5 gallon) with hand pump shall remain in the immediate area for an hour after blasting has been completed.

D. **Smoking:** Smoking shall not be permitted during fire season, except in a barren area or in an area cleared to mineral soil at least three feet in diameter. In areas closed to smoking, the CO may approve special areas to be used for smoking. The Contractor shall sign designated smoking areas. Contractor shall post signs regarding smoking and fire rules in conspicuous places for all employees to see. Contractor's supervisory personnel shall require compliance with these rules. Under no circumstances shall smoking be permitted during fire season while employees are operating light or heavy equipment, or walking or working in grass and woodlands.

E. **Storage and Parking Areas.** Equipment service areas, parking areas, and gas and oil storage areas shall be cleared of all flammable material for a radius of at least 10 feet unless otherwise specified by local administrative unit. Small mobile or stationary internal combustion engine sites shall be cleared of flammable material for a slope distance of at least 10 feet from such engine. The COR shall approve such sites in writing.

F. **Reporting Fires**: As soon as feasible but no later than 15 minutes after initial discovery, Contractor shall notify Forest Service of any fires on Contract Area or along roads used by Contractor. Contractor's employees shall report all fires as soon as possible to any of the following Forest Service facilities and/or personnel listed below, but not necessarily in the order shown:

	Name	Office Address	Telephone
Dispatch Center	**Sierra Interagency Dispatch Center**	**2311 N. Clovis Ave, Fresno CA 93727**	**(559) 500-4546**
Nearest FS Station	High Sierra RD	29688 Auberry Rd, Prather, CA 93651	(559) 855-5355
Contract Administrator	Kirby Molen		(559) 284-2997
Forest Service Timber	Matt Avery	1600 Tollhouse Rd, Clovis, CA 93611.	(559) 297-0706
District Ranger	Kim Sorini-Wilson	29688 Auberry Rd, Prather, CA 93651	(559) 365-1497

When reporting a fire, provide the following information:

- Your Name
- Call back telephone number
- Project Name
- Location: Legal description (Township, Range, Section); and Descriptive location (Reference point)
- Fire Information: Including Acres, Rate of Spread and Wind Conditions.

This contract ☒ requires ☐ does not require Section 5G of the Fire Plan.

G. **Communications:** Contractor shall furnish a serviceable telephone, radio-telephone or radio system connecting each operating side with Contractor's headquarters. When such headquarters is at a location which makes communication to it clearly impractical, Forest Service may accept a reasonable alternative location. The communication system shall provide prompt and reliable communications between Contractor's headquarters (or agreed to alternative) and Forest Service via commercial or Forest Service telephone.

This contract ☒ requires ☐ does not require Section 5H of the Fire Plan.

H. **Fire Patrolperson:** Contractor shall furnish a qualified fire patrolperson each operating day when Project Activity Level C or higher is in effect. When on duty, sole responsibility of patrolperson shall be to patrol the operation for prevention and detection of fires, take suppression action where necessary and notify the Forest Service as required. This Fire patrol is required on foot, unless otherwise agreed. By agreement, one patrolperson may provide patrol on this and adjacent projects. No patrolperson shall be required on Specified Road construction jobs except during clearing operations unless otherwise specified.
The Contractor shall, prior to commencing work, furnish the following information relating to key personnel:

Title	Name	Telephone Number
Fire Supervisor		
Fire Patrolperson		

I. **Clearing of Fuels:** Contractor shall clear away, and keep clear, fuels and logging debris as follows:

Welding equipment and stationary log loaders, yarders and other equipment listed in California State Law:	10 feet slope radius
Tail or corner haul back blocks:	All running blocks shall be located in the center of an area cleared to mineral soil at least 15 feet in diameter.
Lines near, between or above blocks:	Sufficient clearing to prevent line from rubbing on snags, down logs and other dead woody material.

6. EMERGENCY PRECAUTIONS

Contractor's Operations shall conform to the limitations or requirements in the Project Activity Level (PAL) table below. Project Activity Levels applicable to this project shall be the predicted activity levels for the Fire Danger Rating Area(s), or fire weather station(s) stated in the Project Map Legend on Integrated Resource Service Contracts (IRSC's), and other contracts where applicable.

Fire Danger Rating Area/Fire Dinkey Creek Weather Station for Project

The Forest Service, in its sole discretion, may change the predicted activity level if the current fire suppression situation, weather and vegetation conditions warrant an adjustment. If practicable, Forest Service will determine the following day's activity level by 6:00 PM. Contractor shall obtain the predicted Project Activity Level from the appropriate Ranger District Office before starting work each day.

Phone Number or Website to obtain Predicted Activity Levels: (559) 855-5355 High Sierra Ranger District

Forest Service may change the Project Activity Level Table to other values upon revision of the National Fire Danger Rating System. When Contractor is notified, the revised Project Activity Levels will supersede the levels in the Project Activity Level Table below.

PROJECT ACTIVITY LEVEL TABLE

Level	Project Activity Minimum Requirements and Restrictions. Restrictions at each level are cumulative.
A	Minimum required by H2.
B	2. Tank truck, trailer, or approved CAFS substitute shall be on or adjacent to the Active Landing.
C	3. When Hot Saws or Masticators are operating, a tank truck, trailer or approved CAFS substitute shall be within ¼ mile of these operations. Effective communications shall exist between the operator and the Active Landing. 4. Immediately after Mechanical Operations cease, Fire Patrol is required for two hours.
D	4. Immediately after Hot Saw or Masticator operations cease, Fire patrol is required for three hours. 5. No Dead Tree felling after 1:00 PM, except recently dead. 6. No Welding or cutting of metal after 1:00 PM, except by special permit.
Ev	5. The following activities may operate all day: a) Loading and hauling logs decked at approved landings. b) Loading and hauling chips stockpiled at approved landings. c) Servicing equipment at approved sites. d) Dust abatement, road maintenance (Chainsaw use prohibited), culvert installation within cleared area, chip sealing, paving, earth moving or rock aggregate stock pile loading and installation (does not include pit or quarry development). e) Chainsaw and log processing operations associated with loading logs or other forest products at approved landings. 6. Hot Saws or Masticators may operate until 1:00 PM; provided that: a) A tractor or other equipment with a blade capable of constructing fireline is on or adjacent to the active landing or within ¼ mile of the operating equipment. This piece of equipment shall have effective communication with the Hot Saw or Masticator. b) Any additional restrictions specified by the Forest. 7. All other conventional Mechanical Operations are permitted until 1:00PM **8. Some operations may be permitted after 1:00pm, on a case-by-case basis; under the terms of a PAL Ev Variance Agreement. Activities for which a Variance may be issued are:** **a) Rubber Tire Skidding** **b) Chipping on Landings** **c) Helicopter Yarding**

	d) Fire Salvage When approved by a Line Officer, a Variance Agreement can be implemented when the criteria specified in the agreement are met and mitigation measures are in place. This approval is good for ten (10) days unless cancelled sooner or extended by the Sierra RCD for an additional ten (10) days. Variance approval can be withdrawn at the sole discretion of Forest Service. Variance approval is contingent on the 7-day fire weather forecast, fuel conditions, site characteristics, current fire situation, state of Contractor's equipment for prevention and suppression readiness, type of operation and social and community considerations etc. (See attached Project Activity Level Variance Agreement)
E	The following activities may operate all day: 6. Loading and hauling logs decked at approved landings. 7. Loading and hauling chips stockpiled at approved landings. 8. Servicing Equipment at approved sites. 9. Dust abatement, road maintenance (chainsaw use prohibited) or loading stock piles and rock aggregate installation (does not include pit or quarry development). 10. Chainsaw operation associated with loading at approved landings. All other activities are prohibited.

This Project utilizes "The Project Activity Level" (PAL), an industrial operation's fire precaution system. The following Climatology Chart indicates the Historic Activity Levels for the Project Fire Danger Rating Area or Fire Weather Station utilized on this Project. This is only a historical average of the Activity Levels for the identified Fire Danger Rating Area or Weather Station.

Project Activity Level Climatology

Fire Danger Rating Area/Weather Station	**TNF Westside Group**			Years Analyzed		**1996-2016**	
	A	**B**	**C**	**D**	**Ev**	**E**	Days	
Month	Expected Days per Month at Each PAL Value						Analyzed	
May	12.7	7.4	10.6	0.3	0.0	0.0	333	31
June	3.6	7.4	16.3	2.2	0.4	0.0	403	30
July	0.1	2.0	18.5	7.8	2.7	0.0	430	31
August	0.3	1.8	7.8	11.4	9.1	0.6	431	31
September	1.2	2.6	8.2	8.7	5.7	3.6	419	30
October	4.4	4.7	10.9	8.0	2.9	0.0	406	31
November	11.5	9.0	8.4	1.0	0.0	0.0	292	31

APPENDIX G: WET WEATHER

WET WEATHER/WINTER OFF-ROAD OPERATION STANDARDS

Timber Sale Contract Provision B(T)6.31– Operating Schedule states in part "Subject to B(T).6 [Erosion Prevention and Control] and when the requirements of B(T).66 [Current Operating Areas] are met, Contractor's operations may be conducted outside Normal Operating Season."

The Normal Operating Season (NOS) is specified in AT.13/A.16 of The Contract, but may vary from the dates listed. The wet weather/winter season normally begins in October and ends in May. The Contractor is responsible for making the determination when operations should be suspended.

This document is designed to clarify The Contract language related to Wet Weather Operations (WWOps) and to facilitate consistent implementation across The Forest.

The following standards outline the specific WWOps criteria that will be used to determine when operations may begin, what monitoring is required during operations, and when operations should be suspended. These standards provide for additional measures that are needed to maintain water quality and preserve the soil resource. If measures beyond these standards are necessary, they must be agreed upon by all parties and documented in writing. These criteria also apply within the NOS when prolonged periods of wet weather are encountered.

GENERAL STANDARDS

1. Contractor's operations shall be conducted reasonably to minimize soil erosion. Equipment shall not operate when ground conditions are such that an immediate threat of damage to National Forest resources will occur (such as excessive soil compaction and soil displacement). Contractor's operations shall be suspended by designated personnel if monitoring reveals an immediate threat of damage to National Forest resources according to the guidelines in this agreement. Failure to suspend operations will result in contract breach and suspension by delegated Sierra RCD personnel (B(T)9.3).
2. The operation shall be continually monitored by the Contractor and Sierra RCD, including: sale administration personnel, Contractor representatives, and resource specialists. Conditions may change as operations progress at any time of year. If detrimental effects to the transportation system, water quality, or soil resources are encountered by either party, immediate notification by either the Contractor or Sierra RCD shall occur. The Contractor and Sierra RCD will work together to develop actions necessary to alleviate these effects. All actions will be approved by the Sierra RCD.
3. No sediment flow into natural drainages resulting from Contractor Operations (including roads, landings, skidding/yarding) will be permitted at any time. Placement of straw bales or other sediment-catching devices at the outlet of erosion control structures *may* be needed to control sediment discharge. Mitigations will be approved by the Sierra RCD.

Haul may be allowed when:

1. The haul road from the unit to the paved road is stabilized with sufficient aggregate to support haul under evaluated conditions.
2. Earth surfaced roads are dry enough to be bladed and shaped to maintain proper drainage. This may be necessary quite frequently, depending on road conditions and pending storms.
3. The road is in a condition acceptable for drainage and it is frozen EXCEPT for roads with chipseal over aggregate surfaces. Such chipseal-surfaced roads will not sustain wet season haul conditions (i.e. frozen surface) without causing extensive, long-term damage.

Haul will not be allowed when:

1. The road is stabilized with aggregate, but the subgrade will become saturated and the stability of the road prism cannot support haul.
2. Road surface (chipseal over aggregate) is wet or frozen. These roads were not built for wet season/winter haul.
3. The native surfaced cannot be immediately shaped for drainage.
4. Sections of roads lose structural strength and will not support haul.
5. Sediment can drain from the roadway and enter a streamcourse.

Other than haul traffic:
In some instances, crew traffic may alter the designed road drainage through minor rutting. When this occurs, the purchaser will be required to install temporary waterbars to maintain drainage on the road. This will be done on a daily basis if melting and run-off is occurring. If this traffic is causing road resource damage or sediment to enter a streamcourse, crews need to find alternate ways of reaching the area. If the road is to remain closed, it must have a barrier of some type installed to keep out all vehicular traffic and signed to keep traffic off road surface.

General:

1. Snow removal will be done in accordance with the items listed below.
   a. Snow removal to 2-4 inches above road surface may be permitted.
   b. Do not remove road surface by plowing. Any damage or loss of road surface will be replaced or repaired.
   c. Drain-outs will be provided at 100-200 foot intervals or as designated on the ground.
2. Trucks will be encouraged to track over the entire road surface to disperse run-off.
3. Temporary cross drains may be required in advance of predicted storms or warm fronts.
4. Large puddles will be drained.
5. Ditches, dips, culverts and catch basins will be maintained so they will function at all times.

<u>HARVEST OPERATIONS</u>

1. Contractor's operations will be suspended by delegated Sierra RCD personnel if monitoring reveals an immediate threat of damage to National Forest resources (such as excessive soil compaction and soil displacement (B(T)9.3).
2. Per B(T).6 – Erosion Prevention and Control, after September 15th erosion prevention and control work shall be done as promptly as practicable. Drainage structures are very difficult to construct when landings, temporary roads, skid trails, cable corridors, etc. are wet or have snow on them. Erosion structures MUST be in place and functioning prior to precipitation events (greater than 30% chance of rain).
3. Ground-based Logging Systems:
   a. "Normal" unrestricted operations may occur when the soil is dry throughout the entire top 8 inches of the profile.
   b. No operations shall occur during measurable precipitation events or when any of the top 4 inches of soil is moist or wet. (Request Reference - Field guide for soil moisture)
   c. Restricted operations, as defined below, may occur when the top 4 inches of soil is dry throughout, but the soil is moist or wet below. (Request Reference -Soil moisture field guide)
      i. **Conventional equipment** (track laying or rubber-tired). Skidding may occur on designated skid trails spaced an average of 132 feet apart. End lining shall be used to move material to the designated skid trails.
      ii. **Feller-Buncher**. Feller-bunchers may retrieve material from off of skid trails by limiting access to 1 or 2 passes over the same piece of ground. Skidding equipment shall be limited to designated skid trails spaced an average of 132 feet apart.

d. Landings will be constructed to facilitate proper drainage and monitored to ensure that drainage is effective. Sediment shall not be allowed to extend past the landing.
e. If rocking is required for wet weather/winter operations, the landing shall be rocked before the surface becomes saturated.
f. Snow acts as a soil insulator. Unless extreme low temperatures are reached the soil will not freeze under snow. Normally these conditions are not met until the middle of winter, if at all. Unless otherwise agreed, a minimum of 6 inches of machine-compacted snow with a minimum water content of 2 inches is required for over-the-snow logging. If minimum snow depth and snow compaction requirements are not adhered to, soil compaction and/or displacement may occur.

APPENDIX H: Roads (T Specs)

Road Maintenance Requirements. Contractor shall maintain roads in accordance with the following road maintenance requirements.

T-800. DEFINITIONS

Wherever the following terms or pronouns are used in Specifications T-801 through T-811, the intent and meaning shall be interpreted as follows:

800-1.1 - Agreement. Maintenance projects require a mutually acceptable method to resolve the problems which arise when incompatible situations arise between drawings and specifications and actual conditions on the ground to allow orderly and satisfactory progress of the maintenance.
These specifications have been developed in anticipation of those problem areas and have provided that such changes will be by Agreement.
It is intended that drawings and specifications will govern unless "on-the-ground" conditions warrant otherwise, when specifications call for "Agreement", "agreed", or "approval" such Agreement or approval shall be promptly confirmed in writing.

800-1.2 - Annual Road Maintenance Plan. A plan prepared by various users of one or several roads. The plan is an Agreement on maintenance responsibilities to be performed for the coming year.

800-1.3 - Base Course. Material used to reinforce Subgrade or, as shown on drawings, placed on Subgrade to distribute wheel loads.

800-1.4 - Berm. Curb or dike constructed to prevent Roadway runoff water from discharging onto embankment slope.

800-1.5 - Borrow. Select Material taken from designated borrow sites.

800-1.6 - Crown, Inslope, and Outslope. The cross slope of the Traveled Way to aid in drainage and traffic maneuverability.

800-1.7 - Culverts. A conduit or passageway under a road, trail, or other obstruction. A culvert differs from a bridge in that it is usually entirely below the elevation of the Traveled Way.

800-1.8 - Drainage Dip. A dip in the Traveled Way which intercepts surface runoff and diverts the water off the Traveled Way. A Drainage Dip does not block the movement of traffic.

800-1.9 - Drainage Structures. Manufactured structures which control the runoff of water from the Roadway including Inslope, overside drains, aprons, flumes, downdrains, downpipes, and the like.

800-1.10 - Dust Abatement Plan. A table which lists the road, dust palliative, application rates, and estimated number of subsequent applications.

800-1.11 - Lead-off Ditches. A ditch used to transmit water from a Drainage Structure or Drainage Dip outlet to the natural drainage area.

800-1.12 - Material. Any substances specified for use in the performance of the work.

800-1.13 - Prehaul Maintenance. Road maintenance work which the Purchaser determines must be accomplished to maintain the roads to a satisfactory condition commensurate with the Purchaser's use, provided Purchaser's Operations do not damage improvements under B6.22 or National Forest resources and hauling can be done safely. This work will be shown in the Annual Road Maintenance Plan as provided in B/BT6.31.

Prehaul Maintenance work the Purchaser elects to perform will be in compliance with the Road Maintenance T-Specifications.

800-1.14 - Roadbed. The portion of a road between the intersection of Subgrade and sideslopes, excluding that portion of the ditch below Subgrade.

800-1.15 - Road Maintenance Plan. A table which shows applicable road maintenance specifications to be performed by Purchaser on specific roads.

800-1.16 - Roadside. A general term denoting the area adjoining the outer edge of the Roadway.

800-1.17 - Roadway. The portion of a road within the limits of excavation and embankment.

800-1.18 - Shoulder. That portion of Roadway contiguous with Traveled Way for accommodation of stopped vehicles, for emergency use, and lateral support of base and Surface Course, if any.

800-1.19 - Slide. A concentrated deposit of Materials from above or on backslope extending onto the Traveled Way or Shoulders, whether caused by mass land movements or accumulated ravelling.

800-1.20 - Slough. Material eroded from the backslope which partially or completely blocks the ditch, but does not encroach on the Traveled Way so as to block passage of traffic.

800-1.21 - Slump. A localized portion of the Roadbed which has slipped or otherwise become lower than that of the adjacent Roadbed and constitutes a hazard to traffic.

800-1.22 - Special Project Specifications. Specifications which detail conditions and requirements peculiar to the individual project.

800-1.23 - Subgrade. Top surface of Roadbed upon which Base Course or Surface Course is constructed. For roads without Base Course or Surface Course, that portion of Roadbed prepared as the finished wearing surface.

800-1.24 - Surface Course. The Material placed on Base Course or Subgrade primarily to resist abrasion and the effects of climate. Surface Course may be referred to as surfacing.

800-1.25 - Surface Treatment Plan. A table which lists the roads and surface treatments to be applied.

800-1.26 - Traveled Way. That portion of Roadway, excluding Shoulders, used for the movement of vehicles.

800-1.27 - Turnouts. That portion of the Traveled Way constructed as additional width on single lane roads to allow for safe passing of vehicles.

800-1.28 - Water Source. A place designated on the Road Maintenance Map for acquiring water for road maintenance purposes.

800-1.29 - Waterbar. A dip in the Roadbed which intercepts surface runoff and diverts the water off the Roadway. A Waterbar is not designed to be traversable by logging trucks.

T-801. SLIDE AND SLUMP REPAIR

Slide removal is the removal from Roadway and disposal of any Material, such as soil, rock, and vegetation that cannot be routinely handled by a motorgrader during Ditch Cleaning, T-802, and Surface Blading, T-803 Operations. Slump repair is the filling of depressions or washouts in Roadway which cannot be routinely filled by a motor grader during Surface Blading, T-803 Operations.

Slide removal and Slump repair includes excavation, loading, hauling, placing, and compacting of waste or replacement Material and the development of disposal or borrow areas.

REQUIREMENTS

3.1 Slide Material, including soil, rock and vegetative matter which encroaches into the Roadway, shall be removed. The slope which generated the Slide Material shall be reshaped during the removal of the Slide Material with the excavation and loading equipment. Slide Material deposited on the fillslope and below the Traveled Way will not be removed unless needed for slope stability or to protect adjacent resources.
Surface and Base Courses shall not be excavated during Slide removal operations.
Slide Material which cannot be used for other beneficial purposes shall be disposed of at approved disposal sites. Material placed in disposal sites will not require compaction unless compaction is shown on Road Maintenance Plan.

3.2 When filling Slumps or washouts, Material shall be moved from agreed locations or approved borrow sites, placed in layers, and compacted by operating the hauling and spreading equipment uniformly over the full width of each layer.
Existing aggregate surfacing shall be salvaged when practical and relaid after depressions have been filled.
Damaged aggregate base, aggregate surfacing, and bituminous pavement shall be repaired under Specification T-804 Surfacing Repair. The repaired areas of the Slump shall conform to the cross-section which existed prior to the Slump and shall blend with the adjacent undisturbed Traveled Way.

3.3 The maximum volume of Purchaser responsibility for Slide and Slump repair is shown on Road Maintenance Plan. Greater volumes of Slide and Slump repair not qualifying as Catastrophic Damage are Forest Service responsibility.

T-802. DITCH CLEANING

Ditch cleaning is removing and disposing of all Slough Material from Roadway ditches to provide a free-draining waterway.

REQUIREMENTS

3.1 Ditch cleaning shall be repeated during the year as often as necessary to facilitate proper drainage.

3.2 All Slough Material or other debris which might obstruct water flow in the Roadway ditch shall be removed. Material removed from the ditch, if suitable, may be blended into existing native road surface or Shoulder or placed in designated Berms in conjunction with Surface Blading T-803 operations.

Material removed from ditches that is not by Agreement blended into existing roads or placed in Berms shall be loaded and hauled to the disposal site shown on Sale Area Map.

3.3 Roadway backslope or Berm shall not be undercut.

T-803. SURFACE BLADING

1.1 Surface blading is keeping a native or aggregate Roadbed in a condition to facilitate traffic and provide proper drainage. It includes maintaining the Crown, Inslope or Outslope of the Traveled Way, Turnouts, and Shoulder; repairing Berms; blending approach road intersections; and cleaning bridge decks, Drainage Dips, and Lead-off Ditches.

REQUIREMENTS

3.1 Surface blading shall be performed before, during, and after Purchaser's use as often as necessary to facilitate traffic and proper drainage.

3.2 The surface blading shall preserve the existing cross-section. Surface irregularities shall be eliminated and the surface left in a free-draining state and to a smoothness needed to facilitate traffic. Surface Material which has been displaced to the Shoulders or Turnouts shall be returned to the Traveled Way. The blading operation shall be conducted to prevent the loss of surface Material and to provide for a thorough mixing of the Material being worked.

3.3 Water, taken from Water Sources designated on Sale Area Map, shall be applied during blading if sufficient moisture is not present to cut, mix, or compact the surface Material.

3.4 On native surfaced roads, Material generated from backslope Sloughing, and ditch cleaning may be blended with the surface Material being worked. On aggregate surfaced roads this Material shall not be blended with Surface or Base Course Material unless agreed otherwise.

3.5 Roadway backslopes or Berms shall not be undercut, nor shall new Berms be established unless agreed otherwise.

Berms shall be repaired by placing Material, as needed to restore the Berm, to reasonably blend with existing line, grade, and cross-section.

3.6 Drainage Dips and Lead-off Ditches shall be cleaned and maintained to reasonably blend with existing line, grade, and cross-section.

3.7 Intersecting roads shall be bladed for a distance of 50 feet to assure proper blending of the two riding surfaces.

3.8 Rocks or other Material remaining on the Traveled Way after the final pass that are larger than 4 inches in diameter or are larger than the maximum size of imported surfacing shall be removed from the Traveled Way. The oversized Material shall be disposed of by sidecasting, unless shown otherwise on Sale Area Map. Sidecasting into streams, lakes, or water courses will not be permitted.

T-804. SURFACING REPAIR

1.1 Surfacing repair is repairing potholes or small soft areas in the Traveled Way. It includes area preparation and furnishing and placing all necessary Materials, and other work necessary to repair the surface.

MATERIALS

2.1 Material used in the repair of soft areas on aggregate or native surfaced roads may be acquired from approved commercial sources, Forest Service Borrow areas as approved, or Borrow sources agreed to. The quality and quantity of the imported Material used in the repair will be limited to that needed to provide a stable Traveled Way for hauling and to minimize damage to the road and adjacent resources. The quantity of imported surface repair Material used in the appraisal estimate will be shown on Road Maintenance Plan. However, the magnitude of the work may vary depending on Purchaser's hauling schedule and ground conditions.

2.2 Material used in the repair of bituminous pavements may be acquired from local commercial sources. If a mixing table is required, the location shall be approved by the Forest Service. The bituminous mixture to be used by the Purchaser shall be approved by the Forest Service. The Purchaser's share of the quantity of bituminous mixture used in the appraisal estimate will be shown on Road Maintenance Plan. However, Purchaser's share of the work may vary depending on Purchaser's hauling schedule, ground conditions, other traffic, etc.

REQUIREMENTS

3.1 Work under this specification shall be performed in a timely manner to reduce further deterioration of the Traveled Way.

3.2 Soft spots on aggregate or native surfaces shall be repaired by placing the imported Surface Course on top of the soft spot. Layers of imported Material shall be placed until a firm surface is produced.

3.3 Bituminous Pavement Repairs. The areas to receive bituminous pavement repairs will be marked on the road surface by the Forest Service just prior to Purchaser performing the work.

3.4 Potholes (deep patch). Surface Course and Base Course Materials shall be excavated to a depth necessary to reach firm, suitable Material. The minimum depth of excavation shall be 2 inches and the maximum depth of excavation shall be to the top of the Subgrade.

The edges of the prepared hole shall be extended to form a vertical face in unfractured asphalt surfacing. The prepared hole shall generally be circular or rectangular in shape, dry, and cleaned of all loose Material.

Prepared potholes shall be patched or barricaded immediately.

The faces of the prepared hole shall be tacked with a slow-setting emulsified asphalt.

The bituminous mixture shall be placed in layers not exceeding a compacted depth of 2 inches. Each layer shall be compacted thoroughly with hand or mechanical tampers or rollers. Compaction shall not be done with equipment wheels.

Upon completion, the compacted patch in the pothole shall be flush, with a tolerance or approximately ¼ inch to ½ inch above the level of the adjacent pavement.

3.5 Skin Patches. Bituminous mixture shall be distributed uniformly with feathered edges in layers not to exceed 2 inches compacted depth. When multiple layers are ordered, joints shall be offset at least 6 inches between layers.

Each layer shall be compacted by two passes with a 7-10 ton steel roller or comparable vibratory roller.

3.6 Asphalt Berm. Damaged segments of Berm shall be removed and the exposed ends beveled at approximately 45 degrees from vertical. The Berm foundation shall be cleaned and patched as necessary. The foundation and joining surfaces shall be coated with a slow-setting emulsified asphalt. Asphalt mix shall be placed and compacted to conform with the shape and alignment of the undamaged segment.

3.7 Disposal. All Materials removed from potholes, patches, and Berms shall be disposed of at disposal sites shown on Sale Area Map.

T-805. DRAINAGE STRUCTURES

This work consists of maintaining Drainage Structures and related items such as inlet and outlet channels, existing riprap, trash racks, and dropinlets.

MATERIALS

2.1 All Materials used in the maintenance of Drainage Structures shall conform by type and specification to the Material in the structure being maintained.

REQUIREMENTS

3.1 Drainage Structures and related items shall be cleared of all foreign Material which has been deposited above the bottom of the structure and all vegetative growth which interferes with the flow pattern. Material removed that cannot be incorporated into maintenance work shall be hauled to an approved disposal site.

3.2 If outlet or inlet riprap was installed by Purchaser as a construction item or existed prior to Purchaser's haul, it shall be maintained in good condition including the replacement of riprap if necessary to previous line, grade, and cross-section.

3.3 Perform maintenance to insure the proper functioning of the head walls, aprons, inlet assemblies, overside drains, riprap, trash racks, and other facilities related to the Drainage Structure.

T-806. DUST ABATEMENT

This work shall consist of preparing Traveled Way and furnishing and applying Materials to abate dust.

MATERIALS

2.1 The roads requiring dust abatement, type of dust abatement Material to be used, the rates of application, and frequency of applications will be shown on Dust Abatement Plan (B/BT5.3, B/BT6.31, and C/CT5.31#). The Dust Abatement Plan may be changed by written Agreement.

2.2 Water. The locations of Water Sources are shown on the Project Map (Appendix C).

2.3 Dust abatement Materials shall meet the requirements of the following subsections of Forest Service Specifications for Construction of Roads and Bridges or attached Special Project Specifications.

Emulsified Asphalt 702
Blotter Material703.12
Magnesium or Calcium Chloride Brine 723.01
Calcium Chloride Flake 723.02
Lignin Sulfonate723.03

2.4 Testing of Materials. Certification and sampling of bituminous Materials lignin sulfonate, and magnesium chloride shall be in accordance with subsections 105.04 or 723.04 of Forest Service Specifications for Construction of Roads and Bridges.

REQUIREMENTS

3.1 General. Dust abatement Materials shall be applied to the road surface as necessary to control road surface loss, provide for road user safety, and minimize damage to adjacent resources.

3.2 Compaction. When the methods listed below specify compaction, Traveled Way shall be compacted by an 8 to 10 ton pneumatic, steel-wheeled or equivalent vibrating roller making 2 passes over the full Traveled Way and Shoulder width, unless compaction is not required on the Dust Abatement Plan (B/BT5.3, B/BT6.31, and C/CT5.31#).

3.3 Preparation to Dust Abatement Materials Other Than Water. The following applies to all methods of preparation:

Bituminous residue shall be scarified and pulverized to produce loosened Material not exceeding 4 inches in greatest dimension.

Traveled Way shall be bladed in accordance with T-803.

Prior to applying DO-6BA, DO-6PA, or DO-8, the top 2 inches of Traveled Way shall contain not less than 80 percent nor more than 120 percent of optimum moisture as determined by AASHTO T-99, Method C. Prior to applying other bituminous Material, Traveled Way shall have a moisture content between 1 and 3 percent. If surface dusting prevents the bituminous Material from penetrating, a light application of water shall be applied just prior to applying the bituminous Material.

Lignin Sulfonate and magnesium chloride shall be applied when the top 1 inch of Traveled Way contains not less than 3 percent moisture, nor more than 120 percent of optimum moisture as determined by AASHTO T-99, Method C.

Moisture content will be determined in accordance with AASHTO T-217 OR T-239.

One or more of the following methods shall be used, as specified in the Dust Abatement Plan (B/BT5.3, B/BT6.31, and C/CT5.31#).

Method 1. Compact Traveled Way and apply the dust abatement Material.

Method 2. Develop a layer of loose Material approximately 1 inch in depth for the full width of Traveled Way. Apply the dust abatement Material to this loose Material and compact after penetration. If traffic makes maintenance of the loose Material difficult, 1 inch of the Material may be bladed into a windrow along the Shoulder. The specified moisture content shall be maintained in the windrow and the top 1 inch of Traveled Way. The windrow shall be bladed to a uniform Material. When the dust abatement Material has penetrated, Traveled Way shall be compacted.

Method 3. Blade 1 inch of Material from Traveled Way into a windrow along the Shoulder. Maintain the specified moisture content in the windrow and the top inch of Traveled Way. Apply half the dust abatement Material. When the dust abatement Material has penetrated, the windrow shall be bladed to a uniform depth across dust abatement Traveled Way, and the remaining dust abatement Material shall be applied. Traveled Way shall be compacted.

Method 4. Develop a layer of loose Material approximately 2 inches in depth for the full width of Traveled Way. Apply half the dust abatement Material to the loose Material. Blade the top 2 inches into a windrow along the Shoulder. Apply the remaining dust abatement Material to Traveled Way and the Berm. Spread the Berm evenly across Traveled Way and compact.

3.4 Preparation for Dust Abatement with Water. Traveled Way shall be prepared in accordance with Specification T-803 Surface Blading when required.

3.5 Application Tolerance. Dust abatement Materials other than water shall be applied within 0.05 gallons per square yard of the rate specified.

3.6 Mixing Requirements. DO-6BA, DO-6PA, and DO-8 shall be thoroughly circulated in the distributor within 1 hour of application.

3.7 Weather Limitations. Dust abatement Materials shall not be applied when it is raining.

Bituminous Material shall be applied when the surface temperature of Traveled Way is 50 degrees Fahrenheit or higher.

Lignin sulfonate and magnesium chloride shall be applied when the atmospheric temperature is 40 degrees Fahrenheit or higher.

3.8 Blotter Material. Blotter Material shall be spread in a sufficient quantity to prevent tire pickup.

T-807. ROADWAY VEGETATION

This work includes removal of brush and trees from within the Roadway limits.

REQUIREMENTS

3.1 Vegetative matter within the Roadway which impedes vehicular travel or interferes with road maintenance operations, such as surface blading and ditch and culvert cleaning shall be removed. Downed timber meeting utilization standards shall be cut in appropriate lengths and decked along the Roadside in locations where the Traveled Way or sight distances will not be impaired.

3.2 Vegetative matter removed from the Roadway shall be treated by the specified method shown on Project Map (Appendix C) and as required by C/CT6.7#.

Project Roads Pre, During, and Post Maintenance with T-Spec Reference

See Appendix B C5.12 USE OF ROADS BY CONTRACTOR

Pre-Haul Maintenance									
Road No.	From	To	Miles	T-801	T-802	T-803	T-804	T-805	T-807
5S080	0.00	5.60	5.60		P	P		P	P
5S080	5.60	7.60	2.00		P	P		P	P
5S080J	0.00	0.20	0.20		P	P		P	P
5S080J	0.20	0.27	0.07		P	P		P	P
5S080M	0.00	0.20	0.20		P	P		P	P
5S080Q	0.00	0.30	0.30		P	P		P	P
7S032A	0.00	0.15	0.15		P	P		P	P
7S032ATO.16	0.00	0.10	0.10		P	P		P	P
7S032ATO.19	0.00	0.10	0.10		P	P		P	P
7S032D	0.00	0.34	0.34		P	P		P	P
7S036	0.00	0.40	0.40		P	P		P	P
7S036A	0.00	0.25	0.25		P	P		P	P
8S015	0.00	0.26	0.26		P	P		P	P
8S015A	0.00	0.20	0.20		P	P		P	P
8S020	0.00	0.07	0.07		P	P		P	P
8S029	0.00	0.20	0.20		P	P		P	P
8S029	0.00	0.00	0.00		P	P		P	P
8S031	0.00	0.20	0.20		P	P		P	P
8S031	0.00	2.00	2.00		P	P		P	P
8S031A	0.00	0.40	0.40		P	P		P	P
8S031B	0.00	0.45	0.45		P	P		P	P
8S031T2.27	0.00	0.10	0.10		P	P		P	P
8S034	0.00	0.10	0.10		P	P		P	P
8S060	0.00	0.50	0.50		P	P		P	P
8S060A	0.00	0.10	0.10		P	P		P	P
8S060B	0.00	0.13	0.13		P	P		P	P
8S075A	0.00	0.50	0.50		P	P		P	P
8S075B	0.00	0.07	0.07		P	P		P	P
8S075C	0.00	0.08	0.08		P	P		P	P
8S075D	0.00	0.13	0.13		P	P		P	P
8S075DA	0.00	0.50	0.50		P	P		P	P
8S075F	0.00	0.38	0.38		P	P		P	P
8S075G	0.00	0.15	0.15		P	P		P	P
8S075GA	0.00	0.06	0.06		P	P		P	P
8S076C	0.00	0.07	0.07		P	P		P	P
8S085	0.00	1.20	1.20		P	P		P	P
8S303	0.00	0.10	0.10		P	P		P	P

During Haul Maintenance										
Road No.	From	To		T-801	T-802	T-803	T-804	T-805	T-807	T-807
5S080	0.00	5.60	5.60	P	P	P		P	P	P
5S080	5.60	7.60	2.00	P	P	P		P	P	P
5S080J	0.00	0.20	0.20	P	P	P		P	P	P
5S080J	0.20	0.27	0.07	P	P	P		P	P	P
5S080M	0.00	0.20	0.20	P	P	P		P	P	P
5S080Q	0.00	0.30	0.30	P	P	P		P	P	P
7S032A	0.00	0.15	0.15	P	P	P		P	P	P
7S032ATO.16	0.00	0.10	0.10	P	P	P		P	P	P
7S032ATO.19	0.00	0.10	0.10	P	P	P		P	P	P
7S032D	0.00	0.34	0.34	P	P	P		P	P	P
7S036	0.00	0.40	0.40	P	P	P		P	P	P
7S036A	0.00	0.25	0.25	P	P	P		P	P	P
8S015	0.00	0.26	0.26	P	P	P		P	P	P
8S015A	0.00	0.20	0.20	P	P	P		P	P	P
8S020	0.00	0.07	0.07	P	P	P		P	P	P
8S029	0.00	0.20	0.20	P	P	P		P	P	P
8S029	0.00	0.00	0.00	P	P	P		P	P	P
8S031	0.00	0.20	0.20	P	P	P		P	P	P
8S031	0.00	2.00	2.00	P	P	P		P	P	P
8S031A	0.00	0.40	0.40	P	P	P		P	P	P
8S031B	0.00	0.45	0.45	P	P	P		P	P	P
8S031T2.27	0.00	0.10	0.10	P	P	P		P	P	P
8S034	0.00	0.10	0.10	P	P	P		P	P	P
8S060	0.00	0.50	0.50	P	P	P		P	P	P
8S060A	0.00	0.10	0.10	P	P	P		P	P	P
8S060B	0.00	0.13	0.13	P	P	P		P	P	P
8S075A	0.00	0.50	0.50	P	P	P		P	P	P
8S075B	0.00	0.07	0.07	P	P	P		P	P	P
8S075C	0.00	0.08	0.08	P	P	P		P	P	P
8S075D	0.00	0.13	0.13	P	P	P		P	P	P
8S075DA	0.00	0.50	0.50	P	P	P		P	P	P
8S075F	0.00	0.38	0.38	P	P	P		P	P	P
8S075G	0.00	0.15	0.15	P	P	P		P	P	P
8S075GA	0.00	0.06	0.06	P	P	P		P	P	P
8S076C	0.00	0.07	0.07	P	P	P		P	P	P
8S085	0.00	1.20	1.20	P	P	P		P	P	P
8S303	0.00	0.10	0.10	P	P	P		P	P	P

Post Hail Maintenance									
Road No.				T-801	T-802	T-803	T-804	T-805	T-807
5S080	From	To		P	P	P		P	P
5S080	0	5.6	5.6	P	P	P		P	P
5S080J	5.6	7.6	2	P	P	P		P	P
5S080J	0	0.2	0.2	P	P	P		P	P
5S080M	0.2	0.27	0.07	P	P	P		P	P
5S080Q	0	0.2	0.2	P	P	P		P	P
7S032A	0	0.3	0.3	P	P	P		P	P
7S032ATO.16	0	0.15	0.15	P	P	P		P	P
7S032ATO.19	0	0.1	0.1	P	P	P		P	P
7S032D	0	0.1	0.1	P	P	P		P	P
7S036	0	0.34	0.34	P	P	P		P	P
7S036A	0	0.4	0.4	P	P	P		P	P
8S015	0	0.25	0.25	P	P	P		P	P
8S015A	0	0.26	0.26	P	P	P		P	P
8S020	0	0.2	0.2	P	P	P		P	P
8S029	0	0.07	0.07	P	P	P		P	P
8S029	0	0.2	0.2	P	P	P		P	P
8S031	0	0	0	P	P	P		P	P
8S031	0	0.2	0.2	P	P	P		P	P
8S031A	0	2	2	P	P	P		P	P
8S031B	0	0.4	0.4	P	P	P		P	P
8S031T2.27	0	0.45	0.45	P	P	P		P	P
8S034	0	0.1	0.1	P	P	P		P	P
8S060	0	0.1	0.1	P	P	P		P	P
8S060A	0	0.5	0.5	P	P	P		P	P
8S060B	0	0.1	0.1	P	P	P		P	P
8S075A	0	0.13	0.13	P	P	P		P	P
8S075B	0	0.5	0.5	P	P	P		P	P
8S075C	0	0.07	0.07	P	P	P		P	P
8S075D	0	0.08	0.08	P	P	P		P	P
8S075DA	0	0.13	0.13	P	P	P		P	P
8S075F	0	0.5	0.5	P	P	P		P	P
8S075G	0	0.38	0.38	P	P	P		P	P
8S075GA	0	0.15	0.15	P	P	P		P	P
8S076C	0	0.06	0.06	P	P	P		P	P
8S085	0	0.07	0.07	P	P	P		P	P
8S303	0	1.2	1.2	P	P	P		P	P