SPECIFICATIONS FOR MAINTENANCE OF ROADS

SPECIAL PROJECT SPECIFICATION (01/15)

800-F1 DEFINITIONS AND ABREVIATIONS

800.01
Definitions

Wherever in these specifications, or in other contract documents, the following terms, or pronouns in place of them, are used, the intent and meaning shall be interpreted as follows:

1. **Agreed or Approved -** Official agreement or approval by use of a written document issued by the Government. Agreements also require signature of Service Provider's Representative and are dated.

2. **Base course -** The layer or layers of material placed on a subbase or a subgrade to support a surface course. (See Illustration of Road Maintenance Terms.)

3. **Berm -** A curb or dike that controls roadway runoff water, or delineates traffic direction.

4. **Catch Basin**. The area immediately adjacent to inlet invert of the culvert.

5. **Channel.** A natural waterway leading into or away from a culvert or bridge.

6. **Culvert.** Any structure that provides a passageway, drain, or waterway under a road or embankment.

7. **Lead-off ditch**. A ditch used to remove water from roadside drainage ditches, the roadway, cattleguards, or drainage structures such as culverts and drainage dips.

8. **Ditch.** A relatively long narrow excavation placed to collect or disperse water.

9. **Rolling dip.** A drainage structure placed within the roadbed surface to form a uniform depression that allows routine passage of vehicles while diverting water from the traveled way.

10. **Drainage ditch.** A ditch located parallel to and abutting the roadbed.

11. **Drainage structure.** A term identifying manufactured devices placed to control water movements.

12. **Drawings**. Illustrations showing details of required work.

13. **Equipment**. All machinery, operating supplies and tools necessary for the proper performance and acceptable completion of the work.

14. **Excess Material**. Material from the roadway in excess to that needed for maintenance of roadway.

15. **Foreslope.** The slope of the ditch section nearest to the traveled way.

16. **Grade.** The vertical alignment of the top surface of the road.

17. **Highway Vehicles.** Vehicles such as, passenger cars and high clearance vehicles.

18. **High Clearance Vehicles**. Vehicles such as, pickups, 4x4s, and log trucks.

19. **Materials.** Any substances specified for use in the performance of the work.

20. **Measurement**. The process of identifying the dimensions, quantity, or capacity of an item..

21. **Nominal Dimensions or Weights.** The numerical values shown on the drawings or in the specifications as measurements for the work.

22. **Original Contract Quantities**. Those estimated quantities shown in the Schedule of Items as awarded.

23. **Patching.** Minor repairs.

24. **Paved Surface or Pavement.** Denotes asphalt, concrete, or other stabilized materials excluding natural aggregates. Dust palliative treatments are not considered as pavement.

25. **Right-of-Way**. A general term denoting (1) the privilege to pass over land in some particular line (including easement, lease, permit, or license to occupy, use, or traverse public or private Lands), or (2) real property necessary for the project, including roadway, buffer areas, access, and drainage areas.

26. **Roadbed.** The portion of a road between the intersection of the subgrade and side slopes, excluding that portion of the ditch below the subgrade.

27. **Road Listing.** A preliminary listing of road locations and any established work priorities.

28. **Schedule of Items**. A schedule in the contract that contains a listing and description of maintenance items, quantities, units of measure, methods of measurement, unit price, and amount.

29. **Shoulder.** The portion of the roadway continuous to the traveled way for accommodation of stopped vehicles, emergency use, and lateral support of travel way structure.

30. **Slough or Slide**. Material deposited on the roadway that may need to be repositioned or removed.

31. **Slump**. A localized portion of the roadbed that has slipped, or otherwise become lower than the adjacent roadbed, and constitutes a hazard to traffic.

32. **Standard Specifications.** Specifications for all divisions of work.

33. **Subgrade.** Top surface of roadbed upon which the pavement structure, shoulders, and curbs are constructed.

34. **Traveled Way.** The portion of the roadway designated for the movement of vehicles, exclusive of shoulders but including turnouts and curve widening.

35. **Turnouts**. A short auxiliary lane on a one-lane road provided for passage of meeting vehicles.

36. **Unit of Measure.** The unit and fractions of units shown in the Schedule of Items.

37. **Unsuitable Material**. Material removed during maintenance, which must be disposed of in designated locations. Includes material with substantial amounts of vegetation or other objectionable material.

38. **Water-bar**. A deeper type ditch placed across the roadbed to remove water from the roadbed surface, which is not intended for standard passenger vehicles; usually placed diagonal to the centerline.

39. **Work Schedule.** The Service Provider's current schedule for work progression.

40. **DBH.** Tree diameter at breast height.

800.02 Abbreviations

Whenever in these specifications, or in other contract documents, the following terms, or pronouns in place of them, are used, the intent and meaning shall be interpreted as follows: (Reference to a specific standard or specification shall mean the latest addition or amendment thereto in effect on date of Invitation for Bids.)

AASHTO – American Association of State Highway and Transportation Officials.

ASTM – American Society for Testing and Materials.

EPA – Environmental Protection Agency.

FAR – Federal Acquisition Regulation System.

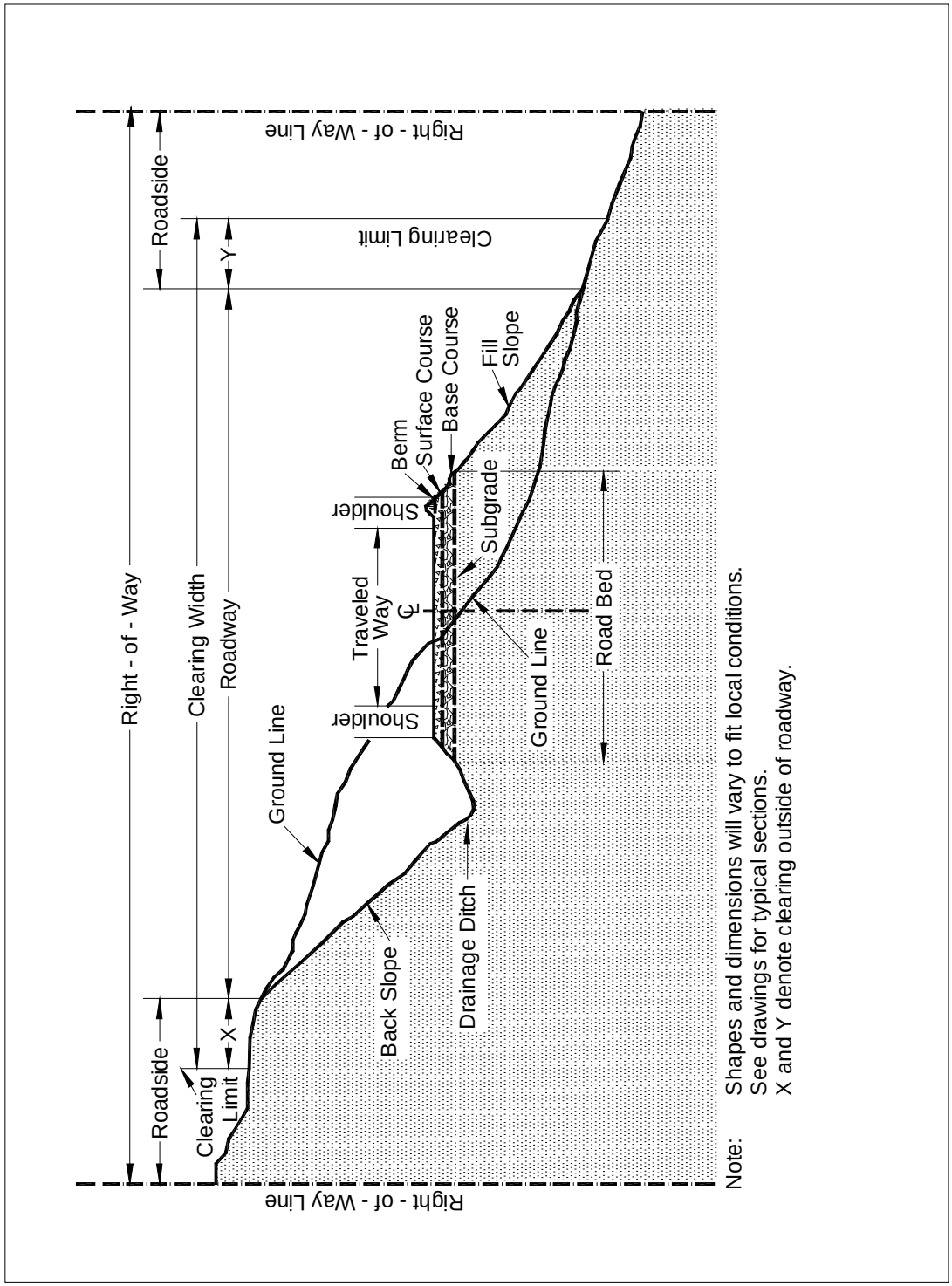
FED SPEC – Federal Specifications.

MUTCD – Manual of Uniform Traffic Control Devices.

NBS – National Bureau of Standards.

OSHA – Occupational Safety and Health Act.

Illustration of Road Maintenance Terms.



SPECIAL PROJECT SPECIFICATION (12/11)
801-F1 QUANTITY MEASUREMENT TERMS

801.01
Measurement Terms

1. U.S. Customary Units of measure are used in conjunction with these specifications.

2. The methods of measurement and computation will be those necessary to accurately determine the quantities of materials furnished and work performed.

3. All items, which are measured by the feet, will be measured parallel to its longitudinal centerline, unless otherwise shown on the drawings.

4. Miles will, in the absence of known distances from existing plans or surveys, be determined by the Government using a calibrated survey odometer or equal substitute operated on the traveled way at or parallel to road centerline.

5. The term "ton" means 2000 pounds. Trucks used to haul material measured by truck weight shall be weighed empty at least once daily, and each truck shall bear a plainly legible identification mark. Weigh tickets furnished by the Contractor from certified scales will be used to determine weight measurements.

6. Materials measured by the cubic yard in the hauling vehicle shall be measured therein at the point of delivery. Vehicles may be of any size or type, provided that the box is of such shape that the actual volume may be readily and accurately determined. **The exception is spot rock surfacing which is measured as compacted in place**.

7. The term "lump sum" when used in the Schedule of Items means the complete unit as required by or described in the contract.

8. Measurement will be made of each item or unit of work, as shown in the Schedule of Items, completed and accepted in accordance with the contract provisions, specifications, and drawings.

SPECIAL PROJECT SPECIFICATION (12/11)
811-F1 SURFACE MAINTENANCE

811.01
Service Required

Smooth and shape native or aggregate surfaced roads including traveled way, shoulders, turnouts, and intersections. Reshape or recondition ditches, water bars, and drain dips.

When roller comapaction is required, a minimum of an 7-10 ton vibratory roller will be operated over the full width of the roadway for a minimum of 3 complete passes over the full width until there is no visible evidence of consolidation. One pass is defined as operating the vibratory roller from the point where blading begins to the point where blading ends. Adjust the moisture content to a level suitable for compaction.

811.02
Performance Standards

Maintenance Level 2-4 Roads

A road surface is maintained to standard when the surface is compact (when required), crowned, or sloped to drain, without segregation of the surfacing materials. The road surface has no ruts, rills or other irregularities & suitable materials have been recovered and incorporated. Unsuitable materials have been removed. Ditches and road surface drainage structures function efficiently.

When ordered by the Contracting Officer to work in a weed infested area the contractor will be required to prevent spreading the infestation into un-infested areas by cleaning equipment. The contractor will use wash stations approved by the Contracting Officer.

811.03
Location of Work

As specified on roads listed on the ROAD LISTING, SHOWN ON THE PLANS, marked on the ground, or as ordered by the Contracting Officer. Locations of weed infested areas are marked on the ground. Do not operate in the weed infested areas unless ordered to do so by the Contracting Officer.

811.04
Measurement

Measurement under this Section will be made by the total number of units for each item listed in the SCHEDULE OF ITEMS completed and accepted.

A. Mile: Surface maintenance will be measured along the centerline of the roadway. Turnouts are incidental. Measurement will be to the nearest one-tenth (0.1) mile.

811.05
Payment

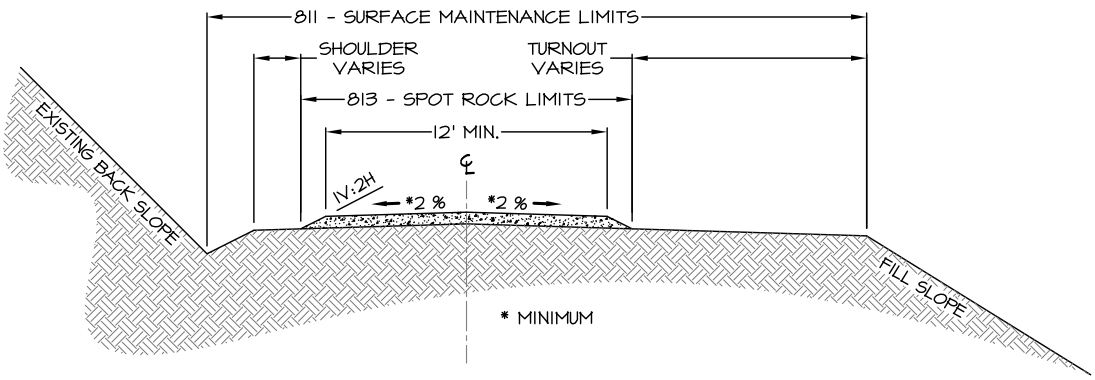
The accepted quantities will be paid at the contract price per unit of measurement for the Section 811 pay items listed in the schedule of items. Payment will be full compensation for the work prescribed in this Section.

Pay Item		Pay Unit
811	Surface Maintenance Level 2 Roads with Roller Compaction	Mile

811.06
Acceptable Quality Levels

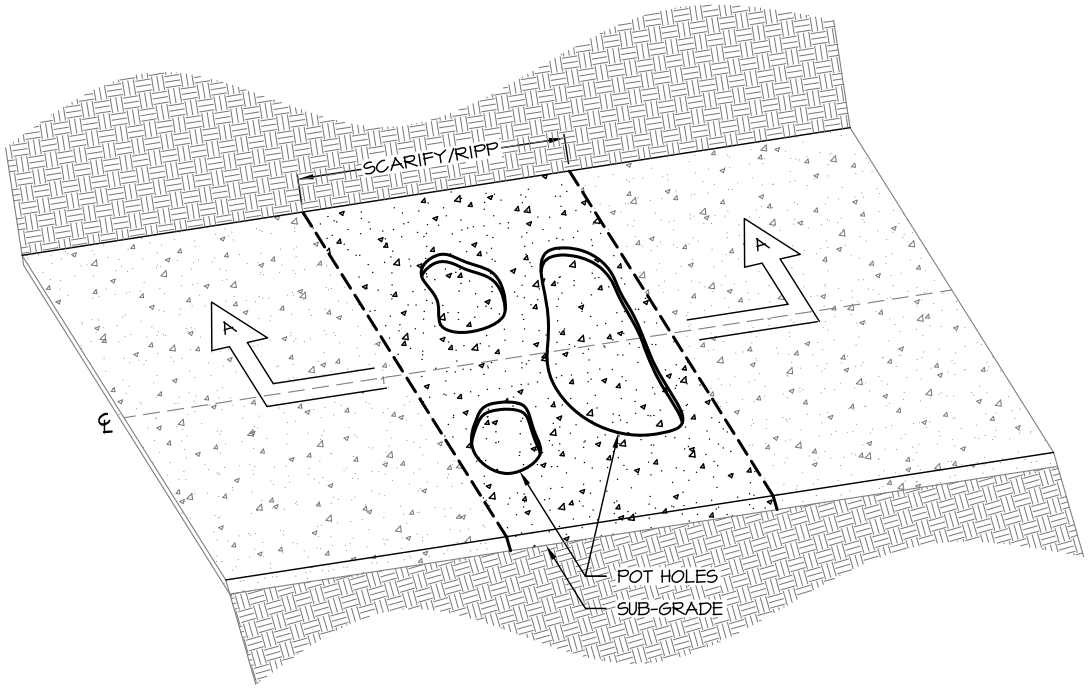
Description	Major Defect	Minor Defect	Allowable Defects		Required Action	
			Major	Minor	Major	Minor
Surface Irregularities (Level 4&5)	Potholes greater than 2" deep and wider than 1 foot	Potholes 2" or less deep and 1 foot or less wide	0 per unit	2 per unit	Rework if greater than 0 major defects	Rework if greater than 2 minor defects
	Washboards greater than 1" deep	Washboards 1” or less deep and not exceeding 20 feet long	0 per unit	2 per unit	Rework if greater than 0 major defects	Rework if greater than 2 minor defects
Surface Irregularities (Level 3)	Potholes greater than 2" deep and wider than 1 foot	Potholes 2” or less deep and 1 foot or less wide	0 per unit	2 per unit	Rework if greater than 0 major defects	Rework if greater than 2 minor defects
	Washboards greater than 1" deep	Washboards less than 1" deep and not exceeding 20 feet long	0 per unit	4 per unit	Rework if greater than 0 major defects	Rework if greater than 4 minor defects
Road Cross Section (Level 4)	Crown or Cross Slope is not uniform and does not drain as specified on more than 250' of surface per mile	Crown or Cross Slope is not uniform and does not drain as specified on less than 250' of surface per mile	0	1 per unit	Rework	Rework if greater than 1 minor defects
Road Cross Section (Level 3)	Crown or Cross Slope is not uniform and does not drain as specified on more than 250' of surface per mile	Crown or Cross Slope is not uniform and does not drain as specified on less than 250' of surface per mile	0	1 per unit	Rework	Rework if greater than 1 minor defects
Road Cross Section (Level 2)	Road surface does not drain properly and causes erosion, or obstructs high clearance vehicles	Road surface does not drain properly, but does not cause erosion	0	2 per unit	Rework if greater than 0 major defects	Rework if greater than 2 minor defects
Oversized Material (Level 3&4 aggregate surfaced roads)	Material greater than 3" diameter remaining on the road surface	Material less than 3" diameter remaining on the road surface and traffic safety is not compromised	0	5 per unit	Rework if greater than 0 major defects	Rework if greater than 5 minor defects
Oversized Material (Level 2)	Objects in traveled way that obstruct high clearance vehicles	Debris in traveled way that may impede high clearance vehicles	0	5 per unit	Rework	Rework if greater than 5 minor defects

Description	Major Defect	Minor Defect	Allowable Defects		Required Action	
			Major	Minor	Major	Minor
Aggregate Surface Quality	Gradation of surface aggregate is degraded by more than 10 %	Gradation of surface aggregate is degraded by less than 10 %	0	5 per unit	Rework	Rework if greater than 5 minor defects
	A loss of more than 10 CY/mile	A loss of less than 10 CY/mile	0	5 per unit	Replace or recover lost material	Accept the loss of material
	surfacing is segregated over more than a 100 square yard area per 1000 linear feet of road and traffic safety is compromised	surfacing is segregated over less than a 100 square yard area per 1000 linear feet of road and traffic safety is not compromised	0	N/A	Rework	Accept the loss of surface quality
Backslopes	Undercut backslope will result in destabilization of slope	Undercut backslope will not result in destabilization of slope	0	2 per unit	Repair and Stabilize	Revegetate if greater than 2 minor defects
Compaction	Visible displacement occurs under hauling or spreading equipment	N/A	0	N/A	Rework	N/A
Ditches and Road Drainage Structures	Impeded flow or water diverted out of drainage structures	< 20% impeded, but water will stay in the channel	0	2 per unit	Rework	Rework if greater than 2 minor defects
Unpaved Shoulders (Level 3 & 4)	Elevation difference between pavement and shoulder is greater than 1"	Elevation difference between pavement and shoulder is less than 1"	0	5 per unit	Rework	Rework if greater than 5 minor defects
	Material greater than 1/4" diameter remaining on the road surface	Material 1/4" diameter or less remaining on the road surface and traffic safety is not compromised	0	5 per unit	Rework	Rework if greater than 5 minor defects
	Does not drain away from pavement	Does not drain away from pavement	0	0	Rework	Rework
Working outside of project limits	Area contains invasive weeds	N/A	0	N/A	Repair and treat affected areas as directed by the Contracting Officer	N/A



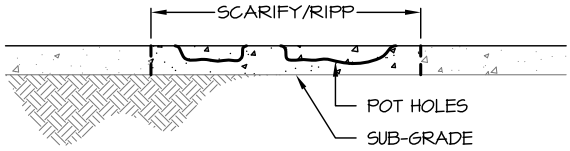
SURFACE MAINTENANCE & SPOT ROCK TYPICAL

Not to Scale



POT HOLE TREATMENT TYPICAL

Not to Scale



SECTION A - A

Not to Scale

NOTES:

1. GRADING - CROWN ROADS WITH A 2 % - 3 % CROWN. FOR IN-SLOPE/OUT-SLOPE ROADS SLOPE WITH A 2 % - 3 % CROSS SLOPE OVER THE ENTIRE ROAD WIDTH.
2. SPOT ROCK - PLACE MATERIAL THE FULL ROAD WIDTH BY END DUMPING TO A MINIMUM DEPTH OF 3".
3. DITCHES - CLEAN DITCHES THAT DO NOT REQUIRE END HAUL AND WHICH CAN EASILY BE PUSHED WITH A GRADER AS DIRECTED BY CONTRACTING OFFICER. MATCH ORIGINAL DITCH DIMENSIONS.
4. CLEANING DITCHES UNDER 811 - SURFACE MAINTENANCE IS DEFINED AS A MINIMAL EFFORT TO OPEN UP RESTRICTED DITCHES AND IS NOT A SUBSTITUTE FOR INTENSIVE DITCH CLEANING, WHEN REQUIRED, AS COVERED UNDER 834 - ROADWAY DRAINAGE SYSTEM MAINTENANCE.
5. POT HOLES - PRIOR TO GRADING AND SPOT ROCK ACTIVITIES, SCARIFY/RIPP ALL POT HOLES, FULL WIDTH, DOWN TO SUB-GRADE OR FIRM GROUND AS DIRECTED BY CONTRACTING OFFICER.

SPECIAL PROJECT SPECIFICATION (12/11)
813-F1 SPOT SURFACING

813.01
Service Required

Load, haul, and place surface material to repair or stabilize road surfaces.

Roller compaction is required. A minimum of an 7-10 ton vibratory roller will be operated over the full width of the roadway for a minimum of 3 complete passes over the full width until there is no visible evidence of consolidation. One pass is defined as operating the vibratory roller from the point where blading begins to the point where blading ends. Adjust the moisture content to a level suitable for compaction.

813.02
Performance Standard

A. Spot surfacing is complete when the designated quantity of the ordered material has been placed.

B. Spot surfacing material shall come form a commercial source, purchased by the contractor. All materials transported onto National Forest System land will be weed-free. Written documentation of methods used to determine the weed-free status of any and all materials furnished by the contractor will be furnished to the Contracting Officer before transport of any materials onto National Forest System land.

C. All suitable and adequate Government furnished materials and gradations shalll be SHOWN ON THE PLANS.

813.03
Location of Work

As specified on roads listed on the ROAD LISTING, SHOWN ON THE PLANS, or as ordered by the Contracting Officer.

813.04
Measurement

Measurement under this Section will be made by the total number of units for each item listed in the SCHEDULE OF ITEMS completed and accepted.

A. Measure spot rock by the final cubic yard in-place.

B. Material measured by the ton shall be verified by certified weight tickets

813.05
Payment

The accepted quantities will be paid at the contract price per unit of measurement for the Section 813 pay items listed in the schedule of items. Payment will be full compensation for the work prescribed in this Section.

Pay Item		Pay Unit
813	Spot Surfacing, Gradation __3/4" -	Cubic Yard

813.06
Acceptable Quality Levels

Description	Major Defect	Minor Defect	Allowable Defects		Required Action	
			Major	Minor	Major	Minor
Depth of Aggregate	Dimension of spot surfacing deviates by more than 1" from depth specified. Or less than 1" from dimension specified but is consistently high or low.	Dimension of spot surfacing deviates by 1" or less than from depth specified and not consistently high or low.	0	N/A	If depth is low, correct placement of aggregate to specified dimensions. If depth is high only pay for ordered amount	Accept aggregate as placed, pay only for delivered quantities.
Width of Aggregate	Dimension of spot surfacing is less than specified width or more than 1' wider than specified.	Dimension of spot surfacing is up to 1' wider than specified but not consistently wide.	0	N/A	If width is narrow, correct placement of aggregate to specified dimensions. If width is too wide reshape.	Accept aggregate as placed, pay only for delivered quantities.
Length	Dimension of spot surfacing is shorter than specified length or more than 100' longer than specified.	Dimension of spot surfacing is shorter than specified length or up to 100' longer than specified.	0	N/A	If length is shorter than specified, correct placement of aggregate to specified dimensions. If too long pay only for ordered amount.	Accept aggregate as placed, pay only for delivered quantities.
Compaction	Visible displacement occurs under heavy spreading equipment	N/A	0	N/A	Rework	N/A
Aggregate Quality	Does not meet specified gradation or durability requirements and is not suitable for intended use	Does not meet specified gradation or durability requirements and is suitable for intended use	0	N/A	Reject and replace	Accept but may reduce payment.
	Material source does not meet weed free requirement	N/A	0	N/A	Reject source	N/A
Finish Quality	Spot surfacing doesn't conform to the adjacent road segments and traffic is impeded.	Spot surfacing generally conforms to the adjacent road segments, but traffic may be slowed.	0	2 per unit	Reshape or recompact surfacing as needed.	Accept but may reduce payment.

SPECIAL PROJECT SPECIFICATION (12/11)
832-F1 LOAD, HAUL, AND PLACE MATERIALS

832.01
Service Required

Load, haul, and place material at designated sites.

832.02
Performance Standard

Loading, hauling, and placing is complete when no obstruction remains in or adjacent to the roadway or in ditches which would have the potential to interfere with traffic use, block or divert water from structures or channels. This includes relocation, repositioning and stabilization as ordered by the Contracting Officer.

832.03
Location of Work

As specified on roads listed on the ROAD LISTING, SHOWN ON THE PLANS, or as ordered by the Contracting Officer.

832.04
Measurement

Measurement under this Section will be made by the total number of units for each item listed in the SCHEDULE OF ITEMS completed and accepted.

A. Cubic Yard: The quantity will be the number of cubic yards measured in the vehicles.

832.05
Payment

The accepted quantities will be paid at the contract price per unit of measurement for the Section 832 pay items listed in the schedule of items. Payment will be full compensation for the work prescribed in this Section.

Pay Item		Pay Unit
832	Load, Haul, and Place Materials, Less Than 5 Miles One Way Haul	Cubic Yard

832.06
Acceptable Quality Levels

Description	Major Defect	Minor Defect	Allowable Defects		Required Action	
			Major	Minor	Major	Minor
Slopes	Unstable material left on slopes	Material left on slopes that can be stabilized and won't block drainages	0	1 per unit	Remove	Remove or stabilize in place
Backslopes	Undercut backslope will result in destabilization of slope	Undercut backslope will not result in destabilization of slope	0	1 per unit	Repair and Stabilize	Revegetate if greater than 1 minor defects
Ditches, inlet/outlet channels, streams and catch basins	water will be diverted out of the drainage structure or soil enters system	< 20% impeded, but water will stay in the channel.	0	1 per unit	Rework	Rework if greater than 1 minor defects
Debris on Road (ML 4-5)	Any debris in traveled way	Debris in traveled way that may slow or impede traffic.	0	2 per unit	Rework	Rework if greater than 2 minor defects
Debris on Road (ML 3)	Debris in traveled way that may impede traffic.	Debris in traveled way that may slow traffic.	0	3 per unit	Rework	Rework if greater than 3 minor defects
Debris on Road (ML 2)	Objects in traveled way that obstruct high clearance vehicles	Debris in traveled way that may impede high clearance vehicles	0	5 per unit	Rework	Rework if greater than 5 minor defects
Placed Material (Disposal Sites)	Unstable material on designated sites.	N/A	0	N/A	Stabilize	N/A
Revegetation	No revegetation work done	Revegetation work incomplete	N/A	N/A	N/A	N/A
Work Area Management	Not following approved safety plan which may include signs, flaggers, and other temporary traffic control measures	Not following approved safety plan which may include signs, flaggers, and other temporary traffic control measures	0	0	Suspend work until in compliance	Suspend work until in compliance

SPECIAL PROJECT SPECIFICATION (01/15)
833-F1 DRAINAGE STRUCTURE INSTALLATION OR REMOVAL

833.01
Service Required

Install or remove drainage structures including culverts, water-bars and rolling dips.

833.02
Performance Standard

A. Drainage structure installation is complete when water-bars and rolling dips have been installed to the lines and grades specified, and drainage structure removal is complete when designated culverts have been removed and culverts have been properly disposed of.

B. Disposal of culvert materials removed shall be removed from National Forest lands and disposed of in a legal manner. Disposal considered to be incidental to drainage structure removal.

833.03
Location of Work

As specified on roads listed on the ROAD LISTING, SHOWN ON THE PLANS, or as ordered by the Contracting Officer.

833.04
Measurement

Measurement under this Section will be made by the total number of units for each item listed in the SCHEDULE OF ITEMS completed and accepted.

A. Each: Measured by the total number of units for each item in the schedule of items completed and accepted.

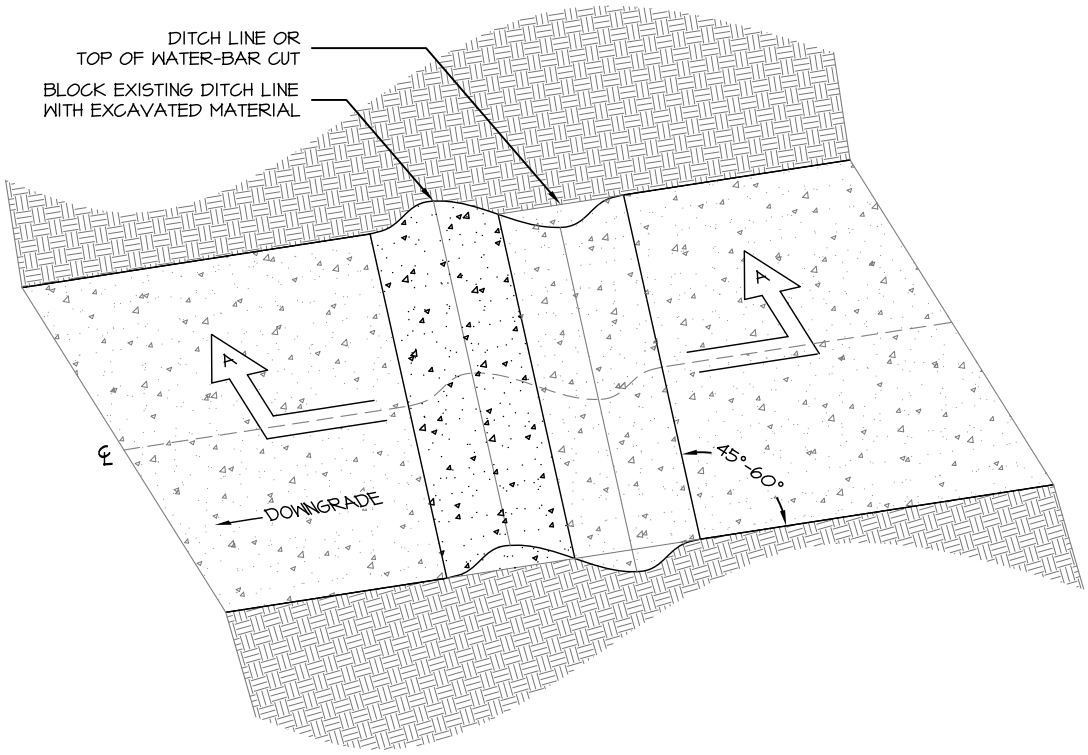
833.05
Payment

The accepted quantities will be paid at the contract price per unit of measurement for the Section 833 pay items listed in the schedule of items. Payment will be full compensation for the work prescribed in this Section.

Pay Item		Pay Unit
833	Water-bar Installation	Each

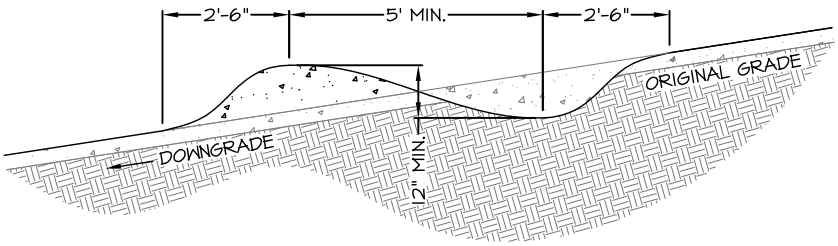
833.06
Acceptable Quality Levels

Description	Major Defect	Minor Defect	Allowable Defects		Required Action	
			Major	Minor	Major	Minor
Culvert size	Culvert is smaller than the designated diameter shown on the drawings.	Culvert is larger than the designated diameter shown on the drawings.	0	N/A	Remove culvert and replace with designated size	Accept if culvert fits the geometry of the road but pay at designated size otherwise replace
	Culvert is shorter than the designated length shown on the drawings.	Culvert is longer than the designated length shown on the drawings.	0	0	Replace or add section to fit geometry of road.	Remove excess culvert and treat cut end, or harden fill slope to prevent erosion and pay for ordered length
Grade and alignment of culvert	More than 10% deviation from original lines and grades.	10% or less deviation from original lines and grades.	0	1 per unit	Remove and replace culvert	Repair if greater than 1 minor defects
Sag or depression in road after placement of culvert and backfill material	Greater than 2 inch depression in traveled way	2 inch or less depression in traveled way	0	1 per unit	Furnish, place and compact designated material to repair depression.	Repair if greater than 1 minor defects
Removed culvert or pieces left on National Forest System Lands	Culverts or pieces of culvert left on National Forest System Lands	N/A	0	N/A	Remove from National Forest System Lands	N/A
Water-bars	More than 10% deviation from original lines and grades.	10% or less deviation from original lines and grades.	0	2 per unit	Rework	Rework if greater than 2 minor defects
Rolling Dip	More than 10% deviation from specified lines and grades	10% or less deviation from specified lines and grades	0	1 per unit	Rework	Rework if minor defects interfere with proper drainage
Sedimentation	Operations cause or allow sediment to leave site.	N/A	0	N/A	Cease operations until sediment is controlled	N/A
Work Area Management	Not following approved safety plan which may include signs, flaggers, and other temporary traffic control measures	Not following approved safety plan which may include signs, flaggers, and other temporary traffic control measures	0	0	Suspend work until in compliance	Suspend work until in compliance



WATER-BAR PERSPECTIVE VIEW

Not to Scale



SECTION A - A

Not to Scale

NOTES:

1. CONSTRUCT WATER-BARS AT LOCATIONS SHOWN ON THE PLANS OR AS MARKED ON THE GROUND.
2. INLET OF WATER-BARS SHALL BE TO BOTTOM OF DITCH LINE OR A MINIMUM OF 6" BELOW THE EXISTING ROAD ELEVATION.
3. GRADE OF WATER-BARS SHALL BE OUT-SLOPED A MINIMUM OF 6% OR 2% MORE THAN THE EXISTING ROAD OUT-SLOPE, WHICHEVER IS GREATER.

SPECIAL PROJECT SPECIFICATION (12/11)
834-F1 ROADWAY DRAINAGE SYSTEM MAINTENANCE

834.01
Service Required

Clean and recondition roadway drainage systems including culverts, ditches, inlet and outlet channels, catch basins, and appurtenances.

834.02
Performance Standard

Drainage system maintenance is complete when no obstruction remains in the defined area adjacent to the structure or in ditches which would have the potential to block water from entering the structure, back water into the structure (except for structures designed to function in a back-flooded manner), or divert water outside the defined channel. Equipment operation in live streams or hydraulic flushing of drainage structures is not permitted.

Materials produced during drainage system maintenance activities may be repositioned in a stable manner, as directed and approved by the Contracting Officer. Material requiring end haul shall be compensated for separately.

When ordered by the Contracting Officer to work in a weed infested area the contractor will be required to prevent spreading the infestation into un-infested areas by cleaning equipment. The contractor will use wash stations approved by the Contracting Officer.

Recondition damaged culverts by straightening bent inlet and outlet ends, and tightening any loose bands or fittings. This work is limited to that which can be done with a pry bar, hydraulic jack, or other similar hand tools.

834.03
Location of Work

As specified on roads listed on the road listing, shown on the plans, marked on the ground and/or ordered by the Contracting Officer and;

A. Drainage structures including inlet structures, culverts, catch basins, inlet/outlet channels, and ditches within the area shown on the plans or in the supplemental specifications.

B. Culverts - a minimum external horizontal distance of 20 feet in any direction from the inlet and outlet end and a minimum internal distance of 3 feet from the inlet and outlet ends.

C. Ditches adjacent to the roadbed.

D. This work does not include bridges, cattle guards, drain dips, or water bars.

E. Do not operate in the weed infested areas marked on the ground unless ordered to do so by the Contracting Officer.

834.04
Measurement

Measurement under this Section will be made by the total number of units for each item listed in the SCHEDULE OF ITEMS completed and accepted.

A. Mile: Work activity will be measured along the centerline of the road regardless of the number of lanes.

B. Each: Measured by the total number of units for each item in the schedule of items completed and accepted.

834.05
Payment

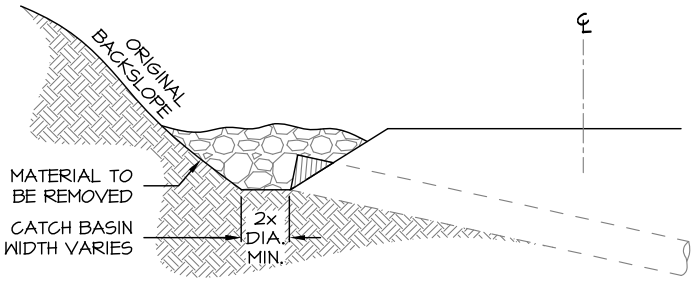
The accepted quantities will be paid at the contract price per unit of measurement for the Section 834 pay items listed in the schedule of items. Payment will be full compensation for the work prescribed in this Section with the exception of end haul. All waste material produced requiring end haul will be paid at the contract price per unit of measurement for the Section 832 pay items listed in the schedule of items.

Pay Item		Pay Unit
834(1)	Clean Ditches and Drainage Structures	Mile
834(2)	Clean Ditches	Mile

834.06
Acceptable Quality Levels

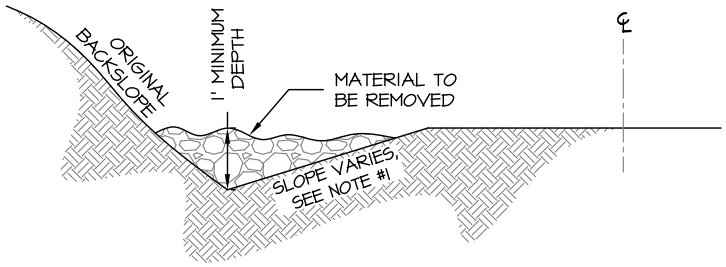
Description	Major Defect	Minor Defect	Allowable Defects		Required Action	
			Major	Minor	Major	Minor
Blocked Culverts	Greater than 20 % of end area blocked	20% or less of end area blocked	0	2 per unit	Rework	Rework if greater than 2 minor defects
Damaged Culvert Inlet/outlets	Greater than 20 % of end area blocked	20% or less of end area blocked	0	2 per unit	Rework	Rework if greater than 2 minor defects
Impeded flow for ditches, inlet/outlet channels, and catch basins	water will be diverted out of the drainage structure or system	< 20% impeded, but water will stay in the channel.	0	2 per unit	Rework	Rework if greater than 2 minor defects
Debris on Road (ML 4-5) produced by Service Provider operations.	Any debris in traveled way	N/A	0	N/A	Rework	N/A
Debris on Road (ML 3) produced by Service Provider operations.	Debris in traveled way that may impede traffic.	Debris in traveled way that may slow traffic.	0	2 per unit	Rework	Rework if greater than 2 minor defects
Debris on Road (ML 2) produced by Service Provider operations.	Objects in traveled way that obstruct high clearance vehicles	Debris in traveled way that may impede high clearance vehicles	0	2 per unit	Rework	Rework if greater than 2 minor defects
Aggregate Surface Quality	Gradation of surface aggregate is degraded by more than 10 %	Gradation of surface aggregate is degraded by 10 % or less	0	1 per unit	Rework	Rework if greater than 2 minor defects
Backslopes	Undercut backslope will result in destabilization of slope	Undercut backslope will not result in destabilization of slope	0	2 per unit	Repair and Stabilize	Revegetate if greater than 2 minor defects

Vegetation	**woody vegetation within 5 feet of the inlet end of drainage structures or in ditches that interferes with flow**	**low growing vegetation within 5 feet or more of inlet end of drainage structures or in ditches that does not interfere with flow**	**0**	**N/A**	**Remove**	**Leave in place**
Work Area Management	**Not following approved safety plan which may include signs, flaggers, and other temporary traffic control measures**	**Not following approved safety plan which may include signs, flaggers, and other temporary traffic control measures**	**0**	**0**	**Suspend work until in compliance**	**Suspend work until in compliance**
Working outside project limits	**Area contains invasive weeds**	**N/A**	**0**	**N/A**	**Repair and treat affected areas as directed by the CO**	**N/A**



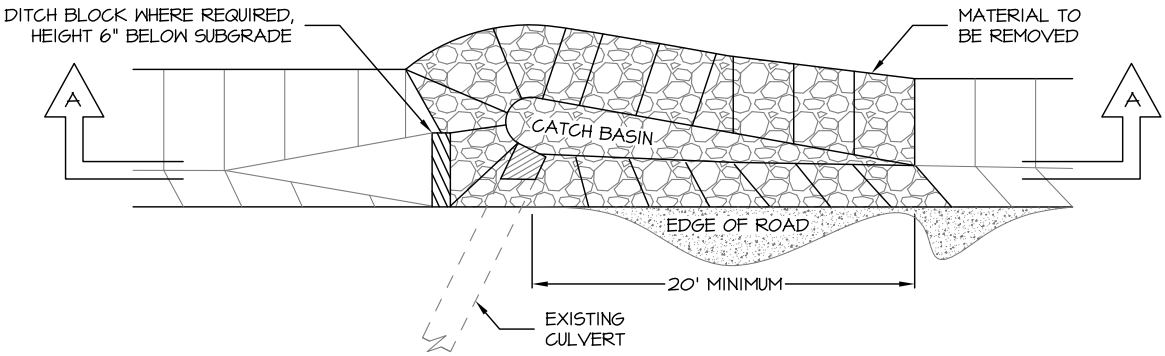
CULVERT CLEANING TYPICAL SECTION

Not to Scale



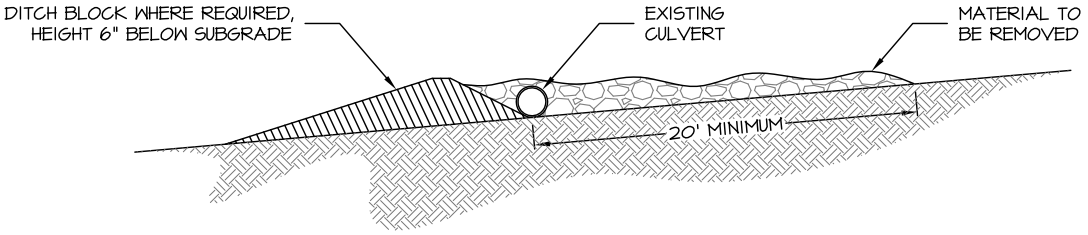
DITCH CLEANING TYPICAL SECTION

Not to Scale



CULVERT CLEANING PLAN VIEW

Not to Scale



CULVERT CLEANING SECTION A - A

Not to Scale

NOTES:

1. DITCH SLOPE VARIES FROM 1V:3H, TYPICAL, TO A 1V:2H MINIMUM ALONG WIDTH RESTRICTED ROAD SEGMENTS. CLEAN AS DIRECTED BY CONTRACTING OFFICER.
2. DISPOSE OF EXCESS MATERIALS AT DESIGNATED WASTE AREAS.

SPECIAL PROJECT SPECIFICATION (01/15)
841-F1 EROSION CONTROL

841.01
Service Required

Apply erosion and sediment control measures in designated areas.

841.02
Performance Standard

Treatment is complete when ordered quantities of contractor provided certified weed free hay or straw mulch have been applied to all disturbed soil areas, either by machine or hand spreading. Minimum weight of a bale of hay shall be 65 lbs.

841.03
Location of Work

As specified on roads listed on the ROAD LISTING, SHOWN ON THE PLANS, or as ordered by the Contracting Officer.

841.04
Measurement

Measurement under this Section will be made by the total number of units for each item listed in the SCHEDULE OF ITEMS completed and accepted.

A. Each: Measured by the total number of units for each item in the schedule of items completed and accepted.

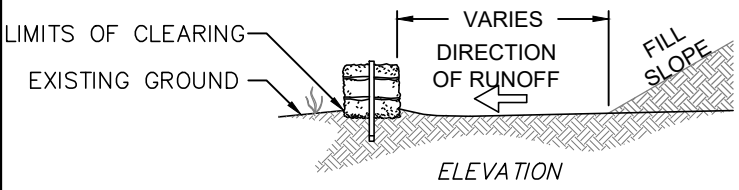
841.05
Payment

The accepted quantities will be paid at the contract price per unit of measurement for the Section 841 pay items listed in the schedule of items. Payment will be full compensation for the work prescribed in this Section.

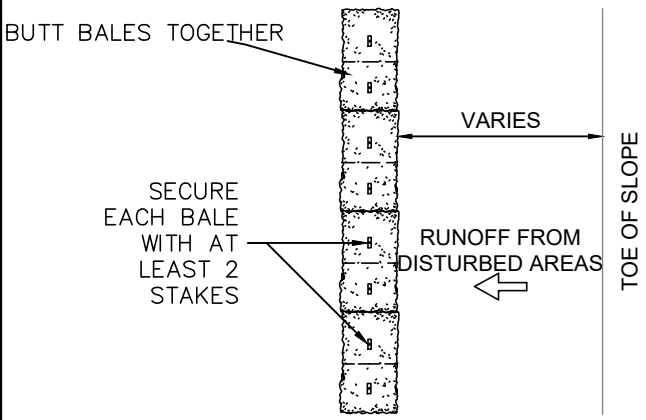
Pay Item		Pay Unit
841	Hay Bail	Each

841.06
Acceptable Quality Levels

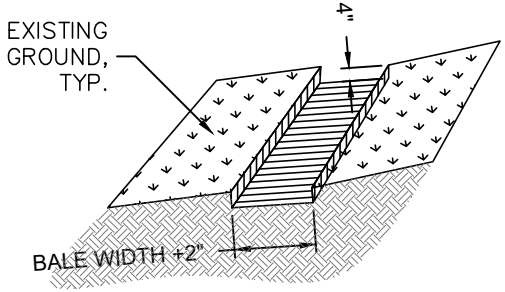
Description	Major Defect	Minor Defect	Allowable Defects		Required Action	
			Major	Minor	Major	Minor
Mulch	**Mulch is not as specified**	**N/A**	**0**	**N/A**	**Reject and replace**	**N/A**
Weeds	**Does not conform to Federal, State, and Local seed and noxious weed acts and laws.**	**N/A**	**0**	**N/A**	**Reject and replace**	**N/A**
Application	**Less than 80% of the designated area is treated**	**Between 80% and 100% of the designated area is treated**	**0**	**1 per unit**	**Rework**	**Rework if greater than 1 minor defects**
Work Area Management	**Not following approved safety plan which may include signs, flaggers, and other temporary traffic control measures**	**N/A**	**0**	**N/A**	**Suspend work until in compliance**	**N/A**



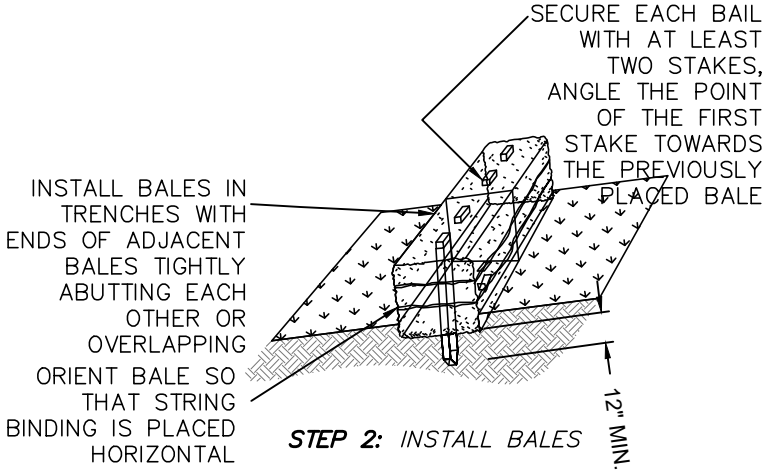
ELEVATION



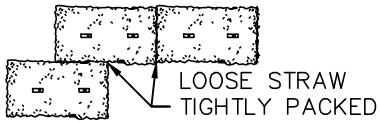
PLAN



STEP 1: *EXCAVATE TRENCH*

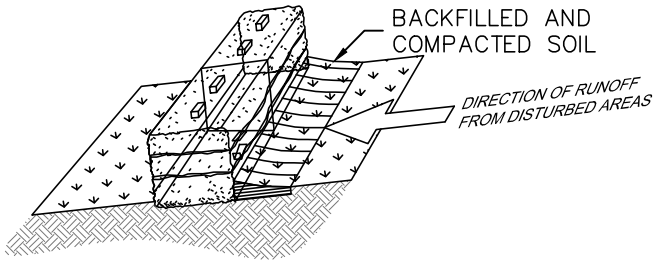


STEP 2: *INSTALL BALES*



PLAN VIEW

STEP 3: *TIGHTLY PACK STRAW BETWEEN BALES*



STEP 4: *BACKFILL SOIL AGAINST BALES*

INSTALLATION OF A STRAW BALE BARRIER AT TOE OF FILL

Not to Scale

PROPERLY STAKED AND ENTRENCHED STRAW BALES

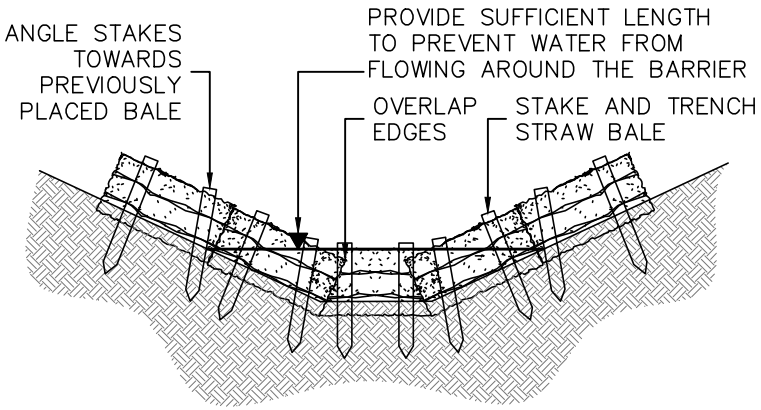
Not to Scale

NOTE:

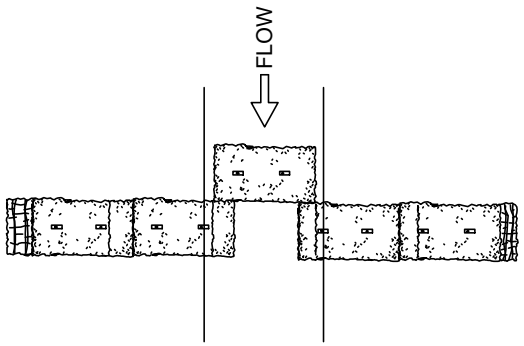
1. USE STRAW BALES IN DRAINAGE DITCHES, OR OTHER DRAINAGE FEATURES THAT CAN CONTRIBUTE SEDIMENT DELIVERY UNDER LOW FLOW CONDITIONS.

2. WINTERIZATION AFTER THE NORMAL OPERATING PERIOD, OCT 31ST ,20XX
   INSTALL STRAW BALES AT LOCATIONS DIRECTED BY CONTRACTING OFFICER ON ANY ROADS NOT COMPLETED & ACCEPTED.

3. ALL STRAW BAILS SHALL BE REMOVED PRIOR TO FINAL INSPECTION AND ACCEPTANCE.



ELEVATION



PLAN

STRAW BALE BARRIER TYPICALS

Not to Scale

SPECIAL PROJECT SPECIFICATION (2/16)
842-F1 ROADWAY VEGETATION MAINTENANCE

842.01
Service Required

Roadside Brushing:

Remove vegetation, trees < 6 inches diameter when measured at 6 inches above the ground and limbs by mechanical brushing and hand removal methods on roadway and roadside surfaces.

842.02
Performance Standard

Roadway vegetation maintenance is complete when the vegetation has been removed and scattered from the designated treatment area not to interfere with traffic, obscures signs, impedes the flow of water or diverts water from drainage structures.

842.03
Roadside Safety

Roadside Safety refers to providing safe conditions for the traveling public and adjacent public use or recreation during mechanical brushing operations. All efforts should
be made to conduct activities safely for both the public and brushing operations.

Debris caused from brushing operations should be removed from roadway surface, road shoulder and drainage feature(s) in a safe, efficient, and timely manner.

Large debris shall be placed on the downhill fill slope and shall not interfere with drainage features and structures.

When the traveling public, either vehicular or pedestrian enter the immediate work-zone, all brushing operations should be stopped or minimized when practicable to provide safe access past mechanical brushing equipment.

When work occurs in limited visibility areas, efforts should be made to minimize conflicts with the traveling public, such as incorporating additional work signs, or utilizing a follow vehicle to warn the approaching public of the work zone, when required.

If hazardous situations are created or detected during brushing operations (for example broken limbs, damaged trees) these should be removed or reported prior to leaving the work site each day.

842.04

Support Vehicle Operations (When Ordered)

Provide awareness of approaching brushing activities to the traveling public by utilizing a follow vehicle.

Follow vehicles shall be equipped with two-way radios, properly charged and functioning, for communication with brushing equipment during mechanical brushing operations.

The top flashing light of the support vehicle needs to be activated while the brush tractor is performing brushing operations. Equip vehicles with a minimum of two red flags, 18” square, mounted on 3’ long staffs, and an approved brush cutting operations ahead sign or equivalent mounted at the rear of the vehicle.

842.05

Location of Work

As specified on roads listed on the road listing, shown on the plans, marked on the ground or ordered by the Contracting Officer.

Brushing

A. Maintenance Level 2 roads

The treatment area will be SHOWN ON THE PLANS. Vegetation shall be removed to a maximum height of 6 inches above ground surfaces. Trees larger than 6 inches diameter when measured at 6 inches above the ground are designated to remain.

B. All roads

Locations of weed infested areas are marked on the ground. Do not operate in the weed infested areas unless ordered to do so by the Contracting Officer.

842.06
Measurement

Measurement under this Section will be made by the total number of units for each item listed in the SCHEDULE OF ITEMS completed and accepted.

A. Mile: Work activity will be measured along the road regardless of the number of lanes.

842.07
Payment

The accepted quantities will be paid at the contract price per unit of measurement for the Section 842 pay items listed in the schedule of items. Payment will be full compensation for the work prescribed in this Section.

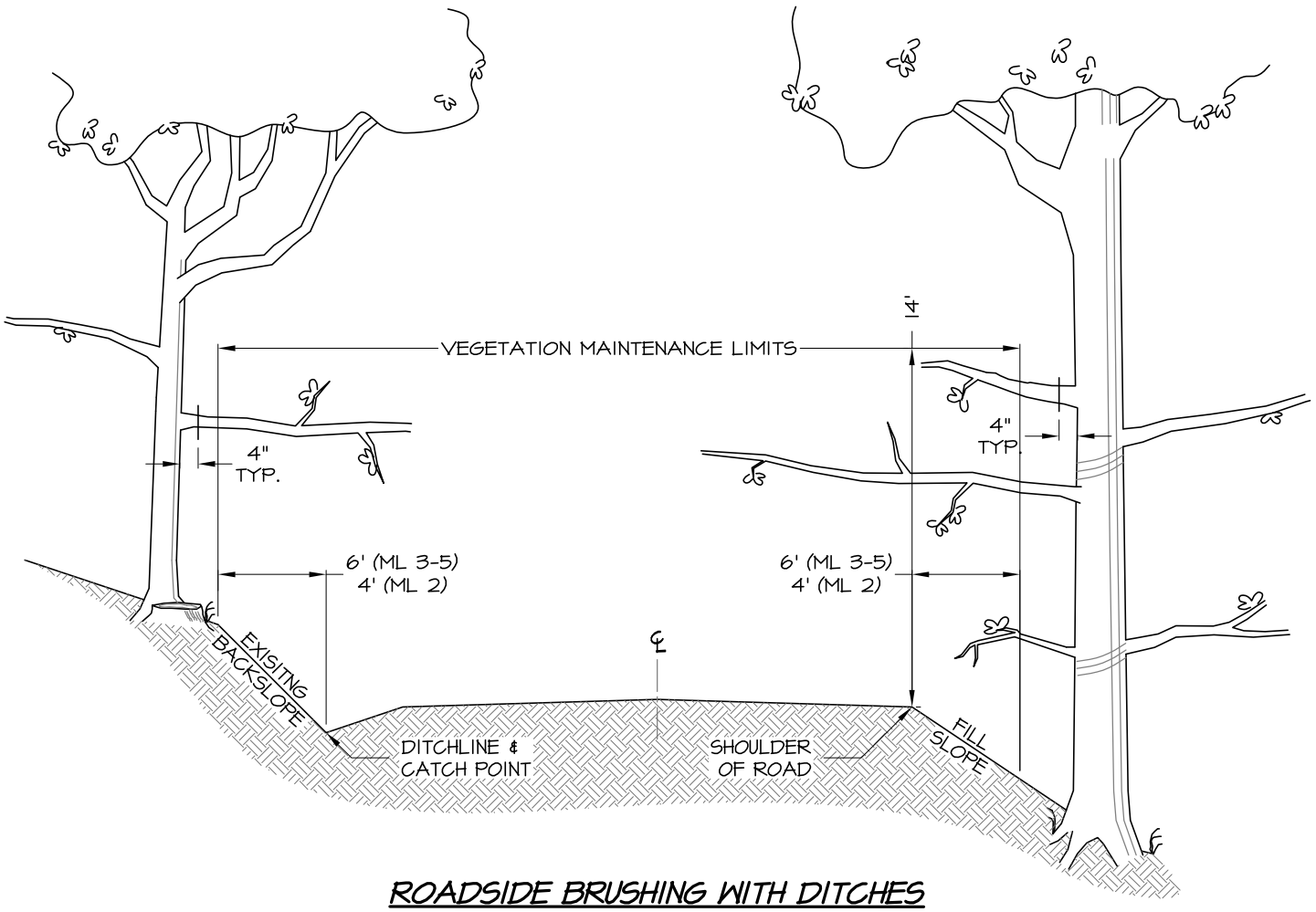
Pay Item	Pay Unit
842 Roadside Brushing Level 2 Roads	Mile

842.08
Acceptable Quality Levels

Description	Major Defect	Minor Defect	Allowable Defects		Required Action	
			Major	Minor	Major	Minor
Tree damage	Damage to more than 30% of the tree bole	Damage to 30% or less of the tree bole	1 per unit	5 per mile	Remove or Treat	Treat
Horizontal Clearance	More than 20% not cleared to limits	20% or less not cleared to limits	0	2 per mile	Rework	Rework if greater than 2 minor defects
Vertical Clearance	More than 20% not cleared to limits	20% or less not cleared to limits	0	2 per mile	Rework	Rework if greater than 2 minor defects
Height above ground surface	More than 20% not cleared to limits	20% or less not cleared to limits	0	2 per mile	Rework	Rework if greater than 2 minor defects
Drainage	Impeded flow or water diverted out of drainage structures.	20% or less impeded, but water will stay in the channel.	0	2 per mile	Rework	Rework if greater than 2 minor defects
Oversized Material (Level 4&5)	Material greater than 3" diameter remaining on the road surface	Material 1” – 3” in diameter remaining on the road surface	0	0	Rework	Rework
	Material greater than 3" diameter and 36" in length remaining on the roadway drainages or has the potential to move into drainages.	Material 1” - 3" in diameter and greater 36" in length remaining on the roadway slopes and drainages or has the potential to move into drainages.	0	3 per mile	Rework	Rework if greater than 5 minor defects
Oversized Material (Level 3)	Material greater than 3" diameter and 12" in length remaining on the road surface	Material 1” - 3" in diameter and 36" in length remaining on the road surface	0	0	Rework	Rework
	Material greater than 3" diameter and 36" in length remaining on the roadway drainages or has the potential to move into drainages.	Material 1” - 3" in diameter and greater 36" in length remaining on the roadway slopes and drainages or has the potential to move into drainages.	0	3 per mile	Rework	Rework if greater than 5 minor defects

Description	Major Defect	Minor Defect	Allowable Defects		Required Action	
			Major	Minor	Major	Minor
Oversized Material (Level 2)	Concentrations of material greater than 6" diameter and 3 feet in length remaining on the road surface	Material less than 6" diameter and 3 feet in length remaining on the road surface	0	2 per mile	Rework	Rework
	Unstable concentrations of material less than 6" diameter and 3 feet in length remaining on the roadway slopes.	N/A	0	N/A	Rework	N/A
	Material greater than 3" diameter and 36" in length remaining on the roadway drainages or has the potential to move into drainages.	Material 1" - 3" in diameter and greater 36" in length remaining on the roadway slopes and drainages or has the potential to move into drainages. .	0	5 per mile	Rework	Rework if greater than 5 minor defects
Concentrations (Level 3-5)	Any concentrations that affect sight distance	N/A	0	0	Rework	N/A
Work Area Management	Not following approved safety plan which may include signs, flaggers, and other temporary traffic control measures	Not following approved safety plan which may include signs, flaggers, and other temporary traffic control measures	0	0	Suspend work until in compliance	Suspend work until in compliance
Working outside of project limits	Area contains invasive weeds	N/A	0	N/A	Repair and treat affected areas as directed by the Contracting Officer	N/A

SPS 842-F2 CUTTING ROADWAY VEGETATION (2/16)



ROADSIDE BRUSHING WITH DITCHES ALL ROAD SURFACES

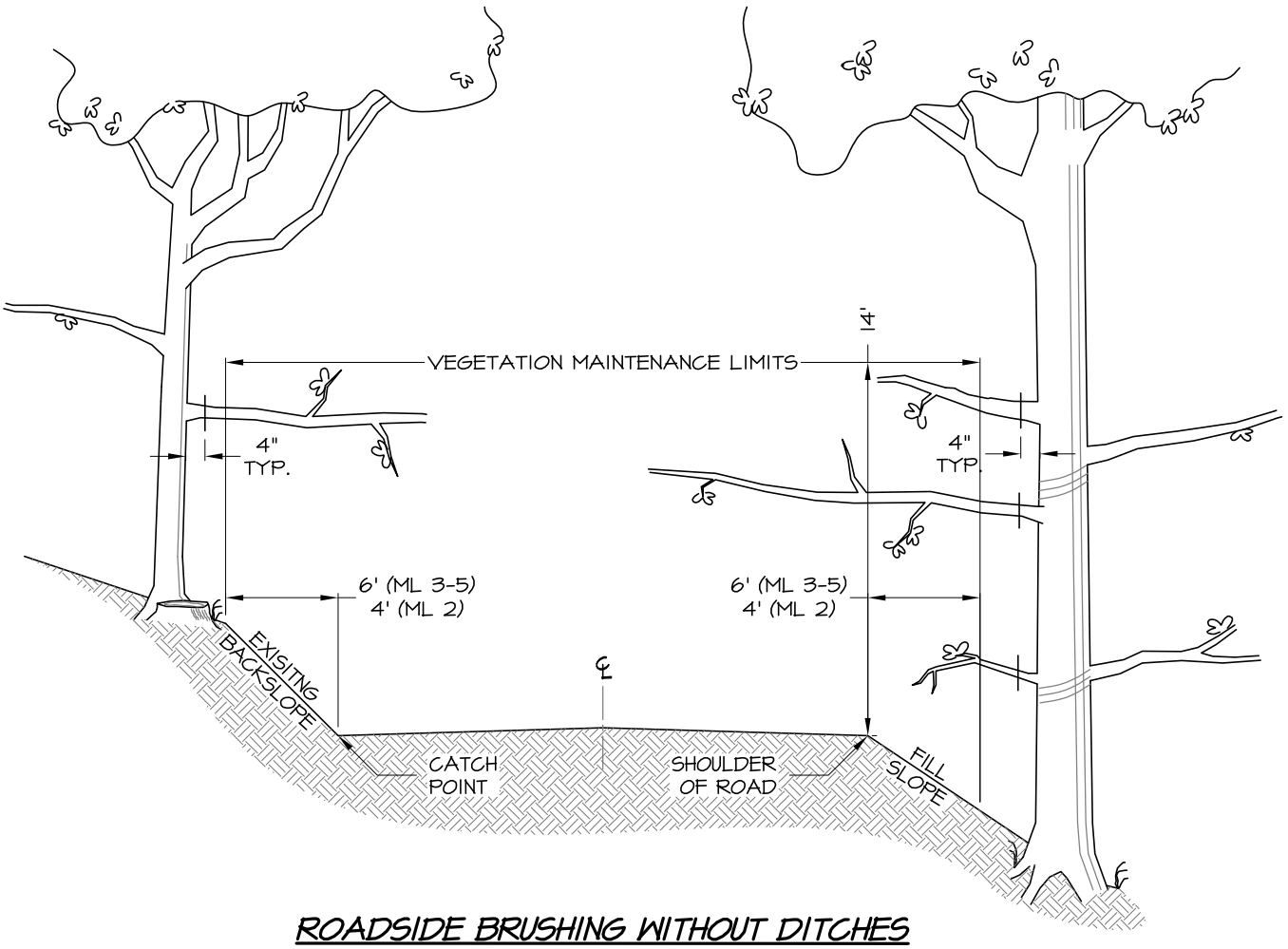
Not to Scale

NOTES:

1. EXTEND AN ADDITIONAL 5' ON THE INSIDE OF ALL HORIZONTAL CURVES, AS DIRECTED BY CONTRACTING OFFICER, TO REDUCE OBSTRUCTIONS IN SIGHT DISTANCE.

2. LEAVE TREES LARGER THAN 6 INCHES IN DIAMETER (WHEN MEASURED 6 INCHES ABOVE THE GROUND) WITHIN THE BRUSHING LIMITS, THAT ARE BEYOND THE BOTTOM OF THE DITCH AND BEYOND THE HINGE POINT ON THE FILL SLOPE.

SPS 842-F3 CUTTING ROADWAY VEGETATION (2/16)



ROADSIDE BRUSHING WITHOUT DITCHES
ALL ROAD SURFACES

Not to Scale

NOTES:

1. EXTEND AN ADDITIONAL 5' ON THE INSIDE OF ALL HORIZONTAL CURVES, AS DIRECTED BY CONTRACTING OFFICER, TO REDUCE OBSTRUCTIONS IN SIGHT DISTANCE.

2. LEAVE TREES LARGER THAN 6 INCHES IN DIAMETER (WHEN MEASURED 6 INCHES ABOVE THE GROUND) WITHIN THE BRUSHING LIMITS, THAT ARE BEYOND THE BOTTOM OF THE DITCH AND BEYOND THE HINGE POINT ON THE FILL SLOPE.

SPECIAL PROJECT SPECIFICATION (01/15)
851-F1 HAZARD AND OBSTRUCTION REMOVAL

851.01
Service Required

Remove logs, limbs, rocks, and debris. Fell & clear designated danger trees and stabilize hazards and obstructions.

851.02
Performance Standard

A. Work is complete when logs, limbs, rocks, debris, and designated danger trees, have been removed or stabilized on-site and when the road is passable by the intended traffic.

B. Hazard or Obstructions are defined as a singular or combination of logs, limbs, rocks, and debris located at one specific location which is hazardous to or obstructs intended traffic.

C. Minimal Hazard or Obstruction removal shall be limited to logs, limbs, rocks, or debris, of sufficient size to warrant use of equipment, which can be removed and disposed of *on-site* with a minimal effort for removal. Examples include but are not limited to single down logs with < 4’ DBH, single large boulders which can be easily moved with road maintenance equipment or a combination of debris that shall not exceed an approximate combined volume of 10 CY.

D. Moderate Hazard or Obstruction removal shall be limited to logs, limbs, rocks, and/or debris of sufficient size to warrant use of equipment, which can be removed and disposed of *on-site* with a moderate effort for removal. Examples include but are not limited to single down logs with > 4’ DBH, a combination of smaller down trees, boulders, and/or debris that shall not exceed an approximate combined volume of 50 CY otherwise 832-F1 Load, Haul, and Place Materials shall be utilized for disposal *off-site*.

E. During tree felling, uphill stump height shall not exceed 12” above natural ground. Trees shall be completely severed from stump.

F. Felled trees & slash shall be removed from roads immediately after felling where it poses a hazard to vehicle traffic.

G. All hang-ups shall be pulled down to a height not to exceed 4 feet above natural ground, so that it will not lean against or be suspended by any adjacent trees or bushes.

851.03
Location of Work

As specified on roads listed on the ROAD LISTING, SHOWN ON THE PLANS, or as ordered by the Contracting Officer.

851.04
Measurement

Measurement under this Section will be made by the total number of units for each item listed in the SCHEDULE OF ITEMS completed and accepted.

A. Mile: Work activity will be measured along the centerline of the road regardless of the number of lanes.

B. Each: Measured by the total number of units for each item in the schedule of items completed and accepted.

851.05
Payment

The accepted quantities will be paid at the contract price per unit of measurement for the Section 851 pay items listed in the schedule of items. Payment will be full compensation for the work prescribed in this Section.

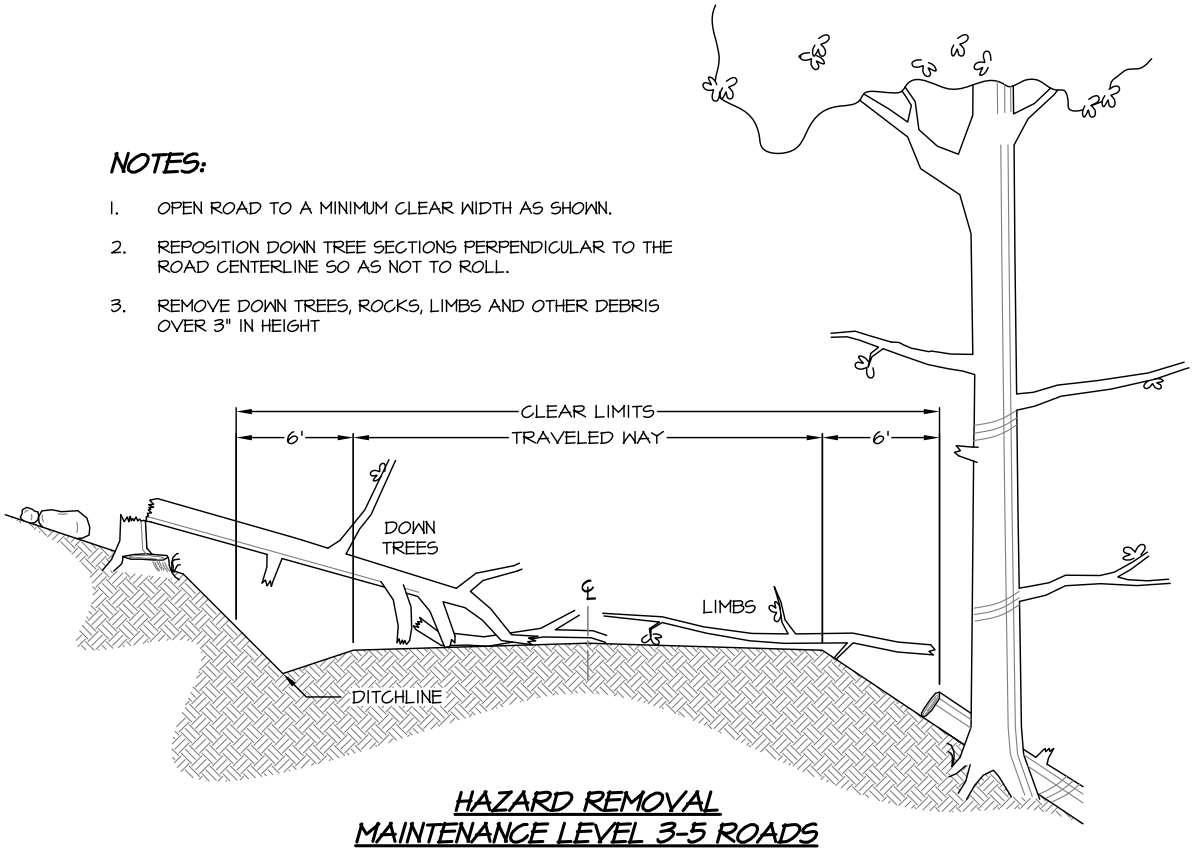
Pay Item		Pay Unit
851(1)	Logging Out Maintenance Level 2 Roads	Mile

851.06
Acceptable Quality Levels

Discription	Major	Minor	Allowable Defects		Required Action	
	Defect	Defect	Major	Minor	Major	Minor
Utilization of Timber	Log lengths do not meet utilization standards (see SPS or BPA Call)	N/A	0	N/A	Charge for loss of stumpage	N/A
Stump Heights	Exceed Specified Height by more than 6 inches	Exceed Specified Height by up to 6 inches	0	2 per unit	Rework	Rework if greater than 2 minor defects
Tree damage caused by Service Provider's operations	Damage to more than 30% of the tree bole	Damage to 30% or less of the tree bole	0	0	Remove or Treat	Treat
Impeded flow for ditches, inlet/outlet channels, and catch basins caused by Service Provider's Operations	Water will be diverted out of the drainage structure or system	20% or less impeded, but water will stay in the channel.	0	2 per unit	Rework	Rework if greater than 2 minor defects
Marked Danger Trees and Snags	Any remaining snags or danger trees that were marked	Any remaining snags or danger trees that were not marked	0	N/A	Rework	N/A
Hazards that interfere with the use of the road (rocks, logs, etc) (ML 3-5)	Unstable hazards that remain in the Clear Limits	N/A	0	N/A	Rework	N/A
Log Out	Horizontal clearance - more than 20% not cleared to specified distance	Horizontal clearance - 20% or less not cleared to specified distance	0	1 per unit	Rework	Rework if greater than 1 minor defects
	Vertical clearance -more than 20% not cleared to specified distance	Vertical clearance - 20% or less not cleared to specified distance	0	1 per unit	Rework	Rework if greater than 1 minor defects
Work Area Management	Not following approved safety plan which may include signs, flaggers, and other temporary traffic control measures	N/A	0	0	Suspend work until in compliance	N/A

NOTES:

1. OPEN ROAD TO A MINIMUM CLEAR WIDTH AS SHOWN.
2. REPOSITION DOWN TREE SECTIONS PERPENDICULAR TO THE ROAD CENTERLINE SO AS NOT TO ROLL.
3. REMOVE DOWN TREES, ROCKS, LIMBS AND OTHER DEBRIS OVER 3" IN HEIGHT

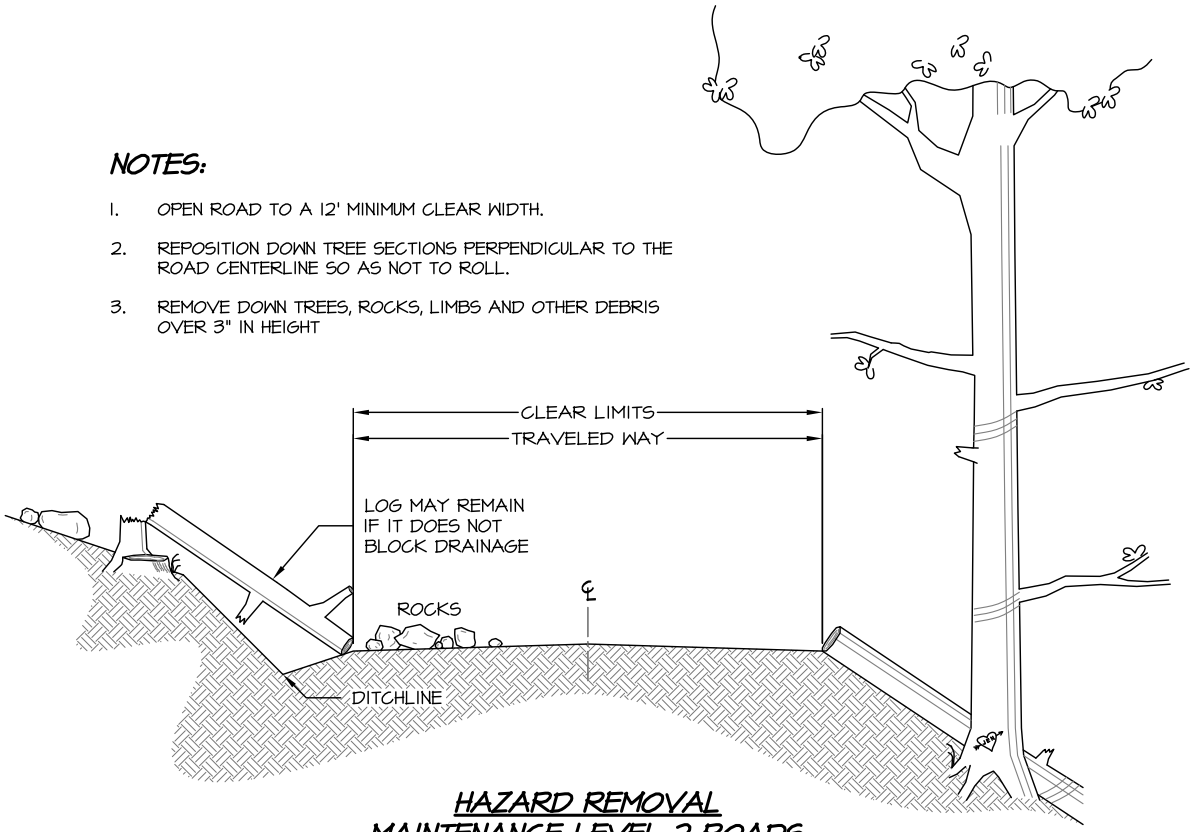


HAZARD REMOVAL
MAINTENANCE LEVEL 3-5 ROADS

Not to Scale

NOTES:

1. OPEN ROAD TO A 12' MINIMUM CLEAR WIDTH.
2. REPOSITION DOWN TREE SECTIONS PERPENDICULAR TO THE ROAD CENTERLINE SO AS NOT TO ROLL.
3. REMOVE DOWN TREES, ROCKS, LIMBS AND OTHER DEBRIS OVER 3" IN HEIGHT



HAZARD REMOVAL
MAINTENANCE LEVEL 2 ROADS

Not to Scale

SPECIAL PROJECT SPECIFICATION (01/15)
881-F1 MOBILIZATION / EQUIPMENT MOVING

881.01
Service Required

A. Mobilization of personnel, equipment, and material to the project site.

B. Moving of equipment outside the established work schedule as ordered.

881.02
Performance Standards

Equipment shall be clean and weed free prior to moving it to the project area. This cleaning shall remove all soil, plant parts, seeds, vegetative matter, or other debris that could contain or hold seeds. All subsequent move-ins of equipment to the project area shall be treated in the same manner as the initial move-in. Equipment shall be considered free of soil, seed, and other such debris when a visual inspection does not disclose such material. This requirement does not apply to service vehicles, water trucks, pickups, cars, and/or similar vehicles.

Additional equipment washing is applicable to all equipment on site requiring washing, NOT individual pieces of equipment.

Unless otherwise agreed, the Forest Service shall be given a minimum of 24 hours notice when equipment is ready for inspection. Notification will include an agreed upon location where the equipment will be available for inspection by the Forest Service. Inspection will be required after every cleaning.

Subsequent equipment moving mileage is defined as a one way moving distance above 10 miles from the present work site to the ordered work site. Moving is complete, when the contractor has moved from the present work site to the ordered work site and returned to the previous location.

881.03
Location of Work:

As specified on roads listed on the ROAD LISTING, SHOWN ON THE PLANS, or as ordered by the Contracting Officer.

881.04
Measurement:

Measurement under this Section will be made by the total number of units for each item listed in the SCHEDULE OF ITEMS completed and accepted.

A. Each: Measured by the total number of units for each item in the schedule of items completed and accepted.

B. Mile: Work activity will be measured along the shortest feasible route to the nearest one (1) mile, from the starting location of the move, to the ordered work site.

881.05
Payment

The accepted quantities will be paid at the contract price per unit of measurement for the Section 881 pay items listed in the schedule of items. Mobilization is complete when all equipment, personnel, and materials are moved to the project site and work has been started. Payment will be full compensation for the work prescribed in this Section.

Pay Item		Pay Unit
881	Mobilization	Lump Sum

881.06
Acceptable Quality Levels

Description	Major Defect	Minor Defect	Allowable Defects		Required Action	
			Major	Minor	Major	Minor
Weed free equipment	Equipment not weed free.	N/A	0	N/A	Equipment rejected until it can be made weed free	N/A
Ordered Movement of Equipment	Equipment not moved within designated time	N/A	N/A	N/A	N/A	N/A
Equipment meets all state and federal regulations	Does not meet state and federal regulations	N/A	0	N/A	Bring equipment up to state and federal regulations or replace equipment	N/A
Equipment leaks	Equipment leaks in sensitive areas or leaks that are large and not typically inherent in the specific equipment	Small leaks inherent in the specific type equipment	0	N/A	Replace equipment and restore affected site as directed by the Contracting Officer	Place absorbent pads under equipment when not operating.