Appendix C – Road Maintenance Specifications

ROAD MAINTENANCE REQUIREMENTS. The Contractor shall maintain roads shown on Contract Road Maintenance Summary Table provided with each Task Order in accordance with Road Maintenance requirements in H.22 and in accordance with the following road maintenance specifications. NO DRAWINGS ACCOMPANY THESE SPECIFICATIONS.

Section	
T-801	Slide & Slump Repair
T-802	Ditch Cleaning
T-803	Surface Blading
T-804	Opening & Maintaining Roads
T-805	Opening & Maintaining Roads (High Blading)
T-806	Surface Repair
T-807	Surface Stabilization (Water)
T-808	Surface Stabilization (Bituminous)
T-808-1	Surface Stabilization (Magnesium Chloride)
T-809	Minor Drainage Structures
T-810	Roadway Vegetation
T-811	Closing Roads
T-812	Miscellaneous Structures
T-813	Treatment and Disposal of Danger Trees
T-814	Snow Removal
T-G	General Requirements

T-801 SLIDE AND SLUMP REPAIR

DESCRIPTION

1.1 Slide removal and slump repair shall include excavation, loading, hauling, placing and shaping of waste or replacement of materials.

a). *Slide Repair* - This work shall consist of the removal and disposal of any materials such as soil, rock and vegetation which has encroached onto the roadway and cannot be routinely handled by a motor-grader during ditch cleaning and surface-blading operations.

b). *Slump Repair* - This work shall consist of filling, with select-material, depressions or washouts in roadway which have developed and cannot be routinely filled by a motor-grader during surface-blading operations.

REQUIREMENTS

3.1 Slide removal and slump repair shall be performed whenever necessary during ContractorContractor's use to facilitate traffic, proper drainage, and to prevent resource damage.

3.2 Material removed from slides shall be placed at locations designated by the Forest Service. Unless otherwise agreed, material shall not be wasted over road-fills and material placed shall be shaped and compacted by the hauling and spreading equipment

3.3 When filling depressions or washouts, selected-material shall be moved from agreed locations, placed in layers and compacted to withstand settlement and deformation.

Existing aggregate-surfacing shall be salvaged when practicable and replaced after depressions have been filled.

Damaged aggregate-base and surfacing shall be repaired under Specification T-806, Surface Repair.

3.4 Following slide repair, roadway shall be shaped so as to reasonably conform to the adjacent roadway, unless otherwise agreed.

3.5 During repair, care shall be taken not to permanently foul aggregate or bituminous-surfaces through covering or mixing with earth or other debris from ditches, slides or other sources.

T-802 DITCH CLEANING

DESCRIPTION

1.1 This work shall consist of removing and disposing of all material from roadway drainage ditches to provide a free draining waterway conforming reasonably to the previous lines, grades and cross-sections.

REQUIREMENTS

3.1 Ditch-cleaning shall be performed whenever necessary during the ContractorContractor's use to facilitate drainage.

3.2 Slough Material –

a). Slough material removed from the ditch, if suitable, may be placed in designed berms.

b). Slough material from ditch cleaning operations shall not be blended into aggregate surfaced roads, unless otherwise agreed, **in writing**, by the Forest Service.

c). Slough material that is not blended into existing roads or placed in berms shall be loaded and hauled to a waste-area designated by the Forest Service, placed in layers and compacted by the hauling vehicle, or disposed of as otherwise agreed.

3.3 During ditch cleaning, care shall be taken not to permanently foul aggregate or bituminous-surfaces through covering or mixing with earth or other debris from the ditches.

3.4 Roadway backslopes and berms shall not be undercut.

T-803 SURFACE-BLADING

DESCRIPTION

1.1 This work shall consist of maintaining a native or aggregate surface roadbed in a condition to facilitate traffic and provide proper drainage. It includes maintaining the crown or slope of traveled-way, shoulders, drainage-dips; all ditches, berms and turnouts, and provides a level of smoothness appropriate for the traffic served.

REQUIREMENTS

3.1 Surface-blading shall be performed immediately before, during and after the ContractorContractor's use as necessary and practicable to facilitate traffic and proper drainage.

3.2 The roadbed, including turnouts, shall be scarified if necessary and bladed to remove ruts and other irregularities and shaped. Existing aggregate-surface material shall be bladed to conserve material and to prevent segregation of particle sizes. While performing surface-blading during routine road-maintenance, ContractorContractor shall avoid permanently fouling surfaces through covering them with rocks, earth or debris from sideditches, slides, or other sources. ContractorContractor shall avoid blading surface material off of the roadbed.

3.3 When directed by the Forest Service, residual bituminous material from previous surface-stabilization treatments shall be scarified and reduced to produce material not exceeding three-inches (76.2 mm) in greatest dimension.

3.4 Cut-slopes or designed berms shall not be undercut.

3.5 At intersections, the roadbeds of side-roads shall be graded for a reasonable distance to assure proper blending of the two riding-surfaces.

3.6 All ditches shall be cleaned and maintained to latest constructed cross-sections to provide free-drainage. Drainage-dips shall be maintained to conform to details shown in the drawings.

3.7 Designed berms shall be repaired when necessary by placing selected-material. Other berms, which are determined by the Forest Service as not necessary, shall be removed.

Supplemental Specification T-803
T-803-1 SURFACE-BLADING (Water)

2.1 *Materials - Add* the following subsection:

MATERIALS

2.1 Water source locations are shown on the contract area map.

3.2 *Requirements* - Add the following, after paragraph one:

Water shall be applied during scarifying or blading if sufficient moisture is not present for compaction or to prevent segregation.

Supplemental Specification T-803
T-803-2 SURFACE-BLADING

3.2 *Requirements* - Add the following:

"The roadbed shall be compacted to meet one of the following values as listed **in the task order** . The roadbed material shall be at a moisture-content suitable for attaining the specified compaction:

Compaction A - By operating equipment over the full-width.
Compaction B - Ninety-five-percent of AASHTO T-99, Method C or D.

The density will be determined during the work in accordance with AASHTO T-191, and T-205; or T-238 and T-239. Adjustment for coarse particles will be made in accordance with AASHTO T-224."

Supplemental Specification T-803
T-803-3 SURFACE-BLADING

3.2 *Requirements* - Add the following:

"The roadbed shall be grid-rolled as listed in **in the task order** Unless otherwise agreed by the Forest Service, grid-rolling will continue until roadbed imported surfacing-materials are reduced to a size not exceeding three inches (76.2 mm) in greatest dimension or two-thirds of the depth of the existing surfacing, whichever is greater."

T-804 OPENING AND MAINTAINING ROADS

DESCRIPTION

1.1 This work shall consist of opening roads by removing closure devices, cleaning ditches, removing berms and blading the traveled-way. This work also consists of maintaining the roadway immediately before, during and after the ContractorContractor's use as necessary to facilitate traffic and proper drainage.

REQUIREMENTS

3.1 All closure devices, such as waterbars, depressions, mounds of earth, or downed-trees, shall be removed and disposed of at locations designated by the Forest Service.

All trees and logs on the roadbed, and trees and brush that overhang the traveled-way and interferes with vehicle travel shall be removed and scattered outside the roadway.

All drainage-dips, ditches, out-sloped or in-sloped sections, and other drainage devices built into the roadway shall be cleaned and maintained so they are functional.

The traveled-way shall be bladed to produce a rideable surface.

No scarifying, watering, or compaction will be required to complete the work. Berms shall be removed as directed by the Forest Service.

T-805 OPENING AND MAINTAINING ROADS (High Blading)

DESCRIPTION

1.1 This work shall consist of opening roads by removing closure devices, cleaning ditches, removing berms and high-blading the traveled-way. This work also consists of maintaining the roadway immediately before, during and after the ContractorContractor's use as necessary to facilitate traffic and proper drainage.

REQUIREMENTS

3.1 All closure devices, such as waterbars, depressions, mounds of earth, or downed-trees, shall be removed and disposed of at locations designated by the Forest Service.

All trees and logs on the roadbed, trees and brush that overhang the traveled-way and interferes with vehicular travel shall be removed and scattered outside the roadway.

All drainage-dips, ditches, out-sloped or in-sloped sections, and other drainage devices built into the roadway shall be cleaned and maintained so they are functional.

The traveled-way shall be high-bladed. High-blade is the removal of oversize material without. removing surface vegetation. Oversize is that material four-inches in diameter and larger, found loose upon the traveled-way

No scarifying, watering, or compaction will be required to complete the work. Berms shall be removed as directed by the Forest Service.

T-806 SURFACE REPAIR

DESCRIPTION

1.1 This work shall consist of repairing potholes or small soft areas on imported aggregate surface, paved surface or native surfaced roads when materials are inadequate to withstand continuing use.

1.2 This work includes preparing the area to be repaired, furnishing and placing all necessary materials, and other work necessary to repair the surface.

1.3 Damage resulting from the ContractorContractor's operations is covered under B 5.12 and B 6.22 and is not provided for under this Specification.

MATERIAL

2.1 *Aggregates* - The types and gradations of aggregate shall be similar to, and compatible with, the existing surface material, as determined by the Forest Service.

a). Pit-run Aggregate: Pit-run aggregates shall consist of native materials of a size and gradation that can be taken directly from the source and placed on the road without crushing or screening. The maximum size shall be three-inches in the greatest dimension.

b). Grid-rolled Aggregate: Grid-rolled aggregate shall consist of native materials of a quality that can be taken directly from the source, without crushing or screening, and broken-down on the road by grid-rolling. The material shall be broken-down to a maximum size of three-inches (76.2 mm) in the greatest dimension.

c). Crushed Aggregate: Crushed-aggregate shall be crushed stone, slag, or gravel meeting current Forest Service or State DOT requirements.

2.2 Material used in the repair of bituminous pavements may be acquired from local commercial sources. If a mixing table is required, the location shall be approved by the Forest Service. The bituminous mixture to be used by the ContractorContractor shall be approved by the Forest Service. The ContractorContractor's share of the quantity of bituminous mixture used in the appraisal estimate will be shown on Road Maintenance Plan. However, ContractorContractor's share of the work may vary depending on ContractorContractor's hauling schedule, ground conditions, other traffic, etc.

2.3 Water, if required, will be as specified in Supplemental Specification T-803-1. Water source locations are shown on the contract area map.

2.4 Borrow material used in the repair of soft areas may from Commercial or Forest Service sources as agreed to with the Forest Service. The quality and quantity of the material used in the repair will be limited to that needed to provide a stable traveled way for hauling.

T-806 SURFACE REPAIR (Cont.)

REQUIREMENTS

3.1 Aggregate surface repair shall be performed as often as necessary during ContractorContractor's use to facilitate traffic and to prevent extensive damage to the road-surface.

3.2 *Aggregate Surface Repair* - Existing aggregate, which has been contaminated with unsuitable material from the subgrade or from other activities shall be removed as directed by the Forest Service. New aggregate shall be mixed until it is uniform throughout, at a moisture-content suitable to prevent segregation and to attain the desired compaction.

The aggregate shall be spread in a uniform layer, with no segregation of size, and to a loose depth that shall have the required thickness when compacted.

If the required compacted depth of any aggregate base or surface course exceeds six inches, it shall be placed in two or more layers of approximately equal thickness. The maximum compacted thickness of any layer shall not exceed six-inches.

Hauling equipment shall be operated over the surface at the previously constructed layer in such a way as to minimize rutting or uneven compaction.

Compaction and grid-rolling, if required, will be as specified in Supplemental Specifications; T-803-2 and T-803-3 as applicable.

All material removed from aggregate-surface repair shall be disposed of as designated by the Forest Service.

3.3 Bituminous Pavement Repairs. The areas to receive bituminous pavement repairs will be marked on the road surface by the Forest Service just prior to ContractorContractor performing the work.

3.4 Potholes (deep patch). Surface Course and Base Course materials shall be excavated to a depth necessary to reach firm, suitable material. The minimum depth of excavation shall be 2 inches and the maximum depth of excavation shall be to the top of the subgrade.

The edges of the prepared hole shall be extended to form a vertical face in un-fractured asphalt surfacing. The prepared hole shall generally be circular or rectangular in shape, dry, and cleaned of all loose Material.

Prepared potholes shall be patched or barricaded immediately.

The faces of the prepared hole shall be tacked with a slow-setting emulsified asphalt.

The bituminous mixture shall be placed in layers not exceeding a compacted depth of 2 inches. Each layer shall be compacted thoroughly with hand or mechanical tampers or rollers. Compaction shall not be done with equipment wheels.

Upon completion, the compacted patch in the pothole shall be flush, with a tolerance or approximately ¼ inch to ½ inch above the level of the adjacent pavement.

3.5 Skin Patches. Bituminous mixture shall be distributed uniformly with feathered edges in layers not to exceed 2 inches compacted depth. When multiple layers are ordered, joints shall be offset at least 6 inches between layers.

Each layer shall be compacted by two passes with a 7-10 ton steel roller or comparable vibratory roller.

3.6 Disposal. All materials removed from potholes and patches shall be disposed of at disposal sites designated by the Forest Service.

T-807 SURFACE STABILIZATION (Water)

DESCRIPTION

1.1 This work shall consist of applying water to the road surface as necessary to control road-surface loss, provide for road user safety, and minimize damage to adjacent resources.

MATERIAL

2.1 Water is the specified-material for surface stabilization; however, ContractorContractor may use other materials if agreed in advance by the Forest Service. Water-source locations are shown on the contract area map.

REQUIREMENTS

3.1 The rate of application shall be such that the water will not run-off of the surface and cause erosion or unnecessary waste. Water shall be applied to abate dust and stabilize surfacing when requested, **in writing**, by the Forest Service.

T-808 SURFACE STABILIZATION (Bituminous)

DESCRIPTION

1.1 This work shall consist of preparing the roadbed and furnishing and applying surface-stabilization materials as necessary to abate dust, control road-surfacing loss, provide for user safety and minimize damage to adjacent resources.

MATERIAL

2.1 The type of dust-abatement material to be used, the rates of application, and frequency of applications will be shown in **in the task order,**

2.2 Water

a). Water shall be reasonably clean and free of oil, salt, acid. alkali, sugar, vegetative-matter, or any other substance injurious to the finished product. Water to be mixed with bituminous-materials shall be tested in accordance with and shall meet the requirements of AASHTO T-26.

b). Water known to be of potable-quality may be used without being tested.

2.3 Bituminous dust-abatement materials shall meet the following requirements:

Application Temperatures - Bituminous materials shall be applied within the temperature ranges indicated in the following table:

Type and Grade of Material	Application Spray Min. – Max.	Temperature Range, °F Mix Min. – Max.
MC 30	85-145	60-105
RC-MC-SC 70	120-185	90-155
RC-MC-SC-250	165-225	125-200
RC-MC-SC-800	200-265	160-225
RC-MC-SC-3000	230-295	200-260
Emulsified Asphalts:		
RS-1, SS-1, SS-1h, CSS-1h	75-130	70-160
CRS-1, CRS-1h	75-130	70-160
RS-2	110-160	70-160
MS-2, MS-2h	110-160	70-160
CRS-2, CRS-2h, CRS-2 Modified	110-160	70-160
CMS-2, CMS-2h	110-160	70-160
Asphalt Cement (All Grades)	400 Max.	250-325
DO-1-2-3	80-125	---
DO-4	80-175	---
DO-8, R3-DO	50-140	---

T-808 SURFACE STABILIZATION (Cont.)

Liquid Asphalts - Liquid asphalts shall meet the requirements of the following specifications:

a). Rapid curing liquid asphalts……AASHTO M - 81
b). Medium-curing liquid asphalts……AASHTO M - 82

Emulsified Asphalts - Emulsified asphalts shall meet the requirements of the following specifications:

a). Emulsified asphalt (anionic)……AASHTO M – 140
(ASTM D – 977)
b). Emulsified asphalt (cationic)……AASHTO M – 208*
(ASTM D – 2397)
* Delete footnote 'd'.

CMS - 2S: Shall comply with requirements of CMS - 2, except that oil distillate by volume of emulsion shall be twelve-percent to twenty-percent, and the distillation residue shall have a minimum value of sixty percent.

CMS - 3: Shall comply with the requirements of CMS-2, except that oil distillate by volume of emulsion shall have a maximum value of four-percent and the distillation residue shall have a minimum value of sixty-eight-percent.

inous Dust Palliatives-

General Requirements	ASTM Method	DO-1 Forest Light	DO-2 Service Medium	DO-3 Dust Oil Heavy	DO-4 Certified Dust Oil	D O - 8	R3-DO
Flash Point:							
Tag Open-Cup, °F, Min.	D1310	125	125	125	200		
Cleveland Open-Cup, °F, Min.	D92	---	---	---	---	212	212
Viscosity:							
Kinematics, @ 100 °F, cSt	D2170	40-70	90-125	135-200	20-100		
Saybolt Furol, @ 77°F, SFS, Max.	D88	---	---	---	---	50	50-100
Water, % Maximum	D95	0.5	0.5	0.5	0.5	---	---
	D244	---	---	---	---	50	---
Sieve Test % Maximum	D255	---	---	---	---	---	50
Asphaltenes %	D2006-70	3-6	4-8	5-10	0-5	5-10	2-10
Saturates, % Minimum	D2006-70	25	25	25	10	8	8
24-Hour Settlement, %	D244	---	-----	---	---	2	2-3
Sieve Test % Maximum	D244	-----	---	---	---	0.1	0.1
Distillation Test:							
Total Distillate to 550°F, Max, % by Volume	D244	35	30	30	5	50	50
Total Distillate to 680°F, Max, % by Volume	D402	---	---	---	---	---	---
Oil Distillate, % by Volume	D244	---	---	---	---	5	5-10
Total Residue, % by Volume	D244	---	---	---	---	45	45
Tests on Residue from Distillation							
Viscosity, Kinematics, @ 100°F, cSt	D2170	75-250	200-600	500-1500	20-150	---	---
Viscosity, Kinematics, @ 122°F, cSt	D2170	---	---	---	---	250-1200	50-500
Solubility in Trichloroethylene, % Min.	D2042	98	98	98	98	98	99
Ductility, CM Minimum	D113	---	---	---	---	---	---

2-4 *Acceptance of Materials* - Certification, sampling and acceptance of bituminous materials will be based upon manufacturer's certification.

T-808 SURFACE STABILIZATION (Cont.)

REQUIREMENTS

3.1 *Preparation for Dust-abatement Materials Other Than Water* - Prior to application of any material, the entire roadbed shall be prepared as required under Specification T-803, Surface Blading.

Bituminous and other residue from previous treatments shall be scarified and pulverized to produce loosened material not exceeding three-inches in greatest dimension.

A light-application of water shall be applied just prior to applying the dust-palliative, unless otherwise agreed by the Forest Service.

3.2 *Application Methods of Bituminous Dust-abatement Materials* – One or more of the following methods shall be used as specified in **in the task order** ..

a). Direct Penetration -

1). Prepared Surface: The palliative application is made directly to the traveled-way and any shoulders prepared in accordance with Specification T-803. The road shall be closed to traffic until penetration is complete or until excess material is blotted according to Subsection 3.4, or as approved by the Forest Service.

2). No Surface Preparation: The palliative is applied directly to the existing surface, regardless of its condition. The road shall be closed to traffic until penetration is complete or until excess material is blotted according to Subsection 3.4, or as approved by the Forest Service.

b). Penetration - The top one-inch (25.4 mm) of roadway-surfacing is placed to the side in a windrow. The palliative application is made to the exposed roadway, and the windrow is pulled-back across the road as a blotter since penetration into the compacted-surface is minimal.

c). Enhanced Penetration - The top one-inch (25.4 mm), plus or minus, is loosened and left in-place. The palliative application then penetrates the loose material.

3.3 *Weather Limitations* - Dust-abatement materials shall not be applied when it is raining, when the surface is too wet to receive the material, or if rain is anticipated to occur within twenty-four-hours of palliative application.

Dust palliatives shall be applied only when the surface temperature of the traveled-way is fifty-degrees Fahrenheit in the shade, and rising.

3.4 *Blotter Material* - Blotter-material, when used, shall be spread in sufficient quantities to prevent tire pickup.

3.5 Traffic - Traffic shall be maintained in accordance with C6.33

Supplemental Specification T-808
T-808-1 SURFACE STABILIZATION (Magnesium Chloride)

Materials

2.1 Add the following subsection:

2.5 Magnesium Chloride brine shall contain 28 to 35 percent Magnesium Chloride (Mg CL_2) by weight and 62 to 72 percent water (H_2O) by weight. The brine may contain small amounts of non-detrimental ions not to exceed the quantities listed in the following table:

Chemical Constituents	Range % by Weight
Magnesium (Mg)	7.0 – 9.5
Chloride (Cl_2)	20.0 – 24.0
Sulfate (SO_4)	0.0 – 3.5
Sodium (Na)	0.0 – 0.8
Potassium (K)	0.0 – 0.8

Other non-detrimental elements such as Li, Br, Fe and Ca may be present in minute quantities.

The presence of nitrates of any material which is potentially detrimental to the brine or Forest Service resources and activities is not acceptable.

Ion presence shall be quantitatively determined by Atomic Absorption Spectrometry or acceptable titration methods.

Specific gravity shall be between 1.290 and 1.330 and shall be determined by use of a heavy liquid hydrometer capable of reading between 1.200 and 1.400.

3.1 Requirements. Amend subsection 3.2 as follows:

3.2 *Application methods of Bituminous and Magnesium Chloride Dust Abatement Materials.* One or more of the following……

T-809 MINOR DRAINAGE STRUCTURES

DESCRIPTION

1.1 This work shall consist of cleaning and maintaining culverts; cleaning, maintaining and repairing inlets, outlets, related ditches, existing riprap, trash-racks and drop-inlets. Minor drainage-structures are those with waterway opening of less than thirty-five square-feet (3.2 SM) in a single installation or a multiple installation in which the smallest opening is less than nineteen square-feet (1.7 SM). This includes overside drains.

MATERIAL

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 During periods of ContractorContractor's operation, ContractorContractor shall keep ditches, culverts and other drainage facilities clear and functioning.

3.2 Culverts, inlet and outlet channels, inlet trash-racks and drop-inlets shall be cleared of loose materials that could cause plugging or prevent the free-flow of water. Vegetative debris shall be scattered outside of the roadbed unless otherwise agreed. Debris shall be placed so as not to enter the stream-channels.

T-810 ROADWAY VEGETATION

DESCRIPTION

1.1 This work shall consist of removal of brush or tree-growth or other obstructions to visibility, as shown on the drawings or designated by the Forest Service.

REQUIREMENTS

3.1 All trees that have fallen across the roadway shall be removed, unless otherwise agreed. Merchantable timber, if any, shall be cut in standard log-lengths and decked along the roadbed in locations where traveled way width or sight-distances will not be impaired.

3.2 Brush and trees that obstruct proper sight-distance shall be removed. Low shrubs and brush, which do not restrict sight distance, provides ground cover or reduces erosion, shall not be removed.

Vegetative-material consisting of limbs, tops and brush shall be scattered outside of the roadway. Stumps and logs not meeting utilization standards may also be scattered outside of the roadway. ContractorContractor shall avoid placing vegetative material in concentrations. Disposal of vegetative material will not be permitted in meadows or drainage ways.

T-811 CLOSING ROADS

DESCRIPTION

1.1 This work shall consist of closing roads by restoring or installing closure-devices and drainage-facilities on roads no longer needed by the ContractorContractor or when interim closures are required during periods of ContractorContractor's non-use.

Closure devices and drainage facilities may consist of cross-ditches, waterbars, drainage-dips, barriers or gates and restoring in-sloped and out-sloped sections.

REQUIREMENTS

3.1 During periods of ContractorContractor's non-use, roads designated for interim closures shall be closed unless otherwise agreed to, **in writing**, by the Forest Service.

The entire roadway shall be bladed and shaped to provide drainage during periods of closure or non-use.

Where possible, and still retaining appropriate surface-drainage characteristics, existing surface-vegetation shall be protected during blading operations.

3.2 All drainage-dips, out-sloped or in-sloped sections, or other drainage devices built into the roadbed and roadway ditches shall be restored and replaced. Existing culverts shall be maintained to provide unobstructed flow.

Waterbars and other cross-ditches shall be installed at locations designated by the Forest Service.

3.3 All closure-devices and signs shall be installed by the methods and at the locations shown on the drawings or designated by the Forest Service.

3.4 Where existing surface-vegetation has been destroyed as a result of ContractorContractor’s operation, the entire roadway will be seeded with a seed-mixture approved by the Forest Service.

T-812 MISCELLANEOUS STRUCTURE

DESCRIPTION

1.1 Maintenance of miscellaneous structures includes cattleguards, gates, H-braces, fencing, guardrails, structure delineators, signs and other similar structures that have been previously installed to insure the safe and efficient operation of the road.

MATERIALS

2.1 Materials used to maintain miscellaneous structures shall be similar in type and quality to those materials in the existing structure.

REQUIREMENTS

3.1 *Cattleguards* - Loose rail or wing elements shall be straightened and welded or bolted back-into-place.

Excess material Carried into the cattleguard shall be removed when the drainage becomes blocked, or any time it reaches within six-inches of the bottom of the cattleguard frame.

Drainage into and out of the cattleguard shall be kept open.

3.2 *Gates* - Metal frame gates shall be maintained in good condition and adjusted to swing properly. Hinges and latches shall be repaired if not operating properly and hinges shall be oiled. Brush and debris shall be removed from within the swing-radius.

Loose wire gate ends and internal stays shall be maintained in good condition. Gate wire shall be maintained as necessary to insure proper operation of the gate both as a vehicle passageway and as a barrier to cattle movement.

3.3 *H-braces* - Posts, horizontal braces, and diagonal struts or tie wires shall be maintained to provide for tightness of fence and gate or latch posts.

3.4 *Fencing* - Fencing which has no opening or provisions for gating shall be temporarily braced prior to cutting. Fencing shall be replaced upon completion of use and shall be stretched and securely fastened to conform to its original spacing before cutting.

3.5 *Structure Delineators and Signs* - Structure delineators, regulatory and warning signs determined by the Engineer as necessary, shall be maintained in good, clean condition.

T-813 TREATMENT AND DISPOSAL OF DANGER TREES

DESCRIPTION

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

REQUIREMENTS

3.1 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.

3.2 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 contract or Supplemental Specifications. Dispose of merchantable timber designated for removal in accordance with B/BT2.32 Construction Clearing, of the Contract, or as described in Supplemental Specifications.

3.3 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.

T-814 - SNOW REMOVAL

DESCRIPTION

1.1 This Section provides for removal of snow from roads to facilitate logging operations and safe use.

REQUIREMENTS

3.1 Erect signs required by the Sign Plan in the Supplemental Specifications.

Perform work in a manner to preserve and protect roads and appurtenances, and prevent erosion damage to roads, streams, and other Forest values.

Do not undercut banks. Do not blade gravel or other surfacing material off the road.

Keep roadbed drainage ditches, drain dips, and culverts functional when needed during operations and upon completion of operations.

Control snow removal to identify the usable traveled way having roadbed support. Reshape over-width plowing as necessary to define the usable width.

Space, construct, and maintain drainage holes in the dike of snow or berm caused by snow removal operations. Place drain holes to obtain surface drainage without discharging on erodible fills.

Close roads to wheeled vehicles at times and in the manner specified in contract.

Upon seasonal completion of Contractor's Operations, effectively block the road by a snow barricade, unless otherwise approved by the Contracting Officer.

Remove snow for project use as established in the Supplemental Specifications and meet the following requirements:

Removal for Project Use - Remove snow from all or part of the traveled way, including sufficient turnouts for safe and efficient use for timber transportation and to protect the road. Remove intruding windfalls, debris or slough and slide material and dispose of only as necessary to provide passage for timber transportation. Removed materials may be deposited off the traveled way or outside the traveled way at locations designated by the Contracting Officer.

When directed by the Contracting Officer, replace in kind, within sixty (60) days after the start of Normal Operating Season, any surfacing material which has been bladed off the road, unless otherwise agreed. Contracting Officer will notify Contractor in writing as to the cubic yard equivalent of bladed off material by the start of the normal operating season.

3.2 Equipment

Contractor may use any type of equipment to remove snow, providing:

a. Type or use of equipment is not restricted in C(T)5.12.

b. Equipment is of the size and type commonly used to remove snow and will not cause damage to the road.

c. The use of plows or dozers to remove snow requires written approval by the Contracting

Officer. Equip plows or dozers with shoes or runners to keep the dozer blade a minimum of 2 inches above the road surface unless otherwise approved by the Contractor Officer.

3.3 Ice Control

Ice control may be performed by Contractor when approved by the Contracting Officer in writing. Such approval will include ice control materials, application rates, and any specific requirements of use.

GENERAL REQUIREMENTS

1.1 Equipment Specifications:

The equipment to be used to complete the performance of this contract shall meet the following minimum standards.

Road Grader -Motor patrol, self-propelled, tandem drive, with a mold board not more than fourteen (14) feet or less than twelve (12) feet with a three (3) tooth ripper bar (scarifier).

Crawler Tractor/Dozer - D4 with three (3) tooth ripper (scarifier) bar and angle dozer blade (6 way tilt preferred).

1.2 Noxious Weeds: All graders, tractor/dozers and backhoes are to be thoroughly cleaned before entering the National Forest for work on this contract. The requirement is designed to decrease the possibility of introducing noxious weed seed onto the National Forest.

1.3 Traffic Control: Traffic control signs, which will be provided by the contractor, must conform to the current edition of the Manual of Uniform Traffic Control Devices (MUTCD).

In the performance of traveled way maintenance, signs shall be located no more than 1 mile before and 1 mile after area of operation. Signs shall be posted only when work is in progress. Vehicle traffic shall not be obstructed for periods in excess of (15) minutes.

1.4 Bridge Maintenance: Clean the deck of any accumulated dirt or gravel, clean deck drains, repair or replace damaged guardrail, repair or replace damaged or rotten deck planks/running planks, patch spalled areas of concrete decks or curbs and replace missing/damaged traffic counters.