U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE **INTEGRATED RESOURCE CONTRACT** (Applicable to Contracts with Measurement after Harvest)		**Name of Contractor**	
National Forest Mt. Baker/Snoqualmie	**Ranger District** Snoqualmie	**Region** Pacific N-West	**Contract Number**
Contract Name Bandera-Hansen Thin Stewardship		**Award Date**	**Termination Date** 09/01/2021

The parties to this contract are The United States of America, acting through the Forest Service, United States Department of Agriculture, hereinafter called Forest Service, and _____ hereinafter called Contractor.

Unless provided otherwise herein, Forest Service agrees to sell and permit Contractor to cut and remove Included Timber and Contractor agrees to purchase, cut, and remove Included Timber and complete required stewardship projects.

IN WITNESS WHEREOF, the parties hereto have executed this contract as of the award date.

UNITED STATES OF AMERICA

Two Witnesses: 2/

By: _____
Contracting Officer

_____
(Name)

_____
(Title)

_____
(Address)

_____
(Contractor) 3/

_____
(Name)

By: _____

_____
(Address)

_____
(Title)

_____
(Business Address)

I, 4/ _____ , certify that I am the _____

Secretary of the corporation named as Contractor herein; that _____

who signed this contract on behalf of Contractor, was then _____

of the corporation; that the contract was duly signed for and in behalf of the corporation by authority of its governing body, and is within the scope of its corporate powers.

_____ **CORPORATE SEAL** 5/

INSTRUCTIONS:

1/ If Contractor is a corporation, state a "corporation organized and existing under the laws of the State of _____" and specify the State; if Contractor is a partnership, state a "partnership consisting of _____" and specify the names of each partner; and if Contractor is a sole proprietor doing business under an assumed name, state "(n) individual doing business under the name of _____ City of _____, State of _____."

2/ The signatures and addresses of two witnesses are required if Contractor is other than a corporation.

3/ If Contractor is a co-partnership, the signatures should be: XYZ Company, by John Doe, a member of the firm. If Contractor is a corporation, form of signature should be: XYZ Company, by John Doe, President (or other officer or agent) and the seal of the corporation must be impressed or indicated.

4/ The certificate must be completed if Contractor is a corporation.

5/ For companies incorporated in States that require a corporation seal, if the corporation has no corporate seal that fact shall be stated, in which case a scroll or adhesive seal shall follow the corporate name.

EXAMPLE 1/

Subcontractor Certification
Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion

Contract Name: _____
National Forest: _____

The prospective subcontractor (participants in lower tier covered transactions) certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this contract by any Federal department or agency.

Where the prospective subcontractor is unable to certify to any of the statements in this certification, such prospective subcontractor shall attach an explanation to this proposal.

Name of Subcontractor: _____
Business Address: _____
_____

_____ _____
Date Signature

1/ It is the Contractor's responsibility to have subcontractors complete this certification and to maintain a file of completed certifications. This certification does not need to be returned to the Forest Service, except at the written request of the Contracting Officer.

A.0 - SPECIFIC CONDITIONS. The following conditions apply to the indicated portions.

A.1 - Location and Area, applicable to B.1

This Contract Area of 2833 acres more or less is located in: Sec. 5, 6, 7, 8, 9, 10, 13, 14, 15, 16, 17 and 22, T.22N, R.10E, W.M.

A.2 - Volume Estimate and Utilization Standards, applicable to C.1, C.2, C.4, and G.4

Species	Product	Estimated Quantity	Unit of Measure	Minimum Specifications				
				Merchantable Tree		Piece Required to be Removed		
				Diameter Breast High (d.b.h.) (inches)	Number of Minimum Pieces per Tree	Length (feet)	Diameter Inside Bark at Small End (inches)	Net Scale in % of Gross Scale 1/
Douglas-fir	Sawtimber	13,756.00	Ton	7.0	1	8	5.0	40
Western Hemlock, Red Alder, and other Coniferous Species	Sawtimber	26,226.00	Ton	7.0	1	8	5.0	40
Total Quantity		39,982.00	Ton					

1/ Enter Merchantability Factor (Merch. Factor) or Net Scale in % of Gross Scale, whichever is appropriate.

A.3- Timber Designations, applicable to C.3; acres are approximate:

	Number	Acres
Clearcutting Units (C.3.1)		
Specified Road Clearing (C.3.2)		
Overstory Removal Units (C.3.3)		
Understory Removal Units (C.3.4)		
Individual Trees (C.3.5)		267.9
Incompletely Marked Timber (C.3.6)		

A.4 - Timber Payment Rates, applicable to D.1 and E.0

A.4.1 - Escalated Rates, applicable for Species and Products to be Paid for at Rates Escalated under D.2

Species	Product	Unit of Measure	Rates per Unit of Measure					Base Index
			Base $	Advertised $	Bid Premium $	Bid (Tentative) $	Required Deposits Slash Disposal $	
Not Applicable								

A.4.2 - Flat Rates, applicable for Species and Products to be Paid for at Flat Rates

Species	Product	Unit of Measure	Rates per Unit of Measure				
			Base $	Advertised $	Bid Premium $	Bid (Flat) $	Required Deposits Slash Disposal $
Douglas-fir	Sawtimber	Ton	.32	1.16			.94
Western Hemlock, Red Alder, and other Coniferous Species	Sawtimber	Ton	.32	1.16			.94

For purposes of convenience in collection and bookkeeping, Bid Rates stated in A.4 include payment of deposits for contract area betterment required pursuant to 16 USC 576b. Such deposits are not included as Required Deposits defined hereunder.

A.4.3 - Stewardship Credits, applicable E.2.2 and K-G.9#

Mandatory Stewardship Projects					
Project Number	**Project Description**	**Units of Measure**	**Quantity**	**Bid Rate $**	**Total Credits**
001	Tree planting in openings	Acres	28.00		

Optional Stewardship Projects						
Priority	**Project Number**	**Project Description**	**Units of Measure**	**Quantity**	**Bid Rate $**	**Total Credits**
	002	Decomission 5510-110	Miles	1.08		
	003	Decomission 5510-120	Miles	.95		
	004	Decomission 9030A Spur	Each	1.00		

The following definitions are established for the terms used in A.4:

Base Rates are the lowest rates of payment for timber that are authorized by this contract. Base Rates remain constant throughout the life of this contract and are not subject to change by rate redetermination, except for reduction under D.3.1, D.3.2, or D.3.3.

Advertised Rates are the minimum acceptable Bid Rates for timber, exclusive of Required Deposits. These rates are those indicated by appraisal, with a cost allowance made for construction of Specified Roads listed in A.7, but are never less than Base Rates.

Bid Premium Rates are the amounts by which Contractor's bid is in excess of Advertised Rates. The Bid Premium Rates are constant during this contract, except as provided in D.3.1, D.3.2, and D.3.3.

Bid Rates are the rates bid by Contractor (exclusive of Required Deposits for slash disposal, road maintenance, and contract scaling) and are the sum of Advertised Rates and Bid Premium Rates. Until a rate redetermination becomes effective, the Bid Rate for species and products in A.4.1 is the Tentative Rate that is subject to quarterly adjustment under D.2; for species and products in A.4.2, the Bid Rate is the Flat Rate.

Required Deposits are deposits that Contractor may be required to pay for slash disposal (16 USC 490), road maintenance (16 USC 537), and contract scaling (1994 Appropriations Act). Required Deposits may be adjusted as part of a rate redetermination or a Contract Term Extension. The table shows only Required Deposits for slash disposal; road maintenance deposits, if any, are given in K-F.3.2#; and contract scaling deposits, if any, are given in K-G.8.1.6#.

Base Index is the specified average of the lumber or other product selling value index used as the basis for computing adjustment in rates for variance in product selling value, as provided in D.2.

A.5 - Indices Used in Quarterly Adjustment, applicable to D.2

Species	Index Name and Date
Not Applicable	

A.6 - High Stumps, applicable to G.4.1.2

Species	Product	Maximum Stump Height * (inches)
All	Sawtimber	12

A.7 - Specified Roads, applicable to F.2

Name and Date of Governing Road Specifications: Federal Highway Administration Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects(2003)-english

Project		Design Class	Appro. Length (mi./km.)	Sheet Numbers and Approval Date	Performance Responsibility		
Road No.	Name				Survey	Design	Construction Staking 1/
5510000	HANSEN CREEK (R) (segment 0 to 3.87)	Single Lane - 15 mp	3.87 / 6.23	17 06/28/2016	FS	FS	FS BC
5510110	HANSEN CREEK MINE RD (R) (segment 0 to 1.02)	Single Lane - 15 mp	1.02 / 1.64	18-20 06/28/2016	FS	FS	FS BC
5510120	HUMPBACK (R) (segment 0 to .4)	Single Lane - 15 mp	.4 / .64	21 06/28/2016	FS	FS	FS BC
9031000	MASON LAKE TRAILHEAD (R) (segment 0 to 2.94)	Single Lane - 15 mp	2.94 / 4.73	26-27 06/28/2016	FS	FS	FS BC
5500431	SOUTHFORK THIN (R) (segment 0 to .02)	Single Lane - 15 mp	.02 / .03	16 06/28/2016	FS	FS	FS BC
9030000	TALAPUS LAKE TRAILHEAD (R) (segment .05 to 3.17)	Single Lane - 15 mp	3.12 / 5.02	22-25 06/28/2016	FS	FS	FS BC
5500000	TINKHAM (R) (segment 0 to 2.02)	Single Lane - 15 mp	2.02 / 3.25	13-15 06/28/2016	FS	FS	FS BC

1/ Indicate timing, i.e., before clearing (BC) or after clearing (AC). Applicable to F.2.1.2.

A.8 - Forest Service Engineering Completion Schedule, applicable to F.2.1

Road No.	Road Name	Type of Work	Completion Date
	Not Applicable		

A.9 - Scaling Instructions and Specifications, applicable to G.8

Name and Date of Governing Instructions: FSH 2409.11a, National Forest Cubic Log Scaling Handbook, as amended and supplemented. Check scaling will be performed on individual scaling locations.

Scaling Specifications					
		Maximum Scaling Length (feet)	Trim Allowance		
Species	Product		Diameter Range (inches)	Length Range (feet)	Trim Allowance (inches)
All	All	0	ALL	ALL	0

A.10 - Scaling Services, applicable to G.8.1

Species	Product	Unit of Measure	Site and Geographic Location	Method	Standard Estimated Cost per Unit $
All	All	Ton	Contractor shall request an alternate scaling site pursuant to G.8.1.1, and enter into a 'Weighing Services Agreement' as per G.8.1.4.	Total (100%) Weight Scale	.00

A.11 - Minimum Scaling Volumes, applicable to G.8.1

Minimum volume for Continuous Scaling Services in two-week period 0 Ton per scaler

Minimum volume for Intermittent Scaling Services 0 Ton on a N/A basis

A.12 - Fire Precautionary Period, applicable to H.2

April 01 to October 31 , inclusive

A.13 - Contractor's Responsibility to Furnish Crews and Equipment for:

Initial Fire Supression, applicable to H.3

Within 0 road miles

Fire Suppression Reinforcement, applicable to H.3.1.2 and H.3.1.3

Within 0 road miles

A.14 - Contractor's Obligation per Operations Fire, applicable to H.4.1

Maximum Amount: $ $300,000.00

A.15 - Termination Date, applicable to 1.2

September 01, 2021

A.16 - Normal Operating Season, applicable to G.3.1, G.6.6, 1.2.1 and J.3

First Period: June 01 to October 15 , inclusive

Second Period: _____ to _____ , inclusive

A.17 - Performance Bond Amount, applicable to J.1

Performance Bond Amount: _____

A.18 - Downpayment, applicable to E.2.1.1

Downpayment Amount: Not Applicable

A.19 - Periodic Payment Amount, applicable to E.2.1.3

	Periodic Payment Determination Date	Amount
Initial Payment:	N/A	N/A
Additional Payment:	N/A	N/A

A.20 - Market-Related Contract Term Addition Producer Price Index, applicable to 1.2.1.2

Index Name: Softwood Lumber **Index Number:** 0811

A.21 - Inapplicable Provisions

The following listed provisions - are hereby made inapplicable. (Instructions: List by reference number and title.)

E.4	PAYMENTS NOT RECEIVED
I.2.1	CONTRACT TERM ADJUSTMENT
I.2.1.2	MARKET-RELATED CONTRACT TERM ADDITION

A.22 - List of Special Provisions in Part K

The following listed special provisions are attached to and made a part of this contract. Provisions with reference numbers followed by # contain blanks into which data have been entered for this contract. (Instructions: List by reference number, title, and date.)

K-C.3.5.5#	DESIGNATION BY PRESCRIPTION (05/2015)
K-C.3.5.7#	INDIVIDUAL TREE DESIGNATION (OPTION 1) (06/2008)
K-D.4.7#	ABNORMAL DELAY (05/2005)
K-E.2.2	CHANGES IN STEWARDSHIP CREDITS (06/2008)
K-E.4	PAYMENTS NOT RECEIVED (08/2012)
K-F.1.0.1#	TEMPORARY ROAD AND LANDING CONSTRUCTION (OPTION 1) (06/2010)
K-F.1.1#	LAND USE AGREEMENTS (05/2005)
K-F.1.2#	USE OF ROADS BY CONTRACTOR (09/2004)
K-F.1.3#	ROAD COMPLETION DATE (09/2004)
K-F.2.1.3#	DEPOSIT FOR RECONSTRUCTION ENGINEERING SERVICES (09/2004)
K-F.2.2.1#	MATERIAL SOURCES (09/2004)
K-F.3.1#	ROAD MAINTENANCE REQUIREMENTS (09/2004)
K-F.3.2#	ROAD MAINTENANCE DEPOSIT SCHEDULE (08/2012)
K-G.3.1.5#	PROJECT OPERATION SCHEDULE (05/2005)
K-G.4.0.5	ALTERNATE REMOVAL OF INCLUDED TIMBER (05/2005)
K-G.4.1#	SPECIFIC REQUIREMENTS (05/2005)
K-G.4.2#	YARDING/SKIDDING REQUIREMENTS (05/2005)
K-G.6.0#	EROSION CONTROL AND SOIL TREATMENT BY CONTRACTOR (04/2014)
K-G.7	SLASH DISPOSAL (06/2008)
K-G.7.4.2#	SLASH TREATMENT REQUIREMENTS (OPTION 2) (06/2008)
K-G.8.4	USE OF PAINT BY CONTRACTOR (OPTION 1) (06/2006)
K-G.8.4.0	ACCOUNTABILITY (04/2014)
K-G.8.5.1	WEIGHT OF LOST LOADS (04/2014)
K-G.9#	STEWARDSHIP PROJECTS (09/2004)
K-H.1	PLANS (05/2005)
K-H.2	SPECIFIC FIRE PRECAUTIONS (05/2005)
K-H.2.0.1	BURNING BY CONTRACTOR (06/2006)
K-H.2.2	EMERGENCY FIRE PRECAUTIONS (05/2005)
K-H.3.1	ADDITIONAL AREA OF FIRE RESPONSIBILITY (05/2005)
K-I.1.0	DISCLAIMER OF EXPRESSED OR IMPLIED WARRANTY (05/2005)
K-I.2.1	CONTRACT TERM ADJUSTMENT (07/2016)
K-I.2.1.2	MARKET-RELATED CONTRACT TERM ADDITION (11/2008)
K-I.3.1#	CONTRACT CHANGES (OPTION 1) (05/2005)
K-I.6.8# (Option 1)	USE OF TIMBER (09/2004)

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UNITED STATES DEPARTMENT OF AGRICULTURE
Forest Service

INTEGRATED RESOURCE CONTRACT

September 2004
(Date of Issue)

PROVISIONS FOR MEASUREMENT OF PRODUCTS AFTER HARVEST

This contract is organized into Parts, Sections, Subsections, and Items. These are numbered in accordance with the following scheme: Part B, Section B.1, Subsection B.1.1, and Item B.1.1.1. References to a Part include all Sections, Subsections, and Items within that Part; references to a Section include all Subsections and Items within that Section; and references to a Subsection include all Items within that Subsection. Cross-references within this contract cite the reference number of the applicable Part, Section, Subsection, and Item. Descriptive headings used are not to be considered in determining the rights and obligations of the parties.

Parts B through J are subject to Specific Conditions in Part A. Wherever appropriate, Specific Conditions established in Part A are cited by reference number. The listing of Sections, Subsections, or Items in provision A.21 has the effect of striking or deleting them from Part B through J. Provision A.22 lists provisions that comprise Part K. Where appropriate, references to Special Provisions are made by citing the applicable reference numbers.

INDEX TO TERMS

CONTENTS

B.0—CONTRACT AREA

B.1 Contract Area Map. The boundaries of "Contract Area" and any subdivision thereof, are as shown on the attached "Contract Area Map" that is made a part hereof, and were, before contract advertisement, designated on the ground by Forest Service to meet the anticipated needs of the parties. The location of Contract Area and its approximate acreage are stated in A.1. Subdivisions may be revised and additional ones may be established only by written agreement. Subdivisions or cutting units and stewardship project areas may be eliminated from Contract Area under conditions described in G.3.6. Catastrophically Damaged areas may be removed from Contract Area under I.3.2.

Where applicable, the following are also identified on Contract Area Map:

(a) Identified claims limiting Contractor's rights under B.2;
(b) Subdivisions defined in C.3 where timber is to be Marked after date of contract advertisement;
(c) Boundaries of Clearcutting Units, Overstory Removal Units, and Understory Removal Units under C.3;
(d) Diameter limits for Overstory Removal Units and Understory Removal Units under C.3.3 and C.3.4;
(e) Areas where leave trees are Marked to be left uncut under C.3.5;
(f) Specified Roads listed in A.7;
(g) Sources of base course, surface rock, and rock riprap listed in the Schedule of Items;
(h) Roads where log hauling or use is prohibited or restricted under F.1.2;
(i) Roads and trails to be kept open under G.2.2;
(j) Improvements to be protected under G.2.2;
(k) Locations of known wildlife or plant habitat and cave resources to be protected under G.2.4;
(l) Locations of areas known to be infested with specific invasive species of concern under G.3.5;
(m) Maximum stump heights when more than one height is listed by areas in A.6 under G.4.1.2;
(n) Skidding or yarding methods specified under G.4.2;
(o) Streamcourses to be protected under G.5;
(p) Locations of meadows requiring protection under G.6.1;
(q) Locations of wetlands requiring protection under G.6.2;
(r) Locations of temporary roads to be kept open under G.6.3.1; and
(s) Other features required by Parts A through K.

B.2 Claims. Valid claims are excluded from Contract Area, except those on which timber cutting is authorized in writing by the claimant and except mining claims on which cutting is authorized by the Act of July 23, 1955 (30 USC 614). Claims that limit Contractor's rights to operate under this contract and that Forest Service has been able to identify are shown on Contract Area Map. Contractor is not obligated to operate contrary to existing claim limitations. Forest Service shall designate boundaries of claims on the ground to the extent necessary to identify Included Timber.

C.0—TIMBER SPECIFICATIONS

C.1 Included Timber. "Included Timber" consists of:

C.1.1 Standard Timber. Live and dead trees and portions thereof that meet Utilization Standards under C.2 and are designated for cutting under C.3.

C.1.2 Substandard Timber. Live and dead trees that:

(a) Do not meet Utilization Standards and
(b) Are located in Clearcutting Units or construction clearings or are otherwise designated for cutting.

C.1.3 Damaged Timber.

C.1.3.1 Damaged by Contractor. Undesignated live trees meeting Utilization Standards:

(a) Within 200 feet slope distance from centerline of roads constructed hereunder that are damaged by Contractor's construction to the extent that considerable deterioration or mortality is imminent and are designated by Forest Service for felling before the nearest road segment is Substantially Completed or

(b) That are damaged by Contractor in logging or stewardship project operations and are subsequently Marked before Contractor has completed work in the immediate area.

By agreement, such trees may be left without charge if their removal would cause undue damage or be grossly uneconomic.

C.1.3.2 Negligent or Willful Damage. Undesignated timber meeting Utilization Standards and unnecessarily damaged or negligently or willfully cut by Contractor, if included by Contracting Officer.

C.1.3.3 Damage by Catastrophe. As provided under I.3.2, undesignated live and dead timber within Contract Area, meeting Utilization Standards, and affected by Catastrophic Damage. "Catastrophic Damage" as used hereunder is major change or damage to Included Timber on Contract Area, to Contract Area, to access to Contract Area, or a combination thereof:

(a) Caused by forces, or a combination of forces, beyond control of Contractor, occurring within a 12-month period, including, but not limited to, wind, flood, earthquake, landslide, fire, forest pest epidemic, or other major natural phenomenon and

(b) Affecting the value of any trees or products meeting Utilization Standards, within Contract Area and estimated to total either:

(i) More than half of the estimated timber volume stated in A.2 or

(ii) More than two hundred thousand cubic feet (2,000 CCF) or equivalent.

Catastrophic Damage does not include changes caused by forest pest epidemics or foreseeable deterioration if Included Timber was sold for salvage or pest control.

C.1.3.4 Minor Damage by Natural Causes. Undesignated trees within Contract Area and meeting Utilization Standards, in amounts less than specified in C.1.3.3, that become insect infested, windthrown, suffer serious damage, or die, as designated by agreement.

C.1.4 Unintentionally Cut Timber. Trees, within or immediately adjacent to Contract Area or to road construction or other authorized clearing outside Contract Area, not designated for cutting under C.3 but that are cut through mistake by Contractor, when included by Contracting Officer.

C.1.5 Construction Timber. Trees to be used for construction under F.1.

C.1.6 Other Material. Species or products not listed in A.2, upon written approval of Contracting Officer under D.4.1.

C.2 Utilization and Removal of Included Timber. "Utilization Standards" for trees and minimum pieces are stated in A.2. To meet minimum tree specifications, trees must equal or exceed tree diameters listed in A.2 and contain at least one minimum piece. Except for timber required or authorized to be left, Contractor shall fell and buck such trees and shall remove from Contract Area and present for Scaling all pieces that:

(a) Meet minimum piece standards in A.2 or

(b) Do not meet such standards, but would have qualified as part of minimum pieces if bucking lengths were varied to include such material.

C.3 Timber Designations. Timber designated for cutting shall be confined to Contract Area, except as provided in C.1.3.1, C.1.4, C.1.5, C.3.2, and F.1. Contract Area Map indicates subdivisions, if any, where Marking under C.3.5 is to be done after contract advertisement, except for construction clearing under C.3.2, minor changes under C.3.7, and damaged timber.

The boundaries of Clearcutting Units, Overstory Removal Units, and Understory Removal Units were plainly Marked on ground before contract advertisement and are shown on Contract Area Map. Boundary trees shall not be cut. The number of units and approximate acreage of timber designations are stated in A.3.

C.3.1 Clearcutting Units. All trees that meet Utilization Standards within "Clearcutting Units" are designated for cutting.

C.3.2 Construction Clearing. All timber is designated for cutting that is within the clearing limits of roads constructed hereunder or is in other authorized clearings. All dead or unstable live trees are designated for cutting that are sufficiently tall to reach Contractor's landings, work areas, or the roadbed of Specified and Temporary Roads when Marked in advance of work in the immediate area. Pieces meeting Utilization Standards from such dead or unstable live trees shall be removed, unless there is agreement that to do so could damage the road. Such designation may be revised as part of agreed changes in road location under F.2.

C.3.3 Overstory Removal Units. All trees within "Overstory Removal Units" are designated for cutting when they meet Utilization Standards and equal or exceed the diameter limits shown on Contract Area Map.

C.3.4 Understory Removal Units. All trees within "Understory Removal Units" are designated for cutting when they meet Utilization Standards and are smaller than the diameter limits shown on Contract Area Map.

C.3.5 Individual Trees. All trees to be cut, other than in the units described in C.3.1, C.3.2, C.3.3, and C.3.4, are Marked or designated by description. Trees are "Marked" when individually designated by Forest Service with paint marks above and below stump height.

Contract Area Map indicates areas plainly identified on the ground where leave trees are Marked to be left uncut.

C.3.6 Incompletely Marked Timber. Live trees within incompletely Marked subdivisions shown on Contract Area Map at time of contract advertisement shall be designated in accordance with K-C.3.6. A representative sample of the timber to be designated has been Marked prior to contract advertisement in accordance with such rules. The approximate locations of the representative sample areas are shown on Contract Area Map.

C.3.7 Minor Changes. Within Contract Area, minor adjustments may be made in boundaries of cutting units or in the timber individually Marked for cutting when acceptable to Contractor and Forest Service.

C.4 Volume Estimate. The estimated volumes of timber by species designated for cutting under C.3 and expected to be cut under Utilization Standards are listed in A.2. If Contract Area Map indicates that there are incompletely Marked subdivisions, the objective of Forest Service shall be to designate for cutting in such subdivisions sufficient timber so that Contract Area shall yield the approximate estimated volume by species or species groups stated in A.2. However, the estimated volumes stated in A.2 are not to be construed as guarantees or limitations of the timber volumes to be designated for cutting under the terms of this contract.

Volume adjustments shall not be made under this Section after there is modification for Catastrophic Damage under I.3.2.

C.4.1 Adjustment for Volume Deficit. If Contract Area Map indicates that there are incompletely Marked subdivisions and if Contracting Officer determines that a deficit in the estimated volume will cause the volume cut to be less than 90 percent of the total estimate shown in A.2, Forest Service, upon request by Contractor, shall designate additional timber within Contract Area. Such additional timber shall be limited to that estimated to be necessary to reach approximately the estimated volumes by species listed in A.2. Any such additional designation shall be consistent with land and resource management plans.

C.4.2 Adjustment for Excess Volume. If Contract Area Map indicates that there are incompletely Marked subdivisions and if Contracting Officer determines that the volume cut will be more than 120 percent of the total estimated volume listed in A.2, Forest Service, upon request by Contractor, shall make an adjustment in Marking or cutting unit boundaries with the objective of designating for cutting the approximate estimated volumes by species listed in A.2. Such adjustments in volumes shall be confined to (a) Marking adjustments on Contract Area and (b) reduction in area to be cut over. Such adjustments or reductions shall not conflict with the silvicultural treatment being applied on Contract Area and shall not materially change the average value by species of the timber designated for cutting. Such adjustments may be made notwithstanding the provisions of B.1 and C.3.

If the timber designated for cutting is not reduced by such adjustments to less than 120 percent of the total estimated quantity listed in A.2, Contractor, after cutting 120 percent of the total estimated volume listed in A.2, may elect to have Contract Area reduced to eliminate the remaining Included Timber. However, where felling operations have been started, units of minimum practical size shall be retained in Contract Area.

D.0—RATES OF PAYMENT

D.1 Current Contract Rates. Included Timber that is removed by Contractor and presented for Scaling in the product form stated in A.2 shall be paid for at Current Contract Rates determined under this Section. "Current Contract Rates" shall be (a) Flat Rates and (b) Tentative Rates adjusted by the escalation procedures in D.2. Flat Rates and Tentative Rates shall be those listed in A.4, unless superseded by rates redetermined under D.3 or established for Contract Term Extension. In addition, Required Deposits shall be made as listed in A.4, K-F.3.2, and K-G.8.1.6, or established under D.3 or I.2.3.

In the event Termination Date is adjusted under I.2.1 or I.2.1.2, Current Contract Rates shall be continued in the same manner as immediately prior to the adjustment period.

Notwithstanding I.2.3, Current Contract Rates for timber cut and removed from Contract Area that remains unscaled after Termination Date, as adjusted or extended, shall be Current Contract Rates in effect on Termination Date.

"Current Contract Value" is the sum of the products of Current Contract Rates and estimated remaining unscaled volumes by species of Included Timber meeting Utilization Standards, less the bid rate for mandatory stewardship projects that have not been completed.

D.2 Escalation Procedure. Tentative Rates for those species and products listed in A.4.1 are subject to quarterly escalation in accordance with the following procedures: The calendar quarter index average for each price index described in A.5 is the arithmetic average of the three such monthly price indices preceding January 1, April 1, July 1, and October 1. The difference between calendar quarter index average and Base Index listed in A.4.1 shall be the basis for quarterly escalation. To arrive at Current Contract Rates for timber Scaled during the preceding calendar quarter, Tentative Rates for each species shall be reduced or increased by such difference, except when the calendar quarter index average is:

(a) Less than the Base Index, the reduction shall not result in a rate below Base Rate or

(b) Greater than the Base Index, the increase shall not exceed the difference between Tentative Rate and Base Rate.

In the event of Contract Term Extension, the escalation procedure will be used during the extension period, except that adjusted payment rates for any calendar quarter cannot be less than Tentative Rates, for each species and product group, established under I.2.3 for the extension period.

D.2.1 Unavailable Index. If an index described in A.5 is no longer available, Contracting Officer may replace that index. If Contracting Officer determines that a replacement index does not exist, Current Contract Rates for the remainder of the contract shall be a Flat Rate. Flat Rates will be Tentative Rates adjusted by the arithmetic average of the index described in A.5 for a 12-month period prior to its becoming unavailable using the quarterly adjustment procedure outlined in D.2. Contracting Officer will determine availability and a beginning point to average the index for Flat Rates. Such Flat Rates are subject to rate redetermination as provided elsewhere under this contract.

D.3 Rate Redetermination. Rates may be redetermined as set forth in this Section. Bid Premium Rates shall be added to all redetermined rates, except as provided in D.3.1, D.3.2, and D.3.3.

Rate redeterminations shall be made in accordance with the standard Forest Service methods in effect 45 days prior to rate redetermination. Such methods shall take into consideration factors that may affect timber value at rate redetermination date.

Redetermined rates shall not be less than Base Rates listed in A.4, except for reduction under D.3.1, D.3.2, or D.3.3. Required Deposits shall be redetermined. Redetermined Specified Road construction cost is subject to the limitations of F.2.6.

D.3.1 Rate Redetermination for Environmental Modification. In the event of a contract modification under I.3.3 or partial termination under I.3.4, Contracting Officer shall make an appraisal to determine for each species the difference between the appraised unit value of Included Timber remaining immediately prior to the revision and the appraised unit value of Included Timber to be cut under the modification. The appraisal shall consider the estimated cost of any construction work listed in the Schedule of Items that was performed and abandoned.

Tentative Rates and Flat Rates in effect at the time of the revision will be adjusted by said differences to become Current Contract Rates. Accordingly, Base Rates shall be adjusted to correspond to the redetermined rates if redetermined rates are less than the original Base Rates, subject to a new Base Rate limitation of the cost of essential reforestation or 25 cents per hundred cubic feet or equivalent, whichever is larger. However, existing Base Indices shall not be changed under this Subsection.

Redetermined rates, or differences for rates subject to D.2, and Required Deposits shall be considered established under D.1 for timber Scaled subsequent to the contract revision.

D.3.2 Rate Redetermination after Catastrophic Damage. In event of Catastrophic Damage and adjustment, if any, of Included Timber, Contracting Officer shall make an appraisal to determine for each species the catastrophe-caused difference between the appraised unit value of Included Timber remaining immediately prior to the catastrophe and the appraised unit value of existing and potential Included Timber immediately after the catastrophe. Included Timber is any that would not be eliminated under I.3.2. Potential Included Timber is any that would be added under I.3.2.

Tentative Rates and Flat Rates in effect at the time of catastrophe shall be adjusted by said differences to become the redetermined rates for the purpose of a contract modification under I.3.2. Accordingly, Base Rates shall be adjusted to correspond to the redetermined rates if redetermined rates are less than the original Base Rates, subject to new Base Rate limitations of 25 cents per hundred cubic feet or equivalent. However, existing Base Indices shall not be changed under this Subsection.

Upon agreement under I.3.2, redetermined rates and Required Deposits shall be considered established under D.1 for timber Scaled subsequent to Catastrophic Damage.

At time of such appraisal, Specified Road construction cost shall include the estimated cost of any construction work listed in the Schedule of Items performed and abandoned.

D.3.3 Rate Redetermination for Market Change. In the event of delay or interruption, exceeding 90 days, under I.3.3, Contracting Officer shall make an appraisal to determine for each species the difference between the appraised unit value of Included Timber immediately prior to the delay or interruption and the appraised unit value of Included Timber immediately after the delay or interruption. The appraisal shall be done after any rate redetermination done pursuant to D.3.1, using remaining volumes.

Tentative Rates and Flat Rates in effect at the time of delay or interruption or established pursuant to D.3.1 will be reduced, if appraised rates declined during the delay or interruption, to become Current Contract Rates. Increases in rates will not be considered. Accordingly, Base Rates shall be adjusted to correspond to the redetermined rates if redetermined rates are less than the original Base Rates, subject to a new Base Rate limitation of the cost of essential reforestation or 25 cents per hundred cubic feet or equivalent, whichever is larger. However, existing Base Indices shall not be changed under this Subsection.

Redetermined rates shall be considered established under D.1 for timber Scaled subsequent to the delay or interruption.

D.3.4 Emergency Rate Redetermination. Forest Service shall redetermine rates if, upon Contractor's application, Forest Service determies that, because of changes in the timber market since the award date or the last rate redetermination under this provision, the Producer Price Index identified in A.20 has declined by 25 percent. Rates shall be redetermined under D.3 and shall be considered established under D.1 for timber Scaled subsequent to Contractor’s application. This Subsection shall not apply during Contract Term Extension.

D.4 Other Payment Rates.

D.4.1 Material Not in A.2. Incidental amounts of products or portions of trees of species listed on A.2 that do not meet Utilization Standards may be removed without charge. Such material may be purposely removed in more than incidental amounts without charge upon written approval of Contracting Officer, and subject to agreement on deposits if needed for road maintenance and use.

Other species or products not listed in A.2 may be cut and removed upon written approval of Contracting Officer and subject to agreement on rates of payment and deposits if needed for road maintenance and use.

When any material suitable for use in a product form included in A.2 is removed in another product form, the rates of payment shall be not less than but approximately equivalent to Current Contract Rates and Required Deposits.

D.4.2 Timber Cut Through Mistake. Undesignated timber meeting Utilization Standards, cut by Contractor through mistake and included by Contracting Officer under C.1.4, shall be removed and paid for at Current Contract

Rates and Required Deposits, unless such material is not listed in A.2. In such event, Contracting Officer, in accord with standard Forest Service methods, shall establish rates to be paid.

D.4.3 Designated Timber Cut But Not Removed. Standard timber shall be removed, as provided in C.2, prior to acceptance of subdivision for completion of logging and stewardship project operations under G.3.6. There shall be no charge when:

(a) The leaving of incidental material is justified under existing conditions, including those under G.4 or
(b) Cut timber is left by option or requirement, as under C.3.1, C.3.2, and G.4.

D.4.4 Undesignated Timber Damaged Without Negligence. Undesignated timber meeting Utilization Standards, damaged without negligence by Contractor and designated by Forest Service under C.1.3.1, shall be cut, removed, and paid for at Current Contract Rates and Required Deposits.

D.4.5 Undesignated Timber Unnecessarily Damaged or Negligently or Willfully Cut. Undesignated timber meeting Utilization Standards and unnecessarily damaged or negligently or willfully cut by Contractor, if included by Contracting Officer under C.1.3.2, shall be cut, removed, and paid for at Current Contract Rates and Required Deposits that are in addition to liquidated damages under D.4.6.

If such timber is of a species or size not listed in A.2 or is of a quality different from designated timber, Contracting Officer shall establish payment rates in accord with standard Forest Service methods.

D.4.6 Liquidated Damages. Unnecessary damage to or negligent or willful cutting of undesignated timber, as described in D.4.5, on portions of Contract Area cut over under this contract is likely to cause substantial silvicultural or other damage to the National Forest. It will be difficult, if not impossible, to determine the amount of such damage. Therefore, Contractor shall pay as fixed, agreed, and liquidated damages an amount equivalent to the amount payable at Current Contract Rates. If designated by Contracting Officer, Contractor shall remove such damaged or cut timber and pay for it at Current Contract Rates.

D.4.7 Defect Caused by Abnormal Delay. Scaling deductions made for rot, check, or other defect resulting from abnormal delay in Scaling caused by Contractor shall be recorded separately and charged to Integrated Resource Account at Current Contract Rates and applicable deposits.

E.0—PAYMENTS

E.1 Amount Payable for Timber. Current Contract Rates and Required Deposits in effect when the timber is Scaled shall be applied to the Scaled volume to determine the amount Contractor shall pay.

E.2 Integrated Resource Account. "Integrated Resource Account" is an account maintained by Forest Service of all Contractor's deposits, credits, payment guarantees, and the charges for:

(a) Timber at Current Contract Rates;
(b) Slash disposal, road maintenance, and contract scaling at Required Deposit rates;
(c) Cooperative work at rates established by specific agreement under E.2.1.8;
(d) Stewardship Credits established; and
(e) Other charges provided in this contract.

Cash deposits shall be recorded currently in such account.

Charges for timber cut shall be made when Forest Service prepares and furnishes to Contractor periodic statements of volume and value of such timber cut and Scaled. Charges subject to escalation under D.2 shall be made initially on the basis stated in E.2.1.4 and shall be adjusted at the end of each calendar quarter, as provided in D.2.

E.2.1 Cash Deposits. Within the limitations of this Subsection, Contractor shall make cash deposits to meet Contractor's obligations within 15 days of billing by Forest Service. Deposits shall be made to Forest Service, U.S.D.A., by mail or delivery to the address to be furnished by Forest Service. Forest Service shall explain the bill at the time it requests each deposit.

E.2.1.1 Downpayment. The downpayment amount shown in A.18 may not be applied toward any other payment required under the provisions of this contract, except damages determined pursuant to J.4, transferred to other contracts, or refunded until stumpage value representing 25 percent of the total bid value of the contract has been charged and paid for or the estimated value of the unscaled timber is equal to or less than the amount of the downpayment.

E.2.1.2 Advance Deposits. Contractor agrees to make cash deposits in advance of cutting to meet charges under E.2.

Forest Service billings for advance cash deposits shall be in such amounts that Integrated Resource Account will maintain an unobligated balance equal to the applicable charges for timber that Forest Service estimates will be cut in not less than 30 days and not more than 60 days. This advance cash deposit may be reduced to a smaller amount by the terms of E.2.1.1, E.2.1.3, E.2.1.5, and/or E.2.1.7. Except for amounts required pursuant to E.2.1.1, E.2.1.3, and E.2.1.7, Contractor shall not be required to make advance deposits above those required under this Item.

When the credit balance in Integrated Resource Account is less than the amount due for timber estimated to be cut in 10 days, Contracting Officer will suspend all or any part of Contractor's Operations until payment or acceptable payment guarantee is received.

E.2.1.3 Periodic Payment Schedule. Contractor shall make periodic payments for stumpage value, as shown in A.19.

In the event Contractor has not paid the amount(s) stated in A.19 as stumpage for volume removed by the periodic payment determination date(s), Forest Service shall issue a bill for collection for the difference between the required amount and payments made by Contractor. If payment(s) fall due on a date other than a normal billing date, the payment date shall be extended to coincide with the next Integrated Resource Account billing date.

The amount of the periodic payment(s) will be reduced if the payment(s) would result in Contractor's credit balance for timber charges exceeding the Current Contract Value.

Only cash may be used for this purpose. No other form of payment is acceptable. Forest Service will apply the payments to subsequent charges on this contract under the terms of E.2.1.2.

Except for Contract Term Extensions under I.2.3, periodic payment determination date(s) that have not been reached shall be adjusted one day for each additional day of contract time granted.

E.2.1.4 Deposits for Charges Subject to Escalation. Deposits requested to cover estimated charges for timber subject to escalation under D.2 shall be based upon Current Contract Rates and related deposits in effect during previous calendar quarter.

E.2.1.5 Deposits When Payment Guaranteed. To the extent payment guarantee is provided under E.3, requirements for advance cash deposits under E.2.1.2 shall be waived for the value of timber on Contract Area that is cut, but not removed, and for the value of products removed from Contract Area for not more than a monthly billing period, subject to the provisions of E.4.

E.2.1.6 Blanket Cash Deposits. Contractor may make cash deposits under a written agreement to cover charges made under this and other contracts within the same National Forest. Forest Service shall allocate such deposits to such contracts. When there is to be no timber cutting hereunder for 30 days or more and payment of current charges has been made, the allocation to this contract shall be reallocated to other contracts within the same National Forest at Contractor's request. Contractor shall not start cutting until allocation has again been made to this contract.

E.2.1.7 Extension Deposits. In the event of Contract Term Extension, Forest Service shall divide the difference between Current Contract Value as of the start of any Contract Term Extension and the credit balance of any deposit made pursuant to E.2.1.3 by the number of whole months remaining in Normal Operating Season(s) within the extension period to determine the amount of each "Extension Deposit."

Contractor shall make the initial Extension Deposit prior to Forest Service executing the contract modification. In response to Forest Service billing under E.2.1, Contractor shall make advance cash deposits. Such deposits shall at least equal each Extension Deposit required for each whole month remaining in Normal Operating Season(s) during the extension period. Extension Deposits shall be due by the last day of each month during Normal Operating Season whether or not the volume that is covered by such deposits has been Scaled.

Due dates for Extension Deposits during the extension period may be delayed when Contractor earns Contract Term Adjustment if Termination Date, as adjusted, results in one or more additional complete months within Normal Operating Season(s).

E.2.1.8 Cooperative Deposits. On a basis of cooperation or assistance (16 USC 572) and by a written agreement, Forest Service shall perform all or portions of the work that Contractor is obligated to perform under this contract, as well as furnish other Services in connection with activities under this contract. When Forest Service is to perform such work, Contractor shall make one or more deposits to cover the estimated cost of the work. On request of Contractor, Forest Service shall render monthly accounts, as may be specified in such agreement.

E.2.2 Stewardship Credits. "Stewardship Credits" are credits that are earned and established when work described in K-G.9 has been performed and accepted. Stewardship Credits shall be earned at the rate as shown in A.4.3. Earned Stewardship Credits may be used to pay for Included Timber value in excess of Base Rates and Required Deposits. Base Rates and Required Deposits must be paid in cash.

E.2.2.1 Progress Estimates. Forest Service shall make timely estimates of Contractor's progress on stewardship projects. On the basis of such progress estimates, Forest Service shall credit Integrated Resource Account each month as such work proceeds.

E.2.2.2 Excess Stewardship Credits. In the event there are unused established Stewardship Credits when all of the Included Timber has been cut and removed, Forest Service, at its option, shall either add more timber or make cash payment for the unused Stewardship Credits.

E.2.2.3 Excess Timber Value. In the event the value of Included Timber exceeds the total value of all of the mandatory projects shown in A.4.3, plus the optional projects shown in A.4.3 that Contractor has been authorized to perform:

(a) Contracting Officer shall authorize additional optional projects shown in A.4.3 if the excess timber value exceeds 10 percent of the total timber value, or

(b) Contracting Officer shall authorize additional optional projects shown in A.4.3 or require cash payment if the excess timber value is less than 10 percent of the total timber value, or

(c) Contractor shall make cash payment for the excess timber value if there are no remaining optional projects shown in A.4.3.

E.2.2.4 Cash Payment for Stewardship Projects. In lieu of providing timber for established Stewardship Credits, Forest Service may elect to provide a cash payment to Contractor.

E.2.3 Temporary Reduction of Downpayment. When, under I.3.3, Contracting Officer requests Contractor to delay or interrupt Contractor's Operations for more than 90 days, the downpayment amount being held on deposit may be temporarily reduced upon the written request of Contractor or at the discretion of Contracting Officer. For the period of the delay or interruption, the downpayment on deposit may be reduced to $1,000 or two (2) percent of the downpayment amount listed in A.18, whichever is larger.

Any downpayment amount temporarily reduced pursuant to this Subsection may be refunded or transferred at the request of Contractor. However, if Contractor has outstanding debt owing the United States, Contracting Officer must apply the amount of downpayment that could be refunded to the debt owed in accordance with the Debt Collection Improvement Act, as amended (31 USC 3701, *et seq*.).

Upon Contractor's receipt of bill for collection and written notice from Contracting Officer that the basis for the delay or interruption no longer exists, Contractor shall restore the downpayment to the full amount shown in A.18 within 15 days after the date the bill for collection is issued, subject to the provisions of E.4. Contractor shall not resume contract operations until the downpayment amount is fully restored.

E.2.4 Refund of Excess Cash. If at any time the credit balance of Integrated Resource Account exceeds the charges for timber that Forest Service estimates will be cut within the next 60 days, any portion of such excess that is due to cash in the account shall be refunded, if requested by Contractor, unless deposited under E.2.1.1, E.2.1.3, or E.2.1.7. If Contractor plans no cutting within the next 60 days, Forest Service may refund the entire unencumbered cash balance, except as provided in this Subsection. After a refund for a shutdown, deposits shall be made to meet the requirements of E.2.1.2 before additional timber may be cut.

E.2.5 Refund after Scaling Completed. Any cash deposit, in excess of that required to meet charges under E.2, shall be refunded or transferred within 15 days of Contractor's request after Scaling is completed, except for amounts estimated to be required under J.5.

E.3 Payment Guaranteed by Bond or Deposited Securities. To guarantee payment, Contractor may furnish and maintain an acceptable surety bond or deposit in a Federal Depository negotiable securities of the United States. The securities shall be deposited through the Regional Fiscal Agent accompanied by a power of attorney and agreement authorizing the bond-approving officer to sell or collect such securities if payment is not made within 15 days of billing by Forest Service. The penal sum of such surety bond or the market value at time of deposit of such negotiable securities shall be the maximum amount of the payment guaranteed.

For payment purposes, penal sum of the surety bond or market value at time of deposit of negotiable securities shall be in lieu of the performance bond furnished under J.1.

E.3.1 Blanket Bond. If Contractor furnishes an acceptable bond, or deposits securities, in accordance with E.3, to guarantee payment for timber from this and other contracts within the same National Forest, the amount of such bond or deposited securities shall be allocated to such contracts by Forest Service. When there is to be no timber cutting hereunder for 30 days or more and payment of current charges has been made, the allocation to this contract shall be reallocated to other contracts at Contractor's request. Contractor shall not start cutting hereunder until this contract receives an allocation that will meet the obligation for payment guarantee.

E.3.2 Letters of Credit for Payment Bond. Notwithstanding the provisions of E.3, Contractor may use letters of credit in lieu of a surety bond for payment bond purposes when approved by Contracting Officer.

E.4 Payments Not Received. (a) Payments are due and payable on the date of issue indicated on the bill for collection. When a payment for timber cut and other charges is not received at the location designated by Forest Service by the date allowed in the bill for collection for receipt of payment, Contracting Officer will suspend all or any part of Contractor's Operations until payment or acceptable payment guarantee is received. Other charges include, but are not limited to:

(i) Slash disposal, road maintenance, and contract scaling deposits;
(ii) Cooperative work at rates established by specific agreement under E.2.1.8;
(iii) Damages pursuant to J.4;
(iv) Road use fees;
(v) Restoration of downpayment pursuant to E.2.2;
(vi) Periodic payments pursuant to E.2.1.3;
(vii) Extension Deposits pursuant to E.2.1.7; and
(viii) Other mandatory deposits.

(b) Failure to pay amounts due by the date allowed in the bill for collection for receipt of payment shall be considered a breach under J.3. The 30-day notice period prescribed therein shall begin to run as of the end of business on the date allowed for receipt of payments. If the performance or payment is guaranteed by surety bond, the surety will

receive a copy of the written notification of breach. Demand will be made on the surety or other institution providing the guarantee or bond instrument for immediate payment 10 days after issuance of written notification of the breach.

(c) Pursuant to the Debt Collection Improvement Act of 1996, as amended, if payment is not received by Forest Service within 15 days after the date of issue indicated on the bill for collection:

(i) Simple interest shall be assessed at the higher of the Current Value of Funds Rate or the Prompt Payment Rate as established by the Secretary of the Treasury. Interest will begin to accrue as of the date of issue indicated on the initial bill for collection.

(ii) Debtors will be assessed administrative charges, in addition to the delinquent amount due. Administrative charges are those additional costs incurred by the Government in processing, handling, and collecting delinquent debts.

(iii) A penalty charge of six (6) percent per annum will be assessed on any portion of a debt delinquent more than 90 days. This penalty charge is in addition to interest and administrative charges under paragraphs (c)(i) and (c)(ii). The penalty charge shall accrue from the date of issue indicated on the bill for collection and shall be assessed on all outstanding amounts, including interest and administrative costs assessed under paragraphs (c)(i) and (c)(ii).

(iv) Payments will be credited on the date received by the Federal Depository or Collection Officer designated on the bill for collection.

(d) Forest Service remedies for Contractor's failure to make payment for timber cut and other charges when due, except for accrual of interest, suspension of all or any part of Contractor's Operations, and administrative offset, shall be stayed for so long as:

(i) A bona fide dispute exists as to Contractor's obligation to make such payment and

(ii) Contractor files and prosecutes a timely Claim.

F.0—TRANSPORTATION FACILITIES

F.1 Authorization. Contractor is authorized to construct and maintain roads, bridges, and other transportation facilities, as needed for harvesting Included Timber and completing stewardship projects on National Forest and other lands where Forest Service has such authority. As used in this contract "construct" includes "reconstruct."

Location and construction of Specified Roads shall be in accordance with F.2. Unless otherwise provided herein, construction may be progressive during this contract. Maintenance shall be governed by F.3. The location and clearing widths of all Temporary Roads or facilities shall be agreed to in writing before construction is started. "Temporary Roads" are roads other than Specified Roads that are constructed by Contractor for the purpose of harvesting Included Timber or completing stewardship projects.

Contractor is authorized to cut and use for construction without charge construction timber designated by agreement.

F.1.1 Requirements of Rights-of-Way. Contractor's road construction and use of rights-of-way identified in attached list or K-F.1.1 shall be confined to rights-of-way and limited by the related easements and stipulations, if any, unless Contractor makes other arrangements that will not infringe upon or adversely affect the grantee's rights. Easements or right-of-way documents are available in the offices of the Forest Supervisor and District Ranger.

F.1.2 Use of Roads by Contractor. Except as provided herein, Contractor is authorized to use existing National Forest system roads and Specified Roads listed in A.7, when Forest Service determines that such use will not cause damage to the roads or National Forest resources.

If Contractor's use of an existing temporary or National Forest system road, not listed in A.7, cannot be satisfactorily accommodated without reconstruction, Contractor shall be authorized to use such road upon agreement as to the minimum reconstruction work that Contractor shall perform before hauling. When appropriate, such road shall be included in A.7 as an alternate facility under F.2.6.

K-F.1.2 lists existing roads shown on Contract Area Map that for such reasons as limitations in structural capacity, safety, and protection of soil, water, and roads:

(a) Cannot be used for log hauling or

(b) May be used only under the restrictive limitations stated therein.

F.2 Specified Roads. "Specified Roads" are roads, including related transportation facilities and appurtenances, shown on Contract Area Map and listed in A.7. Contractor shall construct Specified Roads used under this contract. Construction initiated by Contractor on any such Specified Road shall be completed to an agreed terminus that meets Contractor's needs and prevents unnecessary impact on National Forest resources. Construction to such terminus shall be in full accordance with Plans and specifications identified in A.7 or specifications and the Schedule of Items attached hereto, except for agreed adjustments needed to accommodate such terminus. For each pay unit, the "Schedule of Items" itemizes quantity of work and materials and cost, with method of measurement and basis for payment. Forest Service shall revise the Schedule of Items to show the estimated cost for the portion constructed to the revised terminus as a separate segment.

A Temporary Road shall not be constructed substantially on the location for a Specified Road, except by agreement.

In event of agreed substitution or revision of construction design, specifications, or performance responsibility under F.2.1.2, F.2.5, F.2.6, or K-F.2.1.5, A.7 shall be modified. If Contractor does not need a Specified Road or a portion of a Specified Road for harvesting Included Timber or completing stewardship projects and the Specified Road is not constructed, the deletion of the road or road segment will be a mutually agreed Design Change and Integrated Resource Account will be adjusted for the reduction in cost, as provided in F.2.5.

References in the contract to specifications, standards, or test methods adopted by the American Association of State Highway and Transportation Officials (AASHTO), American Society for Testing and Materials (ASTM), General Services Administration (GSA), or other recognized national technical associations shall mean specifications, standards, or test methods, including interim or tentative issues, that are in effect on the date of contract advertisement.

F.2.1 Engineering. Forest Service completed survey and design for Specified Roads prior to contract advertisement, unless otherwise shown in A.8 or Contractor survey and design are specified in A.7. On those roads for which Forest Service completes the design during the contract, the design quantities shall be used as the basis for revising estimated costs stated in the Schedule of Items and adjusting Integrated Resource Account.

Forest Service engineering shall be completed according to the schedule in A.8. Should Forest Service be unable to perform the designated survey and design by the completion date or other agreed to time, upon written agreement, Contractor shall assume responsibility for such work. In such event, Contracting Officer shall revise:

(a) A.7 to show Contractor's performance responsibility.

(b) The Schedule of Items to include costs of survey and design, as provided under F.2.4, and adjust Integrated Resource Account, as provided in F.2.5. Forest Service shall calculate such costs, using unit rates comparable with those used in the Schedule of Items.

Contractor shall furnish a schedule to Forest Service of specific dates for the start of construction. The schedule of construction shall be submitted to Forest Service for approval within 60 days after contract award and prior to beginning work. Contractor's construction schedule shall reflect Forest Service survey and design completion dates. Forest Service may agree to Contractor's request for an alternate date for starting construction.

Contractor shall perform survey, design, and construction staking of Specified Roads to be engineered by Contractor in accordance with specifications attached hereto. Based upon the quantities developed by such design, as approved by Forest Service, Contracting Officer shall revise the estimated costs stated in the Schedule of Items and adjust Integrated Resource Account. The methods of computing such revised costs shall be consistent with the methods that would have been used had the engineering been performed prior to contract advertisement.

F.2.1.1 Contract Plans. "Plans" are documents that show location, details, and dimensions of the work to be performed. On any of the contract Plans where a portion of the work is drawn out and the remainder is shown in outline, the parts drawn out shall apply to all other like portions of the work.

"Shop Drawings" include drawings, diagrams, layouts, schematics, descriptive literature, illustrations, lists or tables, performance and test data, and similar materials furnished by Contractor to explain in detail specific portions of the work required by the contract. Contractor shall submit a minimum of five (5) sets of required Shop Drawings to Forest Service, three (3) sets of which will be retained by Forest Service. Shop Drawings shall not exceed 24 inches by 36 inches in size. Approval or rejection and date will be noted or stamped on each set. Unless agreed otherwise, Forest Service shall approve or reject the Shop Drawings within 10 days of submission. Such approval of the Shop Drawings shall not be construed as a complete check, but will indicate only that the general method of construction and detailing is satisfactory. If the Shop Drawings are rejected, Contractor must make the noted revisions and resubmit the Shop Drawings.

A change in the amount of construction work that exceeds construction tolerances specified in the specifications identified in A.7 caused by a Forest Service error in construction staking shall be treated as a Design Change. When incompatible situations arise between Plans, specifications, and actual conditions on the ground, Contractor shall make corrections pursuant to F.2.5.3.

F.2.1.2 Construction Staking. Contractor shall avoid careless or negligent damage to construction stakes, flags, or marks. If such damage occurs, Contractor shall be required to replace stakes necessary to construction. Contractor's replacement staking shall be approved by Forest Service. Alternatively, upon Contractor's request, Contracting Officer may agree to perform such work under E.2.1.8.

When A.7 shows that construction stakes are to be set by Forest Service after clearing, Contractor shall submit to Forest Service a written schedule for clearing, construction staking, and construction that will provide Forest Service a reasonable period for setting construction stakes. Time for setting construction stakes may be modified by written agreement.

If Forest Service performs construction staking for Specified Roads, timing of such staking shall permit Contractor's clearing and other construction activity to proceed without hindrance or delay, provided Contractor's construction activity is reasonably consistent with needs identified in Contractor's Operating Schedule or amendments thereto.

Should Forest Service be unable to perform construction staking in such reasonable period, upon written agreement, Contractor shall assume the responsibility for construction staking for agreed upon portions of Specified Roads. In such event, Contracting Officer shall revise:

(a) A.7 to show Contractor's performance responsibility.

(b) The Schedule of Items to include costs of construction staking, as provided under F.2.4, and adjust Integrated Resource Account, as provided in F.2.5. Forest Service shall calculate such costs, using unit rates comparable with those used in the Schedule of Items.

F.2.2 Material Delivery. Within 60 days after award date, Contractor shall provide Forest Service a written schedule showing the desired delivery dates of any material to be supplied by Forest Service. With reasonable notice, schedule may be amended by agreement. Forest Service agrees to make delivery within 15 days after the scheduled delivery dates that are at least 60 days after the schedule is submitted, unless prevented by causes beyond control of Forest Service.

If Contractor does not provide Forest Service the written schedule within the period provided in this Subsection, Forest Service agrees to make delivery within 90 days after a late schedule is submitted, unless prevented by causes beyond control of Forest Service. After delivery to and written receipt by Contractor, Contractor is responsible for installation of needed material and for any loss of or damage to such material due to Contractor's negligence prior to installation or return of unused material to Forest Service.

At Contractor's option, Forest Service deliveries shall be to Contractor's storage area, as agreed, or to the nearest practicable point to the job site along existing roads. Unused material shall be returned to Forest Service at location of delivery, unless agreed otherwise.

F.2.3 Use of Partially Constructed Roads. Unless Contracting Officer determines that there is justification under existing conditions and ground conditions permit hauling without undue damage, portions of Specified Roads shall be Substantially Completed prior to their use for hauling timber. When necessary to facilitate construction and protect bridges and roads from damage, timber felled in construction and timber logged directly to the road from areas immediately adjacent thereto may be hauled before road construction is Substantially Completed. Such hauling shall be confined to periods when abnormal soil erosion and damage to National Forest lands will not result.

"Substantially Completed" means:

(a) Completion of grading and installation of drainage structures so they will function effectively and

(b) Laying the specified depth of base course, if any, unless Contracting Officer determines that physical conditions make it impractical or ground conditions permit hauling without undue damage.

No more than half of Included Timber to be hauled over such portions of road shall be hauled until the base course has been applied.

Unless agreed otherwise, specified reconstruction shall be completed on any portion of road prior to hauling on that portion.

F.2.4 Estimated Cost. Estimated costs by construction phases for Specified Roads listed in A.7 are stated by segments in the Schedule of Items. Such estimated costs are subject to adjustment under D.3, F.2, F.2.1, F.2.1.2, F.2.5, and F.2.6. Appropriately adjusted costs shall be made a part of a revised Schedule of Items and shown as adjustments to Integrated Resource Account. The revised Schedule of Items shall supersede any prior Schedule of Items when it is dated and signed by Contracting Officer and a copy is furnished to Contractor.

F.2.5 Construction Cost Adjustment. Contracting Officer, as provided in F.2.1, F.2.1.2, F.2.5.1, F.2.5.2, and F.2.5.3, shall adjust Specified Road construction cost estimates in the Schedule of Items and show the adjustments as credits or debits to Integrated Resource Account in the month when the road segment is accepted.

F.2.5.1 Variation in Quantities. (a) This Item applies only to differences between quantities shown in the Schedule of Items and measured quantities actually constructed and accepted that are not covered under F.2.5.2 or F.2.5.3. Only changes in quantities where other than contract quantities or lump sum is specified in the Schedule of Items are subject to this Item.

(b) Adjustments to the Specified Road construction cost for variation in quantities shall be computed at unit rates established in the Schedule of Items for units of work actually constructed and measured in accordance with specified method of measurement shown in the Schedule of Items and described in the specifications identified in A.7, except that:

(i) When quantity of authorized work performed or material furnished by Contractor, under any item shown in the Schedule of Items and covered by this Item, is more than 115 percent of original quantity, use Current Unit Rates to calculate the adjustment for that portion of work above 115 percent of original quantity.

(ii) When quantity of authorized work performed or material furnished by Contractor, under any item shown in the Schedule of Items and covered by this Item, is less than 85 percent of original quantity, Forest Service shall make a revised estimate of cost for such work. Any revised estimate shall use the same procedures as those used in original estimates using rates comparable to those used in computing the most recent cost estimate for the contract. The revised cost estimate shall take into account any increase or decrease in unit rates that results from a reduction in quantity of work.

(c) “Current Unit Rates” are Forest Service estimates of the unit rates for doing the work at the time the adjustment is approved.

F.2.5.2 Physical Change. (a) Forest Service shall adjust the Specified Road construction cost if, prior to acceptance under G.3.6, a physical change, caused by a single event and not due to negligence of Contractor, results in an increase or decrease in work and/or materials furnished by Contractor involving additional estimated cost of:

(i) More than $10,000 or

(ii) More than 10 percent of total Specified Road construction cost, whichever is less.

(b) Increases to the Specified Road construction cost shall include cumulative estimated costs of repairing damage from things such as slides, washouts, landslips, and fire. Plans and specifications shall be revised when necessary to meet new conditions. Quantities of work and/or materials determined from such revised Plans and specifications, together with estimated quantities of work and/or materials abandoned, shall be the basis for the revised Specified Road construction cost.

(c) Forest Service shall determine difference in quantities for portions of Specified Road affected by physical change by comparing most recent previous quantities with total of:

(i) Estimated quantities actually constructed prior to physical change, including work abandoned, and

(ii) Estimated quantities to be constructed following physical change.

(d) Forest Service shall calculate the amount of increase to the Specified Road construction cost by applying:

(i) Current Unit Rates to differences when quantities increase and

(ii) Unit rates comparable to those used in computing most recent cost estimate for the contract when quantities decrease.

(e) When quantity of authorized work to be performed or material furnished by Contractor, under any item shown in the Schedule of Items, is reduced to less than 85 percent of original quantity, Forest Service shall make a revised estimate of cost for such work and adjust the Specified Road construction cost. Any revised estimate shall use the same procedures as those used in the original estimates using rates comparable to those used in the most recent cost estimate for the contract. The revised estimate shall take into account any increase or decrease in unit rates that results from a reduction in quantity of work.

F.2.5.3 Design Change. (a) “Design Change” is a change in work and/or materials shown in the Schedule of Items and described in Plans or specifications that has been mutually agreed to in writing or ordered by Contracting Officer. Changes of a minor nature (such as adjustment in horizontal and vertical alignment, that do not exceed specified tolerance, necessary to maintain or balance earthwork quantities substantially as designed) and variation in quantities, as described in F.2.5.1, shall not be considered Design Changes.

(b) Additions, deletions, or changes in types or diameter of culverts shown in Plans and changes in designated water sources shown on Plans shall be considered Design Changes.

(c) Forest Service may, by written notice from Contracting Officer, order changes in work to be performed and/or materials to be furnished by Contractor within general scope of the contract. Such work shall:

(i) Be due to differences between anticipated and actual field conditions,

(ii) Be necessary to construct Specified Roads to design standards, or

(iii) Be necessary to assure stability of Specified Roads.

(d) In addition, Contracting Officer may include work to protect resource values in ordered Design Changes. Such work must be related to construction of Specified Roads and be necessary to prevent damage to soil and water values immediately tributary to Specified Roads. Other Design Changes may be made by mutual written agreement.

(e) Forest Service shall revise Plans and specifications as necessary to meet new conditions. Quantities of work and/or materials determined from such revised Plans and specifications, together with quantities of work and/or materials abandoned, shall be the basis for adjusting the Specified Road construction cost.

(f) Forest Service shall determine the difference in quantities for the portion of Specified Road affected by Design Change by comparing the most recent previous quantities with the total of:

(i) Estimated quantities actually constructed prior to Design Change and

(ii) Estimated quantities to be constructed following Design Change.

(g) Calculate the amount of adjustment to the Specified Road construction cost by applying:

(i) Current Unit Rates to difference when quantities increase and

(ii) Unit rates comparable to those used in computing most recent cost estimates of the contract when quantities decrease.

(h) When quantity of authorized work to be performed or material furnished by Contractor, under any item shown in the Schedule of Items, is reduced to less than 85 percent of original quantity, Forest Service shall make a revised estimate of cost of such work and adjust the Specified Road construction cost. Any revised estimate shall use the same procedures as those used in original estimates using rates comparable to those used in the most recent cost estimate for the contract. The revised estimate shall take into account any increase or decrease in unit rates that results from a reduction in quantity of work.

F.2.6 Alternate Facilities. If under Contractor's Operating Schedule, roads needed for the removal of Included Timber differ substantially from Specified Roads, other roads may be added to A.7. Contracting Officer shall assure that road routing, location, design, and needed easements will make such other roads acceptable as parts of the National Forest transportation facilities. Contractor shall provide survey, design, and construction staking for such other roads.

Based on design quantities from such engineering, Forest Service shall estimate Specified Road construction costs of alternate facilities, using methods consistent with those used in the original computation of the Schedule of Items. If Specified Road construction costs for acceptable alternate facilities are less than the estimated costs of facilities listed in the original Schedule of Items that Contractor does not construct, Integrated Resource Account shall be adjusted by Forest Service to reflect the reduction in costs. In event of rate redetermination under D.3, such allowed costs shall be the redetermined estimated costs of facilities listed in the original Schedule of Items that Contractor does not construct.

F.2.7 Temporary Credit for Unamortized Specified Road Construction Cost. When, under I.3.3, Contracting Officer requests Contractor to delay or interrupt Contractor's Operations for more than 90 days, the unamortized cost of Specified Roads shall be credited to Contractor's Integrated Resource Account upon the written request of Contractor or at the discretion of Contracting Officer. The amount credited to Contractor shall be limited to stumpage paid above Base Rates.

Any Specified Road construction cost credited to Contractor pursuant to this Subsection may be refunded or transferred at the request of Contractor. However, if Contractor has outstanding debt owing the United States, Contracting Officer must apply the amount of credit that could be refunded to the debt owed in accordance with the Debt Collection Improvement Act, as amended.

Upon written notice from Contracting Officer that the basis for the delay or interruption no longer exists, Contractor shall pay for timber a per unit amount, in addition to Current Contract Rates, that is equal to the amount credited to Contractor's Integrated Resource Account divided by 80 percent of the estimated remaining volume of the contract, until the full amount credited to Contractor has been returned.

F.3 Road Maintenance. Contractor shall maintain roads, commensurate with Contractor's use, in accordance with Road Maintenance Requirements in K-F.3.1 and the Road Maintenance Specifications. Performance of road maintenance work by Contractor may be required prior to, during, or after each period of use. The timing of work accomplishment shall be based on Contractor's Operating Schedule under G.3.1.

When two or more commercial users are simultaneously using the same road where Forest Service is not requiring maintenance deposits, the commercial users will develop maintenance responsibilities and arrangements for accomplishing the work. Forest Service must agree to this plan. If the commercial users cannot agree on maintenance responsibilities, Forest Service shall resolve the differences.

If Contractor elects to use different roads than those listed in K-F.3.1, Forest Service shall determine Contractor's commensurate share of road maintenance and revise road maintenance deposits in K-F.3.2.

If Forest Service cannot perform its full commensurate share of road maintenance, Forest Service shall make a cash payment to Contractor for performance of such work.

Unless agreed in writing, prehaul maintenance shall be completed on any portion of road prior to hauling on that portion. Maintenance, as used in this contract, does not include road reconstruction or repairs of an extraordinary nature.

F.4 Use by Others. Forest Service shall have the right to use any road constructed by Contractor under this contract for any and all purposes in connection with the protection and administration of the National Forest. Other parties, in connection with the logging of tributary National Forest timber, may use roads constructed by Contractor hereunder when Contracting Officer determines that such use will not materially interfere with Contractor's Operations. Third party use shall be contingent upon Contracting Officer determining, and third party agreeing to pay, a fair share of maintenance cost commensurate with such commercial use.

Unless otherwise provided in K-F.4, Forest Service shall authorize other uses of roads constructed by Contractor hereunder only if:

(a) Contracting Officer makes appropriate arrangements to relieve Contractor of related maintenance costs commensurate with such other uses and

(b) Such other uses will not materially interfere with Contractor's Operations.

Where Contractor reconstructs a road having established use, Contractor's use during reconstruction and thereafter shall be such as to reasonably accommodate such established use. Contracting Officer shall ensure that other users do not materially interfere with Contractor's right to use such reconstructed road.

G.0—OPERATIONS

G.1 Representatives. Unless otherwise agreed, Contractor shall designate, in writing, a representative who is authorized to receive notices in regard to performance under this contract and take related action. In no case shall Contractor designate any representative to this contract who is currently debarred, proposed for debarment, or sus-

pended by the Federal Government. Contractor's representative shall provide a copy of the contract to Contractor's field supervisor and persons authorized to assume responsibilities in the field supervisor's absence. Prior to initial operations and after shutdowns of 10 days or more, Contractor's representative shall notify Forest Service 2 days, excluding weekends and Federal holidays, before any operations begin on Contract Area.

Contractor's representative shall designate, in writing, a field supervisor, one of whose responsibilities shall be on-the-ground direction and supervision of Contractor's Operations. The field supervisor shall be readily available to the area of operations when operations are in progress and shall be authorized to receive notices in regard to performance under this contract and take related action. The responsibilities of the field supervisor shall include the safeguarding of National Forest resources and performance within the terms of the contract. Contractor representative will furnish Forest Service with names of persons authorized to assume responsibilities in field supervisor's absence. Such delegations may be made a part of Contractor's annual Operating Schedule under G.3.1.

Unless Contracting Officer designates another Forest Service representative and notifies Contractor in writing, the District Ranger is the representative of Forest Service. Forest Service representative shall:

(a) Receive notice in regard to performance under this contract,
(b) Take action in relation to this contract, and
(c) Be readily available to the area of construction, stewardship project work, and logging operations.

Contracting Officer or Forest Service representative shall designate other on-the-ground representatives in writing along with their specific contractual responsibilities and authority. Representatives with authority delegated in writing are the only Forest Service personnel authorized to provide notice or take related actions under the contract. Such delegation shall be made within 60 days of contract award.

G.1.1 Notices. Notices by either party as to action taken or to be taken by the other respecting this contract shall be made in writing to the other party's designated representative.

G.2 Improvements. Contractor is authorized to construct on National Forest land, buildings, facilities, and other improvements needed to log Included Timber and complete stewardship projects. Such construction shall be located where approved in writing by Forest Service and shall be constructed and used in a manner that will protect National Forest values.

Contractor shall comply with the rules and regulations governing the operation of premises that are occupied and shall perform the contract in a manner that will not interrupt or interfere with the conduct of Forest Service business.

Forest Service shall grant written permission before any camp, quarry, borrow pit, storage, or service area, other than as shown on Plans, is opened or operated on National Forest land or administered lands. A camp is interpreted to include the campsite or trailer parking area of any employee, agent, Subcontractor, or their employees or agents working on the project for Contractor. Such permission, if granted, shall be without charge to Contractor.

G.2.1 Removal. Unless Forest Service authorizes continued use, Contractor shall remove or dispose of all improvements when no longer needed. Should Contractor fail to remove or dispose of improvements within 6 months after Termination Date, Forest Service may dispose of improvements at Contractor's expense under J.5 or may, upon written notice to Contractor, assume title to improvements in the name of the United States. In the latter event, Contractor shall not be required to remove such improvements.

G.2.2 Protection of Improvements. So far as practicable, Contractor shall protect Specified Roads and other improvements (such as roads, trails, telephone lines, ditches, and fences):

(a) Existing in the operating area,
(b) Determined to have a continuing need or use, and
(c) Designated on Contract Area Map.

Contractor shall keep roads and trails needed for fire protection or other purposes and designated on Contract Area Map reasonably free of equipment and products, slash, and debris resulting from Contractor's Operations. Contractor shall make timely restoration of any such improvements damaged by Contractor's Operations and, when necessary because of such operations, shall move such improvements, as specified in K-G.2.2.

G.2.2.1 Protection of Improvements Not Owned by Forest Service. Forest Service will notify all utility companies, or other parties affected, and make arrangements for all necessary adjustments of the public utility fixtures, pipelines, and other appurtenances likely to be affected by Contractor's Operations.

When Contractor's Operations are adjacent to properties of railway, telephone, or power companies, or other property, work shall not begin until Contractor has identified actions necessary to prevent damage.

Contractor shall cooperate with the owners of any underground or overhead utility lines in their removal and/or rearrangement operations in order that these operations may progress in a reasonable manner, utility duplication or rearrangement work may be reduced to a minimum, and services shall not be unnecessarily interrupted.

In the event of interruption to utility services because of accidental breakage or as a result of lines being exposed or unsupported, Contractor shall promptly notify the proper authority and shall cooperate with that authority in the restoration of service until the service is restored.

When materials are to be hauled across the tracks of any railway, Forest Service will make arrangements with the railroad for the use of any existing crossing or for any new crossing required. Contractor shall make arrangements for

use of alternate crossings. All construction work to be performed by Contractor on the railroad right-of-way shall not damage railroad company's property.

G.2.2.2 Protection of Property. In construction and reconstruction of Specified Roads, Contractor shall not unnecessarily remove, deface, injure, or destroy trees, shrubs, or other natural features, unless specifically authorized. To the extent practicable, Contractor shall confine operations to within the clearing limit or other areas designated in the contract and prevent the depositing of rocks, excavated materials, stumps, or other debris outside these limits.

Material that falls outside these limits shall be retrieved, disposed of, or incorporated in the work to the extent practicable and necessary to protect adjacent resource values, unless otherwise agreed.

G.2.3 Protection of Land Survey Monuments. Forest Service shall appropriately designate on the ground all known survey monuments, section corners, and other corner accessories. Forest Service shall post identifying signs on two sides of each known bearing tree.

Forest Service shall arrange protective or perpetuative action that does not cause unnecessary delay to Contractor in authorized clearings, such as Clearcutting Units and road construction, and in other instances where damage to monuments, section corners, and other corner accessories is unavoidable.

Contractor shall protect all known survey monuments, witness corners, reference monuments, and bearing trees against avoidable destruction, obliteration, or damage during Contractor's Operations. If any known monuments, corners, or accessories are destroyed, obliterated, or damaged by Contractor's Operations, Contractor shall hire the appropriate county surveyor or a registered land surveyor to reestablish or restore at the same location the monuments, corners, or accessories. Such surveyors shall use procedures in accordance with the Bureau of Land Management "Manual of Instructions for the Survey of the Public Lands of the United States" for General Land Office surveys and in accordance with State law for others. Contractor shall record such survey in appropriate county records.

G.2.4 Protection Measures Needed for Plants, Animals, Cultural Resources, and Cave Resources. Locations of known areas needing special measures for the protection of plants, animals, cultural resources, and/or cave resources are shown on Contract Area Map and/or identified on the ground. Special protection measures needed to protect such known areas are identified in K-G.2.4.

In addition to any special protection measures noted, Contractor has a general duty to protect all known and identified resources referenced in this Subsection from damage or removal during Contractor's Operations. Discovery of additional areas, resources, or members of species needing special protection shall be promptly reported to the other party, and operations shall be delayed or interrupted at that location, under I.3.3, if Contracting Officer determines there is risk of damage to such areas, resources, or species from continued operations.

Wheeled or track-laying equipment shall not be operated in areas identified as needing special measures for the protection of cultural resources, except on roads, landings, tractor roads, or skid trails approved under F.1 or G.4.2.2. Unless agreed otherwise, trees will not be felled into such areas. Contractor may be required to backblade skid trails and other ground disturbed by Contractor's Operations within such areas in lieu of cross ditching required under G.6.

Contractor shall immediately notify Forest Service if disturbance occurs to any area identified as needing special protection measures and shall immediately halt operations in the vicinity of the disturbance until Forest Service authorizes Contractor to proceed. Contractor shall bear costs of resource evaluation and restoration to identified sites. Such payment shall not relieve Contractor from civil or criminal liability otherwise provided by law.

Nothing in this Subsection shall be interpreted as creating any warranty that all locations and special measures for the protection of plants, animals, cultural resources, and cave resources have been described herein, elsewhere in the contract, or designated on the ground.

G.3 Control of Operations. Under this contract, "Contractor's Operations" shall include activities of or use of equipment of Contractor, Contractor's employees, agents, Subcontractors, or their employees or agents, acting in the course of their employment in operations hereunder on National Forest lands or within Forest Service protection boundary (unless acting under the immediate supervision of Forest Service).

Contractor's Operations shall be conducted in a workmanlike and orderly manner. The timing of required Forest Service designation of work on the ground and the performance of other Forest Service work shall not be such as to cause unnecessary delay to Contractor.

G.3.1 Operating Schedule. Contractor shall, before commencing operations, provide in writing an annual Operating Schedule of anticipated major activities and needs for logging Included Timber and completing stewardship projects, such as logging, road maintenance, Scaling, and road construction, including construction staking under F.2.1.2 and material delivery under F.2.2. Upon reasonable notice to Forest Service, such schedule shall be subject to modifications necessitated by weather, markets, or other unpredictable circumstances.

Subject to G.6 and when the requirements of G.6.6 are met, Contractor's Operations may be conducted outside Normal Operating Season. "Normal Operating Season" is the period(s) beginning and ending on the dates stated in A.16 of any year.

G.3.1.1 Inclusion of Technical Proposal. Upon execution of the contract, all elements of the Technical Proposal accepted by Forest Service become binding parts of the contract, including, but not limited to, planned peri-

ods for and methods of road construction, timber harvesting, performance of stewardship projects, slash disposal, erosion control measures, and other contractual requirements. In addition, Contractor may not substitute a Subcontractor that has been accepted in the Technical Proposal with an alternate Subcontractor, unless Contracting Officer agrees to substitution.

Contractor may revise this Technical Proposal when necessitated by weather, markets, or other unforseen circumstances beyond the Contractor's control, subject to approval of Contracting Officer. In the event of delays beyond the control of Contractor that qualify for Contract Term Adjustment, the Technical Proposal shall be adjusted by mutual agreement to accommodate the adjusted contract period.

G.3.1.2 Plan of Operations for Road Construction. Annually, prior to start of construction, Contractor shall submit a supplement to the Technical Proposal that shall include a schedule of proposed progress and a description of planned measures to be taken to provide erosion control for work in progress, including special measures to be taken on any segments of construction not Substantially Completed prior to periods of seasonal precipitation or runoff. Contractor shall submit a revised schedule when Contractor proposes a significant deviation from the progress schedule.

Prior to beginning construction on any portion of Specified Roads identified as sensitive on Plans, Contractor and Forest Service shall agree on proposed method of construction.

G.3.2 Protection of Residual Trees. Contractor's Operations shall not unnecessarily damage young growth or other trees to be reserved.

G.3.3 Safety. Contractor's Operations shall facilitate Forest Service's safe and practical inspection of Contractor's Operations and conduct of other official duties on Contract Area. Contractor has all responsibility for compliance with safety requirements for Contractor's employees.

In the event that Contracting Officer identifies a conflict between the requirements of this contract or agreed upon methods of proceeding hereunder and State or Federal safety requirements, the contract shall be modified and Contractor may request an adjustment in Current Contract Rates to compensate for the changed conditions.

Unless otherwise agreed in writing, when Contractor's Operations are in progress adjacent to or on Forest Service controlled roads and trails open to public travel, Contractor shall furnish, install, and maintain all temporary traffic controls that provide the user with adequate warning of hazardous or potentially hazardous conditions associated with Contractor's Operations. Contractor and Forest Service shall agree to a specific Traffic Control Plan for each individual project prior to commencing operations. Devices shall be appropriate to current conditions and shall be covered or removed when not needed. Except as otherwise agreed, flagmen and devices shall be as specified in the "Manual on Uniform Traffic Control Devices for Streets and Highways" (MUTCD) and as shown on Plans, Contract Area Map, Traffic Control Plan, or in specifications attached hereto.

G.3.4 Sanitation and Servicing. Contractor shall take all reasonable precautions to prevent pollution of air, soil, and water by Contractor's Operations. If facilities for employees are established on Contract Area, they shall be operated in a sanitary manner. In the event that Contractor's Operations or servicing of equipment result in pollution to soil or water, Contractor shall conduct cleanup and restoration of the polluted site to the satisfaction of Forest Service.

Contractor shall maintain all equipment operating on Contract Area in good repair and free of abnormal leakage of lubricants, fuel, coolants, and hydraulic fluid. Contractor shall not service tractors, trucks, or other equipment on National Forest lands where servicing is likely to result in pollution to soil or water. Contractor shall furnish oil-absorbing mats for use under all stationary equipment or equipment being serviced to prevent leaking or spilled petroleum-based products from contaminating soil and water resources. Contractor shall remove from National Forest lands all contaminated soil, vegetation, debris, vehicle oil filters (drained of free-flowing oil), batteries, oily rags, and waste oil resulting from use, servicing, repair, or abandonment of equipment.

G.3.4.1 Prevention of Oil Spills. If Contractor maintains storage facilities for oil or oil products on Contract Area, Contractor shall take appropriate preventive measures to ensure that any spill of such oil or oil products does not enter any stream or other waters of the United States or any of the individual States.

If the total oil or oil products storage exceeds 1,320 gallons in containers of 55 gallons or greater, Contractor shall prepare a Spill Prevention Control and Countermeasures Plan. Such plan shall meet applicable EPA requirements (40 CFR 112), including certification by a registered professional engineer.

Contractor shall notify Contracting Officer and appropriate agencies of all reportable (40 CFR 110) spills of oil or oil products on or in the vicinity of Contract Area that are caused by Contractor's employees, agents, Subcontractors or their employees or agents, directly or indirectly, as a result of Contractor's Operations. Contractor will take whatever initial action may be safely accomplished to contain all spills.

G.3.4.2 Hazardous Substances. Contractor shall notify the National Response Center and Contracting Officer of all releases of reportable quantities of hazardous substances on or in the vicinity of Contract Area that are caused by Contractor's employees, agents, Subcontractors or their employees or agents, directly or indirectly, as a result of Contractor's Operations, in accordance with 40 CFR 302.

G.3.5 Equipment Cleaning. (a) Areas, known by Forest Service prior to contract advertisement, that are infested with invasive species of concern are shown on Contract Area Map. A current list of invasive species of concern and a map showing the extent of known infestations is available at the Forest Supervisor's Office.

(b) Contractor shall not move any Off-Road Equipment, which last operated in an area that is infested with one or more invasive species of concern onto Contract Area without having first taken reasonable measures to make each such piece of equipment free of soil, seeds, vegetative matter, or other debris that could contain or hold seeds. Contractor shall identify the location of the equipment's most recent operations. If the prior location of the Off-Road Equipment cannot be identified, Forest Service will assume that it is infested with seeds of invasive species of concern. In addition, prior to moving Off-Road Equipment from an area on this contract that is shown on Contract Area Map to be infested with invasive species of concern to any other area that is indicated on Contract Area Map as being free of invasive species of concern, Contractor shall again take reasonable measures to make each such piece of equipment free of soil, seeds, vegetative matter, or other debris that could contain or hold seeds.

(c) Contractor must advise Forest Service of measures taken to clean Off-Road Equipment and arrange for Forest Service inspection prior to such equipment being placed in service or moved from areas infested with invasive species of concern to areas that are free of such invasive species. Forest Service shall have 2 days, excluding weekends and Federal holidays, to inspect equipment after it has been made available for inspection. After inspection or after 2 days, Contractor may proceed with operations. Reasonable measures shall not require the disassembly of equipment components or use of any specialized inspection tools. Equipment shall be considered free of soil, seeds, and other such debris when a visual inspection does not disclose such material.

(d) "Off-Road Equipment" includes all logging and construction machinery, except for log trucks, chip vans, service vehicles, water trucks, pickup trucks, cars, and similar vehicles.

(e) If Contractor desires to clean Off-Road Equipment on National Forest land, such as at the end of a project or prior to moving to a new area that is free of invasive species of concern, Contractor and Forest Service shall agree on locations for the cleaning and control of off-site impacts, if any.

(f) New infestations of invasive species of concern to Forest Service, identified by either Contractor or Forest Service on Contract Area, shall be promptly reported to the other party and operations shall be delayed or interrupted at that location, under I.3.3, until Contractor and Forest Service agree on treatment methods.

(g) Nothing in this Subsection shall be interpreted as creating any warranty that all locations of invasive species of concern have been described herein, elsewhere in the contract, or designated on the ground.

G.3.6 Acceptance of Work. Upon Contractor's written request and assurance that work has been completed, Forest Service shall perform an inspection within 5 days, excluding weekends and Federal holidays, so as not to delay unnecessarily the progress of Contractor's Operations. Such a request may be for acceptance of:

(a) Any reasonable portion of Specified Road listed in the Schedule of Items;

(b) Specific requirements on a subdivision of Contract Area (such as logging, stewardship project operations, slash disposal, erosion control, or snag felling); or

(c) All contract requirements on a subdivision of Contract Area.

Forest Service may perform such inspections without request from Contractor.

Within 2 days of inspection, excluding weekends and Federal holidays, Forest Service shall furnish Contractor with written notice either of acceptance or of work remaining to be done.

In the event that Forest Service is unable to make such inspection within 5 days of Contractor's request, Contractor shall be notified in writing of necessity for postponement and time when inspection can be made. The same final approval procedure shall be used at the end of Contractor's construction period on any completed portion of road.

When all contractual work of Contractor has been accepted for any subdivision of Contract Area or cutting unit or stewardship project area identified on Contract Area Map, such area shall be eliminated from Contract Area on written notice of either party to this contract, unless such area is a portion of a larger work area. In the latter circumstance, such area may be eliminated only by agreement.

G.3.6.1 Acceptance of Specified Roads. Specified Road work may be accepted subject to completion of clearing work that does not affect the road structure when completion is delayed for reasons beyond control of Contractor, such as adverse weather.

Specified Road work may be accepted subject to completion of planting and seeding for soil stabilization when completion is delayed for reasons beyond control of Contractor, such as seasonal limitations. Contractor shall complete planting or seeding on such road during the next suitable planting season.

Specified Road work may be conditionally accepted prior to the application of dust palliatives when application is not necessary to prevent dusting of the road surface due to climatic conditions. Contractor shall apply dust palliative on such roads prior to use during periods when dusting may occur.

Prior to request for final inspection, Specified Road work, roadways, borrow pits, and quarries, occupied and no longer needed by Contractor in connection with Contractor's Operations, shall be cleared of all rubbish, excess materials, and temporary structures.

G.4 Conduct of Logging. Unless otherwise specifically provided herein, Contractor shall fell trees designated for cutting and shall remove the portions that meet Utilization Standards, as provided in C.2, prior to acceptance of subdivision for completion of logging and stewardship projects under G.3.6. Forest Service may make exceptions for occasional trees inadvertently not cut or trees or pieces not removed for good reason, including possible damage to forest resources or gross economic impracticability at the time of removal of other timber. Logging shall be conducted in accordance with the following, unless K-G.4 provisions set forth requirements to meet special or unusual logging conditions:

G.4.1 Felling and Bucking. Felling shall be done to minimize breakage of Included Timber and damage to residual timber. Unless agreed otherwise, felling shall be done by saws or shears. Bucking shall be done to permit removal of all minimum pieces set forth in A.2. Contractor may buck out cull material when necessary to produce pieces meeting Utilization Standards. Such bucked out material shall contain a minimum amount of sound wood, not in excess of the net scale in percentage of gross scale, or based on the merchantability factor, whichever is stated in A.2. If necessary to assess extent of defect, Contractor shall make sample saw cuts or wedges.

G.4.1.1 Felling in Clearings. Insofar as ground conditions, tree lean, and shape of clearings permit, trees shall be felled so that their tops do not extend outside Clearcutting Units, construction clearings, and areas of regeneration cutting.

G.4.1.2 Stump Heights. Stumps shall not exceed, on the side adjacent to the highest ground, the maximum heights set forth in A.6, except that occasional stumps of greater heights are acceptable when Contractor determines that they are necessary for safe and efficient conduct of logging. Unless otherwise agreed, Contractor shall re-cut high stumps so they will not exceed heights specified in A.6 and shall dispose of severed portions in the same manner as other logging debris. The stump heights shown in A.6 were selected with the objective of maximum reasonable utilization of the timber, unless Contract Area Map shows special areas where stump heights are lower for aesthetic, land treatment, or silvicultural reasons.

G.4.1.3 Bucking Lengths. Trees shall be bucked in various lengths to obtain the greatest utilization of material meeting Utilization Standards.

G.4.1.4 Limbing. When Forest Service determines it is necessary to minimize damage to the residual stand during skidding, Contractor shall cut exposed limbs from products prior to skidding. Contractor may leave uncut those limbs that cannot be cut with reasonable safety.

G.4.2 Skidding and Yarding. Methods of skidding or yarding specified for particular areas, if any, are indicated on Contract Area Map. Outside Clearcutting Units and construction clearings, insofar as ground conditions permit, products shall not be skidded against reserve trees or groups of reproduction and tractors shall be equipped with a winch to facilitate skidding.

G.4.2.1 Rigging. Insofar as practicable, needed rigging shall be slung on stumps or trees designated for cutting.

G.4.2.2 Landings and Skid Trails. Location of all landings, tractor roads, and skid trails shall be agreed upon prior to their construction. The cleared or excavated size of landings shall not exceed that needed for efficient skidding and loading operations.

G.4.2.3 Skidding on Roads. Products may be skidded on permanent roads authorized for hauling under F.1.2 only by prior written agreement.

G.4.2.4 Arches and Dozer Blades. Unless otherwise specified in K-G.4.2.4, skidding tractors equipped with pull-type arches or dozer blades wider than tractor width or C-frame width, whichever is greater, shall not be used in residual timber outside Clearcutting Units and other authorized clearings, except on constructed tractor roads or landings, unless there is written agreement that residual timber will not be damaged materially by such use.

G.5 Streamcourse Protection. "Streamcourses" that are subject to provisions of this Section are shown on Contract Area Map. Unless otherwise agreed, the following measures shall be observed to protect Streamcourses:

(a) Contractor's Operations shall be conducted to prevent debris from entering Streamcourses, except as may be authorized under paragraph (d). In event Contractor causes debris to enter Streamcourses in amounts that may adversely affect the natural flow of the stream, water quality, or fishery resource, Contractor shall remove such debris as soon as practicable, but not to exceed 2 days, and in an agreed manner that will cause the least disturbance to Streamcourses.

(b) Culverts or bridges shall be required on Temporary Roads at all points where it is necessary to cross Streamcourses. Such facilities shall be of sufficient size and design and installed in a manner to provide unobstructed flow of water and to minimize damage to Streamcourses. Trees or products shall not be otherwise hauled or yarded across Streamcourses unless fully suspended.

(c) Wheeled or track-laying equipment shall not be operated in Streamcourses, except at crossings designated by Forest Service or as essential to construction or removal of culverts and bridges.

(d) Flow in Streamcourses may be temporarily diverted only if such diversion is necessary for Contractor's planned construction and Forest Service gives written authorization. Such flow shall be restored to the natural course as soon as practicable and, in any event, prior to a major storm runoff period or runoff season.

G.6 Erosion Prevention and Control. Contractor's Operations shall be conducted reasonably to minimize soil erosion. Equipment shall not be operated when ground conditions are such that excessive damage will result. Contractor shall adjust the kinds and intensity of erosion control work done to ground and weather conditions and the need for controlling runoff. Erosion control work shall be kept current immediately preceding expected seasonal periods of precipitation or runoff.

If Contractor fails to do seasonal erosion control work prior to any seasonal period of precipitation or runoff, Forest Service may temporarily assume responsibility for the work and any unencumbered deposits hereunder may be used by Forest Service to do the work. If needed for such work, Contractor shall make additional deposits on request by Forest Service. Any money deposited or used for this purpose shall be treated as cooperative deposits under E.2.1.8.

G.6.1 Meadow Protection. Reasonable care shall be taken to avoid damage to the cover, soil, and water in meadows shown on Contract Area Map. Vehicular or skidding equipment shall not be used on meadows, except where roads, landings, and tractor roads are approved under F.1 or G.4.2.2. Unless otherwise agreed, trees felled into meadows shall be removed by endlining. Resulting logging slash shall be removed where necessary to protect cover, soil, and water.

G.6.2 Wetlands Protection. Wetlands requiring protection under Executive Order 11990 are shown on Contract Area Map. Vehicular or skidding equipment shall not be used in such wetlands, except where roads, landings, and tractor roads are approved under F.1 or G.4.2.2. Additional measures needed to protect such areas are provided in K-G.6.2.

G.6.3 Temporary Roads. As necessary to attain stabilization of roadbed and fill slopes of Temporary Roads, Contractor shall employ such measures as outsloping, drainage dips, and water-spreading ditches.

After a Temporary Road has served Contractor's purpose, Contractor shall give notice to Forest Service and shall remove bridges and culverts, eliminate ditches, outslope roadbed, remove ruts and berms, effectively block the road to normal vehicular traffic where feasible under existing terrain conditions, and build cross ditches and water bars, as staked or otherwise marked on the ground by Forest Service. When bridges and culverts are removed, associated fills shall also be removed to the extent necessary to permit normal maximum flow of water.

G.6.3.1 Temporary Roads to Remain Open. To maintain short term access to portions of Contract Area for post-contract treatments and other purposes after a Temporary Road has served Contractor's purpose, pursuant to G.6.3, Contractor agrees, that on Temporary Roads designated on Contract Area Map as "Remain Open," to construct cross ditches and water bars, as designated, staked, or otherwise directed by Forest Service, that can be traversed by a normal two-wheel drive pickup truck. On "Remain Open" Temporary Roads, all bridges and culverts shall remain in place and ditches shall not be eliminated. All drainage structures shall be left in functional condition.

G.6.4 Landings. After landings have served Contractor's purpose, Contractor shall ditch and slope them to permit water to drain or spread. Unless agreed otherwise, cut and fill banks around landings shall be sloped to remove overhangs and otherwise minimize erosion.

G.6.5 Skid Trails and Fire Lines. Contractor shall construct cross ditches and water-spreading ditches on tractor roads and skid trails, where staked or otherwise marked on the ground by Forest Service. Forest Service shall designate cross ditching on Contractor-built fire lines prior to or during construction. By agreement, Contractor may use other comparable erosion control measures, such as backblading skid trails, in lieu of cross ditching.

G.6.6 Current Operating Areas. Where logging, road construction, or other stewardship project work is in progress but not completed, unless agreed otherwise, Contractor shall, before operations cease annually, remove all temporary log culverts and construct temporary cross drains, drainage ditches, dips, berms, culverts, or other facilities needed to control erosion.

Such protection shall be provided, prior to end of a Normal Operating Season, for all disturbed, unprotected ground that is not to be disturbed further prior to end of operations each year, including roads and associated fills, tractor roads, skid trails, and fire lines. When weather permits operations after Normal Operating Season, Contractor shall keep such work on any additional disturbed areas as up to date as practicable.

G.6.7 Erosion Control Structure Maintenance. During the period of this contract, Contractor shall provide maintenance of soil erosion control structures constructed by Contractor until they become stabilized, but not for more than 1 year after their construction. Contracting Officer may agree to perform such structure maintenance under E.2.1.8, if requested by Contractor, subject to agreement on rates. Contractor shall not be responsible for repair of such structures damaged by other National Forest users whose activities are not a part of Contractor's Operations.

G.7 Slash Disposal. Contractor's timing of product removal and preparatory work shall not unnecessarily delay slash disposal. Specific slash disposal measures to be employed by Contractor are stated in K-G.7 and are in addition to Required Deposits for slash disposal.

G.8 Scaling. "Scaling," as used herein, involves:

(a) Various volume determination methods, such as log rule, sampling, measuring, linear measuring, counting, weighing, or another method or combination of methods;

(b) Various sites, such as truck Scaling stations, rollways, weighing stations, woods landings, water Scaling stations, or other sites; and

(c) Various geographic locations.

G.8.1 Scaling Services. Scaling services shall be performed by Forest Service personnel or parties under contract to Forest Service, except that weighing services may be performed by personnel or parties approved by Forest Service. Scaling shall be provided in accordance with the instructions and specifications in A.9. Scalers shall be currently certified to perform accurate Scaling services. The Scaling services provided shall be selected exclusively by Forest Service.

Scaling services may be Continuous, Intermittent, or Extended. “Continuous Scaling Services” is Scaling at one site five (5) 8-hour shifts a week, exclusive of Sundays and Federal holidays. “Intermittent Scaling Services” are non-continuous Scaling services. “Extended Scaling Services” are Scaling services exceeding Continuous Scaling Services and may include Sundays and designated Federal holidays.

Upon written request of Contractor and approval of Contracting Officer, Forest Service may provide other services, such as but not limited to grading, tagging, or marking of Scaled logs.

G.8.1.1 Scaling Location. Forest Service shall provide Scaling services at the Scaling site(s) shown in A.10. The Scaling site(s) shown in A.10 normally will be a non-exclusive site where more than one National Forest contractor may be served.

Contractor may request, in writing, an alternate Scaling site, such as at a private mill yard, private truck ramp, or a privately operated log transfer facility. Contracting Officer may approve an alternate Scaling site, when Contracting Officer determines that Scaling conditions at an alternate site are acceptable. Such conditions shall include at a minimum:

(a) Scaler safety and comfort,

(b) Product accountability and security,

(c) Facilities and practices conducive to accurate and independent Scaling, and

(d) The ability to provide for remote check Scaling.

Upon approval of an alternate Scaling site, Forest Service and Contractor shall enter into a written memorandum of agreement governing Scaling at that alternate location. Contractor agrees that Forest Service personnel or persons under contract with Forest Service shall perform Scaling services at an alternative Scaling site. In no instance shall Contractor or employees of Contractor perform Scaling services.

G.8.1.2 Scaling Adjustments. Forest Service shall check the accuracy of the Scaling performed on National Forest logs. Scaling will be satisfactory if performed within the accuracy standards stated in governing instructions identified in A.9. In the event Forest Service check Scale(s) shows a variance in net Scale in excess of the allowable variance, an adjustment to volume reported Scaled may be made by Forest Service.

Such adjustment will be based on the difference between Forest Service check Scale(s) and original Scale for contract volume Scaled within the adjustment period. The volume to which this difference will be applied will be:

(a) One-half of the volume Scaled between the last satisfactory check Scale and the first unsatisfactory check Scale or, if a period of 120 days or more occurs without Scaling National Forest timber for stumpage, the adjustment will be applied to 100 percent of the volume Scaled after this period and

(b) 100 percent of the volume Scaled between unsatisfactory check Scales and

(c) One-half of the volume Scaled between the last unsatisfactory check Scale and the next satisfactory check Scale, or if no satisfactory check Scale is completed and a period of 120 days or more occurs without Scaling of National Forest timber for stumpage, the adjustment will be applied to 100 percent of the volume Scaled since the last unsatisfactory check Scale.

Adjustments may increase or decrease the original Scaled volume. Adjustments will be applied to Integrated Resource Account to correct charges for Included Timber, plus deposits, Scaled during the adjustment period.

G.8.1.3 Delayed or Interrupted Scaling Services. In the event Scaling services are delayed or interrupted, Contractor shall discontinue hauling. Contractor agrees that in the event such a delay or interruption occurs for reasons not caused by Contractor, its sole and exclusive remedy shall be:

(a) Contract Term Adjustment and

(b) Out-of-Pocket Expenses incurred as a direct result of the delay or interruption of Scaling services under this Item.

Contractor further agrees that no logs will be presented for Scaling outside agreed upon Scaling services schedule.

G.8.1.4 Weighing Services. Weighing services for stumpage payment purposes may be provided by either public or privately owned and operated weighing facilities. A “Weighing Services Agreement,” approved by the Forest Supervisor, must be executed at each weighing facility providing weighing services.

Scales used to weigh National Forest products for payment purposes must be a currently certified scale in accordance with State law and be capable of weighing the entire load of logs in a single operation. The weighing of less than the entire load or weighing two loads at once is prohibited. Unless otherwise agreed, the minimum sized weighing facility shall be a 60-ton capacity scale with a 10 foot by 70 foot platform or larger. The weighmaster must work in a position where it is possible to verify that the truck wheels are on or off the scales.

Weighing facilities shall meet the following minimum requirements:

(a) Be an electronic design,

(b) Use electronic load cells or have a fully enclosed and sealed weigh-beam,

(c) Have digital weight meters sealed with a seal approved by the State,

(d) Have a zero interlocking device on the printer,

(e) Have an automatic zero-setting mechanism,

(f) Have an automatic motion-detecting device,

(g) Be shielded against radio or electromagnetic interference, and

(h) Have a date and time stamp and gross and tare weights that print electronically with each weighing. Contracting Officer may waive electronic printing for public or third party weighing facilities.

Contractor shall bear all charges or fees for weighing services.

G.8.2 Presentation for Scaling. Contractor shall present products so that they may be Scaled in an economical and safe manner. If prior to Scaling, Included Timber is to be mixed with other timber, Contractor shall, prior to mixing, provide for distinguishing, by means approved by Forest Service, each product included in this contract.

Trees or pieces presented for Scaling that have not been bucked to separate material meeting minimum piece standards from material not meeting minimum piece standards due to diameter, shall be Scaled as though such bucking had been done.

Deductions made for rot, check, or other defects resulting from abnormal delay in Scaling caused by Contractor shall be recorded separately and charged to Integrated Resource Account under D.4.7.

Any timber that has been removed from Contract Area during the period of this contract, but remains unscaled after Termination Date, shall be Scaled at the earliest reasonable date.

G.8.3 Scaling Other Products. The Scaled volume of material presented for Scaling in forms other than those stated in A.2, when appropriate, shall be converted to the A.2 unit of measure by the application of standard converting factors and procedures in effect at the time the contract was sold. Other converting factors may be used by written agreement.

G.8.4 Accountability. When Scaling is performed away from Contract Area, products shall be accounted for in accordance with Forest Service written instructions or an Accountability Agreement between Forest Service and Contractor and as follows:

(a) Contractor shall plainly mark or otherwise identify products prior to hauling in accordance with G.8.4.2;

(b) Forest Service shall issue removal receipts to Contractor;

(c) Contractor shall assign a competent individual at the landing to complete removal receipts and attach them to each load of products removed from Contract Area;

(d) Removal receipts shall be returned to Forest Service at periodic intervals;

(e) When products are in transit, the truck driver shall possess or display removal receipt and show it upon request as evidence of authority to move products;

(f) The scaler's portion of removal receipt shall be surrendered at point of Scaling, the unloading point, or as requested by Forest Service; and

(g) Contractor shall notify Forest Service of lost or off-loaded logs and their location within 12 hours of such loss.

Contractor shall not place products in storage for deferred Scaling until an accountability system has been agreed to in writing for a stated period.

G.8.4.1 Route of Haul. As part of the annual Operating Schedule, Contractor shall furnish a map showing the route of haul over which unscaled products will be transported from Contract Area to the approved Scaling location. Such route of haul shall be the shortest, most economical haul route available between the points.

Upon advance written agreement, other routes may be approved. All unscaled products removed from Contract Area shall be transported over the designated routes of haul. Contractor shall notify Forest Service when a load of products, after leaving Contract Area, will be delayed for more than 12 hours in reaching Scaling location.

Contractor shall require truck drivers to stop, if requested by Forest Service, for the following reasons:

(a) For accountability checks when products are in transit from Contract Area to the designated Scaling location or

(b) For a remote check Scale when products are in transit after being truck Scaled at the designated Scaling location.

Contractor and Forest Service shall agree to locations for accountability checks and remote check Scales in advance of haul. Such locations shall be established only in areas where it is safe to stop trucks.

Forest Service shall notify Contractor of the methods to be used to alert truck drivers of an impending stop.

G.8.4.2 Product Identification. Before removal from Contract Area, unless Contracting Officer determines that circumstances warrant a written waiver or adjustment, Contractor shall:

(a) Hammer brand all products that are eight (8) feet or more in length and one-third (1/3) or more sound, on each end that is seven (7) inches or more in diameter.

(b) West of the 100th meridian, paint with a spot of highway-yellow paint all domestic processing products that are eight (8) feet or more in length and one-third (1/3) or more sound, on each end that is seven (7) inches or more in diameter. Each paint spot must be not less than three (3) square inches in size.

Contracting Officer shall assign brands and, if Contract Area is within a State that maintains a log brand register, brands shall be registered with the State. Contractor shall use assigned brand exclusively on logs from this contract until Contracting Officer releases brand. Contractor will furnish and apply highway-yellow paint of a lasting quality (oil-base or equivalent).

All hammer brands and/or highway-yellow paint must remain on logs until they are domestically processed. Contractor shall replace identifying marks if they are lost, removed, or become unreadable. Contractor may remanufacture products into different log lengths. Except for logs remanufactured as part of the mill in-feed process immediately before processing, remanufactured products must be rebranded with the assigned contract brand and repainted with highway-yellow paint, unless otherwise agreed to in writing by Contracting Officer. For such remanufactured products, Contracting Officer may approve use of a brand to be used exclusively as a catch brand, in lieu of the assigned contract brand.

G.8.5 Scaling Lost Products. The volume of lost products shall be determined by the best methods currently available, using data from the records for the period in which the loss occurred or the most applicable period if loss should occur substantially after cutting. In the absence of specific information indicating size or species of lost products, species distribution and volume for entire truckloads shall be assumed to be the same as the average volume Scaled per truck during the report period, and for individual products it shall be assumed that the volume and species were the average volume of the highest priced species Scaled during the report period.

G.8.5.1 Scaling Lost Sample Loads. If Scaling is being done by sampling loads of logs, Contractor shall present such sample loads for Scaling by Forest Service. If loads of logs selected to be sample Scaled are placed in the decks before they are Scaled, they will be considered as lost sample loads. It will be difficult, if not impossible, to determine the volume and species contained in such loads for payment purposes. Therefore, lost sample loads will be deemed to have a Scale volume and species composition equal to that of the highest value load Scaled during the sampling period, as established by Forest Service. If no sample loads were Scaled during the period, the Scale data for the high valued load will be taken from the most current preceding sampling period with Scale. Sample loads lost as a result of Forest Service actions shall be treated as non-Scaled loads.

G.8.6 Scale Reports. Forest Service shall provide Contractor a copy of Forest Service scaler's record, if requested in writing.

G.9 Stewardship Projects. Performance of stewardship projects shall be in accordance with the specifications in K-G.9.

All of the mandatory stewardship projects, as shown in A.4.3, shall be performed. Optional stewardship projects, as shown in A.4.3, shall be performed when authorized in writing by Contracting Officer. Such authorization may be for all or a portion of the quantity shown. Optional stewardship projects may be selected and authorized in any order by the Contracting Officer. Upon written request of Contractor, additional optional stewardship projects shall be authorized; however, Contracting Officer shall not be obligated to authorize additional stewardship projects if three or more authorized optional stewardship projects or any of the mandatory stewardship projects remain uncompleted. Contracting Officer shall not be obligated to authorize additional optional stewardship projects at any time if Contracting Officer determines that there is insufficient value of remaining designated timber to cover the value of additional stewardship projects.

G.9.1 Refund of Unused Stewardship Credits. When, under I.3.3, Contracting Officer requests Contractor to delay or interrupt Contractor's Operations for more than 60 days, unused Stewardship Credits may be refunded upon the written request of Contractor or at the discretion of Contracting Officer.

Contractor agrees that when unused Stewardship Credits are refunded that Contractor shall remit, release, and forever discharge the United States from any and all Claims arising from any delay in using Stewardship Credits under this contract, including, but not limited to, any Claims of interest or other costs.

If Contractor has outstanding debt owing the United States, Contracting Officer must apply the amount of Stewardship Credit that could be refunded to the debt owed in accordance with the Debt Collection Improvement Act, as amended.

H.0—FIRE PRECAUTIONS AND CONTROL

H.1 Plans. Prior to initiating Contractor's Operations during Fire Precautionary Period, Contractor shall file with Forest Service a Fire Prevention and Control Plan providing for the prevention and control of fires on Contract Area and other areas of Contractor's Operations. Such plan shall include a detailed list of personnel and equipment at Contractor's disposal for implementing the plan. This requirement may be met by preparing a single plan for more than one contract.

H.2 Fire Precautions. Specific fire precautionary measures listed in K-H.2 shall be applicable during Contractor's Operations in "Fire Precautionary Period" described in A.12. Contracting Officer may change the dates of Fire Precautionary Period by advance written notice, if justified by unusual weather or other conditions. Required tools and

equipment shall be kept in serviceable condition and immediately available for fire fighting at all times during Contractor's Operations in Fire Precautionary Period.

H.2.1 Substitute Precautions. Forest Service may authorize substitute measures or equipment, or waive specific requirements by written notice, if substitute measures or equipment will afford equal protection or some of the required measures and equipment are unnecessary.

H.2.2 Emergency Precautions. Forest Service may require the necessary shutting down of equipment on portions of Contractor's Operations, as specified by the emergency fire precautions schedule of K-H.2.2. Under such conditions, after Contractor ceases active operations, Contractor shall release for hire by Forest Service, if needed, Contractor's shutdown equipment for fire standby on Contract Area or other areas of Contractor's Operations and personnel for fire standby or fire patrol, when such personnel and equipment are not needed by Contractor for other fire fighting or protection from fire. Equipment shall be paid for at fire fighting equipment rates common in the area or at prior agreed rates and, if Contractor requests, shall be operated only by personnel approved by Contractor. Personnel so hired shall be subject to direction and control by Forest Service and shall be paid by Forest Service at fire fighting rates common in the area or at prior agreed rates.

H.3 Fire Control. Contractor shall, both independently and in cooperation with Forest Service, take all reasonable and practicable action to prevent and suppress fires resulting from Contractor's Operations and to suppress any forest fire on Contract Area. Contractor's independent initial fire suppression action on such fires shall be immediate and shall include the use of all necessary personnel and equipment at Contractor's disposal on Contract Area or within the distance of Contract Area stated in A.13.

H.3.1 Contractor's Reinforcement Obligations. Whenever an Operations Fire or Negligent Fire, whether on or off Contract Area, or any other forest fire on Contract Area, has not been suppressed by initial action and appreciable reinforcement strength is required, Forest Service may require further actions by Contractor until such fire is controlled and mopped up to a point of safety. Such actions may include any or all of the following as necessary to fight such fire:

H.3.1.1 Suspend Operations. To suspend any or all of Contractor's Operations.

H.3.1.2 Personnel. To release for employment by Forest Service any or all of Contractor's personnel engaged in Contractor's Operations or timber processing within the distance of Contract Area stated in A.13. Any organized crew so hired shall include Contractor's supervisor, if any. Personnel so employed shall be paid at Forest Service standard emergency fire fighting rates.

H.3.1.3 Equipment. To make available for Forest Service rental at fire fighting equipment rates common in the area or at prior agreed rates any or all of Contractor's equipment suitable for fire fighting and currently engaged in Contractor's Operations within the distance of Contract Area stated in A.13. Equipment shall be operated only by personnel approved by Contractor, if so requested by Contractor.

H.4 Fire Suppression Costs. Contractor's obligations for cost of fire suppression vary according to three classifications of fires as follows:

H.4.1 Operations Fire. An "Operations Fire" is a fire caused by Contractor's Operations other than a Negligent Fire.

Forest Service, except as provided in H.3, shall use cooperative deposits under E.2.1.8 to perform fire suppression activities on Operations Fires. Contractor agrees to reimburse Forest Service for such cost for each Operations Fire, subject to a maximum of the dollar amount stated in A.14. The cost of Contractor's actions, supplies, and equipment on any such fire provided pursuant to H.3, or otherwise at the request of Forest Service, shall be credited toward such maximum. If Contractor's actual cost exceeds Contractor's obligation stated in A.14, Forest Service shall reimburse Contractor for the excess.

H.4.2 Negligent Fire. A "Negligent Fire" is a fire caused by negligence or fault of Contractor's Operations, including, but not limited to, one caused by smoking by persons engaged in Contractor's Operations during the course of their employment, or during rest or lunch periods; or if Contractor's failure to comply with the requirements of H.2 and H.3 results in a fire starting or permits a fire to spread. Damages and the cost of suppressing Negligent Fires shall be borne by Contractor.

H.4.3 Other Fires on Contract Area. Forest Service shall pay Contractor, at fire fighting rates common in the area or at prior agreed rates, for equipment or personnel furnished by Contractor pursuant to H.3, or otherwise at the request of Forest Service, on any fire on Contract Area other than an Operations Fire or a Negligent Fire.

H.5 State Law. Contractor shall not be relieved by the terms of this contract of any liability to the United States for fire suppression costs recoverable in an action based on State law, except for such costs resulting from Operations Fires. Amounts due Contractor for fire fighting expenditures in accordance with H.4.1 shall not be withheld pending settlement of any such claim or action based on State law.

H.6 Performance by Contractor. Where Contractor's employees, agents, contractors, Subcontractors, or their employees or agents perform Contractor's Operations in connection with fire responsibilities, Contractor's obligations shall be the same as if performance was by Contractor.

I.0—OTHER CONDITIONS

I.1 Title and Liability.

I.1.1 Title Passage. All right, title, and interest in and to any Included Timber shall remain in Forest Service until it has been cut, Scaled, removed from Contract Area or other authorized cutting area, and paid for, at which time title shall vest in Contractor. For purposes of this Subsection, timber cut under cash deposit or payment guarantee under E.3 shall be considered to have been paid for. Title to any Included Timber that has been cut, Scaled, and paid for, but not removed from Contract Area or other authorized cutting area by Contractor on or prior to Termination Date, shall remain in Forest Service.

I.1.2 Liability for Loss. If Included Timber is destroyed or damaged by an unexpected event that significantly changes the nature of Included Timber, such as fire, wind, flood, insects, disease, or similar cause, the party holding title shall bear the timber value loss resulting from such destruction or damage; except that such losses after removal of timber from Contract Area, but before Scaling, shall be borne by Contractor at Current Contract Rates and Required Deposits. Deterioration or loss of value of salvage timber is not an unexpected event, except for deterioration due to delay or interruption that qualifies for Contract Term Adjustment or under I.3.3.

In the event Included Timber to which Forest Service holds title is destroyed, Contractor will not be obligated to remove and pay for such timber. In the event Included Timber to which Forest Service holds title is damaged, Contracting Officer shall make an appraisal to determine for each species the difference between the appraised unit value of Included Timber immediately prior to the value loss and the appraised unit value of timber after the loss. Current Contract Rates in effect at the time of the value loss shall be adjusted by differences to become the redetermined rates.

There shall be no obligation for Forest Service to supply, or for Contractor to accept and pay for, other timber in lieu of that destroyed or damaged. This Subsection shall not be construed to relieve either party of liability for negligence.

I.2 Period of Contract. All obligations of Contractor shall be discharged not later than "Termination Date" stated in A.15, unless it is adjusted pursuant to I.2.1 or I.2.1.2 or extended pursuant to I.2.3 or I.3.2, excepting only those obligations for which Forest Service has given written permission to delay performance. Such written permission shall be considered a Contract Term Adjustment for the purpose of Contractor completing performance of obligations covered by such permission.

I.2.1 Contract Term Adjustment. "Contract Term Adjustment" means adjustment only as provided for in the three circumstances described in this Subsection. Under these circumstances, the contract term shall be adjusted in writing to include additional calendar days in one or more Normal Operating Seasons equal to the actual time lost, except as limited by paragraph (b) in this Subsection.

To qualify for such adjustment, Contractor shall give written notice of the lost time not later than 30 days after end of Normal Operating Season in which time was lost and at least 10 days before Termination Date. Contracting Officer shall make prompt written acknowledgment of such notice, indicating concurrence with the number of days in the notice or the number of days Forest Service considers as qualifying for the adjustment. Lost portions of days shall be disregarded in computing time lost. The three circumstances qualifying for a Contract Term Adjustment are:

(a) Contractor experiences delay in starting scheduled operations or interruptions in active operations, either of which stops removal of Included Timber from Contract Area through curtailment in felling and bucking, yarding, skidding and loading, hauling, or road construction, as scheduled under G.3.1, for 10 or more consecutive days during a Normal Operating Season due to causes beyond Contractor's control, including, but not limited to, acts of God, acts of the public enemy, acts of the Government, labor disputes, fires, insurrections, or floods.

(b) Causes described in paragraph (a) substantially affect the disposition or processing of Included Timber during Normal Operating Season through their effects on primary timber processing facilities, with a resulting delay of 60 days or more in use of such facilities. In such event, Contract Term Adjustment shall not extend for more than 12 consecutive months.

(c) (i) Contracting Officer requests Contractor, in writing, to delay or interrupt operations during the normal operating season for any purpose other than suspension under E.4 or J.3 or

(ii) Contractor suffers a delay or interruption of Contractor's Operations affecting skidding, yarding, and loading because of fire emergency closure ordered by Forest Service (or another agency in its behalf), and the total of such lost time is 10 or more days during any Normal Operating Season.

If Termination Date is adjusted, as described in this Subsection, and later extended under I.2.3, the appraisal for the extension shall be made as of the unadjusted Termination Date, but the date on which the new rates become effective, if higher than Current Contract Rates immediately prior to Termination Date, shall be the adjusted Termination Date.

I.2.1.1 Delay in Reconstruction of Processing Facilities. Notwithstanding the 12-month limitation in I.2.1, if Contractor demonstrates a diligent effort has been made to replace primary timber processing facilities and that delays in doing so have been beyond Contractor's control, Contracting Officer may authorize Contract Term Adjustment up to a total of 24 months.

I.2.1.2 Market-Related Contract Term Addition. The term of this contract may be adjusted when a drastic reduction in wood product prices has occurred in accordance with 36 CFR 223.52. The Producer Price Index used to determine when a drastic reduction in price has occurred is stated in A.20. Contractor will be notified whenever the Chief determines that a drastic reduction in wood product prices has occurred. If the drastic reduction criteria specified in 36 CFR 223.52 are met for 2 consecutive calendar quarters, after contract award date, Contracting Officer will add 1 year to the contract term, upon Contractor's written request. For each additional consecutive quarter such a drastic reduction occurs, Contracting Officer will, upon written request, add an additional 3 months to the term during Normal Operating Season. Contracting Officer must receive Contractor's written request for a market-related contract term addition before the expiration of this contract.

The total amount of contract term addition is limited to the lesser of twice the length of the original contract or 3 years. The revised contract term may not exceed 10 years as a result of market-related contract term addition. Additional contract time may not be granted for those portions of the contract that have a required completion date or for those portions of the contract where Contracting Officer determines that the timber is in need of urgent removal or that timber deterioration or resource damage will result from delay.

I.2.2 Termination for Catastrophe. In event of Catastrophic Damage, this contract may be modified under I.3.2, following rate redetermination under D.3.2, or terminated under this Subsection. Such termination shall not be considered a termination under I.3.4.

I.2.2.1 Termination by Contractor. This contract shall be terminated, upon election and written notice by Contractor, if Catastrophic Damage rate redetermination under D.3.2 shows that the appraised weighted average Indicated Advertised Rate of all Included Timber remaining immediately prior to the catastrophe has been reduced through Catastrophic Damage by an amount equal to or more than the weighted average Current Contract Rate.

"Indicated Advertised Rates" are Forest Service estimates of fair market value of the timber.

I.2.2.2 Termination by Forest Service. This contract may be terminated by written notice from Contracting Officer, if there is Catastrophic Damage and Contractor does not agree, under I.3.2, within 30 days of receipt from Contracting Officer of contract modifications proposed to permit the harvest of the catastrophe-affected timber.

I.2.3 Contract Term Extension. "Contract Term Extension" means an extension of the term of this contract, at the request of Contractor, under this Subsection. This Subsection does not obligate Contracting Officer to grant Contract Term Extension. An extension can only be granted when Contracting Officer has determined that Contractor has diligently performed under the terms of this contract and when such extension is determined to be in the best interest of Forest Service.

Contracting Officer may not grant Contractor's written request for Contract Term Extension, unless Contractor's Operations to date have been in reasonable compliance with contract terms and the approved Technical Proposal under G.3.1.1 and all contractual requirements have been met by Contractor and accepted by Forest Service in active stewardship project areas and on areas cut over at time of Contractor's request, except for areas where work is in progress at time of Contractor's request. Contractor's burning of current slash or seeding or planting for erosion control may be temporarily waived, if weather or other considerations make such work impractical.

Contract Term Extension shall not become effective unless the initial Extension Deposit required by E.2.1.7 has been made by the effective date of any extension.

When such extension is made, Forest Service shall make an appraisal using standard Forest Service methods and appraisal data in effect 45 days prior to the original Termination Date. Bid Premium Rates shall be added to such appraised rates to establish Flat Rates or Tentative Rates for the extension period. In event rates so established would develop Current Contract Value immediately prior to such an extension that is less than Current Contract Value at that time, Flat Rates and Tentative Rates in effect immediately prior to extension shall be retained for the extension period.

I.3 Contract Modification. The conditions of this contract are completely set forth in this contract. Except as provided in I.3.2 and I.3.3, this contract can be modified only by written agreement between the parties. Only Contracting Officer may make contract modifications, with compensating adjustments to Current Contract Rates where appropriate, on behalf of Forest Service.

I.3.1 Changed Conditions. When it is agreed that the completion of certain work or other requirements hereunder would no longer serve the purpose intended because of substantial change in the physical conditions of Contract Area or Included Timber since the date of this contract, the requirements shall be waived in writing. The estimated cost of such waived work or other requirement shall be charged to Integrated Resource Account.

I.3.2 Modification for Catastrophe. In event of Catastrophic Damage, Forest Service, in consultation with Contractor, shall outline on Contract Area Map:

(a) Any areas of catastrophe-affected live and dead timber meeting Utilization Standards and having undesignated timber so situated that it should be logged with the designated timber;

(b) If needed, any such areas where the damaged undesignated timber can reasonably be logged separately; and

(c) Areas of affected or unaffected timber that are to be eliminated from Contract Area.

Forest Service shall locate and post the boundaries of all such areas, as needed.

After Contract Area Map has been outlined under this Subsection, Forest Service may propose contract modification to permit the harvest of catastrophe-affected timber. If Contractor accepts Forest Service proposed modifications, this contract shall be modified to include rates redetermined under D.3.2 and other related revisions as necessary, such as revision of Operating Schedule to ensure prompt removal of affected timber when necessary to avoid further loss and provision for additional contract time, if needed.

I.3.3 Contract Suspension and Modification. (a) Contracting Officer may, by written order, delay or interrupt authorized operations under this contract or modify this contract, in whole or in part:

(i) To prevent environmental degradation or resource damage, including, but not limited to, harm to habitat, plants, animals, cultural resources, or cave resources;

(ii) To ensure consistency with land and resource management plans or other documents prepared pursuant to the National Environmental Policy Act of 1969, 42 USC 4321-4347;

(iii) To conduct environmental analysis, including, but not limited to, engaging in consultation pursuant to the Endangered Species Act of 1973, 16 USC 1531, *et seq.*; or

(iv) Upon agreement of the Regional Forester, due to administrative appeal or litigation, regardless of whether Contracting Officer's request is required by a court order or this contract is named in such a proceeding.

(v) Upon a change in law if performance of the contract, as determined by the Forest Service, would not be in compliance, in whole or in part, with such law.

(b) In the event of a request delaying or interrupting Contractor's Operations under this Subsection, Contractor's remedy shall be: (i) Contract Term Adjustment, (ii) reimbursement for Out-of-Pocket Expenses, (iii) rate redetermination to measure any decline in the market pursuant to D.3.3, (iv) temporary reduction of downpayment pursuant to E.2.3, (v) temporary credit for unamortized Specified Road construction cost pursuant to F.2.7, and (vi) temporary bond reduction pursuant to J.1.3.

(c) In addition to the compensation scheme set forth in subparagraph (b), Contractor may seek termination pursuant to I.3.6 or, at any time prior to authorization to resume work suspended under this Subsection, demand termination under I.3.4. If Contractor elects termination under I.3.4 or I.3.6, Contractor is nonetheless required, prior to contract termination, to fulfill all contract obligations for areas not affected by the delay or interruption under this Subsection and all compliance obligations for areas affected by the delay or interruption, including, but not limited to, erosion control, brush disposal, and road maintenance. To the extent Contractor is unable to fulfill such obligations, any compensation due to Contractor will be reduced by the cost of completing the unfulfilled obligations, as determined by Contracting Officer. If Contractor seeks damages pursuant to subparagraph (b) and termination pursuant to this subparagraph, Contractor is not entitled to duplicative recovery of any damages.

(d) In cases of modification under this Subsection, Contractor shall receive a rate redetermination pursuant to D.3.1.

(e) Contractor will only be eligible for the remedies listed in this Subsection if the delay or interruption occurs when operations were in progress or would have been proceeding, had there been no delay or interruption under this Subsection

(f) The applicability of this Subsection shall be unaffected by a finding during administrative appeal or litigation that this sale or a similarly situated sale was awarded or operated without properly complying with any statute, regulation, or policy.

I.3.4 Contract Termination. (a) The Chief or the Chief's designee may unilaterally terminate this contract, in whole or in part, for any of the reasons set forth in paragraph (a) of I.3.3.

(b) Contractor agrees that compensation for termination of this contract, in whole or in part, under this Subsection shall be: (i) refund or release of advanced deposits under E.2.1.2 for timber cut but not removed, (ii) reimbursement for Out-of-Pocket Expenses, and (iii) one of the following, except when termination, pursuant to I.3.3(v), is based upon a change of law which is public and general in nature: replacement volume under subparagraph (c) or liquidated damages under subparagraph (d).

(c) Forest Service and Contractor shall make good faith efforts to identify within Contract Area replacement timber of similar volume, quality, access, and topography. Stumpage price shall be adjusted under D.3.1 to account for differences between replacement timber and timber deleted. If Forest Service and Contractor cannot reach agreement on satisfactory replacement volume or the proper stumpage of such timber, either party may opt to end the search and Contractor shall be compensated under paragraph (d) of this Subsection.

(d) Forest Service shall pay as fixed, agreed, and liquidated damages an amount equivalent to 15 percent of the estimated delivered log value of the volume of timber not harvested due to the termination or partial termination. Estimated delivered log value and volume of timber not harvested shall be determined by Contracting Officer as of Termination Date, using Forest Service methods in use as of Termination Date.

(e) When Contractor elects termination under this Subsection as a remedy for a delay or interruption pursuant to I.3.3, Contractor shall only be entitled to damages pursuant to subparagraph (d) if the I.3.3 delay or interruption is

greater than one year, and the delay or interruption was not initially caused by wind, flood, earthquake, landslide, fire, forest pest epidemic, or other major natural phenomenon.

(f) In cases of partial termination under this Subsection, Contractor's sole and exclusive remedy for the remaining volume shall be a rate redetermination pursuant to D.3.1.

(g) The applicability of this Subsection shall be unaffected by a finding during administrative appeal or litigation that this sale, or a similarly situated sale, was awarded or operated without properly complying with any statute, regulation, or policy.

(h) Contractor is required to fulfill all contract obligations not affected by a termination or partial termination under this Subsection. To the extent Contractor is unable to fulfill such obligations, any compensation due to Contractor will be reduced by the cost of completing the unfulfilled obligations, as determined by Contracting Officer.

I.3.5 Out-of-Pocket Expenses. "Out-of-Pocket Expenses" are unrecovered expenditures arising directly from performing the contract that were rendered unrecovered due to delay, interruption, or termination pursuant to I.3.3 or I.3.4. An expenditure is unrecovered within the meaning of this Subsection where Contractor was precluded from gaining the benefit of the expenditure during a given period because operations were not permitted. Forest Service will reimburse Contractor only for the following Out-of-Pocket Expenses:

(a) Out-of-Pocket Expenses for maintenance of the contract performance and payment bonds during the period when operations were delayed or interrupted or, if terminated, from the date operations were halted until the expiration of the bonds;

(b) Out-of-Pocket Expenses for maintenance of the downpayment or other cash deposits during the period when operations were delayed or interrupted or, if terminated, from the date operations were halted until the cash is returned to Contractor;

(c) Out-of-Pocket Expenses for move-in and move-out;

(d) Out-of-Pocket Expenses for felling, bucking, lopping, skidding, yarding, and decking any products so processed, but not removed from Contract Area because: (i) the contract was terminated or (ii) the products no longer meet Utilization Standards because of delay or interruption;

(e) If terminated in whole or in part, Out-of-Pocket Expenses for unused Temporary Roads;

(f) Out-of-Pocket Expenses for the investment in Specified Roads during the period when operations were delayed or interrupted or, if terminated, in whole or in part, Out-of-Pocket Expenses for unamortized Specified Road construction and reconstruction; and

(g) If the contract is terminated, in whole or in part, Out-of-Pocket Expenses for bid preparation, including review of contract offering.

Contractor shall submit documentation of claimed expenditures and supporting analysis to Contracting Officer to assist in Contracting Officer's calculation of reimbursement. Expenses related to paragraphs (a), (b), and (g) may be based on interest at the Prompt Payment Rate established by the Secretary of the Treasury. Contracting Officer shall determine the amount of reimbursement under this Subsection using information from Contractor and/or Forest Service methods in use on the date that operations were delayed, interrupted, or terminated at Contracting Officer's sole discretion.

Contractor shall make all reasonable efforts to minimize Out-of-Pocket Expenses.

I.3.6 Termination for Market Change. In the event of delay or interruption under I.3.3, exceeding 90 days, this contract may be:

(a) Modified to include rates redetermined under D.3.3 or

(b) Terminated upon election and written notice by Contractor, if a rate redetermination for market change under D.3.3 shows that the appraised weighted average Indicated Advertised Rate of all Included Timber remaining immediately prior to the delay or interruption has been reduced through a market change by an amount equal to or more than the weighted average Current Contract Rate.

Contractor agrees that damages caused by termination of contract by either party will be limited to Out-of-Pocket Expenses.

I.4 Performance by Other than Contractor. The acquisition or assumption by another party, under an agreement with Contractor, of any right or obligation of Contractor under this contract shall be ineffective as to Forest Service, until Forest Service has been notified of such agreement and Contracting Officer has given written approval. In no case shall such recognition or approval:

(a) Operate to relieve Contractor of the responsibilities or liabilities Contractor has assumed hereunder or

(b) Be given unless such other party:

(i) Is acceptable to Forest Service as a contractor of timber and assumes in writing all of the obligations to Forest Service under the terms of this contract as to the uncompleted portion thereof or

(ii) Acquires the rights in trust as security and subject to such conditions as may be necessary for the protection of the public interests.

I.5 Sale of Other Materials. Forest Service reserves the right to sell from Contract Area during the period of this contract any materials or products not subject to its terms, but shall not permit removal, possession, or use thereof

that will materially interfere with Contractor's Operations. Contractor shall not be obligated to do any work made necessary by the action of others.

I.6 Provisions Required by Statute.

I.6.1 Covenant against Contingent Fees. Contractor warrants that no person or agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial agencies maintained by Contractor for the purpose of securing business. For breach or violation of this warranty, Forest Service shall have the right to annul this contract without liability or to require Contractor to pay, in addition to the contract price or consideration, the full amount of such commission, percentage, brokerage, or contingent fee.

I.6.2 Officials Not to Benefit. No member of Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom, unless it is made with a corporation for its general benefit (18 USC 431, 433).

I.6.3 Nondiscrimination in Employment. If the total value of this contract is in excess of $10,000, Contractor agrees during its performance as follows:

(a) Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by Forest Service setting forth the provisions of this Subsection.

(b) Contractor will, in all solicitations or advertisements for employees placed by or on behalf of Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(c) Contractor will send to each labor union or representative of workers with which Contractor has a collective bargaining agreement or other contract or understanding, a notice to be provided by Forest Service, advising the labor union or worker's representative of Contractor's commitments under this Subsection, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(d) Contractor shall comply with all provisions of Executive Order No. 11246, as amended by Executive Order No. 11375 and Executive Order No. 12086, and the rules, regulations, and relevant orders of the Secretary of Labor.

(e) Contractor will furnish all information and reports required by Executive Order No. 11246, as amended, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to books, records, and accounts by Forest Service and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(f) In event of Contractor's noncompliance with this Subsection or with any of such rules, regulations, or orders, this contract may be terminated or suspended, in whole or in part, and Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246, as amended, and such other sanctions may be imposed and remedies invoked, as provided in Executive Order or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(g) Contractor will include the provisions of paragraphs (a) through (f) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246, as amended, so that such provisions will be binding upon each Subcontractor or vendor. Contractor will take such action with respect to any subcontract or purchase order as Forest Service may direct as a means of enforcing such provisions, including sanctions for noncompliance. Provided, however, that in the event Contractor becomes involved in, or is threatened with, litigation with a Subcontractor or vendor as a result of such direction by Forest Service, Contractor may request the United States to enter into such litigation to protect the interests of the United States.

I.6.4 Debarment and Suspension Certification. Pursuant to 7 CFR Part 3017, Contractor shall obtain certifications from its Subcontractors regarding debarment, suspension, ineligibility, and voluntary exclusion, including additional Subcontractors obtained after award of this contract. "Subcontractors" are participants in lower tier covered transactions.

Contractor may rely upon a certification of a prospective Subcontractor that it is not proposed for debarment under 48 CFR 9.4, debarred, suspended, ineligible, or voluntarily excluded from participating in covered transactions or contracts, unless Contractor knows that the certification is erroneous.

Contractor shall keep the certifications of its Subcontractors on file until contract Termination Date and any extensions thereof, and will provide a copy at the written request of Contracting Officer. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this Subsection. The knowledge and information of Contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

If Contractor knowingly enters into a contract transaction with a person who is proposed for debarment under 48 CFR 9.4, suspended, debarred, ineligible, or voluntarily excluded from participation in covered transactions or contracts, in addition to other remedies available to the Government, Forest Service may pursue available remedies, including suspension and/or debarment.

The Subcontractor for a contract shall complete a "Subcontractor Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion." An example of this certification is shown following the instructions for page 2 of this contract.

I.6.5 Contract Consistency With Other Laws. The contract shall govern if State and local environmental quality laws conflict with or preclude performance of contractual requirements.

J.0—PERFORMANCE AND SETTLEMENT

J.1 Performance Bond. As a further guarantee of the faithful performance of the provisions of this contract, Contractor delivers herewith and agrees to maintain a surety bond in the dollar amount stated in A.17, unless the amount is adjusted as provided in J.1.1 or J.1.3. In lieu of surety bond, Contractor may deposit into a Federal Depository, as directed by Forest Service under E.2.1, and maintain therein, cash in the dollar amount stated in A.17 or negotiable securities of the United States having market value at time of deposit of not less than the dollar amount stated in A.17.

Any adjustment or extension of time for completion of this contract beyond 1 year may be granted only with the consent of surety on bond or delivery of a new bond. Should the sureties on the bond delivered herewith, or any bond delivered hereafter in connection with this contract, become unsatisfactory to Forest Service, Contractor shall, within 30 days of receipt of demand, furnish a new bond with surety satisfactory to Forest Service.

J.1.1 Bond Reduction. Upon Contractor's written request, Contracting Officer shall redetermine the amount of Contractor's performance bond to an amount not less than Contractor's remaining obligations, including the value of Included Timber remaining on Contract Area, plus the estimated cost of uncompleted work required of Contractor and any unpaid billings due on the contract. Contracting Officer shall provide written notice of the redetermined amount to Contractor and to Contractor's surety. Similarly, Contracting Officer shall report to Contractor in writing the amount of deposited cash or deposited securities required thereafter, if such deposits exist in lieu of a surety bond.

As soon as security for the performance of this contract or the settlement of Claims incident thereto is no longer necessary, appropriate notice shall be given to surety or deposits that may have been made in lieu of surety bond shall be returned to Contractor, subject to the conditions in J.5.

J.1.2 Letters of Credit. Notwithstanding the provisions of J.1, approved letters of credit may be used in lieu of a surety bond for performance bond purposes. Such letters of credit shall be subject to approval by Contracting Officer.

J.1.3 Temporary Bond Reduction. When, under I.3.3, Contracting Officer requests Contractor to delay or interrupt Contractor's Operations for more than 90 days, the performance bond amount required may be temporarily reduced upon the written request of Contractor or at the discretion of Contracting Officer. For the period of the delay or interruption, the performance bond may be reduced to an amount not less than the estimated cost of uncompleted work required of Contractor and any unpaid billings due on the contract.

Upon Contractor's receipt of written notice from Contracting Officer that the basis for the delay or interruption no longer exists, Contractor shall restore the performance bond to the full amount shown in A.17 within 15 days. Contractor shall not resume contract operations until the performance bond amount is fully restored.

J.2 Disputes. This contract is subject to the Contract Disputes Act of 1978 (41 USC 601, *et seq.*). Except as provided in the Contract Disputes Act of 1978, all disputes arising under or relating to this contract shall be resolved in accordance with this Section.

As used herein, "Claim" means a written demand or assertion by one of the parties seeking, as a legal right, the payment of money, adjustment or interpretation of contract terms, or other relief, arising under or relating to this contract. A voucher, invoice, or request for payment that is not in dispute when submitted is not a Claim. However, where such submission is subsequently not acted upon in a reasonable time, or disputed either as to liability or amount, it may be converted to a Claim. A Claim by Contractor shall be made in writing and submitted to Contracting Officer for decision. A Claim by the Government against Contractor shall be subject to a decision by Contracting Officer.

For Contractor Claims of more than $100,000, Contractor shall submit with the Claim a certification that the Claim is made in good faith; the supporting data are accurate and complete to the best of Contractor's knowledge and belief; and the amount requested accurately reflects the contract adjustment for which Contractor believes the Government is liable. Contractor, if an individual, shall execute the certification. When Contractor is not an individual, the certification shall be executed by a senior company official in charge at Contractor's plant or location involved or by an officer or general partner of Contractor having overall responsibility for the conduct of Contractor's affairs.

For Contractor Claims of $100,000 or less, Contracting Officer must render a decision within 60 days. For Contractor Claims in excess of $100,000, Contracting Officer must decide the Claim within 60 days or notify Contractor of the date when the decision will be made.

Contracting Officer's decision shall be final unless Contractor appeals or files a suit.

The authority of Contracting Officer does not extend to Claims or disputes that by statute or regulation other agencies are expressly authorized to decide.

Interest, at the Prompt Payment Rate established by the Secretary of the Treasury, on the amount found due on Contractor's Claim shall be paid from the date the Claim is received by Contracting Officer until the date of the payment.

Except as the parties may otherwise agree, pending final resolution of a Claim of Contractor arising under the contract, Contractor shall proceed diligently with the performance of the contract in accordance with Contracting Officer's decision.

J.2.1 Time Limits for Submission of Claim. Failure by Contractor to submit a Claim within established time limits shall relinquish the United States from any and all obligations whatsoever arising under the contract or portions thereof. Contractor shall file such Claim within the following time limits:

(a) When Contractor constructs Specified Road, Contractor must file any Claim not later than 60 days after receipt of Forest Service written notification of acceptance;

(b) When Forest Service constructs Specified Road, Contractor must file any Claim not later than 60 days after receipt of Forest Service written notification authorizing use of road;

(c) For subdivisions or cutting units and stewardship project areas, Contractor must file any Claim not later than 60 days after receipt of Forest Service written notification that such area has been accepted; and

(d) In all other cases, Contractor must file any Claim not later than 60 days after receipt of Contracting Officer written notification that contract is closed.

J.2.2 Contract Documents. All contract documents are intended to be consistent with each other. In case of discrepancy, the following is the order of precedence:

(a) Special Provisions in Part K
(b) Contract Area Map
(c) Specific Conditions in Part A and Schedule of Items
(d) Standard Provisions in Parts B through J
(e) Special project specifications
(f) Plans, such as slash, erosion control, and dust abatement
(g) Agreements between Contractor and Forest Service, as authorized under the contract
(h) Plans:
    (i) Figured dimensions over scaled dimensions
    (ii) Large scale Plans over small scale Plans
(i) Standard specifications
(j) Lists and/or tables in Plans over any conflicting notations on Plans
(k) Shop Drawings

J.3 Breach. In event Contractor breaches any of the material provisions of this contract, Forest Service shall give Contractor notice of such breach and, allowing reasonable time for remedy of such breach and of Forest Service's election to suspend, may give notice to suspend all or any part of Contractor's Operations. Such notice of breach and notice to suspend Contractor's Operations shall be written, except oral notices may be given if such breach constitutes an immediate threat to human life or a threat of immediate and irreparable damage to National Forest resources. Notwithstanding Section G.1, such oral suspension notice may be given to Contractor's work supervisor or, in work supervisor's absence, to those performing the operation. An oral suspension notice shall be promptly followed by telephone notice and a written explanation from Forest Service to Contractor.

Suspension under this Section shall not entitle Contractor to any remedies arising under I.3.3.

Immediately upon oral or written suspension, Forest Service representative shall notify Contracting Officer of the suspension and related circumstances. Contracting Officer shall promptly review the suspension to determine if the suspension should be continued or lifted. Such suspension shall be lifted as early as conditions permit.

Upon receipt of oral or written notice of such breach, Contractor shall remedy the breach as follows:

(a) If remedying such breach requires on-the-ground action by Contractor, Contractor shall have 30 practicable operating days during Normal Operating Season to remedy the breach, except under emergency conditions when action should not be delayed to prevent major damage or

(b) If such breach does not require on-the-ground action by Contractor, such breach shall be remedied within 30 days.

J.3.1 Termination for Breach. Contracting Officer, with the concurrence of the Regional Forester, may terminate this contract for breach in the event Contractor:

(a) Is convicted for violation of criminal statutes, civil standards, or any other offense indicating a lack of business integrity or honesty that seriously and directly affects the responsibility of Contractor; including, but not limited to:

(i) Theft, forgery, bribery, embezzlement, falsification or destruction of records, making false statements, or receiving stolen property, any of which occurred in connection with obtaining, attempting to obtain, selling, trading, or processing public timber;

(ii) Fraud, criminal offenses, or violation of Federal or State antitrust laws, any of which occurred in connection with obtaining, attempting to obtain, or performing a public contract or subcontract; or

(iii) Threatening, resisting, intimidating, or interfering with Forest Officers engaged in, or on account of, the performance of their official duties involving the protection, improvement, or administration of National Forest lands;

(b) Is convicted for violation of criminal statutes or civil standards, orders, permits, or other regulations for environmental protection issued by a Federal agency, State agency, or political subdivision thereof in the conduct of operations hereunder on National Forest lands, pursuant to G.0.1;

(c) Has engaged in a pattern of activity that demonstrates flagrant disregard for the terms of this contract, such as, but not limited to, repeated suspensions for breach pursuant to J.3, causing undesignated timber meeting Utilization Standards to be unnecessarily damaged or negligently or willfully cut, or causing other serious environmental degradation or resource damage;

(d) Fails to comply with contract provisions related to nondiscrimination in employment; or

(e) Fails to remedy a breach of contract within time limits stated in J.3.

Damages due the United States for termination under this Subsection shall be determined pursuant to J.4.

J.4 – Damages for Failure to Complete Contract or Termination for Breach. (a) In event of Contractor's failure to cut designated timber on portions of Contract Area by Termination Date; Contractor's failure to complete required stewardship projects by Termination Date; or termination for breach under J.3.1; Forest Service shall appraise remaining Included Timber and stewardship projects, unless termination is under I.2.2 or I.3.4. Such appraisal shall be made with the standard Forest Service method in use at time of termination.

(b) If the contract is reoffered and awarded, damages due shall be the amount by which Current Contract Value decreases at new Bid Rates, plus costs described in paragraph (d) of this Section, less any unused established Stewardship Credits.

(c) If the contract is not reoffered or there are no responsive bids on the reoffered contract, damages due shall be the amount by which Current Contract Value decreases, based on the value determined by appraisal, plus costs described in paragraph (d) of this Section, less any unused established Stewardship Credits.

(d) If applicable, the following costs shall be included in damages:

(i) The cost of reoffering, including, but not limited to, salary costs, document preparation and duplication costs, mailing costs, and contract advertisement costs.

(ii) If Contractor has failed to cut individual trees in the portions of Contract Area cut over and there is no resale of such individual trees, Contractor shall pay Forest Service for cost of felling and removal or otherwise eliminating such uncut trees, except for occasional trees not cut for reasons stated in G.4.

(iii) The Government's loss caused by the delay in receipt of stumpage payments. Such loss will be measured by interest at the Current Value of Funds Rate established by the Secretary of the Treasury, on the unpaid contract value at Termination Date. Interest will be charged for the total number of months, or portions thereof, from Termination Date until midpoint of the contract resale period, less any time in excess of 1 year needed to make the resale.

(iv) Any increase in reforestation costs, including site preparation, seeding, and planting caused by Contractor's failure to harvest Included Timber by Termination Date.

J.5 Settlement. If obligations of Contractor have not been fully discharged by Termination Date, any money advanced or deposited hereunder shall be retained and applied toward unfulfilled obligations of Contractor without prejudice to any other rights or remedies of Forest Service. Such funds may be treated as cooperative deposits under E.2.1.8 for uncompleted work 30 days after receipt of written notice from Contracting Officer to Contractor of work to be done and Contractor's failure to deny the obligation or to do the work.

J.6 Contract Closure. Contracting Officer shall give appropriate written notice to Contractor when Contractor has complied with the terms of this contract. Contractor shall be paid refunds due from Integrated Resource Account under E.2.4 and excess cooperative deposits under E.2.1.8.

K.0—SPECIAL PROVISIONS

In accordance with A.21, the Sections, Subsections, and Items therein listed are attached and made a part hereof. The identifier after the K indicates the Part, Section, Subsection, or Item that is being supplemented or modified by each particular provision included in this Part.

K-C.3.5.5# - DESIGNATION BY PRESCRIPTION *(05/2015)*

Within Subdivision(s) or Cutting Unit(s) **Subdivision 1** , as shown on Contract Area Map, the following critera shall be used by Contractor to designate trees and other products for cutting and removal:

(a) 1/ **See prescription attached at the end of this provision** (b) Additional trees to be cut, if any, are marked by Forest Service with 2/ **N/A** tracer paint.

(c) Cutting unit boundaries and other trees that shall be left uncut are marked by Forest Service with 2/ **orange or white** tracer paint.

Contractor may select cut trees in cutting unit(s) 3/ **1 through 81** without pre-harvest marking in accordance with the criteria in (a). If specified in (a), Contractor shall mark leave trees in cutting unit(s) 4/ **N/A** with Contractor's non-tracer 2/ **N/A** paint for inspection and approval by Forest Service prior to cutting.

Prescriptive Criteria/Associated Cutting Units

PRESCRIPTION PURSUANT TO K-C.3.5.5# – DESIGNATION BY PRESCRIPTION
(05/2015)

DESIGNATION BY PRESCRIPTION SUBDIVISION #1 (Bandera Thin):

End Results
Reduce stocking levels commensurate with stand health and growth objectives, create early seral habitat, including deer and elk forage, and provide diverse tree species composition and structural diversity of plant communities in Riparian Reserve areas.

Commercial Thin Cutting Units
Commercial Thin cutting units are identified with blue boundary tags titled "Bandera Thin". Cut trees are determined using Designation by Prescription (DxP). Thinning will be primarily from below to a target basal area of (1/). Select leave trees with well-formed crowns with a live crown ratio of greater than 30%. Leave tree order of preference is: western redcedar, Douglas-fir, western hemlock, Pacific silver fir, red alder. Do not leave trees with fading crowns or indications of current bark beetle infestation. The basal area target range for the unit takes precedent over form or species preference. The residual basal area will be averaged for only those plots where thinning occurs (trees are cut) to reach the target basal area for the unit. Existing openings and any areas of low volume will not be included in meeting the target basal area.

Do not cut:
1. Trees greater than the maximum stump diameter of 34 inches.
2. Trees marked with white paint.
3. Pacific yew or hardwoods, except red alder.
4. Western redcedar with a stump diameter greater than 17.0" with a live crown ratio greater than or equal to 30%, except in units (3/).

Cutting Unit	1/ Commercial Thin Target basal area (ft²/acre)	Openings Included	2/ Visual Sensitivity Zone	3/ Do Not Cut Western redcedar
5-7, 10, 13, 14, 16-18, 21, 26, 30, 33, 36, 37, 44-46, 50-57, 61, 62, 64-67, 69, 75	140 to 160			X
1-3, 8, 15, 19, 22-24, 27, 28, 31, 32, 38, 39-43, 58-60, 63, 68, 71	160 to 180			X
29, 49	160 to 180	X		X
34, 35, 48	140 to 160		X	X
47	160 to 180		X	X
77-81	140 to 160			

The maximum stump diameter is calculated to represent a 30.0" DBH tree, which is the upper diameter limit for thinning in these units. Trees that are not to be cut will still be used to determine residual basal area.

VISUAL SENSITIVITY ZONE:
This group includes a portion of cutting units (2/). Visual Sensitivity Zones will be thinned to an average residual basal area within the range of **190 to 210 ft²/acre**. This zone extends 75 feet in to the unit interior from the boundary that parallels the Ira Spring Trail in units 34 and 35; and the Talapus Lake trail in units 47 and 48 as shown on the Contract Area Map.

Thinning will be primarily from below. Select leave trees with well-formed crowns with a live crown ratio of greater than 30%. Leave tree order of preference is: western redcedar, Douglas-fir, western hemlock, Pacific silver fir, red alder. Do not leave trees with fading crowns or indications of current bark beetle infestation. The basal area target range for the unit takes precedent over form or species preference. The residual basal area will be averaged for only those plots where thinning occurs (trees are cut) to reach the target basal area for the unit. Existing openings and any areas of low volume will not be included in meeting the target basal area.

Do not cut:
1. Trees greater than the maximum stump diameter of 34.0 inches.
2. Trees marked with white paint.
3. Pacific yew or hardwoods, except red alder.
4. Western redcedar with a stump diameter greater than 17.0” with a live crown ratio greater than or equal to 30%.

OPENINGS
Includes cutting units 4, 9, 11, 12, 72, 74, 76 and part of units 29 and 49. Openings are identified with orange boundary tags titled “Bandera Thin Opening”. In the opening, cut all merchantable trees except:
1. Leave one clump of approximately 3 to 10 (average of 7) trees for each acre in the opening.
2. Where possible, designate the leave tree clump surrounding a defective tree habitat such as a large snag or large tree with obvious decay.
3. Where possible, leave at least two large diameter Douglas-fir in each clump. If two large Douglas-fir are not available, leave the two largest trees of other species surrounding the defective tree.
4. Select the remaining 3 to 5 trees from codominant and intermediate crown classes.

Unit	Acres of Opening	Acres of Thinning	Minimum Number of Leave Tree Clumps
4	2.2	N/A	2
9	1.9	N/A	2
11	4.1	N/A	4
12	3.1	N/A	3
29	5.1	3.1	5
49	3.1	2.7	3
72	1.8	N/A	2
74	5.1	N/A	5
76	1.7	N/A	2

Do not cut:
1. Trees greater than the maximum stump diameter of 34.0 inches.
2. Any trees marked with white paint.
3. Any Pacific yew or hardwoods, except red alder.

The maximum stump diameter is calculated to represent a 30.0" DBH tree, which is the upper diameter limit for thinning in these units. Trees that are not to be cut will still be used to determine residual basal area.

OTHER REQUIREMENTS AND DEFINITIONS:
Stump height is measured at 10.0 inches on the high side of the tree.

Stump diameter is measured outside bark at stump height, perpendicular to the bole of the tree.

Spacing distances are measured slope distance, from outside bark on the face of the tree at stump height to outside bark on the face of the tree at stump height.

Apply Designation by Prescription only to the trees within the unit boundary. Trees adjacent to, but outside of, the unit boundary are not to be considered in applying the prescription requirements. Boundary trees are not to be considered in leave tree requirements.

K-C.3.5.7# - INDIVIDUAL TREE DESIGNATION (OPTION 1) *(06/2008)*

All **trees meeting the attached description** which meet the minimum tree diameter stated in A.2 are designated for cutting. Additional timber to be cut, if any, will be designated for cutting in accordance with C.3.7.

Leave trees, Marked with **orange or white paint** , or identified by, **by the attached description** , are not to be cut, unless designated by the Forest Service.

K-D.4.7# - ABNORMAL DELAY *(05/2005)*

Unless otherwise agreed, felled timber meeting Utilization Standards shall be removed by Contractor pursuant to C.2 and shall be presented for Scaling within the time period indicated in the following removal schedule. The number of days shown are consecutive calendar days.

Failure to remove and present such timber for Scaling within the required time limits will be considered abnormal delay, subject to D.4.7.

See attached removal schedule.

DESCRIPTION PURSUANT TO K-C.3.5.7# (OPTION 1) – INDIVIDUAL TREE DESIGNATION *(06/2008)*

DESIGNATION BY DESCRIPTION SUBDIVISION #2 (Hansen Thin):

End Results
Reduce stocking levels commensurate with stand health and growth objectives, and provide diverse tree species composition and structural diversity of plant communities in Riparian Reserve areas.

Designation
All live trees, except those identified in 1 through 4 below, will be cut if within 15 feet of a western redcedar over 18.0" stump diameter, or a live tree with a larger stump diameter, in that order of priority. If a western redcedar over 18.0" stump diameter and a tree of larger stump diameter are within 15 feet of each other, the western redcedar will take precedence and the tree of larger stump diameter will be cut.

Do not cut:
1. Western redcedar, Pacific yew, grand fir, or Sitka spruce.
2. Hardwoods, except for red alder.
3. Trees marked with white paint.
4. Trees greater than 34.0 inches stump diameter.

OTHER REQUIREMENTS AND DEFINITIONS:
Stump height is measured at 10.0 inches on the high side of the tree.

Stump diameter is measured outside bark at stump height, perpendicular to the bole of the tree.

Spacing distances are measured slope distance, from outside bark on the face of the tree at stump height to outside bark on the face of the tree at stump height.

Apply Designation by Description only to the trees within the unit boundary. Trees adjacent to, but outside of, the unit boundary are not to be considered in applying the spacing requirements. Boundary trees are not to be considered in applying the spacing requirements.

For the purpose of determining the largest tree, a tree that forks below stump height will be considered two trees. A tree that forks above stump height will be considered one tree.

REMOVAL SCHEDULE PURSUANT TO K-D.4.7# - ABNORMAL DELAY *(05/2005)*

Included Timber	Time Limits	
ALL.	180	days after felling is started.
All timber decked during construction clearing.	180	days after felling on each Specified Road constructed by Contractor is initiated.
Timber decked during road construction.	180	days after Forest Service authorizes Contractor to use roads pursuant to F.2.

K-E.2.2 - CHANGES IN STEWARDSHIP CREDITS *(06/2008)*

The Contracting Officer may at any time, by written order, make changes within the general scope of this contract in any one or more of the following:

(1) Specifications for Stewardship Projects listed in K-G.9#.

(2) Quantities of Stewardship Projects listed in A.4.3.

(3) Prices for Stewardship Projects listed in A.4.3.

(4) Place of performance of the Stewardship Projects as shown on the Contract Area Map.

In addition, by written agreement, new Stewardship Projects may be added to K-G.9# and A.4.3 as long as they are within the general scope of this contract. Contract Area may be expanded to add new stewardship projects.

If a written change order causes an increase in the time required for performing any part of the work under this contract, the Contracting Officer shall make an adjustment in the Contract Termination Date and shall modify the contract accordingly.

The Contractor must assert their right to equitable adjustments under this provision within 30 days from receipt of the written order. However, if the Contracting Officer decides that the facts justify it, the Contracting Officer may receive and act upon a proposal submitted before contract closure.

If the Contractor's proposal includes the cost of property made obsolete or excess by the change, the Contracting Officer shall have the right to prescribe the manner of the disposition of the property.

Failure to agree to an adjustment under this provision shall be considered a dispute under J.2. However, nothing in this provision shall excuse the Contractor from proceeding with the contract as changed.

In addition, by written modification of the contract, new Stewardship Projects may be added to K-G.9# and A.4.3, with or without expanding the Contract Area, as long as they are within the general scope of this contract.

K-E.4 - PAYMENTS NOT RECEIVED *(08/2012)*

(a) Payments are due and payable on the date of issue indicated on the bill for collection. When a payment for timber cut and other charges is not received at the location designated by Forest Service by the date specified in the bill for collection, Contracting Officer will suspend all or any part of Contractor's Operations until payment or acceptable payment guarantee is received. Other charges include, but are not limited to:

(i) Slash disposal, road maintenance, and contract scaling deposits;

(ii) Cooperative work at rates established by specific agreement under E.2.1.8;

(iii) Damages pursuant to J.4;

(iv) Road use fees;

(v) Restoration of downpayment pursuant to E.2.2;

(vi) Periodic payments pursuant to E.2.1.3;

(vii) Extension Deposits pursuant to E.2.1.7; and

(viii) Other mandatory deposits.

(b) Failure to pay amounts due by the date specified in the bill for collection shall be considered a breach under J.3. The 30-day notice period prescribed therein shall begin to run as of the end of business on the date specified for receipt of payments. If the performance or payment is guaranteed by surety bond, the surety will receive a copy of the written notification of breach. Demand will be made on the surety or other institution providing the guarantee or bond instrument for immediate payment 10 days after issuance of written notification of the breach.

(c) Pursuant to the Debt Collection Improvement Act of 1996, as amended, if payment is not received by Forest Service within 15 days after the date of issue indicated on the bill for collection:

(i) Simple interest shall be assessed at the Current Value of Funds Rate as established by the Secretary of the Treasury. Interest will begin to accrue as of the date of issue indicated on the initial bill for collection.

(ii) Debtors will be assessed administrative charges, in addition to the delinquent amount due. Administrative charges are those additional costs incurred by the Government in processing, handling, and collecting delinquent debts.

(iii) A penalty charge of six (6) percent per annum will be assessed on any portion of a debt delinquent more than 90 days. This penalty charge is in addition to interest and administrative charges under paragraphs (c)(i) and (c)(ii). The penalty charge shall accrue from the date of issue indicated on the bill for collection and shall be assessed on all outstanding amounts, including interest and administrative costs assessed under paragraphs (c)(i) and (c)(ii).

(iv) Payments will be credited on the date received by the Federal Depository or Collection Officer designated on the bill for collection.

(d) Forest Service remedies for Contractor's failure to make payment for timber cut and other charges when due, except for accrual of interest, suspension of all or any part of Contractor's Operations, and administrative offset, shall be stayed for so long as:

(i) A bona fide dispute exists as to Contractor's obligation to make such payment and

(ii) Contractor files and prosecutes a timely Claim.

K-F.1.0.1# - TEMPORARY ROAD AND LANDING CONSTRUCTION (OPTION 1) *(06/2010)*

In addition to the requirements of F.1 and G.6.3, Contractor and Forest Service will agree to the design, construction, maintenance, closure, and obliteration of all Temporary Roads.

Construction of Temporary Roads in areas shown on Contract Area Map shall be in accordance with the attached plans or criteria.

Unless otherwise agreed, if Contractor's Operations require more than **N/A** cubic yards of rock for Temporary Roads, landings, or other temporary uses, such rock shall be obtained from commercial sources.

See attached Plans and/or Criteria.

PLANS AND/OR CRITERIA PURSUANT TO K-F.1.0.1# - TEMPORARY ROAD AND LANDING CONSTRUCTION (OPTION 1) (*06/2010)*

1. Road surface drainage features shall be sufficient to control water flow, break up concentrated surface flow, and provide erosion protection. Drainage may consist of ditch and relief culverts, insloped or outsloped surfaces, drainage dips, or a combination of methods. Route road drainage away from stream channels, wetland areas, potentially unstable hillslopes, and sidecast.

2. All installed culverts or other stream-crossing structures should maintain flow down primary, natural pathway of flow and not redirect flow into a ditch, pond, or another channel. Stream-crossing structures will be installed at the location where the water flows into roadbed.

3. On roads to be closed or decommissioned, cross-drains or water bars will be installed. Install waterbars at a spacing of 400 feet where road grade exceeds 2 percent or as otherwise determined by the Forest Service.

4. Maintenance and erosion control will be completed prior to the onset of expected seasonal periods of precipitation or runoff and maintained during and outside of the normal operating season.

5. Culverts and waterbars installed in stream crossings in temporary roads to remain in place over the winter will be sized to accommodate at least the 100-year flood and associated debris flow.

6. Temporary roads shall be single lane with a minimum surface width needed to accommodate logging equipment. Minimizing clearing limits (generally no more than 16 feet on level ground, 20 feet for curves, slightly more for steeper grades). Turnouts do not have to be intervisible, but should be of sufficient quantity on longer roads to provide safe use by the Forest Service.

7. Sidecasting of loose material is prohibited within 150 feet of a river, stream, wetland, pond, seep, or wet area.

8. Temporary roads shall be located within subdivision boundaries and shall be outside of areas of sensitive and shallow soils, unstable landforms, and wetlands.

9. New landings or turnarounds will be located a minimum of 150 feet slope distance away from streams, seeps, and wet areas where possible. If landings must be located within 150 feet of these features, they shall be placed on existing roadbeds or existing landings that require only minimum reconstruction to be made suitable for use. They will be located 50 feet away from stream, seep, and wet area no cut buffers where possible.

10. Decommissioning of temporary roads and landings newly constructed (those not located on existing roadways or cleared, compacted areas) by the Contractor will include removal of culverts installed by Contractor and pulling any side cast material back to conform to the pre-existing slope; installing water bars; decompaction; and scarification, mulching, and seeding per K-G.6.0#. Pull back approach fill to an angle of natural repose when removing culverts. All temporary roads will be decommissioned in accordance with G.6.3. Recontour entrances to temporary roads to original grade.

K-F.1.1# - LAND USE AGREEMENTS *(05/2005)*

Contractor shall adhere to all requirements and stipulations contained in the agreement(s) in the attached table.

See attached table of agreement(s).

TABLE PURSUANT TO K-F.1.1# - LAND USE AGREEMENTS *(05/2005)*

Type of Agreement	Grantor	Purpose
Right-of-way	Bonneville Power Administration	Permit the use of existing ROW for yarding, skidding, landing, and haul
Agreement	Washington Department of Transportation	Permit the construction and use of a temp road to access helicopter landing

K-F.1.2# - USE OF ROADS BY CONTRACTOR *(09/2004)*

Contractor's use of existing roads identified on Contract Area Map by the following codes is prohibited or subject to restrictive limitations, unless agreed otherwise:

Code	Use Limitations
X	Hauling prohibited
R	Hauling restricted
U	Unsuitable for hauling prior to completion of agreed reconstruction
P	Use prohibited
A	Public use restriction
W	Regulation waiver

Roads coded A will be signed by Forest Service to inform the public of use restrictions. Contractor's use of roads coded R, A, or W shall be in accordance with the following restrictions:

See Restricted Road List Table.

TABLE PURSUANT TO K-F.1.2# - USE OF ROADS BY CONTRACTOR (09/04)

Restricted Road List

Road Number	Road Name	Termini		Map Legend	Description of Restrictions
		From	To		
5500	Tinkham	0.0	2.02	U	Unsuitable for hauling prior to completion of agreed reconstruction
5500431	Southfork Thin	0.0	0.02	U	Unsuitable for hauling prior to completion of agreed reconstruction
5510	Hansen Creek	0.00	3.87	U	Unsuitable for hauling prior to completion of agreed reconstruction
5510110	Hansen Creek Mine	0.00	1.02	U	Unsuitable for hauling prior to completion of agreed reconstruction
5510120	Humpback	0.00	0.40	U	Unsuitable for hauling prior to completion of agreed reconstruction
9030	Talupus Lake Trailhead	0.05	3.22	U	Unsuitable for hauling prior to completion of agreed reconstruction
9031	Mason Lake Trailhead	0.0	2.94	U	Unsuitable for hauling prior to completion of agreed reconstruction

Title and Date of Governing Road Rules Document:

Mt. Baker-Snoqualmie N.F.	**June, 1999**
Commercial Road Rules	**Effective Date**

K-F.1.3# - ROAD COMPLETION DATE *(09/2004)*

Construction of Specified Roads shall be completed no later than **10/31/2018** ; except for earlier construction completion dates for roads listed below:

Road Number	Road Name	Station From	Station To	Completion Date
N/A				

Completion date is binding on the party that constructs road, whether Contractor or Forest Service. Contracting Officer may modify the completion date in writing to conform to the Technical Proposal under G.3.1.1 at the request of Contractor.

When Contractor elects Forest Service construction of Specified Roads shown in contract advertisement, Forest Service may adjust construction completion date when road construction is delayed or interrupted for causes that qualify for an adjustment of the completion date of Forest Service's road construction contract. When qualifying delays or interruptions of road construction occur, Forest Service shall evaluate such occurrences and document any findings. The current status of any adjustment shall be available to Contractor on request. Promptly after the end of Normal Operating Season in which qualifying days occur, Forest Service shall give Contractor written notice of (a) number of qualifying days claimed, and (b) new construction completion dates. After all road construction is complete, Forest Service shall grant Contract Term Adjustment. Such adjustment shall be limited to road completion date delays that occurred during Normal Operating Season.

If Forest Service is responsible for road construction and the actual date of road completion is 1 year or more after the completion date stated above, Contractor may request a rate redetermination under D.3 for remaining volume. Such request must be made within 30 days of notification that road construction has been completed. Upon receipt of such request, Forest Service shall redetermine rates using standard methods in effect on the completion date of road construction. Rates to be established shall apply to all timber removed from Contract Area after the effective date of the rate redetermination.

Forest Service shall in no way be responsible for any delay or damage caused by road contractor in performing the road construction, except such delay as may be the fault or negligence of Forest Service.

When Contractor constructs Specified Roads and requests Contract Term Adjustment, completion dates shall be adjusted by number of days that qualify for such adjustment, provided such qualifying days occur before specified construction completion date. When Contractor desires to construct an alternate facility under F.2.6, Forest Service and Contractor shall agree, in writing, on a construction completion date for alternate facility. Contract Term Adjustment as noted above will apply. Completion date shall be adjusted where a Design Change or physical changes necessitate a modification of Specified Road construction work that increases the scope or magnitude of the required work.

If Contractor fails to complete construction of any or all Specified Roads by applicable completion date, as adjusted, Contract Term Extension shall not be granted.

As used in this provision, construction of a road is completed when:

(a) Contractor constructs Specified Roads and Forest Service furnishes Contractor with written notice of accep-tance under G.3.6 or

(b) Forest Service constructs road and furnishes Contractor with written notice authorizing use of road.

Notwithstanding F.1, Contractor shall not use a road that Contractor has elected for Forest Service to construct, until construction is completed and Forest Service furnishes Contractor with written notice authorizing use of road.

K-F.2.1.3# - DEPOSIT FOR RECONSTRUCTION ENGINEERING SERVICES *(09/2004)*

Contractor shall make a cash deposit for engineering services (preconstruction and construction) provided by Forest Service for reconstruction of National Forest system roads necessary to accommodate Contractor¿s use under this contract, pursuant to 16 USC 537.

The total amount to be deposited by Contractor for reconstruction related engineering services to be completed by Forest Service personnel or by public works contract is $ **$39,479.50** . Contractor shall make this deposit at the end of the first full Normal Operating Season or 12 months from contract award, whichever occurs first. In the event a different deposit schedule is agreed to, such deposit shall be due within 15 days after the date of issue indicated on the initial bill for collection, pursuant to E.4.

The amount of the required deposit will be shown as an associated charge on Contractor¿s Integrated Resource Account. Forest Service shall retain any unexpended deposit for reconstruction related engineering services.

The deposit for reconstruction related engineering services shall be commensurate with project need and Contractor¿s road use. Forest Service shall complete reconstruction related engineering services on the following schedule unless a different completion schedule is agreed in writing:

Road or Facility No.	**Termini From**	**To**	**Engineering Services Completion Date**
N/A			

Reconstruction related engineering services may consist of some or all of the engineering work and expense of: preparing, setting out, controlling, inspecting, and measuring the reconstruction of a National Forest system road.

K-F.2.2.1# - MATERIAL SOURCES *(09/2004)*

Sources of local materials are designated on Plans and Contract Area Map. Forest Service assumes responsibility for the quality and quantity of material in designated sources. Contractor shall determine the equipment and work required to produce the specified product, including the selection of acceptable material that is reasonably available in the source that meets specifications. The designation of source includes the rights of Contractor to use certain area(s) for plant site, stockpiles, and haul roads.

Should the designated source, due to causes beyond the control of Contractor, contain insufficient acceptable material, Forest Service will provide another source with adjustment in accordance with F.2.5.3.

When Contractor elects not to use designated sources, Contractor shall furnish the specified product with no adjustment in unit rates. Quality testing shall be the responsibility of Contractor. Test results shall be furnished to Forest Service.

When Contractor elects not to use designated sources and the Schedule of Items lists pit development separately, cost allowance will be reduced under F.2.5.3 when Forest Service determines the work will not be required.

When materials are subject to a weight measurement, the specific gravity or weight/volume relationship used as a basis for determination of estimated quantities shall be:

Source I **N/A** , Source II **N/A** , and Source III **N/A** .

Contractor may, when agreed in writing, use on the project such suitable stone, gravel, and sand, or other material found in the excavation, and will earn a cost allowance for the excavation of such materials at the corresponding contract unit price and for the pay items for which the excavated material is used. Contractor shall replace, without additional cost allowance, sufficient suitable materials to complete the portion of the work that was originally contemplated to be constructed with such material. Contractor shall not excavate or remove any material, except that which is within the excavation limits, without written authorization from Forest Service.

When material is appraised from non-National Forest designated sources, owner charges for the material in terms of unit cost for royalties, purchase of raw materials, or finished products shall be as follows until **N/A** :

See Material Source Table.

Should quantity vary from that estimated, payment to owners shall be for units actually obtained. Contractor shall make arrangements with owner(s) for measurement and payment for royalties, purchase of raw materials, or finished products, as shown above.

Materials produced or processed from National Forest lands in excess of the quantities required for performance of this contract are the property of Forest Service, unless prior written agreement has been obtained to use excess material on other National Forest contracts. Forest Service is not obligated to reimburse Contractor for the cost of their production.

Materials shall be stored to assure the preservation of their quality and fitness for the work. Stored materials shall be located to facilitate their prompt inspection. Sites on Forest Service administered land, approved by Forest Service, may be used for storage purposes and for the placing of Contractor's

plant equipment. All storage sites provided by Forest Service shall be restored at Contractor's expense. Contractor shall be responsible for making arrangements for storage on other than Forest Service administered lands.

When the construction of the portion of the project for which Temporary Roads used for hauling materials is completed, all such Temporary Roads shall be restored as nearly as practicable to their original ground profile, unless otherwise agreed in writing.

MATERIAL SOURCE TABLE PURSUANT TO K-F.2.2.1# - MATERIAL SOURCES *(04/2004)*

Material	Type of Purchase	Owner(s)	Unit of Measure	Unit Price	Estimated Quantity	Total
N/A	N/A	N/A	N/A	N/A	N/A	N/A

K-F.3.1# - ROAD MAINTENANCE REQUIREMENTS *(09/2004)*

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

See Contract Road Maintenance Requirements Summary Table.

TABLE PURSUANT TO K-F.3.1# – ROAD MAINTENANCE REQUIREMENTS (09/04)

Contract Road Maintenance Requirements Summary

Road	Termini		Miles	Applicable During Haul Road Maintenance Specifications										
	From	To		811 Blade	812 Dust	813 Surf.	831 Ditch	832 Haul	834 Drain	842 Veg	851 Log	891 Water		
5500	0.0	2.02	2.02	P	P	P	P		P	P	P	P		
5500-431	0.0	0.02	0.02	P										
5510	0.0	1.62	1.62	P	P	P				P	P	P		
5510	1.62	2.30	0.68	P	P	P				P	P	P		
5510	2.30	3.87	1.57	P	P	P				P	P	P		
5510-110	0.0	1.02	1.02	P			P	P			P			
5510120	0.0	0.40	0.40					P			P			
9030	0.05	0.39	0.34				P			P	P			
9030	0.39	0.81	0.42	P	P	P	P			P	P	P		
9030	0.81	2.00	1.19		P	P				P	P	P		
9030	2.00	2.60	0.60		P	P				P	P	P		
9030	2.60	3.22	0.62		P						P	P		
9031	0.0	1.23	1.23	P	P	P				P	P	P		
9031	1.23	2.94	1.71		P	P				P	P	P		

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

Road	Termini		Miles	Applicable Post Haul Road Maintenance Specifications										
	From	To		811 Blade	813 Surf.	831 Ditch	834 Drain	835 Rd dr	839 Use					
5500	0.0	2.02	2.02	P	P	P	P							
5500-431	0.0	0.02	0.02	P		P								
5510	0.0	1.62	1.62	P	P	P	P							
5510	1.62	2.30	0.68	P	P	P	P							
5510	2.30	3.87	1.57	P		P								
5510-110	0.0	1.02	1.02			P	P							
5510-120	0.0	0.40	0.40			P	P	P	P					
9030	0.05	0.39	0.34			P	P							
9030	0.39	0.81	0.42	P	P	P	P							
9030	0.81	2.00	1.19	P	P	P	P							
9030	2.00	2.60	0.6	P	P	P	P							
9030	2.60	3.22	0.62	P	P	P	P							
9031	0.0	1.23	1.23	P	P	P	P							
9031	1.23	2.94	1.71	P	P	P	P							

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

Description of work required by the above listed T-specs is shown in the following ROAD MAINTENANCE REQUIREMENTS SPECIFICATION table, and included in the timber sale contract.

ROAD MAINTENANCE REQUIREMENTS SPECIFICATION TABLE PURSUANT TO K-F.3.1# - ROAD MAINTENANCE REQUIREMENTS (07/2001)

1	2	3			4	5	6			7	8	9	
Road No. and Termini	Special Project Specifi-cation	Travel Way			Brush and Log Out	Surfacing	Dust Abatement			Seasonal Mainte-nance	Snow Removal	Post Haul	
		Width	X Slope	Comp			Product	Applic Rate	Width			Block	Treat
5500 GRAVEL MP 3.62-5.96	322	EX	AI	B	6′ R and L, Opt	1-1/4″ minus	H2O		EX				P
5500431 GRAVEL MP 0.0-0.06		EX	AI		6′ R and L, Opt	1-1/4″ minus	H2O		EX				P
5510 GRAVEL MP 0.00-1.62	322	EX	AI	B	6′ R and L, Opt	1-1/4″ minus	H2O		EX				P
5510 GRAVEL MP 1.62-2.30	322	EX	AI	B	6′ R and L, Opt	1-1/4″ minus	H2O		EX				P
5510 GRAVEL MP 2.30-3.87	322	EX	AI	B	6′ R and L, Opt	1-1/4″ minus	H2O		EX				P
5510110 GRAVEL MP 0.0-1.02		12′	AI	B	6′ R and L, Opt	1-1/4″ minus	H2O		EX				P
5510120 GRAVEL MP 0.0-0.40		EX	AI	B	6′ R and L, Opt	1-1/4″ minus	H2O		EX			P	P
9030 GRAVEL	322	EX	AI	B	6′ R and L, Opt	1-1/4″ minus	H2O		EX				P

MP 0.05-0.39													
9030 GRAVEL MP 0.39-0.81	322	Ex	AI	B	6′ R and L, Opt	1-1/4″ minus	H2O		EX				P
9030 GRAVEL MP 0.81-2.00	322	Ex	AI	B	6′ R and L, Opt	1-1/4″ minus	H2O		EX				P
9030 GRAVEL MP 2.00-2.60	322	Ex	AI	B	6′ R and L, Opt	1-1/4″ minus	H2O		EX				P
9030 GRAVEL MP 2.60-3.22	322	Ex	AI	B	6′ R and L, Opt	1-1/4″ minus	H2O		EX				P
9031 GRAVEL MP 0.0-1.23	322	Ex	AI	B	6′ R and L, Opt	1-1/4″ minus	H2O		EX				P
9031 GRAVEL MP 1.23-2.94	322	Ex	AI	B	6′ R and L, Opt	1-1/4″ minus	H2O		EX				P

ROAD MAINTENANCE REQUIREMENTS SPECIFICATION CODES TABLE PURSUANT TO K-F.3.1# - ROAD MAINTENANCE REQUIREMENTS (07/2001)

Column No.	**Heading**	**Entry**	**Explanation**
	Any	Blank	Except as otherwise described, no entry indicates Contractor is not authorized or required to perform the work item(s).
	Any	RC	This work requirement applies only when haul of project related construction materials occurs.
2	Special Project Specification	Number	Entry indicates Special Project Specification which applies.
3	Travel Way	EX	Contractor shall maintain the traveled way to the width existing upon entry, or at the completion of Specified Road work.
		Numbers	Contractor shall maintain the traveled way to the standard width indicated by the entry, plus curve widening, in accordance with Section T-811. If required, the road template shall be shaped to this width and to the designated cross slope before haul and during recurring maintenance.
		IS, C, OS, F, or AI	Cross slopes are designated as: IS (Inslope), C (Crown), OS (Outslope), F (Flat), AI (As Is).
		A or B	If compaction is required.
4	Brush and Log Out	Numeric & R and or L	Contractor shall remove brush for specified width on either or both the right (R) side or left (L) side of road.
		As Staked	Limits of brushing are as staked or marked in the field.
		OPT	Contractor may use hand or mechanical means of brushing.
		H	Only hand brushing may be used.

ROAD MAINTENANCE REQUIREMENTS SPECIFICATION CODES TABLE PURSUANT TO K-F.3.1# - ROAD MAINTENANCE REQUIREMENTS (07/2001)

Column No.	**Heading**	**Entry**	**Explanation**
5	Surfacing	Aggregate Grading	Contractor shall place surfacing on roads listed according to the grading indicated.
		D	
6	Dust Abatement	OPT	Product selection is Contractor's choice from those listed in Section T-812.
		Product Abbr.	Unless otherwise agreed, Contractor is restricted to product listed corresponding to the abbreviation shown in Section T-812; (i.e., LigS = Lignon Sulfonate) Application rates are estimated amounts.
		EX	Contractor shall abate dust on the existing width
		Numbers	Contractor shall abate dust to the width indicated by entry.
7	Seasonal Maintenance	W	Waterbars and/or crossditching shall be required prior to expected seasonal precipitation.
		B	Entrance barriers shall be installed by Contractor prior to nonuse periods.
8	Snow Removal	TS	Snowplowing authorized for Contractor's Operations without recreation access being provided per Section T-803 requirements.
		JU	Snowplowing authorized, but must provide for recreation joint use per Section T-803 requirements.
		Blank	Snowplowing is not authorized. Forest Service may authorize plowing by permit when not in conflict with other uses.
9	Post Haul	P	P denotes that work is Contractor's Responsibility to perform.

K-F.3.2# - ROAD MAINTENANCE DEPOSIT SCHEDULE *(08/2012)*

Other provisions herein notwithstanding, when Forest Service requests payment in lieu of Contractor's performance of road maintenance, Contractor shall make Required Deposits (16 USC 537) for current and/or deferred road maintenance. Such deposits are based on the estimated volume and distance hauled and Contractor's commensurate use of each road listed in the Road Maintenance Plan in K-F.3.1#.

Contractor and Forest Service may agree in writing on adjustment of such rates. If Contractor uses roads under jurisdiction of Forest Service other than those listed in the Road Maintenance Plan, Forest Service shall establish rates commensurate with Contractor's use of such roads.

The Required Deposits for Forest Service work in lieu of Contractor performance are **N/A** per **Ton** for recurrent maintenance, and **$.07** per **Ton** for deferred maintenance.

The following table lists who Contractor will make deposits for road maintenance to, and the rate per unit of measure of the deposit. The Road Maintenance Agreement is available for inspection at the Forest Supervisor's Office.

Deposit Made To	Rate	Unit of Measure
N/A		

K-G.3.1.5# - PROJECT OPERATION SCHEDULE *(05/2005)*

Unless otherwise agreed to between Contractor and Forest Service, Contractor's Operations shall be performed in accordance with the following schedule.

See attached schedule.

SCHEDULE PURSUANT TO K-G.3.1.5# - PROJECT OPERATION SCHEDULE
(05/2005)

Subdivision	Cutting Unit	Operating Conditions	Purpose
All	All	Perform any ground disturbing activities in channels and along the banks of streams during instream work windows (July 16 - September 30) as shown on the Contract Area Map, unless otherwise agreed to by the Forest Service.	Avoid or minimize negative impacts to fish.
All	All	The work window for the proposed water withdrawal sites is July 16 through February 28.	Avoid or minimize negative impacts to fish.
All	All	Road reconstruction and temporary road construction activities are only allowed between June 1 and October 15.	Minimize soil and water disturbance.
All	All	Contractor must be capable of restoring access for emergency vehicles within 2 hours on all Forest Service roads used for sale operations.	Reduce response time to wildfires.
All	All	Yarding, skidding, and haul activities are permitted only between June 1 and October 15 unless otherwise agreed to by the Forest Service.	Minimize soil and water disturbance.
1 (Bandera Thin) 2 (Hansen Thin)	1 through 51, 55 through 69 2 through 8	Public access must be allowed on Forest Service Roads 55, 5510, 9030, and 9031 from Friday at noon until Sunday at midnight, and on all holidays falling on a weekday.	Minimize impact to Forest visitors.
1	1 through 51	Closures must allow for public access to at least two of the contract area trailheads (Ira Spring, Talapus Lake, Asahel Curtis/Annette Lake) as shown on the Contract Area Map.	Minimize impact to Forest visitors.
1 (Bandera Thin)	23, 24, 26, 27, 29, 38 through 48,	Heavy equipment operation and other activities generating noise above ambient levels,	Reduce potential disruption of

	77 through 81	except road maintenance, reconstruction, and haul, between April 1 and September 23 shall occur between two hours after sunrise to two hours before sunset.	marbled murrelet feeding or nesting.
1 (Bandera Thin)	23, 24, 26, 27, 29, 38 through 48, 77 through 81	Falling activities are prohibited between March 1 and July 15.	Reduce potential disruption of spotted owl early nesting.

K-G.4.0.5 - ALTERNATE REMOVAL OF INCLUDED TIMBER *(05/2005)*

Contractor and Forest Service may agree to alternate removal requirements of Included Timber contained in A.2. Alternate removal requirements are to be set forth in an agreement signed by both Contractor and Contracting Officer. The terms of the agreement binds both parties and becomes part of the stewardship contract.

The development and execution of the agreement is based upon the determination by the Contracting Officer that removal of Included Timber is economically impractical if Contractor has no ready market for such logs in the tributary area. A tributary area is defined as the area in which the Contractor and competitors regularly deliver saw logs, or 200 miles from the Contract Area, whichever distance is greater.

The agreement for alternate removal requirements shall be executed prior to removing any timber from the Subdivisions included in the agreement. Alternate removal requirements shall apply only to whole units and not to portions of units. All material meeting alternate removal specifications shall be cut and removed to locations designated in the agreement.

Volumes of material with alternate removal requirements will be determined from the National Cruise report for the project. Contractor will be charged for the following:

a) stumpage value at current contract rates of the alternatively removed timber;
b) plus the cost of other work required by the Forest Service to dispose of alternatively removed material;

c) plus the difference between the appraised transportation cost of the Sawtimber and/or Nonsawtimber material involved and the appraised transportation cost of the alternative;
d) minus any work required to be completed by the Contractor associated with alternate removal requirements.

Charges will be debited to the Contractor's Integrated Resource Account.

Upon acceptance of the alternate removal requirements, the Subdivision will be removed from the Contract Area under G.3.6.

Title to material included in the alternate removal agreement shall remain with the Forest Service.

K-G.4.1# - SPECIFIC REQUIREMENTS *(05/2005)*

Notwithstanding G.4.1, G.4.1.1, G.5 and G.6.1, felling objectives shall be accomplished by the type of felling methods and equipment listed herein. Methods or equipment other than those specified may be approved. For Subdivisions shown in the following table, Contractor shall submit a cutting plan for Forest Service acceptance, prior to the start of felling operations.

See attached Table.

TABLE PURSUANT TO K-G.4.1# - SPECIFIC REQUIREMENTS (05/2005)

FELLING METHODS	SUBDIVISIONS
Directional fall away from all unit boundaries, streams, and system roads where possible.	All
Limbs and tops from the end log shall be bucked prior to yarding, unless as otherwise included in your Technical Proposal and accepted by the Forest Service in meeting the requirements of K-G.7.4.2#, Slash Treatment Requirements.	All
Stump heights shall be no less than 10 inches and no greater than 12 inches measured from the ground on the uphill side of the tree.	All
Non-yarding ground based equipment shall be operated on sustained slopes less than 50 percent.	All
Trees accidentally felled or dropped into a no-cut buffer may be removed with one-end suspension. Portions of the trees that are within 30 feet of the buffered riparian feature will be left in place.	All
Trees felled for temporary road construction within no-cut riparian buffers will be left on site.	All
Snags authorized by the Forest Service to be felled for operations shall be left on site.	All
Trees greater than 34.0 inches stump diameter authorized by the Forest Service to be felled for operations will be left on site if possible.	All

FELLING EQUIPMENT	SUBDIVISIONS
As included in your technical proposal and accepted by the Forest Service.	All

K-G.4.2# - YARDING/SKIDDING REQUIREMENTS *(05/2005)*

Contractor shall submit for Forest Service approval a Yarding/Skidding Plan prior to the start of felling operations. Requirements other than those specified in the following table may be approved. When appropriate, such approval shall include adjustments in Current Contract Rates and revision of the Contract Area Map. In no such case shall the adjustments result in Current Contract Rates less than Base Rates.

Location of all skid roads and trails, tractor roads, skyline corridors, mechanized harvestor trails, forwarder roads, and other log skidding facilities, shall be approved prior to their use or construction.

See attached table for requirements.

TABLE PURSUANT TO K-G.4.2# - YARDING/SKIDDING REQUIREMENTS *(05/2005)*

YARDING/SKIDDING REQUIREMENTS	SUBDIVISIONS
Use existing skid trails and landings to the extent practicable.	All
Do not yard through stream channels, no-cut buffers, or wetlands.	All
Equipment travelling off of approved corridors or temporary roads shall operate on a slash mat of operationally-generated material as thick and continuous as practicable.	All
Retain standing snags and existing down woody debris greater than 18.0 inches diameter at the small end undisturbed to the extent possible.	All
GROUND BASED, if included in your technical proposal and accepted by the Forest Service:	As included in your technical proposal and accepted by the Forest Service.
1. Ground based skid trails shall be spaced a minimum of 100 feet apart, and shall not exceed 15 feet in width where possible.	
2. Skid trails shall be located a minimum of 25 feet from no-cut riparian buffers where possible.	
3. Ground based equipment shall operate on a slash mat of operationally-generated material as thick and continuous as possible. Yarding activities will be planned to make as few trips as possible.	
4. Ground based equipment shall be operated on sustained slopes less than 35 percent.	
5. Line-pulling will be accomplished by yarding logs to lead, or at a 30-45 degree angle towards skid trails whenever possible. Suspension of logs is not required during lining operations.	

TABLE PURSUANT TO K-G.4.2# - YARDING/SKIDDING REQUIREMENTS *(05/2005)*

SKYLINE, if included in your technical proposal and accepted by the Forest Service:	As included in your technical proposal and accepted by the Forest Service.
1. If included in your technical proposal and accepted by the Forest Service, when skyline logging, your equipment is the have the capabilities to yarding fan shaped and parallel settings while maintaining one-end suspension, except during lateral yarding, and to yard multi-span settings	
2. Except during lateral yarding, one end of the log must be suspended free of the ground during inhaul.	
3. Tailholds outside of subdivision boundary require approval by the Forest Service.	
4. The use of mobile or other anchors outside of subdivision boundary that may result in impacts to soil requires approval by the Forest Service.	
5. Skyline corridors shall not exceed 15 feet in width after yarding where possible, and shall be spaced a minimum of 120 feet apart at one end.	
6. The carriage must provide a means for mechanically pulling slack and be able to maintain a fixed position on the skyline.	
HELICOPTER, if included in your technical proposal and accepted by the Forest Service:	As included in your technical proposal and accepted by the Forest Service.
1. If included in your technical proposal and accepted by the Forest Service, when helicopter logging, trees are to be lifted straight up above the canopy of the residual stand prior to forward transport of logs to the landing	

K-G.6.0# - EROSION CONTROL AND SOIL TREATMENT BY CONTRACTOR *(04/2014)*

Erosion prevention and control work required by G.6, shall be completed within 15 calendar days after yarding/skidding operations related to each landing are substantially completed or after Forest Service designation on the ground of work where such designation is required hereunder. Said time limit shall be exclusive of full days lost in Contractor's Operations due to causes beyond Contractor's control. Such on the ground designation shall be done as promptly as feasible unless it is agreed that the location of such work can be established without marking on the ground. After September 15, and as long thereafter as operations continue, the work shall be done as promptly as practicable. Damage resulting from Contractor's Operations due to failure to perform required work shall be repaired by Contractor.

On slopes greater than **30** percent, erosion control measures will be done with methods other than mechanized equipment, unless otherwise agreed.

Where soil has been disturbed or displaced on Contract Area by Contractor's Operations and where measures described in G.6 will not result in satisfactory erosion control or where subsoiling is shown on Contract Area Map, the following shall be performed. If applicable, timing of the work shall be coordinated with required scarification or subsoiling.

(a) Where staked or otherwise marked on the ground by Forest Service, seed, fertilizer, and mulch will be applied as indicated in the attached seeding, fertilizing, and mulching schedule. All applications shall be current and done during the period from **April 15** to **November 1** , unless otherwise agreed to. Applications shall be done only during favorable conditions. If Contractor and Forest Service agree, seed can be applied and covered within 10 days of ground disturbance, and may be done outside the required periods.

(b) Where shown on Contract Area Map, landings, Temporary Roads and/or skidtrails/roads shall be scarified to a depth of 20 inches to provide a seedbed for grass seed, fertilizer, and mulch. Seed, fertilizer, and mulch shall be spread evenly at the rates shown in the table. When the seed, fertilizer, and mulch are applied in separate operations, the second or third operations shall be within 10 days of the first or second.

(c) Where shown on Contract Area Map, landings, Temporary Roads, and skid trails/roads used by Contractor shall be subsoiled to a minimum depth of 20 inches, except that Forest Service may agree to lesser depths. Each subsoiler shank shall be equipped with a shoe and wings which has a total width of at least 18 inches. The design of the shank and wings will be such that the treated, compacted soil is slightly lifted and well-fractured rather than plowed, mixed, or displaced. The distance between subsoiler shank passes shall not exceed 36 inches. Treated areas shall span the total width of compaction. Subsoiling shall be kept reasonably current and shall be done during Normal Operating Season unless otherwise agreed.

(d) When agreed to, Contractor may use alternate methods of erosion control.

Seed shall meet current Forest Service requirements, with the additional requirement that no seed containing any noxious weed seed in excess of established state limitations as listed in the current "State Noxious Weed Requirements Recognized in the Administration of the Federal Seed Act" publication will be used (commonly referred to as the "all states" noxious weed seed list). Seed shall be furnished separately or in mixture in standard containers clearly marked with: (1) seed name; (2) lot number; (3) net weight; (4) percentages of purity and of germination (in case of legumes, percentage of germination to include hard seed); (5) percentage of weed seed content; and (6) certification that no noxious weed seeds in excess of established state standards are present. The contractor shall furnish the Government duplicate signed copies of a certificate, signed by a Registered Seed Technologist or Seed Analyst (certified through either the Association of Official Seed Analysis or the Society of Commercial Seed Technologists), certifying that each lot of seed has been tested in accordance with the Association of Official Seed Analysts Standards within 12 months prior to date of application. This certificate shall include (1) name and address of

laboratory, (2) date of test, (3) lot number for each kind of seed, (4) name of seed, (5) percentage of germination, (6) percentage of purity, (7) percentage of weed seed content, and (8) certification that no noxious weed seeds in excess of established state limitations are present in any kind of seed.

Legume seed shall be inoculated with approved cultures in accordance with the instructions of the manufacturer.

No seed may be applied without prior written approval by the government.

(e) Contractor may be required to seed areas disturbed by harvest activites to prevent the spread of noxious weeds, or the establishment of new areas.

See attached application schedule.

APPLICATION SCHEDULE PURSUANT TO K-G.6.0# - EROSION CONTROL AND SOIL TREATMENT BY CONTRACTOR *(04/2014)*

	AREAS	***SEED***		***FERTILIZER***		***MULCH***	
SUBDIVI-SION OR UNIT NUMBER	***A) SKID TRAILS B) FIRELINES C) TEMP. ROADS D) LANDINGS E) OTHER***	***APPLICATION***		***APPLICATION***		***APPLICATION***	
		SPECIES MIXTURE 1/	***LBS/AC***	***TYPE 2/***	***LBS/AC***	***TYPE 3/***	***LBS/AC***
All	A, C, D	blue wildrye	8	N/A	N/A	Weed-free straw	4,000
		mountain brome	6				
		native red fescue	6				
		tufted hairgrass	0.5				

Contractor will purchase the above seed mixture at their cost for erosion control purposes.

The Contractor will be required to pay a co-op deposit of $.02/Ton for the cultivation and harvest of replacement seed of native species for use on future contracts.

1/ For projects in Oregon, the seed shall meet the State certification specifications. Seed must be packaged in containers carrying official certification labels sewn in, glued to, or printed upon the container, with the following information:

1. Variety (if certified as to variety) and kind.
2. Quantity of seed (pounds or bushels).
3. Class of certified seed (blue tags for certified seed).
4. Inspection or lot number traceable to the certifying agency's records.

For projects in Washington, the seed shall be labeled as "Prohibited and Restricted Noxious Weed Free for the State of Washington." The Contractor shall furnish a copy of the seed analysis.

For state of California lands in Region 6, seed must be certified by the state of California, or by an independent agency or company that is approved by the state of California for “prohibited and restricted noxious weed free for the state of California.”

For mixtures of seed, each ingredient in excess of 5 percent must be listed with its percentage by weight and its germination percentage.

Legumes must be innoculated with nitrogen fixing bacteria before planting. The label must show the expiration date of the innoculant.

All seed treated with a fungicide or pesticide must be labeled that it is "treated" giving the name of the chemical used, and an appropriate warning or a caution statement.

2/ Fertilizer shall be a standard commercial fertilizer with guaranteed analysis of contents clearly marked on containers.

3/ Mulch shall meet the appropriate State's certification specifications, with evidence of its certification traceable to the certifying agency's records.

K-G.7 - SLASH DISPOSAL *(06/2008)*

As used in the following Subsections, the term "slash" is vegetative debris including, but not limited to, cull logs, blasted or pushed-out stumps, chunks, broken tops, limbs, branches, rotten wood, damaged brush, damaged or destroyed reproduction, saplings or poles, resulting from Contractor's Operations, including construction of roads or other improvements under this contract. Slash resulting from the construction of Specified Roads shall be disposed of as provided for in Section 201 of the Standard and Special Specifications and as shown in Drawings.

Any burning of slash or refuse by Contractor is subject to K-H.2.0.1.

Forest Service may enter into a written agreement with Contractor for the Contractor to remove slash from landings, subject to D.4.1. Brush disposal deposits paid by the Contractor for the Forest Service to burn landing piles will be credited to the Contractor¿s integrated resource account in the amount shown in the brush disposal plan, less the amount needed by the Forest Service for final cleanup of the landings following removal of the landing slash piles by the Contractor. The credit will be made following the final removal of all Included Timber, and slash piles, from the Contract Area.

K-G.7.4.2# - SLASH TREATMENT REQUIREMENTS (OPTION 2) *(06/2008)*

Contractor shall pile, burn, yard, construct firelines or otherwise treat slash defined in K-G.7, within designated areas. Work required of Contractor shall be in accordance with the following slash plan and specifications, and the Contract Area Map.

Unless otherwise agreed, or shown in the attached slash plan or specifications, when Included Timber is removed during Normal Operating Season, required slash work shall be completed within 30 days of removal of approximately three-quarters of the volume in the unit. When Included Timber is removed outside Normal Operating Season, required work will be completed within 30 days of the beginning of the next Normal Operating Season.

See following specifications.

SPECIFICATIONS PURSUANT TO K-G.7.4.2# - SLASH TREATMENT REQUIREMENTS (OPTION 2)
(06/2008)

1. To minimize the amount of slash at the landings, tops, limbs, and other material that does not meet utilization standards will not be yarded, except as specified in 2 and 3 below.

2. Trees will be whole-tree yarded and slash piled at the landing within 100 feet of Forest Service roads 55, 5510, 5510-110, and 5510-120, 9030, and 9031 (Subdivision 2, Cutting Units 1 through 8). Refer to the Contract Area Map.

3. Trees will be whole-tree yarded and slash piled at the landing within 200 feet of the Bonneville Power Administration powerline corridor (Subdivision 1, Cutting Units 52, 53, 54, 57, 60, 61, 62, 64, 66, 67, 68, 71, 72, 74, 75, 76). Refer to the Contract Area Map.

4. Slash accumulated at landings shall be piled by Contractor.

5. Forest Service will approve the machine to pile landing and decking slash and defining the size and length of material to be treated.

6. Slash piles shall be 25 feet in diameter or less. Piles shall not consist of greater than 10% soil or inorganic material.

7. Landing slash must be piled a minimum of 25 feet away from any residual trees, where possible.

K-G.8.4 - USE OF PAINT BY CONTRACTOR (OPTION 1) *(06/2006)*

Notwithstanding G.8.4.2, use of paint by the Contractor within the Contract Area in the same color(s) used by the Forest Service in the preparation and administration of the contract will be by written approval of the Forest Service.

K-G.8.4.0 - ACCOUNTABILITY *(04/2014)*

Notwithstanding G.8.4, when Weight scaled contracts offer products at different rates in A.4.2, each product must be completely removed from a landing or decking area before another product can be removed, unless otherwise agreed to in writing by the Contracting Officer.

K-G.8.5.1 - WEIGHT OF LOST LOADS *(04/2014)*

Contractor shall present all loads for weighing and shall furnish a weight ticket for each load pursuant to a weighing services agreement. Any load for which a weight ticket is not provided, or the weight ticket is incomplete or unreadable, or does not include the Forest Sevice load receipt number, shall be considered a lost sample load with a net weight equal to the load with the heaviest net weight presented during the billing period, as established by the Forest Service.

K-G.9# - STEWARDSHIP PROJECTS *(09/2004)*

Performance of stewardship projects shall be in accordance with the following specifications.

Stewardship Projects

PROJECTS AND SPECIFICATIONS PURSUANT TO K-G.9# - STEWARDSHIP PROJECTS (09/2004)

Project Number 001 – Plant Openings – Acres: 28

A. ***TECHNICAL REQUIREMENTS***

End Result

Increase tree species diversity in created openings to promote long-term resilient, vigorous stand conditions.

Services to perform: Work shall include planting bare root seedlings per the attached specifications on about 28 acres. Services to perform include furnishing labor, equipment, transportation of laborers and trees, operating supplies and incidentals except those items listed as Government-furnished property. The Contractor shall furnish all labor, equipment, supervision, transportation, and supplies, except those designated as Government-furnished, and any incidentals needed to perform all work specified. This Contract requires Contractor self-inspection. Contractor shall conduct self-inspection in accordance with an accepted quality assurance plan based on the guidelines as described herein.

The Forest Service will provide seedlings suitable to the site and elevation. Contractor must give the Forest Service at least two years advance notice to allow time for seedlings to be produced at the tree nursery.

The Forest Service will notify Contractor when road access, unit availability, and climatic conditions are suitable for planting. Planting will be completed within 30 days of notification by the Forest Service that conditions are suitable for planting. In a typical year, planting conditions in the Bandera Thin area are suitable in early April.

Project Location
Areas to be planted are openings identified in Subdivision #2, cutting units 4, 9, 11, 12, 72, 74, 76 and part of units 29 and 49 as shown on the Contract Area Map. Openings are identified with orange boundary tags titled “Bandera Thin Opening”.

Contract Definitions

Plantable Spot - An area from which vegetation, ash, duff, snow and debris has been or can be removed, and a tree seedling can be planted as specified.

Unplantable Spot - An area within the specified spacing limits in which it is not possible to plant a seedling according to specifications. Standing water and visible livestock trails are examples of unplantable spots.

Satisfactorily Planted Seedling - A seedling planted in full accordance with all planting specifications set forth in this contract.

Unsatisfactorily Planted Seedling - A planted seedling which fails to meet one or more of the specifications for a satisfactorily planted seedling.

Wasted Seedlings - Seedlings which are lost, damaged, destroyed, or handled contrary to the specifications for care of seedlings. Planted seedlings in excess of the maximum number of seedlings as specified are also considered to be wasted seedlings.

Cotyledon Scar - Lowest point on stem from which branches will grow as marked by a distinct ring in the bark on most species of tree seedlings.

Root Length - Root length will be measured from the longest root tip end to the cotyledon scar.

Replanting – Any additional planting work required to be completed in a unit, either voluntarily by the Contractor or as directed by the Contracting Officer's representative, after the Contractor has given the planting inspection sheets to the Government and work was found to be unacceptable.

Micro site Planting - The planting of tree seedlings in plantable spots most favorable to seedling survival and growth. Examples of favorable micro sites are features that provide partial protection from sun, wind, animals, and other damaging agents. These features may be spots located adjacent to stumps, logs, rocks, snags and brush.

Tree Height - Tree height will be measured from the ground to the tip of the seedling.

Tree Height - Tree height will be measured from the ground to the tip of the seedling.

Suitable Tree - A tree greater than one foot in height, of good form and vigor, which shows no physical damage or disease and conforms to the species to be planted on a unit-by-unit basis as specified in the Planting Data Sheet. In addition, any damage and disease free ponderosa pine tree greater than one foot in height shall be considered a suitable tree regardless of unit.

Capable Equipment – Tools, equipment and accessories maintained in good working condition so that they will function in a manner substantially the same as "new" when operated in accordance with manufacturers' recommendations.

Slash – The limbs and trunks of downed or felled trees as well as other woody debris.

Planting Equipment

1. Planting Tools - Contractor's planting tools shall meet the following minimum requirements:

Planting tools shall be capable of making a planting hole the width and depth needed to satisfactorily plant the seedlings as specified in the Planting Data Sheet.

A hoe-type tool shall be used.

Hand held equipment used shall be capable of chopping, cutting, or sawing slash to diameters and depths specified, and be capable of removing live vegetation, duff and soil, to the scalp size specified in Planting Data Sheets.

Seedling Handling Equipment

2. Planting Bags

A. Planting bags shall be of a light color, shall not retain heat, shall have a minimum depth of 15 inches, and shall be free of defects or contaminants.

Insulated planting bag liners shall be required at the Contracting Officer's discretion on days when temperature and humidity fall below suitable survival conditions for the seedlings being transported.

Care of Seedlings

1. The Contractor shall adhere to the following specifications for the care and protection of tree seedlings:

A. Seedlings shall be protected at all times from drying, heating, smothering, freezing, crushing, drowning, abrasion, rapid temperature fluctuations or contact with injurious substances.

Seedlings stored in boxes, bags or bundles shall not be exposed to direct sunlight. Punctured or torn bags or boxes shall be promptly resealed. Containers of seedlings shall be opened only in full shade. Bundles, bags or boxes shall be separated to provide free air movement.

Seedlings shall not be removed from shipping containers until needed for preparation for planting.

Seedlings shall be planted without further root or top pruning or culling.

Seedlings in planting bags shall have only their tops exposed. Burlap-wrapped trees shall have the wrappings loosened slightly.

Seedlings shall not be removed from a planting bag until immediately before planting in a prepared hole.

Seedlings shall be gently removed, one at a time, to prevent stripping or other injury, and quickly and gently inserted into the planting hole.

Seedlings carried in planting bags shall not exceed the amount that can be carried or removed without injury, or which can be planted before critical heating or drying occur. Seedlings placed in planting bags shall be planted out and not returned to storage. Trees in planting bags shall be planted out before extended breaks, such as lunch.

Bags of seedlings shall not be carried into the unit and stored for later planting, unless Government field storage facilities are provided, or the government gives approval.

Unplanted seedlings and empty tree boxes/bags shall be returned to the Government at the end of each working day.

The number of seedlings in the planting bag shall not exceed 120. This number may be increased or decreased depending on the size of the bag, size of the seedlings, severity of drying conditions, and the duration of time the seedlings are in the planting bag. No seedlings shall be in the planting bag for more than two hours prior to planting.

The hoe blade shall not be used to guide the seedling roots into the planting hole.

Contractor shall transport seedlings from Government storage to the planting site in an insulated transportation storage unit. This requirement can be met with either a fully enclosed trailer or a truck with a fully enclosed canopy. This transportation storage unit shall be free of substances, such as gas or oil, which may harm the seedlings.

Contractor shall remove and transport no more seedlings from Government storage than can be planted in one working day.

Throwing or tossing of boxed or bundled seedlings will not be allowed.

Transportation of Seedlings – (applicable when Contractor transports seedlings from District storage.)

A. The Contractor shall transport seedlings from storage to field locations in either fully enclosed trailers or pickups with canopies. Trees will not be transported in heated areas of vehicles. Space blankets will be the equivalent of International Reforestation Supplier's "Heat Shield" seedlings protection tarp. A space blanket will be required to effectively cover all stored seedlings inside of trailers or canopies.

In order to minimize seedling crushing and to provide for proper air circulation, the Contractor shall provide a shelving system for seedling bags or boxes that is acceptable to the Government.

Contractors shall take no more trees than can be planted in a contract day.

Empty tree planting boxes and/or bags will be returned to Government cooler by Contractor.

Spacing and Spot Selection

1. Seedling Spacing Requirements:

A. Where an unplantable spot is encountered, the planter shall plant in the closest plantable spot. However, average spacing shall be maintained (see microsite, planting spot selection).

B. The minimum distance a seedling may be planted from a planted seedling or suitable established tree under any circumstances is one-half the average spacing distance specified for each unit per the solicitation. Refer to (K), Definitions of Technical Specifications Terms above for the description of a suitable established tree.

C. Seedlings shall be planted to the boundary of all planting areas and around the perimeter of unplantable areas in spots distributed at intervals prescribed. If a dozer trail exists, the Contractor shall plant up to the dozer trail. For individual seedlings, the specified average spacing may be varied no more than 50 percent in any direction to find a suitable planting spot or as defined in the Planting Data Sheets and Planting Difficulty Matrix.

Planting Spot Selection:

A. Brush patches containing planting spots shall be planted even though this may require spreading stems aside or working around the stems. Landings, road cuts and fill banks shall be planted where planting spots exist.

Whenever possible, within requirements set forth elsewhere herein, planting spots shall be prepared where stumps, logs, brush, and terrain provide partial protection from sun, wind, animals, loose debris, and other agents detrimental to tree survival and growth.

Roads shall not be planted.

Planting Spot Preparation

1. Prior to preparing the planting hole, Contractor shall clear the planting spot of all limbs, logs, snow, bark, rotten wood, rocks and other loose debris and shall scalp ash, duff, sod, crowns of living plants, and roots to

moist mineral soil. Clearing and scalping dimensions shall be as specified in the unit information or unit maps of each solicitation.

2. A full benched or terraced scalp shall be constructed on slopes that exceed 30 percent unless otherwise specified on the Planting Data Sheets or unit information maps. The minimum bench length shall be the same dimension as the scalp size listed in the Planting Data Sheets or unit information maps.

3. When mineral soil cannot be found within the scalping depth specified for each unit, a seedling shall be planted in duff with at least 50 percent mineral soil mixed in the roots.

Preparing the Planting Hole

1. Planting holes shall be located near the center of the prepared planting spot and shall be between perpendicular to the ground surface and true vertical.

For Hand tools:

B. An open hole, broken out and deep and wide enough to fully accommodate the roots of the seedlings to be planted is required when hand planting tools are used. The planting hole shall be broken out on four sides, with the back of the hole being broken out after the seedling is suspended in the center of the hole.

Seedling Placement

1. Bare Root Seedlings - The bare root seedling shall be suspended near the center of the hole with roots in a near natural arrangement at a depth such that, after filling, firming, and leveling, the soil comes to a point at or above the cotyledon scar of the tree. No portion of the roots shall be exposed. Roots shall not be doubled up, twisted, spiraled, or bunched. The root system shall be aligned with the axis of the planting hole with all roots extending downward.
2. It is permissible to cover the lowest whorl of branches with uncompacted soil.
3. Containerized Seedlings - Seedlings shall be planted in the center of the prepared hole at a depth at which after filling, firming, and leveling, the soil comes to a point even with the lowest needles of green foliage. Plug growing media shall not be distorted or broken from the root system during planting process. Root system shall be aligned with the axis of the planting hole with all roots extending downward.

Filling and Firming

1. Moist mineral soil shall be filled in and firmed around seedling roots. Dry soil, ash, organic matter, rock and other foreign material shall be kept out of holes. Soil shall be filled in and firmed progressively so no loose soil or air pockets remain and the seedling is as firmly planted, as soil conditions will allow. The Contractor shall not wedge the sides of the hole. Firming the soil around the roots shall be accomplished in a manner that assures the seedling and root systems are not damaged. After the soil is firmed around the roots, it shall be smoothed out to the level of the surrounding mineral soil surface. After planting, the seedling stem shall be erect and free to grow. The seedling shall not be weighted down with mud or debris.

2. Firming soil with the foot will not be permitted.
3. After planting, the seedling stem position shall not exceed 15 degrees from true vertical.
4. For hand planting requirements, a planting tool may be used to firm the soil in the manner that does not harm the seedling. Soil firming shall be accomplished while the seedling is held suspended near the center of the hole. Adequate soil firming is best accomplished when approximately one-third of the hole is filled in at one time

Mixture of Planting Stock

5. Where a mixture of planting stock is required, the Contractor shall plant mixtures in locations specified for each unit.
6. Stage Planting - When specified for a particular unit, Contractor shall plant one part of the unit with the designated planting stock prior to completing other parts of the same unit. Planting areas will be identified by obvious existing physical features, plastic flagging, or directions, requiring the Contractor to plant out adjacent land area increments until the stock is exhausted.
7. The Contracting Officer’s representative will designate the planting mixture at the work site.
8. Mixture of planting stock – Unit planting specifications may require two or more planting stocks to be mixed at certain proportions. It is the Contractor's responsibility to plant the units accordingly with the specified mixture after receiving the stock indicated. Planting areas will be identified by obvious existing physical features, plastic flagging, or instruction requesting the Contractor to plant out adjacent land area increments until the stock is exhausted.
9. Each individual violation of the stage planting or mixing specification found on a plot will result in an above-ground violation.

   An error of plus or minus one tree per plot will be permitted. Each tree outside this allowance will be tabulated as one above-ground error.

   Example:

   Unit is planned for 4M DF and 1M PP. Each plot shall be planted with approximately 80 percent DF and 20 percent WRC.

   Sample Plot: 14 plantable spots
   14 trees planted
   20% of 14 trees = 3 WRC trees to be planted
   80% of 14 trees =11 DF trees to be planted

   A plot containing 2-4 PP will be acceptable. One error will be counted for each PP tree planted outside this variance.

B. GOVERNMENT VERIFICATION PROCEDURES

The following describes the major items in the contract with the incentives and deductions for the work described. Items below are included here as requirements.

Work Statement	Performance Standard	Gov't Method of Assessment	Incentives and Deductions for meeting the Standard
Tree Handling and Care	Trees are properly handled and cared for. When violations occur, Contractor takes corrective action immediately.	COR and inspector will monitor operations and conduct random samples.	• The Contractor's care and handling of trees will affect the performance evaluation as either a positive or negative incentive. • If Contractor meets the standard, no deduction. • If Contractor does not meet the standard and/or take corrective action, the Government may assess actual damages of $3.00 per tree, and provide adverse performance evaluation.
Tree Planting	Planting quality meets or exceeds performance standard of 95% quality.	COR or inspector conduct periodic inspection consisting of plots consistent with R-6 Planting Inspection	• The Contractor's planting quality will be reflected in the performance evaluation as either a positive or negative incentive. • If Contractor achieves 95% planting quality or greater, full unit price as incentive. • If Contractor does not achieve at least 95% quality, deductions as per****. May result in adverse performance evaluation.
Quality Control	Contractor maintains good quality control on all aspects of operation including tree handling and planting. Actions not consistent with contract specifications are corrected as per the Quality Control Plan.	COR or inspector randomly sample and observe operations.	• The quality of Quality Control provided by the Contractor will be reflected in the performance evaluation as either a positive or negative incentive. • If the Contractor fails to meet standards, work may be suspended. Repeated failure may result in contract terminated. Also result in adverse performance evaluation.
	Contractor's plot inspections are +/-5% of Government's quality. Inspection completed to meet timeframes.	COR or inspector randomly sample and observe Contractor inspection. Reviews Contractor inspection	• The ability of the Contractor to meet the standard will be reflected in the performance evaluation as either a positive or negative incentive. • When Contractor's plot inspections meet standards, no deduction. • If quality does not meet standard, deduction per **** and/or additional administrative costs to the Government may be assessed.

Work Statement	Performance Standard	Gov't Method of Assessment	Incentives and Deductions for meeting the Standard
		sheets daily.	
Work Plan and Schedule	Work meets schedule as per the accepted work plan.	COR and inspector conduct periodic monitoring.	• The Contractor's ability to maintain the work schedule and complete work on schedule will be reflected in the performance evaluation as either positive or negative incentive. • Work not completed on schedule is subject to termination and may result in assessment of actual damages and administrative costs.

CONTRACTOR QUALITY CONTROL SYSTEM

The Contractor shall identify the quality control inspection system it will use to ensure that contract specifications will be achieved. At no time shall the contractor rely upon Government inspections to provide notification of unsatisfactory performance. The Contractor shall produce written inspection records in a format and at times and places satisfactory to the Contracting Officer. Inspection records shall be made available upon request of the Contracting Officer and be maintained until the date of contract closure. The Contracting Officer may observe the Contractor's inspection at any time and shall otherwise have unlimited access to the inspection data.

Inspection and Acceptance

1.1 Measurement

A. Acreage's were estimated from aerial photographs utilizing a planimetric measuring device, GPS, or were measured in the horizontal plane by traverse within the established unit boundaries.

B. Acceptance specifications are contained in Section E-2.

C. Unless otherwise approved by the Contracting Officer, payment will be made for completed sub-items only.

D. The unit of measure for this contract will be on a per acre basis.

1.2 Remeasurement:

A. The Contractor may, within three days after planting and completing a sub-tem, request remeasurement of any unit. The request must be made in writing. Remeasurement will be made by traversing the unit by GPS within the established boundaries.

B. Payment will be based on the remeasurement of the acreage except when:

1) No payment adjustment shall be made for areas less than 1 acre.

C. The Contractor shall pay for the cost of re-measurement if the remeasurement results in:

2) An increase of less than 1 acre on units smaller or equal to 20 acres or an increase of less than 5 percent on units larger than 20 acres.

1.3 Contractor's Quality Control Plan

A. The Contractor shall provide a Quality Control Plan (QCP). The Plan must demonstrate how the Contractor will ensure that quality of performance meets the objectives and requirements of the contract. The QCP shall specify:

   1) How quality will be monitored to assure performance standards are met.

   2) How the work and crew will be supervised.

   3) How results of the monitoring will result in quality performance.

   4) Identify the personnel responsible for performing quality control.

   5) Quality control shall include monitoring quality while planting is in progress, tree care and other associated tasks, and an unbiased sample of planting for determining actual quality percentage.

   6) Identify the Contractor’s plot inspection methods and procedures.

B. The Contractor shall ensure that performance meets contract specifications, prior to requesting the Government to inspect for payment or acceptance. Upon completion of an inspection card, the Contractor shall contact the Contracting Officer’s representative to set a mutually agreed upon date for inspection of completed work.

C. This contract requires Contractor self-inspection in accordance with the Contractor’s Quality Control Plan.

D. The Contractor may be issued a Notice of Noncompliance, (or other contract action taken), for failure to conduct plot inspections in accordance with the QCP. The Contractor’s inspector is not permitted to modify plot deficiencies nor influence the planting quality by indicating to the planters of upcoming plot locations.

1.4 Contractor Plot Inspection Procedures

The Contractor’s Quality Control Plan must address the Contractor’s plot inspection procedures. Listed below is a guideline for the Contractor plot inspection procedure. If the Contractor’s plot inspection procedures vary from these procedures, the Contractor must state the revisions in the Quality Control Plan submitted with their offer.

The Contractor shall maintain a plot system that provides an unbiased sample of planting quality and which represents the entire area planted.

A. Plot Inspections- Tree Planting. The Contractor shall maintain a plot system that provides an unbiased sample of planting quality, and which represents the entire area planted. Install a series of plots with slope correction. Plots shall be located throughout the planting areas to obtain a representative sample of the work. Plot size shall be determined based on the number of seedlings to be planted within a unit or group of units, on a per acre basis. Only units that have the same number of seedlings prescribed to be planted on a per acre basis, and that use the same plot size (see Table 1) may be grouped for the purpose of locating plots. The Contractor shall recognize, and the Government may approve grouping of units for the purpose of locating plots. A minimum of 10 plots per grouping shall be required to determine acceptance of the unit(s). Contractor shall install a minimum of one plot per acre.

   1) Mark inspection plots on the ground by using flagged markers to locate the plot centers and identify them by consecutively numbering each plot, and also indicate the date of inspection. Flags will be at least 12 inches long prior to tying. All plots centers shall be marked with florescent orange flagging as provided by the Contractor.

2) In accordance with Section 3.4, and the Contractor's accepted proposal, declare seedlings handled in a manner inconsistent with said contract specifications as wasted seedlings.

3) Inspect planting procedures on representative sample plots and examine the planted seedlings to ensure and measure compliance with the specifications. Utilize the following codes for recording above and below ground compliance on the planting plot cards:

CODE ABOVE GROUND INSPECTION

A	Planting Spot Selection
B	Planting Spot Preparation
C	Tree Location on Planting Site
D	Planting Depth and Exposed Root
E	Stem Position or Damage
F	Firming
G	Shade
H	Spacing
AA.	Other Specifications

CODE BELOW GROUND INSPECTION

I	Planting Hole Preparation
J	Planting Hole Orientation
K	Root Configuration and Orientation
L	Altered Root Length and Damage
M	"Foreign" Material in Planting Hole
N	Loose Soil or Air Pockets
II	Other Specification

B. Inspection within each Plot - Each plot shall be inspected as follows:

1) Determine from Table 1 the average number of planting spots for the plot based on the specified average spacing. From this number subtract the number of suitable trees and the number of unplantable spots. Record the difference as the number of plantable spots on which seedlings should be planted.

TABLE 1

Average Spacing (Feet)	Prescribed Trees Per Acre	Average No. of Planting Spots by Plot Size		
		1/50 (16.7')	1/40 (18.6')	1/20 (26.3')
6 X 6	1210	24		
7 X 7	889	18		
8 X 8	680	14		
9 X 9	538	11		
10 X 10	436	9		
11 X 11	360	7		
12 X 12	303	6		
13 X 13	258	5		
14 X 14	222		6	
15 X 15	194		5	
16 X 16	170		4	
17 X 17	151			8
18 X 18	134			7

19 X 19	121			6
20 X 20	109			5

2) Determine and record the maximum number of allowable seedlings from Table II.

TABLE II			
Plantable Spots	Maximum Number of Seedlings	Plantable Spots	Maximum Number of Seedlings
0	1	13	16
1	2	14	17
2	3	15	18
3	4	16	19
4	5	17	20
5	6	18	22
6	7	19	23
7	8	20	24
8	10	21	25
9	11	22	26
10	12	23	28
11	13	24	29
12	14	25	30

3) Record the number of seedlings planted on the plot.

4) Determine and record the number of wasted seedlings on the plot. This will be the number of seedlings determined by subtracting the maximum number of allowable seedlings from the number of planted seedlings recorded, but not less than zero. When planted wasted seedlings are found, and they are considered minor in nature and in no way indicates a trend that average spacing requirements are being exceeded, the Contracting Officer's representative may waive the wasted seedling charge. In no case will a waiver be given if the total of the Planting Inspection Sheet column "Planted Seedlings" exceeds the total of column "Maximum Number Allowable Seedlings" or the number of wasted seedlings is not minor and indicates a trend that average spacing requirements are being exceeded.

Wasted seedlings shall be calculated by the following:

Total number of wasted seedlings from inspection record, multiplied by the reciprocal of the plot size, times number of acres in the sub-item, divided by number of plots taken, plus seedlings determined wasted under care of seedlings specifications. For example, if a total of 27 wasted seedlings were found on 40 1/50 acre plots which were taken on a 60-acre sub item, and a bundle of 200 seedlings had been wasted through improper care, the calculation would be made as follows:

(27 x 50 x 60) divided by 40 = 2025 + 200 = 2225 wasted seedlings

5) Inspect and record the number of planted seedlings meeting the above-ground contract specifications. The maximum number of satisfactory seedlings to be credited shall not exceed that shown in Table II.

6) Determine and dig the number of seedlings from those determined satisfactory above-ground as shown in Table III.

Table III	
Number of Satisfactorily Planted Seedlings on Plot – Above Ground	Number to be DUG
1	1
2-6	2
7-9	3
10 plus	4

The satisfactory above-ground seedlings shall be dug starting with those closest to the plot center and progressing outwards. Each dug tree shall be immediately replanted in accordance with specifications.

7) Record the number of seedlings meeting below-ground contract specifications.

8) Compute the planting quality by the following formula:

Planting Quality for Seedlings =

$$\frac{\textbf{(No. of Sat. Trees above Ground)}}{\textbf{(No. of Plantable Spots)}} \times \frac{\textbf{(No. of Sat. Dug Seedlings)}}{\textbf{(No. of Dug Seedlings)}} \times \textbf{100}$$

The results of the above calculation will be applied as follows:

a. Plot:

(1) Divide the total satisfactory seedlings above ground by the total number of plantable spots.

(2) Divide the total satisfactory seedlings below ground by the total dug.

(3) Multiply the two totals and to get planting quality percentage.

(4) When the number of satisfactory seedlings above ground is zero or one, and the number of plantable spots is zero, the result shall be 1.0.

b. Total Sub Item:

(1) Add the total plot percentage of all plots; divide by the total number of plots, to get the average percentage of plot quality in the sub-item.

9) Percentage of planting quality as calculated above will be rounded to the nearest whole percent. MAXIMUM ALLOWABLE PERCENTAGE SHALL BE 133 PERCENT PER PLOT AS COMPUTED IN PARAGRAPH 8.

10) Average planting spots and maximum number of satisfactory seedlings shown in Tables I and II have been rounded to the nearest whole number and it is mutually understood and agreed that these figures will be used for determining planting quality even though they are not precisely correct from a mathematical standpoint.

C. Inspection Results:

1) Inspections shall be maintained concurrent with contract work. Contractor inspection results shall be available to the Contracting Officer at the completion of each planting day for the work completed that day. Completed Planting Inspection Sheets shall be turned into the Contracting Officer's representative within 24 hours upon completion of each sub item or unit and will remain a part of the permanent contract file.

2) The Contractor shall submit legible plot cards. Illegible and incomplete sheets will be returned to the Contractor for correction and resubmission before Government verification inspections are performed.

3) By submission of the plot cards to the Government, the Contractor is certifying that the unit is:

a. Satisfactorily completed.

b. Tree handling was completed in accordance with all contract provisions.

c. Plot cards reflect the work actually accomplished.

1.5 Unsatisfactory Planting - Government Quality Assurance Surveillance Plan

A. If the percentage of planting quality for any unit or grouping of units that falls below 85 percent due to an insufficient number of satisfactory trees above ground, the Contractor may, at the Government's option, be allowed to replant the unit or grouping of units in order to achieve a higher planting quality percentage. Replanting will be subject to availability of tree stock and shall be requested in writing by the Contractor. Replanting, if allowed, shall be done a maximum of one time. Replanting will not be allowed where the average below-ground quality for the unit or grouping of units is less than 90 percent.

1) Following completion of replanting, a new inspection shall be made by the Contractor and Government. Payment will be based on the new inspection.

B. The Contractor shall replant any unit or grouping of units where the average planting quality falls below 80 percent, provided that:

1) Additional supplies of suitable seedlings are available;
2) The original inspection indicated an average below ground planting quality of not less than 90 percent.
3) No. of Satisfactorily Dug Trees x 100/ No. of Dug Trees
4) Seedlings sampled on inspection plots, which are not placed in the most favorable spot in accordance with the specifications, shall be counted as unsatisfactory seedlings.

C. Only one replant will be permitted. Payment will be based on a new inspection made after replanting. The Contractor shall bear the cost of all re-inspections after replanting.

1.6 Government Verification:

A. The Government will conduct verification inspections to determine compliance with specifications. Each -unit will be verified separately and inspection results on one unit will not be averaged with those of other

units. Determination of the acceptability of the work performed will be based on these verification inspections and will be considered conclusive. The Contractor or a designated representative is encouraged to observe inspections while they are underway.

1) Verification inspection of a unit may or may not be performed immediately following planting.

B. Government verification inspection will consist of observation of tree handling, site preparation, planting and inspection procedures, and examination of individual trees on sample plots. If the Government's verification inspection results differ by more than 5 percentage points from the Contractor's inspection results, the Government's inspection will be used for payment.

D. The Government will monitor progress to assure the Contractor is providing the quality promised in their Quality Control Plan (QCP) and that work meets performance standards. Surveillance will consist of visual observations of the entire operation and sample plots to determine compliance with the specifications.

1) The Government will conduct verification inspections to determine compliance with specifications and to verify the Contractor’s planting quality for above and below ground quality. Government verification inspections will consist of observation of tree handling, site preparation, planting, inspection procedures, and examination of individual trees on sample plots. The Contractor’s completed Planting Inspection Sheets, (R6-FS-2400-113), will be utilized.

2) Each sub item or unit will be verified separately and inspection results will not be averaged with those of other sub-items or units. Determination of the acceptability of the work performed will be based on these verification inspections and will be considered conclusive.

Verification inspections of a sub-item or unit may or may not be performed immediately following planting.

3) The Government will review all plot sheets and check calculations after receipt. The Government will compare the Contractor’s plot results with the Government’s results. After all plots have been taken and recorded on a unit, a planting quality will be computed using the formula in Section 2.1. The Contractor will be informed if the quality is acceptable after comparing the Government verification plots with the Contractor’s plots upon completion of a sub item or unit.

1.7 Re-inspection upon Contractor Request

A. If the original verification inspection results are unacceptable to the Contractor, the Contractor will have the option to request, in writing, a full inspection by the Government. Requests for re-inspection shall be made, in writing, within five days after receipt of initial inspection results. If the Government's re-inspection results differ by more than 5 percentage points from the Contractor's original inspection results, the Government's re-inspection results will be used for payment and the Contractor will bear the Government's re-inspection costs.

B. Inspection results used for payment will be determined as specified elsewhere herein.

1.8 Acceptance

The Contractor’s Quality Control inspections for planting shall be within 5 percent of the Government quality assurance to be considered acceptable.

Failure of the Contractor to provide planting quality resulting in inspection results within 5 percent of the Government's quality assurance at the completion of a unit will deem the Contractor's quality control unacceptable and will result in payment for that unit based on results of the Government's quality assurance. If the Government's results are objectionable to the Contractor, a re-examination may be requested in writing. The request must be submitted within 5 calendar days after receipt of the Government's quality assurance inspection results and contain documentation that supports the probability that an error exists. The same plot method will be used, but new plots will be selected that do not overlap plots previously inspected by the Government and a 2- percent quality assurance inspection will be conducted. If the results of the re-examination support the Contractor's submitted quality control results, those results will be considered acceptable and used for pay. If results of the re-examinatoin support the Government's quality assurance results, the Government's results will be used for the basis of pay and the Contractor will be assessed the costs incurred by the Government that are directly related to the performance of such service.

A. PAYMENT

2.1. Payment for Satisfactory Planting:

A. When Government verification is within 5 percentage points of the Contractor's inspection; the Government will base payment on the Contractor's inspection percentages. If inspection indicates the percentage is 95 percent or above, payment will be made at 100 percent of the sub-item unit price. For planting quality below 95 percent, payment will be made for the actual quality percent earned. Computations to at least thousandths (.000) and the final percentage of quality will be rounded to the nearest whole percent.

B. If Government verification results differ greater than 5 percentage points from the Contractor's inspections; the Government will base payment on the Government verification inspection. Computations to at least thousandths (.000) and the final percentage of quality will be rounded to the nearest whole percent.

C. When formal inspections, (minimum 20% of Contractor's plots), fail to support Contractor's inspection results, the Contractor will have the option to request, in writing, a full reinspection by the Government. If the Government's verification inspection results differ by more than five percentage points from the Contractor's inspection results, the Government's inspection will be used for payment. The Contractor will bear the Government's full inspection costs if results differ by more than five percentage points.

1) If the Government re-inspection results are within 5 percentage points of the original Contractor's inspections, pay will be based on the Contractor's inspection. The Contractor will not be billed for the Government inspection costs.

2) If the Government re-inspection results are greater than 5 percentage points of the original Contractor's inspections, pay will be based on Government re-inspection results, but the Contractor shall bear the Government re-inspection costs.

3) Where planting quality for a sub item falls below the Minimum Acceptable Quality level of 80 percent, Contractor may be required to rework, and actual damages incurred by the Government as a result of the rework may be assessed. Repeated failure to plant at the 80 percent level or above may be grounds for termination for default. At a minimum, actual damages will be assessed for those acres not satisfactorily planted. Actual damages include, but are not limited to, cost of tree seedlings, site preparation, and resurvey. If additional rework of any of the required treatments is still required after the first Government reinspection; all subsequent

Government inspections will be charged to the Contractor. Costs will include round trip mileage to the unit from the Tonasket Ranger District at the rate of $0.55 per mile and the Government's cost for the Inspector's wages for the time spent driving to the unit and return to the District office and for time spent conducting the reinspection.

4) Any work quality that the Government determines as unacceptable will be noted in the performance evaluation.

2.2 Payment Option for Unsatisfactory Planting:

A. If the percentage of planting quality for any unit or grouping of units that falls below 85 percent due to an insufficient number of satisfactory trees above ground, the Contractor may, at the Government's option, be allowed to replant the unit or grouping of units in order to achieve a higher planting quality percentage. Replanting will be subject to availability of tree stock and shall be requested in writing by the Contractor. Replanting, if allowed, shall be done a maximum of one time. Replanting will not be allowed where the average below-ground quality for the unit or grouping of units is less than 90 percent.

1) Following completion of replanting, a new inspection shall be performed by the Contractor as set forth in Section 1.4. A verification inspection will be conducted by the Government. Payment will be based on the new inspection.

B. The Contractor shall replant any unit or grouping of units where the average planting quality falls below 80 percent, provided that:

1) Additional supplies of suitable seedlings are available.

2) The original inspection indicated an average below ground planting quality of not less than **90** percent.

Number of Satisfactorily Dug Trees divided by Number of Dug Trees X 100 = % Satisfactory

3) Seedlings sampled on inspection plots, which are not placed in the most favorable spot in accordance with the specifications, shall be counted as unsatisfactory seedlings.

C. Only one replant will be permitted. Payment will be based on a new inspection made after replanting. The Contractor shall bear the cost of all reinspections after replanting.

Project Number 002 – Decommission 5510-110 Spur – Miles: 1.08

End Results

Restore existing road templates to improve soil conditions, reduce hydrologic impacts and prevent further use and damage

A. ***TECHNICAL REQUIREMENTS***

See attached:

BANDERA-HANSEN THIN STEWARDSHIP POST HAUL –DECOMMISSIONING

- Drawings
- Forest Service Supplemental Specifications

Project Number 003 – Decommission 5510-120 Spur – Miles: 0.95

End Results

Restore existing road templates to improve soil conditions, reduce hydrologic impacts and prevent further use and damage

A. ***TECHNICAL REQUIREMENTS***

See attached:

BANDERA-HANSEN THIN STEWARDSHIP POST HAUL –DECOMMISSIONING

- Drawings
- Forest Service Supplemental Specifications

Project Number 004 – Decommission 9030A Spur – Each: 1

End Results

Stabilize, hydrologically disconnect, and effectively obliterate 200 feet of designated unauthorized road segment. Restore natural contour and drainage features and re-vegetate with approved certified weed free grass mix or native species. The ditch on Forest Road 9030 that intersects unauthorized road will be reinforced with riprap to deflect any water to go on the roadway. There will be a berm constructed to mask entrance to discourage motorized travel as directed by the Contract Administrator. The end result is a condition that promotes vegetative growth and does not allow water to collect and cause surface erosion.

Road Decommissioning Technical Specifications

ROAD TYPE	LOCATION OF UNAUTHORIZED ROAD	LENGTH OF ROAD SEGMENT TO BE OBLITERATED (FEET)
9030A	Subdivision 2	200

A. TECHNICAL REQUIREMENTS

1. This work consists of obliterating 0.3 miles of existing non-system roads, including de-compaction to 18 inches or to depth of compaction, re-contouring to natural slope profile, seeding, mulching with native material, and equipment rental as needed, and other incidental work. This includes furnishing all labor, equipment, supervision, transportation, supplies, and incidentals.

2. This work also consists of the reclamation of roadways by the de-compaction and re-contouring of subgrade; removing fill material from drainages; and seeding of all disturbed areas. In addition, work may include incidental rock placement, and other miscellaneous items required for execution of the work.

3. **Soil Erosion Control -**
   This work consists of furnishing, installing, and maintaining permanent and temporary erosion and sediment control measures to minimize erosion and sedimentation during and after work. When working adjacent to live water or streams a buffer of vegetation, a brush barrier, temporary silt fence or straw dike will be maintained to prevent direct sedimentation to the stream.

4. **Certified Weed Free Straw** - Straw bales shall be certified as "Weed Free". The source field shall be inspected and certified by the county extension agent from the county that the straw was grown. Each shipment onto the forest shall be accompanied by an official certification stating that it is weed free. The Contractor shall furnish the Forest Service with a statement of certification. Individual bales shall have a certification string or tag.

5. **Vegetation Removal:** Vegetation shall be placed on top of re-contoured - road segments and completed channel side slopes in stable positions not interfering with stream channel flow.

6. **De-compaction:** Any hardened road segment or surface area shall be de-compacted to promote water infiltration and establish vegetation. Loosen compacted soil down to 18 inches or to depth of compaction of the entire disturbance area created by the road through the use of a trackhoe excavator bucket to dig the full depth of the bucket. Clod size shall be no larger than 10 inches.

7. **Excavation:** After required de-compaction of the roadway, the fill material shall be piled up and placed on roadbed between the top of cut and original ground, forming a slope approximating natural contours as shown in the drawings. No ditches, water traps, or berms shall remain. Finished product should blend in with the surrounding terrain.

8. **Removal of Drainage Fill:** Material removed from drainage on unauthorized road in Subdivision 2 shall be left in an un-compacted manner (but bucket tampered) and placed outside of the channel. After drainage fill material has been removed, stream channel and side slope (bank) width and dimensions shall be the same as the undisturbed width and dimensions above or below the crossing. An approximately uniform grade shall be constructed from natural ground above the inlet to natural ground below the outlet to facilitate a free draining channel for the entire length unless otherwise noted on the work lists. Excavated material shall be incorporated in the adjacent areas while maintaining "natural slopes".

9. Seed Application: This work consists of seeding the full length and width of the decommissioned roadway and all other disturbed areas. Hand-operated seeding methods are satisfactory on areas inaccessible to mechanical equipment. Apply seed by the dry method. No fertilizer shall be used. Store and handle material to preserve its quality and fitness for the work. The Contractor is responsible for the security of all stored material. Conform to the Federal Seed Act, the Federal Noxious Weed Act, and applicable State and local seed and noxious weed laws. Do not use wet, moldy, or otherwise contaminated or damaged seed. Apply seed to all disturbed areas within 10 calendar days of soil disturbance. All seed must be made available for inspection and approved before use.

   Do not seed during windy weather or when the ground is excessively wet, has snow cover of more than 1 inch, cloddy, hard pan, or is otherwise untillable.

The application rate shall be applied in terms of pure live seed in pounds per acre as follows: 3200 pounds per acre

SEED APPLICATION	
SPECIES MIXTURE	**LBS/AC**
Tufted Hairgrass	4
Annual Ryegrass	10
Winter Triticale	60
Alsike Clover	2
Total	76

K-H.1 - PLANS *(05/2005)*

The plan shall state how Contractor's representative or alternates will be contacted in a fire emergency, both during periods of operation and at other times such as evenings or weekends. Contractor shall certify compliance with specific fire precautionary measures included as Subsections under K-H.2 - Specific Fire Precautions, before beginning operations during Fire Precautionary Period (closed season) and shall update such certification when operations change.

If helicopter yarding is required, the plan shall include a schedule of rates mutually agreed to for computing Contractor costs incurred toward meeting Contractor's obligations under A.14, or for paying for helicopters controlled by Contractor and used under Forest Service direction for suppressing Operations Fires or other fires on Contract Area, excluding Negligent Fires.

K-H.2 - SPECIFIC FIRE PRECAUTIONS *(05/2005)*

When the industrial fire precaution level is I or higher, unless waiver is granted under K-H.2.2, specific required fire precautionary measures are as follows:

A. Fire Security.

Contractor shall designate in writing a person or persons who shall perform fire security services listed below on Contract Area and vicinity. The designated person will be capable of operating Contractor's communications and fire fighting equipment specified in the contract, excluding helicopters, and of directing the activities of Contractor's personnel on Forest fires. Such person must report any fire detected to Forest Service within 15 minutes of detection. In lieu of having the designated person perform the required supervisory duties, Contractor may provide another person meeting the qualifications stated above to direct the activities of Contractor's personnel and equipment during all fire fighting activities.

Services described shall be for at least 1 hour from the time Contractor's Operations are shut down. For the purposes of this provision, personnel servicing equipment, and their vehicles, who are not engaged in cutting or welding metal are excluded.

Fire security services shall consist of moving throughout the operation area or areas constantly looking, reporting, and taking suppression action on any fires detected. Where possible, the designated person shall observe inaccessible portions of helicopter operating areas from vantage points within or adjacent to Contract Area.

Contractor shall furnish fire security services based on the predicted industrial precaution level, obtained by Contractor from the appropriate Ranger District Headquarters. If predictions made after 6:00 p.m. local time, are significantly different than originally estimated, Forest Service will inform Contractor when changes in fire security services are indicated.

B. Fire Extinguisher and Equipment (on Trucks, Tractors, Power Saws, etc.).

(a) Each yarder or loader equipped with an internal combustion engine or other spark emitting source shall be equipped with a readily accessible fire extinguisher, with an Underwriter's Laboratory (UL) Rating of at least 5 B,C.

(b) All power-driven equipment operated by Contractor on National Forest land, except portable fire pumps, shall be equipped with one fire extinguisher having a UL rating of at least 5 B,C and one "D" handled or long handled round point shovel, size O or larger. In addition, each motor patrol, truck and passenger-carrying vehicle shall be equipped with a double-bit axe or Pulaski, 3-1/2 pounds or larger.

(c) Equipment required in (a) and (b) shall be kept in a serviceable condition and shall be readily available.

(d) Each gasoline power saw operator shall be equipped with a pressurized chemical fire extinguisher of not less than 8-ounce capacity by weight, and one long handled round point shovel, size O or larger, except at a landing where a suitable fire extinguisher and shovel are immediately available. The extinguisher will be kept in possession of the saw operator at all times. The shovel shall be accessible to the operator within 1 minute.

(e) Each helicopter shall be equipped with one fire extinguisher having a UL rating of at least 5 B,C mounted inside the aircraft within reach of the pilot's operating position.

(f) One refill for each type or one extra extinguisher sufficient to replace each size extinguisher required on equipment shall be safely stored in the fire tool box or other agreed upon place on Contract Area that is protected and readily available.

(g) At each area where helicopters are being serviced or supplied, a carbon dioxide fire extinguisher with a UL rating of at least 20 B,C will be provided on the site and placed where it is available for immediate use.

C. Spark arresters and mufflers.

Each internal combustion engine shall be equipped with a spark arrester qualified and rated under USDA Forest Service Standard 5100-la as shown in the National Wildfire Coordination Group Spark Arrester Guide, unless it is:

(a) Equipped with a turbine-driven exhaust supercharger such as the turbocharger. There shall be no exhaust bypass.

(b) A multi-position engine, such as on power saws which must meet the performance levels set forth in the Society of Automotive Engineers (SAE) "multi-positioned small engine exhaust fire ignition standard, SAE recommended practice J335B" as now or hereafter amended.

(c) A passenger carrying vehicle or light truck, or medium truck up to 40,000 GVW, used on roads and equipped with a factory designed muffler complete with baffles and an exhaust system in good working condition.

(d) A heavy duty truck, such as a dump or log truck, or other vehicle used for commercial hauling, used only on roads and equipped with a factory designed muffler and with a vertical stack exhaust system extending above the cab.

Exhaust equipment described in this Subsection, including spark arresters and mufflers, shall be properly installed and constantly maintained in serviceable condition.

D. Fire Tools.

Contractor shall furnish serviceable fire fighting tools in a readily accessible fire tool box or compartment of sound construction with a hinged lid and hasp so arranged that the box can be secured or sealed. The box shall be red and marked "Fire Tools" in letters at least 1 inch high. It shall contain a minimum of:

(a) Two axes or Pulaskis with a 32 inch handle.

(b) Three adze eye hoes. One Pulaski may be substituted for one adze eye hoe.

(c) Three long handled, round point shovels, size 0 or larger.

E. Tank Truck.

Contractor shall provide a tank truck or trailer, containing not less than 300 gallons of water, during yarding, skidding, loading, land clearing, right-of-way clearing, mechanical falling, and mechanical treatment of slash. Such tank truck or trailer shall be maintained in a serviceable condition and located within 10 minutes, round trip, from each operating side during Fire Precautionary Period (closed season), except as provided under H.2.1.

The tank truck or trailer shall be equipped with a pump capable of discharging 20 gallons of water per minute, using a 1/4 inch nozzle tip, through a 50 foot length of poly or rubber lined hose. In addition, 500 feet of serviceable hard rubber poly or rubber lined or FJRL hose of not less than 1 inch outside diameter, fitted with a nozzle capable of discharging a straight stream of 1/4 inch diameter and a spray pattern shall be immediately available for use. The tank, pump, nozzle and at least 250 feet, of the total 500 feet of hose, shall be connected and ready for use at all times. Synthetic hose may be used by

agreement.

If a trailer is used, it shall be equipped with a hitch to facilitate prompt movement. A serviceable tow vehicle shall be immediately available for attachment to the trailer and must meet the time requirements stated above. Such truck or trailer shall be equipped to operate for a minimum of 8 hours.

Where designated on Contract Area Map, Contractor shall provide a tank trailer or water source and pumping equipment, including accessories, which can be lifted and transported by the yarding system. The component parts shall meet all specifications above. The tank trailer or water supply and pumping accessories shall be deliverable to a fire, in area of operations, within 15 minutes of detection.

In lieu of the above tank trailer or water supply for helicopter operations, Contractor may provide a suitable helicopter water bucket with a 300 gallon capacity. When Contractor provides a water bucket, a water source shall be provided within 5 minutes round trip flight time from operating side.

F. Communications.

During Contractor's Operations, excluding powersaw falling and bucking, Contractor shall provide adequate two-way communication facilities to report a fire to Forest Service within 15 minutes of detection. Citizen Band radios (CB's) are not considered adequate two-way communications because FCC Regulations prohibit commercial use.

G. Smoking and Open Fire Restrictions.

Smoking and fires shall be permitted only at the option of Contractor. Contractor shall not permit open fires on Contract Area without advance permission in writing from Forest Service.

H. Blasting.

Blasting shall be permitted only for road construction purposes unless advance permission is obtained from Forest Service.

Whenever the Industrial Fire Precaution Level is II or greater, a fire security person equipped with a long handled round point No. 0 or larger shovel and a 5 gallon backpack pump can filled with water, will stay at location of blast for 1 hour after blasting is done. Blasting may be suspended by Forest Service, in areas of high rate of spread and resistance to control.

Fuses shall not be used for blasting. Explosive cords shall not be used without permission of Forest Service, which may specify conditions under which such explosives may be used and precautions to be taken.

I. Compliance with State Fire Laws.

Listing of specific fire precautionary measures in the foregoing Subsections is not intended to relieve Contractor in any way from compliance with State fire laws covering fire prevention and suppression equipment, applicable to Contractor's Operations.

J. Aircraft Communications.

Every aircraft used in conjunction with Contractor's Operations shall be equipped with an operable radio system. The radio system shall be capable of transmitting and receiving on VHF frequency 122.85 Megahertz (MHz) with a minimum output of 5 watts at the transmitter. The system shall be located and installed so that the pilot can operate it while flying. A shielded all-weather broad-band antenna shall be part of the system. Radio and antenna shall be properly installed and maintained.

Upon discovery or notification of a fire on Contract Area, all aircraft pilots controlled by Contractor

shall monitor VHF frequency 122.85 MHz when within 5 miles of a fire and broadcast their intentions.

K. Logging Block Equipment.

Contractor shall provide a serviceable 5 gallon backpack pump full of water, one axe, and one long handled round point shovel, size 0 or larger, at each haulback block through which a running line passes.

The area below such blocks must be kept clear of all flammable debris under 4 inches in diameter for a distance of 6 feet in all directions. Material larger than 4 inches that poses a fire risk, such as punky logs, must also be removed.

Contractor shall avoid line-rub on rocks or woody material which may result in sparks or sufficient heat to cause ignition of fire.

K-H.2.0.1 - BURNING BY CONTRACTOR *(06/2006)*

Notwithstanding the Fire Precautionary Period limitation of H.2, Contractor is required to obtain written permission from Forest Service prior to any burning on the National Forest Lands.

K-H.2.2 - EMERGENCY FIRE PRECAUTIONS *(05/2005)*

Contractor shall restrict operations in accordance with the Industrial Fire Precaution Levels attached. Forest Service may change the Industrial Fire Precaution Levels to other values upon revision of the National Fire Danger Rating System and may change the specific Industrial Fire Precaution Levels when such changes are necessary for the protection of the National Forest. When sent to Contractor, the revised Industrial Fire Precaution Levels will supersede the attached levels.

INDUSTRIAL FIRE PRECAUTIONS SCHEDULE

LEVEL INDUSTRIAL FIRE PRECAUTION
I. Closed Season - Fire precaution requirements are in effect. A Fire Watch/Fire Security is required at this and all higher levels unless otherwise waived.

II. Partial Hootowl - The following may operate only between the hours of 8 p.m. and 1 p.m. local time:

power saws, except at loading sites;
cable yarding;
blasting;
welding or cutting of metal.

III. Partial shutdown - The following are prohibited:

cable yarding - except that gravity operated logging systems employing non-motorized carriages may be operated between the hours of 8 p.m. and 1 p.m. local time when all blocks and moving lines are 10 feet or more above the ground, excluding the line between the carriage and the choker.

power saws - except at loading sites and on tractor/skidder operations between the hours of 8 p.m. and 1 p.m. local time.

In addition, the following are permitted between the hours of 8 p.m. and 1 p.m. local time:

tractor, skidder, feller-buncher, forwarder, or shovel logging operations where tractors, skidders or other equipment with a blade capable of constructing fireline are immediately available to quickly reach and effectively attack a fire start;
mechanized loading and hauling;
blasting;
welding or cutting of metal;
any other spark-emitting operation not specifically mentioned.

IV. General shutdown - All operations are prohibited.

The following definitions shall apply to these Industrial Fire Precaution Levels:

Cable yarding systems: A yarding system employing cables and winches in a fixed position.

Closed Season (Fire Precautionary Period): That time period each year when a fire hazard exists and as described in A.12.

Hauling: Where hauling involves transit through more than one shutdown zone/regulated use area, the precaution level at the woods site shall govern the level of haul restrictions, unless prohibited by other than the Industrial Fire Precaution Level system.

Loading sites/woods site: A place where any product or material (including but not limited to logs,

firewood, slash, soil, rock, poles, posts, etc.) is placed in or upon a truck or other vehicle.

Advance written waiver of the above precautions may be issued by the Contracting Officer or Forest Service Representative.

Such waiver, or substitute precautions under H.2.1, shall prescribe measures to be taken by Contractor to reduce the risk of ignition, and/or the spread of fire. The Contracting Officer or Forest Service Representative shall consider site specific weather factors, fuel conditions, and specific operations that result in less risk of fire ignition and/or spread than contemplated when precaution level was predicted. Consideration shall also be given to measures that reduce the precaution levels above. Contractor shall assure that all conditions of such waivers or substitute precautions are met.

Contractor shall obtain the predicted Industrial Fire Precaution Level from the appropriate Ranger District headquarters. If predictions made after 6:00 p.m., local time, are significantly different than originally estimated, Forest Service will inform Contractor when changes in restrictions or industrial precautions are indicated.

K-H.3.1 - ADDITIONAL AREA OF FIRE RESPONSIBILITY *(05/2005)*

The area within 200 feet slope distance of the center line of any road constructed or reconstructed under this contract on National Forest lands outside of Contract Area shall be considered as a part of Contract Area in connection with responsibilities under H.3 and H.4 until the road has been accepted in writing by Forest Service.

K-I.1.0 - DISCLAIMER OF EXPRESSED OR IMPLIED WARRANTY *(05/2005)*

Contractor and Forest Service hereby agree, acknowledge, and accept that there is no expressed or implied warranty provided by the Forest Service that guarantees the Contractor will be allowed to complete the removal of products sold under the terms of the contract. Upon execution of the contract, Contractor hereby acknowledges the acceptance of the risk that this contract is subject to interruption or termination as a result of litigation associated with the environmental analysis process used by the Forest Service in the planning of this project. If such interruption or termination occurs due to litigation, Contractor agrees to accept as full compensation for such interruption remedies pursuant to I.3.3, or for termination remedies pursuant to I.3.4.

K-I.2.1 - CONTRACT TERM ADJUSTMENT *(07/2016)*

"Contract Term Adjustment" (CTA) means adjustment only as provided for in the three circumstances described in this subsection. Under these circumstances, the contract term shall be adjusted in writing to include additional calendar days in one or more normal operating seasons equal to the actual time lost, except as limited by paragraph (2) in this subsection.

To qualify for such adjustment, contractor shall give written notice of the lost time not later than 30 days after the end of the normal operating season in which time was lost and at least 10 days before termination date. Contracting officer shall make prompt written acknowledgment of such notice, indicating concurrence with the number of days in the notice or the number of days the Forest Service considers as qualifying for the adjustment. Lost parts of days shall be disregarded in computing time lost. The three circumstances qualifying for a CTA are:

(1) Contractor experiences delay in starting operations scheduled under G.3.1 or interruptions in active operations, either of which stops such operations for 10 or more consecutive days during a normal operating season due to causes beyond the contractor's control, including, but not limited to, acts of God, acts of the public enemy, acts of the Government, labor disputes, fires, insurrections, or floods. Operations subject to these causes include:

(i) Removal of the included timber from contract area through curtailment in felling and bucking, yarding, skidding, loading, hauling, or road construction; or

(ii) Performance of stewardship projects shown in A.4.3.

(2) Causes described in paragraph (1) substantially affect the disposition or processing of included timber during the normal operating season through their effects on primary timber processing facilities, with a resulting delay of 60 days or more in use of such facilities. In such event, the CTA shall not extend for more than 12 consecutive months.

(3) (i) Contracting officer requests the contractor, in writing, to delay or interrupt operations during the normal operating season for any purpose other than suspension under E.4 or J.3; or

(ii) Contractor suffers a delay or interruption of the contractor's operations described in paragraph (1)(i) or (ii) because of a fire emergency closure ordered by Forest Service (or another agency on its behalf), and the total of such lost time is 10 or more days during any normal operating season.

If the termination date is adjusted, as described in this subsection, and later extended under I.2.3, the appraisal for the extension shall be made as of the unadjusted termination date, but the date on which the new rates become effective, if higher than current contract rates immediately prior to the termination date, shall be the adjusted termination date.

K-I.2.1.2 - MARKET-RELATED CONTRACT TERM ADDITION *(11/2008)*

The term of this contract may be adjusted when a drastic reduction in wood product prices has occurred in accordance with 36 CFR 223.52. The Producer Price Index used to determine when a drastic reduction in price has occurred is stated in A.20. Contractor will be notified whenever the Chief determines that a drastic reduction in wood product prices has occurred. If the drastic reduction criteria specified in 36 CFR 223.52 are met for 2 consecutive calendar quarters, after contract award date, Contracting Officer will add 1 year to the contract term, upon Contractor's written request. For each additional consecutive quarter such a drastic reduction occurs, Contracting Officer will, upon written request, add an additional 3 months to the term during Normal Operating Season, except that no single 3-month addition shall extend the term of the contract by more than one year. Contracting Officer must receive Contractor's written request for a market-related contract term addition before the expiration of this contract.

No more than 3 years shall be added to a contract's term by market-related contract term addition unless the following conditions are met:

(i) The contract was awarded after December 31, 2006; and

(ii) A drastic reduction in wood product prices occurred in at least ten of twelve consecutive quarters during the contract term, but not including the quarter in which the contract was awarded.

For each qualifying quarter meeting the criteria in paragraphs (i) and (ii) of this provision, the Forest Service will, upon the Contractor's written request, add an additional 3 months during the normal operating season to the contract, except no single 3-month addition shall extend the term of a contract by more than 1 year.

In no event shall a revised contract term exceed 10 years as a result of market-related contract term addition.

Additional contract time may not be granted for those portions of the contract that have a required completion date or for those portions of the contract where Contracting Officer determines that the timber is in need of urgent removal or that timber deterioration or resource damage may result from delay.

K-I.3.1# - CONTRACT CHANGES (OPTION 1) *(05/2005)*

Contract changes involving volumes and/or values will use a weight ratio of **3.1176** to convert net CCF cruise volumes to Tons.

K-I.6.8# (Option 1) - USE OF TIMBER *(09/2004)*

(a) This contract is subject to the Forest Resources Conservation and Shortage Relief Act of 1990, as amended (16 USC 620, et seq.).

(b) Except for **Alaska yellow-cedar** determined pursuant to public hearing to be surplus, unprocessed Included Timber shall not be exported from the United States nor used in direct or indirect substitution for unprocessed timber exported from private lands by Contractor or any person as defined in the Act (16 USC 620e).

(c) Timber in the following form will be considered unprocessed:

(i) Trees or portions of trees or other roundwood not processed to standards and specifications suitable for end product use;

(ii) Lumber, construction timbers, or cants intended for remanufacturing not meeting standards defined in the Act (16 USC 620e); and

(iii) Aspen or other pulpwood bolts exceeding 100 inches in length.

(d) Unless otherwise agreed in writing, unprocessed Included Timber shall be delivered to a domestic processing facility and shall not be mixed with logs intended for export.

(e) Prior to award, during the life of this contract, and for a period of 3 years from Termination Date, Contractor shall furnish to Forest Service, upon request, records showing the volume and geographic origin of unprocessed timber from private lands exported or sold for export by Contractor or affiliates.

(f) Prior to delivering unprocessed Included Timber to another party, Contractor shall require each buyer, exchangee, or recipient to execute an acceptable agreement that will:

(i) Identify the Federal origin of the timber;

(ii) Specify domestic processing for the timber involved;

(iii) Require the execution of such agreements between the parties to any subsequent transactions involving the timber;

(iv) Require that all hammer brands and/or yellow paint must remain on logs until they are either legally exported or domestically processed, whichever is applicable; and

(v) Otherwise comply with the requirements of the Act (16 USC 620d).

(g) No later than 10 days following the execution of any such agreement between Contractor and another party, Contractor shall furnish to Forest Service a copy of each such agreement. Contractor shall retain, for 3 years from Termination Date, the records of all sales, exchanges, or dispositions of all Included Timber.

(h) Upon request, all records dealing with origin and disposition of Included Timber shall be made available to Contracting Officer.

(i) For breach of this Section, Forest Service may terminate this contract and take such other action as may be provided by statute or regulation, including the imposition of penalties. When terminated by Forest Service under this Section, Forest Service will not be liable for any Claim submitted by Contractor relating to the termination.

TRAFFIC CONTROL PLAN AND SPECIFICATIONS PURSUANT TO G.3.3 SAFETY

Unless otherwise agreed, the following measures are required to provide adequate warning of hazards for users of roads and trails adjacent to Contractor's Operations.

Part I. Signing and Other Warning Methods:

(a) Signs. The following signs are required when Contractor's Operations are in progress adjacent to or on Forest Service controlled roads and trails:

MINIMUM LETTER SIZE AND LEGEND	MINIMUM SIZE AND SHAPE	**WHEN AND WHERE REQUIRED**
1. LOGGING OPERATIONS NEXT <> MILES (4" letters)	24" (rectangle) 36"	Min. 100 ft. outside of any continuous work areas, on roads listed in K-F.3.1# and trails listed in Part II.
2. LOGGING OPERATIONS (3" letters)	24" (diamond) 24"	To be used in conjunction with "Logging Operations Next <> Miles" and where work area is not continuous.
3. FOR LOGGING USE ONLY (3" letters)	24" (diamond) 24"	Required where roads listed in K-F.3.1# and temporary roads intersect with K-F.3.1# roads. Install a cross ditch to discourage use when sign is covered or removed for extended periods.
4. TRUCKS (4" letters)	24" (diamond) 24"	At critical intersections on roads listed in K-F.3.1# when traffic is heavy or otherwise exceeds volumes stated in Part II below. Remove or cover when the sign is not applicable.
5. END LOGGING OPERATIONS (4" letters)	24" (rectangle) 36"	Use in conjunction with "Logging Operations Next <> Miles" and "Logging Operations."
6. TREE FELLING AHEAD (3" letters)	24" (diamond) 24"	Required 200 feet in advance of danger area where timber is being felled adjacent to all roads, including temporary roads, and trails.

7. ROAD MACHINERY AHEAD (3" letters)	24" (diamond) 24"	Required at least 200 feet in advance of Contractor road maintenance operations on roads listed in Schedule K-F.3.1#.

TRAFFIC CONTROL PLAN AND SPECIFICATIONS – G.3.3 Safety (continued)

All signs shall meet requirements as specified in Parts I and VI of the Manual of Uniform Traffic Control Devices (MUTCD).

Sign borders and lettering shall be black. Borders are 1/2 inch wide, inset 1/2 inch from outside edge of sign. All sign backgrounds shall be orange, except signs #1 and 5 which shall be reflectorized orange.

Signs shall be installed on posts, with a 5 foot minimum ground clearance, or on temporary supports complying with MUTCD standards.

All signs are to be removed or covered when operations are interrupted for seasonal nonuse or other extended periods.

Contractor shall furnish flag personnel and advance warning signs when cable or helicopter logging above roads or trails, felling adjacent to roads or trails, where logs being bucked may roll into roads or trails, and in areas where fallout from blasting may occur. On roads listed in K-F.3.1# and temporary roads, Contractor may temporarily block the road in lieu of furnishing flag personnel.

(b) Barricades. On roads listed in K-F.3.1#, if Contractor's Operations cause the traveled way or road shoulders to be constricted overnight, or longer, by such obstructions as decked logs, parked equipment, or piled slash, Contractor shall place barricades on both sides of the encroaching obstruction to safely channel traffic around such obstructions. Barricades shall remain in place until the obstruction is removed.

Barricades shall be Type II and meet specifications in MUTCD, Part VI. Barricades must be at least 3 feet high. Rails must be at least 2 feet long. Striping shall be alternating orange and white, sloping at a 45 degree angle, and reflectorized. For rails 2 feet to 3 feet long, striping shall be 4 inches wide. For rails longer than 3 feet, striping shall be 6 inches wide. Two rails, 8-12 inches in width, must face each direction.

Barricades shall be equipped with warning lights which shall be Type A low intensity flashing and shall be maintained so as to be capable of being visible on a clear night from a distance of 3,000 feet.

(c) Other Traffic Control Methods. The posting of CB channel signs may be authorized.

On roads listed in K-F.3.1#, Contractor may be authorized to install temporary gates, barricades (except cables), or natural barriers. The devices must be installed with the necessary hazard markers, be reasonably passable by Forest Service, and be removed prior to acceptance of the subdivision being served by the road.

TRAFFIC CONTROL PLAN AND SPECIFICATIONS – G.3.3 SAFETY
(continued)

Part II. Specific Requirements:

None

Contractor and Forest Service agree to the above stated requirments of the Traffic Control Plan:

Name	Name
Title	Title
Date	Date

BANDERA-HANSEN THIN STEWARDSHIP

SPECIFICATION AND SUPPLEMENTAL SPECIFICATION LIST

Road Name		Tinkham	Southfork Thin	Hansen Creek	Hansen Cr. Mine	Humpback	Talupus Lake Trailhead	Mason Lake Trailhead
Road Number		**5500**	**5500431**	**5510**	**5510110**	**5510120**	**9030**	**9031**
Termini (Miles)		0.00 to 2.02	0.0 to 0.02	0.0 to 3.87	0.0 to 1.02	0.0 to 0.40	0.05 to 3.167	0.0 to 2.94
Construction (Miles)								
Reconstruction (Miles)		2.02	0.02	3.87	1.02	0.40	3.12	2.94
Standard Spec. or Supplemental No.	Latest Revision Date							
Standard Specification	2003							
Preface	3/15/04	X	X	X	X	X	X	X
101-109	2003	X	X	X	X	X	X	X
101.01	1/22/09	X	X	X	X	X	X	X
101.03	6/16/06	X	X	X	X	X	X	X
101.04	3/29/07	X	X	X	X	X	X	X
102.00	2/16/05	X	X	X	X	X	X	X
103.00	2/16/05	X	X	X	X	X	X	X
104.00	6/16/06	X	X	X	X	X	X	X
104.03	1/22/09	X	X	X	X	X	X	X
104.03	2/22/05	X	X	X	X	X	X	X
104.06	2/17/05	X	X	X	X	X	X	X
105.02	1/18/07	X	X	X	X	X	X	X
105.05	5/12/04	X	X	X	X	X	X	X
106.01	7/31/07	X	X	X	X	X	X	X
106.07	5/11/04	X	X	X	X	X	X	X
107.05	5/11/04	X	X	X	X	X	X	X
107.06	6/16/06	X	X	X	X	X	X	X
107.08	3/29/05	X	X	X	X	X	X	X
107.09	6/16/06	X	X	X	X	X	X	X
107.10	6/16/07	X	X	X	X	X	X	X
108.00	2/16/05	X	X	X	X	X	X	X
109.00	2/17/05	X	X	X	X	X	X	X
109.02	6/16/06	X	X	X	X	X	X	X
151.00	2003	X	X	X	X	X	X	X
152.00	10/11/2006						X	
155.00	5/11/04	X	X	X	X	X	X	X
156.03	2/24/05	X	X	X	X	X	X	X
156.04	2/24/05	X	X	X	X	X	X	X
156.08	2/24/05	X	X	X	X	X	X	X
157.00	2/24/2005	X	X	X	X	X	X	X
203.01	2/25/05	X	X	X	X	X	X	X
203.04	2/18/05	X	X	X	X	X	X	X
203.05	2/18/05	X	X	X	X	X	X	X
203.08	2/24/05	X	X	X	X	X	X	X
204.00	3/26/09	X	X	X	X	X	X	X
209.10	10/23/07	X			X		X	X
209.11	2/24/05	X			X		X	X

Road Name		Tinkham	Southfork Thin	Hansen Creek	Hansen Cr. Mine	Humpback	Talupus Lake Trailhead	Mason Lake Trailhead
Road Number		**5500**	**5500431**	**5510**	**5510110**	**5510120**	**9030**	**9031**
Termini (Miles)		0.00 to 2.02	0.0 to 0.02	0.0 to 3.87	0.0 to 1.02	0.0 to 0.40	0.05 to 3.167	0.0 to 2.94
Construction (Miles)								
Reconstruction (Miles)		2.02	0.02	3.87	1.02	0.40	3.12	2.94
Standard Spec. or Supplemental No.	Latest Revision Date							
Standard Specification	2003							
Table 209-1	2/24/05	X			X	X	X	X
230.00	10/11/06	X	X	X	X	X	X	X
251.00	8/5/09	X	X	X	X	X	X	X
251.03	8/5/09	X	X	X	X	X	X	X
303.00	5/11/07	X	X	X	X	X	X	X
322.00	10/14/11	X	X	X			X	X
404.02	6/9/06							
404.04	3/2/05							
404.06	3/3/05							
404.07	3/4/05							
404.09	3/5/05							
602.00	2003	X	X		X		X	X
602.03	9/26/05	X	X		X		X	X
602.06	8/5/09	X	X		X		X	X
607.00	3/2/05	X					X	
625.00	2003	X	X		X	X	X	X
625.03	7/22/07	X	X		X	X	X	X
625.04	7/22/07	X	X		X	X	X	X
625.04	2/25/06	X	X		X	X	X	X
625.05	3/30/05	X	X		X	X	X	X
625.06	7/22/07	X	X		X	X	X	X
625.07	7/22/07	X	X		X	X	X	X
625.08	8/20/09	X	X		X	X	X	X
625.09	7/22/07	X	X		X	X	X	X
625.11	7/22/07	X	X		X	X	X	X
633.00	2003			X	X			
633.03	3/3/05			X	X			
633.05	3/3/05			X	X			
635.03		X	X	X	X	X	X	X
651.00	2003			X			X	X
703.05	8/14/2009	X	X	X	X	X	X	X
705.02	8/5/2009	X	X		X	X	X	X
713.05	3/2/2005	X	X	X	X		X	X
714.03	2/25/2005	X					X	

Table of Contents

Preface

Preface_wo_03_15_2004_m

Delete all but the first paragraph and add the following:

The Forest Service, US Department of Agriculture has adopted FP-03 for construction of National Forest System Roads.

101 - Terms, Format, and Definitions

101.00_nat_us_07_25_2005

101.01_nat_us_01_22_2009

101.01 Meaning of Terms

Delete all references to the TAR (Transportation Acquisition Regulations) in the specifications.

101.01_nat_us_01_22_2009

101.01 Meaning of Terms

Delete all references to the FAR (Federal Acquisition Regulations) in the specifications.

101.03_nat_us_06_16_2006

101.03 Abbreviations.

Add the following to (a) Acronyms:

AFPA	American Forest and Paper Association
MSHA	Mine Safety and Health Administration
NIST	National Institute of Standards and Technology
NESC	National Electrical Safety Code
WCLIB	West Coast Lumber Inspection Bureau

.

Add the following to (b) SI symbols:

mp	Milepost
ppm	Part Per Million

101.04_nat_us_03_29_2007

101.04 Definitions.

Delete the following definitions and substitute the following:

Bid Schedule--The Schedule of Items.

Bridge--No definition.

Contractor--The individual or legal entity contracting with the Government for performance of prescribed work. In a timber sale contract, the contractor is the "purchaser".

Culvert--No definition.

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.

Add the following:

Adjustment in Contract Price--"Equitable adjustment," as used in the Federal Acquisition Regulations, or "construction cost adjustment," as used in the Timber Sale Contract, as applicable.

Change--"Change" means "change order" as used in the Federal Acquisition Regulations, or "design change" as used in the Timber Sale Contract.

Design Quantity--"Design quantity" is a Forest Service method of measurement from the FS-96 *Forest Service Specifications for the Construction of Roads and Bridges.* Under these FP specifications this term is replaced by the term "Contract Quantities".

Forest Service--The United States of America, acting through the Forest Service, U.S. Department of Agriculture.

Neat Line--A line defining the proposed or specified limits of an excavation or structure.

Pioneer Road--Temporary construction access built along the route of the project.

Purchaser--The individual, partnership, joint venture, or corporation contracting with the Government under the terms of a Timber Sale Contract and acting independently or through agents, employees, or subcontractors.

Protected Streamcourse--A drainage shown on the plans or timber sale area map that requires designated mitigation measures.

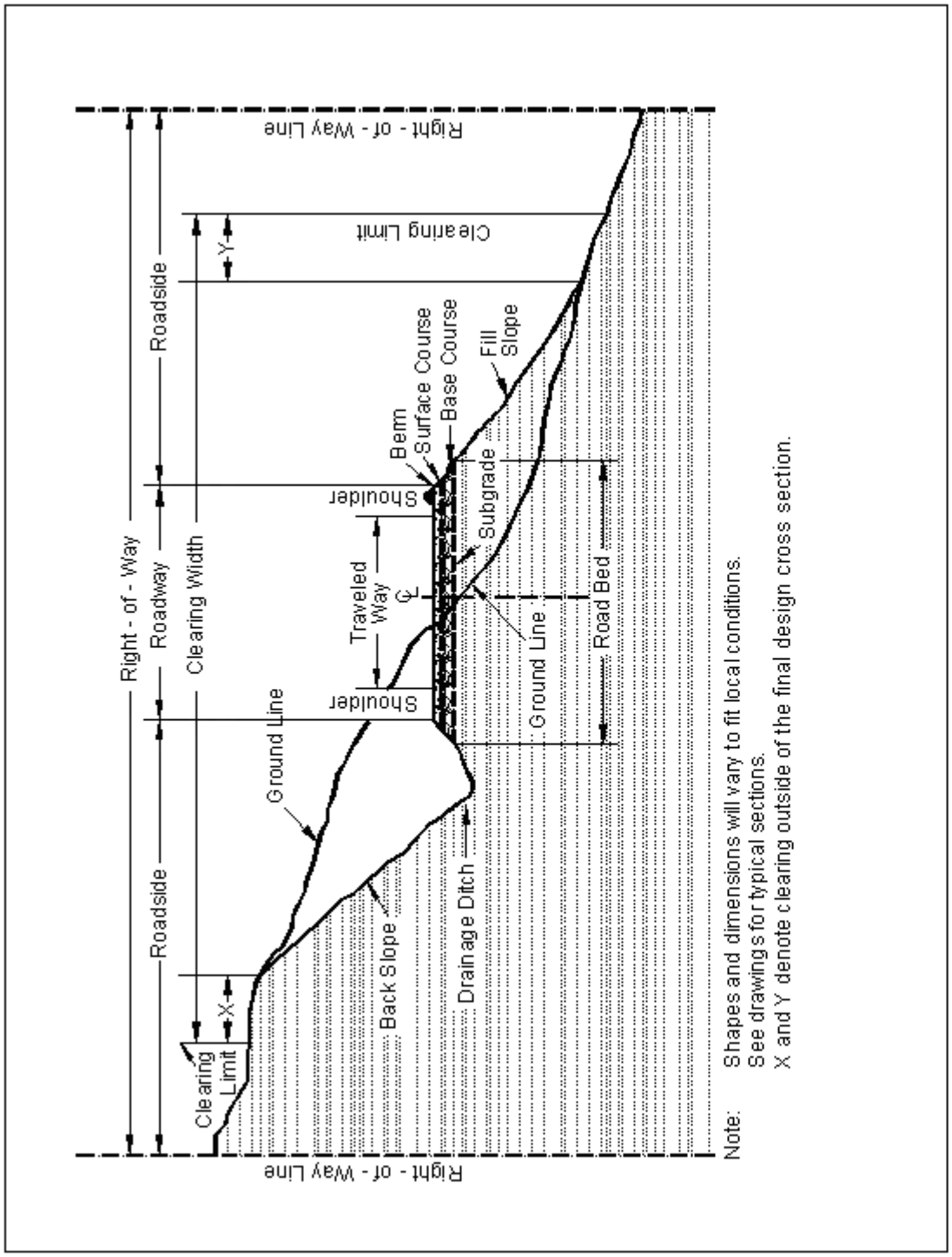
Road Order--An order affecting and controlling traffic on roads under Forest Service jurisdiction. Road Orders are issued by a designated Forest Officer under the authorities of 36 CFR, part 260.

Schedule of Items--A schedule in the contract that contains a listing and description of construction items, quantities, units of measure, unit price, and amount.

Utilization Standards--The minimum size and percent soundness of trees described in the specifications to determine merchantable timber.

Add Figure 101-1—Illustration of road structure terms:

Figure 101-1—Illustration of road structure terms.



101.04 Definitions.

Delete the following definitions:

Contract Modification

Day

Notice to Proceed

Solicitation

102 Bid, Award, and Execution of Contract

Delete Section 102 in its entirety.

103 - Scope of Work

103.00_nat_us_02_16_2005

Deletions

Delete all but subsection 103.01 Intent of Contract.

104 - Control of Work

104.00_nat_us_06_16_2006

Deletions

Delete Sections 104.01, 104.02, and 104.04.

104.03_nat_us_02_22_2005

104.03 Drawings and Specifications

Delete subsection 104.03

104.03_nat_us_01_22_2009

104.03 Specifications and Drawings.

Delete 104.03.

104.06_nat_us_02_17_2005

Add the following subsection:

104.06 Use of Roads by Contractor

The Contractor is authorized to use roads under the jurisdiction of the Forest Service for all activities necessary to complete this contract, subject to the limitations and authorizations designated in the Road Order(s) or described in the contract, when such use will not damage the roads or national forest resources, and when traffic can be accommodated safely.

105 - Control of Material

105.02_nat_us_01_18_2007

105.02 Material Sources.

105.02(a) Government-provided sources.

Add the following:

Comply with the requirements of 30 CFR 56, subparts B and H. Use all suitable material for aggregate regardless of size unless otherwise designated. When required, re-establish vegetation in disturbed areas according to section 625.

105.05_nat_us_05_12_2004

105.05 Use of Material Found in the Work.

Delete 105.05 (a) and (b) and the last sentence of the second paragraph and substitute the following:

Materials produced or processed from Government lands in excess of the quantities required for performance of this contract are the property of the Government. The Government is not obligated to make reimbursement for the cost of producing these materials.

106 - Acceptance of Work

106.01_nat_us_07_31_2007

106.01 Conformity with Contract Requirements.

Delete Subsection 106.01 and substitute the following:

References to standard test methods of AASHTO, ASTM, GSA, and other recognized standard authorities refer to the methods in effect on the date of solicitation for bids.

Perform all work to the lines, grades, cross-sections, dimensions, and processes or material requirements shown on the plans or specified in the contract.

Incorporate manufactured materials into the work according to the manufacturer's recommendations or to these specifications, whichever is more strict.

Plan dimensions and contract specification values are the values to be strived for and complied with as the design values from which any deviations are allowed. Perform work and provide material that is uniform in character and reasonably close to the prescribed value or within the specified tolerance range. The purpose of a tolerance range is to accommodate occasional minor variations from the median zone that are unavoidable for practical reasons.

When standard manufactured items are specified (such as fence, wire, plates, rolled shapes, pipe conduits, etc., that are identified by gauge, unit mass, section dimensions, etc.), the identification will be considered to be nominal masses or dimensions. Unless specific contract tolerances are noted, established manufacturing tolerances will be accepted.

The Government may inspect, sample, or test all work at any time before final acceptance of the project. When the Government tests work, copies of test reports are furnished to the Contractor upon request. Government tests may or may not be performed at the work site. If Contractor testing and inspection is verified by the Government, the Contractor's results may be used by the Government to evaluate work for acceptance. Do not rely on the availability of Government test results for process control.

Acceptable work conforming to the contract will be paid for at the contract unit bid price. Four methods of determining conformity and accepting work are described in Subsections 106.02 to 106.05 inclusive. The primary method of acceptance is specified in each Section of work. However, work may be rejected at any time it is found by any of the methods not to comply with the contract.

Remove and replace work that does not conform to the contract, or to prevailing industry standards where no specific contract requirements are noted, at no cost to the Government.

(a) Disputing Government test results. **If the accuracy of Government test results is disputed, promptly inform the CO. If the dispute is unresolved after reasonable steps are taken to resolve the dispute, further evaluation may be obtained by written**

request. Include a narrative describing the dispute and a proposed resolution protocol that addresses the following:

(1) Sampling method;

(2) Number of samples;
(3) Sample transport;
(4) Test procedures;
(5) Testing laboratories;
(6) Reporting;
(7) Estimated time and costs; and
(8) Validation process.

If the evaluation requires additional sampling or testing be performed, mutually agree with the Government on witnessing procedures and on sampling and testing by a third party laboratory. Use a third party laboratory accredited by the AASHTO accreditation program. Provide proof of the laboratory's accreditation for the test procedures to be used. Do not use the same laboratory that produced the disputed Government test results or that produced the test results used as a basis for the dispute.

The CO will review the proposed resolution protocol and may modify it before final approval and execution.

The Government will use the approved resolution protocol test results to determine the validity of the disputed testing. If the Government test results are validated, the Contractor will be responsible for all costs associated with developing and performing the resolution protocol. If the Government test results are not validated, the Government will be responsible for all costs associated with developing and performing the resolution protocol. If the validity of the Government test results cannot be determined, the Contractor and Government will equally share all costs associated with developing and carrying out the resolution protocol.

(b) Alternatives to removing and replacing non-conforming work. As an alternative to removal and replacement, the Contractor may submit a written request to:

(1) Have the work accepted at a reduced price; or

(2) Be given permission to perform corrective measures to bring the work into conformity.

The request must contain supporting rationale and documentation. Include references or data justifying the proposal based on an evaluation of test results, effect on service life, value of

material or work, quality, aesthetics, and other tangible engineering basis. The CO will determine disposition of the nonconforming work.

106.07_nat_us_05_11_2004

106.07 Delete

Delete subsection 106.07.

107 - Legal Relations and Responsibility to the Public

107.05_nat_us_05_11_2004

107.05 Responsibility for Damage Claims.

Delete the entire subsection.

107.06_nat_us_06_16_2006

107.06 Contractor's Responsibility for Work.

Delete the following from the first paragraph.

"except as provided in Subsection 106.07".

107.08_nat_us_03_29_2005

107.08 Sanitation, Health, and Safety

Delete the entire subsection.

107.09_nat_us_06_16_2006

107.09 Legal Relationship of the Parties.

Delete the entire subsection.

107.10_nat_us_06_16_2006

107.10 Environmental Protection.

Add the following:

Design and locate equipment repair shops, stationary refueling sites, or other facilities to minimize the potential and impacts of hazardous material spills on Government land.

Before beginning any work, submit a Hazardous Spill Plan. List actions to be taken in the event of a spill. Incorporate preventive measures to be taken, such as the location of mobile refueling facilities, storage and handling of hazardous materials, and similar information. Immediately notify the CO of all hazardous material spills. Provide a written narrative report form no later than 24 hours after the initial report and include the following:

- Description of the item spilled (including identity, quantity, manifest number, and other identifying information).
- Whether amount spilled is EPA or state reportable, and if so whether it was reported, and to whom.
- Exact time and location of spill including a description of the area involved.

- Containment procedures.
- Summary of any communications the Contractor had with news media, Federal, state and local regulatory agencies and officials, or Forest Service officials.
- Description of clean-up procedures employed or to be employed at the site including final disposition and disposal location of spill residue.

When available provide copies of all spill related clean up and closure documentation and correspondence from regulatory agencies.

The Contractor is solely responsible for all spills or leaks that occur during the performance of this contract. Clean up spills or leaks to the satisfaction of the CO and in a manner that complies with Federal, state, and local laws and regulations.

108 - Prosecution and Progress

108 Delete.

Delete Section 108 in its entirety.

109 - Measurement and Payment

109.00_nat_us_02_17_2005

109 Deletions

Delete the following entire subsections:

109.06 Pricing of Adjustments.

109.07 Eliminated Work.

109.08 Progress Payments.

109.09 Final Payment.

109.02_nat_us_06_16_2006

109.02 Measurement Terms and Definitions.

(b) Contract quantity.

Add the following:

Contract quantities will be adjusted only when there are errors in the original design of 15% or more.

Change the following:

"(b) Cubic yard" to "(c) Cubic yard".

Add the following definition:

(p) Thousand Board Feet (Mbf). 1,000 board feet based on nominal widths, thickness, and extreme usable length of each piece of lumber or timber actually incorporated in the job. For glued laminated timber, 1,000 board feet based on actual width, thickness, and length of each piece actually incorporated in the job.

151 - Mobilization

151.00_01_us_10_11_2006

Delete Section 151 in its entirety and replace with the following.

Description

151.01 This work consists of moving personnel, equipment, material, and incidentals to the project and performing all work necessary before beginning work at the project site; obtaining of permits, insurance, and bonds. This work also includes washing and treating construction equipment and vehicles necessary for equipment transport to remove seeds, plants, and plant fragments before the equipment is used on Forest Service lands, according to the requirements within.

Construction Requirements

Wash the sides, tops, and undercarriages of all construction equipment. Remove all seeds, plants, plant fragments, dirt, and debris from the construction equipment. Only equipment inspected by the Forest Service will be allowed to operate within the project area. All subsequent move-ins of equipment to the project area will be treated in the same manner as the initial move-in. This requirement does not apply to cars, pickup trucks, and other vehicles that regularly travel between the construction site and areas off the National Forest.

Equipment will be considered free of soil, seed, and other such debris when a visual inspection does not disclose such material. Disassembly of equipment, components or the need for specialized inspection tools is not required.

Notify the CO in writing at least 72 hours before moving any construction equipment onto the national forest. 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.

Use methods of cleaning and locations for cleaning approved by the CO.

For work at a commercial washing facility, use an approved facility.

New infestations of noxious weeds of concern to Forest Service and identified by either Contractor or Forest Service, in the Project Area or on the haul route, will be promptly reported to the other party. Contractor and Forest Service will agree on treatment methods to reduce or stop the spread of noxious weeds when new infestations are found. A current list of noxious weeds of concern to Forest Service is available at each Forest Service office.

Measurement

151.02 Clean equipment prior to moving onto this project. The initial cleaning will not be included in the measurement for payment. Payment for cleaning will only be made if subsequent cleanings are ordered by the CO. Measurement shall be on an "each" basis, meaning one complete cleaning of all equipment required for this contract. Subsequent cleanings necessitated by the Contractor's actions but not directed by the CO will not be included in the measurement for payment.

Measure mobilization according to Subsection 109.02.

Payment

151.03 The accepted quantity, measured as provided in Subsection 109.02, will be paid at the contract price per unit of measurement for the Section 151 pay item shown in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Progress payments for mobilization lump sum will be paid as follows:

(a) If applicable, bond premiums will be reimbursed according to FAR Clause 52.232-5 Payments Under Fixed-Price Construction Contracts, after receipt of the evidence of payment.

(b) When 5 percent of the original contract amount is earned from other bid items, 50 percent of the mobilization item, or 5 percent of the original contract amount, whichever is less, will be paid.

(c) When 10 percent of the original contract amount is earned from other bid items, 100 percent of the mobilization item, or 10 percent of the original contract amount, whichever is less, will be paid.

(d) Any portion of the mobilization item in excess of 10 percent of the original contract amount will be paid after final acceptance.

Include all costs associated with the initial cleaning of equipment in the unit bid price for Mobilization. Cleaning for subsequent move-ins will not be paid for unless after a suspension ordered by the CO.

152 - Construction Survey and Staking

152.00_nat_us_08_05_2005

Description

152.01(c) Material.

Add the following:

Use required stake dimensions and materials. Pre-paint the top 2 inches of all stakes and lath, or mark them with plastic flagging. Use designated colors for paint or flagging. Mark all stakes with a stake pencil that leaves a legible imprint, or with waterproof ink.

Do not use aerosol spray paints.

Use moisture-resistant paper for survey notes. Keep notes in books with covers that will protect the contents and retain the pages in numerical sequence.

Construction Requirements

152.02 General.

Delete the first two sentences.

Add the following:

When indicated on the plans, a preliminary survey line has been established on the ground. The project location line is established by offsets from this preliminary line.

Delete second sentence in second paragraph and replace with the following:

Reestablish missing reference, control lines, or stakes as necessary to control subsequent construction staking operations

152.03 Survey and Staking Requirements.

(b) Roadway cross-sections.

Replace the first two sentences with the following:

Take roadway cross-sections normal to centerline. When the centerline curve radius is less than or equal to 200 feet, take cross-sections at a maximum centerline spacing of 25 feet. When the centerline curve radius is greater that 200 feet take cross-sections at a maximum centerline spacing of 80 feet.

c) Slope Stakes & References:

Replace section with the following:

Slope stakes and references. When required, locate slope stakes on designated portions of the road. Locate the slope stake catch points and use them to establish clearing limits and slope stake references.

Mark slope stakes with the station, the amount of cut or fill, the horizontal distance to centerline, and the slope ratios.

Place slope reference stakes at least 10 feet outside the clearing limit and mark with the offset distance to the slope stake. Place sight stakes when required.

Prior to clearing and grubbing operations, move the slope stake outside the clearing limit to the slope reference stake. After clearing and grubbing and before excavation, reset the slope stakes in their original position.

Use the designated method to establish the slope stake catchpoint.

- **Method I**—Computed Method. Use the template information shown in the plans or other Government-provided data to calculate the actual location of the catchpoint. The slope stake "catchpoint distance" provided may be used as a trial location to initiate slope staking. Recatch slope stakes on any section that does not match the staking report within the tolerances established in Table 152-2.
- **Method II**—Catchpoint Measurement Method. Determine the location of slope stake catchpoints by measuring the catchpoint distances shown in the plans or other Government-provided data.

(d) Clearing and grubbing limits.

Add the following:

Establish clearing limits on each side of the location line by measuring the required horizontal or slope distances shown in the stake notes. Mark the clearing limits with flagging or tags on trees to be left standing, or on lath. Make markings intervisible, and no more than 90 feet apart.

After establishing clearing limits, move the location line stake outside the clearing limits for station identification purposes, and mark it with horizontal distance to location line

(e) Centerline reestablishment.

Replace with the following:

Reestablish centerline from instrument control points. The maximum spacing between centerline points is 25 feet when the centerline curve radius is less than or equal to 200 feet. When the centerline curve radius is greater than 200 feet, the maximum distance between centerline points is 80 feet.

(g) Culverts.

Replace subsection with the following:

Set culvert reference stakes at all culvert locations. Set a culvert reference stake on the centerline of the culvert 10 feet from each end or beyond the clearing limit, whichever is greater. Record the following on culvert reference stakes:

(1) Diameter, actual field measured length, and type of culvert.

(2) The vertical and horizontal distance from the reference stake to the invert at the ends of the culvert.

(3) Station of actual point where culvert intersects centerline.

When required, stake headwall for culverts by setting a hub with a guard stake on each side of the culvert on line with the face of the headwall. Perform this work after clearing is completed.

152.03 (l) Miscellaneous Survey and Staking.

Add the following:

(11) Cattleguards

(12) Drain Dips

(13) Erosion Control Measures

Replace Table 152-1 with the following two tables:

Table 152-1 Tolerances for reestablishing P-line, traverse, and elevations.

Precision Class	Minimum Position Closure	Angular Accuracy (±)	L-Line Tangent Control Points[a] (±)	Vertical Closure[b] (±)
A (Bridges)	1/10,000	2 sets, direct/reverse 10 second rejection limit	N/A	0.02 ft or 0.02ft/1000ft[c]
B	1/5,000	2 sets, direct/reverse 20 second rejection limit	0.1 ft	0.02 ft or 0.02ft/1000ft[c]
C	1/1,000	1 set, direct/reverse 1 minute rejection limit	0.2 ft	0.5ft/1000ft[c]
D	1/300	Foresight and backsight; 15 minute rejection limit[c]	0.4 ft	1.0ft/1000ft[c]
E	1/100	Foresight and backsight; 30 minute rejection limit[c]	0.8 ft	1.0ft/1000ft[c]

a. Accuracy of offset measurement.

b. Determine vertical closures at intervals not to exceed 2000 ft as measured along centerline.

c. Use greater value.

Table 152-2 Cross section and slope stake tolerances.

Item	Tolerances				
	A	B	C	D	E
Allowable deviation of cross-section line projection from a true perpendicular to tangents, a true bisector of angle points, or a true radius of curves	(±)2º	(±)3º	(±)3º	(±)5º	(±)5º
Take cross-sections topography measurements so that variations in ground from a straight line connecting the cross-section points will not exceed	0.5 ft	1.0 ft	2.0 ft	2.0 ft	3.0 ft
Horizontal and vertical accuracy for cross-sections, in feet or percentage of horizontal distance measured from traverse line, whichever is greater.	0.1 ft or 0.4%	0.15 ft or 0.6%	0.2 ft or 1.0%	0.2 ft or 1.0%	0.3 ft or 1.0%
Horizontal and vertical accuracy for slope stake, slope stake references, and clearing limits. In feet or percentage of horizontal distance measured from centerline or reference stake, whichever is greater.					
Slope reference stakes and slope stakes.	0.1 ft or 0.4%	0.15 ft or 0.6%	0.2 ft or 1.0%	0.2 ft or 1.0%	0.3 ft or 1.0%
Clearing limits	1.0 ft	1.0 ft	1.0 ft	1.5 ft	2.5 ft

155 - Schedules for Construction Contracts

155.00_nat_us_05_11_2004

155 Delete.

Delete Section 155 in its entirety.

156 - Public Traffic

156.03_nat_us_02_24_2005

156.03 Accommodating Traffic During Work.

Delete the following from the last paragraph:

according to Subsection 106.07(b)

156.04_nat_us_02_24_2005

156.04 Maintaining Roadways During Work.

(a) Add the following:

Do not construct detours outside of the clearing limits or use alternate route detours without the approval of the CO.

156.08_nat_us_02_24_2005

156.08 Traffic and Safety Supervisor.

Delete this subsection in its entirety.

157 - Soil Erosion Control

157.03_nat_us_02_24_2005

157.03 General

Delete the entire subsection and replace with the following:

Prior to the start of construction, submit a written plan that provides permanent and temporary erosion control measures to minimize erosion and sedimentation during and after construction. Do not begin work until the necessary controls for that particular phase of work have been implemented. Do not modify the type, size, or location of any control. An alternate erosion control plan with all necessary permits may be submitted 30 days before intended use.

Incorporate all permanent erosion control features into the project at the earliest practicable time, as outlined in the approved plan.

When erosion control measures are not functioning as intended, immediately take corrective action.

203 - Removal of Structures and Obstructions

203.01_nat_us_02_25_2005

203.01 Description.

Delete and replace with the following:

This work consists of disposing of construction slash and debris, salvaging, removing, and disposing of buildings, fences, structures, pavements, culverts, utilities, curbs, sidewalks, and other obstructions.

203.04_nat_us_02_18_2005

203.04 Removing Material.

Replace the fourth and fifth paragraphs with the following:

Where part of an existing culvert is removed, remove the entire culvert upstream from the removal. The remaining downstream culvert may be left in place if no portion of the culvert is within 12 inches of the subgrade, embankment slope, or new culvert or structure; and the culvert ends are sealed with concrete.

Remove structures and obstructions in the roadbed to 12 inches below subgrade elevation. Remove structures and obstructions outside the roadbed to 12 inches below finished ground or to the natural stream bottom.

203.05_nat_us_02_18_2005

203.05 Disposing of Material.

Add the following:

(e) Windrowing Construction Slash. Place construction slash outside the roadway in neat, compacted windrows approximately parallel to and along the toeline of embankment slopes. Do not permit the top of the windrows to extend above subgrade. Use construction equipment to matt down all material in a windrow to form a compact and uniform pile. Construct breaks of at least 15 feet at least every 200 feet in a windrow. Do not place windrows against trees. Obtain approval for pioneer roads. A pioneer road may be constructed to provide an area for placement of windrows, provided the excavated material is kept within the clearing limits and does not adversely affect the road construction.

(f) Scattering. Scatter construction slash outside the clearing limits without damaging trees. Limb all logs. Place logs and stumps away from trees, positioned so they will not roll, and are not on top of one another. Limb and scatter other construction slash to reduce slash concentrations.

(g) Chipping or Grinding. Use an approved chipping machine to grind slash and stumps greater than 3 inches in diameter and longer than 3 feet. Deposit chips or ground woody material on embankment slopes or outside the roadway to a loose depth less than 6 inches. Minor amounts of chips or ground woody material may be permitted within the roadway if they are thoroughly mixed with soil and do not form a layer.

(h) Debris Mat. Use tree limbs, tops, cull logs, split stumps, wood chunks, and other debris to form a mat upon which construction equipment is operated. Place stumps upside down and blend stumps into the mat.

(i) Decking Firewood Material. Remove brush from decks. Limb and deck logs that do not meet Utilization Standards according to Subsection 201.04 as directed by the CO. Cut logs to lengths less than 30 feet. Ensure that logs stacks are stable and free of brush and soil.

(j) Removal to designated locations. Remove construction slash to designated locations.

(k) Piling. Pile construction slash in designated areas. Place and construct piles so that if the piles are burned, the burning will not damage remaining trees. Keep piles free of dirt from stumps. Cut unmerchantable logs into lengths of less than 20 feet.

(l) Placing Slash on Embankment Slopes. Place construction slash on completed embankment slopes to reduce soil erosion. Place construction slash as flat as practicable on the completed slope. Do not place slash closer than 2 feet below subgrade. Priority for use of available slash is for: (1) through fills; (2) insides of curves; and (3) ditch relief outlets.

(m) Hydrological Sensitive Placement. Where required use this method in combination with other designated methods to dispose of material to reduce erosion and to aid in re-vegetation:

1. Place windrow segments on contours, wrap in type I geotextile.
2. Place logs as log erosion barriers on contours. Place logs so that 80% of their length is on the ground surface.
3. Scatter slash on bare or disturbed areas within or outside the clearing limits as directed.
4. Scatter chips or ground woody material on bare or disturbed areas within or outside the clearing limits as directed.

Place stumps in swales or on sites to form planting pockets. Place windrow segments on contours, wrap in type I geotextile.

203.08 Payment

Add the following:

Disposal of construction slash will be compensated under the designated pay item in Section 201.

204 - Excavation and Embankment

204.00_nat_us_03_26_2009

Replace Section 204 in its entirety with the following:

Description

204.01 This work consists of excavating material and constructing embankments. This includes furnishing, hauling, stockpiling, placing, disposing, sloping, shaping, compacting, and finishing earthen and rocky material.

204.02 Definitions.

(a) Excavation. Excavation consists of the following:

(1) Roadway excavation. All material excavated from within the right-of-way or easement areas, except subexcavation covered in (2) below and structure excavation covered in Sections 208 and 209. Roadway excavation includes all material encountered regardless of its nature or characteristics.

(2) Subexcavation. Material excavated from below subgrade elevation in cut sections or from below the original groundline in embankment sections. Subexcavation does not include the work required by Subsections 204.05, 204.06(b), and 204.06(c).

(3) Borrow excavation. Material used for embankment construction that is obtained from outside the roadway prism. Borrow excavation includes unclassified borrow, select borrow, and select topping.

(b) Embankment construction. Embankment construction consists of placing and compacting roadway or borrow excavation. This work includes:

(1) Preparing foundation for embankment;
(2) Constructing roadway embankments;
(3) Benching for side-hill embankments;
(4) Constructing dikes, ramps, mounds, and berms; and
(5) Backfilling subexcavated areas, holes, pits, and other depressions.

(c) Conserved topsoil. Excavated material conserved from the roadway excavation and embankment foundation areas that is suitable for growth of grass, cover crops, or native vegetation.

(d) Waste. Excess and unsuitable roadway excavation and subexcavation that cannot be used.

Material

204.03 Conform to the following Subsections:

Backfill material	704.03
Select borrow	704.07
Select topping	704.08
Topping	704.05
Unclassified borrow	704.06
Water	725.01

Construction Requirements

204.04 Preparation for Roadway Excavation and Embankment Construction. Clear the area of vegetation and obstructions according to Sections 201 and 203.

204.05 Reserved.

204.06 Roadway Excavation. Excavate as follows:

(a) General. Do not disturb material and vegetation outside the construction limits. Incorporate only suitable material into embankments. Replace any shortage of suitable material caused by premature disposal of roadway excavation. Dispose of unsuitable or excess excavation material according to Subsection 204.14.

At the end of each day's operations, shape to drain and compact the work area to a uniform cross-section. Eliminate all ruts and low spots that could hold water.

Retrieve material deposited outside of the clearing limits as directed by the CO. Place unsuitable material in designated areas.

(b) Rock cuts. Blast rock according to Section 205. Excavate rock cuts to 6 inches below subgrade within the roadbed limits. Backfill to subgrade with topping or with other suitable material. Compact the material according to Subsection 204.11

(c) Earth cuts. Scarify earth cuts to 6 inches below subgrade within the roadbed limits. Compact the scarified material according to Subsection 204.11.

(d) Pioneer Roads. Road pioneering, slash disposal, and grubbing of stumps may proceed concurrently with excavation. Conduct excavation and placement operations so material to be treated under Section 201 will not be incorporated into the roadway unless specified in the slash treatment method. Maintain drainage during pioneering operations.

Remove snow and ice in advance of the work and deposit beyond the roadway limits in a manner that will not waste material or generate sediment. Do not incorporate snow and ice into embankments. Place snow or ice in a manner to prevent resource damage.

204.07 Subexcavation. Excavate material to the limits designated by the CO. Take cross-sections according to Section 152. Prevent unsuitable material from becoming mixed with the backfill. Dispose of unsuitable material according to Subsection 204.14. Backfill the subexcavation with topping, or other suitable material. Compact the material according to Subsection 204.11.

204.08 Borrow Excavation. Use all suitable roadway excavation in embankment construction. Do not use borrow excavation when it results in excess roadway excavation. Deduct excess borrow excavation from the appropriate borrow excavation quantity.

Obtain borrow source acceptance according to Subsection 105.02. Develop and restore borrow sources according to Subsection 105.03. Do not excavate beyond the established limits. When applicable, shape the borrow source to permit accurate measurements when excavation is complete.

204.09 Preparing Foundation for Embankment Construction. Prepare foundation for embankment construction as follows:

(a) Embankment less than 4 feet high over natural ground. When designated, remove topsoil and break up the ground surface to a minimum depth of 6 inches by plowing or scarifying. Compact the ground surface according to Subsection 204.11.

(b) Embankments over an existing asphalt, concrete, or gravel road surface. Scarify gravel roads to a minimum depth of 6 inches. Scarify or pulverize asphalt and concrete roads to 6 inches below the pavement. Reduce all particles to a maximum size of 6 inches and produce a uniform material. Compact the surface according to Subsection 204.11.

(c) Embankment across ground not capable of supporting equipment. Dump successive loads of embankment material in a uniformly distributed layer to construct the lower portion of the embankment. Limit the layer thickness to the minimum depth necessary to support the equipment.

(d) Embankment on an existing slope steeper than 1V:3H. Cut horizontal benches in the existing slope to a sufficient width to accommodate placement and compaction operations and equipment. Bench the slope as the embankment is placed and compacted in layers. Begin each bench at the intersection of the original ground and the vertical cut of the previous bench.

204.10 Embankment Construction. Incorporate only suitable roadway excavation material into the embankment. When the supply of suitable roadway excavation is exhausted, furnish unclassified borrow to complete the embankment. Obtain written approval before beginning construction of embankments over 6 feet high at subgrade centerline. Construct embankments as follows:

(a) General. At the end of each day's operations, shape to drain and compact the embankment surface to a uniform cross-section. Eliminate all ruts and low spots that could hold water.

During all stages of construction, route and distribute hauling and leveling equipment over the width and length of each layer of material.

Compact embankment side slopes flatter than 1V:1.75H with a tamping type roller or by walking with a dozer. For slopes 1V:1.75H or steeper, compact the slopes as construction of the embankment progresses.

Where placing embankment on one side of abutments, wing walls, piers, or culvert headwalls, compact the material using methods that prevent excessive pressure against the structure.

Where placing embankment material on both sides of a concrete wall or box structure, conduct operations so compacted embankment material is at the same elevation on both sides of the structure.

Where structural pilings are placed in embankment locations, limit the maximum particle size to 4 inches.

(b) Embankment within the roadway prism. Place embankment material in horizontal layers not exceeding 12 inches in compacted thickness. Incorporate oversize boulders or rock fragments into the 12-inch layers by reducing them in size or placing them individually as required by (c) below. Compact each layer according to Subsection 204.11 before placing the next layer.

Material composed predominately of boulders or rock fragments too large for 12-inch layers may be placed in layers up to 24 inches thick. Incorporate oversize boulders or rock fragments into the 24-inch layer by reducing them in size or placing them individually according to (c) below. Place sufficient earth and smaller rocks to fill the voids. Compact each layer according to Subsection 204.11 before placing the next layer.

(c) Individual rock fragments and boulders. Place individual rock fragments and boulders greater than 24 inches in diameter as follows:

(1) Reduce rock to less than 48 inches in the largest dimension.

(2) Distribute rock within the embankment to prevent nesting.

(3) Place layers of embankment material around each rock to a depth not greater than that permitted by (b) above. Fill all the voids between rocks.

(4) Compact each layer according to Subsection 204.11 before placing the next layer.

(d) Embankment outside of roadway prism. Where placing embankment outside the staked roadway prism, place material in horizontal layers not exceeding 24 inches in compacted thickness. Compact each layer according to Subsection 204.11.

204.11 Compaction. Compact the embankment using one of the following methods as specified:

(a) <u>Compaction A.</u> Use AASHTO T 27 to determine the amount of material retained on a Number 4 sieve. If there is more than 80 percent retained on the No. 4 sieve use procedure (1). If there is 50 to 80 percent retained on the No. 4 sieve use procedure (2). If there is less than 50 percent retained on the No. 4 sieve use procedure (3).

(1) Adjust the moisture content to a level suitable for compaction. Fill the interstices around rock with earth or other fine material as practical. Use compression-type rollers at speeds

less than 6feet per second and vibratory rollers at speeds less than 3 feet per second. Compact each layer of material full width with one of the following and until there is no visible evidence of further consolidation.

(a) Four roller passes of a vibratory roller having a minimum dynamic force of 40,000 pounds impact per vibration and a minimum frequency of 1000 vibrations per minute.
(b) Eight roller passes of a 20-ton compression-type roller.
(c) Eight roller passes of a vibratory roller having a minimum dynamic force of 30,000 pounds impact per vibration and a minimum frequency of 1000 vibrations per minute.

Increase the compactive effort for layers deeper than 12 inches as follows:

- For each additional 6 inches or fraction thereof, increase the number of roller passes in (a) above by four passes.
- For each additional 6 inches or fraction thereof, increase the number of roller passes in (b) and (c) above, by eight passes.

(2) Use AASHTO T 99 to determine the optimum moisture content of the portion of the material passing a No. 4 sieve. Multiply this number by the percentage of material passing a No. 4 sieve, and add 2 percent to determine the optimum moisture content of the material. Adjust the moisture content of material classified A-1 through A-5 to a moisture content suitable for compaction. Adjust the moisture content of material classified A-6 and A-7 to within 2 percent of the optimum moisture content.

Use compression-type rollers at speeds less than 6 feet per second and vibratory rollers at speeds less than 3 feet per second. Compact each layer of material full width according to (1) above.

(3) Classify the material according to AASHTO M 145. For material classified A-1 or A-2-4, determine the maximum density according to AASHTO T 180, method D. For other material classifications, determine the optimum moisture content and maximum density according to AASHTO T 99, method C.

Adjust the moisture content of material classified A-1 through A-5 to a moisture content suitable for compaction. Adjust the moisture content of material classified A-6 and A-7 to within 2 percent of the optimum moisture content.

Use compression-type or vibratory rollers. Compact each layer of material full width to at least 95 percent of the maximum density. Determine the in-place density and moisture content according to AASHTO T 310 or other approved test procedures. When required, use AASHTO T 224 to correct for coarse particles.

(b) Compaction B. Place material by end dumping to the minimum depth needed for operation of spreading equipment. Adjust the moisture content of the material to obtain a mass that will not visibly deflect under the load of the hauling and spreading equipment. Operate compaction equipment over the full width of each layer until there is no visible evidence of further

consolidation or, if when a sheepsfoot roller is used, the roller "walks out" of the layer. Make at least three complete passes.

(c) Compaction C. Place material by end dumping to the minimum depth needed for operation of spreading equipment. Level and smooth each embankment layer before placing the next layers. Operate hauling and spreading equipment uniformly over the full width of each layer. Construct a solid embankment with adequate compaction by working smaller rock and fines in with the larger rocks to fill the voids, and by operating hauling and spreading equipment uniformly over the full width of each layer as the embankment is constructed.

204.12 Ditches. Slope, grade, and shape ditches. Remove all projecting roots, stumps, rock, or similar matter. Maintain all ditches in an open condition and free from leaves, sticks, and other debris.

Form furrow ditches by plowing or using other acceptable methods to produce a continuous furrow. Place all excavated material on the downhill side so the bottom of the ditch is approximately 18 inches below the crest of the loose material. Clean the ditch using a hand shovel, ditcher, or other suitable method. Shape to provide drainage without overflow.

204.13 Sloping, Shaping, and Finishing. Complete slopes, ditches, culverts, riprap, and other underground minor structures before placing aggregate courses. Slope, shape, and finish as follows:

(a) Sloping. Leave all earth slopes with uniform roughened surfaces, except as described in (b) below, with no noticeable break as viewed from the road. Except in solid rock, round tops and bottoms of all slopes including the slopes of drainage ditches. Round material overlaying solid rock to the extent practical. Scale all rock slopes. Slope rounding is not required on tolerance class D though M roads.

If a slide or slipout occurs on a cut or embankment slope, remove or replace the material, and repair or restore all damage to the work. Bench or key the slope to stabilize the slide. Reshape the cut or embankment slope to an acceptable condition.

(b) Stepped slopes. Where required by the contract, construct steps on slopes of 1⅓V:1H to 1V:2H. Construct the steps approximately 18 inches high. Blend the steps into natural ground at the end of the cut. If the slope contains nonrippable rock outcrops, blend steps into the rock. Remove loose material found in transitional area. Except for removing large rocks that may fall, scaling stepped slopes is not required.

(c) Shaping. Shape the subgrade to a smooth surface and to the cross-section required. Shape slopes to gradually transition into slope adjustments without noticeable breaks. At the ends of cuts and at intersections of cuts and embankments, adjust slopes in the horizontal and vertical planes to blend into each other or into the natural ground.

(d) Finishing. Finish the roadbed to be smooth and uniform, and shaped to conform to the typical sections. Remove unsuitable material from the roadbed and replace it with suitable material. Finish roadbeds to the tolerance class shown in table 204-2.Ensure that the subgrade is visibly

moist during shaping and dressing. Scarify to 6 inches below the bottom of low sections, holes, cracks, or depressions and bring back to grade with suitable material. Maintain proper ditch drainage.

For surfaced roads, remove all material larger than 6 inches from the top 6 inches of the roadbed.

For unsurfaced roads, use one of the following methods to finish the roadbed:

(1) Method A. Remove all material larger than 6 inches from the top 6 inches of the roadbed and replace with suitable material.
(2) Method B. Use a vibratory grid roller or approved equal with a minimum weight of 10 tons. Roll at least 5 full-width passes or until there is no visible evidence of further consolidation.
(3) Method C. For roads designated as Construction Tolerance Class K, L, or M, finish the roadbed by spreading the excavation. Eliminate rock berms.

204.14 Disposal of Unsuitable or Excess Material. Dispose of unsuitable or excess material at designated sites or legally off of the project.

When there is a pay item for waste, shape and compact the waste material in its final location. Do not mix clearing or other material not subject to payment with the waste material.

204.15 Acceptance. See Table 204-1 for sampling and testing requirements.

Material for embankment and conserved topsoil will be evaluated under Subsections 106.02 and 106.04.

Excavation and embankment construction will be evaluated under Subsections 106.02 and 106.04.

Clearing and removal of obstructions will be evaluated under Sections 201 and 203.

Measurement

204.16 Measure the Section 204 items listed in the bid schedule according to Subsection 109.02 and the following as applicable.

(a) Roadway excavation. Measure roadway excavation in its original position as follows:

(1) Include the following volumes in roadway excavation:
(a) Roadway prism excavation;
(b) Rock material excavated and removed from below subgrade in cut sections;
(c) Unsuitable material below subgrade and unsuitable material beneath embankment areas when a pay item for subexcavation is not shown in the bid schedule;
(d) Ditches, except furrow ditches measured under a separate bid item;
*(e*Topsoil;
(f) Borrow material used in the work when a pay item for borrow is not shown in the

bid schedule;
(g) Loose scattered rocks removed and placed as required within the roadway;
(h) Conserved material taken from stockpiles and used in Section 204 work; and
(i) Slide and slipout material not attributable to the Contractor's method of operation.

(2) Do not include the following in roadway excavation:
(a) Overburden and other spoil material from borrow sources;
(b) Overbreakage from the backslope in rock excavation;
(c) Water or other liquid material;
(d) Material used for purposes other than required;
(e) Roadbed material scarified in place and not removed;
(f) Material excavated when stepping cut slopes;
(g) Material excavated when rounding cut slopes;
(h) Preparing foundations for embankment construction;
(i) Material excavated when benching for embankments;
(j) Slide or slipout material attributable to the Contractor's method of operation;
(k) Conserved material taken from stockpiles constructed at the option of the Contractor; and
(l) Material excavated outside the established slope limits.

(3) When both roadway excavation and embankment construction pay items are shown in the bid schedule, measure the following as roadway excavation only:
(a) Unsuitable material below subgrade in cuts and unsuitable material beneath embankment areas when a pay item for subexcavation is not shown in the bid schedule;
(b) Slide and slipout material not attributable to the Contractor’s method of operations; and
(c) Drainage ditches, channel changes, and diversion ditches.

(b) Unclassified borrow, select borrow, and select topping. When measuring by the cubic yard measure in its original position. If borrow excavation is measured by the cubic yard in place, take initial cross-sections of the ground surface after stripping overburden. Upon completion of excavation and after the borrow source waste material is returned to the source, retake cross-sections before replacing the overburden.
Do not measure borrow excavation used in place of excess roadway excavation.

(c) Embankment construction. Measure embankment construction in its final position. Do not make deductions from the embankment construction quantity for the volume of minor structures.

(1) Include the following volumes in embankment construction:
(a) Roadway embankments;
(b) Material used to backfill subexcavated areas, holes, pits, and other depressions;
(c) Material used to restore obliterated roadbeds to original contours; and
(d) Material used for dikes, ramps, mounds, and berms.

(2) Do not include the following in embankment construction:

(a) Preparing foundations for embankment construction;
(b) Adjustments for subsidence or settlement of the embankment or of the foundation on which the embankment is placed; and
(c) Material used to round fill slopes.

(d) Rounding cut slopes. Measure rounding cut slopes horizontally along the centerline of the roadway if a pay item for slope rounding is included in the bid schedule. If a pay item for slope rounding is not included in the bid schedule slope rounding will be considered subsidiary to excavation.

(e) Waste. Measure waste by the cubic yard in its final position. Take initial cross-sections of the ground surface after stripping over burden. Upon completion of the waste placement, retake cross-sections before replacing overburden.

(f) Slope scaling. Measure slope scaling by the cubic yard in the hauling vehicle.

Payment

204.17 The accepted quantities will be paid at the contract price per unit of measurement for the Section 204 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Table 204-1
Sampling and Testing Requirements

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Topping (704.05) & unclassified borrow (704.06)	Measured and tested for conformance (106.04)	Classification	—	AASHTO M 145	1 per soil type	Processed material before incorporating in work	Yes, when requested	Before using in work
		Moisture-density	—	AASHTO T 180, method D(1) or T 99, method C(1)	1 per soil type but not less than 1 per 13,000 yd^3	"	"	"
		Compaction	—	AASHTO T 310 or other approved procedures	1 per 6000 yd^2 but not less than 1 per layer	In-place	—	Before placing next layer
Select borrow (704.07 & Select topping (704.08)	Measured and tested for conformance (106.04)	Classification	—	AASHTO M 145	1 per soil type but not less than 1 for each day of production	Processed material before incorporating in work	Yes, when requested	Before using in work
		Gradation	—	AASHTO T 27 & T 11	"	"	"	"
		Liquid limit	—	AASHTO T 89	"	"	"	"
		Moisture-density	—	AASHTO T 180, method D(1) or T 99, method C(1)	1 per soil type but not less than 1 per 13,000 yd^3	"	"	"
		Compaction	—	AASHTO T 310 or other approved procedures	1 per 6000 yd^2 but not less than 1 per layer	In-place	—	Before placing next layer

(1) Minimum of 5 points per proctor

Table 204-1 (continued)
Sampling and Testing Requirements

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Earth embankment (204.11, Compaction A)	Measured and tested for conformance (106.04)	Classification	—	AASHTO M 145	1 per soil type	Source of Material	Yes, when requested	Before using in work
		Moisture-density	—	AASHTO T 180, method D(1) or T 99, method C(1)	1 per soil type but not less than 1 per 13,000 yd^3	"	"	"
		Compaction	—	AASHTO T 310 or other approved procedures	1 per 3500 yd^2 but not less than 1 per layer	In-place	—	Before placing next layer
Top of subgrade (204.11 Compaction A)	Measured and tested for conformance (106.04)	Compaction	—	AASHTO T 310 or other approved procedures	1 per 2500 yd^2	In-place	—	Before placing next layer

(1) Minimum of 5 points per proctor.

Table 204-2
Construction Tolerances

	Tolerance Class [a]												
	A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**
Roadbed width (ft)	+0.5	+0.5	+1.0	+1.0	+1.0	+1.0	+1.5	+1.0	+2.0	+2.0	+2.0	+2.0	+2.0
Subgrade elevation (ft)	±0.1	±0.2	±0.2	±0.5	±0.5	±1.0	±1.0	±1.5	±2.0	±3.0	±2.0	±3.0	(c)
Centerline alignment (ft)	±0.2	±0.2	±0.5	±0.5	±1.0	±1.0	±1.5	±1.5	±2.0	±3.0	±3.0	±5.0	(c)
Slopes, excavation, and embankment (% slope[b])	±3	±5	±5	±5	±5	±5	±10	±10	±10	±10	±20	±20	±20

(a) Maximum allowable deviation from construction stakes and drawings.
(b) Maximum allowable deviation from staked slope measured from slope stakes or hinge points.
(c) Unless otherwise shown the centerline alignment and subgrade elevation, as built, have no horizontal curves with a radius of less than 80 feet, and no vertical curves with a curve length of less than 80 feet when the algebraic difference in the grade change is less than 10 percent, or a curve length of less than 100 feet when the algebraic difference of the grade change is greater than or equal to 10 percent. The centerline grade is not to exceed 20 percent in 100 feet of length.

209 - Structure Excavation and Backfill

209.10_nat_us_10_23_2007

209.10 Backfill.

(a) General.

Add the following:

Replace any pipe that is distorted by more than 5 percent of nominal dimensions, or that is ruptured or broken.

Do not place or backfill pipe that meets any of the following conditions until the excavation and foundation have been approved in writing by the CO:

- Embankment height greater than 6 feet at subgrade centerline.
- Installation in a protected streamcourse.
- Round pipe with a diameter of 48 inches or greater.
- Pipe arches with a span of 50 inches or greater.
- Any box culvert of structure other than pipe culverts.

(b) Pipe culverts.

(1) Pipe culverts with compacted backfill.

Add the following:

Excavate an area on each side of the pipe as needed to effectively achieve compaction requirements. Backfill without damaging or displacing the pipe. Complete backfilling of the trench with suitable material.

209.11_nat_us_02_24_2005

209.11 Compacting.

Delete the subsection and add the following:

Compact backfill using designated compaction method A, B, or C:

Method A. Ensure that backfill density exceeds the density of the surrounding embankment.

Method B. Adjust the moisture content of the backfill material to a moisture content suitable for compaction. Compact each layer using appropriate compaction equipment until visual displacement ceases. For compaction under sections 252, 254, 255, 257, 258 and 262 compact with a vibratory steel wheeled roller with a mass of at least 8 tons.

Method C. Determine optimum moisture content and maximum density according to AASHTO T 99 method C. Adjust the moisture content of the backfill material to a moisture

content suitable for compaction. Compact material placed in all layers to at least 95 percent of the maximum density. Determine the in place density and moisture content according to AASHTO T 310 or other approved test procedures.

Table 209-1 Sampling and Testing Requirements

Add the following:

(2) Compaction methods (A) and (B) do not require AASHTO T-99 or T-310 test methods for foundation fill.

230 - Roadside Brushing

230.00_01_us_10_11_2006

Description

230.01 Work. This work consists of removing all vegetative material including limbs, residual slash, live roadside brush, and small trees within the brushing limits designated on the plans. Brushing areas include turnouts.

Construction

230.02 Brushing. Cut all brush and small trees (6 inches diameter, or less, at the point of cut) inside the brushing limits and outside the roadbed no higher than 4 inches above ground level (6 inches for machine brushing). If rocks or other obstructions are encountered, cut no higher than 6 inches above the obstruction. Limb live trees with a diameter larger than 6 inches to provide a clear height of __ feet above the road surface.

Cut all brush and trees located on the roadbed as nearly flush to the road surface as possible so stumps will not become a hazard to vehicle tires.

230.03 Windfalls. Limb windfalls lying within or across the brushing limits, cut off at the top of the existing cut slope or__ feet from the shoulder on the fill slope. Dispose of windfall material as slash.

230.04 Road Junctions. Do not deposit brushing debris on the roadway of adjoining roads.

230.05 Slash Treatment. Scatter slash outside the brushing limits without damaging residual trees. Slash is defined as any material that has a length greater than 36 inches or a diameter greater than __ inches at any point. Do not deposit material in streams, streambeds, culvert inlets or outlets, drainage ways, or cattle guards.

230.06 Acceptance. Roadside brushing will be evaluated under Subsection 106.02.

Measurement

230.07 Method. Measure the Section 230 items listed in the bid schedule according to Subsection 109.02 and the following.

Linear measurements will be horizontal along the road centerline.

Quantities will be the number of miles (or stations) and fractions thereof along the road centerline.

Payment

230.08. The accepted quantities will be paid at the contract price per unit of measurement for the section 230 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this section. See Subsection 109.05.

251 - Riprap

251.03_nat_us_08_05_2009

Construction Requirements

251.03 General.

Add the following:

Place riprap under or adjacent to structures before placing prefabricated superstructure units or constructing superstructure falsework unless otherwise approved by the CO.

251.08 Measurement.

Add the following:

Payment for excavation and embankment required for placement of riprap is indirectly included in the pay item for riprap.

303 - Road Reconditioning

303.00_0605_us_05_11_2007

Delete Section 303 in its entirety and replace with the following.

Description

303.01 This work consists of reconditioning ditches, shoulders, roadbeds, parking areas, approach road intersections, cattleguards, asphalt surfaces and aggregate surfaces. Clean and maintain all drainage structures.

Material

303.02 Conform to the following Subsection:

Water 725.01

Construction Requirements

303.03 Ditch Reconditioning. Remove all slide material, sediment, vegetation, and other debris from the existing ditches and culvert inlets and outlets. Reshape ditches and culvert inlets and outlets to achieve positive drainage and a uniform ditch width, depth, and grade. Dispose of waste as shown on the plans.

303.04 Shoulder Reconditioning. Repair soft and unstable areas according to Subsection 204.07. Remove all slide material, vegetation, and other debris from existing shoulders including shoulders of parking areas, turnouts, and other widened areas. Dispose of waste as shown on the plans.

303.05 Roadbed Reconditioning Repair soft and unstable areas according to Subsection 204.07. Remove all organic, deleterious material larger than 6 inches from the top 6 inches of subgrade. Dispose of waste as shown on the plans. Scarify and shape the traveled way and shoulders at locations and to the depth and width designated on the plans. Remove surface irregularities and shape to provide a uniform surface.

Dispose of rock larger than 4 inches brought to the surface during scarification in areas designated on the plans.

For portions of roads not requiring scarification, the roadbed may contain rocks larger than 4 inches provided they do not extend above the finished roadbed surface. Reduce in place or remove rock extending above the finished roadbed surface. Dispose of removed rock in areas designated on the plans.

Compact using the following method as specified:

(a) Layer Placement Method (Hauling and Spreading Equipment). Place material by end dumping to the minimum depth needed for operation of spreading equipment. Level and smooth each embankment layer before placing the next layers. Operate hauling and spreading equipment uniformly over the full width of each layer. Construct a solid embankment with adequate compaction by working smaller rock and fines in with the larger rocks to fill the voids, and by operating hauling and spreading equipment uniformly over the full width of each layer as the embankment is constructed.

(b) Layer Placement (Roller Compaction) Method. Place material by end dumping to the minimum depth needed for operation of spreading equipment. Adjust the moisture content of the material to obtain a mass that will not visibly deflect under the load of the hauling and spreading equipment. Operate compaction equipment over the full width of each layer until visible deformation of the layer ceases or, in when a sheepsfoot roller is used, the roller "walks out" of the layer. Make at least three complete passes. . Use rollers that meet the following requirements:

(1) Steel wheeled rollers, other than vibratory, capable of exerting a force of not less than 250 pounds per inch of width of the compression roll or rolls.

(2) Vibratory steel wheeled rollers equipped with amplitude and frequency controls with a minimum weight of 6 tons, specifically designed to compact the material on which it is used.

(3) Pneumatic-tired rollers with smooth tread tires of equal size that will provide a uniform compacting pressure for the full width of the roller and capable of exerting a ground pressure of at least 80 psi.

303.06 Aggregate Surface Reconditioning. Repair soft and unstable areas to the full depth of the aggregate surface and according to Subsection 204.07. Scarify to the depth and width shown on the plans, and remove surface irregularities. Reshape, finish, and compact the entire aggregate surface according to Section 301, Section 308, Section 321, or Section 322 as applicable.

303.07 Roadway Reconditioning. Perform all the applicable work described in Subsections 303.03 through 303.06.

Maintain the existing cross slope or crown unless otherwise shown on the plans. Establish a blading pattern that will retain the surfacing on the roadbed and provide a through mixing of the materials within the completed surface width.

Blade and shape the subgrade for both surfaced and unsurfaced roads when moisture content is suitable for compaction.

303.08 Pulverizing. Scarify the surface to the designated depth and width. Pulverize all material to a size one and one half times the maximum sized aggregate or to 1½ inches, whichever is greater. Mix, spread, compact, and finish the material according to Section 322.

303.09 Acceptance. Road reconditioning work will be evaluated under Subsections 106.02 and 106.04.

Measurement

303.10 Measure the Section 303 items listed in the Schedule of Items according to Subsection 109.02 and the following as applicable.

Measure ditch reconditioning and shoulder reconditioning by the mile, by the station or foot horizontally along the centerline of the roadway for each side of the roadway.

Measure roadbed reconditioning, aggregate surface reconditioning, roadway reconditioning, and pulverizing by the mile, by the station, or by the square yard.

Payment

303.11 The accepted quantities will be paid at the contract price per unit of measurement for the Section 303 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

322 - Minor Aggregate Courses

Description

322.01 This work consists of constructing one or more courses of aggregate on a prepared surface. Work includes producing aggregate by grid rolling, screening, or crushing methods, or placing pit-run or Government-furnished aggregate.

Surface aggregate grading is designated as shown in Table 703-3.

Subbase and base aggregate grading is designated as shown in Table 703-2.

Screened aggregate grading is designated as shown in Table 703-16.

Material

322.02 Conform to the following Subsections:

Aggregate	703.05
Water	725.01

Construction Requirements

322.03 General. Prepare the surface on which the aggregate course is placed according to Section 204 or 303 as applicable.

Request approval of the roadbed in writing before placing aggregate.

Develop, haul, and apply water in accordance to Section 170.

Submit target values within the gradation ranges shown in Table 703-2 or 703-3 for the required grading. After reviewing the proposed target values the CO will determine the final values for the gradation and notify the Contractor in writing.

No quality requirements or gradation other than maximum size will be required for pit run and grid-rolled material. For grid rolling, use all suitable material that can be reduced to maximum size.

After processing on the road, remove all oversize material from the road and dispose of it as directed by the CO.

If the aggregate is produced and stockpiled before placement, handle and stockpiled according to Section 320. Establish stockpile sites at approved locations.

322.04 Mixing and Spreading. Mix the aggregate and adjust the moisture content to obtain a uniform mixture with a moisture content suitable for the specified compaction method. Spread and shape the mixture on the prepared surface in a uniform layer with no segregation of size, and to a loose depth that will provide the required compacted thickness.

Do not place in layers exceeding 6 inches in compacted thickness for aggregate base and surface courses or twice the maximum particle size for screened aggregate. When more than one layer is necessary, compact each layer according to Subsection 322.05 before placing the next layer. Route hauling and leveling equipment uniformly over the full width.

When placing aggregate over geotextile, place aggregate in a single lift to the full depth specified.

322.05 Compacting. Compact each layer full width. Roll from the sides to the center, parallel to the centerline of the road. Along curbs, headers, walls, and all places not accessible to the roller, compact the material with approved tampers or compactors.

Compact the aggregate using one of the following methods as specified:

Compaction A. Operating spreading and hauling equipment over the full width of the travelway.

Compaction B. Operate rollers and compact as specified in Subsection 204.11(a)(1).

Compaction C. Moisten or dry the aggregate to a uniform moisture content between 5 and 7 percent based on total dry weight of the mixture. Operate rollers and compact as specified in Subsection 204.11(a)(1).

Compaction D. Compact to a density of at least 95 percent of the maximum density, as determined by AASHTO T 99, method C or D.

Compaction E. Removed.

Compaction F. Compact to a density of at least 95 per-cent of the maximum density, as determined by AASHTO T 180, method C or D.

Compaction G. Removed.

For all compaction methods, blade the surface of each layer during the compaction operations to remove irregularities and produce a smooth, even surface. When a density requirement is specified, determine the in place density and moisture content according to AASHTO T 310 or other approved test procedures.

322.06 Construction Tolerance. If grade finishing stakes are required, finish the surface to within ±0.10 feet from staked line and grade elevation.

If grade finishing stakes are not required, shape the surface to the required template and check the surface with a 10-foot straightedge. Defective areas are surface deviations in excess of 1/2 inch in 10 feet between any two contacts of the straightedge with the surface.

Correct all defective areas by loosening the material, adding or removing material, reshaping, and compacting.

Ensure that the compacted thickness is not consistently above or below the specified thickness. The maximum variation from the compacted specified thickness is ½ inch.

Ensure that the compacted width is not consistently above the specified width. The maximum variation from the specified width will not exceed +12 inches at any point.

322.07 Maintenance. Maintain the aggregate course to the correct line, grade, and cross-section by blading, watering, rolling, or any combination thereof until placement of the next course. Correct all defects according to Subsection 322.06.

322.08 Acceptance. See Table 322-1 or Table 322-2 as applicable, for sampling and testing requirements.

Aggregate gradation and surface course plasticity index will be evaluated under Subsection 106.04. If the aggregate is obtained from a Government stockpile then the above characteristics will be evaluated under Subsection 106.02. Other aggregate quality properties will be evaluated under Subsections 106.02 and 106.04. Placement of aggregate courses will be evaluated under Subsections 106.02 and 106.04.

The allowable upper and lower aggregate gradation limits are the Target Value plus or minus the allowable deviations shown in Tables 703-2 and 703-3.

The allowable upper and lower Plasticity index limits for surface courses are stated in 703.05(b).

Preparation of the surface on which the aggregate course is placed will be evaluated under Section 204 or 303 as applicable.

Measurement

322.09 Measure the Section 322 items listed in the bid schedule according to Subsection 109.02 and the following as applicable.

Measure square yard width horizontally to include the top of aggregate width including designed widening. Measure the square yard length horizontally along the centerline of the roadway.

If the measurement for aggregate is by cubic yard using contract quantities then measure aggregate by the cubic yard in-place once compacted, otherwise measurement for aggregate by the cubic yard is measured by the cubic yard in the hauling vehicle.

Measure thickness perpendicular to the grade of the travelway.

Measure width perpendicular to the centerline.

Payment

322.10 The accepted quantities will be paid at the contract price per unit of measurement for the Section 322 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Table 322-1
Sampling and Testing Requirements

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Aggregate source quality 703.05	Measured and tested for conformance (106.04 & 105)	LA abrasion (coarse)	—	AASHTO T 96	1 per type & source of material	Source of material	Yes, when requested	Before using in work
		Sodium sulfate soundness loss (coarse & fine)	—	AASHTO T 104	"	"	"	"
		Durability index (coarse & fine)	—	AASHTO T 210	"	"	"	"
		Fractured faces	—	ASTM D 5821	"	"	"	"
Subbase, Base, and Surface courses	Measured and tested for conformance (106.04)	Sample	—	AASHTO T 2	2 per day	From windrow or roadbed after processing or from approved crusher sampling device	Yes	48 hours

Table 322-1 (continued)
Sampling and Testing Requirements

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Subbase, Base, and Surface	Measured and tested for conformance (106.04)	Moisture-density Method D	—	AASHTO T 99 (1)	1 per type and source of material	Source of material	Yes, when requested	Before using in work
			—		"	"	"	"
		Moisture-density Method F	—	AASHTO T 180(1)	"	"	"	"
			—		"	"	"	"
		In-place density & moisture content	—	AASHTO T 310 or other approved procedures	3 per day	In-place	—	Before placing next layer

(1) Minimum of 5 points per proctor.

Table 322-2
Sampling and Testing Requirements

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Screened Aggregate	Measured and tested for conformance (106.04)	Sample	—	AASHTO T 2	2 per day	From windrow or roadbed after processing or from approved crusher sampling device	Yes	48 hours

404 - Minor Hot Asphalt Concrete

404.02_nat_us_06_09_2006

404.02 Composition of Mix (Job-Mix Formula).

Delete the second paragraph and replace with the following:

Submit a job-mix formula and supporting documentation, test results, and calculations for the material to be incorporated into the work. Include copies of laboratory test results and mix design data that demonstrate that the properties of the aggregate, additives, and mixture meet the current requirements and criteria of Federal or state agencies. Ensure that the job-mix formula was performed no more than one year prior to placing the hot asphalt concrete. After reviewing the Contractor's proposed job-mix formula, the CO will determine the final values for the job-mix formula to be used and notify the Contractor in writing.

404.04_nat_us_03_02_2005

404.04 Weather Limitations.

Change 35° F to 45° F:

404.06_nat_us_03_02_2005

404.06 Placing.

Add the following:

Do not place asphalt until the CO has approved in writing the area where it will be placed.

Delete the last sentence and replace with the following:

Offset the longitudinal joint of one layer at least 6 inches from the joint in the layer immediately below. Make the longitudinal joint in the top layer along the centerline of two-lane roadways or at the lane lines of roadways with more than two lanes. Offset transverse joints in succeeding layers and in adjacent lanes at least 10 feet, where possible.

404.07_nat_us_03_02_2005

404.07 Compacting (a).

Delete and replace with the following:

(a) Roadway paving. Thoroughly and uniformly compact the surface a minimum of three passes with rollers that meet one of the following requirements:

(1) Steel-wheeled rollers, other than vibratory type, capable of exerting a force of not less than 1.5 ton/feet of width of the compression roll or rolls.

(2) Vibratory steel-wheel rollers with a minimum mass of 5 ton, equipped with amplitude and frequency controls, and designed to compact asphalt concrete.

(3) Pneumatic-tire rollers with smooth tread tires of equal size that provide a uniform compacting pressure for the full width of the roller and capable of exerting a ground pressure of at least 80 lbf/in^2.

Perform initial compaction while the mixture is above 250 °F. Perform finish rolling with steel-wheel rollers and continue until no roller tracks remain.

404.09 Acceptance.

Add the following to the second paragraph:

See Table 404-1 for sampling and testing requirements.

Table 404-1. Delete and replace with the following:

Table 404-1. Sampling and Testing Requirements.

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Sampling Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Asphalt Mixture (404.09)	-	-	-	AASHTO T 168	Three minimum per project and at least one per 500 Cubic yards	Roadway prior to compaction	yes	As soon as sampled

602 - Culverts and Drains

602.03_nat_us_09_06_2005

602.03 General.

Add the following:

Ensure that the final installed alignment of all pipe allows no reverse grades, and does not permit horizontal and vertical alignments to vary from a straight line drawn from center of inlet to center of outlet by more than 2 percent of pipe center length or 1.0 feet, whichever is less.

602.06_nat_us_08_05_2009

602.06 Laying Plastic Pipe.

Delete the second paragraph and substitute the following:

Provide soil-tight bell and spigot joints for plastic pipe culverts.

607 - Cleaning, Reconditioning, and Repairing Existing Drainage Structures

607.01_06_us_09_15_2009

607.01 Description.

Add the following to the first sentence:

…..and bridges.

Add the following paragraph:

Remove all dirt and deleterious debris from bridge decks, expansion joints, curbs, rails and deck drains.

607.02 General.

Add the following:

Clean bridge decks and appurtenances by an approved pressurized water method and/or other approved mechanical and manual methods. Contain and remove loose material from the bridge off the work site to an approved location. Do not allow material to enter the waterways.

Remove cleaned material from bridge to designated site as specified in the plans.

625 - Turf Establishment

625.03_nat_us_07_02_2007

625.03 General.

Delete this subsection and replace with the following:

Apply turf establishment to the areas shown on the plans or worklists within ***15*** days after completion of ground disturbing activities. Unless otherwise specified in writing by the CO apply turf establishment after each ***1000*** foot section of road has been constructed to template lines. Seeded areas damaged by construction activities shall be reseeded within 10 days of the damage. Do not seed during windy weather or when the ground is excessively wet, frozen, or snow covered.

Assure that all seed and mulch used in the work conforms to the weed free requirements of Section 713.

625.04 Preparing Seedbed.

Delete entire subsection and replace with the following:

Ensure that the surface soil is in a roughened condition favorable for germination and growth.

625.05 Watering

Delete entire subsection.

625.06 Fertilizing.

Delete entire subsection and replace with the following:

Apply fertilizer having a chemical analysis as listed below by the following methods.

(a) Dry Method. Apply the fertilizer with approved mechanical equipment. Hand operated methods are satisfactory on areas inaccessible to mechanical equipment.

(b) Hydraulic method. Use hydraulic-type equipment capable of providing a uniform application using water as the carrying agent. Add fertilizer to the slurry and mix before adding seed. Add the tracer material when designated by the CO.

Fertilizer. Apply fertilizer at the rate of ***0*** pounds per acre. Insure that the fertilizer meets the following chemical analysis:

625.07 Seeding.

Delete the first sentence and add the following.

Apply seed mix by the following methods**:**

(a) Dry method. Delete the third sentence.

Add the following after subsection (b).

Seed Mix. Furnish and apply the following kinds and amounts of pure live seed:

Seed Mix C1 – ≤3500' Elevation

Soil Not Droughty, Not Saturated; Site Not Adjacent to Wetlands

Name of Seed	% of Mixture	Application Rate (lbs/Acre)
Tufted Hairgrass	5%	4
Annual Ryegrass	13%	10
Winter Triticale	79%	60
Alsike Clover	3%	2
	100%	76 lbs/Acre

Determine the pounds of seed to be furnished per acre by dividing the pounds of pure live seed required per acre by the product of the percent purity and percent germination.

625.08 Mulching.

Delete the entire subsection and replace with the following:

Apply Mulch within ***8*** hours after seeding by the following methods.

(a) Dry Method. Apply mulch with a hand spreader or a spreader utilizing forced air at a rate of ***3200*** pounds per acre.

Apply so no hole in the matrix is greater than 0.04 inches. Apply so that no gaps exist between the matrix and the soil.

625.09 Protecting and Caring for Seeded Areas

Delete the first sentence and add the following:

Protect and care for seeded areas until final acceptance.

625.11 Measurement.

Delete the entire Subsection and replace with the following:

Measure the Section 625 items listed in the bid schedule according to Subsection 109.02.

633 - Permanent Traffic Control

633.00_01_us_10_12_2006

633.01

Delete the first paragraph and add the following:

This work includes furnishing, installing, removing and reinstalling guide signs, route markers (with or without arrows), gate signs, object markers, gate barricades and sign posts.

633.02 Material.

Add the following subsections:

Protective Overlay Film	718.02
Edge Film	718.02

633.03 General.

Delete the subsection and replace with the following:

Furnish traffic control devices and guide signs according to the MUTCD, approved USDA-FS and state supplements, the current edition of USDA-FS EM-7100-15 *Sign and Poster Guidelines for the Forest Service*, and Standard Highway Signs published by FHWA. Submit the sign list for approval before ordering.

633.05 Panels.

Add the following:

Apply protective overlay film and top edge film as required and according to with manufacturer's recommendations.

Modify the following:

"Use antitheft fasteners where possible" in the fifth paragraph and replace it with the following: "For each sign panel, use at least one antitheft fastener."

635 - Temporary Traffic Control

635.03_nat_us_05_13_2004

635.03 General.

Add the following:

Install temporary traffic control signs to temporary posts or approved temporary sign mounts.

651 - Development of Pits & Quarries

651.00_nat_us_03_02_2005

Description

651.01 This work consists of clearing, grubbing, stripping topsoil, removing overburden, constructing access roads, conducting restoration activities, and performing other incidental work required for pit or quarry development.

Construction Requirements

651.02 General. Submit a plan of operations according to Section 105. Perform all work in accordance with Sections 105, 201, 203, 204, 625, and 635, landscape preservation requirements, and the approved pit and quarry development plan of operations. Perform the work in accordance with MSHA 30 CFR, part 56.

651.03 Acceptance. Developing pits and quarries will be evaluated under Subsections 106.02 and 106.04.

Measurement

651.04 Measure the Section 651 items listed in the bid schedule according to Subsection 109.02.

Payment

651.05 The accepted quantities will be paid at the contract price per unit of measurement for the Section 651 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

703 - Aggregate

703.05_nat_us_08_14_2009

Delete 703.05 and replace with the following:

703.05 Subbase, Base, Surface Course, and Screened Aggregate.

(a) Subbase or base aggregate. Furnish hard, durable particles or fragments of crushed stone, crushed slag, or crushed gravel conforming the following:

(1) Gradation	Table 703-2
(2) Liquid limit, AASHTO T 89	25 max.
(3) Plastic limit, AASHTO T 90	Nonplastic
(4) Los Angeles abrasion, AASHTO T 96	40% max.
(5) Sodium sulfate soundness loss (5 cycles), AASHTO T 104	12% max.
(6) Durability index (coarse), AASHTO T 210	35 min.
(7) Durability index (fine), AASHTO T 210	35 min.
(8) Fractured faces, ASTM D 5821	50% min.
(9) Free from organic matter and lumps or balls of clay	

Do not use material that breaks up when alternately frozen and thawed or wetted and dried.

Obtain the aggregate gradation by crushing, screening, and blending processes as necessary. Fine aggregate, material passing the No. 4 sieve, shall consist of natural or crushed sand and fine mineral particles.

(b) Surface course aggregate. Furnish hard, durable particles or fragments of crushed stone, crushed slag, or crushed gravel conforming the following:

(1) Gradation	Table 703-3
(2) Liquid limit, AASHTO T 89	35 max.
(3) Plastic Index, AASHTO T 90	
a) If the percent passing the No. 200 sieve is less than 12%	2 to 9
b) If the percent passing the No. 200 sieve is greater than 12%	Less than 2
(4) Los Angeles abrasion, AASHTO T 96	40% max.
(5) Sodium sulfate soundness loss (5 cycles), AASHTO T 104	12% max.
(6) Durability index (coarse), AASHTO T 210	35 min.
(7) Durability index (fine), AASHTO T 210	35 min.
(8) Fractured faces, ASTM D 5821	75% min.
(9) Free from organic matter and lumps or balls of clay	

Do not use material that breaks up when alternately frozen and thawed or wetted and dried.

Do not furnish material that contains asbestos fibers.

Obtain the aggregate gradation by crushing, screening, and blending processes as necessary. Fine aggregate, material passing the No. 4 sieve, shall consist of natural or crushed sand and fine mineral particles.

(c) Screened aggregate – Furnish hard, durable particles or fragments of stone, slag, or gravel conforming the following:

(1) Gradation	Table 703-16
(2) Plastic Index, AASHTO T 90	Less than 9
(3) Los Angeles abrasion, AASHTO T 96	55% max.
(4) Free from organic matter and lumps or balls of clay.	

Do not use material that breaks up when alternately frozen and thawed or wetted and dried.

Obtain the aggregate gradation by crushing, screening, and blending processes as necessary.

Delete Table 703-2 and replace with the following:

Table 703-2
Target Value Ranges for Subbase and Base Gradation

Sieve Size	Percent by Mass Passing Designated Sieve (AASHTO T 27 and T 11)				
	Grading Designation				
	A (Subbase)	B (Subbase)	C (Base)	D (Base)	E (Base)
2½ inch	100				
2 inch	97 – 100	100	100		
1½ inch		97 – 100			
1 inch	65 – 79 (6)		80 – 100 (6)	100	
3/4 inch			64 – 94 (6)	86 – 100 (6)	100
1/2 inch	45 – 59 (7)				
3/8 inch			40 – 69 (6)	51 – 82 (6)	62 – 90 (6)
No. 4	28 – 42 (6)	40 – 60 (8)	31 – 54 (6)	36 – 64 (6)	36 – 74 (6)
No. 40	9 – 17 (4)			12 – 26 (4)	12 – 26 (4)
No. 200	4.0 – 8.0 (3)	4.0 – 12.0 (4)	4.0 –7.0 (3)	4.0 – 7.0 (3)	4.0 – 7.0 (3)

( ) The value in the parentheses is the allowable deviation (±) from the target values..

Delete Table 703-3 and replace with the following:

Table 703-3
Target Value Ranges for Surface Gradation

Sieve Size	Percent by Mass Passing Designated Sieve (AASHTO T 27 and T 11)					
	Grading Designation					
	F	G	H	S	T	U
1 1/2 inch	100			100		
1 inch	97-100	100		72 – 92 (6)	100	
3/4 inch	76-89 (6)	97 - 100	97 - 100			100
1/2 inch					71 – 91 (6)	
3/8 inch	56-68 (6)	70 – 80 (6)	80 – 92 (6)	51 – 71 (6)		71 – 90 (6)
No. 4	43-53 (7)	51 – 63 (7)	58 – 70 (7)	36 – 53 (7)	43 – 60 (7)	50 – 68 (7)
No. 8				26 – 40 (6)	30 – 46 (6)	34 – 51 (6)
No. 16	23-32 (6)	28 – 39 (6)	28 – 40 (6)			
No. 40	15-23 (5)	19 – 27 (5)	16 – 26 (5)	14 – 25 (5)	16 – 28 (5)	19 – 30 (5)
No. 200	10.0-16.0 (4)	10.0 – 16.0 (4)	9.0 – 14.0 (4)	8.0 – 15.0 (4)	8.0 – 15.0 (4)	8.0 – 15.0 (4)

( ) The value in the parentheses is the allowable deviation (±) from the target values.
If the plasticity index (PI) is greater than 0, the TV range for the No. 200 sieve size is 8-12 (4).

Add Table 703-16:

Table 703-16

Gradation Requirements for Screened Aggregate

Sieve Size	Percent by Mass Passing Designated Sieve (AASHTO T 27 and T 11)						
	Grading Designation						
	L	M	N	O	P	Q	R
6 inch	100	100					
4 inch			100	100			
3 inch					100	100	
2 inch							100
No. 4		15-45		15-45		15-45	

705.02 Riprap Rock.

Delete Table 705-1 and replace it with the following:

Gradation Requirements for Riprap

Class	Percent of Rock by Mass	Mass (pounds)	Approximate Cubic Dimension [b,c] (inches)
1	20	22 to 33	6 to 8
	30	11 to 22	5 to 6
	40	1 to 11	2 to 5
	10[a]	0 to 1	0 to 2
2	20	55 to 110	8 to 10
	30	22 to 55	6 to 8
	40	2 to 22	3 to 6
	10[a]	0 to 2	0 to 3
3	20	220 to 330	14 to 16
	30	110 to 220	10 to 14
	40	11 to 110	5 to10
	10[a]	0 to 11	0 to 5
4	20	550 to 770	18 to 20
	30	220 to 570	14 to 18
	40	22 to 220	6 to 14
	10[a]	0 to 22	0 to 6
4a	20	770 to1353	20 to 24
	30	330 to 770	16 to 20
	40	33 to 330	7 to16
	10[a]	0 to 33	0 to 7
5	20	1540 to 2200	26 to 28
	30	1100 to 1540	20 to 26
	40	55 to 1100	8 to 20
	10[a]	0 to 55	0 to 8
6	20	1870 to 3520	28 to 34
	30	1100 to 1870	22 to 28
	40	110 to 1100	10 to 22
	10[a]	0 to 110	0 to 10
7	20	4400 to 5940	35 to 39
	30	2200 to 4400	28 to 35
	40	220 to 2200	14 to 28
	10[a]	0 to 220	0 to 14

8	20	7000 to 10000	42 to 47
	30	4000 to 7000	35 to 42
	40	400 to 4000	16 to 35
	10[a]	0 to 400	0 to 16

(a) Furnish spall and rock fragments graded to provide a stable dense mass.
(b) The volume of a rock with these cubic dimensions has a mass approximately equal to the specified rock mass.
(c) Furnish rock with breadth and thickness at least one-third its length.

713 - Roadside Improvement Material

713.05_nat_us_03_02_2005

713.05 Mulch.

Add the following:

Assure that mulch used on the project is certified noxious weed free by the appropriate authority in the jurisdiction of use.

714 - Geotextile and Geocomposite Drain Material

714.03_nat_us_02_25_2005

Tables 714-1 and 714-4.

Add the following note to both tables:

(4) Woven slit film will not be allowed.

Add the following:

714.03 Geogrids.

Furnish geogrids consisting of polymeric materials such as polypropylene, polyethylene, or polyester formed into a stable network of bars or straps fixed at their junctions such that the bars retain their relative position to each other.

Elevate and protect rolls with a waterproof cover if stored outdoors.

(a) Physical requirements. Furnish geogrid treated to resist ultraviolet degradation, and conforming to the physical strength requirements shown in table 714-7 according to ASTM D 4595 for the specified geogrid category. Strength values shown in table 714-7 represent minimum average roll values and are for the direction of primary reinforcement. Ensure that the aperture size for all geogrids is between ¾ to 3 inches.

(b) Evaluation procedures. Geogrids will be evaluated under Subsection 106.03. Furnish a certification and a sample of the geogrid.

Table 714-7—Physical strength requirements for geogrids.

Category	Minimum Ultimate Strength at Breakage *(lbs/ft)*
1	890
2	1985
3	2875
4	4110
5	5475
6	8215

718 - Traffic Signing and Marking Material

718.05_nat_us_08_05_2009

718.05 Aluminum Panels

Delete the third paragraph and replace with the following:

Clean, degrease and properly prepare the panels according to methods recommended by the sheeting manufacturer. Conversion coatings will conform to ASTM B-921 or ASTM B-449.

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE -- REGION SIX

MT. BAKER - SNOQUALMIE NATIONAL FOREST

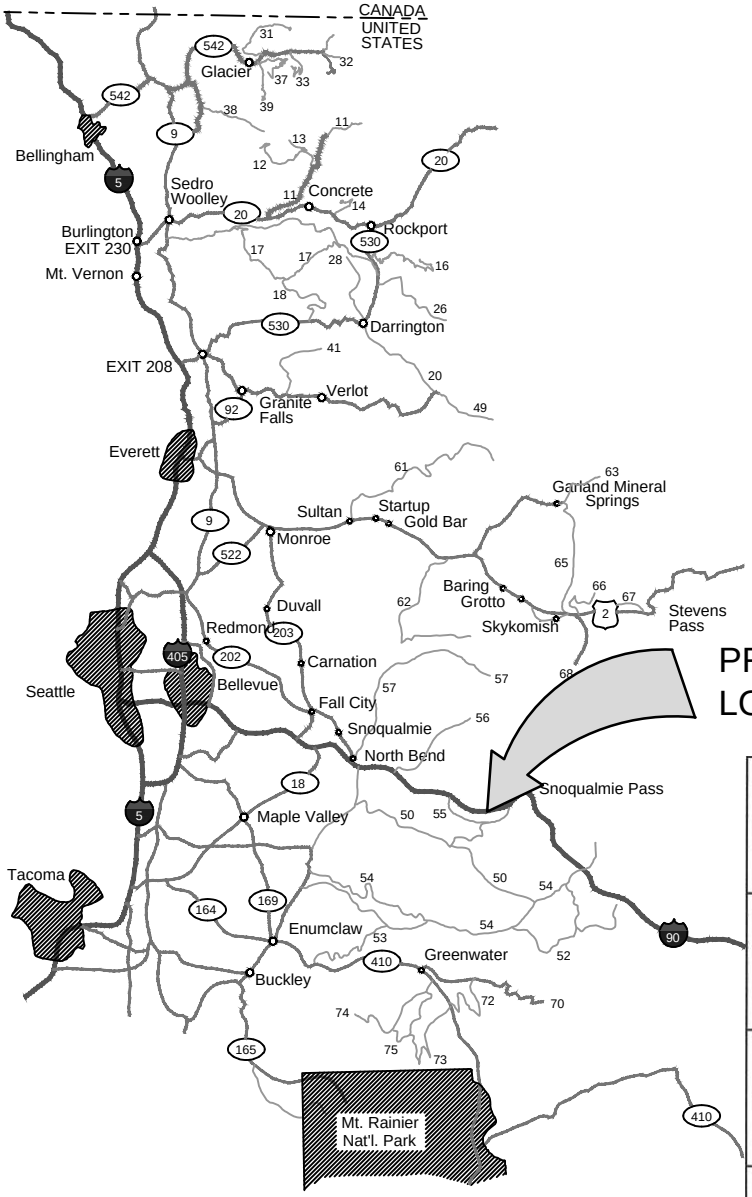
SNOQUALMIE RANGER DISTRICT

SPECIFIED ROAD WORK DRAWINGS FOR PROPOSED

BANDERA-HANSEN THIN STEWARDSHIP

ROAD NO.	MP to MP	MILES
5500	0.00 to 2.02	2.02
5500431	0.00 to 0.02	0.02
5510	0.00 to 3.87	3.87
5510110	0.00 to 1.02	1.02
5510120	0.00 to 0.40	0.40
9030	0.05 to 3.167	3.117
9031	0.00 to 2.94	2.94
	TOTAL	13.387

INDEX TO SHEETS



VICINITY MAP

N

STATE OF WASHINGTON

PROJECT LOCATION

PREPARED BY:

Lee Lana — 6/23/16

NAME DESIGN ENGINEER DATE

REVIEWED BY:

James B Mitchell — 6-23-16

NAME PROJECT TEAM LEADER DATE

REVIEWED BY:

Felix Nistiche — 6/27/16

NAME ASSISTANT FOREST ENGINEER DATE

RECOMMENDED BY:

Gladys Boone — 6/27/16

NAME FOREST ENGINEER DATE

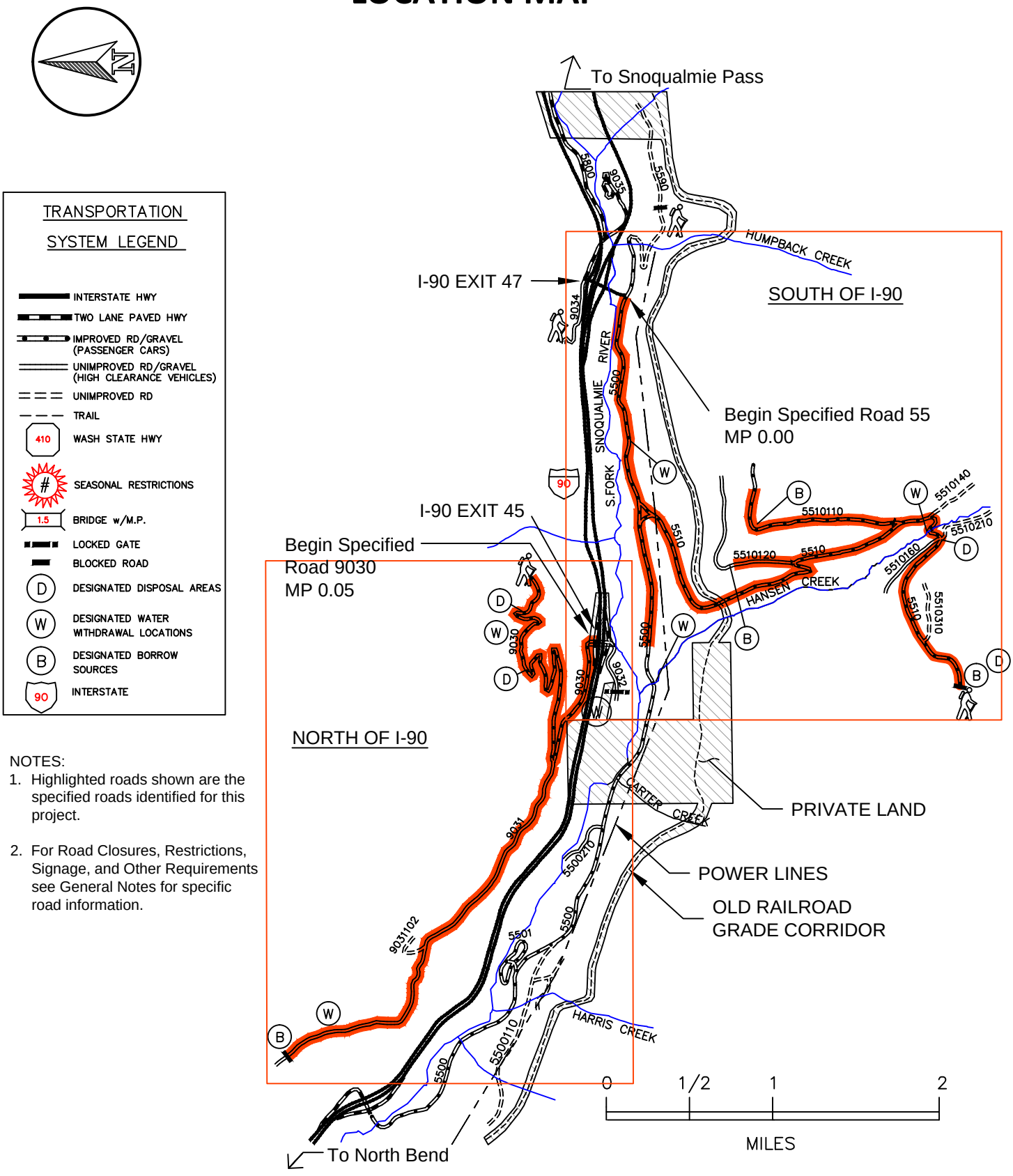
APPROVED BY:

Scott Schumacher — 6/28/16

NAME DISTRICT RANGER DATE

SHEET	OF
2	41

BANDERA-HANSEN THIN STEWARDSHIP LOCATION MAP

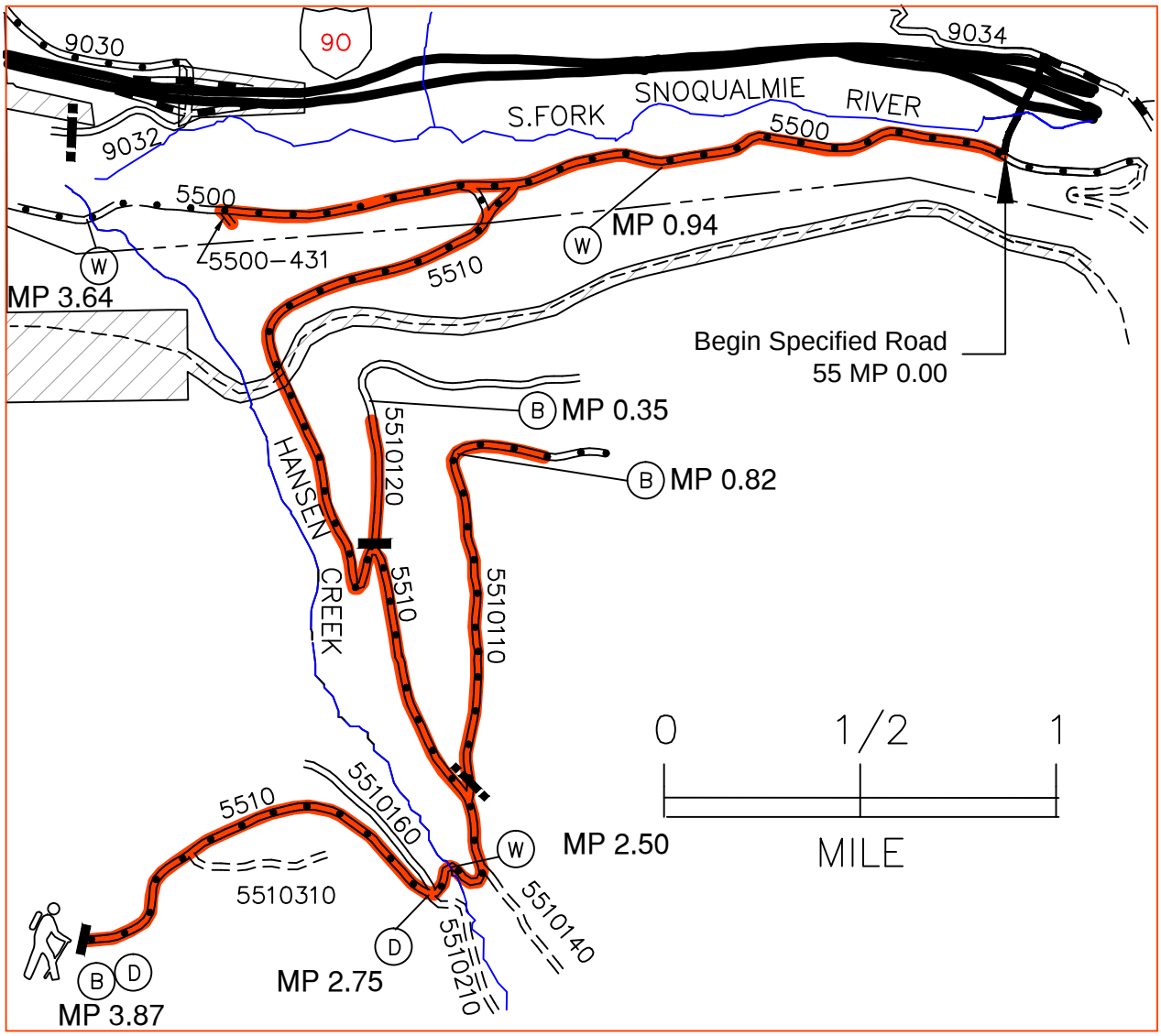


NOTES:

1. Highlighted roads shown are the specified roads identified for this project.
2. For Road Closures, Restrictions, Signage, and Other Requirements see General Notes for specific road information.

SHEET	OF
3	41

BANDERA-HANSEN THIN STEWARDSHIP
LOCATION MAP
SOUTH OF I-90



TRANSPORTATION SYSTEM LEGEND

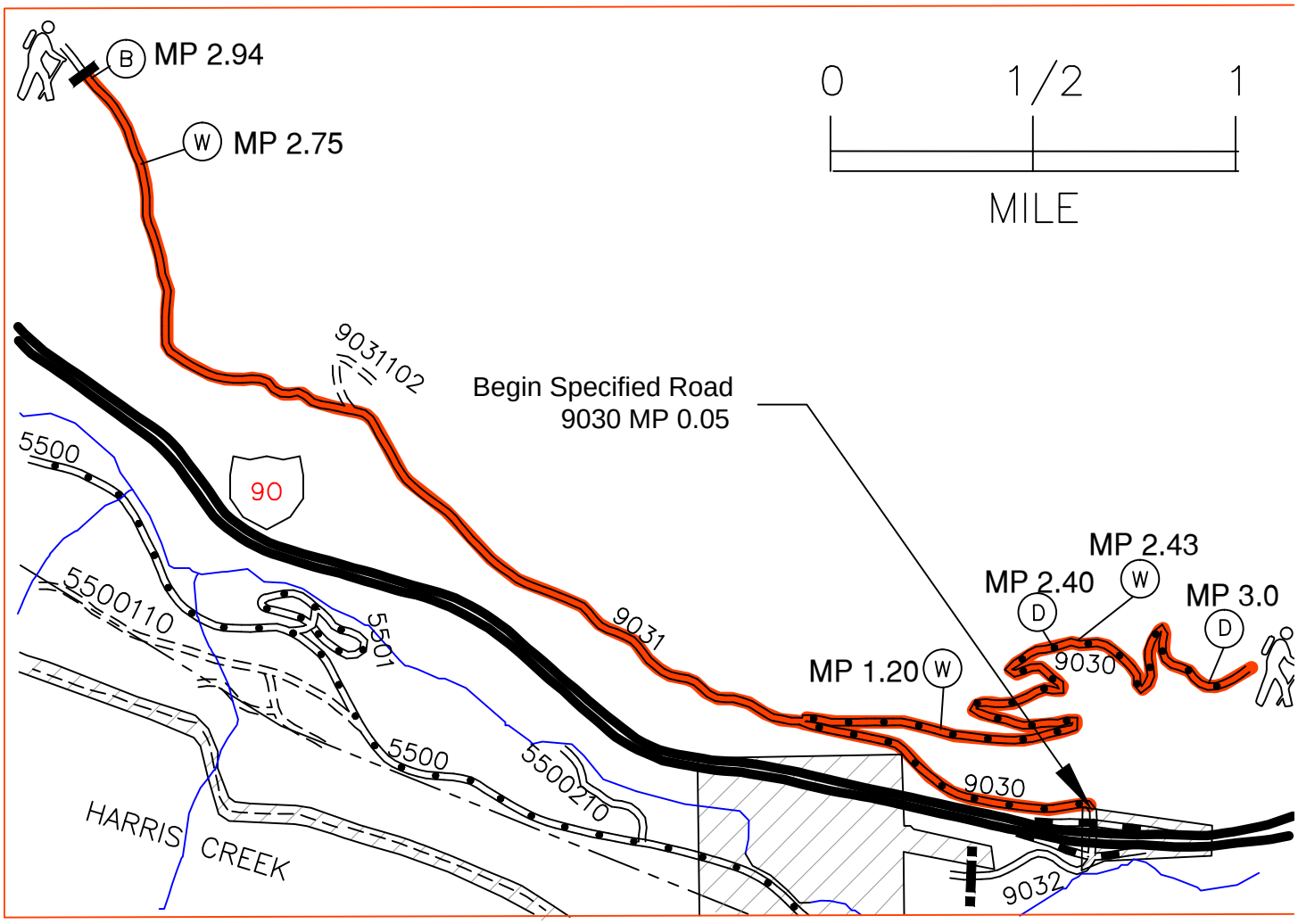
- INTERSTATE HWY
- TWO LANE PAVED HWY
- IMPROVED RD/GRAVEL (PASSENGER CARS)
- UNIMPROVED RD/GRAVEL (HIGH CLEARANCE VEHICLES)
- UNIMPROVED RD
- TRAIL
- 410 WASH STATE HWY
- 90 INTERSTATE
- SEASONAL RESTRICTIONS
- 1.5 BRIDGE w/M.P.
- LOCKED GATE
- BLOCKED ROAD
- (D) DESIGNATED DISPOSAL AREAS
- (W) DESIGNATED WATER WITHDRAWAL LOCATIONS
- (B) DESIGNATED BORROW SOURCES

NOTES:

1. Highlighted roads shown are the specified roads identified for this project.
2. For Road Closures, Restrictions, Signage, and Other Requirements see General Notes for specific road information.
3. Road 55A and 5500 have buried utility lines. Call 811 prior to any excavation work.

SHEET	OF
4	41

BANDERA-HANSEN THIN STEWARDSHIP
LOCATION MAP
NORTH OF I-90



TRANSPORTATION SYSTEM LEGEND

- INTERSTATE HWY
- TWO LANE PAVED HWY
- IMPROVED RD/GRAVEL (PASSENGER CARS)
- UNIMPROVED RD/GRAVEL (HIGH CLEARANCE VEHICLES)
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- 90 INTERSTATE
- SEASONAL RESTRICTIONS
- 1.5 BRIDGE w/M.P.
- LOCKED GATE
- BLOCKED ROAD
- D DESIGNATED DISPOSAL AREAS
- W DESIGNATED WATER WITHDRAWAL LOCATIONS
- B DESIGNATED BORROW SOURCES

NOTES:

1. Highlighted roads shown are the specified roads identified for this project.
2. For Road Closures, Restrictions, Signage, and Other Requirements see General Notes for specific road information.

BANDERA-HANSEN THIN STEWARDSHIP
SUMMARY OF QUANTITIES
(FOR EACH SPECIFIED ROAD)

PAY ITEM	DESCRIPTION OF WORK	UNIT	5500	5500431	5510	5510110	5510120	9030	9031	TOTAL
15101	MOBILIZATION (INCLUDES CLEANING OF EQUIPMENT, SIGNING, TRAFFIC CONTROL, SANITATION)	LS	1	1	1	1	1	1	1	**7**
15204	DRAINAGE STRUCTURE SURVEY AND STAKING	LS	0	0	0	0	0	1	0	**1**
20207A	REMOVAL OF INDIVIDUAL TREES, HAZARD TREES, DISPOSAL OF TOPS AND LIMBS F, LOGS F, LEAVE STUMPS	EA	0	0	0	0	0	5	0	**5**
20207B	REMOVAL OF INDIVIDUAL TREES, DISPOSAL OF TOPS AND LIMBS F, LOGS F, STUMPS F	EA	1	1	0	0	0	0	0	**2**
20301A	REMOVAL OF EXISTING CULVERT, DISPOSAL METHOD A	EA	2	0	0	3	0	6	1	**12**
20301B	REMOVAL OF ROAD BARRIER	EA	0	0	0	0	1	0	0	**1**
20401	ROADWAY EXCAVATION, COMPACTION METHOD C, FINISHING METHOD C	CY	0	130	0	121	20	0	0	**271**
20402	ROADWAY EXCAVATION, CONSTRUCT TRUCK TURNAROUND, COMPACTION METHOD C, FINISHING METHOD C	LS	0	0	0	1	0	0	0	**1**
20407	BORROW MATERIAL, 4" MAXIMUM PARTICLE SIZE COMPACTION METHOD C (GOVERNMENT QUARRY SOURCES)	CY	0	0	0	722	100	0	0	**822**
20419A	DRAINAGE EXCAVATION, DITCHOUT CONSTRUCTION	LF	20	0	0	0	0	90	0	**110**
20419B	DRAINAGE EXCAVATION, CLEANING	LF	0	0	0	0	0	1848	0	**1848**
20419C	DRAINAGE EXCAVATION, TYPE DITCH RECONSTRUCTION	LF	106	0	100	510	0	797	0	**1513**
20411	EMBANKMENT CONSTRUCTION, SHOULDER REPAIR, COMPACTION METHOD C, FINISHING METHOD C	CY	0	0	0	0	0	18	0	**18**
20412	EMBANKMENT CONSTRUCTION, FOREST ROAD 9030 MP 1.83 SWITCHBACK EMBANKMENT REPAIR, COMPACTION METHOD C, FINISHING METHOD C	LS	0	0	0	0	0	1	0	**1**

BANDERA-HANSEN THIN STEWARDSHIP
SUMMARY OF QUANTITIES
(FOR EACH SPECIFIED ROAD)

PAY ITEM	DESCRIPTION OF WORK	UNIT	5500	5500431	5510	5510110	5510120	9030	9031	TOTAL
20499	ROADWAY EXCAVATION, FOREST ROAD 9030 MP 2.24 ROAD INSLOPE CONSTRUCTION, COMPACTION METHOD C, FINISHING METHOD C	LS	0	0	0	0	0	1	0	**1**
20950	CULVERT BEDDING MATERIAL (COMMERCIAL SOURCE)	TON	20	0	0	26	0	160	20	**226**
23050A	ROADSIDE BRUSHING, NORMAL	MILE	2.02	0.02	3.87	1.02	0.4	3.12	2.94	**13.39**
23050B	ROADSIDE BRUSHING, BRIDGE	MILE	0	0	0	0	0	0	0	**0**
25101A	PLACED RIPRAP, CLASS 5 (GOVERNMENT QUARRY SOURCES)	CY	21	0	6	207	0	84	28	**346**
25101B	PLACED RIPRAP, 2"- 4" (GOVERNMENT QUARRY SOURCES)	TON	0	0	0	0	0	0	80	**80**
25101C	PLACED RIPRAP, CLASS 5, FOREST ROAD 9030 MP 1.16 (GOV'T SOURCE), GEOTEXTILE TYPE III	LS	0	0	0	0	0	1	0	**1**
30322	ROAD RECONDITIONING, COMPACTION METHOD B	MILE	2.02	0.02	3.87	1.02	0.4	2.78	2.94	**13.05**
32201A	AGGREGATE BASE, GRADING EQUAL TO WSDOT MIX 1-1/4" MINUS, COMPACTION METHOD A (COMMERCIAL SOURCE)	TON	430	110	275	0	0	1736	1469	**4020**
32201B	AGGREGATE BASE, GRADING 2-1/2" MINUS, COMPACTION METHOD A (COMMERCIAL SOURCE)	TON	0	0	0	0	0	0	71	**71**
40401	MINOR HOT MIX ASPHALT, 3" THICK ASPHALT PATCH, 26' X 10'	TON	5	0	0	0	0	0	0	**5**
60275A	18-INCH HIGH DENSITY POLYETHYLNE PIPE WITH SMOOTH INTERIOR AND ANNULAR EXTERIOR, COMPACTION METHOD B	LF	0	0	0	75	0	0	30	**105**
60275B	24-INCH HIGH DENSITY POLYETHYLNE PIPE WITH SMOOTH INTERIOR AND ANNULAR EXTERIOR, COMPACTION METHOD B	LF	70	0	0	0	0	200	0	**270**
60275C	36-INCH HIGH DENSITY POLYETHYLNE PIPE WITH SMOOTH INTERIOR AND ANNULAR EXTERIOR, COMPACTION METHOD B.	LF	0	0	0	40	0	0	40	**80**

BANDERA-HANSEN THIN STEWARDSHIP
SUMMARY OF QUANTITIES
(FOR EACH SPECIFIED ROAD)

PAY ITEM	DESCRIPTION OF WORK	UNIT	5500	5500431	5510	5510110	5510120	9030	9031	TOTAL
60275D	24-INCH HIGH DENSITY POLYETHYLNE PIPE WITH SMOOTH INTERIOR AND ANNULAR EXTERIOR, COMPACTION METHOD B	LF	0	0	0	0	0	60	0	**60**
60275E	36-INCH HIGH DENSITY POLYETHYLNE PIPE WITH SMOOTH INTERIOR AND ANNULAR EXTERIOR, COMPACTION METHOD B	LF	0	0	0	0	0	160	0	**160**
60501	UNDERDRAIN, FOREST ROAD 55 MP 1.32. 6" PERFORATED DRAIN PIPE, SCHEDULE 80, 4" CLEAN DRAIN ROCK, GEOTEXTILE TYPE 1	LS	1	0	0	0	0	0	0	**1**
60708	RECONDITION DRAINAGE STRUCTURE	EA	1	0	0	0	0	5	0	**6**
60712	CLEANING IN PLACE, BRIDGE SWEEPING	LF	0	0	0	0	0	0	0	**0**
62502	SEEDING, DRY METHOD WITH MULCH (SEED MIX C1)	SY	70	30	111	626	0	315	70	**1222**
63301A	SIGN SYSTEM, INCLUDING 4X4 POST AND MUTCD SIGN 'STOP' (R1-1) 30"X30"	EA	0	0	1	0	0	0	0	**1**
63301B	SIGN SYSTEM, INCLUDING 4X4 POST AND MUTCD SIGN 'STOP AHEAD' (W3-1) 30"X30"	EA	0	0	1	0	0	0	0	**1**
63301C	SIGN SYSTEM, INCLUDING 4X4 POST AND MUTCD SIGN 'YIELD' (R1-2) 30"X30"X30"	EA	0	0	1	0	0	0	0	**1**
63307	DELINEATORS, CARSONITE HIGHWAY GRADE, INCLUDING INSTALLATION	EA	0	0	0	0	0	12	0	**12**

GENERAL NOTES

- **Item 15101,** Mobilization – In addition to what is identified in Section 151 of the Specifications, mobilization includes construction signing, traffic control, and cleaning of equipment as indirect costs to this item. Equipment shall be washed (to remove all material that could potentially contain weed seeds) and inspected by the Forest Service Engineering Representative (ER) prior to entering National Forest lands.

Forest Road 55 (Tinkham Road) has buried utility lines within the road prism.
Call 811 prior to any digging or excavation work

- **Item 15204,** Drainage Structure Survey and Staking – Includes slope staking on both sides of centerline at cross-section locations and finished grade stakes. Set stake references outside of clearing limits. Include all reference point and slope stake information on the reference stakes.

- **Item 20207A**, Removal of Individual Trees, Hazard Trees – Consists of felling Hazard trees and leaving the stumps for shoulder stabilization, Disposal Method F for logs and limbs.

- **Item 20207B**, Removal of Individual Trees – Consists of removing trees as shown on the worklist. Disposal Method F.

- **Item 20301A**, Removal of Culvert – Includes the removal and disposal of all culverts designated in this project for removal. All culverts shall become the property of the Purchaser and be removed off National Forest Lands. Follow all Federal, State, and Local laws for disposal of culverts.

- **Item 20301B**, Removal of Road Barrier – Item includes leveling the earth barrier on Road 5510120 and moving the rocks aside. The rocks may be placed nearby for use in re-installing the barrier at the end the Timber Sale.

- **Item 20401**, Roadway Excavation – Item includes roadway excavation, embankment, compaction, hauling of waste material, and maintaining disposal sites. All excess material shall be hauled and neatly piled at one of the designated disposal areas identified on the Location Map and staked in the field by the ER.

- **Item 20402**, Construct Truck Turnaround – Item includes excavation, embankment, compaction, and hauling of waste material to construct a truck turnaround. All excess material shall be hauled to one of the designated disposal areas identified on the Location Map and staked in the field by the ER.

- **Item 20407**, Borrow Material. Borrow shall come from the Government source on Road 5510 at MP 3.87, 5510110 at MP 0.82, and Road 9031 MP 2.94. Borrow shall be generated from the areas shown on the Pit Plan. Borrow shall have a maximum particle size of 4”. Material shall be compacted with a minimum 6 ton vibratory roller. Pit development shall be according to section 651 of the specification and is an indirect cost to this item. Generating material, loading, hauling, placing, compacting, and pit maintenance are all indirect costs to this item.

- **Item 20411**, Embankment Construction, Shoulder Repair, Compaction Method C, Finishing Method C – Item includes the use of borrow material from approved sources. It will consist of re-compacting suitable road bed material and re-establishing the road bed. Repair areas and volumes are described on worklist.

- **Item 20412**, Embankment Construction, Forest Road 9030 MP 1.83 Switchback Embankment Repair, Compaction Method C, Finishing Method C. – Item includes the use of borrow material from approved sources. It will consist of re-compacting suitable road shoulder material and fill slope, and establishing a barrier berm outside of road shoulder.

- **Item 20419A**, Drainage Excavation, Type Ditchout Construction. See the Work Description List for location and the Ditch Reconstruction Typical for details. All excess material shall be hauled to one of the designated disposal areas identified on the Location Map and staked in the field by the ER.

GENERAL NOTES

- **Item 20419B**, Drainage Excavation, Type Cleaning. Includes the removal of obstructions in the ditch line. See the Work Description List for location. All excess material shall be hauled to one of the designated disposal areas identified on the Location Map and staked in the field by the ER.

- **Item 20419C**, Drainage Excavation, Type Ditch Reconstruction. See the Work Description List for location and the Ditch Reconstruction Typical for details. All excess material shall be hauled to one of the designated disposal areas identified on the Location Map and staked in the field by the ER.

- **Item 20499**, Roadway Excavation, Forest Road 9030 MP 2.24 Switchback Inslope Repair, Compaction Method C, Finishing Method C. – Item includes the use of 1-1/4" minus commercial aggregate sources. It will consist of in-sloping road at switchback with commercial surfacing material, and establishing a barrier berm outside of road shoulder.

- **Item 20950**, Culvert Bedding Material (Commercial Source) – Bedding material for culvert installations shall meet the requirements of Section 209 of the specifications and shall be obtained from a certified weed free Commercial Source. Submit material certification, test reports, and gradation reports to the ER, prior to purchase, for approval. Load and weight tickets shall be submitted daily to the ER. No bedding material shall be placed until the pipe bed has been constructed with positive camber.

- **Item 23050A**, Roadside Brushing – This work consists of the cutting and disposal of the existing roadway vegetation on specified roads. Clearing limits and requirements are shown on the Road Brushing Typical. Item is measured by the mile and accepted quantity includes completion of both sides of the road. Multiple passes may be necessary to ensure the vegetation is cut to the specified sizes.

- **Items 25101 A/B/C**, Placed Riprap – Government Quarry Sources
  25101A Placed Riprap, Class 5 –Riprap shall be obtained from the designated government borrow sources shown on the location map.
  25101B Riprap, 2" – 4" – Shall be from government borrow sources and used on locations as noted on worklists
  25101C Riprap, Class 5 with geotextile type III, Forest Road 9030 MP 1.16- Riprap shall be obtained from the designated government borrow sources shown on the location map and under Designated Borrow Sources herein. This item includes the installation of Geotextile fabric type III in 3-feet compacted layers.

- **Item 30322,** Road Reconditioning –This work consists of grading, shaping, and compacting the roadway; grading, cleaning and reshaping all ditches; and cleaning all culvert inlets and outlets. See the Road Reconditioning Typical for details. Compaction shall be achieved using a minimum 6 ton vibratory roller. Loose debris such as logs, rocks >3" and other large debris shall be removed from the roadway.

- **Item 32201A & 32201B**, Aggregate Base and Surfacing 1-1/4" minus and 2-1/2" minus, Compaction Method A– Aggregate shall come from a weed free commercial source. Material certification, test reports, and gradation report shall be submitted to the ER for approval prior to delivery to the project. Quantities are measured by the ton. Load and weight tickets shall be submitted daily to the ER for verification of quantities. Compaction shall be achieved using a minimum 6 ton vibratory roller.

- **Item 40401,** Minor Hot Mix Asphalt, 3" Thick Asphalt Patch – Use an aggregate gradation and asphalt binder of a quality conforming to those normally used locally by with Federal or State agencies for the type of work being constructed. Asphalt patch dimensions: 26' x 10'. Pay Item includes materials, testing of subgrade (90% T99) and asphalt (90% T99) Haul all waste material off National Forest lands.

GENERAL NOTES

- **Items 60275 A/B/C/D/E**, 18", 24", and 36" corrugated polyethylene pipe with Bell and Spigot connections – This work consists of furnishing and installing culverts. See the Drainage Construction Typicals for installation details. Compaction Method B is required as described in Section 209 of the Specifications. All culvert installations at locations with live streams or presence of water shall comply with the MOU with WDFW and be dewatered by pumping, temporary bypass culvert, or ditching. Dewatering is an indirect cost to the culvert installation. Construct culvert bed with positive camber prior to placing bedding material. Bedding Material is pay item 20950. Submittals and materials certifications required.

- **Item 60501,** Underdrain, Forest Road 55 MP 1.32 – Item consists of constructing a drainage area of 10' long x 30' wide on road prism. Item includes 4" round drain rock, subgrade material, aggregate surfacing and 2 – 6" perforated pipes wrapped with geotextile type I. See Sheet 43 for details.

- **Item 60708,** Recondition Drainage Structure – Item consists of removing and disposing of all foreign material within the barrel and appurtenances of the culvert by any method that does not damage the culvert.

- **Item 62503,** Seeding (C-1), dry method (with straw mulch) – This work consists of seeding and mulching all constructed fill slopes, cut slopes, and all disturbed soil areas beyond the traveled way, all disturbed soil areas for culvert installations, and disposal areas. See the Supplemental Project Specifications for seed and mulch (weed free straw) requirements, application, and timing. Submittals and materials certifications required.

- **Item 63301A,** Sign Installation, 'Stop' R1-1 – Signs shall be in accordance with the MUTCD, see Work List for type and size. This work consists of installing signs and post. Install wood sign on 12-foot long 4x4 treated timber post with anti-theft bolted fasteners. Post shall be buried a minimum of 3' in the ground. Submittals and materials certifications required.

- **Item 63301B,** Sign Installation, 'Stop Ahead' W3-1 – Signs shall be in accordance with the MUTCD, see Work List for type and size. This work consists of installing signs and post. Install wood sign on 12-foot long 4x4 treated timber post with anti-theft bolted fasteners. Post shall be buried a minimum of 3' in the ground. Submittals and materials certifications required.

- **Item 63301C,** Sign Installation, 'Yield' R1-2 – Signs shall be in accordance with the MUTCD, see Work List for type and size. This work consists of installing signs and post. Install wood sign on 12-foot long 4x4 treated timber post with anti-theft bolted fasteners. Post shall be buried a minimum of 3' in the ground. Submittals and materials certifications required.

- **71809,** Carsonite Delineators and Installation – This work consists of purchasing and installing delineators. Delineating the road in locations as shown on the worklists. Delineators shall be white, highway grade with reflective sheeting (yellow – min. 6" x 3").

GENERAL NOTES

- **Designated Borrow Source** – Borrow sources shall be used for riprap, rocky borrow, or unclassified borrow as described in the Work List. There are 4 designated Government borrow sites for this project.
  1. **Road 5510 at MP 3.87 Pit**. Borrow shall come from the back of the pit as shown in the pit plan. The front part of the pit is used as parking for the trailhead. Replace wheel stops and the earth berm and shape the borrow site to drain at the completion of operations.
  2. **Road 5510110 at MP 0.82.** Borrow shall be taken from the bank without undercutting the slope and trees above. This is a small quantity (<100 CY) borrow source for unclassified rocky borrow.
  3. **Road 5510120 at MP 0.40.** This is a source for riprap size 12" and above. Utilize only the loose rock on the uphill side of the road.
  4. **Road 9031 at MP 2.94.** Borrow shall come from the right bank without undercutting the slope and trees above. Earth berms will need to be re-established once work is completed.

- **Designated Disposal Areas** – Disposal areas are for slash, debris, soil, and other waste material generated as a result of construction activities that are not designated for other specific locations. Place material within locations and as flagged by the ER. All waste shall be shaped to drain, seeded and mulched, and are indirect costs to those pay items.
  1. **Road 5510 at MP 3.87 Pit**. Pile waste material as shown on the Pit Plan detail.
  2. **Road 5510 at MP 2.75.** Pile waste and consolidate against the bank at the back of the pit.
  3. **Road 9030 at MP 2.4.** Pile waste and consolidate.
  4. **Road 9030 at MP 3.0.** Pile waste and consolidate behind and outside of emergency parking area

- **Timing Restrictions** – Timing restrictions for wildlife and fisheries concerns shall be in accordance with the Operating Conditions in **K6.315**.

- **Dewatering** – The following requirements apply where worksite isolation from flowing waters and/or dewatering occur.
  a. A written dewatering plan shall be prepared prior to the start of the instream work that describes the method of bypass, location and construction of any coffer dams or diversion dams, the number and size of pumps to be used, and backup plans in place in case of mechanical failure or unanticipated storm events.
  b. The dewatering system will be designed and installed to minimize erosion and sediment delivery to watercourses and to withstand all stream flows anticipated during the construction period. Water shall be reintroduced back into the channel in a manner that minimizes the mobilization of fines and sediment into downstream waters.
  c. Water bypassed around the site will be returned to the stream channel downstream of the work site. The bypass discharge point shall be designed to minimize erosion and scour of the stream channel, banks, and vegetation.
  d. Wastewater from project activities within the dewatered area shall be routed to an area outside the bankfull channel to allow removal of fine sediment and other contaminants prior to infiltrating back into waterbodies.
  e. Any materials used to construct the dewatering system will be removed prior to the completion of the project

GENERAL NOTES

- **Water Withdrawal Sources** –Water Withdrawal shall only occur at locations described below map and shall only be used during the work window shown in K6.315. Submit a water withdrawal plan to the Engineering Representative for review and approval 7 days prior to starting work.
  - Road 5500 MP 0.94
  - Road 5500 MP 3.64
  - Road 5510 MP 2.50
  - Road 9030 MP 1.20 and MP 2.43
  - Road 9031 MP 2.75
  - Resident Fish/ Non fish-bearing Stream (all streams assumed to be fish-bearing unless written documentation from FS fish biologist documenting otherwise) -The withdrawal hose or pipe must be fitted with a screen with a minimum effective surface area of at least one square inch of functional screen area for every gallon per minute (gpm) of water drawn through it, a round or square screen mesh that is no larger than 2.38 mm (3/32 or 0.094 inches) in the narrow dimension, or any other shape that is no larger than 1.75 mm (1/16 or 0.069 inches) in the narrow dimension.
  - No more that 10% of the instantaneous stream flow may be removed. Streams may be sandbagged or have a weir placed across the stream to pond water. No soil shall be used to seal the water retention area and no logs or woody material from within the bankfull channel may be used. All sandbags or weirs shall be completely removed at the end of work season and prior to onset of rainy season.

- **Road Closures and Notification Requirements – All work costs as shown below are incidental to 15101 Mobilization.**

  1. Notify the Engineering Representative 7 Calendar days prior to construction regarding this project.
  2. Install Road Information Signs on Forest Road 5510 at MP 0.2, Forest Road 55 at MP 0.0, and Forest Road 9030 at MP 0.05 meeting all the requirements of the MUTCD 2012 with the following information. Signs shall be present and maintained during all ongoing project road work.

  ROAD CONSTRUCTION
  DELAYS
  DATE X TO X
  TIME X TO X
  ROAD # XXXX

  Sign shall be 60”x60”, reflective, white with black letters
  Installation on (2) 4”x4”x12’ posts

  3. Road Work Ahead signs, At a minimum, (2) 36”x36” signs, Orange with Black Letters, shall be installed on each side of each work activity while work is ongoing. Placement of signs shall be located near the project work sites. See Traffic Control Drawing.
  4. Closures for Road Construction Related Activities
     A. Roads 5500431, 5510110 and 5510120 shall be closed to the public at all times.
     B. On roads 5500, 5510, 9030, and 9031 (roads open to the public), there shall be NO road closures or road construction or hauling activities from 1200 (noon) on Fridays through Monday at 0600 or on any federally recognized holidays.
     C. On roads 5500, 5510, 9030, and 9031 (roads open to the public), do not delay public travel for more than 1 hour before allowing vehicles to pass.
     D. For any road closures at specific site locations lasting more than one hour, notify the Forest Service 14 calendar days prior to any temporary road closures on any roads so that land owners, tribes, and existing mining claimants may be notified.
     E. When closures are granted, no roads shall be closed for more than 3 consecutive days Monday – Thursday.
     F. Marenakos private pit is located on Forest Road 9031 MP 1.20 – 1.24. Coordination for access needs may occur.

BANDERA-HANSEN THIN STEWARDSHIP **WORK DESCRIPTION LIST**			SHEET 13	OF 41
Rd. #5500 - MP 0.00 to 2.02				
Mile Post	***Item***	***Description***	***Units***	***Estimated Quantity***
0.00		**Begin Specified Road Work for Road 5500,** (Jct. with Forest Road 5590 and adjacent bridge)		
0.00	23050A	Begin Roadside Brushing	MILE	2.02
0.00	30322	Begin Road Reconditioning	MILE	2.02
0.00	40401	Construct asphalt patch, South end approach of the bridge and Forest Road 55 intersection. 26'w x 10'l x 3"d (See Sheet 38)	TON	5
0.00	60708	Existing 18" culvert, repair inlet	EA	1.00
0.00	32201A	Place surfacing,1-1/4" minus crushed agg. 1161' x 12' x 2"	TON	157
0.22				
0.39	32201A	Place crushed surfacing,1-1/4" minus crushed agg. 200' x 12' x 2"	TON	27
0.43				
0.43		Existing 24" CMP		
0.70	20301A	Remove existing 18" CMP	EA	1
	60275B	Install new 24" x 35' Culvert	LF	35
	20950	Place culvert bedding material	TON	10
	25101A	Place 8 CY Class 5 Riprap for inlet headwall (3CY) and outlet apron (5 CY)	CY	8
	32201A	Place aggregate surfacing	TON	30
	62502	Seed and mulch	SY	35
0.70	32201A	Place surfacing,1-1/4" minus crushed agg. 475' x 12' x 2"	TON	64
0.79				
0.94		**Water source**		
0.98	32201A	Place surfacing,1-1/4" minus crushed agg. 634' x 12' x 2"	TON	86
1.10				
1.22		**Live Stream**		
1.30		**Road Intersection - FSR 5510**		
1.30	32201A	Place surfacing,1-1/4" minus crushed agg. 265' x 12' x 2"	TON	36
1.35				
1.31	60501	Construct underdrain 10'l x 30'w x 18"d, 10˚ skew using 4" round drain rock, wrapped in geotextile fabric, Type I with two (2) 6" perforated pipes (screen ends). (See Detail Sheet 42)	LS	1
	20419A	Construct ditchout	LS	20
1.31	20419C	Reconstruct ditchline	LF	106
1.33				
1.33	20207B	Remove 18" dbh cedar from ditchline, clear and grub. Re-establish ditchline	EA	1

BANDERA-HANSEN THIN STEWARDSHIP **WORK DESCRIPTION LIST**			SHEET 14	OF 41
Rd. #5500 - MP 0.00 to 2.02 (Continued)				
Mile Post	***Item***	***Description***	***Units***	***Estimated Quantity***
1.35	20301A	Remove existing 18" CMP	EA	1
	60275B	Install new 24" x 34' Culvert	LF	35
	20950	Place culvert bedding material	TON	10
	25101A	Place 13 CY Class 5 Riprap for inlet headwall (5CY) and outlet apron (8 CY)	CY	13
	32201A	Place aggregate surfacing	TON	30
	62502	Seed and mulch	SY	35
1.42		**Road Intersection - FSR 5500-110 spur, Left**		
2.02		End Roadside Brushing		
		End Road Reconditioning		
		END SPECIFIED ROAD WORK		

BANDERA-HANSEN THIN STEWARDSHIP **WORK DESCRIPTION LIST**			SHEET 15	OF 41
Rd. #5500-431 - MP 0.00 to 0.02				
Mile Post	***Item***	***Description***	***Units***	***Estimated Quantity***
0.00		**Begin Specified Road Work for Road 5500-431,** (Jct. w/ Forest Road 5500, MP 2.04)		
	23050A	Begin Roadside Brushing	MILE	0.02
	30322	Begin Road Reconditioning	MILE	0.02
0.00	20401	Curb Widening: 10' Left at station 0+00 and 15' Right at station 0+50. Place waste at 0+80 left or right of roadway, re-establish ditchline	CY	100
	32201A	Place surfacing on new road widening	TON	80
	62502	Seed and mulch disturbed areas	SY	30
0.00	32201A	Place surfacing on roadway, 1-1/4" minus crushed agg.	TON	30
0.02				
0.02	20401	Shift road 10' Right	CY	30
	20207B	Cut 20" dbh tree, right	EA	1.00
0.02		End Roadside Brushing		
		End Road Reconditioning		
		End Specified Road Work		

WORK DESCRIPTION LIST

Rd. #5510 - MP 0.00 to 3.87

Mile Post	*Item*	*Description*	*Units*	*Estimated Quantity*
0.00		**Begin Specified Road Work for Forest Road 5510,** (Jct. with Road 5500)		
	23050A	Begin Roadside Brushing	MILE	3.87
	30322	Begin Road Reconditioning	MILE	3.87
0.0 to 0.02	20419C	Reconstruct ditch left for 100', end haul waste to desigated waste site	LF	100
	62502	Seed and mulch ditchline	SY	111
0.00	32201A	Place surfacing,1-1/4" minus crushed agg., 100' long x 2" thick	TON	14.00
0.01	63301A	Install Stop Sign (R1-1, 30"x30") Left, includes post	EA	1
0.07	63301B	Install "Stop Ahead" Sign (W3-1, 30"x30") Left, includes post	EA	1
0.10	63301C	Install Yield Sign (R1-2, 30"x30"x30") Right, includes post	EA	1
0.11		**Jct. with 5510 "Y" Right**		
0.13	32201A	Place surfacing,1-1/4" minus crushed agg., 70' long x 2" thick	TON	10
0.66	32201A	Place surfacing,1-1/4" minus crushed agg., 100' long x 2" thick	TON	14
0.90		**Train Trestle Crossing**		
0.91	25101A	Place Class 5 riprap apron at outlet of existing pipe, 3'x6'x9', Do not disturb exist. logs (See detail A Sheet 33)	CY	6
1.00	32201A	Place surfacing,1-1/4" minus crushed agg., 50' long x 2" thick	TON	7
1.05	32201A	Place surfacing,1-1/4" minus crushed agg., 80' long x 2" thick	TON	11
1.28	32201A	Place surfacing,1-1/4" minus crushed agg., 80' long x 2" thick	TON	11
1.30	32201A	Place surfacing,1-1/4" minus crushed agg., 740' long x 2" thick	TON	100
1.50		**Switchback Left**		
1.62		**Switchback Right**		
		Jct. with Road 5510120 Left		
1.71	32201A	Place surfacing,1-1/4" minus crushed agg., 200' long x 2" thick	TON	27
1.85	32201A	Place surfacing,1-1/4" minus crushed agg., 600' long x 2" thick	TON	81
2.30		**Jct. with Road 5510110 Left**		
3.87		End Roadside Brushing		
		End Road Reconditioning		
		Borrow Source/Waste Area Left (See Pit Plan on Sheet 29)		
		End Specified Road Work		

WORK DESCRIPTION LIST

Rd. #5510110 - MP 0.00 to 1.02

Mile Post	*Item*	*Description*	*Units*	*Estimated Quantity*
0.00		**Begin Specified Road Work for Forest Road 5510110,** (Jct. with Forest Road 5510, MP 2.30)		
0.00 to 1.02	23050A	Begin Roadside Brushing	MILE	1.02
0.00 to 1.02	30322	Begin Road Reconditioning	MILE	1.02
0.00 to 0.03	20419C	Reconstruct ditch left	LF	175
	62502	Seed and mulch ditch line	SY	117
0.02	20407	Place rocky borrow to fill existing dip	CY	10
0.03	20401	Remove ditch dam	CY	2
	20407	Place rocky borrow to fill existing dip	CY	10
0.06		**Turnout Left with Sign Board**		
0.08	20401	Remove ditch dam	CY	2
	20407	Place rocky borrow to fill existing dip	CY	10
0.08 to 0.10	20407	Place rocky borrow on roadway (6" depth x 12' wide x 115' long)	CY	26
0.10	20401	Remove ditch dam	CY	2
	20407	Place rocky borrow to fill existing dip	CY	10
0.10 to 0.23	20407	Place rocky borrow on roadway (6" depth x 12' wide x 695' long)	CY	117
0.13	20401	Remove ditch dam	CY	2
	20407	Place rocky borrow to fill existing dip	CY	10
0.16		**Existing 18" CMP**		
0.21	20401	Remove ditch dam	CY	2
	20407	Place rocky borrow to fill existing dip	CY	10
0.22		**Existing 18" CMP**		
0.23 to 0.27	20407	Place rocky borrow on roadway (9" depth x 12' wide x 195' long)	CY	66
0.25	20401	Remove ditch dam	CY	2
	20407	Place rocky borrow to fill existing dip	CY	10
0.25 to 0.32	20419C	Reconstruct ditch right	LF	335
	62502	Seed and mulch ditch line	SY	224
0.29 to 0.32	20407	Place rocky borrow on roadway (12" depth x 12' wide x 125' long)	CY	55
0.32	20301A	Remove existing 18" CMP	EA	1
	60275C	Install new 36" x 40' Culvert	LF	40
	20950	Place culvert bedding material	TON	10
	25101A	Place 12 CY Class 5 Riprap for inlet headwall (3CY) and outlet apron (9 CY)	CY	12
	62502	Seed and mulch	SY	35
0.36	25101A	Construct riprap wall left, 40' long x 6' high x 4' thick (See Sheet 37)	CY	40
	20407	Place rocky borrow on roadway (12" depth x 6' wide x 40' long)	CY	10

WORK DESCRIPTION LIST

Rd. #5510110 - MP 0.00 to 1.02 (Continued)

Mile Post	*Item*	*Description*	*Units*	*Estimated Quantity*
0.37	20401	Remove ditch dam	CY	2
	20407	Place rocky borrow to fill existing dip	CY	10
0.40 to 0.41	20407	Place rocky borrow on roadway (6" depth x 12' wide x 60' long)	CY	13
0.41	20401	Remove ditch dam	CY	2
	20407	Place rocky borrow to fill dip	CY	10
	20401	Remove cut slope slide material utilize on roadway	CY	20
	62502	Seed and mulch	SY	80
0.42		**Existing 18" CMP**		
0.45	20401	Remove cut slope slide material and utilize on roadway	CY	25
	62502	Seed and mulch bare soil	SY	100
0.45 to 0.47	20407	Place rocky borrow on roadway (12" depth x 6' wide x 80' long)	CY	18
0.48 to 0.49	20407	Place rocky borrow on roadway (6" depth x 12' wide x 75' long)	CY	17
0.51		**Existing Turnout Left**		
	20407	Place rocky borrow to build up shoulder (18" depth x 8' wide x 100' long)	CY	45
0.52 to 0.54	20407	Place rocky borrow on roadway (12" depth x 8' wide x 90' long)	CY	40
	25101A	Construct Riprap Wall, 90' long x 8' high x 4' thick (See Sheet 37)	CY	100
0.52	20301A	Remove existing 18" CMP	EA	1
	60275A	Install new 18" x 40' Culvert	LF	40
	20950	Place culvert bedding material	TON	8
	25101A	Place 5 CY Class 5 Riprap for inlet headwall (2 CY) and outlet apron (3 CY)	CY	5
	62502	Seed and mulch	SY	35
0.55 to 0.63	20407	Place rocky borrow on roadway (6" depth x 12' wide x 440' long)	CY	93
0.56	20401	Remove ditch dam	CY	2
	20407	Place rocky borrow to fill existing dip	CY	10
0.61		**Existing 18" CMP**		
0.61 to 0.64	20401	Remove cut slope slide material, reconstruct ditch, use materail on roadway	CY	48
0.64 to 0.65	25101A	Construct riprap wall left, 50' long x 6' high x 4' thick (See Sheet 37)	CY	45
0.67 to 0.70	20407	Place rocky borrow on roadway (9" depth x 12' wide x 140' long)	CY	47
0.67	20301A	Remove existing 18" CMP	EA	1
	60275A	Install new 18" x 35' Culvert	LF	35
	20950	Place culvert bedding material	TON	8
	25101A	Place 12 CY Class 5 Riprap for inlet headwall and outlet apron	CY	5
	62502	Seed and mulch	SY	35
0.71 to 0.73	20407	Place rocky borrow on roadway (6" depth x 12' wide x 110' long)	CY	25

WORK DESCRIPTION LIST

Rd. #5510110 - MP 0.00 to 1.02 (Continued)

Mile Post	*Item*	*Description*	*Units*	*Estimated Quantity*
0.80	20401	Remove ditch dam	CY	2
	20407	Place rocky borrow to fill existing dip	CY	10
0.82 to 0.86		**Unclassified borrow site, Right. Limited quantity, do not undercut bank. Remove suitable material from cut slope as needed.**		
	20402	Construct truck turnaround (40' radius)	LS	1
0.88	20401	Remove ditch dam	CY	2
	20407	Place rocky borrow to fill existing dip	CY	10
0.92	20401	Remove ditch dam	CY	2
	20407	Place rocky borrow to fill existing dip	CY	10
0.95	20401	Remove ditch dam	CY	2
	20407	Place rocky borrow to fill existing dip	CY	10
0.98	20401	Remove ditch dam	CY	2
	20407	Place rocky borrow to fill existing dip	CY	10
1.02		End Roadside Brushing		
		End Road Reconditioning		
		End Specified Road Work		

BANDERA-HANSEN THIN STEWARDSHIP | SHEET 20 | OF 41

WORK DESCRIPTION LIST

Rd. #5510120 - MP 0.00 to 0.40

Mile Post	*Item*	*Description*	*Units*	*Estimated Quantity*
0.00		**Begin Specified Road Work for Forest Road 5510120,** (Jct. with Forest Road 5510, MP 1.62)		
0.00 to 0.92	23050A	Begin Roadside Brushing	MILE	0.40
	30322	Begin Road Reconditioning	MILE	0.40
0.01	20301B	Remove rock barrier, replace during post haul	EA	1
0.03	20401	Remove ditch dam	CY	2
	20407	Place rocky borrow to fill existing dip	CY	10
0.06	20401	Remove ditch dam	CY	2
	20407	Place rocky borrow to fill existing dip	CY	10
0.08	20401	Remove ditch dam	CY	2
	20407	Place rocky borrow to fill existing dip	CY	10
0.14	20401	Remove ditch dam	CY	2
	20407	Place rocky borrow to fill existing dip	CY	10
0.18	20401	Remove ditch dam	CY	2
	20407	Place rocky borrow to fill existing dip	CY	10
0.21	20401	Remove ditch dam	CY	2
	20407	Place rocky borrow to fill existing dip	CY	10
0.24	20401	Remove ditch dam	CY	2
	20407	Place rocky borrow to fill existing dip	CY	10
0.27	20401	Remove ditch dam	CY	2
	20407	Place rocky borrow to fill existing dip	CY	10
0.30	20401	Remove ditch dam	CY	2
	20407	Place rocky borrow to fill existing dip	CY	10
0.32	20401	Remove ditch dam	CY	2
	20407	Place rocky borrow to fill existing dip	CY	10
0.35		End Roadside Brushing		
		End Road Reconditioning		
0.35-.40		**Riprap borrow source/waste site, Right**		
0.40		**End Specified Road Work**		

WORK DESCRIPTION LIST

Rd. #9030 - MP 0.05 to 3.167

Mile Post	*Item*	*Description*	*Units*	*Estimated Quantity*
0.00		**Forest Road 9030,** (Jct. with I-90 0ff-ramp)		
0.02		**Jct. with Temp Road 15a, Right - NOTE: Road Construction Permit required from WSDOT prior to construction of temporary road. Notify Forest Service 60 days prior to construction in order for the Forest Service to obtain permit from the State.**		
0.050	23050A	Begin Roadside Brushing	MILE	3.12
	20419B	Begin ditch cleaning, clear obstructions	LF	1,848
0.067	60708	Culvert reconditioning	EA	1
0.201	60708	Live Stream - Culvert reconditioning	EA	1
0.293	60708	Culvert reconditioning	EA	1
0.334	60708	Culvert reconditioning	EA	1
0.395	60708	Culvert reconditioning	EA	1
0.400	30322	Begin Road Reconditioning	MILE	2.78
0.400	32201A	Spot rock, 1-1/4" minus crushed agg. 2,149' x 12' x 3"	TON	435
0.807				
0.420		**Live Stream, existing culvert**		
0.480	20419C	Reconstruct ditch, Right. Haul waste to disposal site	LF	264
0.530				
0.807		**Intersection with 9031**		
0.807	20419C	Reconstruct ditch at switchback, Right. Haul waste to disposal site	LF	68
0.820				
0.807	32201A	Spot rock, 1-1/4" minus crushed agg. 808' x 12' x 2"	TON	110
0.960				
1.080	60275B	Install new 24" x 40' Culvert. 23% grade, 20% skew	LF	40
	20950	Place culvert bedding material	TON	10
	25101A	Place 8 CY Class 5 Riprap for inlet headwall (3CY) and outlet apron (5 CY)	CY	8
	32201A	Place aggregate surfacing	TON	30
	62502	Seed and mulch	SY	35
1.090	20419C	Reconstruct ditch - Left	LF	70
1.100	32201A	Spot rock, 1-1/4" minus crushed agg. 1,584' x 12' x 2"	TON	214
1.400				
1.160	25101C	Place Class 5 riprap apron at outlet of existing culvert 50' x 8' x 4' with Geotextile Type III (See sheet 38)	LS	1

WORK DESCRIPTION LIST

Rd. #9030 - MP 0.05 to 3.167 (Continued)

Mile Post	*Item*	*Description*	*Units*	*Estimated Quantity*
1.200		**Water Source**		
1.310	60275B	Install new 24" x 40' Culvert	LF	40
	20950	Place culvert bedding material	TON	10
	25101A	Place 8 CY Class 5 Riprap for inlet headwall (3CY) and outlet apron (5 CY)	CY	8
	32201A	Place aggregate surfacing	TON	30
	62502	Seed and mulch	SY	35
1.330	20301A	Remove existing 18" CMP	EA	1
	60275B	Install new 24" x 40' Culvert	LF	40
	20950	Place culvert bedding material	TON	10
	25101A	Place 8 CY Class 5 Riprap for inlet headwall (3CY) and outlet apron (5 CY)	CY	8
	32201A	Place aggregate surfacing	TON	30
	62502	Seed and mulch	SY	35
1.460	32201A	Spot rock, 1-1/4" minus crushed agg. 740' x 12' x 2"	TON	100.00
1.600				
1.467	20301A	Remove existing 24" CMP	EA	1
	60275E	Install new 36" x 40' Culvert	LF	40
	20950	Place culvert bedding material	TON	10
	25101A	Place 13 CY Class 5 Riprap for inlet headwall (5CY) and outlet apron (8 CY)	CY	13
	32201A	Place aggregate surfacing	TON	30
	62502	Seed and mulch	SY	35
1.607	15204	Culvert site staking	LS	1
	20301A	Remove existing 24" CMP	EA	1
	60275E	Install new 36" x 70' Culvert	LF	70
	20950	Place culvert bedding material	TON	10
	25101A	Place 14 CY Class 5 Riprap for inlet headwall (6CY) and outlet apron (8 CY)	CY	13
	32201A	Place aggregate surfacing	TON	50
	62502	Seed and mulch	SY	40
1.530		**Switchback - Left**		
1.650	32201A	Spot Rock, 1-1/4" minus crushed agg. 528' x 12' x 2"	TON	72
1.750				
1.760	20411	Repair shoulder, Left. 80' x 2' x 3'	CY	18
1.760	20419C	Reconstruct ditch, Right, use waste material for shoulder repair at MP 1.83	LF	370
1.830				
1.760	32201A	Spot Rock, 1-1/4" minus crushed agg. 422' x 12' x 2"	TON	57
1.840				
1.830	20207A	Hazard tree removal, Left	EA	5
	63307	Install delineators- Left at switchback	EA	6
	20412	Embankment repair, outside shoulder (See Detail on Sheet 38)	LS	1

WORK DESCRIPTION LIST

Rd. #9030 - MP 0.05 to 3.167 (Continued)

Mile Post	*Item*	*Description*	*Units*	*Estimated Quantity*
2.050		**Switchback - Left**		
2.137		**Live Stream**		
	20301A	Remove existing 24" CMP	EA	1
	60275E	Install new 36" x 50' Culvert. 5' inlet, 14' outlet	LF	50
	20950	Place culvert bedding material	TON	50
	25101A	Place 13 CY Class 5 Riprap for inlet headwall (5CY) and outlet apron (8 CY)	CY	13
	32201A	Place aggregate surfacing	TON	40
	62502	Seed and mulch	SY	50
2.200	32201A	Place surfacing,1-1/4" minus crushed agg. 2006' x 12' x 2"	TON	271
2.580				
2.220	20419A	Ditchout, Right	LF	5
2.230	20419A	Ditchout, Right	LF	10
2.240		Switchback		
	20419A	Ditchout, Right	LF	25
	20419C	Reconstruct ditch, Right	LF	25
	20499	Rebuild switchback, inslope construction (see detail sheet 34)	LS	1
	63307	Install delineators-Left at switchback	EA	6
2.260	20419A	Ditchout, Left	LF	50
2.280		**Disposal Site - Right**		
2.340	20301A	Remove existing 18" CMP	EA	1
	60275B	Install new 24" x 80' Culvert	LF	80
	20950	Place culvert bedding material	TON	10
	25101A	Place 8 CY Class 5 Riprap for inlet headwall (3CY) and outlet apron (5 CY)	CY	8
	32201A	Place aggregate surfacing	TON	30
	62502	Seed and mulch	SY	35
2.400		**Disposal site - Right**		
2.430		**Water Source**		
2.610	32201A	Place surfacing,1-1/4" minus crushed agg. 686' x 12' x 2" thick	TON	93
2.740				
2.700		**Switchback - Left**		
2.825	20301A	Remove existing 18" CMP	EA	1
	60275D	Install new 24" x 60' Culvert. 10' inlet, 20' outlet	LF	60
	20950	Place culvert bedding material	TON	50
	25101A	Place 13 CY Class 5 Riprap for inlet headwall (5CY) and outlet apron (8 CY)	CY	13
	32201A	Place aggregate surfacing	TON	30
	62502	Seed and mulch	SY	50
2.835		**Switchback - Right**		

WORK DESCRIPTION LIST

Rd. #9030 - MP 0.05 to 3.167(Continued)

Mile Post	*Item*	*Description*	*Units*	*Estimated Quantity*
2.830	32201A	Place surfacing,1-1/4" minus crushed agg., 317' x 12' x 2" thick	TON	43
2.890				
3.000		**Disposal site, Right. Beyond parking area**		
3.060	32201A	Place surfacing,1-1/4" minus crushed agg., 528' x 12' x 2" thick	TON	71
3.160				
3.167		End Roadside Brushing at kiosk		
		End Road Reconditioning at kiosk		
		End Specified Road Work at kiosk		

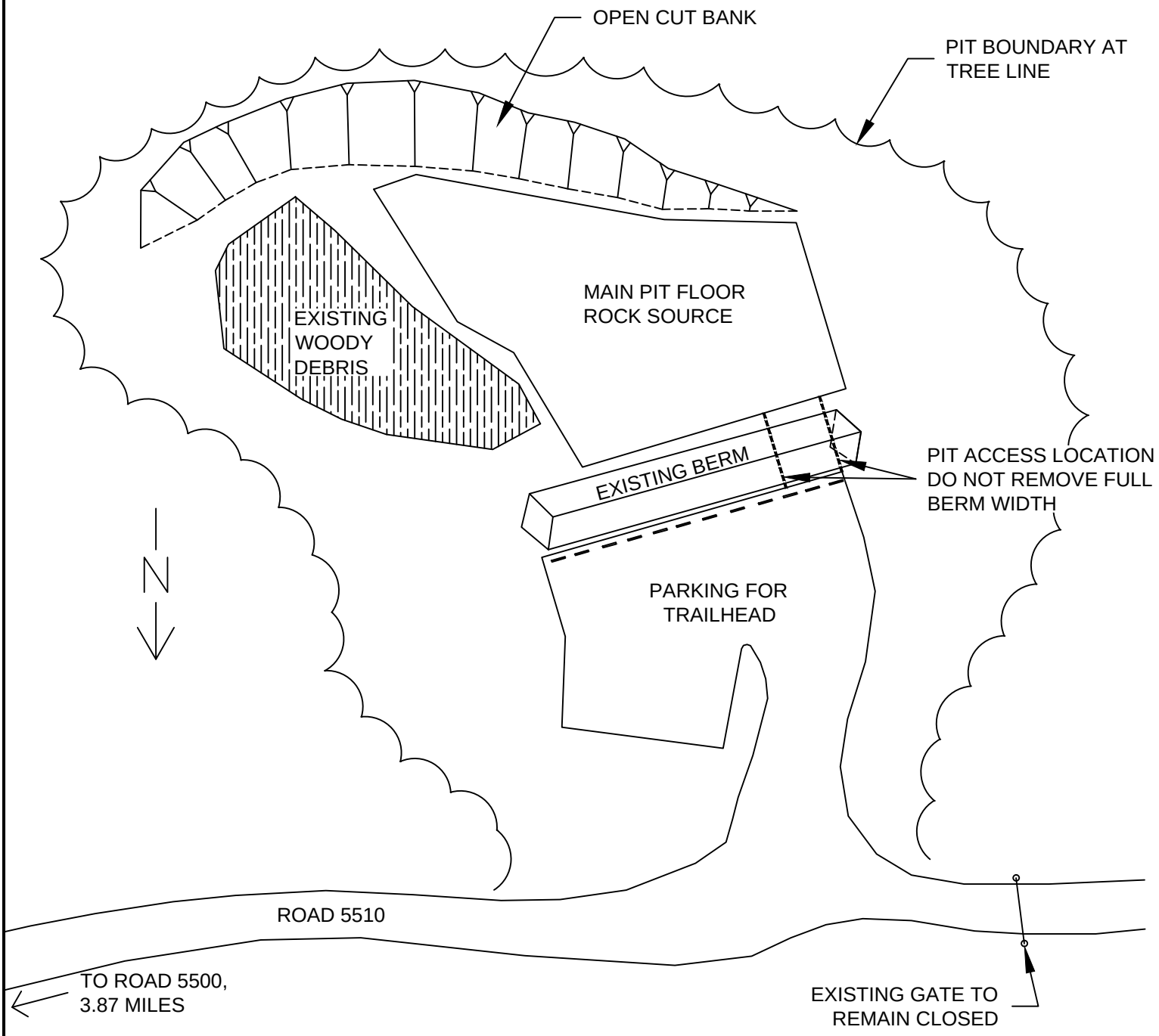
BANDERA-HANSEN THIN STEWARDSHIP **WORK DESCRIPTION LIST**			SHEET 25	OF 41
Rd. #9031 - MP 0.00 to 2.94				
Mile Post	***Item***	***Description***	***Units***	***Estimated Quantity***
0.00		**Begin Specified Road Work for Forest Road 5510,** (Jct. with Forest Road 9030)		
0.00	23050A	Begin Roadside Brushing	MILE	2.94
0.00	30322	Begin Road Reconditioning	MILE	2.94
0.00	32201A	Place surfacing, 1-1/4" minus surfacing agg. 3,168' x 12' x 2"	TON	413
0.60				
0.50		**Water Source**		
0.80	32201A	Place surfacing, 1-1/4" minus surfacing agg. 1,056 x 12' x 3"	TON	214
1.00				
1.06	25101B	Reconstruct inlet catch basin, 25' in both directions	TON	30
1.10	25101B	Reconstruct inlet catch basin, 25' in both directions	TON	30
1.19		**Pit Entrance, private road on Right**		
1.20	60275A	Install new 18" x 30' Culvert	LF	30
	20950	Place culvert bedding material	TON	10
	25101A	Place 8 CY Class 5 Riprap for inlet headwall (3CY) and outlet apron (5 CY)	CY	8
	32201A	Place aggregate surfacing	TON	30
	62502	Seed and mulch	SY	35
1.23	32201A	Helipad on road. Place surfacing 50' x 12' x 3"	TON	10
1.25	32201A	Place surfacing, 1-1/4" minus surfacing agg. 1,848 x 12' x 3"	TON	374
1.60				
1.34	25101B	Reconstruct inlet catch basin to match inlet grade	TON	20
1.56		**Water Source**		
1.57		Protect 4x4 post and marker, Right		
1.68	32201B	Place 2-1/2" rock in turnout	TON	8.00
1.93	32201B	Place 2-1/2" rock in turnout	TON	63.00
1.94	32201A	Place surfacing, 1-1/4" minus surfacing agg. 845 x 12' x 3"	TON	171
2.10				
2.36	32201A	Place surfacing, 1-1/4" minus surfacing agg. 200' x 12' x 3"	TON	27
2.40				

BANDERA-HANSEN THIN STEWARDSHIP **WORK DESCRIPTION LIST**			SHEET 26	OF 41
Rd. #9031 - MP 0.00 to 2.94 (Continued)				
Mile Post	***Item***	***Description***	***Units***	***Estimated Quantity***
2.40	20301A	Remove existing 24" CMP	EA	1
	60275C	Install new 36" x 40' Culvert	LF	40
	20950	Place culvert bedding material	TON	10
	25101A	Place 20 CY Class 5 Riprap for inlet headwall (8CY) and outlet apron (12 CY)	CY	20
	32201A	Place aggregate surfacing	TON	30
	62502	Seed and mulch	SY	35
2.75		**Water Source - Right**		
2.91		**Trailhead**		
	32201A	Place surfacing, 1-1/4" minus surfacing agg. 150' x 80' x 3"	TON	200
2.94		**Rock Source - Right (See Pit Plan on Sheet 30)**		
2.94		End Roadside Brushing		
		End Road Reconditioning		
		End Specified Road Work		

DRAINAGE LISTING

(See the work summary sheets for work description at each location.)

Design		As Built		Allowable Alternatives		Installation Details								Remarks
Mile Post	L.F.	Mile Post	L.F.	All Pipes Shall Be HDPE Unless Otherwise Specified: Dia. in Inches	All Pipes Shall Be HDPE Unless Otherwise Specified: Corrugations if Metal Pipe is Specified	Type	Grade %	Skew Deg.	Headwall Ditchdam (CY)	Outlet Apron (CY)	Bedding (Ton)	Elbow	Anchor Sets	*Place Class 7 Riprap **Place Class 8 Riprap All Others Class 5 Riprap
ROAD 5500 DRAINAGE LISTING														
0.7	35			24		1	ex	ex	3	5	10			Remove existing 18" CMP
1.35	34			24		3	ex	ex	5	8	10			Remove existing 18" CMP
ROAD 5510110 DRAINAGE LISTING														
0.32	40			36		1	4	70	3	9	10			Remove existing 18" CMP
0.52	40			18		3	10	90	2	3	8			Remove existing 18" CMP
0.67	35			18		3	15	90	2	3	8			Remove existing 18" CMP
ROAD 9030 DRAINAGE LISTING														
1.08	40			24		1	23	20	3	5	10			New culvert location
1.31	40			24		1	25	20	3	5	10			New culvert location
1.33	30			24		1	ex	ex	3	5	10			Remove existing 18" CMP
1.467	40			36		3	ex	ex	5	8	10			Remove existing 24" CMP
1.607	70			36		3	ex	ex	6	8	10			Remove existing 24" CMP
2.137	50			36		3	ex	ex	5	8	10			Remove existing 24" CMP
2.34	80			24		1	ex	ex	3	5	10			Remove existing 18" CMP
2.825	60			24		1	ex	ex	5	8	10			Remove existing 18" CMP
ROAD 9031 DRAINAGE LISTING														
1.2	30			18		1			3	5	10			New culvert location
2.4	40			36		3	ex	ex	8	12	10			Remove existing 24" CMP

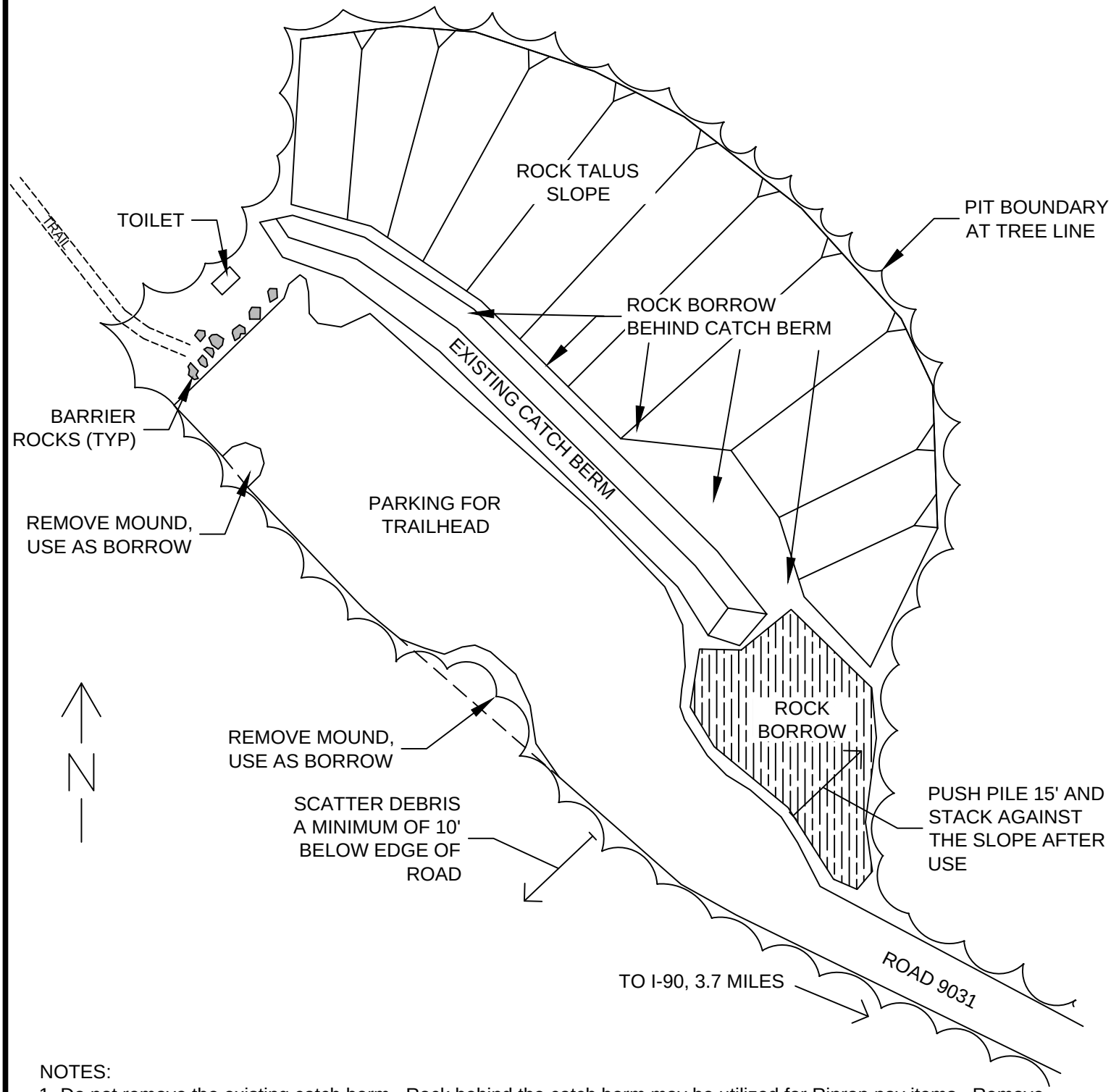


NOTES:

1. Access the main pit floor at the location shown. Move the wheel stops aside and replace at completion of operations. Level the existing berm and replace at completion of project.
2. Waste shall be placed on the existing woody debris pile. Place slash and soil in separate piles. Shape soil waste to drain at completion of operations.
3. Borrow material may be generated from the open cut bank or from the main pit floor. Do not undercut trees at the top of the cut bank.
4. Pit shall be shaped to drain at completion of operations.

DRAWING NOT TO SCALE

U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE PACIFIC NORTHWEST REGION–6		DATE: MAY 12, 2016 SHEET: 28 OF: 41
APPROVED:	DWG NO: PIT PLAN	DRAWN BY: U. S. FOREST SERVICE
PROJECT NAME: BANDERA–HANSEN THIN STEWARDSHIP		SHEET TITLE: ROAD 5510–MP 3.87 PIT PLAN



NOTES:

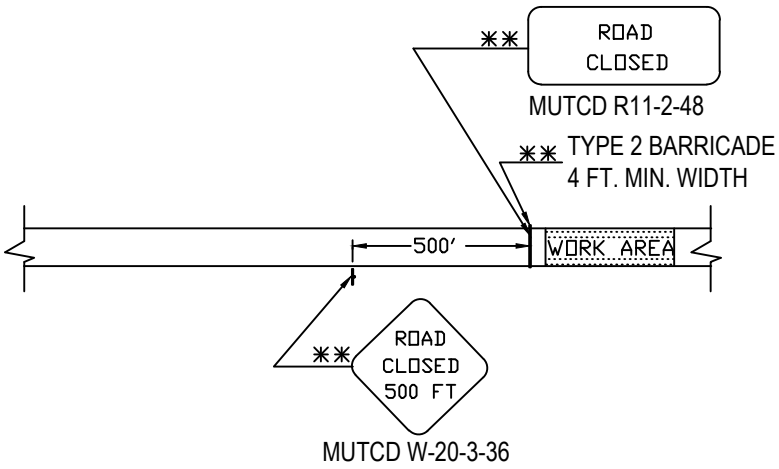
1. Do not remove the existing catch berm. Rock behind the catch berm may be utilized for Riprap pay items. Remove vegetation and scatter minimum of 10' down slope of parking area.
2. Strip the vegetation off of the rock borrow pile and push the pile 15' back into the hillside. Use rock borrow as needed for project work as described in the work list.
3. Scatter all stripped vegetation a minimum of 10' down slope of parking lot. Do not concentrate piles of slash.

DRAWING NOT TO SCALE

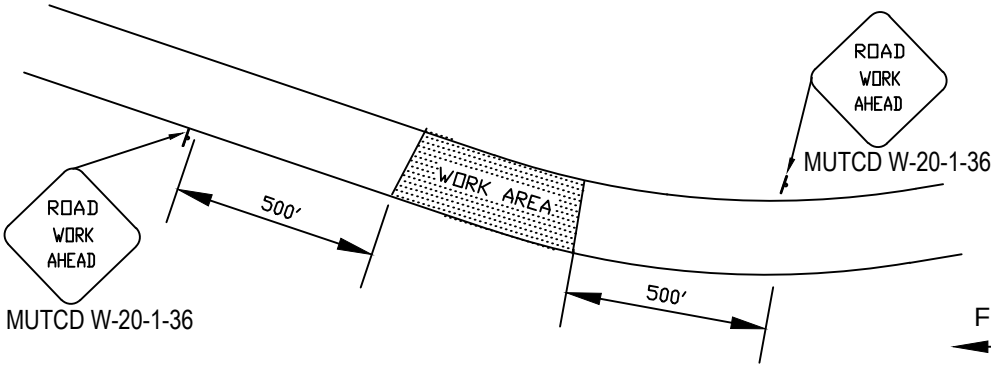
U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE PACIFIC NORTHWEST REGION–6		DATE: MAY 12, 2016 SHEET: 29 OF: 41
APPROVED:	DWG NO: PIT PLAN	DRAWN BY: U. S. FOREST SERVICE
PROJECT NAME: BANDERA–HANSEN THIN STEWARDSHIP		SHEET TITLE: ROAD 9031–MP 2.94 PIT PLAN

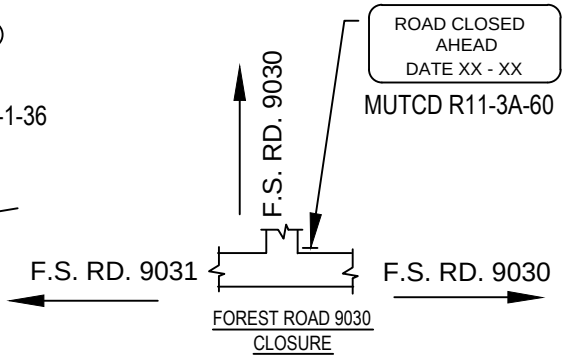
TRAFFIC CONTROL PLAN

TRAFFIC CONTROL PLAN FOR ROAD CLOSURE



1. Road use authorization per C 5.12, "Use of Roads by Purchaser" in contract.
2. Total road closure per supplemental specifications Section 156 Public Traffic in the contract. Operations at all other times will accommodate traffic.
3. Traffic control devices shall be maintained for duration of closure.
4. All signs shall conform to the MUTCD Sections 2a-11, through 2a-16, 6b-1 and 6b-2 of the 2012 Edition.
5. **Signs are shown for one direction of travel only. The same number and types of signs shall be provided for the opposite direction of travel.



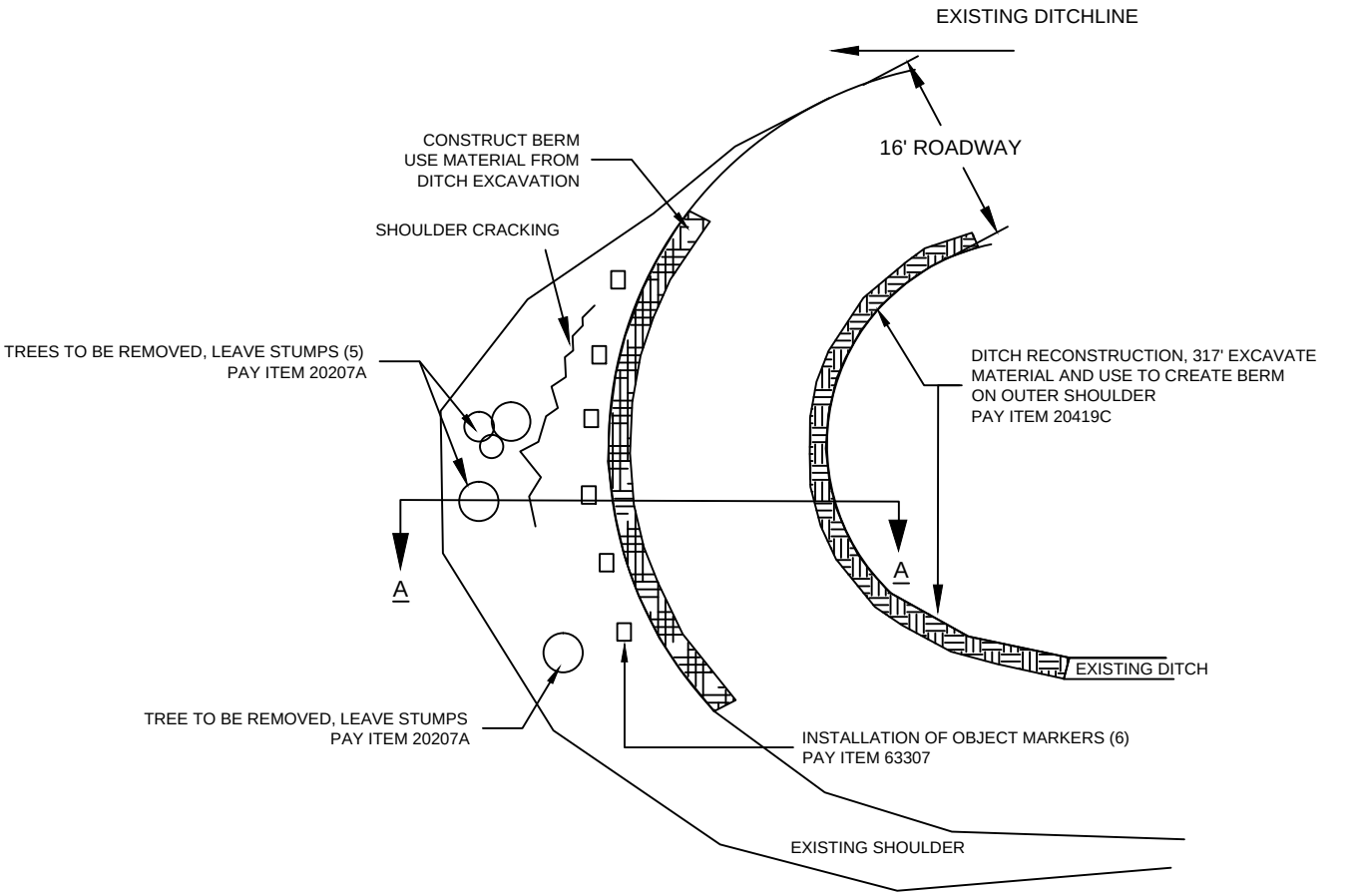


TRAFFIC CONTROL PLAN FOR TRAFFIC ALLOWED THROUGH WORK AREA

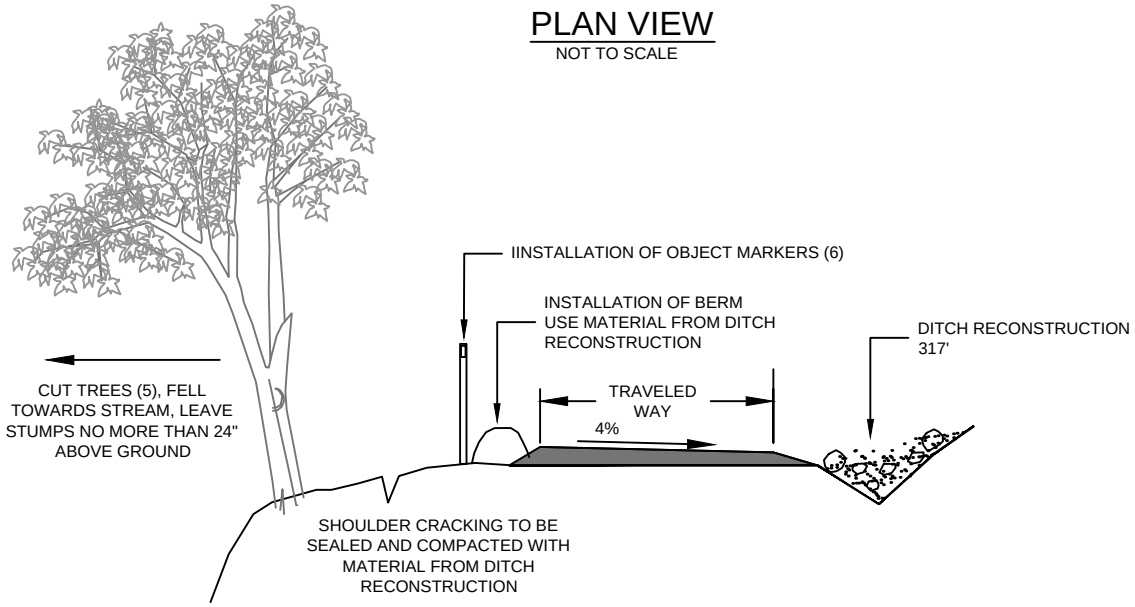
1. Work area shall be in a condition such that it may be safely traversed at night, including channelizing devices if needed.
2. Warning lights shall be used to mark channelizing devices at night as needed.
3. Traffic control devices shall be maintained for duration of work in both directions open to traffic.
4. Signs are shown for one direction of travel only. The same number and types of signs shall be provided for the opposite direction of travel.
5. All signs shall conform to the MUTCD sections 2a-11, through 2a-16, 6b-1 and 6b-2 of the 2012 edition.

FOREST SERVICE US DEPARTMENT OF AGRICULTURE	U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE PACIFIC NORTHWEST REGION—6	DATE: MAY 12, 2016
		SHEET: 30 OF: 41
APPROVED:	DWG NO: 15101	DRAWN BY: U. S. FOREST SERVICE
PROJECT NAME: BANDERA—HANSEN THIN STEWARDSHIP		SHEET TITLE: TRAFFIC CONTROL

FSR 9030 MP 1.83 EMBANKMENT REPAIR

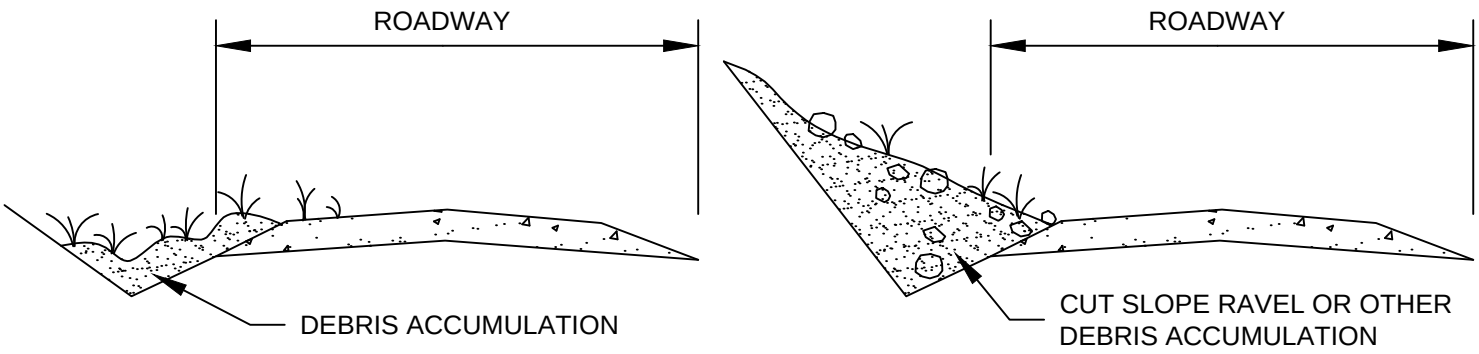


PLAN VIEW
NOT TO SCALE



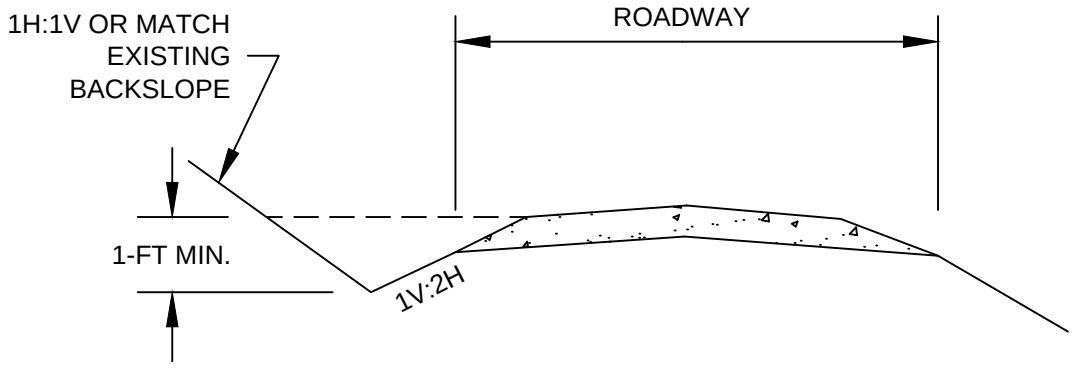
CROSS-SECTION VIEW A-A
NOT TO SCALE

U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE PACIFIC NORTHWEST REGION–6		DATE: MAY 12, 2016 SHEET: 31 OF: 41
APPROVED:	DWG NO: 20412	DRAWN BY: U. S. FOREST SERVICE
PROJECT NAME: BANDERA–HANSEN THIN STEWARDSHIP		SHEET TITLE: FOREST RD 9030 MP 1.83 EMBANKMENT REPAIR



TYPICAL DITCH DEBRIS/OBSTRUCTIONS

NOT TO SCALE



TYPICAL COMPLETED DITCH

NOT TO SCALE

NOTES:

1. Restore ditches identified and staked in the field to the minimum dimensions shown or match existing ditch lines.

2. Loose rock, soil, wood and other materials shall be removed.

3. Suitable material (rocks up to 2" in greatest dimension), may be blended into the roadbed of native surfaces and shoulders, or placed in designated location(s) where excess material is deposited.

4. Excess materials temporarily stored on the ditch-slope or shoulder shall be removed daily.

5. Lead-off ditches shall be shaped and sloped to drain away from the traveled-way.

6. Load and haul waste material to the designated disposal areas as flagged. Consolidate by lumping waste material into 1 large pile and compact pile with track wheeled equipment prior to seed and mulching.

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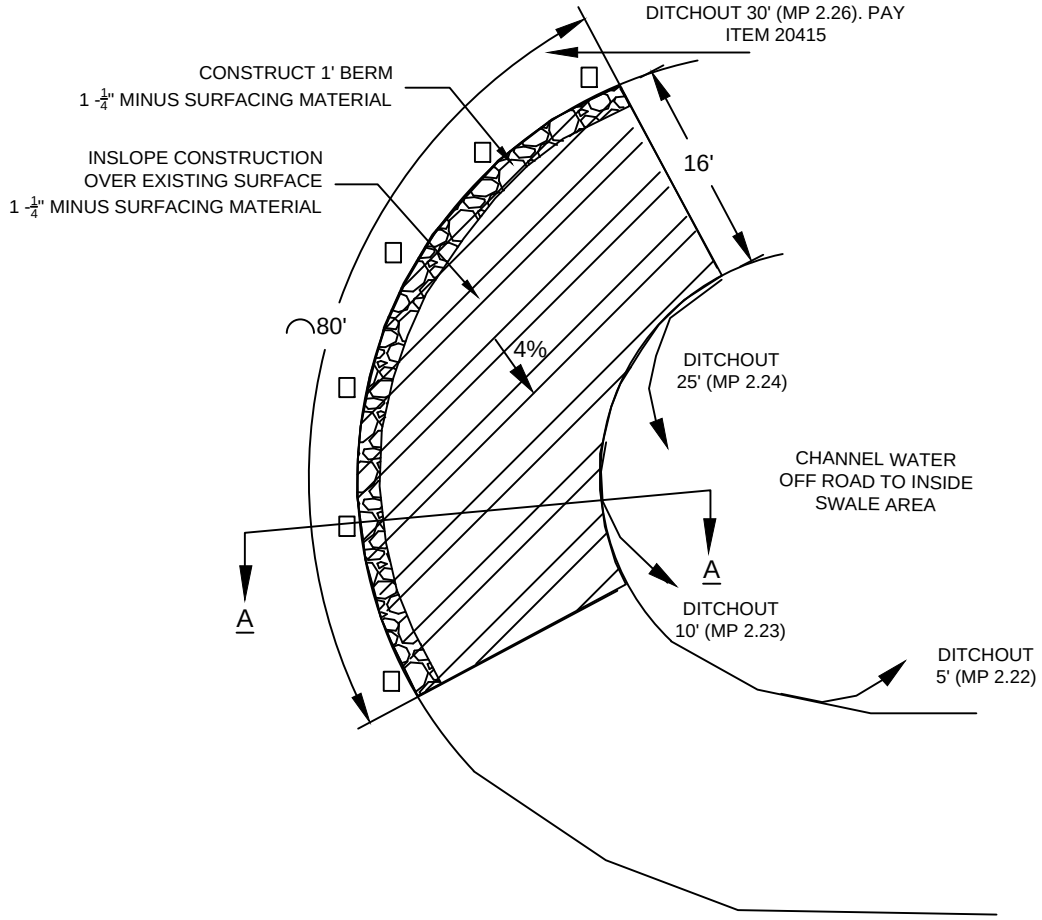
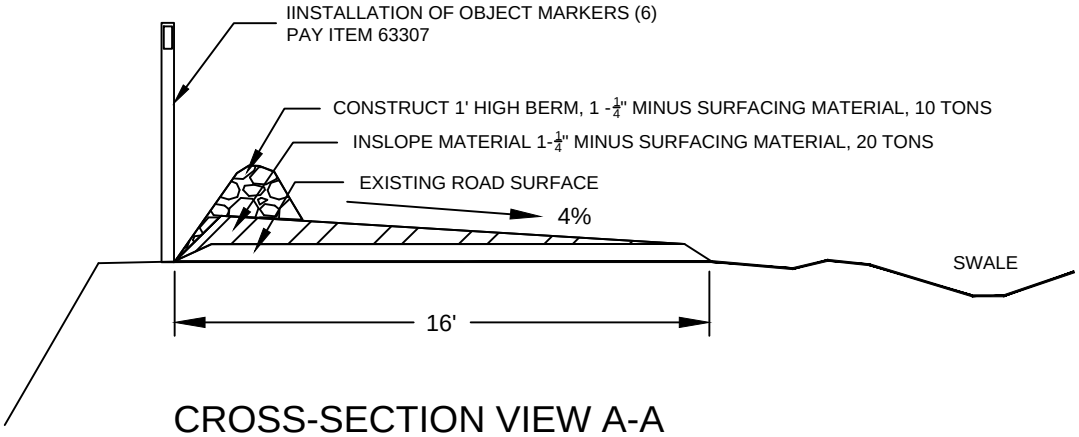
		SHEET: 32 OF: 41
	APPROVED: / DWG NO: 20419 (A/B/C)	DRAWN BY: U. S. FOREST SERVICE
PROJECT NAME: BANDERA–HANSEN THIN STEWARDSHIP		SHEET TITLE: DRAINAGE EXCAVATION

FSR 9030 MP 2.24 ROAD INSLOPE CONSTRUCTION

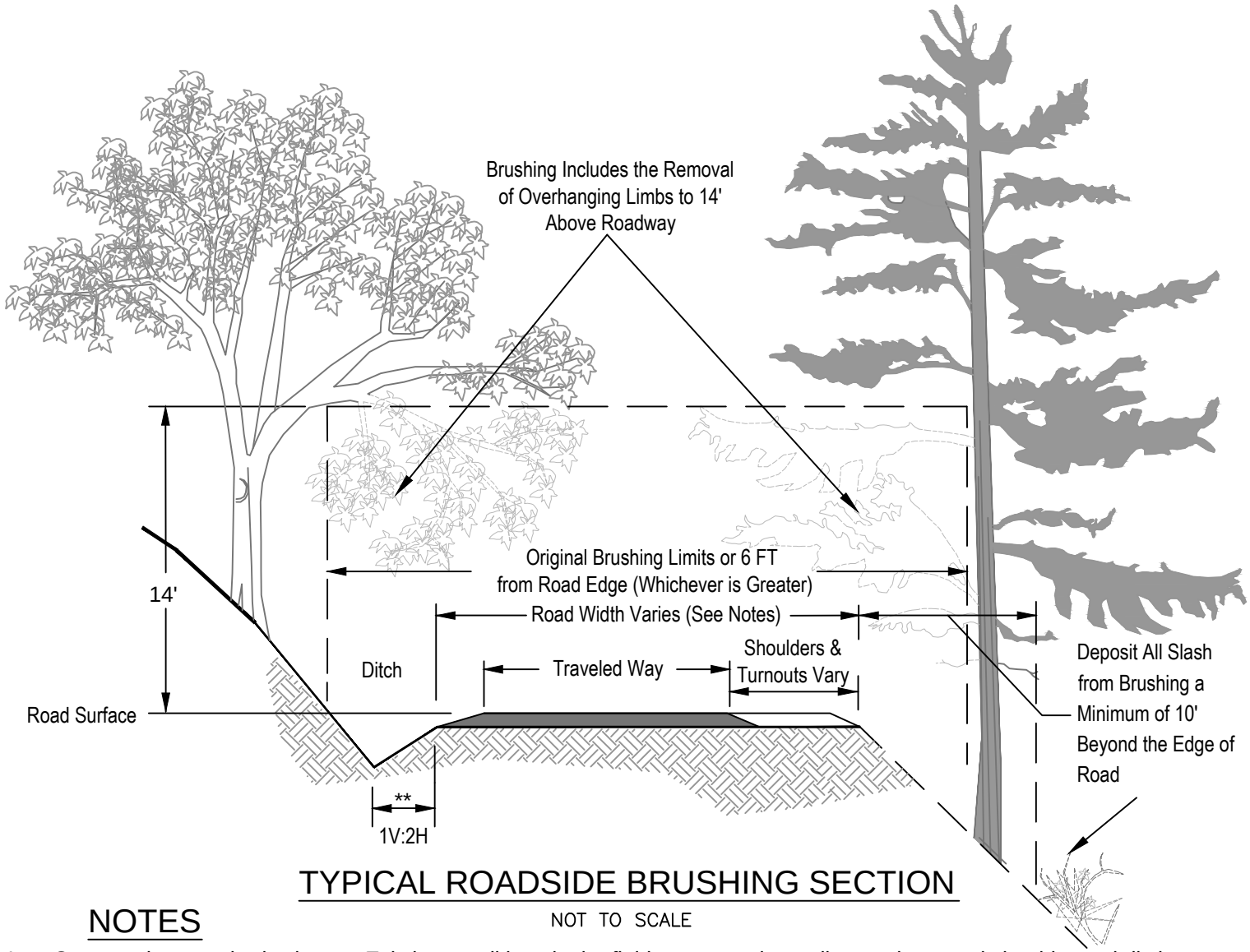


PLAN VIEW
NOT TO SCALE



CROSS-SECTION VIEW A-A
NOT TO SCALE

U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE PACIFIC NORTHWEST REGION–6		DATE: MAY 12, 2016 SHEET: 33 OF: 41
APPROVED:	DWG NO: 20499	DRAWN BY: U. S. FOREST SERVICE
PROJECT NAME: BANDERA–HANSEN THIN STEWARDSHIP		SHEET TITLE: FSR 9030 MP 2.24 INSLOPE CONSTRUCTION



TYPICAL ROADSIDE BRUSHING SECTION

NOT TO SCALE

NOTES

1. ** Construction standards shown. Existing conditions in the field may vary depending on the actual shoulder and ditch constructed and maintained.

2. Existing traveled way road widths are a minimum of 12' and maximum of 14' wide. Not including curve widening and turnouts.

3. Scatter material a minimum of 10 feet beyond the edge of road along the fill slope and a minimum of 5 feet away from drainage areas. Do not deposit slash and debris inside the timber sale unit boundaries. Material within the timber sale unit boundaries shall be hauled to a designated disposal area or scattered in the locations outside the unit boundaries. See general notes for additional information.

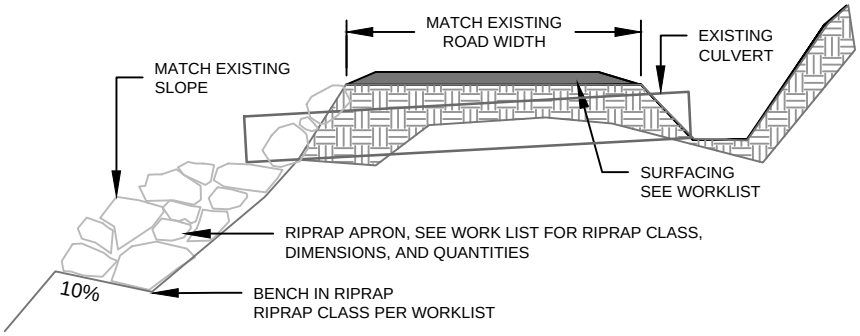
4. All vegetation shall be cut within 6" of the ground line or protruding solid object beyond the bottom of the ditch and the roadway reconditioning limits.

5. All culvert catch basins shall be brushed a minimum of 10 foot radius from the culvert inlet.

6. Upon completing mechanical or hand brushing operations, all sticks and limbs larger than 1" in diameter and 18" long shall be removed from the ditchline and roadside and scattered 10' beyond the roadway.

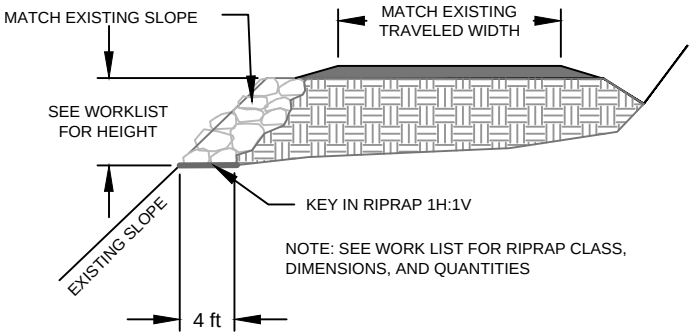
U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE PACIFIC NORTHWEST REGION–6		DATE: MAY 12, 2016 SHEET: 34 OF: 41
APPROVED:	DWG NO: 23050A	DRAWN BY: U. S. FOREST SERVICE
PROJECT NAME: BANDERA–HANSEN THIN STEWARDSHIP		FILE NAME: ROADSIDE BRUSHING

PAY ITEM 25101A



TYPICAL CULVERT SCOUR REPAIR

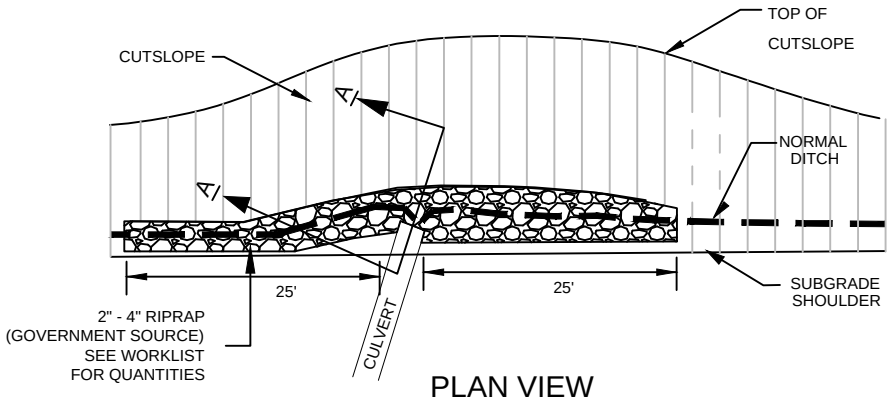
NOT TO SCALE



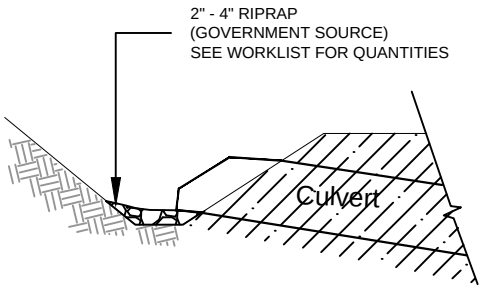
TYPICAL RIPRAP WALL DETAIL

NOT TO SCALE

PAY ITEM 25101B



PLAN VIEW

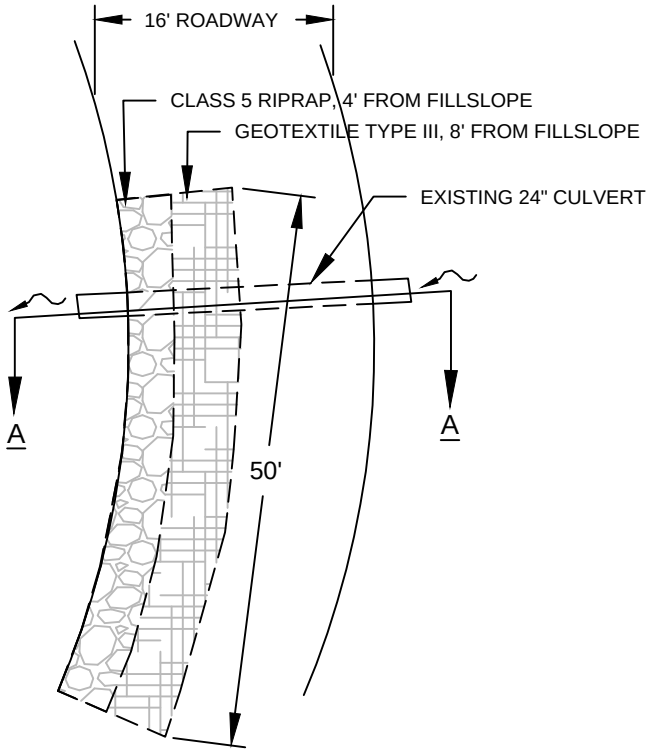


CROSS-SECTION A-A

U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE PACIFIC NORTHWEST REGION–6		DATE: MAY 12, 2016 SHEET: 35 OF: 41
APPROVED:	DWG NO: 25101A/B	DRAWN BY: U. S. FOREST SERVICE
PROJECT NAME: BANDERA–HANSEN THIN STEWARDSHIP		FILE NAME: RIPRAP DETAILS

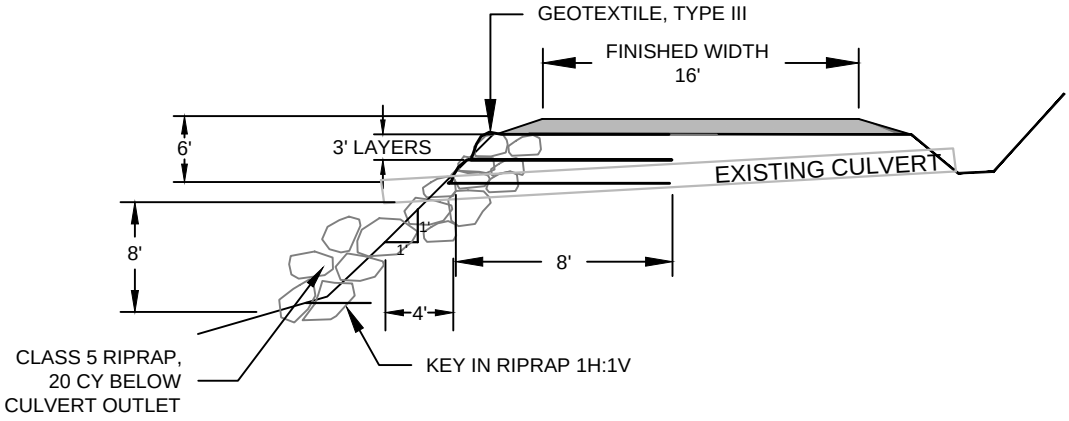
PAY ITEM 25101C

FSR 9030 MP 1.16 RIPRAP REPAIR



PLAN VIEW

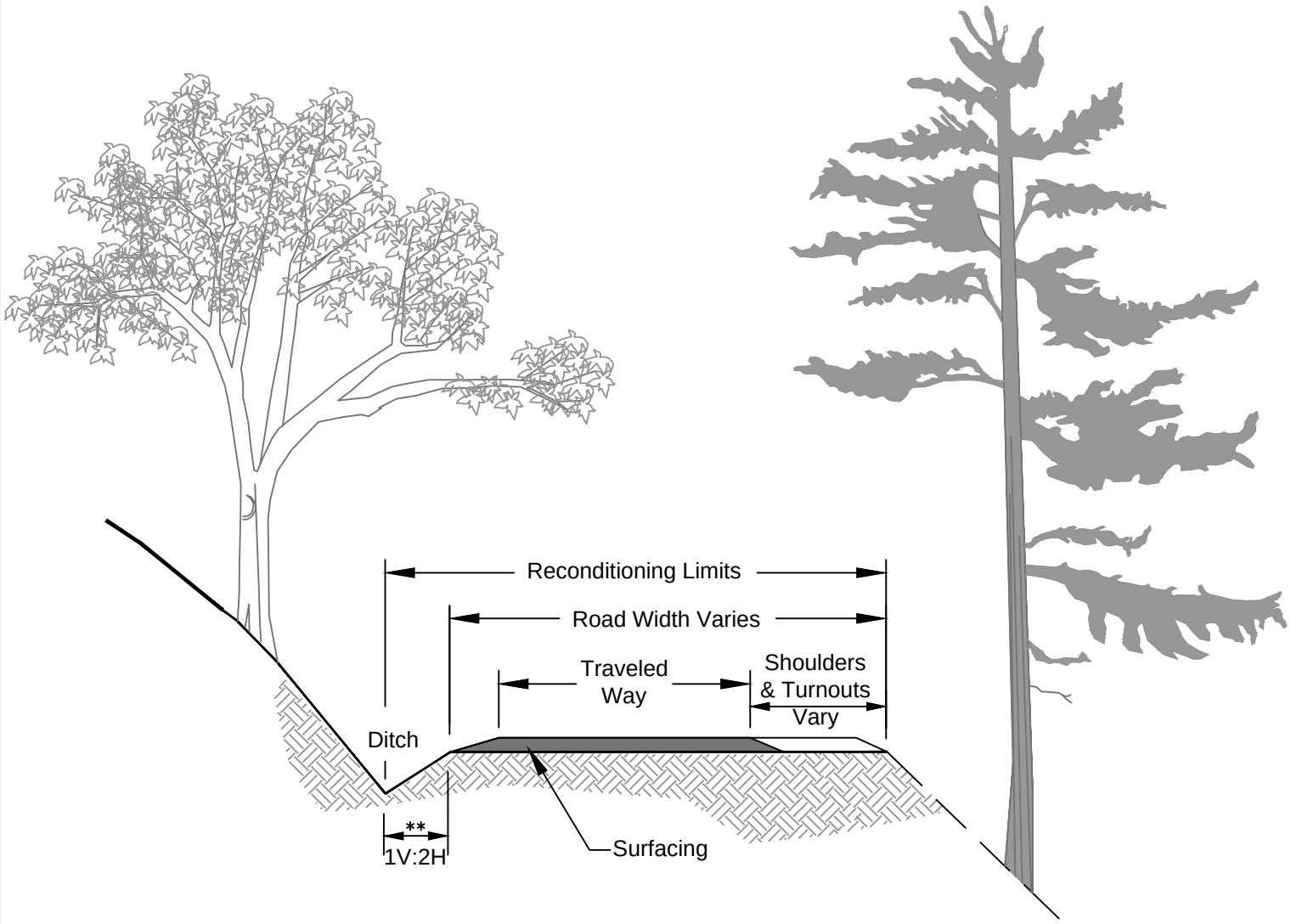
NOT TO SCALE



CROSS-SECTION A-A

NOT TO SCALE

U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE PACIFIC NORTHWEST REGION—6		DATE: MAY 12, 2016 SHEET: 36 OF: 41
APPROVED:	DWG NO: 25101C	DRAWN BY: U. S. FOREST SERVICE
PROJECT NAME: BANDERA—HANSEN THIN STEWARDSHIP		FILE NAME: FSR 9030 MP 1.16 RIPRAP REPAIR



TYPICAL ROADWAY SECTION

NOT TO SCALE

NOTES

**1. Construction standards shown. Existing conditions in the field may vary depending on the actual shoulder and ditch constructed and maintained.

2. Existing traveled way road widths are a minimum of 12' and maximum of 14' wide. Not including curve widening and turnouts

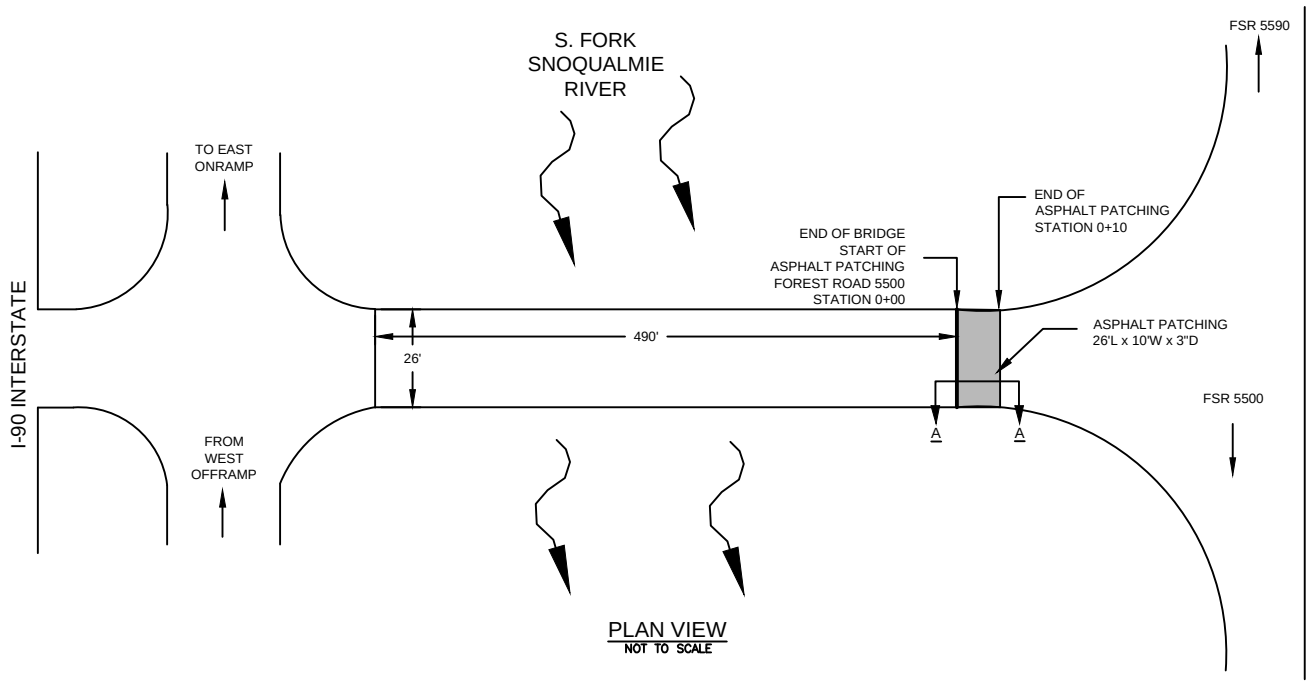
3. All culvert inlets, catch basins, and outlets shall be cleaned to allow maximum water flow.

4. All culvert outlet ditches and roadway lead-off ditches shall be cleaned and shaped to allow maximum water flow.

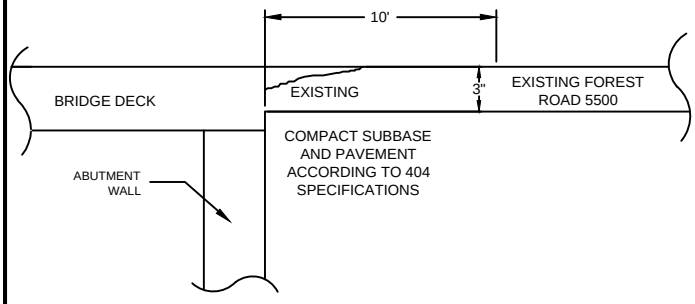
5. All unsuitable, excess, and oversize material generated from reconditioning the ditch or roadway shall be removed and distributed uniformly on the fill slope.

6. Roadway shoulder berms shall not be allowed unless otherwise stated

FOREST SERVICE US DEPARTMENT OF AGRICULTURE	U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE PACIFIC NORTHWEST REGION–6	DATE: MAY 12, 2016 SHEET: 37 OF: 41
APPROVED:	DWG NO: 30322	DRAWN BY: U. S. FOREST SERVICE
PROJECT NAME: BANDERA–HANSEN THIN STEWARDSHIP		SHEET TITLE: ROAD RECONDITIONING



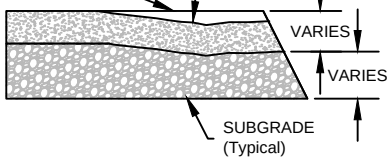
PLAN VIEW
NOT TO SCALE



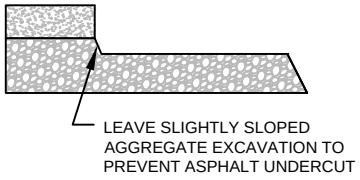
CROSS-SECTION VIEW A-A
NOT TO SCALE

1. ORIGINAL ASPHALT (Typical)

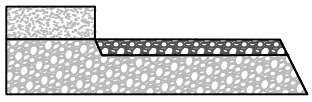
EXISTING ASPHALT (Typical)



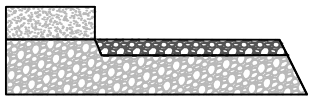
2. SAW CUT ASPHALT EDGES TO A CLEAN LINE OUTSIDE OF FAILURE. EXCAVATE AGGREGATE TO AREA OF FIRM SUPPORT. DISPOSAL PER GENERAL NOTES.



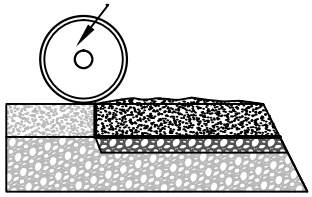
3. PLACE AND COMPACT AGGREGATE BASE PER 32201



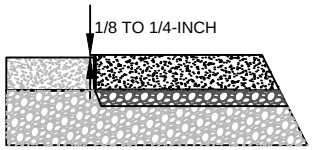
4. APPLY TACK/PRIME COAT TO ASPHALT AND AGGREGATE.



5. PLACE FULL DEPTH ASPHALT MIXTURE & COMPACT.



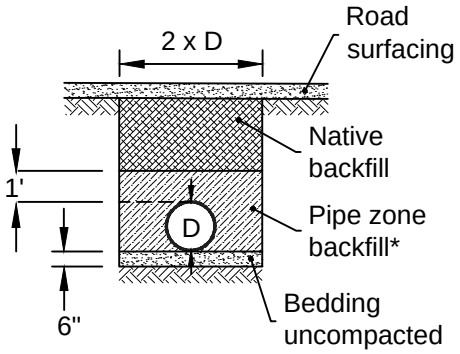
6. FINISHED COMPACTED ELEVATION SHALL BE 1/8 TO 1/4-INCH ABOVE THE EDGES OF THE EXISTING ASPHALT.



TYPICAL HOT-MIX ASPHALT PATCHING AND PAVING
NOT TO SCALE

U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE PACIFIC NORTHWEST REGION–6		DATE: MAY 12, 2016 SHEET: 38 OF: 41
APPROVED:	DWG NO: 40401	DRAWN BY: U. S. FOREST SERVICE
PROJECT NAME: BANDERA–HANSEN THIN STEWARDSHIP		SHEET TITLE: ROAD 55 ASPHALT PATCHING

CULVERT TYPES

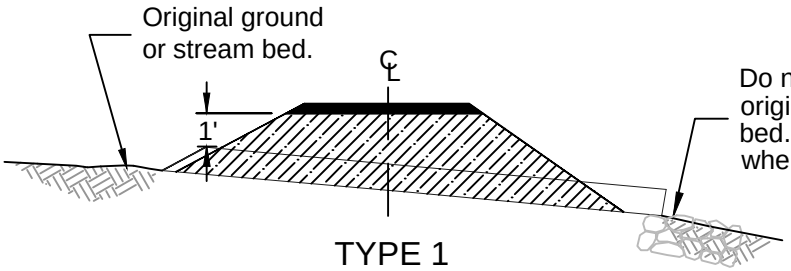


* Maximum particle size is 3", except 1-1/2" for plastic pipe

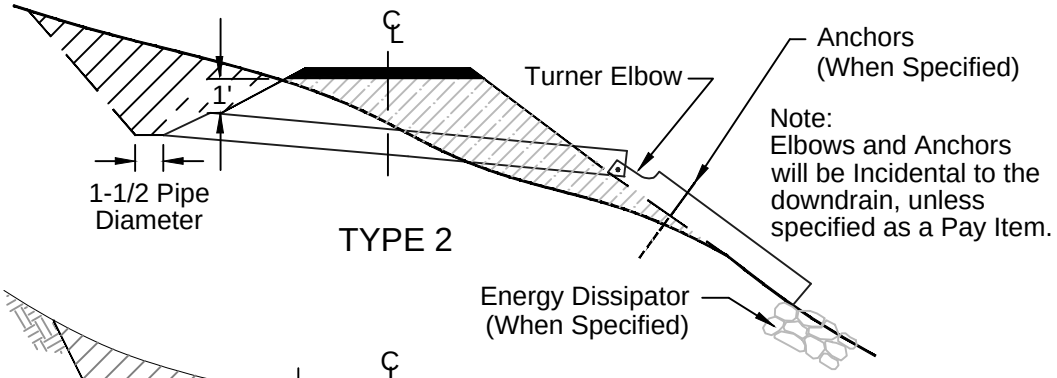
CULVERT INSTALLATION

NOTE: Pipe beds shall be constructed with a positive camber (1% of pipe length, 2% max.) before placing the pipe.

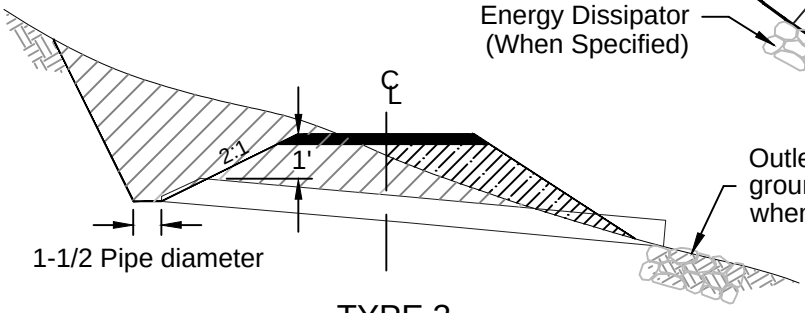
NOTE: Downhill-most section of pipe shall be full length.



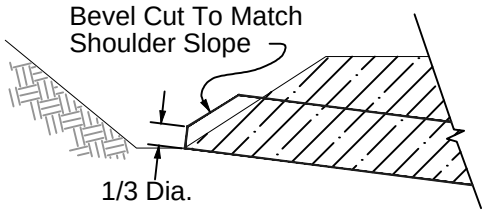
TYPE 1



TYPE 2

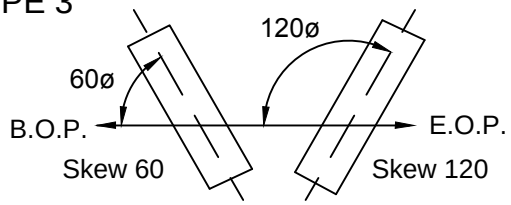


TYPE 3

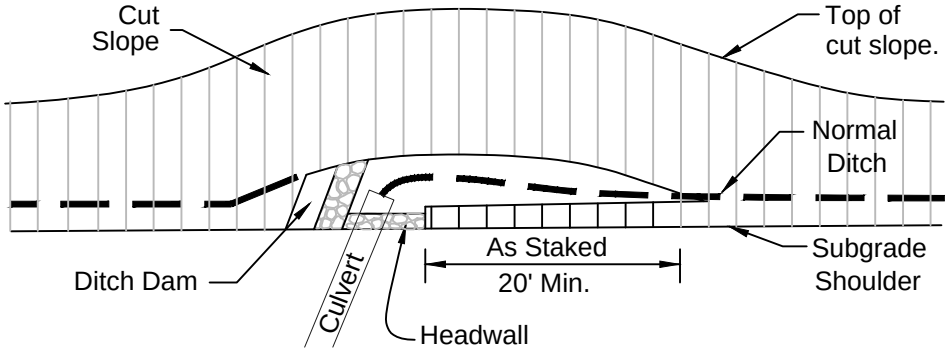


NOTE: All culverts shall be beveled at the inlet.

BEVELED INLET DETAIL



SKEW DIAGRAM



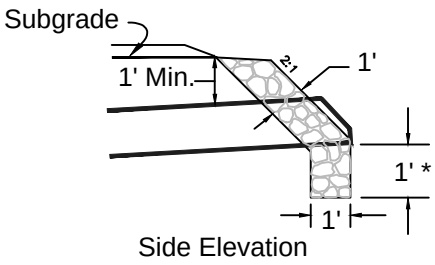
INLET CATCH BASIN DETAIL-PLAN VIEW
TYPE 2 & 3 CULVERT INSTALLATION

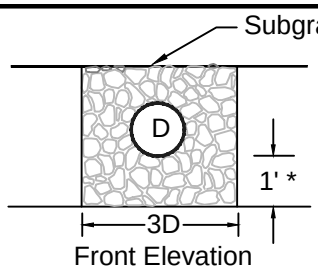
ANCHOR DESCRIPTION

Anchors (Each) shall consist of two 6' steel fence posts 1.5 lb./foot and No. 9 galvanized wire.
Posts shall be driven a minimum of 3' into the ground.
3 strands of wire shall be twisted together and encompass the entire circumference of the downpipe.
The number of Anchors sets per installation will be specified on the drawings.
1 set of Anchors will be required per 20' length of Plastic Downpipe.

NOT TO SCALE

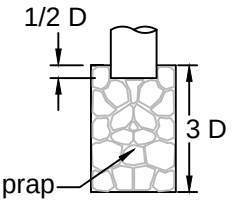
U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE PACIFIC NORTHWEST REGION–6		DATE: MAY 12, 2016 SHEET: 39 OF: 41
APPROVED:	DWG NO: 60275(A–E) – 1	DRAWN BY: U. S. FOREST SERVICE
PROJECT NAME: BANDERA–HANSEN THIN STEWARDSHIP		SHEET TITLE: CULVERT & DRAINAGE DETAILS



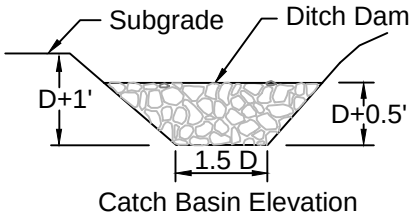


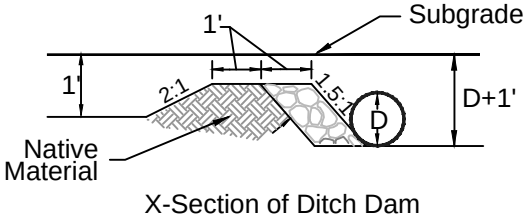
* For culvert over 24" in diameter otherwise 0'.

HAND-PLACED RIPRAP HEADWALL

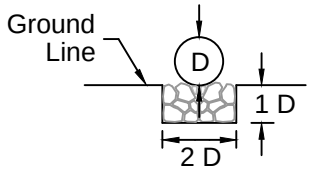


OUTLET APRON PLAN VIEW



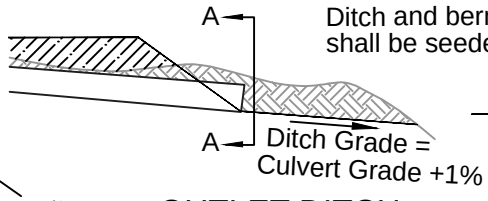


PLACED RIPRAP DITCH DAM

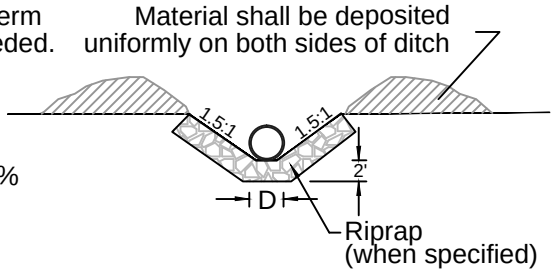


NOTE: Outlet apron shall be installed prior to setting the culvert. Apron surface shall be left with protruding riprap for velocity break.

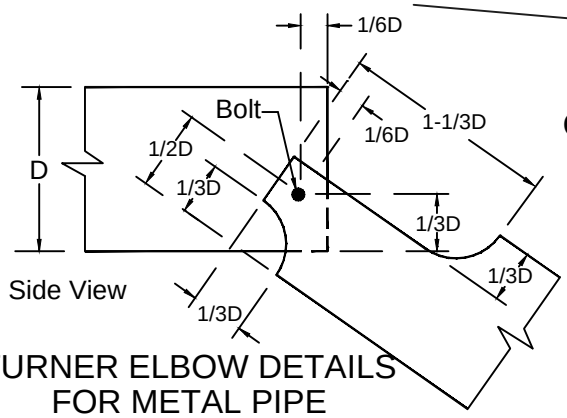
OUTLET APRON ELEV. VIEW



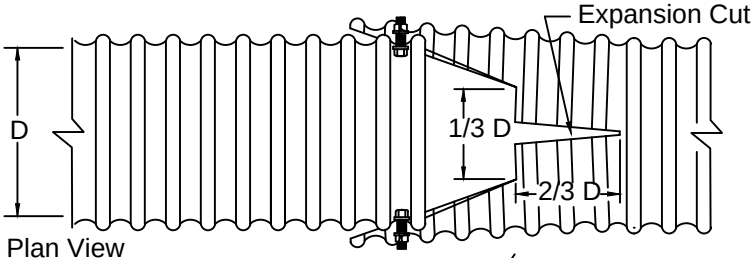
OUTLET DITCH

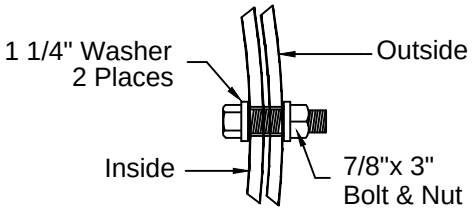


SECTION A-A OUTLET/LEAD-OFF DITCH

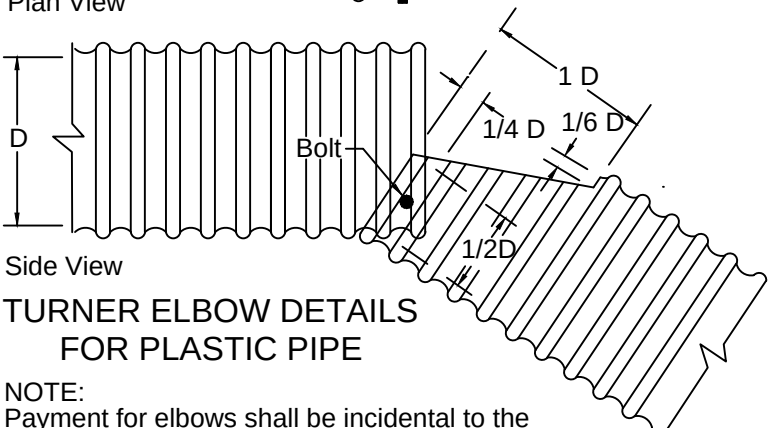


TURNER ELBOW DETAILS FOR METAL PIPE

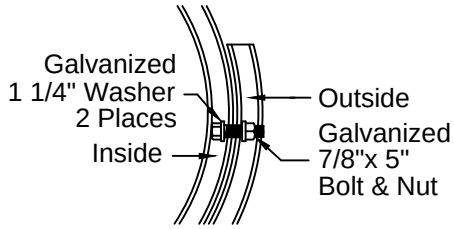




BOLT DETAIL FOR METAL PIPE



TURNER ELBOW DETAILS FOR PLASTIC PIPE



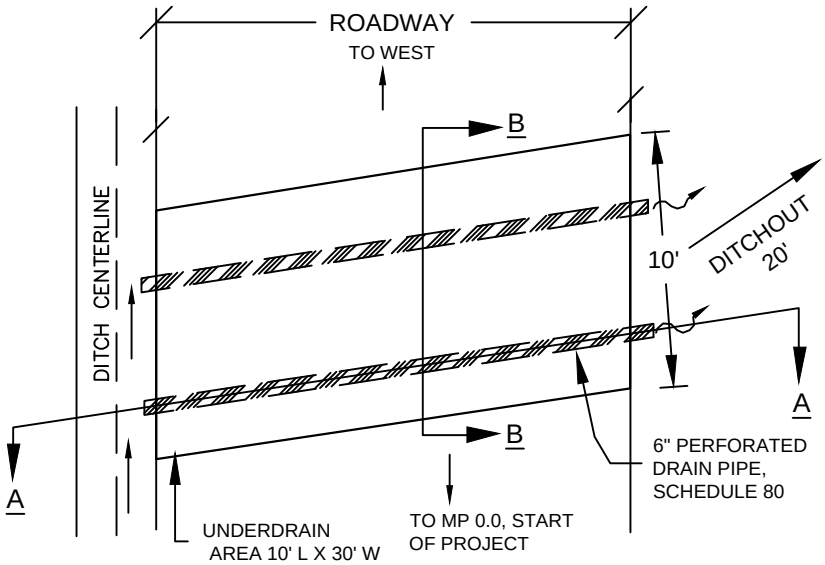
BOLT DETAIL FOR PLASTIC PIPE

NOTE:
Payment for elbows shall be incidental to the downdrain unless listed as a specific pay item.

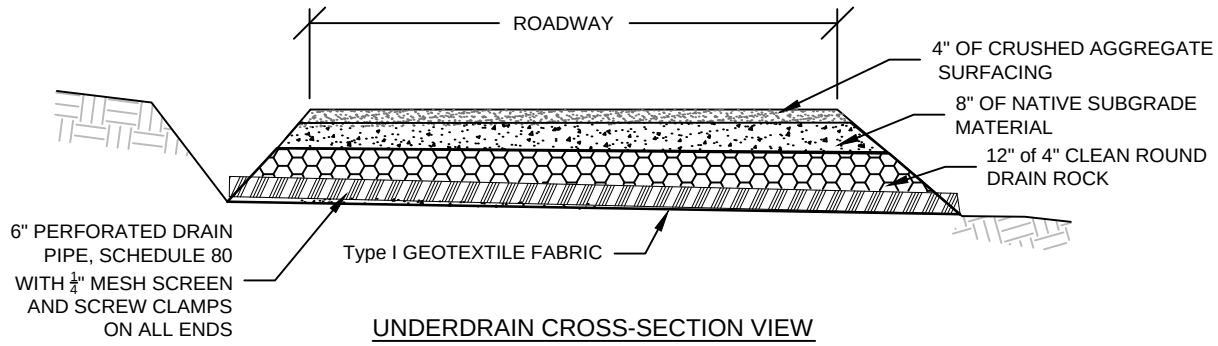
NOT TO SCALE

U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE PACIFIC NORTHWEST REGION–6		DATE: MAY 12, 2016 SHEET: 40 OF: 41
APPROVED:	DWG NO: 60275(A–E)–2	DRAWN BY: U. S. FOREST SERVICE
PROJECT NAME: BANDERA–HANSEN THIN STEWARDSHIP		SHEET TITLE: CULVERT & DRAINAGE DETAILS

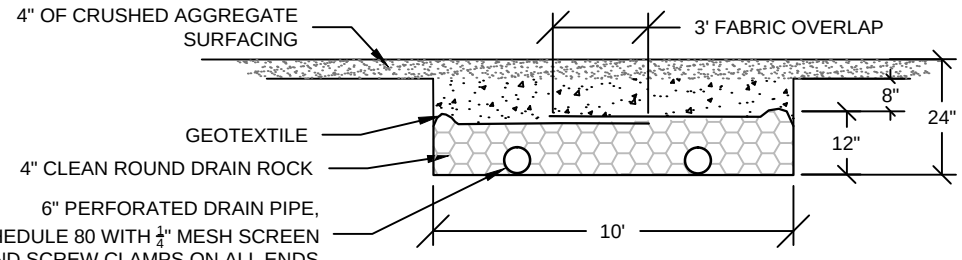
FSR 55 - MP 1.31 UNDERDRAIN



UNDERDRAIN PLAN VIEW



UNDERDRAIN CROSS-SECTION VIEW
SECTION A-A



UNDERDRAIN END VIEW
SECTION B-B

U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE PACIFIC NORTHWEST REGION—6		DATE: MAY 12, 2016 SHEET: 41 OF: 41
APPROVED:	DWG NO: 60501	DRAWN BY: U. S. FOREST SERVICE
PROJECT NAME: BANDERA—HANSEN THIN STEWARDSHIP		FILE NAME: FOREST ROAD 55 MP 1.32 UNDERDRAIN

811.01 Description

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

811.02 Maintenance Requirements

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

B. General

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

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

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

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

5. Where DESIGNATED ON THE GROUND, included in the ROAD LISTING, SHOWN ON THE DRAWINGS or as ordered by the Contracting Officer invasive species of concern prevention practices shall be followed as listed below.

Invasive Species of Concern Prevention Practices
• *For actions that will operate outside the limits of the road prism, require the cleaning of all heavy equipment prior to entering NFS Lands.* • *All equipment and gear that comes in contact with a known infestation must be cleaned before moving to non-infested areas within the project to avoid spreading the infestation further.*

C. Routine Blading

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

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

D. Compaction

Roads requiring compaction will be included in the ROAD LISTING. Unless Compaction Method B is designated in the ROAD LISTING, all traveled ways requiring compaction may be compacted by Method A. Compaction shall commence immediately following blading. Compaction methods are:

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

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

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

F. Intersections

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

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

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

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

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

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

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

812.01 Description

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

812.02 Materials

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

A. Water (H2O) will be obtained from sources SHOWN ON THE DRAWINGS or listed in the SUPPLEMENTAL SPECIFICATIONS to Section T-891 Water Supply, unless otherwise approved by the Contracting Officer.

B. Lignin Sulfonate (LIG S) Provide certification that the material meets the requirements of Subsection 725.20 of the "Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects (FP-03)" and the Forest Service Supplemental Specification 725.20.

C. Magnesium Chloride (MG CL2) Provide certification that that the material meets the requirements of Subsection 725.02 of the "Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects (FP03)" and the Forest Service Supplemental Specification 725.02.

D. Calcium Chloride Brine (CA CL2B). Provide certification that the material meets the requirements of Subsection 725.02 of the "Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects (FP03)" and the Forest Service Supplemental Specification 725.02.

E. Calcium Chloride Flake (CA CL2F). Provide certification that the material meets the requirements of Subsection 725.02 of the "Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects (FP03)" and the Forest Service Supplemental Specification 725.02.

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

812.03 Methods

As shown in the SUPPLEMENTAL SPECIFICATIONS, Contractor may utilize a variety of methods to decrease or eliminate the need for dust abatement.

812.04 Equipment

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

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

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

812.05 Maintenance Requirements

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

B. Apply all other dust palliatives at the rates and times agreeable to the Contracting Officer. The Road Listing shows the expected average application rate and may be varied to meet field conditions. Lignin Sulfonate, Magnesium Chloride, and Calcium Chloride Brine are listed as gallons per square foot of the undiluted product at fifty (50), thirty-three (33), and thirty-eight (38) percent respectively. Calcium Chloride Flake is listed in pounds per square foot at seventy-seven (77) percent concentration.

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

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

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

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

813.01 Description

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

813.02 Materials

A. Materials will be Government-furnished when stated in the supplemental specifications.

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

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

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

Material or methods appropriate for establishing invasive species of concern free status for the particular invasive species of concern are listed below.

Invasive Species of Concern and Acceptable Methods specific to this project:

Invasive Species of Concern	**Acceptable Methods**
	• *For actions that will operate within or outside the limits of the road prism, require the cleaning of all heavy equipment prior to entering NFS Lands.* • *All equipment and gear that comes in contact with a known infestation must be cleaned before moving to non-infested areas within the project to avoid spreading the infestation further.*

813.03 Maintenance Requirements

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

B. Mixing and Placing

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

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

C. Compaction Methods

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

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

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

T-831 - DITCH MAINTENANCE (10/07)

831.01 Description

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

831.02 Maintenance Requirements

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

B. Undercutting backslopes during removal operations is not permitted.

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

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

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

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

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

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

I. Where DESIGNATED ON THE GROUND, included in the ROAD LISTING, SHOWN ON THE DRAWINGS or as ordered by the Contracting Officer invasive species of concern prevention practices shall be followed as listed below:

Invasive Species of Concern Prevention Practices
• *For actions that will operate outside the limits of the road prism, require the cleaning of all heavy equipment prior to entering NFS Lands.* • *All equipment and gear that comes in contact with a known infestation must be cleaned before moving to non-infested areas within the project to avoid spreading the infestation further.*

T-832 - REMOVE AND END HAUL MATERIALS (05/07)

832.01 Description

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

832.02 Maintenance Requirements

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

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

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

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

D. Place all materials in disposal sites as specified in the SUPPLEMENTAL SPECIFICATIONS, as SHOWN ON THE DRAWINGS, or as ordered by the Contracting Officer.

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

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

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

834.01 Description

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

834.02 Maintenance Requirements

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

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

C. Hydraulic flushing of drainage structures is not allowed unless provided for in the SUPPLEMENTAL SPECIFICATIONS.

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

E. Where DESIGNATED ON THE GROUND, included in the ROAD LISTING, SHOWN ON THE DRAWINGS or as ordered by the Contracting Officer invasive species of concern prevention practices shall be followed as listed below.

Invasive Species of Concern Prevention Practices
• *For actions that will operate outside the limits of the road prism, require the cleaning of all heavy equipment prior to entering NFS Lands.* • *All equipment and gear that comes in contact with a known infestation must be cleaned before moving to non-infested areas within the project to avoid spreading the infestation further.*

T-835 - ROADWAY DRAINAGE MAINTENANCE (05/07)

835.01 Description

This work consists of providing post haul drainage on roads.

835.02 Maintenance Requirements

A. Drainage

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

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

3. Work to be done at staked locations shall be as indicated on the stake and/or stated in SUPPLEMENTAL SPECIFICATIONS:

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

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

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

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

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

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

B. Slides, Slumps and Slough

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

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

C. Entrance Devices

Upon completion of work, replace entrance devices to effectively eliminate access by motorized vehicles having four (4) wheels and a width in excess of 50 inches.

D. Seeding

Seed and fertilize all disturbed areas in accordance with requirements set forth in Section T-841.

T-839 - MAINTENANCE FOR PROJECT USE (05/07)

839.01 Description

Work consists of providing minimum access required for Contractor's Operations and associated Forest Service contract administration and preventing unacceptable resource or road damage.

839.02 Maintenance Requirements

A. Contractor is authorized to perform the following maintenance to provide vehicle passage and drainage:

1. Removing log, earth, and rock barriers and/or improving existing road junctions to enable vehicle access as mutually agreed.

2. Smoothing or filling existing cross ditches and water bars.

3. Installing Contractor-furnished culverts or other temporary drainage structures for shallow stream crossings as approved by the Contracting Officer.

4. Removing brush, fallen trees, rocks, and other materials from the traveled way and other locations that interfere with needed maintenance:

   a. Place all removed materials away from drainages.

   b. Limb and remove timber which meets utilization standards or deck at locations approved by the Contracting Officer. Scatter other woody materials, including limbs, off of and below the roadbed without creating concentrations.

5. Clean and recondition drainage structures in accordance with Section T-831 and Section T-834.

6. Reposition or ramp over slough and slides to provide adequate width of traveled way material.

7. Provide traveled way drainage above slumps and seal cracks in slump area. Ramp the slumps on both ends into undisturbed roadbed to provide usable width unless otherwise ordered by the Contracting Officer.

B. During use, the traveled way shall not channel water along the road. Prior to seasonal periods of anticipated rains and runoff, perform the following work:

1. Shape the traveled way and roadbed to drain.

2. Reinstall removed cross ditches and water bars and provide any additional drainage structures necessary to offset changes through use and maintenance.

3. Perform work outlined in 839.02 A (5), (6), and (7).

4. During periods of non use, replace original barrier or provide and maintain standard MUTCD, Type 3, barricades unless alternate type barriers are approved by the Contracting Officer.

839.03 Post Haul Requirements

A. Upon completion of project use perform such work as needed to reasonably conform to the character of the existing road prior to Contractor's maintenance for project use, unless otherwise provided in the SUPPLEMENTAL SPECIFICATIONS or the Road Listing. Work shall be in addition to requirements of 839.02 B and in accordance with 839.03 B and C.

B. Roads designated in the Road Listing to be blocked shall conform to the requirements of Section T-835. Unless otherwise approved by the Contracting Officer, remove Contractor-installed temporary structures from National Forest System land. Associated commercially-obtained materials shall remain the property of the Contractor.

C. Remove or reshape Contractor improvements at road junctions, as approved by the Contracting Officer at the time of improvement.

841.01 Description

This work consists of applying seed, fertilizer, mulch, and planting containerized or bare root plant stock singularly or in specified combinations to roadways and disposal areas. Work area may be limited to designated portions of the roadway and roadside or include treatment of the entire area bounded by the outer limits of the roadsides.

841.02 Materials and Application Rates

Provide the following listed materials:

A. Fertilizer: Fertilizer shall be a standard commercial grade and provide the minimum percentage of available nutrients designated.

% Nitrogen	% Phosphorus	% Potassium	% Sulfur

Furnish fertilizer in sealed containers with the composition, weight, and guaranteed analysis of contents clearly marked. Apply at the rate of <> pounds per acre.

B. Seed:

1. This work consists of furnishing and placing required seed mix on all areas disturbed under this contract and on any other areas specified.

2. Apply the seed in the following amounts and mixtures:

Name of Seed	% of Mixture	Rate (lbs/Acre)
Tufted Hairgrass	5%	4
Annual Ryegrass	13%	10
Winter Triticale	79%	60
Alsike Clover	3%	2
	100%	76 lbs/Acre

3. Use hand-operated seeding devices, or other devices approved by the Contracting Officer, to apply seed.

4. Furnish weed-free seed, with additional requirement that no seed containing any prohibited noxious weed seed, or any restricted noxious weed seed in excess of current state standards, for those weeds as defined in the current publication commonly referred to as the "All States Noxious Weed List" while the standards for prohibited and restricted noxious weeds are to be found in the appropriate state law or regulations.

Furnish seed separately or in mixture in standard containers with (1) seed name; (2) lot number; (3) net weight; (4) percentages of purity and of germination (in case of legumes, percentage of germination to include hard seed), and (5) percentage of maximum weed seed content clearly marked for each kind of seed; (6) certification that the seed lot meets applicable State and Federal laws with regard to prohibited and restricted noxious

weeds clearly marked for each kind of seed. Furnish the Contracting Officer duplicate signed copies of a certificate signed by a Registered Seed Technologist or Seed Analyst(certified through either the Association of Official Seed Analysts or the Society of Commercial Seed Technologists) certifying that each lot of seed has been tested in accordance with the Association of Official Seed Analysts standards within 12 months prior to the date of application. This certification shall include (1) name and address of laboratory, (2) date of test, (3) lot number for each kind of seed, (4) name of seed, (5) percentage of germination, (6) percentage of purity, (7) percentage of weed content, (8) certification that the seed lot meets applicable State and Federal laws with regard to prohibited and restricted noxious weeds, and (9) in the case of a mixture, the proportions of each kind of seed. Legume seed shall be inoculated with approved cultures in accordance with the instructions of the manufacturer. No seed may be applied without prior written approval from the Contracting Officer.

C. Mulch: Apply mulch materials as follows:

Mulch Type	Application Rate

D. Plant Stock: Furnish the following listed plant materials:

Stock	Size	Bare Root	Containerized

841.03 Schedules and Applications

A. Schedule

1. Seeding may not be done until all other ground-disturbing work on the road has been completed and accepted. Complete seeding as soon as other ground-disturbing work is accepted, unless a specific seeding season is listed below.

   Seeding season: <> to <>.

2. Do not apply the treatment when the ground is frozen or excessively wet. Terminate application during periods when there is too much wind to allow consistent treatment rates and control of the treatment area to the designated limits.

B. Roadside and Slope Treatment

1. Roadsides will not require advance preparation unless required in the SUPPLEMENTAL SPECIFICATIONS or as SHOWN ON THE DRAWINGS.

2. Apply the designated treatment by hand operated machine. When both roadbed (under 841.03C) and slopes are shown in the SUPPLEMENTAL SPECIFICATIONS for treatment, application may be done at the same time.

3. The Contractor will not be required to operate self-propelled equipment beyond the defined roadbed. Do not apply treatment materials to the foreslope of ditches unless roadbed treatment (841.03C) is also required.

C. Roadbed Treatment

1. Scarify portions of the roadbed not previously disturbed and left loose under Section T-835 to a minimum depth of 4 inches unless bedrock is encountered at a lesser depth. The maximum distance between furrows formed by scarification is 12 inches.

2. Treat barrier mounds placed under Section T-835 while in a roughened condition.

D. Planting

1. Plant designated woody plant materials at the staked locations or designated spacings.

2. Place containerized plant stock in an appropriately sized hole formed by a dibble or other device to place the roots at the proper depth.

3. Place bare root plant stock in a slotted cut formed by a mattocks, pulaski, or other edged tool. Place the crown at ground level. Do not bend or break the roots.

4. Compress the area adjacent to the hole by foot or special tool to form a depression up and down slope from the stem and force the soil against the container or roots with no air voids.

5. Hold the plantings firmly in place by the soil. When checked by pulling upward on the top ½ inch of the plant stem, the planting shall either break at the hold point or the area compressed against the roots show evidence of movement. Remove and replace with fresh stock plantings that are not held firmly by the soil.

841.04 Government Provided Materials

The Government will provide the following listed materials. At least ten (10) calendar days notice must be given to the Contracting Officer prior to actual date material will be picked up.

Materials will be provided at:

T-842 - CUTTING ROADWAY VEGETATION (10/07)

842.01 Description

This work consists of cutting all vegetative growth, including trees and other vegetation less than 4 inches in diameter measured 6 inches above the ground, on roadway surfaces and roadsides.

842.02 Maintenance Requirements

A. General

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

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

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

4. Correct damage to trunks of standing trees caused by Contractor's operation either by treatment with a commercial nursery sealer or by removing the tree as directed by the Contracting Officer.

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

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

B. Cutting Side Vegetation

1. Show the width of vegetation to be removed in the Road Listing.

2. Unless otherwise included in the SUPPLEMENTAL SPECIFICATIONS or DESIGNATED ON THE GROUND:

   a. Commence work at the edge of the traveled way and proceed away from the road centerline.

   b. Roads without a defined traveled way: The starting point for cutting will be marked on the ground or defined in the SUPPLEMENTAL SPECIFICATIONS.

3. The points for establishing cutting limits are as follows:

   a. Fill and daylighted (wide roadbed) section cutting commences at the edge of the traveled way and proceeds away from the road center line.

   b. Drainage ditched section cutting commences at the bottom of the existing ditch and proceeds away from the road center line. Cutting on ditch foreslopes is not required.

   c. Unditched cut section cutting commences at the intersection of the cutbank and the roadbed and proceeds away from center line.

4. Provide transitions between differing increments of cutting width. Accomplish transitions in a taper length of not less than 50 feet nor more than 70 feet.

C. Debris

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

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

3. Materials may be scattered down slope from the roadbed, outside of the work area and drainages unless otherwise listed in D. Invasive Species of Concern.

D. Invasive Species of Concern

Where DESIGNATED ON THE GROUND, included in the ROAD LISTING, SHOWN ON THE DRAWINGS or as ordered by the Contracting Officer invasive species of concern prevention practices shall be followed as listed below.

Invasive Species of Concern Prevention Practices
• *For actions that will operate outside the limits of the road prism, require the cleaning of all heavy equipment prior to entering NFS Lands.* • *All equipment and gear that comes in contact with a known infestation must be cleaned before moving to non-infested areas within the project to avoid spreading the infestation further.*

851.01 Description

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

851.02 Maintenance Requirements

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

B. Limb other material cut into lengths for handling. Deck outside ditches and drainages, off the traveled way and turnouts or at staked locations. The clearing width is to the edge of the roadway for public use roads, except limited use roads. The clearing width for limited use roads is shown in the specifications.

C. Notwithstanding K(T).3, blowdown timber outside Sale Area required to be removed, which meets Utilization Standards in A(T).2, when designated by the Contracting Officer is Included Timber subject to requirements of K(T).2.

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

891.01 Description

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

891.02 Materials

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

Map Key No.	Location Road	Location Milepost	User Restrictions
W	5500	0.94	See General Notes
W	5500	3.64	See General Notes
W	5510	2.50	See General Notes
W	9030	1.20	See General Notes
W	9030	2.43	See General Notes
W	9031	2.75	See General Notes

891.03 Equipment

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

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

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

891.04 Water Withdrawal Sources

Water Withdrawal shall only occur at the following locations stated in Section 891.02 and in compliance with all special criteria below. Submit a water withdrawal plan to the Contracting Officer for review and approval 7 days prior to starting work.

- Resident Fish/ Non fish-bearing Stream (all streams assumed to be fish-bearing unless written documentation from FS fish biologist documenting otherwise) -The withdrawal hose or pipe must be fitted with a screen with a minimum effective surface area of at least one square inch of functional screen area for every gallon per minute gpm) of water drawn through it, a round or square screen mesh that is no larger than 2.38 mm (3/32 or 0.094 inches) in the narrow dimension, or any other shape that is no larger than 1.75 mm (1/16 or 0.069 inches) in the narrow dimension.

- No more that 10% of the instantaneous stream flow may be removed. Streams may be sandbagged or have a weir placed across the stream to pond water. No soil shall be used to seal the water retention area and no logs or woody material from within the bankfull channel may be used. All sandbags or weirs shall be completely removed at the end of work season and prior to onset of rainy season

BANDERA-HANSEN THIN STEWARDSHIP
POST HAUL -DECOMMISSIONING

Forest Service Supplemental Specifications
Table of Contents

Preface

Preface_wo_03_15_2004_m

Delete all but the first paragraph and add the following:

The Forest Service, US Department of Agriculture has adopted FP-03 for construction of National Forest System Roads.

101 - Terms, Format, and Definitions

101.00_nat_us_07_25_2005

101.01_nat_us_01_22_2009

101.01 Meaning of Terms
Delete all references to the TAR (Transportation Acquisition Regulations) in the specifications.

101.03_nat_us_06_16_2006

101.03 Abbreviations.

Add the following to (a) Acronyms:

AFPA	American Forest and Paper Association
MSHA	Mine Safety and Health Administration
NIST	National Institute of Standards and Technology
NESC	National Electrical Safety Code
WCLIB	West Coast Lumber Inspection Bureau

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Add the following to (b) SI symbols:

mp	Milepost
ppm	Part Per Million

101.04_nat_us_03_29_2007

101.04 Definitions.

Delete the following definitions and substitute the following:

Bid Schedule--The Schedule of Items.

Bridge--No definition.

Contractor--The individual or legal entity contracting with the Government for performance of prescribed work. In a timber sale contract, the contractor is the “purchaser”.

Culvert--No definition.

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.

Add the following:

Adjustment in Contract Price--"Equitable adjustment," as used in the Federal Acquisition Regulations, or "construction cost adjustment," as used in the Timber Sale Contract, as applicable.

Change--"Change" means "change order" as used in the Federal Acquisition Regulations, or "design change" as used in the Timber Sale Contract.

Design Quantity--"Design quantity" is a Forest Service method of measurement from the FS-96 *Forest Service Specifications for the Construction of Roads and Bridges.* Under these FP specifications this term is replaced by the term "Contract Quantities".

Forest Service--The United States of America, acting through the Forest Service, U.S. Department of Agriculture.

Neat Line--A line defining the proposed or specified limits of an excavation or structure.

Pioneer Road--Temporary construction access built along the route of the project.

Purchaser--The individual, partnership, joint venture, or corporation contracting with the Government under the terms of a Timber Sale Contract and acting independently or through agents, employees, or subcontractors.

Protected Streamcourse--A drainage shown on the plans or timber sale area map that requires designated mitigation measures.

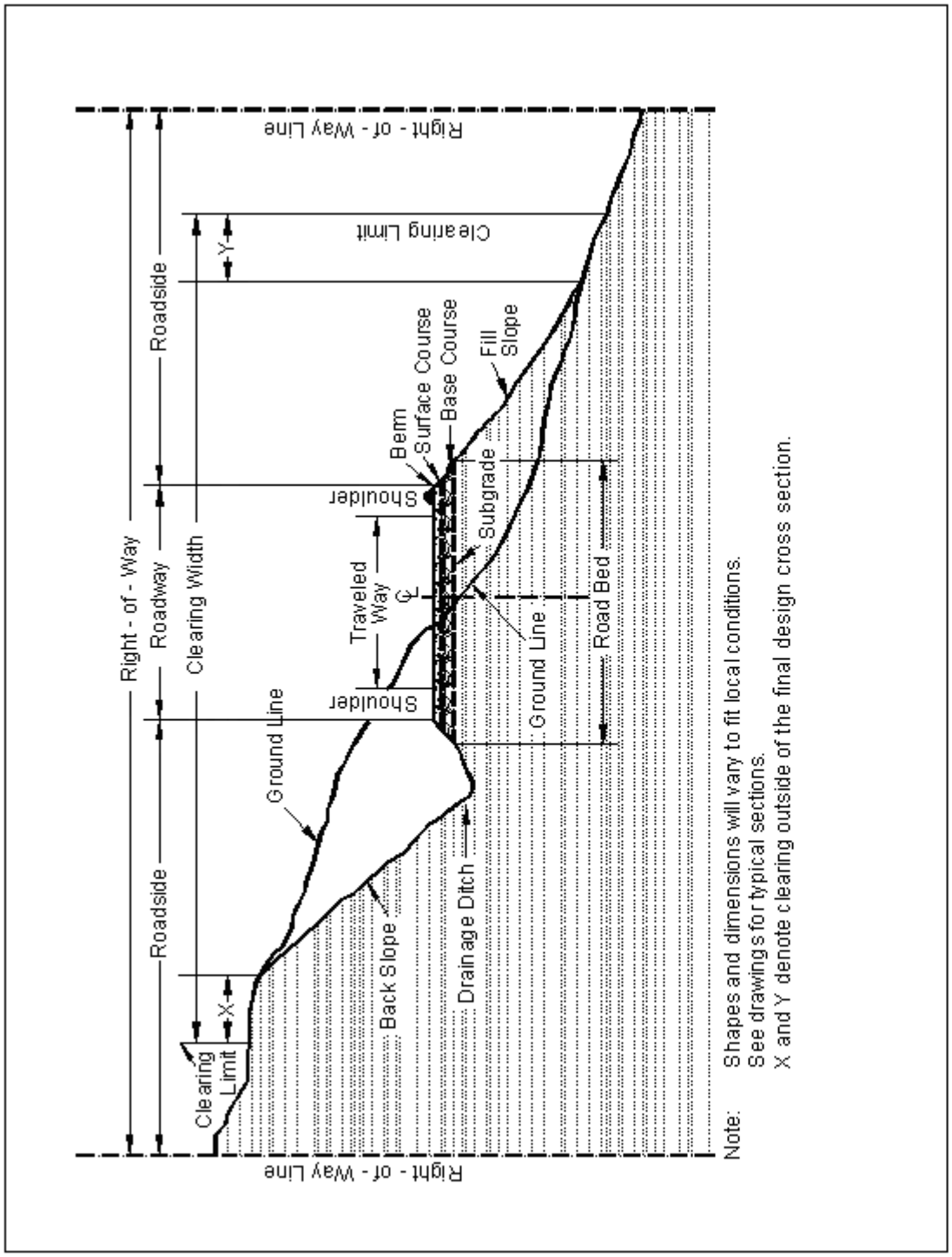
Road Order--An order affecting and controlling traffic on roads under Forest Service jurisdiction. Road Orders are issued by a designated Forest Officer under the authorities of 36 CFR, part 260.

Schedule of Items--A schedule in the contract that contains a listing and description of construction items, quantities, units of measure, unit price, and amount.

Utilization Standards--The minimum size and percent soundness of trees described in the specifications to determine merchantable timber.

Add Figure 101-1—Illustration of road structure terms:

Figure 101-1—Illustration of road structure terms.



102 Bid, Award, and Execution of Contract

Delete Section 102 in its entirety.

103 - Scope of Work

Deletions

Delete all but subsection 103.01 Intent of Contract.

104 - Control of Work

104.00_nat_us_06_16_2006

Deletions

Delete Sections 104.01, 104.02, and 104.04.

104.06_nat_us_02_17_2005

Add the following subsection:

104.06 Use of Roads by Contractor

The Contractor is authorized to use roads under the jurisdiction of the Forest Service for all activities necessary to complete this contract, subject to the limitations and authorizations designated in the Road Order(s) or described in the contract, when such use will not damage the roads or national forest resources, and when traffic can be accommodated safely.

105 - Control of Material

105.02_nat_us_01_18_2007

105.02 Material Sources.

105.02(a) Government-provided sources.

Add the following:

Comply with the requirements of 30 CFR 56, subparts B and H. Use all suitable material for aggregate regardless of size unless otherwise designated. When required, re-establish vegetation in disturbed areas according to section 625.

105.05_nat_us_05_12_2004

105.05 Use of Material Found in the Work.

Delete 105.05 (a) and (b) and the last sentence of the second paragraph and substitute the following:

Materials produced or processed from Government lands in excess of the quantities required for performance of this contract are the property of the Government. The Government is not obligated to make reimbursement for the cost of producing these materials.

106 - Acceptance of Work

106.07 Delete

Delete subsection 106.07.

107 - Legal Relations and Responsibility to the Public

107.05_nat_us_05_11_2004

107.05 Responsibility for Damage Claims.

Delete the entire subsection.

107.06_nat_us_06_16_2006

107.06 Contractor's Responsibility for Work.
Delete the following from the first paragraph.

"except as provided in Subsection 106.07".

107.09_nat_us_06_16_2006

107.09 Legal Relationship of the Parties.

Delete the entire subsection.

107.10_nat_us_06_16_2006

107.10 Environmental Protection.

Add the following:

Design and locate equipment repair shops, stationary refueling sites, or other facilities to minimize the potential and impacts of hazardous material spills on Government land.

Before beginning any work, submit a Hazardous Spill Plan. List actions to be taken in the event of a spill. Incorporate preventive measures to be taken, such as the location of mobile refueling facilities, storage and handling of hazardous materials, and similar information. Immediately notify the CO of all hazardous material spills. Provide a written narrative report form no later than 24 hours after the initial report and include the following:

- Description of the item spilled (including identity, quantity, manifest number, and other identifying information).
- Whether amount spilled is EPA or state reportable, and if so whether it was reported, and to whom.
- Exact time and location of spill including a description of the area involved.
- Containment procedures.
- Summary of any communications the Contractor had with news media, Federal, state and local regulatory agencies and officials, or Forest Service officials.
- Description of clean-up procedures employed or to be employed at the site including final disposition and disposal location of spill residue.

When available provide copies of all spill related clean up and closure documentation and correspondence from regulatory agencies.

The Contractor is solely responsible for all spills or leaks that occur during the performance of this contract. Clean up spills or leaks to the satisfaction of the CO and in a manner that complies with Federal, state, and local laws and regulations.

108 - Prosecution and Progress

108 Delete.

Delete Section 108 in its entirety.

109 - Measurement and Payment

109.00_nat_us_02_17_2005

109 Deletions

Delete the following entire subsections:

109.06 Pricing of Adjustments.

109.07 Eliminated Work.

109.08 Progress Payments.

109.09 Final Payment.

109.02_nat_us_06_16_2006

109.02 Measurement Terms and Definitions.

(b) Contract quantity.

Add the following:

Contract quantities will be adjusted only when there are errors in the original design of 15% or more.

Change the following:

"(b) Cubic yard" to "(c) Cubic yard".

Add the following definition:

(p) Thousand Board Feet (Mbf). 1,000 board feet based on nominal widths, thickness, and extreme usable length of each piece of lumber or timber actually incorporated in the job. For glued laminated timber, 1,000 board feet based on actual width, thickness, and length of each piece actually incorporated in the job.

155 - Schedules for Construction Contracts

155 Delete.

Delete Section 155 in its entirety.

204 - Excavation and Embankment

204.00_nat_us_03_26_2009

Replace Section 204 in its entirety with the following:

Description

204.01 This work consists of excavating material and constructing embankments. This includes furnishing, hauling, stockpiling, placing, disposing, sloping, shaping, compacting, and finishing earthen and rocky material.

204.02 Definitions.

(a) Excavation. Excavation consists of the following:

(1) Roadway excavation. All material excavated from within the right-of-way or easement areas, except subexcavation covered in (2) below and structure excavation covered in Sections 208 and 209. Roadway excavation includes all material encountered regardless of its nature or characteristics.

(2) Subexcavation. Material excavated from below subgrade elevation in cut sections or from below the original groundline in embankment sections. Subexcavation does not include the work required by Subsections 204.05, 204.06(b), and 204.06(c).

(3) Borrow excavation. Material used for embankment construction that is obtained from outside the roadway prism. Borrow excavation includes unclassified borrow, select borrow, and select topping.

(b) Embankment construction. Embankment construction consists of placing and compacting roadway or borrow excavation. This work includes:

(1) Preparing foundation for embankment;
(2) Constructing roadway embankments;
(3) Benching for side-hill embankments;
(4) Constructing dikes, ramps, mounds, and berms; and
(5) Backfilling subexcavated areas, holes, pits, and other depressions.

(c) Conserved topsoil. Excavated material conserved from the roadway excavation and embankment foundation areas that is suitable for growth of grass, cover crops, or native vegetation.

(d) Waste. Excess and unsuitable roadway excavation and subexcavation that cannot be used.

Material

204.03 Conform to the following Subsections:

Backfill material	704.03
Select borrow	704.07
Select topping	704.08
Topping	704.05
Unclassified borrow	704.06
Water	725.01

Construction Requirements

204.04 Preparation for Roadway Excavation and Embankment Construction. Clear the area of vegetation and obstructions according to Sections 201 and 203.

204.05 Reserved.

204.06 Roadway Excavation. Excavate as follows:

(a) General. Do not disturb material and vegetation outside the construction limits. Incorporate only suitable material into embankments. Replace any shortage of suitable material caused by premature disposal of roadway excavation. Dispose of unsuitable or excess excavation material according to Subsection 204.14.

At the end of each day's operations, shape to drain and compact the work area to a uniform cross-section. Eliminate all ruts and low spots that could hold water.

Retrieve material deposited outside of the clearing limits as directed by the CO. Place unsuitable material in designated areas.

(b) Rock cuts. Blast rock according to Section 205. Excavate rock cuts to 6 inches below subgrade within the roadbed limits. Backfill to subgrade with topping or with other suitable material. Compact the material according to Subsection 204.11

(c) Earth cuts. Scarify earth cuts to 6 inches below subgrade within the roadbed limits. Compact the scarified material according to Subsection 204.11.

(d) Pioneer Roads. Road pioneering, slash disposal, and grubbing of stumps may proceed concurrently with excavation. Conduct excavation and placement operations so material to be treated under Section 201 will not be incorporated into the roadway unless specified in the slash treatment method. Maintain drainage during pioneering operations.

Remove snow and ice in advance of the work and deposit beyond the roadway limits in a manner that will not waste material or generate sediment. Do not incorporate snow and ice into embankments. Place snow or ice in a manner to prevent resource damage.

204.07 Subexcavation. Excavate material to the limits designated by the CO. Take cross-sections according to Section 152. Prevent unsuitable material from becoming mixed with the backfill. Dispose of unsuitable material according to Subsection 204.14. Backfill the subexcavation with topping, or other suitable material. Compact the material according to Subsection 204.11.

204.08 Borrow Excavation. Use all suitable roadway excavation in embankment construction. Do not use borrow excavation when it results in excess roadway excavation. Deduct excess borrow excavation from the appropriate borrow excavation quantity.

Obtain borrow source acceptance according to Subsection 105.02. Develop and restore borrow sources according to Subsection 105.03. Do not excavate beyond the established limits. When applicable, shape the borrow source to permit accurate measurements when excavation is complete.

204.09 Preparing Foundation for Embankment Construction. Prepare foundation for embankment construction as follows:

(a) Embankment less than 4 feet high over natural ground. When designated, remove topsoil and break up the ground surface to a minimum depth of 6 inches by plowing or scarifying. Compact the ground surface according to Subsection 204.11.

(b) Embankments over an existing asphalt, concrete, or gravel road surface. Scarify gravel roads to a minimum depth of 6 inches. Scarify or pulverize asphalt and concrete roads to 6 inches below the pavement. Reduce all particles to a maximum size of 6 inches and produce a uniform material. Compact the surface according to Subsection 204.11.

(c) Embankment across ground not capable of supporting equipment. Dump successive loads of embankment material in a uniformly distributed layer to construct the lower portion of the embankment. Limit the layer thickness to the minimum depth necessary to support the equipment.

(d) Embankment on an existing slope steeper than 1V:3H. Cut horizontal benches in the existing slope to a sufficient width to accommodate placement and compaction operations and equipment. Bench the slope as the embankment is placed and compacted in layers. Begin each bench at the intersection of the original ground and the vertical cut of the previous bench.

204.10 Embankment Construction. Incorporate only suitable roadway excavation material into the embankment. When the supply of suitable roadway excavation is exhausted, furnish unclassified borrow to complete the embankment. Obtain written approval before beginning construction of embankments over 6 feet high at subgrade centerline. Construct embankments as follows:

(a) General. At the end of each day's operations, shape to drain and compact the embankment surface to a uniform cross-section. Eliminate all ruts and low spots that could hold water.

During all stages of construction, route and distribute hauling and leveling equipment over the width and length of each layer of material.

Compact embankment side slopes flatter than 1V:1.75H with a tamping type roller or by walking with a dozer. For slopes 1V:1.75H or steeper, compact the slopes as construction of the embankment progresses.

Where placing embankment on one side of abutments, wing walls, piers, or culvert headwalls, compact the material using methods that prevent excessive pressure against the structure.

Where placing embankment material on both sides of a concrete wall or box structure, conduct operations so compacted embankment material is at the same elevation on both sides of the structure.

Where structural pilings are placed in embankment locations, limit the maximum particle size to 4 inches.

(b) Embankment within the roadway prism. Place embankment material in horizontal layers not exceeding 12 inches in compacted thickness. Incorporate oversize boulders or rock fragments into the 12-inch layers by reducing them in size or placing them individually as required by (c) below. Compact each layer according to Subsection 204.11 before placing the next layer.

Material composed predominately of boulders or rock fragments too large for 12-inch layers may be placed in layers up to 24 inches thick. Incorporate oversize boulders or rock fragments into the 24-inch layer by reducing them in size or placing them individually according to (c) below. Place sufficient earth and smaller rocks to fill the voids. Compact each layer according to Subsection 204.11 before placing the next layer.

(c) Individual rock fragments and boulders. Place individual rock fragments and boulders greater than 24 inches in diameter as follows:

(1) Reduce rock to less than 48 inches in the largest dimension.

(2) Distribute rock within the embankment to prevent nesting.

(3) Place layers of embankment material around each rock to a depth not greater than that permitted by (b) above. Fill all the voids between rocks.

(4) Compact each layer according to Subsection 204.11 before placing the next layer.

(d) Embankment outside of roadway prism. Where placing embankment outside the staked roadway prism, place material in horizontal layers not exceeding 24 inches in compacted thickness. Compact each layer according to Subsection 204.11.

204.11 Compaction. Compact the embankment using one of the following methods as specified:

(a) <u>Compaction A.</u> Use AASHTO T 27 to determine the amount of material retained on a Number 4 sieve. If there is more than 80 percent retained on the No. 4 sieve use procedure (1). If there is 50 to 80 percent retained on the No. 4 sieve use procedure (2). If there is less than 50 percent retained on the No. 4 sieve use procedure (3).

(1) Adjust the moisture content to a level suitable for compaction. Fill the interstices around rock with earth or other fine material as practical. Use compression-type rollers at speeds

less than 6feet per second and vibratory rollers at speeds less than 3 feet per second. Compact each layer of material full width with one of the following and until there is no visible evidence of further consolidation.

(a) Four roller passes of a vibratory roller having a minimum dynamic force of 40,000 pounds impact per vibration and a minimum frequency of 1000 vibrations per minute.
(b) Eight roller passes of a 20-ton compression-type roller.
(c) Eight roller passes of a vibratory roller having a minimum dynamic force of 30,000 pounds impact per vibration and a minimum frequency of 1000 vibrations per minute.

Increase the compactive effort for layers deeper than 12 inches as follows:

- For each additional 6 inches or fraction thereof, increase the number of roller passes in (a) above by four passes.
- For each additional 6 inches or fraction thereof, increase the number of roller passes in (b) and (c) above, by eight passes.

(2) Use AASHTO T 99 to determine the optimum moisture content of the portion of the material passing a No. 4 sieve. Multiply this number by the percentage of material passing a No. 4 sieve, and add 2 percent to determine the optimum moisture content of the material. Adjust the moisture content of material classified A-1 through A-5 to a moisture content suitable for compaction. Adjust the moisture content of material classified A-6 and A-7 to within 2 percent of the optimum moisture content.

Use compression-type rollers at speeds less than 6 feet per second and vibratory rollers at speeds less than 3 feet per second. Compact each layer of material full width according to (1) above.

(3) Classify the material according to AASHTO M 145. For material classified A-1 or A-2-4, determine the maximum density according to AASHTO T 180, method D. For other material classifications, determine the optimum moisture content and maximum density according to AASHTO T 99, method C.

Adjust the moisture content of material classified A-1 through A-5 to a moisture content suitable for compaction. Adjust the moisture content of material classified A-6 and A-7 to within 2 percent of the optimum moisture content.

Use compression-type or vibratory rollers. Compact each layer of material full width to at least 95 percent of the maximum density. Determine the in-place density and moisture content according to AASHTO T 310 or other approved test procedures. When required, use AASHTO T 224 to correct for coarse particles.

(b) Compaction B. Place material by end dumping to the minimum depth needed for operation of spreading equipment. Adjust the moisture content of the material to obtain a mass that will not visibly deflect under the load of the hauling and spreading equipment. Operate compaction equipment over the full width of each layer until there is no visible evidence of further

consolidation or, if when a sheepsfoot roller is used, the roller "walks out" of the layer. Make at least three complete passes.

(c) Compaction C. Place material by end dumping to the minimum depth needed for operation of spreading equipment. Level and smooth each embankment layer before placing the next layers. Operate hauling and spreading equipment uniformly over the full width of each layer. Construct a solid embankment with adequate compaction by working smaller rock and fines in with the larger rocks to fill the voids, and by operating hauling and spreading equipment uniformly over the full width of each layer as the embankment is constructed.

204.12 Ditches. Slope, grade, and shape ditches. Remove all projecting roots, stumps, rock, or similar matter. Maintain all ditches in an open condition and free from leaves, sticks, and other debris.

Form furrow ditches by plowing or using other acceptable methods to produce a continuous furrow. Place all excavated material on the downhill side so the bottom of the ditch is approximately 18 inches below the crest of the loose material. Clean the ditch using a hand shovel, ditcher, or other suitable method. Shape to provide drainage without overflow.

204.13 Sloping, Shaping, and Finishing. Complete slopes, ditches, culverts, riprap, and other underground minor structures before placing aggregate courses. Slope, shape, and finish as follows:

(a) Sloping. Leave all earth slopes with uniform roughened surfaces, except as described in (b) below, with no noticeable break as viewed from the road. Except in solid rock, round tops and bottoms of all slopes including the slopes of drainage ditches. Round material overlaying solid rock to the extent practical. Scale all rock slopes. Slope rounding is not required on tolerance class D though M roads.

If a slide or slipout occurs on a cut or embankment slope, remove or replace the material, and repair or restore all damage to the work. Bench or key the slope to stabilize the slide. Reshape the cut or embankment slope to an acceptable condition.

(b) Stepped slopes. Where required by the contract, construct steps on slopes of 1⅓V:1H to 1V:2H. Construct the steps approximately 18 inches high. Blend the steps into natural ground at the end of the cut. If the slope contains nonrippable rock outcrops, blend steps into the rock. Remove loose material found in transitional area. Except for removing large rocks that may fall, scaling stepped slopes is not required.

(c) Shaping. Shape the subgrade to a smooth surface and to the cross-section required. Shape slopes to gradually transition into slope adjustments without noticeable breaks. At the ends of cuts and at intersections of cuts and embankments, adjust slopes in the horizontal and vertical planes to blend into each other or into the natural ground.

(d) Finishing. Finish the roadbed to be smooth and uniform, and shaped to conform to the typical sections. Remove unsuitable material from the roadbed and replace it with suitable material. Finish roadbeds to the tolerance class shown in table 204-2.Ensure that the subgrade is visibly

moist during shaping and dressing. Scarify to 6 inches below the bottom of low sections, holes, cracks, or depressions and bring back to grade with suitable material. Maintain proper ditch drainage.

For surfaced roads, remove all material larger than 6 inches from the top 6 inches of the roadbed.

For unsurfaced roads, use one of the following methods to finish the roadbed:

(1) Method A. Remove all material larger than 6 inches from the top 6 inches of the roadbed and replace with suitable material.
(2) Method B. Use a vibratory grid roller or approved equal with a minimum weight of 10 tons. Roll at least 5 full-width passes or until there is no visible evidence of further consolidation.
(3) Method C. For roads designated as Construction Tolerance Class K, L, or M, finish the roadbed by spreading the excavation. Eliminate rock berms.

204.14 Disposal of Unsuitable or Excess Material. Dispose of unsuitable or excess material at designated sites or legally off of the project.

When there is a pay item for waste, shape and compact the waste material in its final location. Do not mix clearing or other material not subject to payment with the waste material.

204.15 Acceptance. See Table 204-1 for sampling and testing requirements.

Material for embankment and conserved topsoil will be evaluated under Subsections 106.02 and 106.04.

Excavation and embankment construction will be evaluated under Subsections 106.02 and 106.04.

Clearing and removal of obstructions will be evaluated under Sections 201 and 203.

Measurement

204.16 Measure the Section 204 items listed in the bid schedule according to Subsection 109.02 and the following as applicable.

(a) Roadway excavation. Measure roadway excavation in its original position as follows:

(1) Include the following volumes in roadway excavation:
(a) Roadway prism excavation;
(b) Rock material excavated and removed from below subgrade in cut sections;
(c) Unsuitable material below subgrade and unsuitable material beneath embankment areas when a pay item for subexcavation is not shown in the bid schedule;
(d) Ditches, except furrow ditches measured under a separate bid item;
*(e*Topsoil;
(f) Borrow material used in the work when a pay item for borrow is not shown in the

bid schedule;
(g) Loose scattered rocks removed and placed as required within the roadway;
(h) Conserved material taken from stockpiles and used in Section 204 work; and
(i) Slide and slipout material not attributable to the Contractor's method of operation.

(2) Do not include the following in roadway excavation:
(a) Overburden and other spoil material from borrow sources;
(b) Overbreakage from the backslope in rock excavation;
(c) Water or other liquid material;
(d) Material used for purposes other than required;
(e) Roadbed material scarified in place and not removed;
(f) Material excavated when stepping cut slopes;
(g) Material excavated when rounding cut slopes;
(h) Preparing foundations for embankment construction;
(i) Material excavated when benching for embankments;
(j) Slide or slipout material attributable to the Contractor's method of operation;
(k) Conserved material taken from stockpiles constructed at the option of the Contractor; and
(l) Material excavated outside the established slope limits.

(3) When both roadway excavation and embankment construction pay items are shown in the bid schedule, measure the following as roadway excavation only:
(a) Unsuitable material below subgrade in cuts and unsuitable material beneath embankment areas when a pay item for subexcavation is not shown in the bid schedule;
(b) Slide and slipout material not attributable to the Contractor’s method of operations; and
(c) Drainage ditches, channel changes, and diversion ditches.

(b) Unclassified borrow, select borrow, and select topping. When measuring by the cubic yard measure in its original position. If borrow excavation is measured by the cubic yard in place, take initial cross-sections of the ground surface after stripping overburden. Upon completion of excavation and after the borrow source waste material is returned to the source, retake cross-sections before replacing the overburden.
Do not measure borrow excavation used in place of excess roadway excavation.

(c) Embankment construction. Measure embankment construction in its final position. Do not make deductions from the embankment construction quantity for the volume of minor structures.

(1) Include the following volumes in embankment construction:
(a) Roadway embankments;
(b) Material used to backfill subexcavated areas, holes, pits, and other depressions;
(c) Material used to restore obliterated roadbeds to original contours; and
(d) Material used for dikes, ramps, mounds, and berms.

(2) Do not include the following in embankment construction:

(a) Preparing foundations for embankment construction;
(b) Adjustments for subsidence or settlement of the embankment or of the foundation on which the embankment is placed; and
(c) Material used to round fill slopes.

(d) Rounding cut slopes. Measure rounding cut slopes horizontally along the centerline of the roadway if a pay item for slope rounding is included in the bid schedule. If a pay item for slope rounding is not included in the bid schedule slope rounding will be considered subsidiary to excavation.

(e) Waste. Measure waste by the cubic yard in its final position. Take initial cross-sections of the ground surface after stripping over burden. Upon completion of the waste placement, retake cross-sections before replacing overburden.

(f) Slope scaling. Measure slope scaling by the cubic yard in the hauling vehicle.

Payment

204.17 The accepted quantities will be paid at the contract price per unit of measurement for the Section 204 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Table 204-1
Sampling and Testing Requirements

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Topping (704.05) & unclassified borrow (704.06)	Measured and tested for conformance (106.04)	Classification	—	AASHTO M 145	1 per soil type	Processed material before incorporating in work	Yes, when requested	Before using in work
		Moisture-density	—	AASHTO T 180, method D(1) or T 99, method C(1)	1 per soil type but not less than 1 per 13,000 yd^3	"	"	"
		Compaction	—	AASHTO T 310 or other approved procedures	1 per 6000 yd^2 but not less than 1 per layer	In-place	—	Before placing next layer
Select borrow (704.07 & Select topping (704.08)	Measured and tested for conformance (106.04)	Classification	—	AASHTO M 145	1 per soil type but not less than 1 for each day of production	Processed material before incorporating in work	Yes, when requested	Before using in work
		Gradation	—	AASHTO T 27 & T 11	"	"	"	"
		Liquid limit	—	AASHTO T 89	"	"	"	"
		Moisture-density	—	AASHTO T 180, method D(1) or T 99, method C(1)	1 per soil type but not less than 1 per 13,000 yd^3	"	"	"
		Compaction	—	AASHTO T 310 or other approved procedures	1 per 6000 yd^2 but not less than 1 per layer	In-place	—	Before placing next layer

(1) Minimum of 5 points per proctor

Table 204-1 (continued)
Sampling and Testing Requirements

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Earth embankment (204.11, Compaction A)	Measured and tested for conformance (106.04)	Classification	—	AASHTO M 145	1 per soil type	Source of Material	Yes, when requested	Before using in work
		Moisture-density	—	AASHTO T 180, method D(1) or T 99, method C(1)	1 per soil type but not less than 1 per 13,000 yd^3	"	"	"
		Compaction	—	AASHTO T 310 or other approved procedures	1 per 3500 yd^2 but not less than 1 per layer	In-place	—	Before placing next layer
Top of subgrade (204.11 Compaction A)	Measured and tested for conformance (106.04)	Compaction	—	AASHTO T 310 or other approved procedures	1 per 2500 yd^2	In-place	—	Before placing next layer

(1) Minimum of 5 points per proctor.

Table 204-2
Construction Tolerances

	Tolerance Class [a]												
	A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**
Roadbed width (ft)	+0.5	+0.5	+1.0	+1.0	+1.0	+1.0	+1.5	+1.0	+2.0	+2.0	+2.0	+2.0	+2.0
Subgrade elevation (ft)	±0.1	±0.2	±0.2	±0.5	±0.5	±1.0	±1.0	±1.5	±2.0	±3.0	±2.0	±3.0	(c)
Centerline alignment (ft)	±0.2	±0.2	±0.5	±0.5	±1.0	±1.0	±1.5	±1.5	±2.0	±3.0	±3.0	±5.0	(c)
Slopes, excavation, and embankment (% slope[b])	±3	±5	±5	±5	±5	±5	±10	±10	±10	±10	±20	±20	±20

(a) Maximum allowable deviation from construction stakes and drawings.
(b) Maximum allowable deviation from staked slope measured from slope stakes or hinge points.
(c) Unless otherwise shown the centerline alignment and subgrade elevation, as built, have no horizontal curves with a radius of less than 80 feet, and no vertical curves with a curve length of less than 80 feet when the algebraic difference in the grade change is less than 10 percent, or a curve length of less than 100 feet when the algebraic difference of the grade change is greater than or equal to 10 percent. The centerline grade is not to exceed 20 percent in 100 feet of length.

625 - Turf Establishment

625.3 General.

Delete this subsection and replace with the following:

Apply turf establishment to the areas shown on the plans or worklists within ***14*** days after completion of ground disturbing activities. Unless otherwise specified in writing by the CO apply turf establishment after ***ALL*** sections of road has been constructed to template lines. Seeded areas damaged by construction activities shall be reseeded within 10 days of the damage. Do not seed during windy weather or when the ground is excessively wet, frozen, or snow covered.

Assure that all seed and mulch used in the work conforms to the weed free requirements of Section 713.

625.4 Preparing Seedbed.

Delete entire subsection and replace with the following:

Ensure that the surface soil is in a roughened condition favorable for germination and growth.

625.5 Watering

Delete entire subsection.

625.6 Fertilizing.

Delete entire subsection and replace with the following:

Apply fertilizer having a chemical analysis as listed below by the following methods.

(a) Dry Method. Apply the fertilizer with approved mechanical equipment. Hand operated methods are satisfactory on areas inaccessible to mechanical equipment.

(b) Hydraulic method. Use hydraulic-type equipment capable of providing a uniform application using water as the carrying agent. Add fertilizer to the slurry and mix before adding seed. Add the tracer material when designated by the CO.

625.7 Seeding.

Delete the first sentence and add the following.

Apply seed mix by the following methods**:**

(c) Dry method. Delete the third sentence.

Add the following after subsection (b).

Seed Mix. Furnish and apply the following kinds and amounts of pure live seed:

Seed Mix C1 – ≤3500' Elevation

Soil Not Droughty, Not Saturated; Site Not Adjacent to Wetlands

Name of Seed	% of Mixture	Application Rate (lbs/Acre)
Hairgrass, Tufted	3%	0.5
Wildrye, Blue	39%	8
Brome, Mountain	29%	6
Fescue, Native Red	29%	6
	100%	20.5 lbs/Acre

625.8 Mulching.

Delete the entire subsection and replace with the following:

Apply Mulch within ***24*** hours after seeding by the following methods.

(d) Dry Method. Apply mulch with a hand spreader or a spreader utilizing forced air at a rate of ***3000*** pounds per acre. Anchor the mulch with an approved stabilizing emulsion tackifier at a rate of ***None*** gallons per acre. Do not mark or deface structure, pavements, utilities, or plant growth with tackifier.

(e) Hydraulic Method. Apply mulch in a separate application from the seed using hydraulic-type equipment according to Subsection 625.07(b).

Apply wood fiber or grass straw cellulose fiber mulch at a rate of ***N/A*** pounds per acre.

Apply bonded fiber matrix hydraulic mulch at a minimum rate of ***N/A*** pounds per acre. Apply so no hole in the matrix is greater than 0.04 inches. Apply so that no gaps exist between the matrix and the soil.

Inaccessible areas and areas less than 1/10 of an acre may be mulched by hand. Apply mulch uniformly over the entire disturbed area.

625.11 Measurement.

Delete the entire Subsection and replace with the following:

Measure the Section 625 items listed in the bid schedule according to Subsection 109.02.

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE -- REGION SIX

MT. BAKER - SNOQUALMIE NATIONAL FOREST

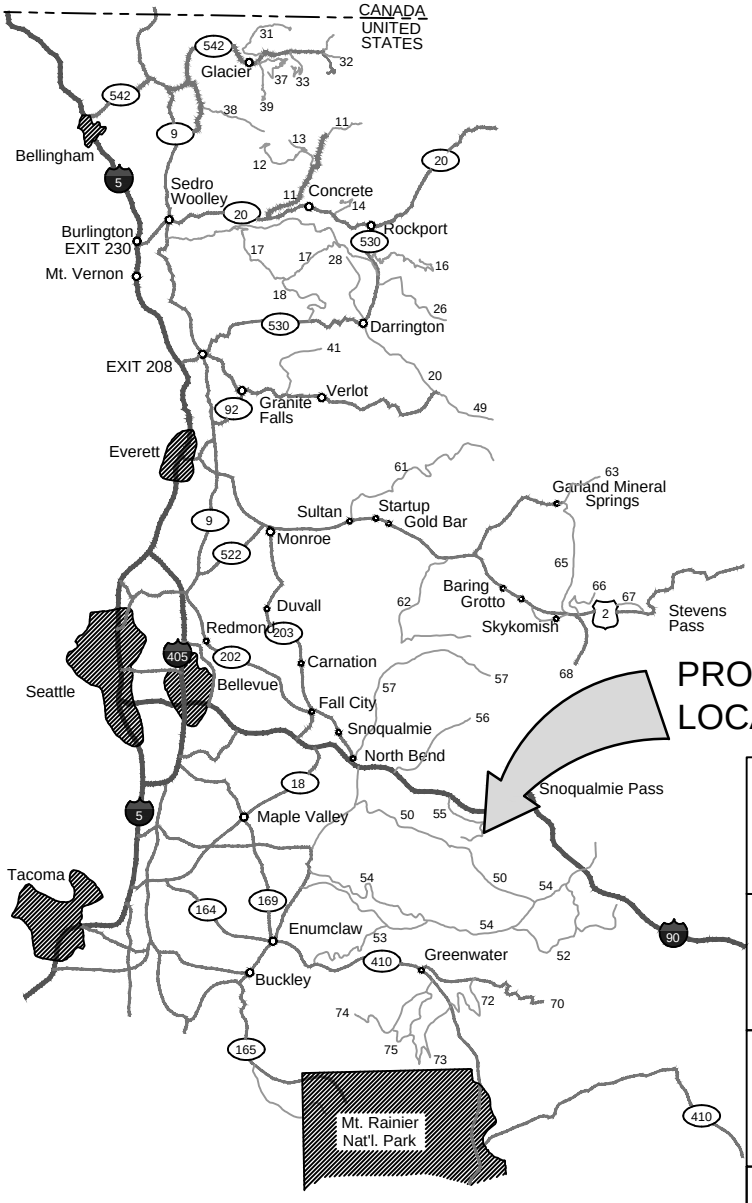
SNOQUALMIE RANGER DISTRICT

DRAWINGS FOR PROPOSED

BANDERA-HANSEN THIN STEWARDSHIP POST HAUL - DECOMMISSIONING

ROAD NO.	MP to MP	MILES
5510110	0.00 to 1.15	1.15
5510120	0.00 to 1.00	1.00
	TOTAL	2.15

INDEX TO SHEETS



VICINITY MAP

N

STATE OF WASHINGTON

PREPARED BY:

NAME DESIGN ENGINEER DATE

REVIEWED BY:

NAME PROJECT TEAM LEADER DATE

REVIEWED BY:

NAME ASSISTANT FOREST ENGINEER DATE

RECOMMENDED BY:

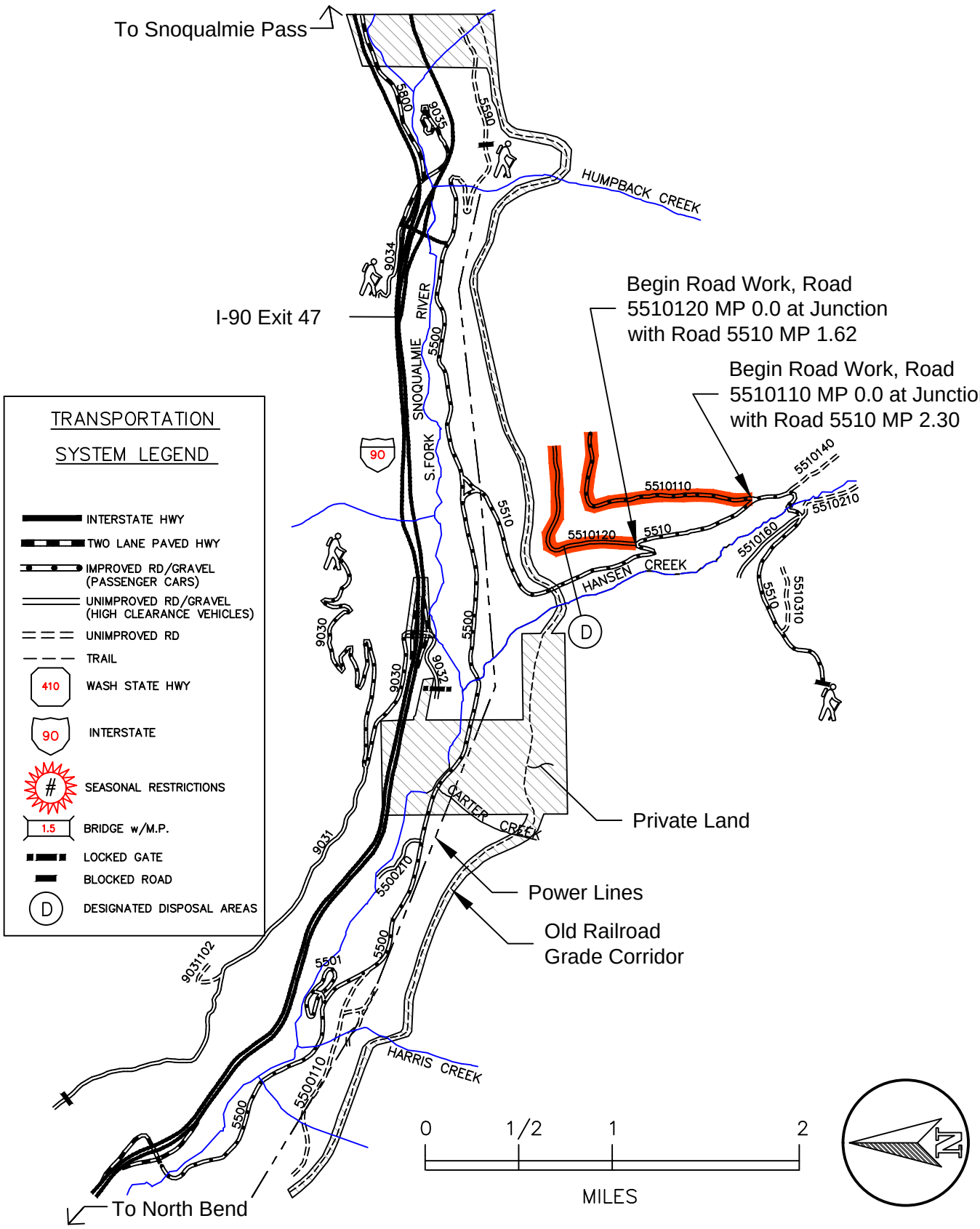
NAME FOREST ENGINEER DATE

APPROVED BY:

NAME DISTRICT RANGER DATE

SHEET	OF
2	10

BANDERA-HANSEN THIN STEWARDSHIP
POST HAUL - DECOMMISSIONING
PROJECT LOCATION MAP



BANDERA-HANSEN THIN STEWARDSHIP
POST HAUL - DECOMMISSIONING

SUMMARY OF QUANTITIES

ROAD #5510110

PAY ITEM	DESCRIPTION OF WORK	UNIT	QUANTITY
15101	MOBILIZATION (INCLUDES CLEANING OF EQUIPMENT, TRAFFIC CONTROL, AND SANITATION)	LS	1
20301	REMOVAL OF EXISTING CULVERT	EACH	7
20420A	DRAINAGE EXCAVATION - WATERBAR	EACH	2
20420B	DRAINAGE EXCAVATION - DRAINAGE FEATURE	EACH	7
20427	EARTH BERM	EACH	1
*21103	ROADWAY OBLITERATION, METHOD 1	MILE	1.08
*62501	SEEDING, DRY METHOD WITH MULCH (SEED MIX C1)	ACRE	5.25

ROAD #5510120

PAY ITEM	DESCRIPTION OF WORK	UNIT	QUANTITY
15101	MOBILIZATION (INCLUDES CLEANING OF EQUIPMENT, TRAFFIC CONTROL, AND SANITATION)	LS	1
20301	REMOVAL OF EXISTING CULVERT	EACH	6
20420B	DRAINAGE EXCAVATION - DRAINAGE FEATURE	EACH	5
20427	EARTH BERM	EACH	1
*20429	END HAUL	CY	300
*21103	ROADWAY OBLITERATION, METHOD 1	MILE	0.95
*62501	SEEDING, DRY METHOD WITH MULCH (SEED MIX C1)	ACRE	4.85

*Item is a Contract Quantity (See FP-03 Section 109.02)

BANDERA-HANSEN THIN STEWARDSHIP
POST HAUL - DECOMMISSINING

WORK DESCRIPTION LIST

SHEET 4 OF 10

Rd. #5510120 - MP 0.00 to 1.00

Mile Post	*Item*	*Description*	*Units*	*Estimated Quantity*
0.00		**Begin Road 5510120 - Junction with Road 5510, MP 1.62**		
0.01	20427	Construct Earth Berm just prior to culvert location	EACH	1
	21103	**Begin Road Obliteration - Leave 3' Wide Walking Path**	MILE	0.95
	62501	**Place Seed and Mulch** (Estimated 40' wide x 1.0 Mile Long)	ACRE	4.85
0.01	20301	Remove existing 18" culvert	EACH	1
	20420B	Construct Drainage Feature, 3' wide channel	EACH	1
0.11	20301	Remove existing 18" culvert	EACH	1
	20420B	Construct Drainage Feature, 3' wide channel	EACH	1
0.35-0.40		**Existing Rock Pit, do not Obliterate**		
0.60-0.63	20429	Slide area, end haul shoulder fill to rock pit at MP 0.37	CY	300
0.61	20301	Remove existing 18" culvert	EACH	1
	20420B	Construct Drainage Feature, 3' wide channel	EACH	1
0.69	20301	Remove existing 18" culvert	EACH	1
	20420B	Construct Drainage Feature, 3' wide channel	EACH	1
0.89	20301	Remove existing 18" culvert	EACH	1
	20420B	Construct Drainage Feature, 3' wide channel	EACH	1
0.95	20301	Remove existing 18" culvert	EACH	1
1.00		**End Road Obliteration** **End Seed and Mulch**		

BANDERA-HANSEN THIN STEWARDSHIP
POST HAUL - DECOMMISSINING

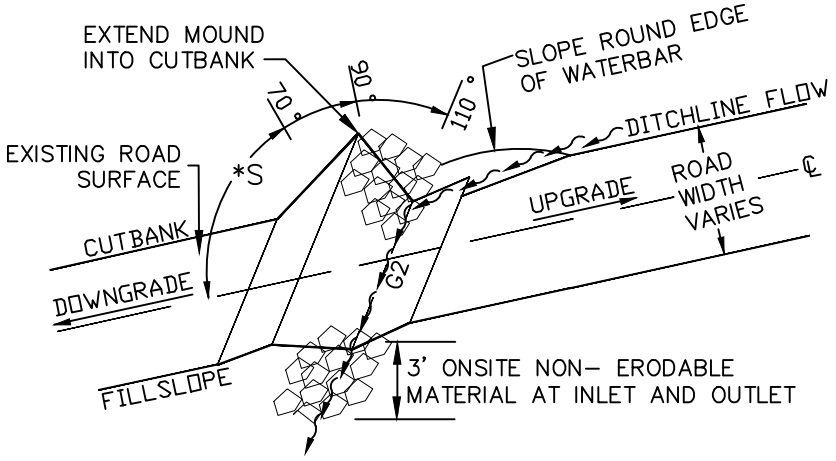
WORK DESCRIPTION LIST

SHEET 5 OF 10

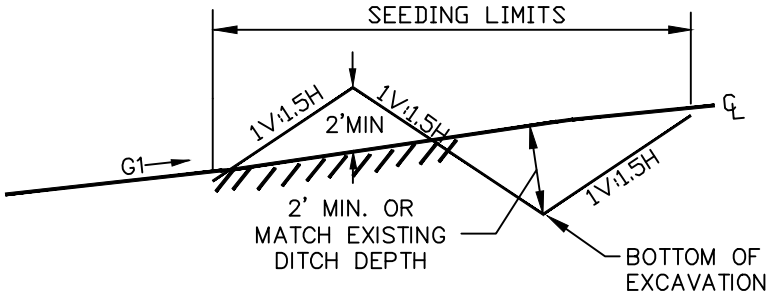
Rd. #5510110 - MP 0.00 to 1.15

Mile Post	*Item*	*Description*	*Units*	*Estimated Quantity*
0.00		**Begin Road 5510110 - Junction with Road 5510, MP 2.30**		
0.02	20420A	Construct waterbar just before exisitng Gate	EACH	1
0.02		**Existing Gate - Leave in Place and Locked at Completion of Project**		
0.03	20420A	Construct waterbar	EACH	1
0.06		**Turnout Left with Sign Board**		
0.07	20427	Construct Earth Berm	EACH	1
	21103	**Begin Road Obliteration - Leave 3' Wide Walking Path**	MILE	1.08
	62501	**Place Seed and Mulch** (Estimated 40' wide x 1.08 Miles Long)	ACRE	5.25
0.16	20301	Remove existing 18" culvert	EACH	1
	20420B	Construct Drainage Feature, 3' wide channel	EACH	1
0.22	20301	Remove existing 18" culvert	EACH	1
	20420B	Construct Drainage Feature, 3' wide channel	EACH	1
0.32	20301	Remove existing 36" culvert	EACH	1
	20420B	Construct Drainage Feature, 6' wide channel	EACH	1
0.42	20301	Remove existing 18" culvert	EACH	1
	20420B	Construct Drainage Feature, 3' wide channel	EACH	1
0.52	20301	Remove existing 18" culvert	EACH	1
	20420B	Construct Drainage Feature, 3' wide channel	EACH	1
0.61	20301	Remove existing 18" culvert	EACH	1
	20420B	Construct Drainage Feature, 3' wide channel	EACH	1
0.67	20301	Remove existing 18" culvert	EACH	1
	20420B	Construct Drainage Feature, 3' wide channel	EACH	1
1.15		**End Road Obliteration**		
		End Seed and Mulch		

WATER BAR



PERSPECTIVE VIEW



PROFILE VIEW

SHEET NOTES:

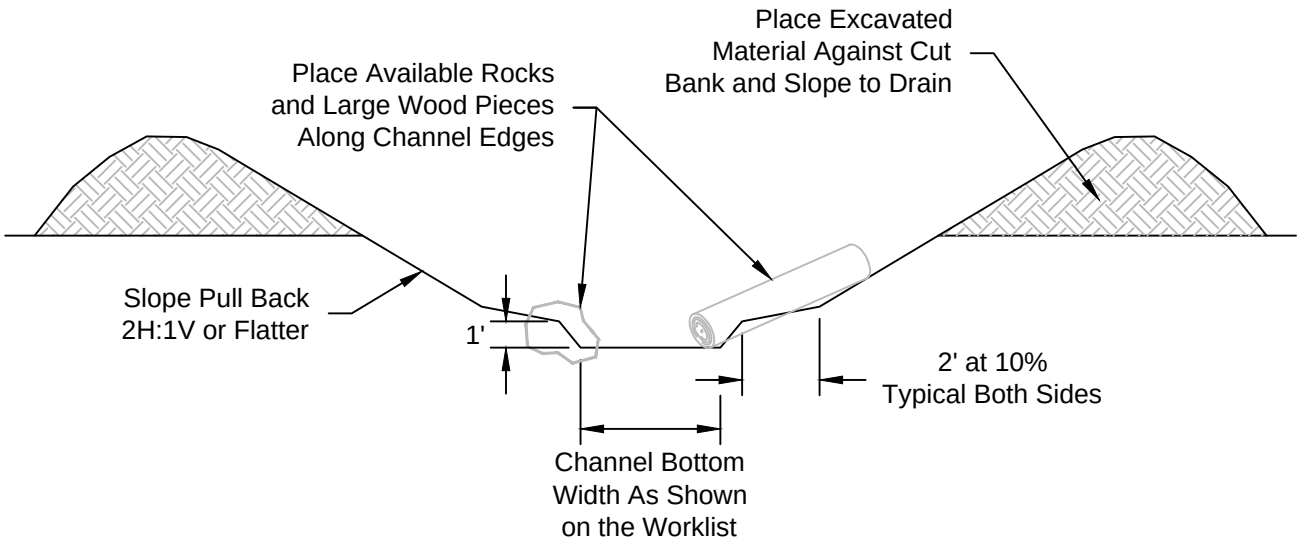
1. Before starting excavation, determine the average road grade (G1), then use Table 1 to determine the other construction requirement variables.
2. All fill and 3' of non-erodible material shall be equipment compacted.
3. Slope round inlet and outlet to prevent erosion and waterbar failure. All excavation shall be smoothed and sloped to drain with no ponding.
4. Upon completion, all disturbed soil areas shall be seeded and mulched in accordance with item 62501.

TABLE 1: DESIGN VARIABLES

G1	G2	*S
% ROAD GRADE	% GRADE OF WATERBAR	SKEW OF WATERBAR (DEG.)
0-4	2-6	86 OR 94
4-6	6-8	85 OR 95
6-8	8-10	80 OR 100
8-10	10-12	75 OR 105
10-12	12-14	70 OR 110
12-14	14-16	65 OR 115
14-16	16-18	60 OR 120
16-18	18-20	55 OR 125
18-20	20-22	50 OR 130

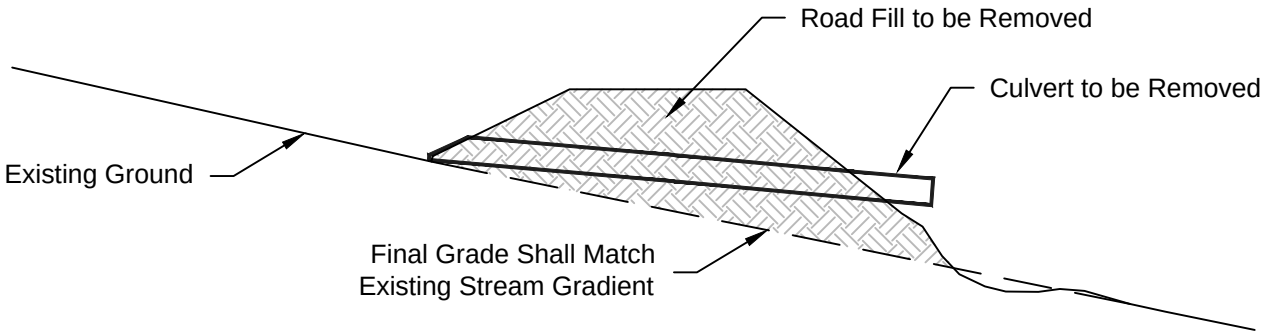
*SKEW DEPENDS ON DIRECTION OF DITCHLINE FLOW.

U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE PACIFIC NORTHWEST REGION-6		DATE: MAY 10, 2016 SHEET: 6 OF: 10
APPROVED:	DWG NO: 20420A	DRAWN BY: U. S. FOREST SERVICE
PROJECT NAME: BANDERA-HANSEN THIN STEWARDSHIP POST HAUL - DECOMMISSIONING		FILE NAME: TYPICAL WATERBAR DETAILS



ELEVATION VIEW

NOT TO SCALE



CROSS SECTION VIEW

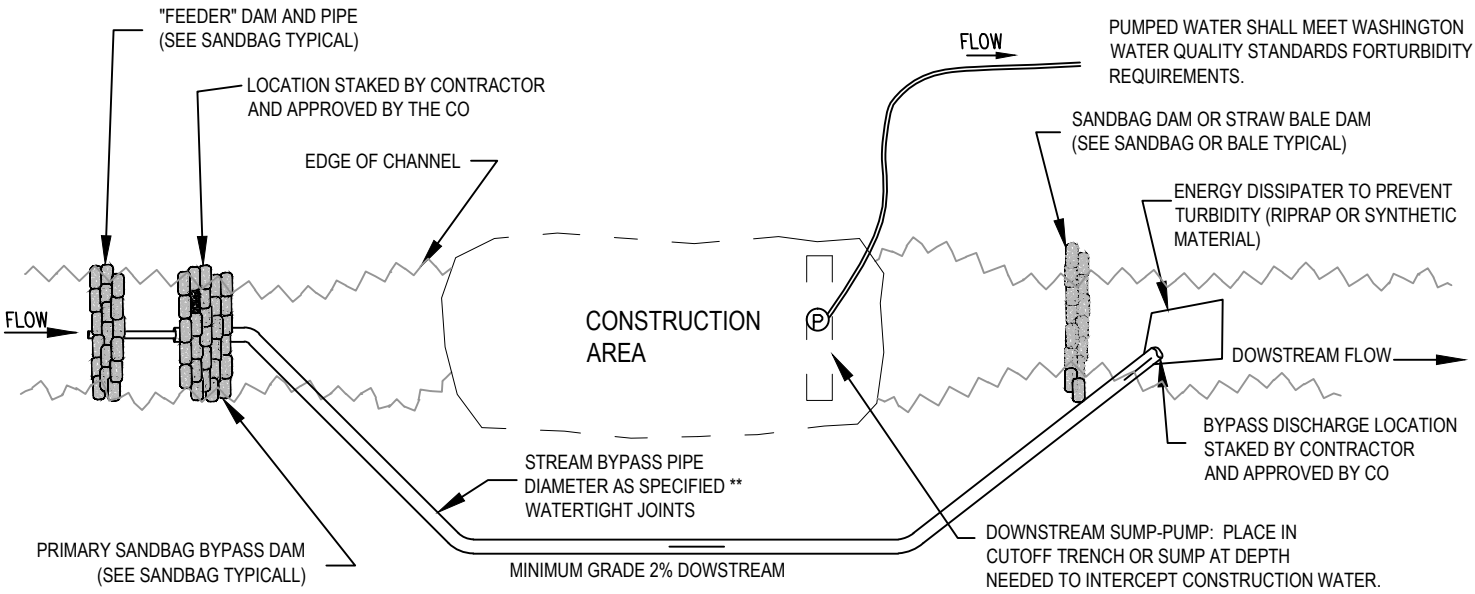
NOT TO SCALE

NOTES

1. If water is flowing at time of construction, install a bypass as shown on Sheet 8 so that work may be completed under dry conditions.
2. Excavated material shall be placed against the cut bank as shown in the obliteration detail.
3. The reconstructed channel grade shall match the existing channel gradient upstream and downstream to the extent practical.
4. Channel slope pull back shall be 2H:1V or flatter near the outlet of the pipe and shall match the existing channel slopes at the inlet of the pipe.
5. Salvage large rock, large wood pieces, and rootwads generated from the excavation and place along the edges of the reconstructed stream channel.
6. Culvert removal is per item 20301. Removed culverts shall be disposed of off National Forest Lands and in accordance with local, county, and, state laws.
7. Scatter available slash over excavated areas.
8. Complete seeding and mulching per item 62501.

U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE PACIFIC NORTHWEST REGION–6		DATE: May 10, 2016 SHEET: 7 OF: 10
APPROVED:	DWG NO: 20420B	DRAWN BY: U. S. FOREST SERVICE
PROJECT NAME: BANDERA–HANSEN THIN STEWARDSHIP POST HAUL – DECOMMISSIONING		SHEET TITLE: TYPICAL DRAINAGE FEATURE DETAILS

TEMPORARY STREAM BYPASS



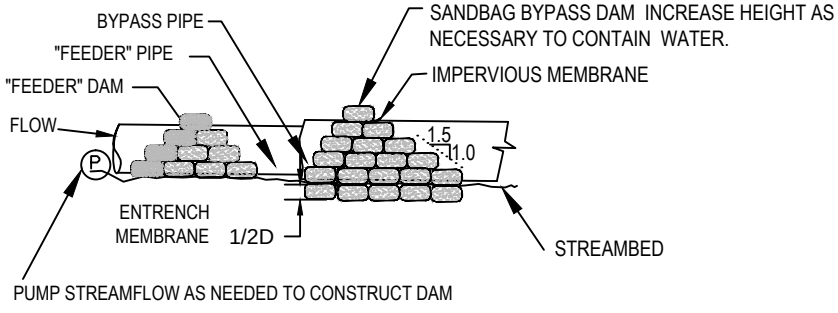
PLAN VIEW
TYPICAL DEWATERING & SEDIMENT CONTROL PLAN

NOT TO SCALE

NOTE:

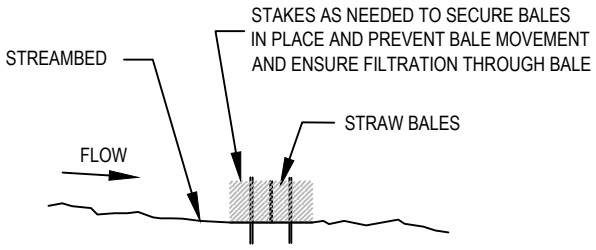
1. WORK SHALL BE DONE UNDER DRY CONDITIONS. CONTRACTOR MAY SUBMIT AN ALTERNATIVE PLAN FOR REVIEW.
2. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE MITIGATION MEASURES AS DESCRIBED IN THE CONTRACT PROVISIONS.

**THE VOLUME OF WATER EXPECTED AT THE DAM IS UNKNOWN. SIZE PIPE OR USE A COMBINATION OF SIPHONING AND PUMPING TO DIVERT WATER AROUND EXCAVATION TO A SUITABLE TREATMENT AREA OR DIRECTLY BACK INTO STREAM IF APPROVED BY THE COR.



SECTION VIEW AT STREAMBED INVERT
SANDBAG BYPASS DAM TYPICAL

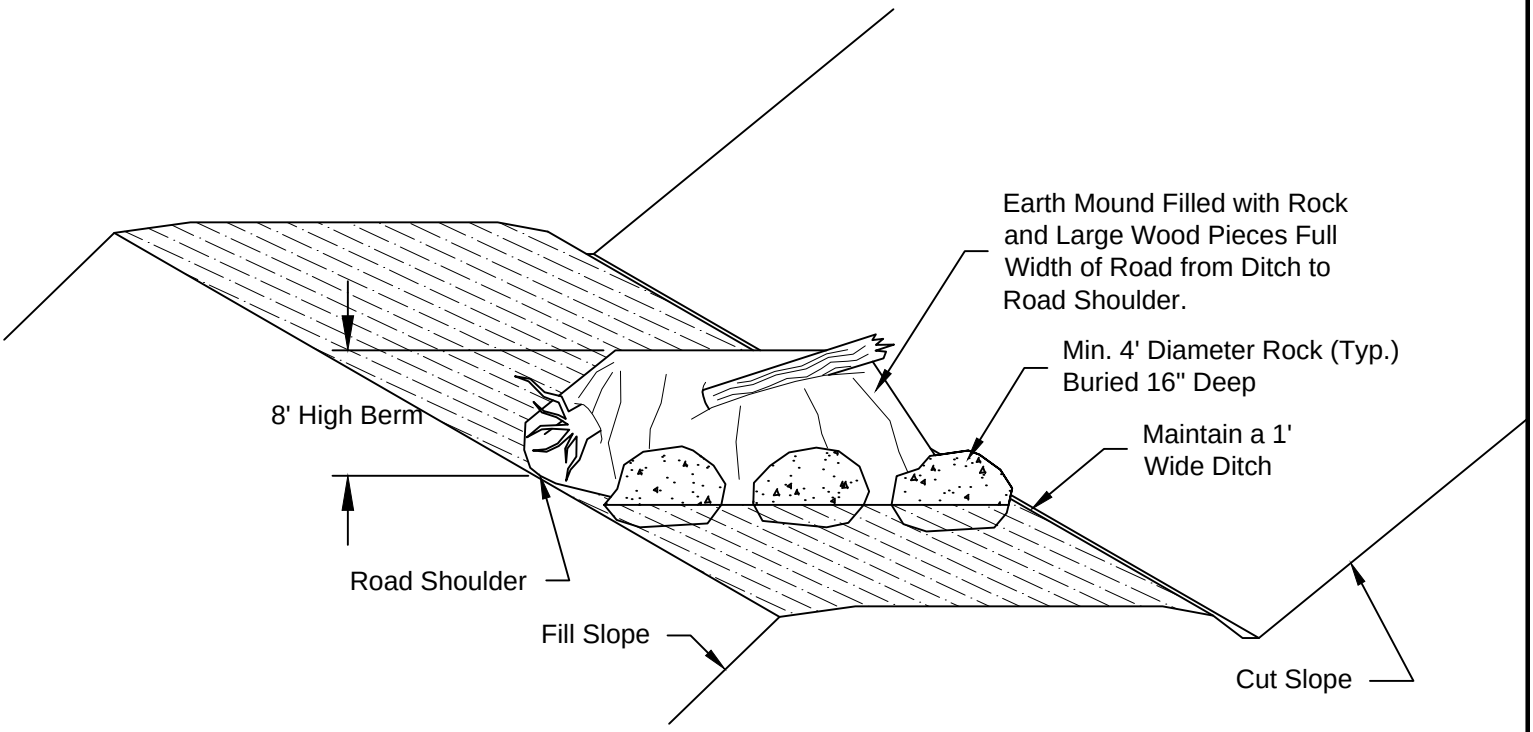
NOT TO SCALE



SECTION VIEW
STRAW BALE DAM TYPICAL

NOT TO SCALE

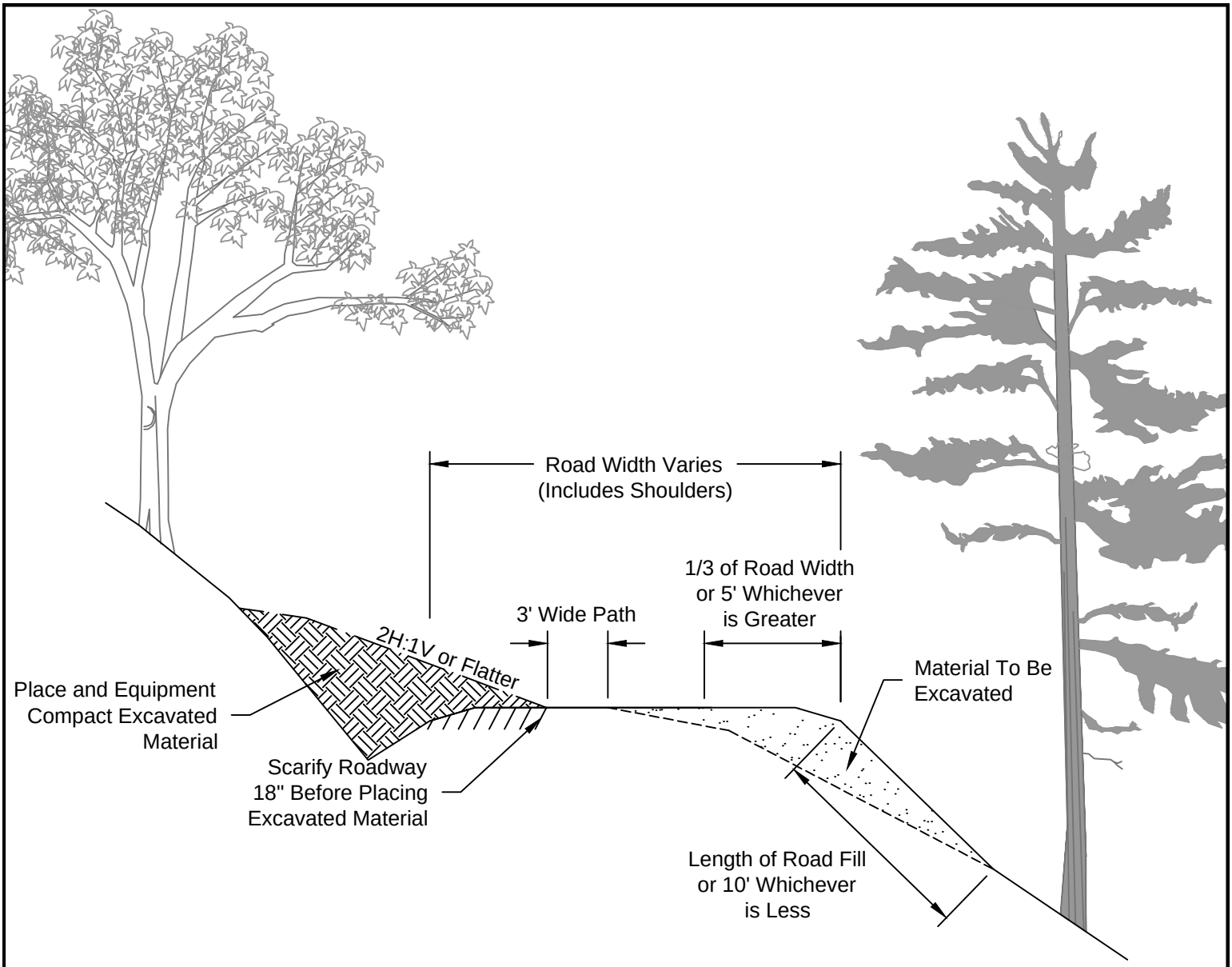
U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE PACIFIC NORTHWEST REGION–6		DATE: May 10, 2016 SHEET: 8 OF: 10
APPROVED:	DWG NO: 20420B	DRAWN BY: U. S. FOREST SERVICE
PROJECT NAME: BANDERA–HANSEN THIN STEWARDSHIP POST HAUL – DECOMMISSIONING		SHEET TITLE: TEMPORARY STREAM BYPASS



NOTES

1. Berm may be constructed from road shoulder material generated during road obliteration completed behind the berm location.
2. 4' minimum diameter rock shall be obtained from rock pit on Road 5510120 at MP 0.35.
3. Seed and mulch berm per item 62501.

FOREST SERVICE US DEPARTMENT OF AGRICULTURE	U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE PACIFIC NORTHWEST REGION–6	DATE: May 10, 2016
		SHEET: 9 OF: 10
	APPROVED: / DWG NO: 20427	DRAWN BY: U. S. FOREST SERVICE
PROJECT NAME:	BANDERA–HANSEN THIN STEWARDSHIP POST HAUL – DECOMMISSIONING	SHEET TITLE: TYPICAL EARTH BERM DETAILS



TYPICAL ROAD OBILITERATION

NOT TO SCALE

NOTES

1. Road will be outsloped by pulling the fill shoulder towards the cutbank as shown on the typical section unless otherwise specified in the worklist. The finished grade shall be free draining across the full width.
2. Maintain a 3' wide walking path for the full length of the decommissioned roadway. Path is an indirect cost to the roadway obliteration pay item.
3. Material designated for End Haul on the worklist shall be hauled to the pit on Road 5510120 MP 0.35.
4. Scatter available slash over excavated areas.
5. Complete seeding and mulching per item 62501.

FOREST SERVICE US DEPARTMENT OF AGRICULTURE	U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE PACIFIC NORTHWEST REGION–6	DATE: May 10, 2016 SHEET: 10 OF: 10
APPROVED:	DWG NO: 21103	DRAWN BY: U. S. FOREST SERVICE
PROJECT NAME:	BANDERA–HANSEN THIN STEWARDSHIP POST HAUL – DECOMMISSIONING	SHEET TITLE: TYPICAL ROAD OBLITERATION DETAILS