

ATTACHMENT 3 - APPENDIX C

C(T)5.31# – ROAD MAINTENANCE REQUIREMENTS. (9/04)

Contractor shall maintain roads in accordance with the following Contract Road Maintenance Requirements Summary:

PRE HAUL											
ROAD	TERMINI		MILES	ROAD MAINTENACE T-SPECIFICATIONS							
	FROM	TO		T-101	T-103	T-108	T-113	T-301	T-310	T-507	
NFSR 244	MP 1.82/Start of FS Jur	MP 7.01	5.19	C	-	C	C	C	C	C	
NFSR 451	JCT w/ NFSR 244	EOR/ MP 14.00	14.00	C	-	-	C	C	C	C	
NFSR 451H	JCT w/ NFSR 451	MP 0.70	0.70	C	-	-	-	-	C	C	

DURING HAUL											
ROAD	TERMINI		MILES	ROAD MAINTENACE T-SPECIFICATIONS							
	FROM	TO		T-101	T-103	T-108	T-113	T-301	T-310	T-507	
NFSR 244	MP 1.82/Start of FS Jur	MP 7.01	5.19	C	C	C	C	C	C	C	
NFSR 451	JCT w/ NFSR 244	EOR/ MP 14.00	14.00	C	C	-	C	C	C	C	
NFSR 451H	JCT w/ NFSR 451	MP 0.70	0.70	C	C	-	-	-	C	C	

POST HAUL											
ROAD	TERMINI		MILES	ROAD MAINTENACE T-SPECIFICATIONS							
	FROM	TO		T-101	T-103	T-108	T-113	T-301	T-310	T-507	
NFSR 244	MP 1.82/Start of FS Jur	MP 7.01	5.19	C	-	C	C	C	C	C	
NFSR 451	JCT w/ NFSR 244	EOR/ MP 14.00	14.00	C	-	-	C	C	C	C	
NFSR 451H	JCT w/ NFSR 451	MP 0.70	0.70	C	-	-	-	-	C	C	

Notes:

C = Contractor Performance Item

The maximum volume of Contractor responsibility for Slide and Slump repair is 20 cubic yards

O = Optional Contract Line Item

NFSR = National Forest Service Road

CR = County Road

JCT = Junction

MP = Milepost

EOR = End of Road

ROAD MAINTENANCE T-SPECIFICATIONS FOR STEWARDSHIP CONTRACTS

Contractor will be responsible for doing all pre, during and post haul road maintenance.

T-SPECIFICATIONS	
T-SPEC NUMBER	SPECIFICATION TITLE
T-101	Surface Blading
T-103	Dust Abatement
T-108	Slide Removal and Slump Repair
T-113	Surfacing Repair
T-201	Shoulder Maintenance
T-301	Ditch Cleaning
T-310	Minor Drainage Structures
T-507	Cutting Roadside Vegetation

SPECIFICATION T-101 SURFACE BLADING

DESCRIPTION

1.1 Surface blading is keeping the native or aggregate surfaced road in a condition to facilitate traffic, minimize additional future maintenance, reduce erosion, and provide proper drainage. It includes maintaining the crown, inslope or outslope of the traveled way and shoulders, drainage dips, leadoff ditches, berms, turnouts, removal of minor slides and slumps, and other irregularities that prevent normal runoff from the road surface.

REQUIREMENTS

3.1 Surface blading shall be performed as often as necessary and to the standards required to facilitate traffic and proper drainage.

3.2 The blading shall be performed in such a manner as to preserve the existing cross section and to conserve surface materials. On gravel surfaced roads, the base must not be disturbed and no surface material may be bladed into the ditch or over the road shoulders. Blading of native surface roads shall be performed so no base material under four (4) inches in the greatest dimension is lost. All ruts, holes, etc., shall be removed by scarifying and/or cutting to the bottom of any surface irregularities. Oversize material brought to the surface in the scarification process shall be removed from the roadway. Surface material which has been displaced to the shoulders, turnouts, outside of curves, etc., shall be brought back so as to leave a uniform depth on the traveled way at completion of blading. Water shall be applied during blading if sufficient moisture is not present to prevent segregation.

3.3 Roadside cutslopes or berms shall not be undercut.

3.4 At intersections, the roadbeds of sideroads shall be graded for a reasonable distance to assure proper blending of the two riding surfaces.

3.5 Drainage dips and leadoff ditches shall be cleaned and continually maintained to conform reasonably to their original constructed lines, grade, and cross section.

3.6 Berms shall be repaired promptly by placing selected material as needed to restore the berm to its original condition.

3.7 Surface blading of native surface roads also includes ditch cleaning, which shall be done in accordance with T-301, Ditch Cleaning.

3.8 All blading operations shall be properly signed in accordance with B6.33# and all applicable State Laws.

SPECIFICATION T-103 DUST ABATEMENT

DESCRIPTION

1.1 Dust abatement consists of road surface preparation and application of materials.

MATERIALS

2.1 Water, bituminous products, lignin sulfonates, chloride products, and other materials may be used for dust abatement. Materials other than water will require approval of the Forest Service and shall meet specifications furnished by the Forest Service.

REQUIREMENTS

3.1 Dust abatement materials shall be applied to the road surface as necessary to control surface loss and provide that vehicles are always intervisible within their stopping sight distance. The average user speed on the road shall be used to determine stopping sight distance. Preparation shall be in accordance with Specification T-101, Surface Blading.

3.2 The rate of application shall be such that the selected material will not run off the surface and cause pollution or unnecessary waste.

3.3 When water is the selected material, it shall be applied as often as necessary to abate dust from all Purchaser operations.

Dust abatement shall be maintained as needed throughout the duration of operations.

SPECIFICATION T-108 SLIDE REMOVAL AND SLUMP REPAIR

DESCRIPTION

1.1 Slide removal and slump repair consists of all work necessary to restore the road to its original cross section as necessary to facilitate use and provide drainage. This work is such that it cannot be handled by a grader during surface blading and ditch cleaning operations.

Slump repair is the filling with selected material of depressions or washouts in roadway which cannot be routinely filled by a motor grader.

Slide removal and slump repair includes excavation, loading, hauling, placing, and compacting of replacement material and the removal and disposal of waste material. This includes the development of disposal or borrow areas at locations approved by the Forest Service.

REQUIREMENTS

3.1 Purchaser shall deposit slide material in an approved manner at designated locations.

Material shall not be disposed of on road fills unless otherwise agreed.

The slope which contributed the slide material shall be reshaped as practicable to reduce future sliding unless otherwise agreed.

3.2 When filling slumps and depressions, select material shall be used, placed in layers, and compacted to conform with or exceed the density of existing subgrade.

Existing aggregate surfacing shall be salvaged and relayed or replaced after slumps have been filled.

Damaged aggregate base, aggregate surfacing, and asphalt surfacing shall be repaired under Specification T-113, Surfacing Repair.

3.3 Following slide removal, roadway shall be shaped so as to reasonably conform to its original subgrade template.

3.4 Slump, waste, and borrow areas shall be seeded as required under T-508.

SPECIFICATION T-113 SURFACING REPAIR

DESCRIPTION

1.1 Surfacing repair is patching potholes or small areas of broken asphalt or imported aggregate surfaces and asphalt dikes. It includes preparing the area to be patched and furnishing and placing all necessary materials, including base, and other work necessary to patch the surfacing, including paved shoulders. Sections requiring repair work shall be limited in area not to exceed 20 square feet for paved surfaces or 200 square feet for aggregate surfaces and not more than 10 areas per mile per year.

MATERIAL

2.1 Materials used for repair of aggregate surfacing shall conform to these specifications:

2.2 Materials used for asphalt patching shall conform to or exceed the requirements of these specifications:

REQUIREMENTS

3.1 Aggregate Surfacing Repair. Aggregate material shall be placed in accordance with the applicable specification used in paragraph 2.1 above. Work under this specification shall be performed in a timely manner to reduce further deterioration of the surface.

3.2 Asphalt Surfacing Repair.

A. Potholes (deep patch). Remove the surface course and base course as deep as necessary to reach firm support; extend horizontally at least six (6) inches into good asphalt surfacing surrounding the cracked area. Make the cut square or rectangular with faces straight and vertical. Prime the bottom and faces using MC70, MC250, MC800, or emulsified asphalt (penetration type). Backfill the hole with asphalt mix and compact. Use 2-inch layers if the hole is more than four (4) inches deep. Compact each layer thoroughly with mechanical tampers or rollers. Compaction shall not be done with equipment wheels without prior approval. The patch when completed and compacted shall be flush with surrounding surface.

B. Skin Patches. Minor depressions, light ravelling, or surface checking at scattered locations shall be treated by applying a skin patch. Carefully broom the surface of all loose material and apply a tack coat of MC70, MC250, or emulsified asphalt (penetration type) at the rate of 1/10-gallon per square yard. Place asphalt mix, distribute uniformly, and feather edges with asphalt rakes so the patch when compacted shall be flush with the adjoining surface. Roll thoroughly with a portable roller.

3.3 Asphalt Dikes. Asphalt material in the damaged length of dike shall be removed. Clean and repair asphalt foundation as necessary. Level exposed ends of existing dike. Prime all surfaces with bituminous material. Asphalt mix shall be placed and compacted to conform with the shape of the original dike.

All asphalt material removed from potholes, patches, and dikes shall be disposed of in designated area.

SPECIFICATION T-201 SHOULDER MAINTENANCE

DESCRIPTION

1.1 Shoulder maintenance consists of keeping that portion of roadway adjacent to a paved and/or aggregate surface in a reasonably smooth condition and flush with the pavement and/or aggregate in order to provide lateral support to the surface. It may require blading, furnishing, and placing additional material, application of bituminous material, and any other work incidental to the maintenance of the shoulder.

MATERIALS

2.1 Materials selected for shoulder maintenance shall be similar to the material used in the previous construction or maintenance.

REQUIREMENTS

3.1 Shoulder Blading. Replace material as necessary. Blade and shape the entire width of the shoulder to drain the paved or aggregate surface. The shoulder material shall be moistened if necessary to ensure reasonable compaction and graded flush with the pavement or aggregate edge. The entire shoulder shall be fully compacted.

3.2 Asphalt Stabilized Shoulders. Where shoulder has been previously stabilized with bituminous treatment, reapplication of bituminous material shall be made when 50 percent of the shoulder surface material is no longer held in place by bitumen. Prior to treatment, it may be necessary to replace earth or aggregate material lost or moved since last application.

SPECIFICATION T-301 DITCH CLEANING

DESCRIPTION

1.1 Ditch cleaning is removing and disposing of all slough material from roadside ditches to provide an unobstructed waterway conforming reasonably to previous line, grade, and cross section.

REQUIREMENTS

3.1 Slough Material.

A. Native Surfaced Roads. Slough material from ditch cleaning, if suitable, may be placed and blended into the existing road surface or shoulders or placed in a designed berm during surface blading.

B. Aggregate Surface Roads. Slough material from ditch cleaning shall not be mixed with aggregate surfacing or left on the road surface unless otherwise agreed. Material shall be disposed of in an agreed manner at designated locations.

C. Asphalt Surfaced Roads. Equipment, methods, and timing shall be agreed to before start of ditch cleaning operations so as to protect the asphalt pavement. Material shall be disposed of in an agreed manner at designated locations.

SPECIFICATION T-310 MINOR DRAINAGE STRUCTURES

DESCRIPTION

1.1 Minor drainage structures are single passages with maximum waterway opening equivalent to a 78-inch round pipe (87- by 63-inch arch) or multiple passages with maximum, single waterway opening equivalent to a 60-inch round pipe (66- by 51-inch arch). They include overside drains. Maintenance is work performed on inlets, outlets, related channels, existing riprap, trash racks, and drop inlets.

MATERIALS

2.1 All materials used in the maintenance of minor drainage structures shall conform by type and specification to the material in the structure being maintained.

REQUIREMENTS

3.1 All minor drainage structures are to be maintained in accordance with these specifications in the spring following any significant runoff and prior to the beginning of winter storms.

3.2 Clear inlet and outlet channels, inlet trash racks, and drop inlets of loose material that could cause plugging or prevent the free flow of water. Debris shall be disposed of in agreed manner at designated locations.

3.3 If outlet riprap was originally placed to dissipate water energy, it shall be maintained in good condition including the replacement of riprap if necessary.

4.1 Make whatever minor repairs are necessary to ensure the proper functioning of the head walls, aprons, inlet assemblies, overside drains, riprap, trash racks, and other facilities related to the drainage structure.

SPECIFICATION T-507 CUTTING ROADSIDE VEGETATION

DESCRIPTION

1.1 This work consists of cutting and disposing of all vegetative growth, including trees from within the roadway that reduce sight distance and operational capability of the road. Vegetation removal is required if the growth of the vegetation during the contract period causes unacceptable reduction of sight distance and operation capability.

REQUIREMENTS

3.1 Vegetative matter within the roadway which reduces sight distance, impedes vehicular travel, or interferes with road maintenance operations such as surface blading and ditch and culvert cleaning shall be removed. Downed timber meeting utilization standards shall be cut in appropriate lengths and decked along the roadside in locations where the traveled way or sight distance will not be impaired.

3.2 Low shrubs and brush which do not restrict sight distance, do not impede road maintenance, and reduce erosion shall not be removed. Vegetation removed shall be disposed of by scattering, chipping, hauling to designated disposal areas, or as otherwise agreed upon.

Traffic Control Plan

MUTCD Certified flaggers must be used for any road closures or delays on Mount Idaho Grade road under Grangeville Highway District jurisdiction. Any closure or delays must be coordinated with Grangeville Highway District prior to implementation.

LOGGING AND MAINTENANCE OPERATIONS SIGNING STANDARDS

All signs must be manufactured & installed as specified in the FHWA "**Manual on Uniform Traffic Control Devices**" (MUTCD) & FS publication "**Standards for Forest Service Signs & Posters**"(EM 7100-15).

SIGN STANDARDS

SHAPE & COLOR: Generally, signs for logging and maintenance operations are either diamond-shaped or rectangular. All signs are **reflective orange background with black legend and border** unless shown otherwise. Handpainted, homemade signs are not legal. Fluorescent paint is not reflectorized.

SUBSTRATE: Sign substrate material may be High Density Overlay (HDO) Plywood, Aluminum, Fiberglass Reinforced Plastic, Corrugated Plastic or Roll-up Fabrics.

SIGN SIZE: Sign size is a factor of speed and MUTCD & FS standards. Where conditions of speed, volume, or special hazard require greater visibility or emphasis, larger signs should be used. Minimum sizes for the most common signs can be found in Figure 4. Refer to the EM-7100-15 for additional sign sizes.

LEGEND: All lettering shall be Series "C" alphabet, conforming to Standard Alphabets for Highway Signs. Letter size is also a function of speed - use letter size and word messages as specified in MUTCD and EM-7100-15.

SIGN PLACEMENT

Signs are to be installed in locations as agreed to in the traffic control plan. All signs are to be removed, covered, or folded when operations are not in progress or the sign message is not applicable. Signs should generally be located on the right-hand side of the roadway. When special emphasis is needed, signs may be placed on both the left and right sides of the road. Sign message shall be clearly visible to road users, mounted on posts or portable sign stands.

LATERAL CLEARANCE

From the edge of the road - 2 foot minimum, where slope limits to less than 6 feet. 6-12 foot preferred.

HEIGHT

Minimum of 7 feet, measured from the bottom of the sign to the near edge of the travelway. The height to the bottom of a supplemental sign mounted below the primary sign will be 6 feet.

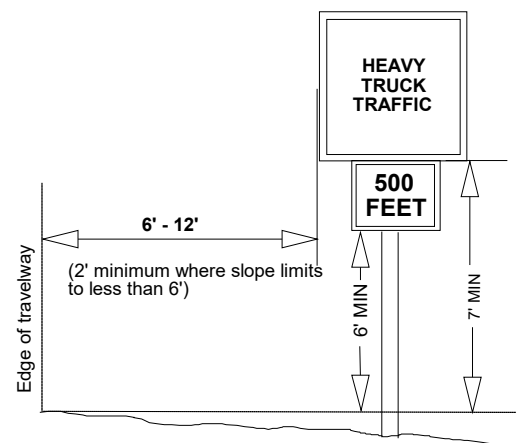


Figure 1: Sign Placement Dimensions

PLACEMENT DISTANCE

Signs must be located 100-500 feet prior to the activity, (both ends if a through road) and maintained at that distance. This distance is based on speed. Refer to Figure 2 , Table II-1, MUTCD, a portion of which is reproduced here, to determine correct placement distance.

Posted or 85 percentile speed MPH	Deceleration to listed advisory speed MPH				
	10	20	30	40	50
20		NA			
25		100			
30		150	100		
35		200	175		
40		275	250	175	
45		350	300	250	
50		425	400	325	225
55		500	475	400	300
60		575	550	500	400
65		650	625	575	500

Figure 2: A Portion of MUTCD TABLE II-1

SIGN SUPPORTS

POSTS: Signs are to be mounted on separate posts. Supplemental signs such as Speed Advisory plates are to be mounted on the same post as the primary sign. ***Do not mount signs on trees or other signs.*** Posts may be wood, metal, carsonite or similar material. Where sign supports cannot be sufficiently offset from the road edge, supports will meet breakaway standards. Single wood posts with less than 24 square inches do not require breakaway design.

TEMPORARY/PORTABLE SUPPORTS: Portable supports may be used for short-term, short-duration, and mobile conditions. MUTCD defines this time period as one work shift, 12 hours or less. All portable supports must meet MUTCD standards, including breakaway. These must be a minimum of 1 foot above the road surface or more if visibility requires it.

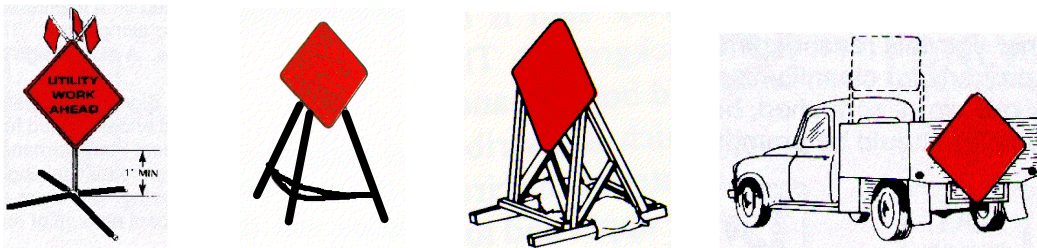


Figure 3: Examples of Temporary/Portable Supports

SIGNS

The following signs meet the intent of Timber Sale Contract Provision B6.33, SAFETY.

This is not a complete listing of signs that may be needed.



FG20-1-48*



FG20-2-48



FG20-3-42*



FG20-3a-42



FW22-3-30



FW20-1-30*



W21-3-30*



FW21-4a-30



FW11-7-24

W22-1-36*

FW8-6-24

FW11-9a-24



W7-3a-24*



W13-1-18**



W20-7aP-24*



BM-L-O



BM-R-O

Barricade Markers (See MUTCD for length and stripe size)

* Specify Distance

** Specify Speed