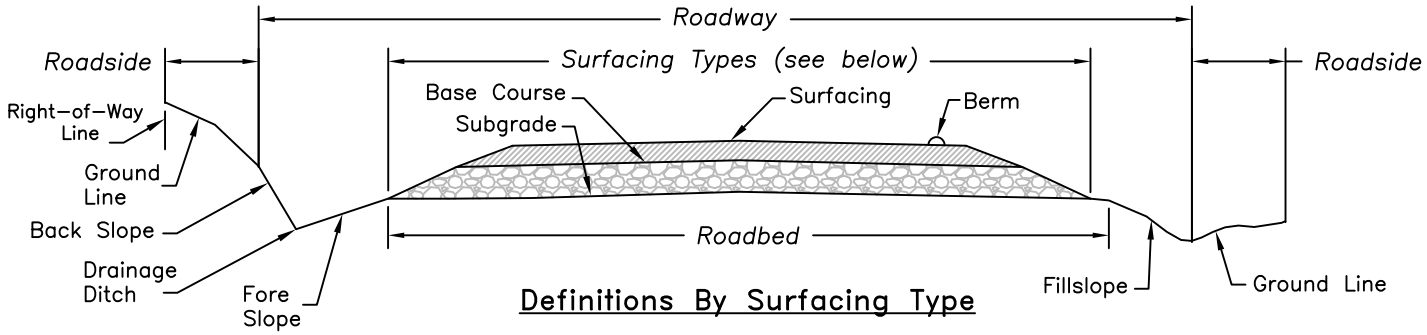
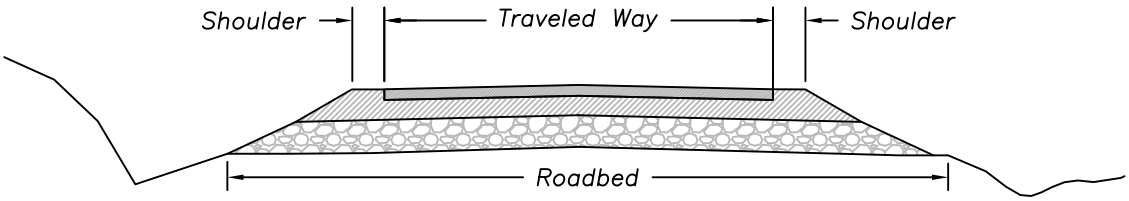
Buster Timber Sale Road Maintenance T-Specifications

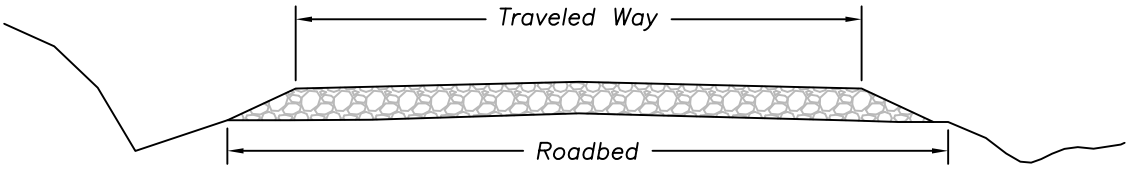
Specification	Description
(no specification)	801 Road Maintenance Terms (drawing)
T811	Blading 811 Blading (drawing)
T812F	Dust Abatement
T813	Surfacing
T831F	Ditch Maintenance
T832F	Remove and End Haul Materials
T833F	Bridge Maintenance
T834F	Drainage Structure Maintenance 834 Catch Basin (drawing)
T835F	Roadway Drainage Maintenance 835 Road Closure (drawing)
T836	Maintenance for Limited Use
T838	Maintenance for High Clearance Vehicles 838-1 Cross Ditch (drawing) 838-2 Water Bar (drawing)
T842F	Cutting Roadway Vegetation
T851F	Logging Out
T854	Treatment and Disposal of Danger Trees
T891	Water Supply and Watering



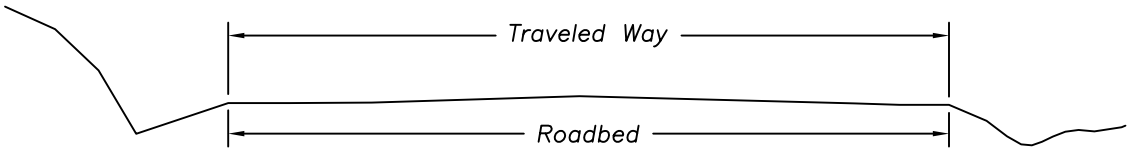
Definitions By Surfacing Type



Asphalt Paving Surface Section



Aggregate Surfacing Section



Native Material Surfacing Section

Note:
Shapes and Dimensions will vary with Local Conditions.

UMPQUA NATIONAL FOREST – REGION 6

TITLE ROAD MAINTENANCE TERMS

DRAWING NO. 801

DATE: PSR 2/13

811.01 Description

This work consists of surface blading the traveled way to a condition that facilitates traffic and provides proper drainage. Blading includes shaping the crown or slope of travel way, berms, and drainage dips in accordance with this specification. Compaction is required when shown on the ROAD LISTING.

811.02 Maintenance Requirements

A. Timing - Perform surface blading during the contract period as often as needed to provide conditions stated for the maintenance level of the road.

B. General

1. Blade and shape the existing traveled way and shoulders, including turnouts, to produce a surface which is uniform, consistent to grade, and crowned or cross-sloped as indicated by the character of the existing surface, unless otherwise shown in the ROAD LISTING, to at least ½ inch per 1 foot of width, but not more than ¾ inch per 1 foot of width. Thoroughly loosen surfacing material to no less than 2 inches depth or the depth of potholes or corrugations. Scarification to facilitate cutting to the full depth of potholes or corrugations may be elected, but will be considered incidental to blading. Do not scarify to a depth that will cause contamination of the surfacing.

2. Apply water during blading when sufficient moisture is not present to prevent segregation. Supply, haul, and apply water in accordance with Section T-891.

3. Shape existing native rock or aggregate surfaced drainage dips to divert surface runoff to existing outlet devices, ditches, or discharge locations.

4. Establish a blading pattern which provides a uniform driving surface, retains the surfacing on the roadbed, and provides a thorough mixing of the materials within the completed surface width. Upon final blading, no disturbed rock shall protrude more than 2 inches above the adjacent surface unless otherwise provided in the contract. Remove and place outside the roadbed, material not meeting this dimension so as not to obstruct drainage ways or structures. This material may be scattered off the roadbed if there is free drainage.

C. Routine Blading

1. Conform to the dimensions SHOWN ON THE DRAWINGS or designated in the SUPPLEMENTAL SPECIFICATIONS upon completion of blading.

2. Shape roadbed width in excess of the dimensions shown only as needed to provide drainage away from the traveled way. Do not remove established grasses and other vegetation from the excess width except as incidental to providing drainage or unless otherwise provided in the contract.

D. Compaction

1. Roads requiring compaction will be included in the ROAD LISTING. Compaction shall commence immediately following blading. Compaction methods are:

Compaction Method A: Breaking track while operating equipment on the traveled way.

Compaction Method B: 7-10 ton pneumatic, steel, or equivalent vibratory roller, operated to cover the full width two (2) times.

E. Undercutting - Undercutting roadway back slope is not permitted.

F. Intersections

1. At intersections, blade the roadbeds of side roads which are not closed or restricted from vehicular use to ensure smooth transitions.

2. Signing, cross ditching in the road surface (traveled way), earth berms, or other devices placed to discourage or eliminate use by passenger cars, are field evidence of road closure or restriction. Roads listed for work under Sections T-835, T-836, T-838, or T-839 are considered restricted.

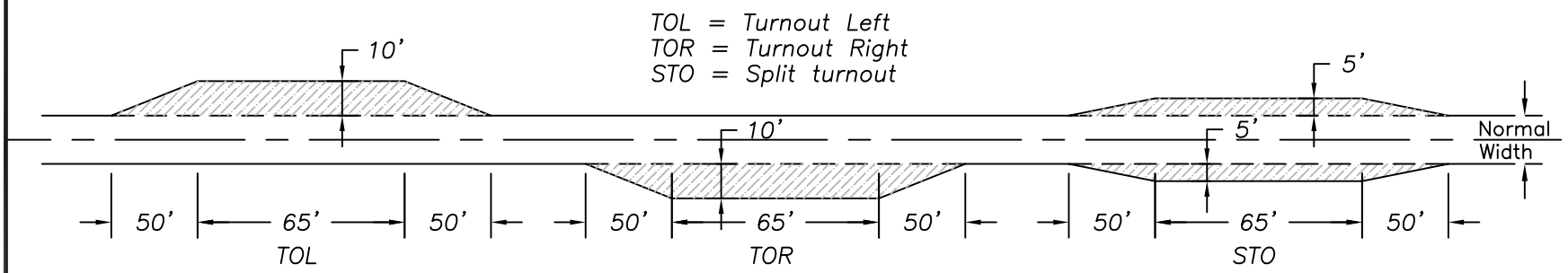
3. Side roads listed for work under this Section are not restricted.

G. Cleaning of Structures - Do not allow materials resulting from work under this Section to remain on or in structures, such as bridges, culverts, cattle guards, or drainage dips.

H. Berms - Maintain existing berms to the condition of adjacent segments. Do not create new berms.

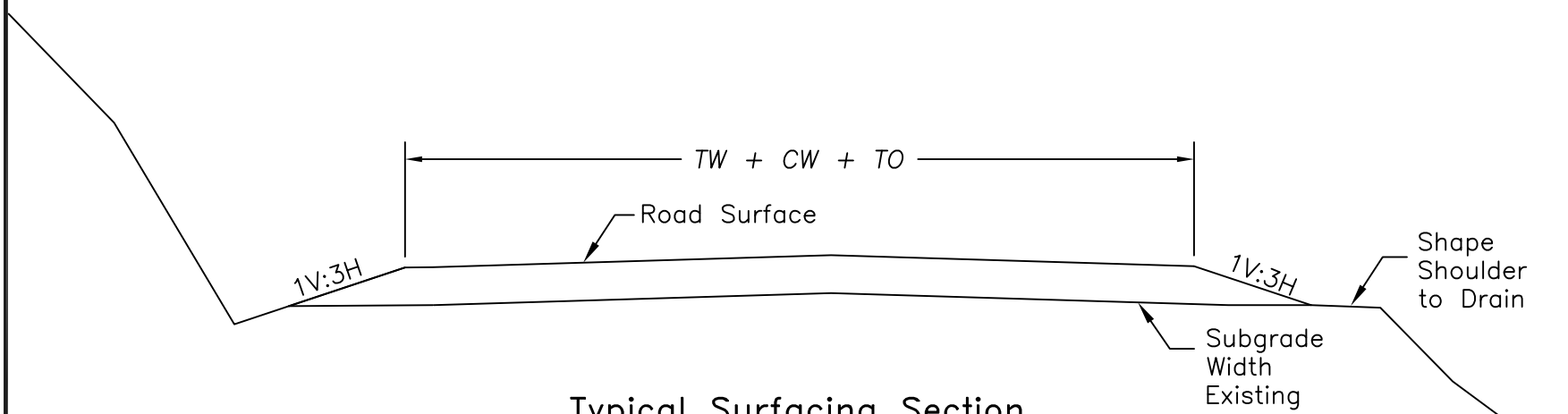
I. Smooth Blading - Smooth blading may be used as an interim measure to remove loose surfacing material from the wheel paths, and store removed materials in a recoverable windrow, until blade processing as described in this section is feasible. Watering will not be required for smooth blading. Accomplish smooth blading without distorting the existing cross-slope or crown of the traveled way.

Move and store loose surfacing materials on the high side of super-elevated curves and sections with uniform inslope or outslope. In crowned sections, store the material on either or both sides as elected. Windrow and place stored materials to provide not less than 12 feet of smooth traveled way on one-lane segments, or 20 feet of smooth traveled way on two-lane segments, or segments with turnouts. Cut holes through windrows, which may collect water on the road, for drainage at least every 500 feet.



Typical Turnout Dimensions

oote: Blade and shape all turnouts to dimensions shown or to full extents of existing turnout if smaller.



Typical Surfacing Section

TW = Traveled Way
CW = Curve Widening
TO = Turnout

UMPQUA NATIONAL FOREST – REGION 6

TITLE

BLADING

DRAWING NO.

811

DATE: PSR 1/14

T-812F – DUST ABATEMENT (6/12)

812.01 Description

This work consists of applying dust palliatives on roads shown in the Road Listing.

812.02 Materials

The dust palliative materials are shown in the road listing, unless shown as Optional for Purchaser's election. If Optional is shown then the Purchaser may use any of the products listed below. Dust palliative materials shall meet the following requirements:

A. Water (H2O) will be obtained from sources SHOWN ON THE DRAWINGS or listed in Section T-891 Water Supply, unless otherwise agreed.

B. Lignin Sulfonate (LIG S) is the chemical residue produced as a by-product of the acid sulfite pulping process, and supplied as a water solution. Furnish a water solution with a base cation of ammonia, calcium or sodium. Provide certification that the material meets the following requirements:

1. Solids 50%
   (determined according to the modified Technical Association of the Pulp and Paper Industry Standard T 650-TM-84 or by a specific gravity/percent solids versus temperature graph that correlates with the standard)

2. Specific gravity 1.25

3. pH, AASHTO T 289 4.5 min.

4. Ensure that the material does not exceed the following chemical constituents: phosphorous, 25.00 ppm; cyanide, 0.20 ppm; aresenic, 5.00 ppm; copper 0.20 ppm; lead 1.00 ppm; mercury 0.05 ppm; chromium 0.50 ppm; cadium 0.20 ppm; barium 10.00 ppm; selenium 5.00 ppm; zinc 10.00 ppm.

C. Magnesium Chloride (MG CL2) is the liquid residue of evaporative mineral recovery processes. Furnish a brine solution conforming to the following:

1. Magnesium chloride by mass 28% minimum

2. Water by mass 72% maximum

3. Specific gravity, AASHTO T 227 1.290 to 1.330

4. Ensure that the material does not exceed the following chemical constituents: phosphorous, 25.00 ppm; cyanide, 0.20 ppm; arsenic, 5.00 ppm; copper 0.20 ppm; lead 1.00 ppm; mercury 0.05 ppm; chromium 0.50 ppm; cadmium 0.20 ppm; barium 10.00 ppm; selenium 5.00 ppm; zinc 10.00 ppm; sulfate 4.3 percent maximum; nitrate 5.0 percent maximum.

D. Calcium Chloride Brine (CA CL2B).

1. Conform to AASHTO M 144, type L for the specified concentration.

2. Ensure that the material does not exceed the following chemical constituents: phosphorous, 25.00 ppm; cyanide, 0.20 ppm; arsenic, 5.00 ppm; copper 0.20 ppm; lead 1.00 ppm; mercury 0.05 ppm; chromium 0.50 ppm; cadmium 0.20 ppm; barium 10.00 ppm; selenium 5.00 ppm; zinc 10.00 ppm; sulfate 4.3 percent maximum; nitrate 5.0 percent maximum.

E. Calcium Chloride Flake (CA CL2F).

1. Conform to AASHTO M 144, type S, grade 1, 2, or 3, class A.

2. Ensure that the material does not exceed the following chemical constituents: phosphorous, 25.00 ppm; cyanide, 0.20 ppm; arsenic, 5.00 ppm; copper 0.20 ppm; lead 1.00 ppm; mercury 0.05 ppm; chromium 0.50 ppm; cadmium 0.20 ppm; barium 10.00 ppm; selenium 5.00 ppm; zinc 10.00 ppm; sulfate 4.3 percent maximum; nitrate 5.0 percent maximum.

F. Bituminous dust palliatives. Manufacture materials specifically for dust abatement purposes which conform to the requirements of Section T-892 for each listed road in the Road Listing.

G. To avoid accidental entry of dust abatement chemicals into the stream system, the following shall apply:

1. Application of dust abatement will occur when streams are at a seasonal baseflow.

2. Dust abatement will not be applied when raining.

3. A 3-day forecast of clear weather shall follow any application of dust abatement.

4. Dust abatement treatment is not permissible within 25 feet of perennial stream crossings and bridges.

5. A one-foot no treatment zone on the edge of the gravel along the ditch line will be maintained.

812.03 Methods

As shown in C(CT)5.31# Dust Abatement, Purchaser may utilize a variety of methods, including reducing the number of loads, the time of day the loads are hauled, etc., to decrease or eliminate the need for dust abatement.

812.04 Equipment

A. Design, equip, and operate application equipment for spreading dust palliatives so that the material is uniformly applied at the rate and traveled way widths shown in the Road Listing.

B. For bituminous palliatives provide equipment that heats and applies the bituminous material. Provide a bituminous distributor that is self-powered and mounted on pneumatic tires and equipped with a pump and circulating spray bar, a tachometer, pressure gauges, accurate volume measuring devices such as visual volume dial or gauge calibrated to the tank, and a thermometer. Provide equipment which is a standard commercial type of proven performance.

C. Accomplish dilution of dust palliatives within the application vehicle with the water source protected from contamination. Circulate the resulting mixture at least five (5) minutes to ensure uniform mixing prior to application.

812.05 Maintenance Requirements

A. Limit water applications to abatement for hauling vehicles and provide at a frequency and rate which controls dust such that vehicle tail lights and turn signals remain visible. Vary rates of application as needed but remain low enough to avoid forming rivulets. Accomplish the abatement by sufficient frequency of application without saturating and softening the traveled way. Compacted or glazed road surface or wheel tracks may be loosened as needed for water penetration.

B. Apply all other dust palliatives at the rates and times agreeable to the Government. The Road Listing shows the expected average application rate and may be varied to meet field conditions.

C. Apply bituminous dust palliatives only when the surface to be treated contains sufficient moisture to obtain uniform distribution of the dust palliative unless noted differently in the SPECIAL PROJECT SPECIFICATIONS.

D. Prior to initial application, when needed, the road will be bladed and shaped under Section T-811F, Blading.

E. Required subsequent applications may be applied to the existing road surface without blading.

F. Dust palliatives will not be applied in a manner that spatters or mars adjacent structures or trees, or placed on or across cattleguards or bridges. Discharge dust abatement material only on roads approved by the Government.

813.01 Description

This work consists of placing surface aggregate as DESIGNATED ON THE GROUND, or as ordered by the Contracting Officer. It includes preparing the area, furnishing, hauling, and placing all necessary materials and other work necessary to blend with the adjacent road cross section.

813.02 Materials

A. Materials will be Government-furnished when stated in the ROAD LISTING.

B. Materials furnished by the Purchaser shall conform to the gradation and quality requirements of Section 703 of the "Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects FP-03 U.S. Customary Units" and FS supplements to the FP-03.

C. All materials transported onto National Forest System land shall be free of invasive species of concern. Written documentation of methods used to determine the invasive species of concern free status of any and all materials furnished by the Purchaser shall be submitted to the Contracting Officer before transport of any materials onto National Forest System land.

D. The Contracting Officer shall have 5 days, excluding weekends and Federal holidays, to review the methods and inspect the materials after the required written documentation is provided by the Purchaser. After satisfactory review and inspection or after such 5 day period, the Purchaser may transport the material onto National Forest System land.

813.03 Maintenance Requirements

A. Thoroughly loosen the area to be surfaced to a minimum depth of 1 inch prior to placement of aggregate.

B. Mixing and Placing

1. When scheduled coincidentally with work under Section T-811, and included in the ROAD LISTING, mix surfacing and existing aggregate with water until a uniform mixture is obtained prior to final shaping and compaction.

2. Otherwise, spread the material on the prepared area in layers no more than 4 inches in depth. When more than one (1) layer is required, shape and compact each layer before the succeeding layer is placed. Upon completion, the surfacing shall reasonably conform to the adjacent cross section and provide smooth transitions in the road profile.

C. Compaction Methods

1. Compaction Method A: Breaking track while operating equipment on the traveled way.

2. Compaction Method B: 7-10 ton pneumatic, steel, or equivalent vibratory roller, operated to cover the full width two (2) times.

Either Method A or B may be used unless Method B is designated in the ROAD LISTING.

831.01 Description

This Section provides for routine maintenance of various types of ditches to provide a waterway which is unobstructed, as shown on the DRAINAGE MAINTENANCE WORKLIST or DESIGNATED ON THE GROUND.

831.02 Maintenance Requirements

A. Maintain ditches by removing rock, soil, wood, and other materials. Maintained ditches shall function to meet the intent of the original design.

B. Undercutting backslopes during removal operations is not permitted.

C. Suitable material up to 4 inches in greatest dimension removed from the ditches may be blended into existing native road surface and shoulder or placed in designated berm.

D. Do not blend material from ditch cleaning operations into aggregate surfaced roads. Do not blade material across aggregate or bituminous surfaced roads, unless approved in writing by the Contracting Officer.

E. Haul material in excess of 831.02 C or subject to 831.02 D to a designated waste area under Section T-832. Remove excess materials temporarily stored on the ditch slope or edge of the shoulder daily.

F. Remove limbs and wood chunks in excess of 12 inches in length or 3 inches in diameter from ditches and place outside the roadway.

G. Clean paved surfaces of all materials resulting from ditch maintenance work.

H. Shape lead-off ditches to drain away from the traveled way.

T-832F – REMOVE AND END HAUL MATERIALS (6/12)

832.01 Description

Work consists of loading, hauling, and placing of slide, slough, or excess materials such as rock, soil, vegetation, and other materials to designated disposal sites.

832.02 Maintenance Requirements

A. Remove, end haul, and dispose of excess materials generated by work under other Sections of this contract.

B. Remove the slide and slough materials in the area extending approximately 6 feet vertically above the road surface and not more than 3 feet down slope from the roadbed. Dispose of material at designated sites as SHOWN ON THE SALE AREA MAP, or as ordered by the Contracting Officer.

   Reshape the slope which generated the slide material as nearly as practical to its original condition by equipment operating from road surface. Reshaping of roadside ditches in slide area shall be in accordance with Section T-831.

C. When approved by the Contracting Officer, fill slumps by compacting selected materials into roadway depressions. Compaction is by Method 2.

D. Place all materials at designated sites SHOWN ON THE SALE AREA MAP, or as ordered by the Contracting Officer. Placement method shall be as SHOWN IN THE ROAD LISTING. Additional requirements for shaping and finishing may be SHOWN ON THE DRAWINGS, or ordered by the Contracting Officer.

   1. Method 1 - Side Casting and End Dumping. Material may be placed by side casting and end dumping. Where materials include large rocks, provide a solid fill by working smaller pieces and fines into voids. Shape the finished surfaces to drain.

   2. Method 2 Layer Placement - Step or roughen surfaces on which materials are to be placed prior to placing any material. Place materials in approximately horizontal layers no more than 12 inches thick. Compact each layer by operating hauling and spreading equipment over the full width of each layer.

E. Repair any damage to existing aggregate or pavement surfaces.

T-834F – DRAINAGE STRUCTURE MAINTENANCE (2/13)

834.01 Description

This work consists of cleaning and reconditioning culverts and other drainage structures.

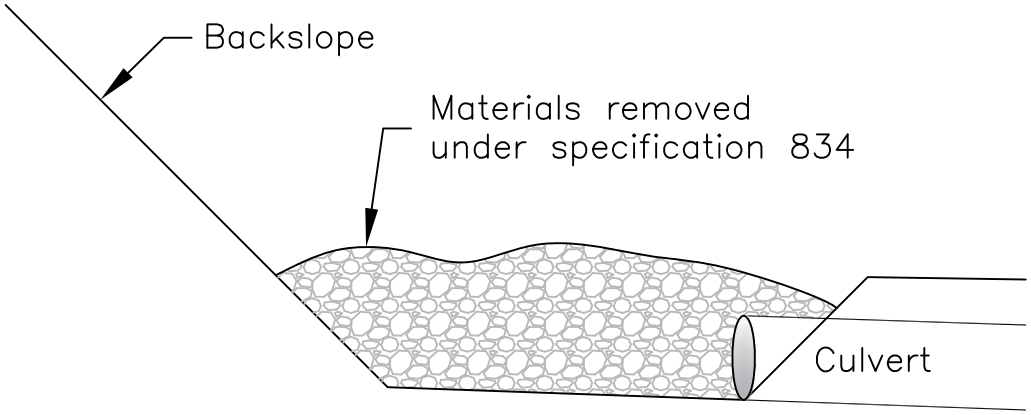
834.02 Maintenance Requirements

A. Clean drainage structures, inlet structures, culverts, catch basins, and outlet channels specified in the DRAINAGE MAINTENANCE WORKLIST. Clean catch basins by removing the material within the area SHOWN ON THE DRAWINGS.

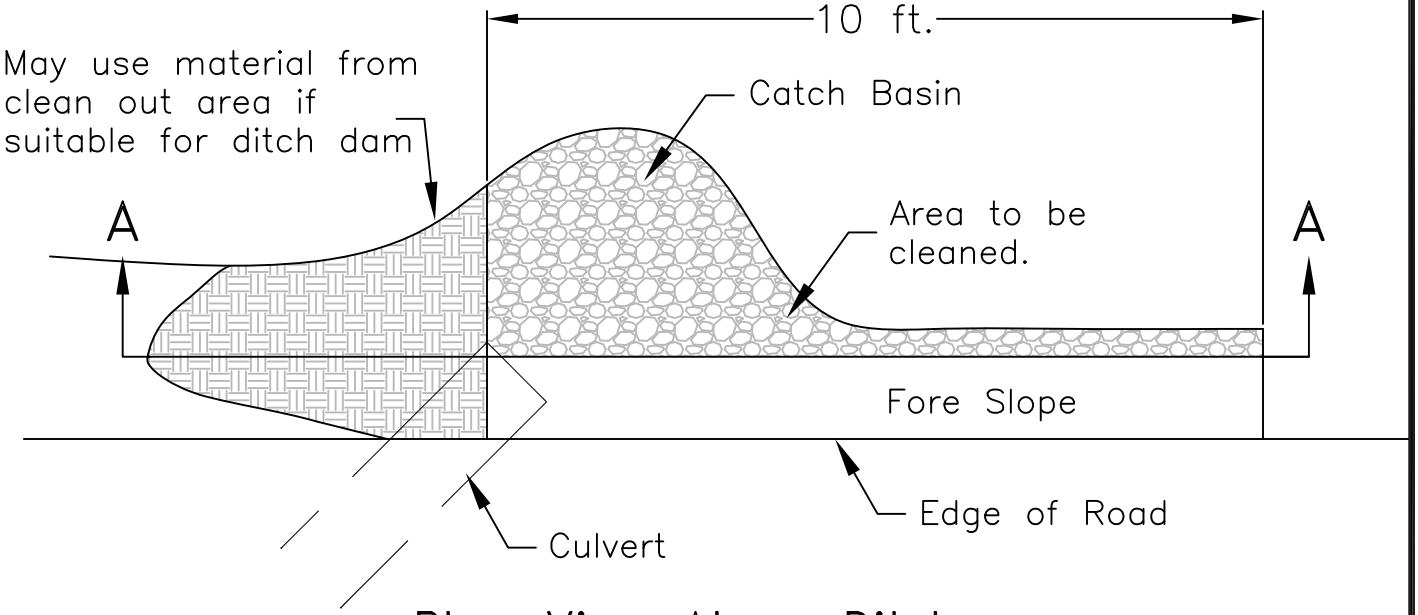
B. Clean the transition from the ditch line to the catch basin a distance of 10 feet from the catch basin. Clean outlet channels and lead-off ditches a distance of 6 feet. Remove and place debris and vegetation so as to not enter the channel or ditch, or obstruct traffic. Haul debris and vegetation to a designated disposal area in accordance with Section T-832.

C. Hydraulic flushing of drainage structures is not allowed unless provided for in the DRAINAGE MAINTENANCE WORKLIST.

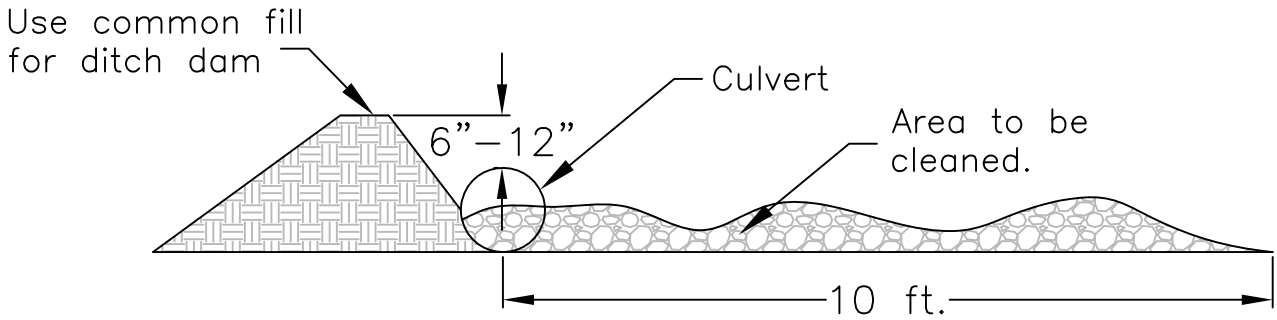
D. Cleaning and reconditioning are limited to the first 3 feet of inlet and outlet, determined along the top of the structure. Recondition culvert inlet and outlet by field methods such as jacking out or cutting away damaged metal which obstructs flow. Treat cut edges with a zinc rich coating, in accordance with AASHTO M 36M and ASTM A 849.



Cross Section View



Plan View Along Ditch



Section A–A

UMPQUA NATIONAL FOREST – REGION 6

TITLE CATCH BASIN

DRAWING NO. 834

DATE: PSR 2/13

T-835F – ROADWAY DRAINAGE MAINTENANCE (12/12)

835.01 Description

This work consists of providing post haul drainage on roads.

835.02 Maintenance Requirements

A. Drainage

1. Upon completion of work, shape the roadway to provide for the removal of surface water. The roadway need not be passable to vehicles. Repair and reinstall water bars, 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.

2. Continuous blade shaping of the roadbed is not required under this specification.

3. Work to be done at staked locations shall be as indicated on the stake and/or stated in the DRAINAGE MAINTENANCE WORKLIST.

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

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

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

   Method C: Water bar roadbed at locations staked on the ground and construct as SHOWN ON THE DRAWINGS or as included in the DRAINAGE MAINTENANCE WORKLIST.

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

6. Either clean culverts and other fabricated structures to provide drainage from road ditches and make the ditch functional or provide water bar(s) across the roadbed. Removed structures shall become Purchaser's property to be removed from National Forest System land. Remove and replace any purchaser-installed temporary drainage structures with a water bar.

B. Slides, Slumps and Slough

1. Slides and slough may be left in place, provided they do not potentially impound water or divert water from watercourses. As necessary, reshape the various surfaces to provide drainage.

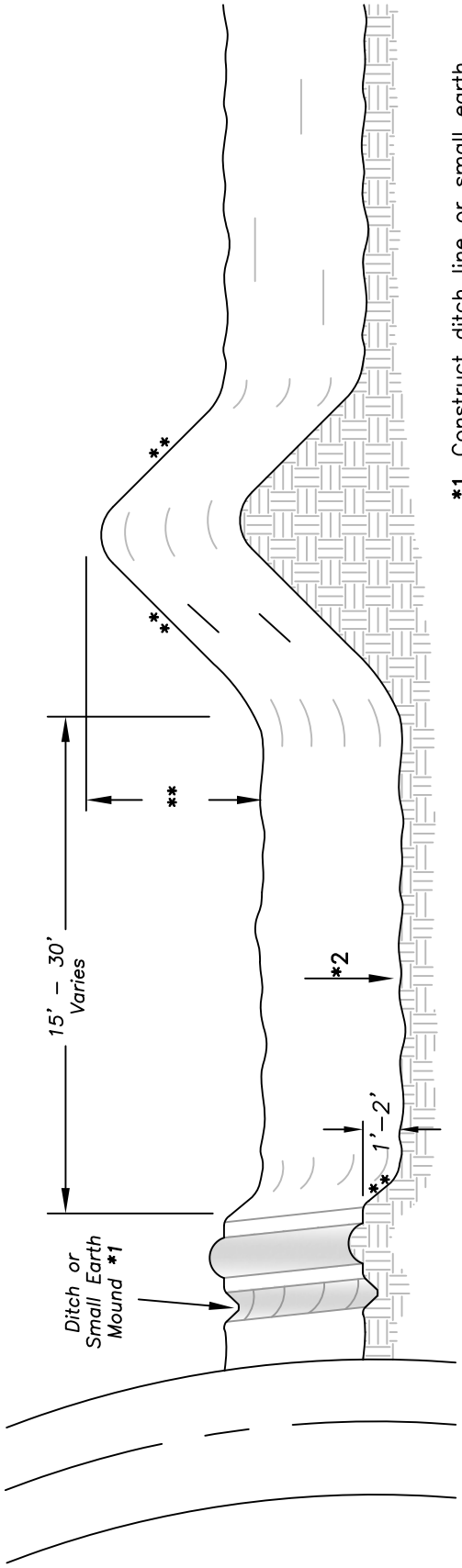
2. Provide drainage to effectively decrease or eliminate the entry of surface water into slides, slumps, and roadbed surface cracks. Place berms, waterbars or ditches as needed to intercept and remove runoff water from the roadbed. Surface seal cracks by covering over with native soil materials to prevent additional water entry and compact with equipment tires.

C. Entrance Devices

Upon completion of work, construct or replace road closure devices in accordance with drawing T-835 and the type as shown in the ROAD LISTING.

D. Seeding

If shown on the DRAINAGE MAINTENANCE WORKLIST, seed and fertilize all disturbed areas in accordance with requirements set forth in Section T-841.

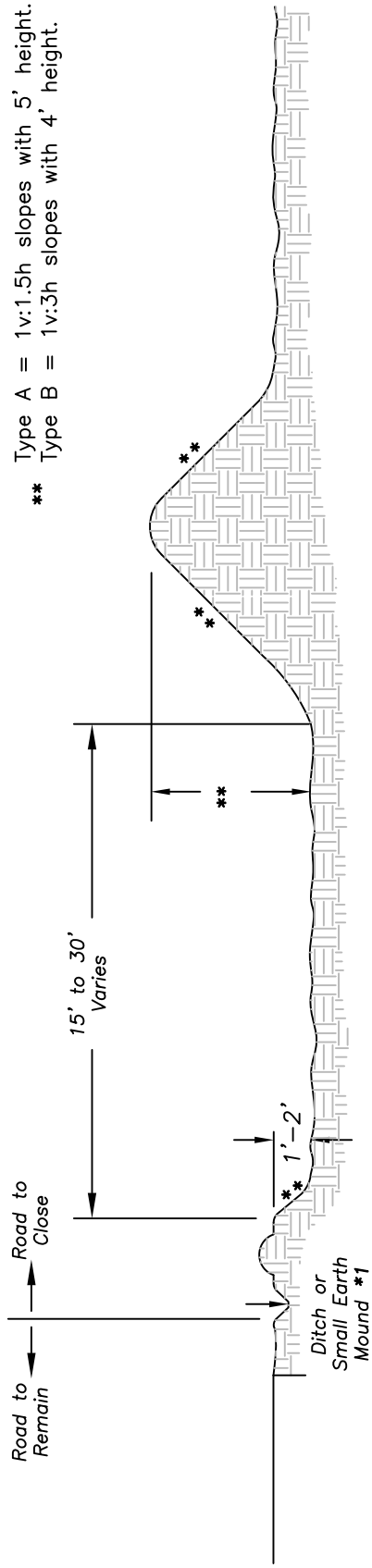


ISOMETRIC VIEW

*1 Construct ditch line or small earth mound across closed road entrance to define edge of remaining road.

*2 Slope excavation area to drain.

** Type A = 1v:1.5h slopes with 5' height.
Type B = 1v:3h slopes with 4' height.



PROFILE VIEW

UMPQUA NATIONAL FOREST – REGION 6

TITLE ROAD CLOSURE

DRAWING NO. 835

DATE: PSR 2/13

T-836 – MAINTENANCE FOR LIMITED USE (05/07)

836.01 Description

This work consists of making limited use roads passable for joint use by Purchaser and high clearance vehicles, and providing drainage from the traveled way and roadbed.

836.02 Maintenance Requirements

A. Traveled Way

Purchaser may smooth or fill existing cross ditches and water bars and by agreement modify existing road junctions 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 as follows:

    a. No object extending over 4 inches above the road surface shall remain within the 12 feet usable traveled way and 10 feet turnout widths. Center the usable width on the roadbed or position away from the fill slope.

    b. Cut and remove standing or down trees, logs, brush, and limbs from within the area described in 1 a. above. 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 timber which meets utilization standards or deck at agreed locations.

    c. Place all removed materials away from drainages.

    d. During use, maintain drainage structures, including dips, ditches and culverts in a useable condition.

2. Clean and recondition drainage facilities in accordance with: Section T-831 and T-834.

B. Slough and Slides

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

2. Purchaser may reposition or ramp over slides and slough when the traveled way width is less than 12 feet providing the material is capable of supporting vehicles. Limit out slope to no more than six percent.

3. Reposition slough or slide materials on the roadbed which are not capable of supporting a vehicle to provide the 12 foot width. When directed by the Contracting Officer, slough or slide material will be removed under Section T-832.

C. Slumps 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 10 feet in the area of the slump.

3. Unless the Contractor Officer agrees to material being placed on slumps, ramp the slumps on both ends into undisturbed roadbed to provide at least 10 feet usable width. Use removed materials to guide vehicles to the ramp location or to aid in draining the area.

4. Washouts may be filled with suitable material.

D. Post haul

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 water bars 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.

T-838 – MAINTENANCE FOR HIGH CLEARANCE VEHICLE USE (05/07)

838.01 Description

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

838.02 Maintenance Requirements

A. Traveled Way

Purchaser may smooth or fill existing cross ditches and water bars and as approved by the Contracting Officer modify existing road junctions to enable vehicle access. The Purchaser may perform the following work 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 as follows:

    a. No object extending over 4 inches above the road surface shall remain within the 12 feet usable traveled way. Center the usable width on the roadbed or position away from the fill slope.

    b. Cut and remove standing or down trees, logs, brush, and limbs from within the area described in 1(a). 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 timber that meets utilization standards or deck at locations approved by the Contracting Officer.

    c. Place all removed materials away from drainages.

    d. During use, maintain drainage structures including dips, ditches and culverts in a usable condition.

2. Clean and recondition drainage facilities in accordance with Section T-831 and T-834.

B. Slough and Slides

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

2. Purchaser may reposition or ramp over slides and slough when the traveled way width is less than 12 feet providing the material is capable of supporting vehicles. Limit out slope 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 the Contracting Officer, slough or slide material will be removed under Section T-832.

C. Slumps 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 10 feet in the area of the slump.

3. Unless the Contracting Officer approves material being placed on slumps, ramp the slumps on both ends into undisturbed roadbed to provide at least 10 feet usable width. Use removed materials to guide vehicles to the ramp location or to aid in draining the area.

4. Washouts may be filled with suitable material.

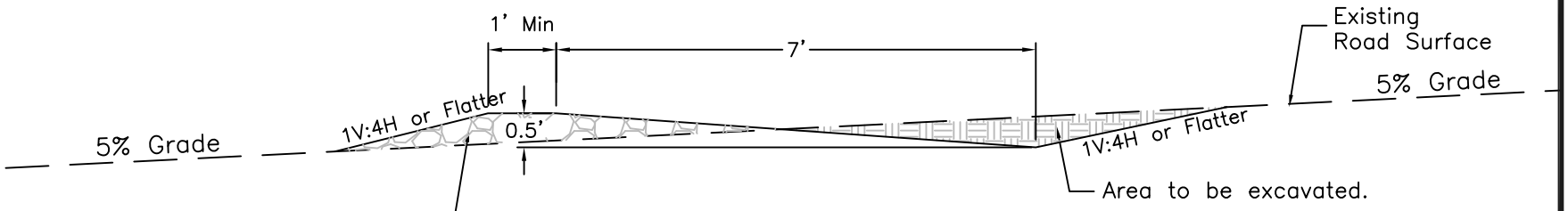
D. Post haul

At the end of hauling or prior to entering into seasonal shutdowns or a period of extended inactivity:

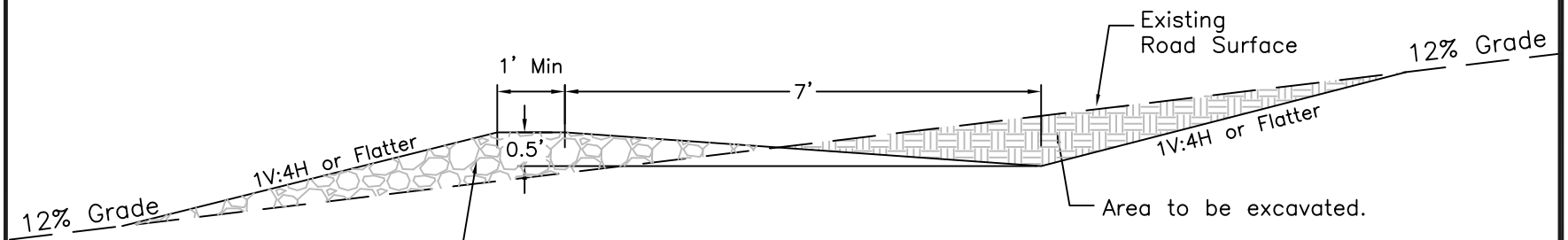
1. Shape the traveled way and disturbed roadbed to provide functional drainage.

2. Reinstall removed cross ditches and water bars 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.



Example: 5% Road Grade
Typical Section Parallel to Road Centerline



Example: 12% Road Grade
Typical Section Parallel to Road Centerline

Notes:
1. Flowline shall be horizontally skewed 60 degrees from the road centerline, unless otherwise designated in the road listing.

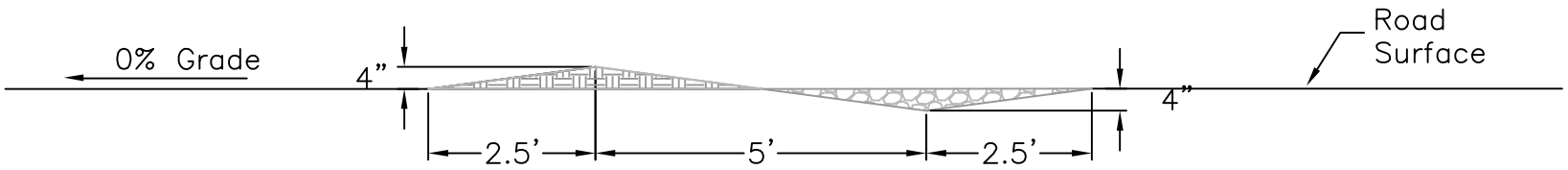
2. Berm of excavated material shall cross entire roadbed and ditchline, unless otherwise designated in the road listing.

UMPQUA NATIONAL FOREST – REGION 6

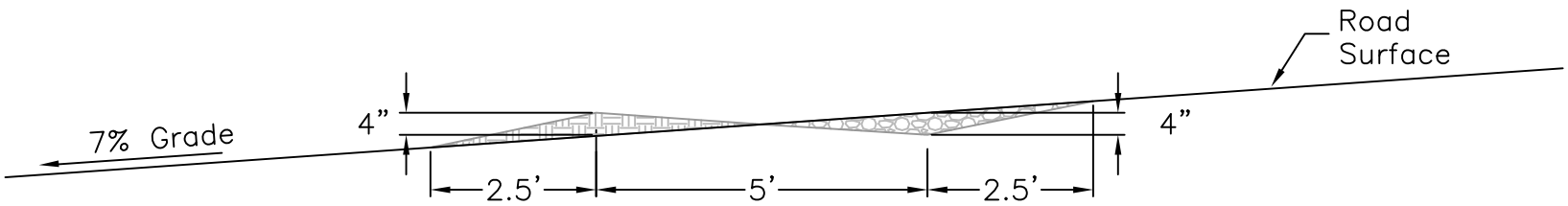
TITLE CROSS DITCH DRIVABLE

DRAWING NO. 838–1

DATE: PSR 2/13

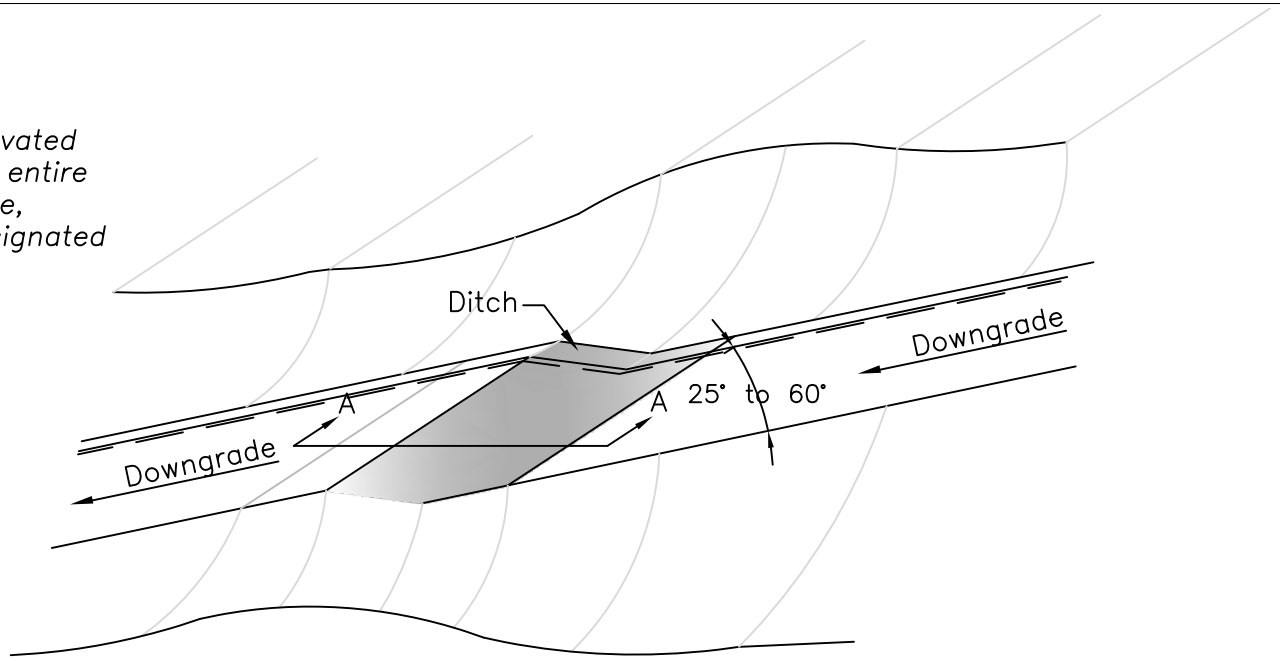


Section A–A
Example: 0% Grade



Section A–A
Example: 7% Grade

NOTE: Berm of excavated material shall cross entire roadbed and ditchline, unless otherwise designated in the road listing.



Typical Cross Section
for High Clearance Vehicles

UMPQUA NATIONAL FOREST – REGION 6

TITLE

WATER BAR DRIVABLE

DRAWING NO.

838–2

DATE: PSR 2/13

T-842F – CUTTING ROADWAY VEGETATION (12/12)

842.01 Description

This work consists of cutting all vegetative growth, including trees and other vegetation less than 4 inches in diameter measured 6 inches above the ground, on roadway surfaces and roadsides. Resulting slash and debris shall be disposed of as shown in the ROAD LISTING.

842.02 Maintenance Requirements

A. General

1. Cut brush, trees and other vegetation within each area treated to a maximum height of 6 inches above the ground surface or obstruction such as rocks or existing stumps. When work is performed under this Section, remove all limbs which extend into the treated area, or over the roadbed, to a height of 14 feet above the traveled way surface elevation.

2. Items to remain will be DESIGNATED ON THE GROUND.

3. Work may be performed either by hand or mechanically unless specifically shown in the Road Listing. Self-propelled equipment is not allowed on cut and fill slopes or in ditches.

4. Avoid damage to trunks of standing trees. The Contracting Officer may require treatment with a commercial nursery sealer or removal of trees damaged by Purchaser’s operation.

5. Limb trees within the cutting limits which are over 4 inches measured at 6 inches above the ground in lieu of cutting.

6. When trees are limbed, cut limbs within 4 inches of the trunk.

B. Cutting Side Vegetation

1. The treated area includes the road bed measured from the center line to each defined road edge, or to the bottom of the ditch on ditched road segments, plus an additional 4 feet on each side. Where there is no defined road edge or ditch, the treated area extends 12 feet from each side of the road center line.

2. Provide transitions between differing increments of cutting width. Accomplish transitions in a taper length of not less than 50 feet and not more than 70 feet.

C. Debris

1. Materials resulting from the cutting operation in excess of 12 inches in length or 3 inches in diameter are not allowed to remain on roadway slopes within the treated area, in ditches, or within water courses.

2. Remove limbs and chunks in excess of 3 inches in any dimension from the traveled way and shoulders.

3. For road segments where scattering is identified in the ROAD LISTING as the disposal method, materials may be scattered down slope from the roadbed, outside of the work area and drainages.

4. For road segments where chipping is identified in the ROAD LISTING as the disposal method, run all materials in excess of 12 inches in length or 3 inches in diameter through a mechanical chipper. Resultant chipped material may be placed on cut slopes or down slope of the roadbed, but not in ditches or drainages. Avoid placing accumulations of chips on steep cut slopes where the material will ravel into ditches.

851.01 Description

This work consists of removal of fallen trees and snags which encroach into the roadway or the 3 feet of roadside abutting the roadway on the cut side.

851.02 Maintenance Requirements

A. Limb and remove timber which meets Utilization Standards, or deck at locations designated by the Contracting Officer.

B. For material which does not meet Utilization Standards, limb and cut into lengths for handling. Deck outside ditches and drainages, off the traveled way and turnouts, or at staked locations. The clearing width is to the edge of the roadbed above a fill slope, and 3 feet beyond the base of the back slope.

C. Notwithstanding B(T)2.3, blowdown timber outside Sale Area required to be removed, which meets Utilization Standards in A(T)2, when designated by the Contracting Officer is Included Timber subject to requirements of B(T)2.2.

D. Do not leave woody debris and slash in excess of 12 inches in length or 3 inches in diameter, or concentrations which may plug ditches or culverts, in ditches, drainage channels, or on back slopes, traveled way, shoulders, or turnouts.

T-854 - TREATMENT AND DISPOSAL OF DANGER TREES (5/07)

854.01 Description

This work consists of felling and disposal of designated live or dead danger trees sufficiently tall to reach roads used by the Purchaser. Any removal of logs is subject to prior agreement between the Contractor Officer and the Purchaser.

854.02 Requirements

A. Designation of Danger Trees

Danger trees to be felled will be designated in advance by the Contracting Officer. Trees to be removed will be Marked.

B. Falling, bucking and treatment for disposal.

Use controlled felling to ensure the direction of fall and prevent damage to property, structures, roadway, residual trees, and traffic. Stump heights, measured on the side adjacent to the highest ground, must not exceed 12 inches or 1/3 of the stump diameter, whichever is greater. Higher stump heights are permitted when necessary for safety.

Felled snags and trees, which are not Marked for removal, will be left in a stable condition such that they will not roll or slide. Position logs away from standing trees so they will not roll, are not on top of one another, and are located out of roadway and drainage structures.

Fell, limb and, remove trees, which are Marked for removal, that equal or exceed the utilization standards as listed in the Timber Sale contract or SUPPLEMENTAL SPECIFICATIONS. Dispose of merchantable timber designated for removal in accordance with B/BT2.32 Construction Clearing, of the Timber Sale Contract, or as described in SUPPLEMENTAL SPECIFICATIONS.

C. Slash Treatment

Within the roadway, remove limbs, chunks, and debris in excess of 12 inches in length and 3 inches in diameter, and concentrations that may plug ditches or culverts, and water courses.

Dispose of slash by scattering outside the roadway limits without damaging trees, or improvements.

Large accumulations of slash may be ordered hauled under T-832.

T-891 – WATER SUPPLY AND WATERING (5/07)

891.01 Description

This work consists of providing facilities to furnish an adequate water supply, hauling and applying water.

891.02 Materials

If the Purchaser elects to provide water from other than designated sources, the Purchaser is responsible to obtain the right to use the water, including any cost for royalties involved.
Suitable and adequate water sources available for Purchaser's use under this contract are designated as follows:

Map Key No.	Location Road	Location Milepost	Use Restrictions
W1807	3806	5.83	
W1909 & W1910	3806	8.22	
W1812	3809	1.61	
W1021	3825-100	0.69	
W1002	3815	0.34	
W1018	3825	1.47	

891.03 Equipment

A. Positive control of water application is required. Equipment shall provide uniform application of water without ponding or washing.

B. An air gap or positive anti-siphon device shall be provided between the water source and the vehicle being loaded if the vehicle has been used for other than water haul, if the source is a domestic potable water supply, or the water is used for tank mixing with any other materials.

C. The designated water sources may require some work prior to their use. Such work may include cleaning ponded areas, installing temporary weirs or sandbags, pipe repair, pump installation, or other items appropriate to the Purchaser's operations. Flowing streams may be temporarily sandbagged or a weir placed to pond water, provided a minimum flow of _____ cu. ft/sec is maintained. Obtain approval from the Contracting Officer on improvements for sandbags or weirs prior to placement.