

# **ROAD MAINTENANCE REQUIREMENTS**

**FS-2400-6T Contracts (06/06)**

**CT5.31# Special Provisions**

## **SECTION 1. GENERAL**

Purchaser's main Road Maintenance responsibility begins: (1) after Purchaser performs Prehaul Maintenance on a road listed in the Road Maintenance Requirements Schedule; or (2) for all other roads, when Purchaser begins to use the road. Occasional travel by Purchaser's light vehicles, prior to beginning of construction clearing or logging operations in the area accessed by the road, does not constitute beginning of use. Purchaser is not required to perform routine maintenance during periods of inactivity. During periods of inactivity, Forest Service will perform maintenance only as required to meet its needs.

The Purchaser shall maintain roads, commensurate with the Purchaser's use, in accordance with the Road Maintenance Requirements Summary and Road Maintenance Specifications. Performance of road maintenance work by the Purchaser may be required prior to, during, or after each period of use. The timing of work accomplishment shall be based on the Purchaser's operating schedule under Standard Provision BT6.31.

If the Purchaser elects to use different roads than those listed in the Road Maintenance Requirements Summary, the Contracting Officer (CO) or designee shall determine the Purchaser's commensurate share of road maintenance and/or revise road maintenance deposits.

Unless the CO or designee agrees in writing, all Prehaul Maintenance requirements shall be completed on any portion of road prior to hauling on that portion.

The Forest Service shall prepare a revised Road Maintenance Requirements Schedule to reflect changes in the original haul routes when needed.

Any work or materials that are determined to no longer be needed and are waived shall have the estimated cost charged to the Timber Sale Account as described in BT8.31.

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## SECTION 2. ROAD MAINTENANCE DEFINITIONS

Wherever the following terms are used in the Road Maintenance Specifications, the meaning shall be:

Base Course. Material placed on the Subgrade to distribute concentrated wheel loads.

Borrow. Select Material taken from designated borrow sites.

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

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.

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.

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

During Haul Maintenance. Road maintenance work to be accomplished during the period of timber removal.

Geotextile. A group of construction fabrics with varying attributes designed for different purposes.

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

Maintenance Activity. Items of work leading to the restoration and upkeep of a road and necessary to sustain the road's anticipated traffic.

Material. Any substance specified for use in the performance of the work.

Post Haul Maintenance. Road maintenance work to be accomplished after timber removal is completed.

Prehaul Maintenance. Road maintenance work to be accomplished prior to the roads use. Roads receiving prehaul maintenance shall be shown on the Sale Area Map.

Road Maintenance Cost. An estimate of the cost to perform road maintenance activities; as determined by the Forest Service. Estimates may include any or all of the work activities listed in Section 4, Road Maintenance Activity Specifications.

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

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

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

Sand Hole. A hole that develops in the running surface of the road which is quite soft and dangerous in nature. Usually found in very sandy soils.

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.

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.

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.

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.

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.

Surface Course. The Material placed on the Base Course or Subgrade to enhance traction, distribute concentrated wheel loads and resist abrasion and the effects of climate. Surface Course may be referred to as surfacing.

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

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

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## SECTION 3. ROAD MAINTENANCE REQUIREMENTS SCHEDULE

### Contract Road Maintenance Requirements Summary

Road	Termini		Miles	Applicable Prehaul Road Maintenance Specifications									
	From	To		T-8360	T-8130								
4647.080	0+00	8+00	0.15	P	P								

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

A total of 260 tons of aggregate shall be placed on the roads for pre-haul maintenance.

Road	Termini		Miles	Applicable During Haul Road Maintenance Specifications									
	From	To		T-8030	T-8110	T-8130	T-8310	T-8340	T-8420				
4647.080	0+00	8+00	0.15	P	P	P	P	P	P				

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

A total of 90 tons of aggregate shall be placed on the roads for during haul and/or post haul maintenance. If the required tonnage is not needed the remaining tonnage shall be stockpiled in an area designated by the FS.

Road	Termini		Miles	Applicable Post Haul Road Maintenance Specifications									
	From	To		T-8110	T-8350	T-8360	T-8130						
4647.080	0+00	8+00	0.15	P	P	P	P						

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

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## SECTION 4. ROAD MAINTENANCE SPECIFICATIONS

### INCLUDED SPECIFICATIONS

<u>Specification No.</u>	<u>Specification Title</u>
T-8030	Snow Removal
T-8110	Maintenance Blading/Grading
T-8130	Spot Surface Course Placement/Replenishment
T-8310	Ditch Cleaning
T-8340	Drainage Structure Maintenance
T-8350	Roadway Drainage Maintenance
T-8360	Composite High Clearance Road Maintenance
T-8420	Cutting Roadway Vegetation

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## T-8030 Snow Removal

### DESCRIPTION

- 1.1 This Section provides for removal of snow from roads to facilitate logging operations and safe use. Remove snow from all or part of the traveled way, including sufficient turnouts for safe and efficient use for timber transportation and to protect the road. Remove intruding windfalls, debris or slough and slide material and dispose of only as necessary to provide passage for timber transportation. Removed materials may be deposited off the traveled way or outside the traveled way at locations designated by the Forest Service Representative (FSR). Snow may also be compacted as needed to freeze down soft areas or wet areas. This work is considered part of this specification. Equipment used for this work shall be in accordance with this specification and approved in advance by the FSR.

### EQUIPMENT

- 2.1 Purchaser may use any type of equipment to remove snow, providing:
- a. Type or use of equipment is not restricted in CT5.12# or Schedule document.
  - b. Equipment is of the size and type commonly used to remove snow and will not cause damage to the road. Tracked or cleated vehicles shall not be used unless approved in writing by the FSR.
  - c. The Blade will be equipped with skid shoes to prevent loss of surfacing and damage to the road bed. On gravel and native surface roads, a minimum 0-1 -inch depth compacted snow mat will be maintained on the roadbed during blading.

### REQUIREMENTS

- 3.1 Erect signs required by the Sign Plan in the SUPPLEMENTAL SPECIFICATIONS or as shown on the Section 3. Road Maintenance Requirements Schedule. Perform work in a manner to preserve and protect roads and appurtenances, and prevent erosion damage to roads, streams, and other forest values.
- 3.2 Space, construct, and maintain drainage holes in the dike of snow or berm caused by snow removal operations. Place drain holes to obtain surface drainage without discharging on erodible fills.
- 3.3 Upon seasonal completion of Purchaser's Operations, effectively block the road by a snow barricade, unless otherwise approved by the Contracting Officer.
- 3.4 Ice control may be performed by Purchaser when approved by the FSR in writing. Such approval will include ice control materials, application rates, and any specific requirements of use.
- 3.5 Snow berms will be reduced at road intersections where plowed road segments join unplowed road segments. Reduce the piled snow in the roadway to create a smooth transition from plowed road to normal snow depth.

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## T-8110 Maintenance Blading/Grading

### DESCRIPTION

- 1.1 Maintenance Blading/Grading is keeping an aggregate surfaced 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 Drainage Dips and Lead-off Ditches.

### EQUIPMENT

- 2.1 The equipment required to shape, spread, and compact surfacing is listed below.

Road Number	Road Termini - From	Road Termini - To	Equipment Description
4647.080	0+00	8+00	Road Grader or Tractor with 3-way blade

\*Post haul grading requires Road Grader (125-150hp)

### REQUIREMENTS

- 3.1 Maintenance Blading/Grading shall be performed to facilitate traffic and proper drainage before, during, or after Purchaser's use as required by Section 3. Road Maintenance Requirements Schedule.
- 3.2 The surface blading shall preserve the existing cross-section. Surface irregularities shall be eliminated and the surface left in a smooth, free-draining state needed to facilitate traffic. Surface Course Material which has been displaced to the Shoulders or Turnouts shall be returned to the Traveled Way. The blading operation shall be conducted to conserve Surface Material and to provide for a thorough mixing of the Material being worked.
- 3.3 On aggregate surfaced roads Material generated from back slope Sloughing and ditch cleaning shall not be blended with Surface or Base Course Material unless agreed otherwise
- 3.4 Roadway back slopes shall not be undercut.
- 3.5 Drainage Dips and Lead-off Ditches shall be cleaned and maintained to retain the existing line, grade, and cross-section.
- 3.5 Intersecting roads shall be bladed for a distance of 50 feet to assure blending of the surfaces.
- 3.6 Rocks or other Material remaining on the Traveled Way after the final pass that are 4 inches in diameter or larger shall be removed. The unsuitable Material shall be disposed of by side casting unless agreed otherwise. Side casting into streams, lakes, or water courses will not be permitted.

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- 3.7 Material resulting from this activity shall not remain on or in structures, such as Culverts, cattle guards, ditches, bridges, and Drainage Dips.
- 3.8 Material resulting from this activity, plus any accumulated debris, shall be removed from roadway structures, such as concrete low-water crossings or fords.

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## T-8130 Spot Surface Course Placement/Replenishment

### DESCRIPTION

- 1.1 Spot Surface Course Placement/Replenishment includes Subgrade preparation, furnishing, hauling, spreading and shaping materials in accordance with the requirements.

### MATERIALS

- 2.1 Surface Course Material will be in accordance with the subsection 3.2 of these specifications. Only commercial sources of aggregate will be accepted, except surfacing material may also be purchased from the government, where available, by filling out a form 2600, paying the required fees, and obtaining a permit.

### REQUIREMENTS

- 3.1 Subgrade Preparation. Prepare Subgrade to receive Surface Course Material at locations as designated on-the-ground by the Forest Service on roads listed below. Prepare the Subgrade by shaping the Roadbed to approximately the original cross-section and consistent with adjacent sections.
- 3.2 Furnish, haul and spread Material at locations designated on the ground by the Forest Service (FS). Compact the aggregate by operating spreading and hauling equipment over the full width of each layer of the aggregate, or by other methods as specified below.

<b>Road Number</b>	<b>Type Material</b>	<b>Finished Compacted Thickness Specified</b>	<b>Total Quantity (Tons or cu.yds.)</b>	<b>Compaction Method</b>
4647.080	#53/#23/#2 aggregate	Minimum 4"	350 tons	Hauling Equip.

- 3.3 Variations. The Purchaser will be required to furnish weight tickets to the FS for each load of commercially obtained crushed aggregate prior to the final inspection. For aggregate purchased from the government, a count of truck loads will be required in addition to finished depth checks for the placed and compacted aggregate. Widths and lengths will be as staked or from schedule. When it is mutually agreed that all or part of the Surface Course Material is not needed, the estimated cost of surfacing not placed shall be charged to the Timber Sale Account in accordance with BT8.31.

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## T-8310 Ditch Cleaning

### DESCRIPTION

- 1.1 Ditch cleaning is the removal and disposal of all accumulated organic and Slough Material from Roadway ditches to provide a positive draining waterway of uniform width, depth, and grade.

### REQUIREMENTS

- 3.1 Ditch cleaning shall be repeated during sale operations 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 ditches that are not suitable for blending into the existing surface course shall be disposed of in places agreed to in writing by the FSR.
- 3.3 Roadway back slopes shall not be undercut.

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## T-8340 Drainage Structure Maintenance

### DESCRIPTION

1.1 This work consists of maintaining and/or installation/removal of Drainage Structures and related items such as: inlet and outlet channels, existing riprap, trash racks, necessary geotextiles, pipes, and drop-inlets.

### MATERIALS

2.1 All Materials used in the maintenance and/or installation/removal of Drainage Structures shall conform by type and specification to the Material in the structure being maintained or as indicated in the subsection 3.3 below.

### REQUIREMENTS

3.1 Drainage Structures and related items shall be cleared of all foreign Material deposited above the bottom of the structure and all vegetative growth which interferes with the water flow. Material removed that cannot be incorporated into maintenance work shall be uniformly placed on fill slopes unless agreed otherwise.

3.2 Perform maintenance to insure the proper functioning of the head walls, aprons, inlet assemblies, riprap, trash racks and other facilities related to the Drainage Structure.

3.3 Install/remove ditches, drainage dips, rock crossings and/or culverts as shown below, and as marked on the ground. Installation of structures shall not begin without the presence of a FSR unless agreed to in writing by the FSR.

Road Number	Location	Remove/Install	Type of Structure	Size	Quantity
4647.080	2+72	Install	Drainage Dip		1

3.4 Installation shall be in accordance with construction industry standards and practices.

3.5 Culverts designated for removal/disposal shall become the property of the Purchaser and shall be disposed of properly.

3.6 Temporary culverts provided by the USFS shall remain the property of the government.

3.7 Bridges. Any miscellaneous parts needing repair or replacement during normal use of any bridge during haul shall be considered maintenance. This includes minor items such as object markers, running planks that have loosened or cracked deck boards, or drainage structures which may become plugged. Bridge decks that are dirt and dust covered shall be cleaned to allow for proper drainage and for safety of the user.

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## T-8350 Roadway Drainage Maintenance

### DESCRIPTION

1.1 This work consists of providing Post Haul drainage on roads.

### MATERIALS

2.1 All Materials used in the maintenance and/or installation/removal of Drainage Structures shall conform by type and specification to the Material in the structure being maintained, or as indicated in subsection 3.3.

### REQUIREMENTS

3.1 Upon completion of work, shape the roadway to provide for the removal of surface water. The roadway need not be passable to vehicles (ML-1 roads). Repair and reinstall waterbars, barriers or berms existing prior to the Purchaser's operation. Areas where water is ponded by existing centerline profile sags in through cuts may be left untreated.

3.2 Any of the following methods are acceptable for use at eroded or rutted locations:

(a) Method A: Outsloping the roadbed at not less than ½ inch per yard of width.

(b) Method B: Insloping the roadbed at not less than ½ inch per yard of width.

(c) Method C: Water bar roadbed at locations staked on the ground and construct as shown on the enclosed detail.

(d) Method D: Crown the roadbed as shown in the attached detail as the typical section for that length of road.

3.3 Drainage structures located in roadbed through fills and natural watercourses shall be fully functional without obstructions, including inlet and outlet channel within 20 feet of the structure.

<b>Road Number</b>	<b>Location</b>	<b>Remove/Install</b>	<b>Type of Structure</b>	<b>Quantity</b>
4647.080	2+72	Install	Drainage Dip	1

3.4 Entrance Devices. Upon completion of work, replace entrance devices to effectively eliminate access by motorized vehicles (ML-1).

3.5 Seed and fertilize all disturbed areas in accordance with requirements set forth in T-8410 Vegetation Establishment.

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## T-8360 Composite High Clearance Road Maintenance

### DESCRIPTION

1.1 This work consists of making limited use roads passable for project use by Purchaser and providing drainage from the traveled way and roadbed.

### MATERIALS

2.1 Required materials are listed in subsection 3.2.

### REQUIREMENTS

#### 3.1 Traveled Way

A. Purchaser may smooth or fill existing cross ditches and waterbars and, by agreement, modify existing road junction to enable vehicle access. Prior to beginning haul and resumption of haul after an extended stoppage:

1. Remove brush, fallen trees, rocks, and other debris from traveled way, including turnouts, turnarounds, and other locations that interfere with needed maintenance. No object extending over 4 inches above the road surface shall remain within the 12 feet usable traveled way.
2. Center the usable width of the roadbed or position away from the fill slope.
3. Cut and remove standing or down trees, logs, brush, and limbs from within the 12 feet usable traveled way. Remove encroaching limbs to a height of 14 feet above the traveled way surface. Scatter material not meeting utilization standards outside and below the roadbed on the fill side. Limb and remove designated timber which meets utilization standards or deck at agreed locations.
4. Place all removed material away from drainages and in locations previously agreed to in writing by the FSR.
5. During use, maintain drainage structures including dips, ditches and culverts in a usable condition and surface in a flat, Insloped or Outsloped, or Crowned usable condition.

3.2 Drainage Facilities. Clean and recondition drainage facilities in accordance with T-8310 Ditch Cleaning and T-8340 Drainage Structure Maintenance.

Road Number	Location/length	Remove/Install	Type of Work/Drainage Structure	Size	Quantity
4647.080	2+72	Install	Drainage Dip		1

#### 3.3 Slough and Slides

1. Slough and Slides may be left in place provided surface drainage is adequately provided and at least 12 feet of width is available for vehicle passage.

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2. Purchaser may reposition or ramp over Slides and Slough when the Traveled Way is less than 12 feet providing the material is capable of supporting vehicles. Limit Outslope to no more than six percent.
3. Reposition Slough or Slide materials, which are not capable of supporting a vehicle, on the roadbed to provide the 12 feet width. When directed by Forest Service, Slough or Slide material will be removed under Section T-8320 Slide, Slump, and Erosion Repair.

#### 3.4 Slumps, Eroded areas, and Washouts

1. Drain the roadbed immediately upgrade of Slumps and longitudinal cracks to prevent water from entering Slump area.
2. Slumps and longitudinal cracks at the edge of the roadbed shall not be considered a part of the usable width. Usable width may be reduced to ten feet in the area of the Slump.
3. Unless Forest Service agrees to material being placed on Slumps, ramp the Slumps on both ends into undisturbed roadbed to provide at least ten feet usable width. Use removed materials to guide vehicles to the ramp location or to aid in draining the area.
4. Eroded areas/washouts may be filled with suitable material and compacted by operating equipment over the fill area.

#### 3.5 Posthaul

- A. At the end of hauling or prior to entering into seasonal shutdowns or a period of extended inactivity:
  1. Shape the traveled way and disturbed roadbed to provide functional drainage.
  2. Reinstall removed cross ditches and waterbars and provide any additional drainage structures necessary to offset changes caused through use and maintenance.
  3. Leave roads useable for high clearance vehicles. Remove or reshape Purchaser modifications at road junctions to leave the entrance as it was before use, or as agreed at the time of improvement.
  4. Close all roads which were closed previously, using prior existing methodology.

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## T-8420 Cutting Roadway Vegetation

### DESCRIPTION

- 1.1 This work includes removal of brush, trees and other vegetative growth from within the clearing limits. This may include brush mowing of shoulders to prevent larger growth which would inhibit travel in the future. Removal of hazard trees outside the clearing limits.

### EQUIPMENT

- 2.2 Equipment use may include farm tractor mounted mowing or brushing equipment. If brushing equipment is required it must be of a size and power to cut off and masticate stems up to four inches in diameter. Larger growth may require hand clearing with a chainsaw or mechanized equipment able to handle larger trees.

### REQUIREMENTS

- 3.1 Vegetative matter within the Roadway which impedes vehicular travel, and/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 in locations where agreed upon and the Traveled Way or sight distances will not be impaired.
- 3.2 Vegetative matter removed from the clearing limits shall be scattered outside the clearing limits at least 10 feet perpendicular to the road surface.
- 3.3 Trim tree branches that extend over the road surface and shoulders to attain a clear height of 14 feet. Trim branches flush with the tree or as close as possible without causing damage or scarring to the bole. Area shall be left neatly trimmed.
- 3.4 Any stump removed shall be placed in an upright position out of the clearing limits.
- 3.5 Area shall not be left in an unsightly condition. The FSR shall have the final say over how the area is left.
- 3.6 Trees that are dead or alive that are of sufficient height to fall onto the road shall be marked by the ER/FSR/SA prior to felling. Felled trees are to be left where fell unless they fall across the road. They then shall be treated according with 3.1 and 3.2.