

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
All Units	Green	<u>Hazard Tree</u> . 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 Purchaser's landings or the roadbed of National Forest System roads within Sale Area, shall be felled by Purchaser when Marked in the specified paint color above and below stump height by Forest Service in advance of felling any other timber in the vicinity. Pieces meeting Utilization Standards from such dead and unstable live trees shall be removed unless Purchaser 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 Sale Area Map or on the ground.
Units: 300, 315, 316, 401, and 402	Blue	<u>Individual Tree Mark</u> . Individual trees are designated for cutting only if Marked above and below stump height with the specified paint color.
Units: 284, 295, 296, 307, 308, 311, 312, 329, 347, 352, 353, 403	Orange	<u>Leave Tree Mark</u> . All live and dead conifer trees are designated for cutting unless Marked as leave trees. Leave trees are Marked above and below stump height with the specified paint color. Sale Area Map indicates areas plainly identified on the ground where leave trees are Marked to be left uncut.
All Units	White	<u>Wildlife Trees</u> . Notwithstanding the designation for cutting under B2.31, B2.33, 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 Purchaser's Operations, Forest Service may designate alternate trees to be saved.
All Units	Black	<u>Marked Out Trees</u> . 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.
N/A		<u>Designation by Spacing C2.351#</u>
N/A		<u>Designation by Species and Diameter, C2.352#</u>
N/A		<u>Designation by Damage Class, C2.353#</u>
N/A		<u>Designation by Row Spacing, C2.354#</u>

Subdivision/Payment Unit and Cutting Unit Boundary Designation Table

<u>Subdivision/Payment Unit</u>	<u>Boundary Paint Color</u>	<u>Boundary Designation</u>
All Subdivisons	Orange	
<u>Cutting Unit</u>	<u>Boundary Paint Color</u>	<u>Boundary Designation</u>
All Units	Orange	Boundary lines are marked at eye level with three orange slanted slash marks and a spot at ground level with the eye level marks facing into the interior of the unit. Yellow boundary posters with sale name are stapled to boundary trees and face outward at locations where the boundary intersects or coincides with roads. The Roadside Hazard Tree Units, 401 and 402, are identified at beginning and end of units with yellow boundary tags.

Restricted Roads List Table

Not Applicable

Contract Road Maintenance Requirements Summary

Road	Termini		Miles	Applicable Prehaul Road Maintenance Specifications									
	From	To		T801	T802	T803	T804	T806	T807	T808	T809	T810	T811
40N42	1C01	Unit 402	6.38	P		P							
40N42A	40N42	Unit 307	0.62	P		P							
40N39	40N42	Unit 352	2.27	P		P							
40N39A	40N39	Unit 402	0.67	P		P							
40N51	1C01	MP 11.41	11.41	P		P							
40N33	40N51	MP	1.54	P		P							
40N51B	40N51	Unit 329	1.12	P		P							

P = Purchaser Performance Item, D = Deposit to Forest Service, D3 = Deposit to Third Party

Road	Termini		Miles	Applicable During Haul Road Maintenance Specifications									
	From	To		T801	T802	T803	T804	T806	T807	T808	T809	T810	T811
40N42	1C01	Unit 402	6.38			P		P					
40N42A	40N42	Unit 307	0.62			P		P					
40N39	40N42	Unit 352	2.27			P		P					
40N39A	40N39	Unit 402	0.67			P		P					
40N51	1C01	MP 11.41	11.41			P		P					
40N33	40N51	MP	1.54			P		P					
40N51B	40N51	Unit 329	1.12			P		P					

P = Purchaser Performance Item, D = Deposit to Forest Service, D3 = Deposit to Third Party

Road	Termini		Miles	Applicable Post Haul Road Maintenance Specifications									
	From	To		T801	T802	T803	T804	T806	T807	T808	T809	T810	T811
40N42	1C01	Unit 402	6.38			P							
40N42A	40N42	Unit 307	0.62			P							
40N39	40N42	Unit 352	2.27			P							
40N39A	40N39	Unit 402	0.67			P							
40N51	1C01	MP 11.41	11.41			P							
40N33	40N51	MP	1.54			P							
40N51B	40N51	Unit 329	1.12			P							

P = Purchaser Performance Item D = Deposit to Forest Service D3 = Deposit to Third Party

Road Maintenance T-Specifications**for****Timber Sale Contracts**

<i>Applicable T-Spec.</i>	<i>No.</i>	<i>Specification Title</i>
X	T-800	Definitions
X	T-801	Slide and Slump Repair
	T-802	Ditch Cleaning
X	T-803	Surface Blading
	T-804	Surfacing Repair
	T-805	Drainage Structures
X	T-806	Dust Abatement
	T-807	Roadway Vegetation
	T-808	Miscellaneous Structures
	T-809	Waterbars
	T-810	Barriers
	T-811	Surface Treatment

SPECIFICATION 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 C/CT5.31.

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.

SPECIFICATION T-801 SLIDE AND SLUMP REPAIR

DESCRIPTION

1.1 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 disposal sites shown on Sale Area Map. 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 borrow sites shown on Sale Area Map, 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.

SPECIFICATION T-803 SURFACE BLADING

DESCRIPTION

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.

3.9 Material resulting from work under this specification shall not remain on or in structures, such as Culverts, overside drains, cattleguards, ditches, Drainage Dips, and the like.

3.10 Material resulting from work under this specification, plus any accumulated debris, shall be removed from bridge decks and the deck drains opened.

SPECIFICATION T-806 DUST ABATEMENT

DESCRIPTION

1.1 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. The Dust Abatement Plan may be changed by written Agreement.

2.2 Water. The locations of Water Sources are shown on Contract Area Map.

Operating Guidelines:

1. Operations are restricted to one hour after sunrise to one hour before sunset.
2. Pumping rate shall not exceed 350 gallons per minute.
3. The pumping rate shall not exceed ten percent of the stream flow.
4. Seek streams and pools where water is deep and flowing, as opposed to streams with low flow and small isolated pools.
5. Pumping shall be terminated when the tank is full. The effect of single pumping operations, or multiple pumping operations at the same location, shall not result in obvious draw-down of either upstream or downstream pools.
6. Each pumping operations shall use a fish screen. The screen face should be oriented parallel to flow for best screening performance. The screen shall be designed and used such that it can be submerged with at least one-screen-height clearance above and below the screen.
7. Operators shall keep a log on the truck containing the following information:
 - a. Operator's Name
 - b. Date
 - c. Time
 - d. Pump Rate
 - e. Filling Time
 - f. Screen Cleaned (Y or N)
 - g. Screen condition
 - h. Comments

Screen Construction Criteria:

1. Surface Area:
 - a. The total (unobstructed) surface area of the screen shall be at least 2.5 square feet, based on the upper limit of pumping of 350 gpm. Larger surface areas are recommended where debris buildup is anticipated, and where stream depth is adequate to keep the screen submerged at approximately middepth.
2. Screen Mesh:
 - a. Screen Mesh must be in good repair and present a sealed, positive barrier effectively preventing entry of the "design fish" into the intake. The design fish in this case is an immature (20-30mm) salmon or steelhead fry.
 - b. The screen mesh size shall be: round openings – maximum 3/32 inch diameter (.09 inch)
 - c. Square openings – maximum 3/32 inch diagonal (.09 inch)
 - d. Slotted openings – maximum 1/16 inch width (.07 inch)

3. Screen Design:

- a. Water drafting screens maybe off-the-shelf products, but they are often custom-made devices appropriate to the scale and duration of pumping operation. To keep the screen supported and correctly positioned in the water column, adjustable support legs are advised. Screen geometry can be configured either as rectangular or cylindrical, e.e. as a shallow “box-shape” or tubular.
- b. The intake structure shall be designed to promote uniform velocity distribution at all external mesh surfaces. This can be accomplished with a simple internal baffle devise that distributes the flow evenly across the entire surface of the screen. In order to accomplish this, the designer needs to understand the hydraulic characteristics of these devices. There is a tendency for most of the intake water to enter the screen near the hose end, so a typical internal baffle would consist of a pipe (or manifolded set of pipes) which have variable porosity holes at predetermine spacing. We recommend starting near the hose end with approximately 5 – 10% average open area, and gradually increasing the porosity toward the length of the scen. At a point where screen length exceeds three times the diameter of the suction hose, the baffling effect tends to diminish rapidly. At this point the baffle porosity may approach 100%. A successful baffle system will functionally distribute flow to all areas of the screen. A poorly designed screen may result in high-velocity “hot spots”, which could lead to fish impingement on the screen face.
- c. Hydraulic testing of prototype screen designs is recommended where the application is on-going and extensive.

4. Screen Structure:

- a. The screen frame must be strong enough to withstand the hydraulic forces it will experience. However, the structural frames, braces, and other elements that block the flow, change flow direction, or otherwise decrease the screen surface area should be minimized.

5. Screen Cleaning:

- a. The screen shall be cleaned as often as necessary to prevent approach velocity from exceeding 0.33 feet per second. Operators should withdraw the screen and clean it after each use, or as necessary to keep screen face free of debris. Pumping should stop of screen cleaning when approximately fifteen percent or more of the screen area is occluded by debris. A suitable brush shall be on board the truck for this cleaning operation.
- b. If the operator notes (1) impingement of any juvenile fissh on the screen face or (2) entrainment of any fish through the screen mesh, he/she should stop operations and notify the Department of Fish & Game and/or NMFS hydraulic engineering staff:

National Marine Fisheries Service
Engineering Section
777 Sonoma Avenue, Suite 325
Santa Rosa, CA 95404
(707) 575-6050

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 Material	703.12
Magnesium or Calcium Chloride Brine	723.01
Calcium Chloride Flake	723.02
Lignin Sulfonate	723.03

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 (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 (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.

Dust Abatement Plan (T-806) (7/01)

Road Segment	Material Type or Grade	Application Rate		Frequency of Subsequent Application	Prep. Method	Wt. Vol. Conversion Factor
		Initial	Subsequent			
40N42	WATER	N/A	N/A	*SEE BELOW	**SEE BELOW	N/A
40N42A	WATER	N/A	N/A	*SEE BELOW	**SEE BELOW	N/A
40N39	WATER	N/A	N/A	*SEE BELOW	**SEE BELOW	N/A
40N51	WATER	N/A	N/A	*SEE BELOW	**SEE BELOW	N/A
40N33	WATER	N/A	N/A	*SEE BELOW	**SEE BELOW	N/A
40N51B	WATER	N/A	N/A	*SEE BELOW	**SEE BELOW	N/A

* If water is used - Complete abatement once for each hauling day shall satisfy this requirement, except that when production exceeds 10 loads per operating day, water shall be applied to dusting roads through the day while hauling.

** Preparation method for water - Preparation shall be in accordance with the specification T-806 Dust Abatement.

WET WEATHER OPERATION STANDARDS
(05/16/02)

Timber Sale Contract (TSC) Provision B5.12 - Use of Roads by Purchaser, states in part "...Purchaser is authorized to use existing National Forest roads...when such use will not cause damage to the roads or National Forest resources and when hauling can be done safely." Provision B6.31 - Operating Schedule states in part "Subject to B6.6 and when the requirements of B6.65 are met, Purchaser's operations may be conducted outside Normal Operating Season."

Logging operations may be conducted outside the Normal Operating Season (NOS), however, certain requirements must be met in order to have operations proceed during this period. Compliance with pertinent Best Management Practices (BMPs) by the Purchaser is necessary to meet water quality requirements as agreed to between the State of California and the US Forest Service. The following standards are intended to further clarify Timber Sale Contract requirements by providing specific criteria for conducting sale operations during wet weather conditions and to facilitate consistent implementation across the Klamath National Forest.

The following guidelines are to be used to determine if conditions are favorable for wet weather/winter operations and to provide guidance as to when conditions warrant suspension of operations, when operations may begin or resume, or when and what remedies may be appropriate. These guidelines also apply within the Normal Operating Season (NOS) when prolonged periods of wet weather are encountered. These standards were developed to protect water quality. Protection measures for other resources and facilities, such soils and transportation system, are addressed in the Timber Sale Contract and other Forest Service standards and guides.

A. General Guidelines:

* Operations will be continually monitored by the Purchaser and the Forest Service, including: sale administration personnel, purchaser representatives, and resource specialists. Conditions may change as operations progress during the wet season. If detrimental effects to the transportation system, water quality, or soil resources are encountered by either party, immediate notification of designated sale administrative personnel by either the Purchaser or Forest Service shall occur. The Purchaser and Forest Service will work together to develop actions necessary to alleviate these effects.

* BMP guidelines dictate that no sediment/contaminant flow into stream courses from any facility used by the Purchaser, including B. Roads, C. Skid Trails, Cableways, or Harvest Areas, D. Landings, and E. Fueling Locations, will be permitted at any time. BMP measurable thresholds, listed in paragraph "2)" under the major headings below (*BMP indicators that operations should be curtailed and/or corrective actions implemented*), warn the Purchaser and the Forest Service that BMP violations are possible if action is not taken. Expression of any of these BMP indicators does not necessarily indicate BMP violation(s) and degradation of water quality has occurred.

B. Roads:

General - Hauling/Access Use:

* Required road work for prehaul must be accomplished prior to the wet season or periods of precipitation. Saturated road surfaces should not be graded. At least 2" of snow should remain on the road surface after snow plowing. Road surfaces must be Sale Name:

at a standard and maintenance level that will support the impacts of wet weather operations. This includes the following:

1) Actions that augment BMP compliance:

Wet Conditions

* Drainage structures and erosion/sediment prevention actions will be in place and functioning prior to expected precipitation events.

* Roads will be properly graded and ditched or outsloped.

* Portions of roads that lie within Streamside Management Zones (SMZs) and road locations where eroded material is likely to enter channels will be rocked to Forest Service specifications and geotextile fabric used when appropriate, unless otherwise agreed, with input from a resource specialist and an engineer.

* Operations will be scheduled to use roads in order to avoid the risk of rutting during "precipitation events."

* By agreement, use of the variable tire pressure option can be used to reduce surface replacement and will reduce purchaser road maintenance costs.

Snow Conditions

* Snow will be removed without disturbing the road surface, cut bank, fill slope, or drainage structures. No soil or aggregate should be intermixed with the sidecast snow during plowing or grading. At least 2" of snow should remain on the road surface after snow plowing.

* Snow berms must be breached, except in sensitive areas, to allow proper road drainage. These outlets must be spaced so as not to concentrate road surface flows (usually spaced no more than 200 feet apart). Erosion control structures (straw bales or filter fence) may be required at the outlets to collect road generated sediment.

Frozen Conditions

* If the road surface freezes, the road surface segments must remain completely frozen and must be able to support the weight of any vehicle that will be driven on it. If the road thaws, see below...

* When any part of the active road length thaws and mitigations, such as rocking, cannot be implemented to ensure water quality protection, the road will not be used. This will preclude the use of the road by all vehicles (including administrative) unless the activity can be restricted to that portion of the road that remains frozen.

2) BMP indicators that operations should be curtailed and/or corrective action implemented:

CULVERTS:

[1] Sediment and/or debris is blocking 30% of inlet or outlet.

[2] More than 10% of the flow passes beneath or around culvert, or noticeable piping erosion evident, unless crossing is designed to do so (e.g., coarse material rock fill)

EROSION:

[3] Scour and/or sediment deposition evident, and extending more than 20 feet below outlet of cross drain or other drainage structure (e.g., culvert, rolling dip, waterbar).

[4] Scour &/or sediment movement into SMZ or drainageway from road surface, cut slope, or fill slope.

[5] Material sidecast within 25 feet of a channel, ditch or drainageway, or onto slopes vegetated for erosion control.

PONDING:

[6] Ponding present on road surface that is causing fill subsidence or otherwise threatening integrity of fill.

RUTS/RILLS:

[7] More than 10% of road segment length has rills or ruts more than 2 inches deep and 20 feet in length which continue off road surface, with potential to deliver sediment to stream channel.

[8] Ruts formed that can channel water past erosion control structures.

[9] Numerous rills present at stream crossing (>1 rill per lineal 5 ft), apparently active or enlarging, evidence of some sediment delivery to stream.

3) Operating Requirements & Remedies:

* If more than 10 percent of the road segment length is rutted 2 inches in depth or greater, purchasers use of the road will be suspended. (Percentage will be determined in one mile increments if road is longer than one mile). 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.

* If the roadway dries and can support vehicles without causing rutting, soil displacement, damage to drainage structures, and with no off-site sediment movement, it can be used. If not, it should remain unused.

* Roads damaged by Purchaser's Operations and associated damage will be repaired at the Purchaser's expense. A remedy plan will be prepared and implemented. Repair work shall be accomplished immediately when conditions are such that additional damage to the resources will not occur or when designated by the Forest Service.

Native Surfaced Roads and Other Roads Identified for Special Hauling Requirements

* The native surfaced roads and other roads listed below are located in sensitive soils that are prone to road surface damage during wet weather use. There shall be no log hauling on these roads during precipitation events. The timber sale operator shall allow an adequate drying period after a rain occurrence prior to resumption of hauling (normally 1 day depending on soil type and/or as determined by Purchaser and Forest Service Rep.).

<u>Road Number</u>	<u>Termini - Termini</u>
--------------------	--------------------------

N/A

Rocking Roads

* Locations where road rocking is required to harden the road surface for wet weather haul will be designated in writing and flagged on-the-ground by the Engineering Rep. or Sale Administrator. Minimum depth of rock that meets engineering specifications

will be established in writing and inspected by the Forest Service prior to use of the road for hauling outside the NOS.

C. Skid Trails/Cableways/Harvest Areas:

Skid trails will be flagged by the Purchaser and approved by the Forest Service in advance of falling.

1) Actions that augment BMP compliance:

General

* No more than 15% of the activity area (includes temporary roads, landings, skid trails, and cableways [cable corridors]) should be subjected to detrimental ground-disturbing activities. Ground-disturbing activities produce adverse changes in soil porosity (compaction), soil cover, and soil organic matter.

Snow/Frozen Conditions

* Snow can act as a cushion to protect wet soils. Unless otherwise agreed, within the operating area, a minimum of 6 inches of machine compacted snow with a minimum water content of 2 inches is required for over-the-snow logging or the soil should be frozen to a depth of 6 inches for logging operations to occur (frozen soil occurs primarily on the Goosenest District). When the snow depth approaches this minimum, snow conditions must be monitored on a daily basis to verify snow depth is sufficient to start or continue operations. Approval to operate on snow less than indicated above must include an evaluation by a soil scientist or hydrologist. At least 90% of the skidding surfaces must meet the above snow cover standard at all times. If snow cover falls below 90%, see section 2) below for "bare ground" standards.

Wet Conditions

Skyline - No Specified pre-conditions.

Cut-to-Length System - Processing of material on the designated skid trails by a harvester may occur when soils are dry to a depth of 4 inches. Limit harvester to 1 or 2 passes over the same piece of ground. The forwarder will stay on designated skid trails covered with a minimum of 6 inches of slash.

Feller/Buncher System - Movement of material to the designated skid trails by a track laying feller/buncher may occur when soils are dry to a depth 4 inches. Feller/buncher will be limited to 1 or 2 passes over the same piece of ground. Skidding equipment will stay on designated skid trails until soils are dry to a depth of 10 inches.

Traditional Tractor Logging - Skidding may occur by conventional high-ground-pressure equipment when soils are dry to a depth of 4 inches. Equipment is restricted to the designated skid trails. Endlining will be used to move material to the designated skid trails until soils are dry to a depth of 10 inches. Equipment may, by agreement, leave designated skid trails when soils are dry to a depth of 10 inches.

2) BMP indicators that operations should be curtailed and/or corrective actions implemented:

[10] More than 20% of skid trail or cableway surface lengths have rills present that are over 2 inches deep and more than 10 feet in length.

[11] More than 10% of skid trail surface length has ruts greater than 2 inches deep.

[12] Rills and/or sediment deposition extends more than 20 feet below waterbar outlet.

[13] More than 10% of waterbars fail to divert flow off skid trails or cableways.

[14] Erosion within or sediment movement into SMZ.

[15] Presence of gullies (erosional features greater than 4" deep and 6" wide).

3) Operating Requirements & Remedies:

* Skid trails, cableways and harvest areas damaged by Purchaser's Operations and associated damage will be repaired at the Purchaser's expense. A remedy plan will be prepared and implemented. Repair work shall be accomplished immediately when conditions are such that additional damage to the resources will not occur or when designated by the Forest Service. See the Wet Weather Operation Field Guide for a list of potential remedies.

D. Landings:

Landings will be agreed to by Purchaser and designated sale administrative personnel prior to their construction and/or use. Landings will not be located within SMZs or Riparian Reserves unless a resource specialist (hydrologist, geologist, fisheries biologist) is consulted.

1) Actions that augment BMP compliance:

* Landings will be constructed to ensure proper drainage, compaction and stability. Landings will be monitored to ensure that drainage is effective. For example, landings will not create a depression which cannot be properly drained; upslope runoff will be diverted, to an appropriate location, around the activity.

* If rocking is required for wet weather operations, landings should be rocked before the surface becomes saturated.

* Landings should be identified well in advance of logging activities. This would allow construction be complete within the NOS. But if unavoidable and as a preventative measure, all landing fill slopes constructed outside of the Normal Operating Period should be mulched. Mulch material can consist of wood chips, certified weed-free straw, or any other Forest Service approved material which will provide slope protection against erosion and rilling. In addition, downslope perimeter erosion control will be required if a potential threat to water quality exists as determined by an earth scientist.

* The use of a heel boom loader may be required to minimize landing size and reduce excavation of the site.

2) BMP indicators that operations should be curtailed and/or corrective actions implemented:

[16] Rills (greater than 1/2" deep and 10' in length) and/or sediment deposition has extended more than 20 feet below the toe of the landing fill slope.

[17] More than 1 cubic yard of material (from erosion or slope failure) has moved into SMZ.

3) Operating Requirements & Remedies:

* Landings damaged by Purchaser's Operations and associated damage will be repaired at the Purchaser's expense. Repair work shall be accomplished immediately when conditions are such that additional damage to the resources will not occur or when designated by the Forest Service.

E. Fueling Sites:

1) Action that augment BMP compliance:

* Purchaser shall take additional appropriate measures documented in a wet weather fuel storage plan to prevent any oil or oil product spill from entering any stream or drainageway.

2) BMP indicators that operations should be curtailed and/or corrective measures implemented:

[18] Evidence of more than 10 gallons of fuel or oil products outside bermed containment area.

3) Operating Requirements & Remedies:

* Fueling sites damaged by Purchaser's Operations and associated damage will be repaired at the Purchaser's expense. Repair work shall be accomplished immediately when conditions are such that additional damage to the resources will not occur or when designated by the Forest Service.

Forest Service retains the authority to suspend any or all of Purchaser's operations as needed to protect resources.

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

Load Limitations	<p>Purchaser shall notify Forest Service 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 Forest Service shall notify Purchaser in writing of any regulations or restrictions that may be needed to protect National Forest Transportation Facilities.</p> <p>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.</p>
Existing Non-National Forest System Roads	Roads not shown on Sale Area Map may be used as Temporary Roads if there is agreement before use is started.
Snow Removal	<p>If Purchaser removes snow from roads, such work shall be done with Forest Service approval and in a manner that will protect roads and adjacent resources.</p> <p>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.</p> <p>Snow must not be removed to the road surface. A minimum 2 to 4 inch snow depth must be left to protect the roadway. If the road surface is damaged, Purchaser 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.</p> <p>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.</p>
Water Supply Deposits	N/A

<p>Surface Replacement Deposits</p>	<p>Purchaser shall make Required Deposits for deferred surface replacement (16 U.S.C. 537) for use of existing surfaced roads. If applicable, such deposits shall be based upon the volume and distance hauled on the roads and at the applicable rates listed in the table below titled Surface Replacement Deposit Schedule. If Purchaser uses surfaced roads under jurisdiction of Forest Service other than those listed, Forest Service may establish applicable rates for such surfaced roads.</p> <p style="text-align: center;">SURFACE REPLACEMENT DEPOSIT SCHEDULE</p> <table border="1" data-bbox="321 583 1336 856"> <thead> <tr> <th>Road No.</th> <th>From</th> <th>To</th> <th>Miles</th> <th>Rate</th> </tr> </thead> <tbody> <tr> <td>40N42</td> <td>1C01</td> <td>42N42A</td> <td>3.82</td> <td>\$0.9037</td> </tr> <tr> <td>40N51</td> <td>1C01</td> <td>Unit 401</td> <td>11.37</td> <td>\$3.4543</td> </tr> <tr> <td>40N33</td> <td>40N51</td> <td>Unit 401</td> <td>1.37</td> <td>\$0.0041</td> </tr> <tr> <td>40N51B</td> <td>40N51</td> <td>Unit 329</td> <td>1.12</td> <td>\$0.0638</td> </tr> </tbody> </table> <p>Sale Area Average Rate: \$4.43/MBF</p>	Road No.	From	To	Miles	Rate	40N42	1C01	42N42A	3.82	\$0.9037	40N51	1C01	Unit 401	11.37	\$3.4543	40N33	40N51	Unit 401	1.37	\$0.0041	40N51B	40N51	Unit 329	1.12	\$0.0638
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40N51B	40N51	Unit 329	1.12	\$0.0638																						

SCHEDULE PURSUANT TO C6.315# - SALE OPERATIONS SCHEDULE (8/2006)

<u>Subdivision/ Area/Unit</u>	<u>Conditions of Operation</u>	<u>Purpose</u>
UNITS: 284, portion of 329, and portion of 401, and 403	No activity may occur from February 1 through September 15. This restriction may be lifted upon current surveys and approved by Forest Service.	Northern Spotted Owl
Helicopter Units: 308, and 311	Restrict flight path February 1 through September 15. May be lifted upon current surveys and approved by Forest Service	Northern Spotted Owl

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

Treatment Method and Applicable Map Symbol	Felling, Bucking and Limbing Specifications						
Limbing	Outside of construction clearings, Clearcutting Units and regeneration units, unless otherwise provided by B6.414, Purchaser shall, prior to skidding/yarding operations, cut exposed limbs from products which are to be skidded/yarded. Such limbing of stems shall be done to a top diameter of approximately N/A inches, at which point the top shall be cut from the remainder of the stem.						
No Lop "No Lop"	Within units or subdivisions designated NO LOP on Sale Area 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 Sale Area Map, trees smaller than N/A inches DBH shall be skidded/yarded to agreed landing locations prior to limbing, bucking, and lopping. Trees larger than or equal to N/A inches DBH shall be bucked into two or more pieces with the butt portion being no longer than N/A feet prior to skidding/yarding. The butt log shall not be limbed prior to skidding/yarding.						
Directional Felling "DF"	Within areas designated DF on Sale Area Map, Included Timber shall be directionally felled away from private property, roads, site specific protection areas, improvements, survey monuments, and streams 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 "TS"	N/A						
Maximum Log Length	<p>Cut trees shall be bucked prior to skidding so that resulting logs shall not exceed the maximum log length including trim allowance shown in following table:</p> <table border="1" data-bbox="477 1423 1312 1520"> <thead> <tr> <th data-bbox="477 1423 857 1472">Unit Number</th> <th data-bbox="857 1423 1312 1472">Maximum Log Length</th> </tr> </thead> <tbody> <tr> <td data-bbox="477 1472 857 1520">N/A</td> <td data-bbox="857 1472 1312 1520"></td> </tr> </tbody> </table>	Unit Number	Maximum Log Length	N/A			
Unit Number	Maximum Log Length						
N/A							
Minimum Stump Height	<table border="1" data-bbox="477 1612 1321 1766"> <thead> <tr> <th data-bbox="477 1612 760 1688">Unit/Subdivision</th> <th data-bbox="760 1612 1040 1688">Minimum Stump Height (inches)</th> <th data-bbox="1040 1612 1321 1688">Purpose or Reason</th> </tr> </thead> <tbody> <tr> <td data-bbox="477 1688 760 1766">All units</td> <td data-bbox="760 1688 1040 1766">4</td> <td data-bbox="1040 1688 1321 1766">Product Accountability</td> </tr> </tbody> </table>	Unit/Subdivision	Minimum Stump Height (inches)	Purpose or Reason	All units	4	Product Accountability
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All units	4	Product Accountability					

Ground-Based Skidding Table - C6.42#

Map Symbol	Requirements
TRAC	<p>Skid road pattern shall be agreed in advance of felling and main skid roads shall be flagged on the ground in advance of felling. Purchaser 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.</p> <p>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.</p>
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 75 feet uphill, and 75 feet downhill.
MAX	N/A
MH	N/A
CTL	N/A
PB	N/A
HCTL	N/A

SPECIFICATIONS PURSUANT TO C6.6# - EROSION PREVENTION AND CONTROL.

Vegetative Soil Stabilization N/A

Special Erosion Prevention Measures N/A

Soil Scarification. N/A

Backblading N/A

Tillage N/A

SPECIFICATIONS PURSUANT TO C6.7# - SLASH TREATMENT (8/2006)

Specified slash treatment methods shall be shown on Sale Area Map or listed in the following tables by the following symbols:

Slash Treatment Methods

<u>Symbol</u>	<u>Method</u>	<u>Definition</u>
Buck-L	"Bucking Large Logging Slash"	N/A
Buck-P	"Bucking and Piling"	N/A
Bury	"Burying"	N/A
Chip	"Chipping"	N/A
Deck	"Decking" large material	N/A
Mach	"Machine Piling"	Concentrations of Logging Slash, excluding scattered individual pieces, shall be Machine Piled by tractor equipped with brush rake for disposal by Forest Service.
Pile	"Piling" small material	Logging Slash smaller than <u>6</u> inches in large end d.o.b. and <u>10</u> feet long shall be hand Piled for disposal by Forest Service.
Remove	"Removing"	N/A
Scat 18"	"Scattering"	Logging Slash shall be scattered to reduce slash concentrations with slash being generally left within 18 inches of the ground as shown on Sale Area Map. Logging Slash shall be scattered into openings away from and without unnecessary damage to residual trees. All scattered logs shall be limbed, placed away from trees and positioned so they will not roll. When Scattering is specified, another method may be used by agreement.
Stack	"Stacking" small material	N/A
View	"Visible Slash Treatment"	N/A
YUMD	"Yarding Unutilized Material-Decking"	N/A
YUME	"Yarding Unutilized Material-Exterior Boundary"	N/A
YUML	"Yarding Unutilized Material-Landing"	N/A
YUMR	"Yarding Unutilized Material-Removal"	N/A

Cover	"Covering Piles"	All piles shall be covered with a durable waterproof covering as approved by Forest Service. The material shall be at least six feet in width. Piles shall not be less than fifty percent covered, with the covering extending not less than half way down all sides. Pieces of burnable material shall be placed on top of the durable waterproof covering to keep the covering from blowing off the pile.
Fell	"Damaged Small Tress"	Unless treated under other provisions, all trees smaller than the minimum d.b.h. in A2, over 5 feet in height, and damaged beyond recovery by Purchaser'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.
Fire-L	"Firelines"	N/A
Fuel-B	"Fuelbreaks"	N/A

PILING SPECIFICATIONS. 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. Such Logging Slash shall be bucked into lengths not exceeding ten feet prior to piling. Maximum width of tractor, with brush rake attached, shall not exceed N/A inches. Machine Piling is not required on areas where use of tractors would cause undue damage to residual timber or where slopes exceed N/A percent. Piles shall be located a distance of at least twice their height in feet from the outer edge of tree crowns or snags. Piles shall be no less than four feet in height or greater than N/A feet in height. Material extending three feet or more outside the edge of a pile shall be trimmed. 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. For hand piles, Purchaser shall construct a fireline cleared to mineral soil and at least 3 feet wide around each pile. 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. Trenches shall be constructed by hand unless otherwise agreed.

UNIT AND SUBDIVISION.SLASH TREATMENT SPECIFICATIONS.

SLASH TREATMENT		
Subdivision or Unit No	Specified Method	Prohibited Method
401, 402	"PILE" Purchaser shall not be required to pile more than 10 acres.	
401, 402, 403, 315	"SCAT 18"	

LANDINGS AND DISPOSAL SITES. Unutilized logs accumulated at landings and disposal sites shall be Decked by Purchaser for disposal by Forest Service. 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	
	<i>Subdivision or Unit No.</i>	<i>Specified Method</i>	<i>Maximum Height of Decks</i>
<u>Landings</u>	All	"MACH"	16
<u>Disposal Sites</u>	N/A		

TREATMENT ALONG PERMANENT ROADS Permanent roads that require roadside slash treatment are listed in the attached table and shown on Sale Area Map. All Logging and Construction Slash within Required Disposal Strips shall be treated by Purchaser. "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, in Clearcutting Units and regeneration units slash from Required Disposal Strips may be treated with other Logging Slash. 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	
<i>Road No.</i>	<i>Subdivision and/ or Unit No. or Road Juncitons (From To)</i>	<i>Width of Required Disposal Strip</i>	<i>Specified Method</i>	<i>Slash Larger Than Treatment Size Requirements of Specified Method</i>
N/A				

TREATMENT ALONG TEMPORARY ROADS. Outside of Clearcutting Units or regeneration units, 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 **<N/A>** feet. Such slash shall be Scattered free of soil to reduce concentrations unless treatment is required by another specified method.

ADDITIONAL SLASH TREATMENT REQUIREMENTS. Within areas shown on Sale Area Map, Purchaser shall perform work according to the specifications in the attached Table, unless otherwise agreed in writing.

Subdivision, Payment Units, Roads and or Road Segments	Additional Slash Treatment Requirements
N/A	<p>Yard all stem material to a top d.o.b. of 1 inch, from timber designated for cutting, with the following exception: broken portions of logs and tops less than 4 feet in length need not be yarded.</p> <p>Broken ends of merchantable logs shall not be bucked off in the units.</p> <p>Slash and Substandard Material accumulated at the landings shall be Decked or Machined Piled, in accordance with specifications above.</p> <p>Material accumulated at landings shall be considered as Timber Subject to Agreement under C2.11#, described as Substandard Material and may be removed and paid for at Purchaser's option.</p>

ASSISTANCE IN SLASH BURNING. If Forest Service requests, Purchaser shall furnish equipment and equipment operators to assist in preparation for slash burning at agreed times prior to the normal slash burning season in the area.

Purchaser shall furnish equipment and equipment operators for burning and mop-up when requested. The amount and kind of equipment requested shall be that normally used in slash treatment work and reasonably available under the existing equipment organization of Purchaser. Forest Service shall reimburse Purchaser for such work at rates common in the area or at previously agreed rates.

A. Fire Tools and Equipment Purchaser 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 Purchaser'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, Purchaser 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/skidlers, 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.

All required fire tools shall be maintained in suitable and serviceable condition for fire fighting purposes.

B. Fire Extinguishers Purchaser 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.

Purchaser 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 delimeter, etc), with at least two 4-A:60-B:C fire extinguishers or an acceptable CAFS substitute identified in Section K.

C. Spark Arresters and Mufflers

Except for tractors and other equipment with exhaust-operated turbochargers, Purchaser 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.

D. Power Saws

Each power saw shall be equipped with a spark arrester approved and maintained in effective working order as identified in the Spark Arrestor Guide in Section C. above and according to applicable parts of CPRC Section 4442 or 4443. 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.

E. Fire Supervisor & Fire Patrolperson

Purchaser shall designate in the fire plan required by B(T)7.1 and furnish on Sale Area during operating hours a fire supervisor, named in writing and authorized to act on behalf of Purchaser in fire prevention and suppression matters.

Unless agreed otherwise, Purchaser 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 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.

F. Seasonal Permits

Purchaser shall obtain written permits from Forest Service before allowing welding, warming fires or burning, subject to C(T)7.22# - Emergency Precautions.

G. Clearing of Fuels

Purchaser 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 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 (C(T)7.22#). 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, Purchaser shall notify Forest Service of any fires on Sale Area or along roads used by Purchaser.

J. Tank Truck

Purchaser shall provide a water tank truck or trailer on or in proximity to Sale Area during Purchaser'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 Sale 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	
	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G
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
	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G
	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P
	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M

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
Fog Spray	6 - 20	N/A

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

(5)When Purchaser 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 C(T)7.22#.

K. Compressed Air
Foam System
(CAFS)

A fire suppression system where compressed air is added to water and a foaming agent. By agreement, Purchaser 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 C(T)7.22#.

L. Communications Purchaser shall furnish a serviceable communications system such as a telephone, radio-telephone, radio system or satellite phone connecting each operating side within the Sale Area with Purchaser's headquarters, and capable of notifying Forest Service within **15 minutes** of discovery of any fires on the Sale Area or along Purchaser'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, Purchaser 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 Purchaser 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 Purchaser'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.

PROJECT ACTIVITY LEVEL (PAL) - C(T)7.22# - EMERGENCY PRECAUTIONS**PROJECT ACTIVITY LEVEL TABLE**

Level	Project Activity Minimum Requirements and Restrictions. Restrictions at each level are cumulative.
A	Minimum required by C(T)7.2#.
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	<p>1. The following activities may operate all day:</p> <ul style="list-style-type: none"> 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. <p>2. Hot Saws or Masticators may operate until 1:00 PM; provided that:</p> <ul style="list-style-type: none"> 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. <p>3. All other conventional Mechanical Operations are permitted until 1:00 PM.</p> <p>4. Some operations may be permitted after 1:00 PM, on a case-by-case basis, under the terms of a PAL Ev Variance Agreement. Activities for which a Variance may be issued are:</p> <ul style="list-style-type: none"> • Rubber Tire Skidding • Chipping on Landings • Helicopter Yarding • Fire Salvage <p>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 Contracting Officer for an additional ten (10) days.</p>

	<p>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 Purchaser's equipment for prevention and suppression readiness, type of operation and social and community considerations etc. (See attached Project Activity Level Variance Agreement).</p>
E	<p>The following activities may operate all day:</p> <ol style="list-style-type: none">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. <p>All other activities are prohibited.</p>

SPECIFICATIONS PURSUANT TO C7.22# - EMERGENCY PRECAUTIONS.

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)	
<i>Fuel Moistures</i>	
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:

