U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE **TIMBER SALE CONTRACT** (Applicable to Sales to be Measured before Felling)		**Name of Purchaser**	
National Forest Ottawa	**Ranger District** Ontonagon	**Region** Eastern	**Contract Number**
Sale Name Top Cat		**Award Date**	**Termination Date** 08/31/2021

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 Purchaser.

Forest Service having advertised a sale at which either (1) Purchaser, whose required bid deposit is now held by Forest Service as an initial deposit, was the successful bidder, or (2) no bids were received and Purchaser having subsequently offered at least the minimum advertised price and made an initial deposit in the same amount as the bid deposit specified in the sale advertisement; and the parties hereto desiring to record their agreement; now therefore,

Unless provided otherwise herein, Forest Service agrees to sell and permit Purchaser to cut and remove Included Timber and Purchaser agrees to purchase, cut, and remove Included Timber.

This contract consists of three Divisions: AT - Specific Conditions, BT - Standard Provisions, and CT - Special Provisions, together with Sale Area Map, Plans and specifications for developments (if any), and such attachments as may be provided for in Division CT. Specific Conditions are numbered and apply to the Part, Section, Subsection, or Item of the Standard Provisions, as indicated hereunder. Other conditions of this contract are stated in Division CT - Special Provisions.

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

UNITED STATES OF AMERICA

Two Witnesses:[1/]

By: _____
Contracting Officer

_____
(Name)

_____
(Title)

By: _____
(Purchaser) [2/]

_____
(Address)

_____

_____
(Name)

_____
(Title)

_____
(Address)

_____
(Business Address)

I, [3/] _____, certify that I am the _____ Secretary of the corporation named as Purchaser herein; that _____ who signed this contract on behalf of Purchaser, 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** [4/]

Sale Name: Top Cat **Contract No:**

INSTRUCTIONS:

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

2/ If Purchaser is a co-partnership, the signatures should be: XYZ Company, by John Doe, a member of the firm. If Purchaser 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.

3/ The certificate must be completed if Purchaser is a corporation.

4/ 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

Timber Sale 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 timber sale 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 Purchaser'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.

Sale Name: Top Cat **Contract No:**

The following conditions apply to the indicated portions of Division BT - Standard Provisions issued June 2006.

AT1 - Location and Area, applicable to BT1.1

This Sale Area of 746 acres more or less is located in:

T50N-R37W, S. 9, 10, 14, 15, & 16, Ontonagon County

AT2 - Volume Estimate and Utilization Standards, applicable to BT2.1, BT2.2, BT2.4, and BT6.4

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
Mixed Conifer	Sawtimber	22.00	CCF	9.0	1	8	7.6	40
Mixed Hardwood	Sawtimber	555.00	CCF	11.0	1	8	9.6	50
Sugar Maple	Sawtimber	540.00	CCF	11.0	1	8	9.6	50
Aspen	Pulpwood	279.00	CCF	5.0	1	8	4.0	70
Mixed Conifer	Pulpwood	89.00	CCF	5.0	1	8	4.0	70
Mixed Hardwood	Pulpwood	3,292.00	CCF	5.0	1	8	4.0	70
Total Quantity		4,777.00	CCF					

* Quantities not included here are described in BT2.4.

AT3- Timber Designations, applicable to BT2.3; acres are approximate:

	Number	Acres
Clearcutting Units (BT2.31)		
Specified Road Clearing (BT2.32)		
Overstory Removal Units (BT2.33)		
Understory Removal Units (BT2.34)		
Individual Trees (BT2.35)		311
Incompletely Measured Payment Units (BT2.36)		

Sale Name: Top Cat **Contract No:**

AT4 - Timber Payment Rates, applicable to BT3.1 and BT4.0

AT4a - For Species and Products to be Paid for at Rates Escalated under BT3.2

Not Applicable

AT4b- 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 $
Mixed Conifer	Sawtimber	CCF	1.07	23.25			.00
Mixed Hardwood	Sawtimber	CCF	4.04	92.45			.00
Sugar Maple	Sawtimber	CCF	5.62	213.67			.00
Aspen	Pulpwood	CCF	1.11	36.71			.00
Mixed Conifer	Pulpwood	CCF	1.04	11.70			.00
Mixed Hardwood	Pulpwood	CCF	1.06	19.77			.00

For purposes of convenience in collection and bookkeeping, Bid Rates stated in AT4 include payment of deposits for sale area betterment required pursuant to 16 USC 576b. Such deposits are not included as Required Deposits defined hereunder.

Sale Name: Top Cat **Contract No:**

AT4c - Schedule of Payment Units

Payment Unit No.	Approx. Acres	Quantity of Species and Products to be Escalated under AT4a	Total Tentative Payment $	Quantity of Species and Products to be Paid for at Flat Rates under AT4b				Total Flat Rate Payment $	Total Required Deposits for Slash Disposal $
001	71			Mixed Conifer	Sawtimber	10.00	CCF		.00
				Mixed Hardwood	Sawtimber	109.00	CCF		
				Sugar Maple	Sawtimber	170.00	CCF		
				Aspen	Pulpwood	53.00	CCF		
				Mixed Conifer	Pulpwood	8.00	CCF		
				Mixed Hardwood	Pulpwood	676.00	CCF		
				Total PU Quantity And Value		1,026.00	CCF		
002	21			Mixed Conifer	Sawtimber	5.00	CCF		.00
				Mixed Hardwood	Sawtimber	23.00	CCF		
				Sugar Maple	Sawtimber	22.00	CCF		
				Aspen	Pulpwood	29.00	CCF		
				Mixed Conifer	Pulpwood	8.00	CCF		
				Mixed Hardwood	Pulpwood	196.00	CCF		
				Total PU Quantity And Value		283.00	CCF		
003	32			Mixed Conifer	Sawtimber	1.00	CCF		.00
				Mixed Hardwood	Sawtimber	29.00	CCF		
				Sugar Maple	Sawtimber	56.00	CCF		
				Aspen	Pulpwood	9.00	CCF		
				Mixed Conifer	Pulpwood	2.00	CCF		
				Mixed Hardwood	Pulpwood	422.00	CCF		
				Total PU Quantity And Value		519.00	CCF		
004	40			Mixed Conifer	Sawtimber	1.00	CCF		.00
				Mixed Hardwood	Sawtimber	61.00	CCF		
				Sugar Maple	Sawtimber	39.00	CCF		
				Aspen	Pulpwood	73.00	CCF		
				Mixed Conifer	Pulpwood	6.00	CCF		
				Mixed Hardwood	Pulpwood	431.00	CCF		
				Total PU Quantity And Value		611.00	CCF		
005	63			Mixed Conifer	Sawtimber	1.00	CCF		.00
				Mixed Hardwood	Sawtimber	138.00	CCF		
				Sugar Maple	Sawtimber	107.00	CCF		
				Aspen	Pulpwood	54.00	CCF		
				Mixed Conifer	Pulpwood	4.00	CCF		
				Mixed Hardwood	Pulpwood	614.00	CCF		
				Total PU Quantity And Value		918.00	CCF		
006	33			Mixed Conifer	Sawtimber	0.00	CCF		.00
				Mixed Hardwood	Sawtimber	80.00	CCF		
				Sugar Maple	Sawtimber	106.00	CCF		
				Aspen	Pulpwood	0.00	CCF		
				Mixed Conifer	Pulpwood	2.00	CCF		
				Mixed Hardwood	Pulpwood	256.00	CCF		
				Total PU Quantity And Value		444.00	CCF		
007	15			Mixed Conifer	Sawtimber	2.00	CCF		.00
				Mixed Hardwood	Sawtimber	65.00	CCF		
				Sugar Maple	Sawtimber	1.00	CCF		
				Aspen	Pulpwood	6.00	CCF		
				Mixed Conifer	Pulpwood	7.00	CCF		
				Mixed Hardwood	Pulpwood	159.00	CCF		
				Total PU Quantity And Value		240.00	CCF		

Sale Name: Top Cat **Contract No:**

Payment Unit No.	Approx. Acres	Quantity of Species and Products to be Escalated under AT4a	Total Tentative Payment $	Quantity of Species and Products to be Paid for at Flat Rates under AT4b				Total Flat Rate Payment $	Total Required Deposits for Slash Disposal $
008	35			Mixed Conifer	Sawtimber	2.00	CCF		.00
				Mixed Hardwood	Sawtimber	13.00	CCF		
				Sugar Maple	Sawtimber	15.00	CCF		
				Aspen	Pulpwood	28.00	CCF		
				Mixed Conifer	Pulpwood	47.00	CCF		
				Mixed Hardwood	Pulpwood	320.00	CCF		
				Total PU Quantity And Value		425.00	CCF		
009	1			Mixed Conifer	Sawtimber	0.00	CCF		.00
				Mixed Hardwood	Sawtimber	37.00	CCF		
				Sugar Maple	Sawtimber	24.00	CCF		
				Aspen	Pulpwood	27.00	CCF		
				Mixed Conifer	Pulpwood	5.00	CCF		
				Mixed Hardwood	Pulpwood	218.00	CCF		
				Total PU Quantity And Value		311.00	CCF		

The following definitions are established for the terms used in AT4:

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 BT3.31, BT3.32, or BT3.33.

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 AT7, but are never less than Base Rates.

Bid Premium Rates are the amounts by which Purchaser's bid is in excess of Advertised Rates. The Bid Premium Rates are constant during this contract, except as provided in BT3.31, BT3.32, and BT3.33.

Bid Rates are the rates bid by Purchaser (exclusive of Required Deposits for slash disposal and road maintenance) 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 AT4a is the Tentative Rate that is subject to quarterly adjustment under BT3.2; for species and products in AT4b, the Bid Rate is the Flat Rate.

Required Deposits are deposits that Purchaser may be required to pay for slash disposal (16 USC 490) and road maintenance (16 USC 537). 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 CT5.32#.

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 BT3.2.

AT5 - Indices Used in Quarterly Adjustment, applicable to BT3.2

Not Applicable

AT6 - High Stumps, applicable to BT6.412

Species	Product	Maximum Stump Height (inches)
All	Sawtimber	14
All	Pulpwood	10

Sale Name: Top Cat **Contract No:**

AT7 - Specified Roads, applicable to BT5.2

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	Approx. Length (mi./km.)	Sheet Numbers and Approval Date	Performance Responsibility		
Road No.	Name				Survey	Design	Construction Staking 1/
1826	FDR1826 (C) (segment .93 to 1.05)	Single Lane - 15 mph	.12 / .19	SR-1 to SR-74 09/28/2015	FS	FS	FS AC
1826	FDR1826 (R) (segment 0 to .93)	Single Lane - 15 mph	.93 / 1.5	SR-1 to SR-74 09/28/2015	FS	FS	FS AC
1826-A	FDR1826-A (R) (segment 0 to .74)	Single Lane - 15 mph	.74 / 1.19	SR-1 to SR-74 09/28/2015	FS	FS	FS AC
1826-C	FDR1826-C (R) (segment 0 to .26)	Single Lane - 15 mph	.26 / .42	SR-1 to SR-74 09/28/2015	FS	FS	FS AC
1827	FDR1827 (R) (segment 0 to .97)	Single Lane - 15 mph	.97 / 1.56	SR-1 to SR-74 09/28/2015	FS	FS	FS AC

1/ Indicate timing, i.e., before clearing (BC) or after clearing (AC). Applicable to BT5.212.

AT8 - Forest Service Engineering Completion Schedule, applicable to BT5.21

Road No.	Road Name	Type of Work	Completion Date
	NOT APPLICABLE		

AT9 - Fire Precautionary Period, applicable to BT7.2

April 01 to November 15 , inclusive

AT10 - Purchaser Responsibility to Furnish Crews and Equipment for:

Initial Fire Supression, applicable to BT7.3

Within 5.0 road miles

Fire Suppression Reinforcement, applicable to BT7.312 and BT7.313

Within 20.0 road miles

AT11 - Purchaser's Obligation per Operations Fire, applicable to BT7.41

Maximum Amount: $ $1,000

AT12 - Termination Date, applicable to BT8.2

August 31, 2021

AT13 - Normal Operating Season, applicable to BT6.31, BT6.66, BT8.21 and BT9.3

First Period: December 15 to March 15 , inclusive

Second Period: _____ to _____ , inclusive

Sale Name: Top Cat **Contract No:**

AT14 - Performance Bond, applicable to BT9.1

Performance Bond Amount: _____

AT15 - Downpayment, applicable to BT4.211

Downpayment Amount: _____

AT16 - Periodic Payment Amount, applicable to BT4.213

	Periodic Payment Determination Date	Amount
Initial Payment:	____	_____
Additional Payment:	____	_____

AT17 - Market-Related Contract Term Addition Producer Price Index, applicable to BT8.212

Index Name: Wood Chips **Index Number:** 3211135

AT18 - Inapplicable Standard Provisions

The following listed Sections, Subsections, or Items of Division BT - Standard Provisions - are hereby made inapplicable. (Instructions: List by reference number and title.)

BT4.211	DOWNPAYMENT
BT4.4	PAYMENTS NOT RECEIVED
BT8.212	MARKET-RELATED CONTRACT TERM ADDITION

AT19 - List of Special Provisions

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

CT2.302#	BOUNDARY TREES (06/2009)
CT2.355#	INDIVIDUAL TREES, CUT TREE MARKING (06/2009)
CT4.211	DOWNPAYMENT (06/2007)
CT4.212	TEMPORARY REDUCTION OF DOWNPAYMENT (08/2009)
CT4.4	PAYMENTS NOT RECEIVED (08/2012)
CT5.12#	USE OF ROADS BY PURCHASER (06/1999)
CT5.31#	ROAD MAINTENANCE REQUIREMENTS (07/2001)
CT6.314#	OPERATING REQUIREMENTS (06/2009)
CT6.412	STUMP MARKS (06/2009)
CT6.62#	SITE SPECIFIC WETLANDS PROTECTION MEASURES (07/2001)
CT6.63#	TEMPORARY ROAD CLOSURE (06/2009)
CT6.7#	SLASH DISPOSAL MEASURES (06/2009)
CT7.2	FIRE PRECAUTIONS (06/2009)
CT8.212	MARKET-RELATED CONTRACT TERM ADDITION (11/2008)

There are no pages 108-109.

CT2.302# - BOUNDARY TREES *(06/2009)*

Boundary trees for all harvest units have been designated with **ORANGE (3 paint slashes at eye level facing into the Payment Unit for exterior boundaries; 2 paint slashes at eye level on each side of the boundary for interior boundaries)** paint marks above and below stump height. Boundary trees shall not be cut.

CT2.355# - INDIVIDUAL TREES, CUT TREE MARKING *(06/2009)*

Individual trees to be cut are Marked with indicated color above and below stump height in all or parts of the following Payment Unit(s). Areas of cut tree marking are shown on the Sale Area Map with the symbol "CTM."

PAYMENT UNIT(S)	PAINT COLOR

CT2.355# - INDIVIDUAL TREES, CUT TREE MARKING. (06/2009)

Cut Tree Marking Table

Payment Units	Paint Color
Payment Units 001-008	BLUE
009 (Roads)	YELLOW

CT4.211 - DOWNPAYMENT *(06/2007)*

The downpayment amount shown in AT15 may not be applied toward any other payment required under the provisions of this contract, except damages determined pursuant to BT9.4, transferred to other timber sales, or refunded until (a) stumpage value representing 25 percent of the total bid value of the timber sale is shown on Timber Sale Account to have been cut, removed, and paid for, or (b) the estimated value remaining to be cut and removed, as shown on Timber Sale Account, is equal to or less than the amount of the downpayment, or (c) if 36 CFR 223.49(e) is applicable, the estimated value remaining to be cut and removed, as shown on Timber Sale Account, is equal to or less than the amount of the downpay-ment. For lump sum timber sales, the downpayment may be applied to payment for release of the single payment unit.

If Forest Service makes a determination that this contract should not have been included under in-creased downpayment requirements (36 CFR 223.49(e)), the downpayment shall be revised and applied in accordance with 36 CFR 223.49(f).

CT4.212 - TEMPORARY REDUCTION OF DOWNPAYMENT *(08/2009)*

Notwithstanding BT4.211 or CT4.211, upon the Purchaser's written request Forest Service may temporarily reduce the downpayment when Purchaser's scheduled operations are delayed or interrupted for 30 or more consecutive days, or the contract term is extended for 30 or more consecutive days for any of the following reasons:

(1) Forest Service requests or orders Purchaser to delay or interrupt scheduled operations for reasons other than breach;

(2) Purchaser interrupts or delays scheduled operations to work on a sale designated by the Forest Service as in urgent need of harvesting; or

(3) An adjustment of the contract term authorized upon a determination of substantial overriding public interest, including a market-related contract term addition, or an urgent removal contract term extension under 36 CFR 223.53.

When Purchaser is not cutting or removing timber under contract during a qualifying period of delay, interruption, or extension listed above the downpayment may be reduced to $1000 or 2 percent of the downpayment amount stated in the contract, whichever is greater. The Purchaser must restore the downpayment to the full amount stated in the contract within 15 days from receipt of the bill for collection and written notice from the Contracting Officer that the basis for temporarily reducing the downpayment no longer exists. Purchaser shall not cut or remove timber on a contract where the downpayment has been temporarily reduced until the downpayment amount stated in the contract is fully restored.

CT4.4 - 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 Purchaser's Operations until payment or acceptable payment guarantee is received. Other charges include, but are not limited to:

(i) Slash disposal and road maintenance deposits;

(ii) Cooperative work at rates established by specific agreement under BT4.218;

(iii) Damages pursuant to BT9.4;

(iv) Road use fees;

(v) Restoration of downpayment pursuant to BT4.22;

(vi) Periodic payments pursuant to BT4.213;

(vii) Extension Deposits pursuant to BT4.217; 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 BT9.3. 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 Purchaser'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 Purchaser's Operations, and administrative offset, shall be stayed for so long as:

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

(ii) Purchaser files and prosecutes a timely Claim.

CT5.12# - USE OF ROADS BY PURCHASER *(06/1999)*

Purchaser's use of existing roads identified on Sale 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 the Forest Service to inform the public of use restrictions. Purchaser's use of roads coded R, A, or W shall be in accordance with the following restrictions:

See Restricted Road List Table.

CT5.12# – USE OF ROADS BY PURCHASER. (06/1999)

Restricted Road List

Road Number	Road Name	Termini (miles)		Map Legend	Description of Restrictions
		From	To		
FR 1823-B	FR 1823-B	POB	POE	P	Use Prohibited.
FR 1826	FR 1826	POB	0.93	U	Unsuitable for hauling prior to completion of agreed reconstruction.
FR 1826-A	FR 1826-A	POB	POE (0.74)	U	Unsuitable for hauling prior to completion of agreed reconstruction.
FR 1826-C	FR 1826-C	POB	0.26	U	Unsuitable for hauling prior to completion of agreed reconstruction.
FR 1826-C	FR 1826-C	0.26	POE	X	Hauling Prohibited; use as a skid trail must be approved by the Forest Service.
FR 1827	FR 1827	POB	POE (0.97)	U	Unsuitable for hauling prior to completion of agreed reconstruction.

POB = Point of Beginning
POE = Point of Ending

Note: hauling includes empty or loaded log trucks.

CT5.31# - ROAD MAINTENANCE REQUIREMENTS *(07/2001)*

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

See Contract Road Maintenance Requirements Summary Table.

WO-CT5.31# - ROAD MAINTENANCE REQUIREMENTS. (07/2001)

Contract Road Maintenance Requirements Summary

Road	Termini		Miles	Applicable Prehaul Road Maintenance Specifications								
	From	To		T-8030	T-8130	T-8310	T-8340	T-8350	T-8360	T-8620		
NA												

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

Road	Termini		Miles	Applicable During Haul Road Maintenance Specifications								
	From	To		T-8030	T-8130	T-8310	T-8340	T-8350	T-8360	T-8420		
1826	0.00	1.05	1.05	P		P	P	P	P			
1826-A	0.00	0.74	0.74	P		P	P	P	P			
1826-C	0.00	0.26	0.26	P		P	P	P	P			
1827	0.00	0.97	0.97	P		P	P	P	P			

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

Road	Termini		Miles	Applicable Post Haul Road Maintenance Specifications								
	From	To		T-8110	T-8130	T-8310	T-8340	T-8350	T-8360	T-8420	T-8620	
1826	0.00	1.05	1.05			P	P	P	P		P	
1826-A	0.00	0.74	0.74			P	P	P	P		P	
1826-C	0.00	0.26	0.26			P	P	P	P			
1827	0.00	0.97	0.97			P	P	P	P		P	

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

CT6.314# - OPERATING REQUIREMENTS *(06/2009)*

Within Sale Area, unless changed by written agreement, the following operating requirements apply:

Restricted operations/activities:
Payment Unit 001: Purchasers operations are restricted during the period of 3/16 thru 11/14 (due to soils and protection of residual stems).

Payment Units 002 - 008: Purchasers operations are restricted during the period of 3/16 thru 12/14 (due to soils and protection of residual stems).

Within the Sale Area, decked pine and other conifer material must be removed from the Sale Area within 30 days of cutting to minimize the potential breeding areas for pine beetles during the period of May 1 thru September 30.
Prohibited operations/activities:
Payment Units 001: Purchasers operations are prohibited during the period of 11/15 to 12/31 (due to Wildlife Objectives).

CT6.412 - STUMP MARKS *(06/2009)*

Trees designated for cutting under BT2.35 have been marked with paint at breast height and below stump height. Trees shall be felled so as to leave paint on stump.

CT6.62# - SITE SPECIFIC WETLANDS PROTECTION MEASURES *(07/2001)*

Measures needed to protect wetlands identified on the Sale Area Map or on the ground include:

All equipment, vehicles, and logging slash are prohibited from these areas. Any logging slash that falls within these areas shall be removed or treated, as directed by the Forest Service.

CT6.63# - TEMPORARY ROAD CLOSURE *(06/2009)*

Notwithstanding Standard Provision BT6.63, measures to effectively block temporary roads to normal vehicular traffic shall consist of the following:

Berm will be placed at an angle of 30 to 45 degrees, relative to the road. Dig a trench, 12 to 18 inches below the surface of the road or trail, and extend it to both sides of the road to prevent runoff from bypassing the berm/waterbar. The uphill end should extend beyond the ditch of the road and into the earth berm to intercept any ditch flows. The outflow end is to be fully open and extended far enough beyond the edge of the road or trail to safely disperse runoff onto the undisturbed forest floor. When placement of the closure device does not require the berm to also function as a waterbar for drainage, the trench will not be required. Height of the berm will be approx. 4 feet. Rocks/boulders, logging slash, cull logs, and stumps may be incorporated into the ridge of earth during construction as long as proper drainage is maintained and the road is completely blocked, unless otherwise agreed in writing. (See Typical Drawing)

CT6.7# - SLASH DISPOSAL MEASURES *(06/2009)*

Slash resulting from Purchaser's operations shall be removed from lakes, ponds, private land, right-of-way clearings for telephone lines, power lines, pipelines, and other authorized facilities, and landings to be seeded under Special Provision CT6.6#.

The tops of felled trees shall not be left hanging in standing trees. All trees cut or pushed for landing and other construction clearings shall be completely felled and not left leaning. Slash resulting from construction clearing shall be treated concurrent with operations.

Slash Disposal treatment zones are shown on the Sale Area Map with symbol "SDZ."

Other specific slash disposal requirements are as follows:

SDZ -shown on Sale Area Map for Payment Units 001-009: Slash resulting from construction clearing (such as from landings, temporary roads, ROW clearing associated with pre-haul road maintenance requirements listed in CT5.31#), including Specified Road construction, shall be lopped and scattered to lie within 3 feet of the ground. All root wads will be severed from the stem and righted on the ground or otherwise disposed of as directed by the Forest Service, concurrent with operations.

SDZ(2) - shown on the Sale Area Map for Payment Units 001-008: All slash resulting from Purchaser's operations shall either be 1) left at the stump when severed from the merchantable portion of the stem, 2) delimbed in place when bunched with a processor-type equipment prior to skidding/forwarding to a central processing point, or 3) spread back evenly across the payment unit, concurrent with operations.

Logging slash and stumps used in the construction of road closure berms is excluded from the SDZ, and SDZ(2) requirements.

CT7.2 - FIRE PRECAUTIONS *(06/2009)*

Unless other methods are agreed to in writing between the Purchaser and the Contracting Officer, the following specific precautionary measures are applicable during Purchaser's Operations in Fire Precautionary Period indicated in AT9.

1. Purchaser shall maintain Forest Service-approved spark arresting device on any piece of equipment operated by an internal combustion motor. In addition, each piece of motorized equipment shall be equipped with a serviceable round-pointed shovel and an operational fire extinguisher of at least five-pound rating suitable for the equipment being used. All chainsaw operators will have a serviceable round-pointed shovel and a one-pound multipurpose fire extinguisher readily available.

2. Purchaser shall require that smoking and the building of lunch or warming fires by Purchaser's employees, contractors, or employees of contractors be confined to designated safe places where flammable debris has been cleared away and where, at the option of the Purchaser, smoking or the building of lunch or warming fires may be permitted.

3. Adequate spark arresters shall be maintained on chimneys or stovepipes where wood or coal is being burned in an enclosed device.

4. Purchaser shall furnish serviceable firefighting tools. Location, numbers, and types of tools shall be specified in the Fire Prevention and Control Plan in accordance with BT7.1.

CT8.212 - 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 AT17. Purchaser 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 Purchaser'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 Purchaser'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 sale 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 Purchaser'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.

TOP CAT ROAD MAINTENANCE REQUIREMENTS
FS-2400-6T Contracts (06/06)
CT5.31## Special Provisions

SECTION 1. GENERAL

Purchaser's main Road Maintenance responsibility begins: (1) after Purchaser performs Prehaul Maintenance on a road listed in the Road Maintenance Requirements Schedule; or (2) for all other roads, when Purchaser begins to use the road. Occasional travel by Purchaser's light vehicles, prior to beginning of construction clearing or logging operations in the area accessed by the road, does not constitute beginning of use. Purchaser is not required to perform routine maintenance during periods of inactivity. During periods of inactivity, Forest Service will perform maintenance only as required to meet its needs.

The Purchaser shall maintain roads, commensurate with the Purchaser's use, in accordance with the Road Maintenance Requirements Summary and Road Maintenance Specifications. Performance of road maintenance work by the Purchaser may be required prior to, during, or after each period of use. The timing of work accomplishment shall be based on the Purchaser's operating schedule under Standard Provision **BT6.31**.

If the Purchaser elects to use different roads than those listed in the Road Maintenance Requirements Summary, the Contracting Officer (CO) or designee shall determine the Purchaser's commensurate share of road maintenance and/or revise road maintenance deposits.

Unless the CO or designee agrees in writing, all Prehaul Maintenance requirements shall be completed on any portion of road prior to hauling on that portion.

The Forest Service shall prepare a revised Road Maintenance Requirements Schedule to reflect changes in the original haul routes when needed.

Any work or materials that are determined to no longer be needed and are waived shall have the estimated cost charged to the Timber Sale Account as described in **BT8.31**.

TOP CAT ROAD MAINTENANCE REQUIREMENTS
FS-2400-6T Contracts (06/06)
CT5.31## Special Provisions

SECTION 2. ROAD MAINTENANCE DEFINITIONS

Wherever the following terms are used in the Road Maintenance Specifications, the meaning shall be:

Base Course. Material placed on the Subgrade to distribute concentrated wheel loads.

Borrow. Select Material taken from designated borrow sites.

Crown, Inslope, and Outslope. The cross slope of the Traveled Way to aid in drainage and traffic maneuverability.

Culverts. A conduit or passageway under a road, trail, or other obstruction. A culvert differs from a bridge in that it is usually entirely below the elevation of the Traveled Way.

Drainage Dip. A dip in the Traveled Way which intercepts surface runoff and diverts the water off the Traveled Way. A Drainage Dip does not block the movement of traffic.

Drainage Structures. Manufactured structures which control the runoff of water from the Roadway including Inslope, overside drains, aprons, flumes, downdrains and downpipes.

During Haul Maintenance. Road maintenance work to be accomplished during the period of timber removal.

Geotextile. A group of construction fabrics with varying attributes designed for different purposes.

Lead-off Ditches. A ditch used to transmit water from a Culvert, Drainage Structure or Drainage Dip outlet to the natural drainage area.

Maintenance Activitiy. Items of work leading to the restoration and upkeep of a road and necessary to sustain the road's anticipated traffic.

Material. Any substance specified for use in the performance of the work.

Post Haul Maintenance. Road maintenance work to be accomplished after timber removal is completed.

Prehaul Maintenance. Road maintenance work to be accomplished prior to the roads use. Roads receiving prehaul maintenance shall be shown on the Sale Area Map.

Road Maintenance Cost. An estimate of the cost to perform road maintenance activities; as determined by the Forest Service. Estimates may include any or all of the work activities listed in Section 4, Road Maintenance Activity Specifications.

Roadbed. The portion of a road between the intersection of Subgrade and sideslopes, excluding that portion of the ditch below Subgrade.

Roadside. A general term denoting the area adjoining the outer edge of the Roadway.

Roadway. The portion of a road within the limits of excavation and embankment.

Sand Hole. A hole that develops in the running surface of the road which is quite soft and dangerous in nature. Usually found in very sandy soils.

TOP CAT ROAD MAINTENANCE REQUIREMENTS
FS-2400-6T Contracts (06/06)
CT5.31## Special Provisions

Shoulder. That portion of Roadway contiguous with Traveled Way for accommodation of stopped vehicles, for emergency use, and lateral support of Base and Surface Course, if any.

Slide. A concentrated deposit of materials from above or on backslope extending onto the Traveled Way or Shoulders, whether caused by mass land movements or accumulated ravelling.

Slough. Material eroded from the backslope which partially or completely blocks the ditch, but does not encroach on the Traveled Way so as to block passage of traffic.

Slump. A localized portion of the Roadbed which has slipped or otherwise become lower than that of the adjacent Roadbed and constitutes a hazard to traffic.

Subgrade. Top surface of Roadbed upon which Base Course or Surface Course is constructed. For roads without Base Course or Surface Course, that portion of Roadbed prepared as the finished wearing surface.

Surface Course. The Material placed on the Base Course or Subgrade to enhance traction, distribute concentrated wheel loads and resist abrasion and the effects of climate. Surface Course may be referred to as surfacing.

Traveled Way. That portion of Roadway, excluding Shoulders, used for the movement of vehicles.

Turnouts. That portion of the Traveled Way constructed as additional width on single lane roads to allow for safe passing of vehicles.

SECTION 3. ROAD MAINTENANCE REQUIREMENTS SCHEDULE

See Summary in **CT 5.31#**.

SECTION 4. ROAD MAINTENANCE SPECIFICATIONS

INCLUDED SPECIFICATIONS

Specification No.	Specification Title
T-8030	Snow Removal
T-8310	Ditch Cleaning
T-8340	Drainage Structure Maintenance
T-8350	Roadway Drainage Maintenance
T-8360	Composite High Clearance Road Maintenance
T-8620	Miscellaneous Maintenance

TOP CAT ROAD MAINTENANCE REQUIREMENTS
FS-2400-6T Contracts (06/06)
CT5.31## Special Provisions

T-8030 Snow Removal

DESCRIPTION

1.1 This Section provides for removal of snow from roads to facilitate logging operations and safe use. Remove snow from all or part of the traveled way, including sufficient turnouts for safe and efficient use for timber transportation and to protect the road. Remove intruding windfalls, debris or slough and slide material and dispose of only as necessary to provide passage for timber transportation. Removed materials may be deposited off the traveled way or outside the traveled way at locations designated by the Forest Service Representative (FSR). Snow may also be compacted as needed to freeze down soft areas or wet areas. This work is considered part of this specification. Equipment used for this work shall be in accordance with this specification and approved in advance by the FSR.

EQUIPMENT

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

a. Type or use of equipment is not restricted in **CT5.12#** or Schedule document.
b. Equipment is of the size and type commonly used to remove snow and will not cause damage to the road. Tracked or cleated vehicles shall not be used unless approved in writing by the FSR.
c. The Blade will be equipped with skid shoes to prevent loss of surfacing and damage to the road bed. On gravel and native surface roads, a minimum **4** -inch depth compacted snow mat will be maintained on the roadbed during blading.

REQUIREMENTS

3.1 Erect signs required by the Sign Plan in the SUPPLEMENTAL SPECIFICATIONS or as shown on the Section 3. Road Maintenance Requirements Schedule. Perform work in a manner to preserve and protect roads and appurtenances, and prevent erosion damage to roads, streams, and other forest values.

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

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

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

3.5 Snow berms will be reduced at road intersections where plowed road segments join unplowed road segments. Reduce the piled snow in the roadway to create a smooth transition from plowed road to normal snow depth.

TOP CAT ROAD MAINTENANCE REQUIREMENTS
FS-2400-6T Contracts (06/06)
CT5.31## Special Provisions

T-8310 Ditch Cleaning

DESCRIPTION

1.1 Ditch cleaning is the removal and disposal of all accumulated organic and Slough Material from Roadway ditches to provide a positive draining waterway of uniform width, depth, and grade.

REQUIREMENTS

3.1 Ditch cleaning shall be repeated during sale operations as often as necessary to facilitate proper drainage.

3.2 All Slough Material or other debris which might obstruct water flow in the Roadway ditch shall be removed. Material removed from ditches that are not suitable for blending into the existing surface course shall be disposed of in places agreed to in writing by the FSR.

3.3 Roadway back slopes shall not be undercut.

T-8340 Drainage Structure Maintenance

DESCRIPTION

1.1 This work consists of maintaining and/or installation/removal of Drainage Structures and related items such as: inlet and outlet channels, existing riprap, trash racks, necessary geotextiles, pipes, and drop-inlets.

MATERIALS

2.1 All Materials used in the maintenance and/or installation/removal of Drainage Structures shall conform by type and specification to the Material in the structure being maintained or as indicated in the subsection 3.3 below.

REQUIREMENTS

3.1 Drainage Structures and related items shall be cleared of all foreign Material deposited above the bottom of the structure and all vegetative growth which interferes with the water flow. Material removed that cannot be incorporated into maintenance work shall be uniformly placed on fill slopes unless agreed otherwise.

3.2 Perform maintenance to insure the proper functioning of the head walls, aprons, inlet assemblies, riprap, trash racks and other facilities related to the Drainage Structure.

3.3 Install/remove ditches, drainage dips, rock crossings and/or culverts as shown below, and as marked on the ground. Installation of structures shall not begin without the presence of a FSR unless agreed to in writing by the FSR.

TOP CAT ROAD MAINTENANCE REQUIREMENTS
FS-2400-6T Contracts (06/06)
CT5.31## Special Provisions

Road Number	Location	Remove/Install	Type of Structure	Size	Quantity
NA					

3.4 Installation shall be in accordance with construction industry standards and practices.

3.5 Culverts designated for removal/disposal shall become the property of the Purchaser and shall be disposed of properly.

3.6 Temporary culverts provided by the USFS shall remain the property of the government.

3.7 Bridges. Any miscellaneous parts needing repair or replacement during normal use of any bridge during haul shall be considered maintenance. This includes minor items such as object markers, running planks that have loosened or cracked deck boards, or drainage structures which may become plugged. Bridge decks that are dirt and dust covered shall be cleaned to allow for proper drainage and for safety of the user.

T-8350 Roadway Drainage Maintenance

DESCRIPTION

1.1 This work consists of providing Post Haul drainage on roads.

MATERIALS

2.1 All Materials used in the maintenance and/or installation/removal of Drainage Structures shall conform by type and specification to the Material in the structure being maintained, or as indicated in subsection 3.3.

REQUIREMENTS

3.1 Upon completion of work, shape the roadway to provide for the removal of surface water. The roadway need not be passable to vehicles (ML-1 roads). Repair and reinstall waterbars, barriers or berms existing prior to the Purchaser's operation. Areas where water is ponded by existing centerline profile sags in through cuts may be left untreated.

3.2 Any of the following methods are acceptable for use at eroded or rutted locations:
(a) Method A: Outsloping the roadbed at not less than ½ inch per yard of width.
(b) Method B: Insloping the roadbed at not less than ½ inch per yard of width.
(c) Method C: Water bar roadbed at locations staked on the ground and construct as shown on the enclosed detail.
(d) Method D: Crown the roadbed as shown in the attached detail as the typical section for that length of road.

3.3 Drainage structures located in roadbed through fills and natural watercourses shall be fully functional without obstructions, including inlet and outlet channel within 20 feet of the structure **(all structures within termini indicated in CT5.31# Summary Table).**

3.5 Entrance Devices. Upon completion of work, replace entrance devices to effectively eliminate access by motorized vehicles (ML-1).

3.6 Seed and fertilize all disturbed areas in accordance with requirements set forth in T-8410 Vegetation Establishment.

T-8360 Composite High Clearance Road Maintenance

DESCRIPTION

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

MATERIALS

2.1 Required materials are listed in subsection 3.2.

REQUIREMENTS

3.1 Traveled Way

A. Purchaser may smooth or fill existing cross ditches and waterbars and, by agreement, modify existing road junction to enable vehicle access. Prior to beginning haul and resumption of haul after an extended stoppage:

1. Remove brush, fallen trees, rocks, and other debris from traveled way, including turnouts, turnarounds, and other locations that interfere with needed maintenance. No object extending over 4 inches above the road surface shall remain within the 12 feet usable traveled way.
2. Center the usable width of the roadbed or position away from the fill slope.
3. Cut and remove standing or down trees, logs, brush, and limbs from within the 12 feet usable traveled way. Remove encroaching limbs to a height of 14 feet above the traveled way surface. Scatter material not meeting utilization standards outside and below the roadbed on the fill side. Limb and remove designated timber which meets utilization standards or deck at agreed locations.
4. Place all removed material away from drainages and in locations previously agreed to in writing by the FSR.
5. During use, maintain drainage structures including dips, ditches and culverts in a usable condition and surface in a flat, Insloped or Outsloped, or Crowned usable condition.

3.2 Drainage Facilities. Clean and recondition drainage facilities in accordance with T-8310 Ditch Cleaning and T-8340 Drainage Structure Maintenance. **See Table in T-8340 for new structures; maintain all other structures per 3.1, item 5 above within termini indicated in CT5.31# Summary Table.**

TOP CAT ROAD MAINTENANCE REQUIREMENTS
FS-2400-6T Contracts (06/06)
CT5.31## Special Provisions

3.3 Slough and Slides

1. Slough and Slides may be left in place provided surface drainage is adequately provided and at least 12 feet of width is available for vehicle passage.
2. Purchaser may reposition or ramp over Slides and Slough when the Traveled Way is less than 12 feet providing the material is capable of supporting vehicles. Limit Outslope to no more than six percent.
3. Reposition Slough or Slide materials, which are not capable of supporting a vehicle, on the roadbed to provide the 12 feet width. When directed by Forest Service, Slough or Slide material will be removed under Section T-8320 Slide, Slump, and Erosion Repair.

3.4 Slumps, Eroded areas, and Washouts

1. Drain the roadbed immediately upgrade of Slumps and longitudinal cracks to prevent water from entering Slump area.
2. Slumps and longitudinal cracks at the edge of the roadbed shall not be considered a part of the usable width. Usable width may be reduced to ten feet in the area of the Slump.
3. Unless Forest Service agrees to material being placed on Slumps, ramp the Slumps on both ends into undisturbed roadbed to provide at least ten feet usable width. Use removed materials to guide vehicles to the ramp location or to aid in draining the area.
4. Eroded areas/washouts may be filled with suitable material and compacted by operating equipment over the fill area.

3.5 Posthaul

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

1. Shape the traveled way and disturbed roadbed to provide functional drainage.
2. Reinstall removed cross ditches and waterbars and provide any additional drainage structures necessary to offset changes caused through use and maintenance.
3. Leave roads useable for high clearance vehicles. Remove or reshape Purchaser modifications at road junctions to leave the entrance as it was before use, or as agreed at the time of improvement.
4. Close all roads which were closed prieviously, using prior existing methodology.

T-8620 Miscellaneous Maintenance

DESCRIPTION

1.1 Maintenance of miscellaneous structures includes cattle guards, gates (this includes all types of closure devices such as logs, rocks, dirt berms, dirt and slash berms, metal gates, etc), signs, and other similar structures that have been previously installed to insure safe and efficient operation of the road.

TOP CAT ROAD MAINTENANCE REQUIREMENTS
FS-2400-6T Contracts (06/06)
CT5.31## Special Provisions

MATERIALS

2.1 Any Materials needed in the maintenance of miscellaneous structures shall be similar in type and quality to the Material in the structure being maintained.

REQUIREMENTS

3.1 Cattle guards. Loose rails shall be welded or bolted back in place.
Excess Material carried into the cattle guard shall be removed when drainage is blocked or when it reaches six inches from the bottom of the cattle guard frame. Drainage into and from the cattle guard shall be kept open.

3.2 Gates (and other closure devices). Gates shall be kept in good repair and made to swing easily. Hinges or latches shall be repaired if not operating properly. Brush and debris shall be removed from within the swinging radius. Weathered berms or wood piles shall be reconstructed to a height which discourages use and blocks the road.

3.3 Signs. Any signs needing repair or replacement shall be installed per sign placement detail or MUTCD direction. All roads shall have legible sign numbers. ML 3-5 roads shall have horizontal numbering and ML 1-2 roads shall have vertical numbers. The material used shall be as directed by the Forest Service Representative. All new signs must meet retro reflectivity requirements.

Road Number	Road Name	Location	Remove/Install	Type of Item	Size	Quantity
1826	1826	2/	Install	Earthen Berm3/	1/	1
1826	1826	**0.55**2/	Install	Earthen Berm3/	1/	1
1827	1827	2/	Install	Earthen Berm3/	1/	1

1/ Per Typical Drawing – Earthen Berms/Road Closure Devices

2/ At Location Designated by Forest Service

3/ OHV passable berm

Top Cat Timber Sale
SPECIFIED ROAD WORK SCHEDULE OF ITEMS

Item No.	Road Number & Item Description	C or R[1]	Unit of Measure & M of M [2]	Quantity	Road Standard (W, D, S) [3]	Unit Allowance	Estimated Allowance
	FR 1826	**R**			**D**		
	M.P. 0.00-0.93						
249(02)	Composite Road Construction Work includes shaping road to crown or outslope and restoring ditches to allow for drainage.		Mile/DQ	0.93		$4,000.00	$3,720.00
308(01)	Minor Crushed Aggregate Courses. Work includes furnishing, hauling and placing 30 CY of crushed aggregate surfacing onto entrance. (39 CY loose material)		CY/DQ	30		$30.00	$900.00
	M.P. 0.38						
203(04)	Remove existing pipe at MP 0.38 and dispose off of government property		LS/LSQ	1		$200.00	$200.00
157(02)	Soil Erosion control, 200' silt fence. Work includes furnishing and installing as directed by the Forest Service.		FT/ DQ	200		$3.00	$600.00
249(03)	Structure Excavation/ Excavate for new culvert bed and improve inlet 25' left and outlet 50' right.		LS LSQ	1		$350.00	$350.00

Item No.	Road Number & Item Description	C or R[1]	Unit of Measure & M of M [2]	Quantity	Road Standard (W, D, S) [3]	Unit Allowance	Estimated Allowance
	FR 1826 (cont.)	**R**			**D**		
	MP 0.38 (cont.)						
602(74)	Furnish and install 36" x 40' High Density Polyethylene (HDPE) dual walled drainage pipe and band.		LF/AQ	40		$53.00	$2,120.00
204(04)	Excavate 100 CY local borrow from left and right, at MP 0.39, and place into travel way over/near pipe. Backfill shall be placed in 6" lifts and compacted using Method A, see notes.		CY/DQ	100		$5.00	$500.00
207(01)	Furnish & place 8 oz. woven Geotextile fabric under road surfacing material as permeable separator. (100'L x 15'W)		SY/DQ	167		$3.00	$501.00
322(22)	Minor aggregate course. Furnish, haul and place 24 CY (31 CY loose) pit run road surfacing material. Material shall be Forest Service approved and compacted using Method A, see notes for size and gradation. MP 0.37 - MP 0.39 (100'L x 13'W x 6"D)		CY/DQ	24		$28.50	$684.00
	M.P. 0.50						
	Protect existing pipe at MP 0.50		EA/AQ	1			$-

Item No.	Road Number & Item Description	C or R[1]	Unit of Measure & M of M [2]	Quantity	Road Standard (W, D, S) [3]	Unit Allowance	Estimated Allowance
	FR 1826 (cont.)	**R**			**D**		
	M.P. 0.55						
	Protect existing pipe at MP 0.55		EA/AQ	1			$-
	M.P. 0.58						
204(19)	Construct 30' outlet ditches right and left.		LF/DQ	60		$1.00	$60.00
	M.P. 0.60						
204(19)	Construct 30' outlet ditches right and left.		LF/DQ	60		$1.00	$60.00
	M.P. 0.63 - M.P. 0.66						
204(04)	Excavate 80 CY local borrow from MP 0.63, left and right. Place onto travel way at left T Turn at MP 0.65		CY/DQ	80		$5.00	$400.00
	M.P. 0.70 - M.P. 0.77						
203(01)	Remove existing pipe at MP 0.75 and dispose off of government property		EA/DQ	1		$200.00	$200.00
204(20)	Structure Excavation/ Excavate for new culvert bed		EA/DQ	1		$150.00	$150.00
602(74)	Furnish and install 15" x 30' HDPE dual walled drainage pipe.		LF/AQ	30		$14.00	$420.00
204(01)	Excavate 80 CY local borrow from MP 0.70-MP 0.72, left and right. Place onto travel way over pipe at MP 0.75. Backfill shall be placed in 6" lifts and compacted using Method A, see notes.		CY/DQ	80		$5.00	$400.00

Item No.	Road Number & Item Description	C or R[1]	Unit of Measure & M of M [2]	Quantity	Road Standard (W, D, S) [3]	Unit Allowance	Estimated Allowance
	FR 1826 (cont.) M.P. 0.70 - M.P. 0.77 (cont.)	**R**			**D**		
249(03)	Composite Road Construction Work construct ditches left, to pipe to allow for drainage. MP 0.74 - MP 0.77		LS/LSQ	1		$150.00	$150.00
207(01)	Furnish & place 8 oz. woven Geotextile fabric under road surfacing material as permeable separator. MP 0.74 - MP 0.76 (100'L x 15'W)		SY/DQ	167		$3.00	$501.00
322(22)	Minor aggregate course. Furnish, haul and place 36 CY (47 CY loose) pit run road surfacing material. Material shall be Forest Service approved and compacted using Method A, see notes for size and gradation. MP 0.37 - MP 0.39 (150'L x 13'W x 6"D)		CY/DQ	36		$28.50	$1,026.00
	M.P. 0.84 - M.P.0.87						
204(20)	Structure Excavation/ Excavate for new culvert bed at MP 0.85		LS/LSQ	1		$150.00	$150.00
602(74)	Furnish and install 15" x 24' HDPE dual walled drainage pipe.		LF/AQ	24		$14.00	$336.00

Item No.	Road Number & Item Description	C or R[1]	Unit of Measure & M of M [2]	Quantity	Road Standard (W, D, S) [3]	Unit Allowance	Estimated Allowance
	FR 1826 (cont.)	**R**			**D**		
	M.P. 0.84 - M.P.0.87 (cont.)						
204(01)	Excavate 60 CY local borrow from left at MP 0.86 - MP 0.87. Place onto travel way over pipe at MP 0.85. Backfill shall be placed in 6" lifts and compacted using Method A, see notes.		CY/DQ	60		$5.00	$300.00
				FR 1826 segment reconstruction =			**$13,728.00**
	M.P. 0.93-1.05	**C**			**D**		
249(03)	Composite Road Construction Construct new road to crown or outslope to match winter typical drawing to allow for cross drainage.		LS/SQ	1		$800.00	$800.00
204(20)	Structure Excavation/ Excavate for new culvert bed at MP 0.97		EA/AQ	1		$150.00	$150.00
602(74)	Furnish and install 15" x 24' HDPE dual walled drainage pipe.		LF/AQ	24		$14.00	$336.00
204(04)	Excavate 60 CY local borrow from left at MP 0.98 - MP 1.00. Place onto travel way over pipe at MP 0.97. Backfill shall be placed in 6" lifts and compacted using Method A, see notes.		CY/DQ	60		$5.00	$300.00
				FR 1826 segment construction =			**$1,586.00**

Item No.	Road Number & Item Description	C or R[1]	Unit of Measure & M of M [2]	Quantity	Road Standard (W, D, S) [3]	Unit Allowance	Estimated Allowance
	FR 1826-A	**R**			**D**		
	M.P. 0.00 - 0.74						
201(02)	Clearing and Grubbing Work includes mowing overgrown road, using mechanical rotary mower. Mow from back to back of ditch line or 24' cleared road width.		LS/LSQ	1		$1000.00	$1,000.00
249(02)	Composite Road Construction Work includes shaping road to crown/restore ditches to allow for drainage.		Mile/DQ	0.74		$4,200.00	$3,108.00
	M.P. 0.05 - 0.06						
204(20)	Structure Excavation/ Excavate for new culvert bed at MP 0.05		EA/DQ	1		$150.00	$150.00
602(74)	Furnish and install 15" x 24' HDPE dual walled drainage pipe.		LF/AQ	24		$14.00	$336.00
204(04)	Excavate 30 CY local borrow from left at MP 0.06. Place onto travel way over pipe. Backfill shall be placed in 6" lifts and compacted using Method A, see notes.		CY/DQ	30		$5.00	$150.00
322(22)	Minor aggregate course. Furnish, haul & place 12 CY (15 CY loose) pit run road surfacing material. Material shall be Forest Service approved & compacted, Method A, see notes for size and gradation. MP 0.05 - MP 0.06 (50'L x 13'W x 6"D)		CY/DQ	12		$28.50	$342.00

Item No.	Road Number & Item Description	C or R[1]	Unit of Measure & M of M [2]	Quantity	Road Standard (W, D, S) [3]	Unit Allowance	Estimated Allowance
	FR 1826-A (cont.) M.P. 0.11 - 0.13	**R**			**D**		
204(20)	Structure Excavation/ Excavate for new culvert bed at MP 0.12		EA/DQ	1		$150.00	$150.00
602(74)	Furnish and install 15" x 24' HDPE dual walled drainage pipe.		LF/AQ	24		$14.00	$336.00
204(04)	Excavate 30 CY local borrow from left. Place onto travel way over pipe. Backfill shall be placed in 6" lifts and compacted using Method A, see notes.		CY/DQ	30		$5.00	$150.00
	M.P. 0.14 - 0.16						
204(20)	Structure Excavation/ Excavate for new culvert bed at MP 0.15		EA/DQ	1		$150.00	$150.00
602(74)	Furnish and install 15" x 24' HDPE dual walled drainage pipe.		LF/AQ	24		$14.00	$336.00
204(04)	Excavate 30 CY local borrow from left. Place onto travel way over pipe. Backfill shall be placed in 6" lifts and compacted using Method A, see notes.		CY/DQ	30		$5.00	$150.00
	M.P. 0.19						
204(20)	Structure Excavation/ Excavate for new culvert bed		EA/DQ	1		$150.00	$150.00
602(74)	Furnish and install 15" x 30' HDPE dual walled drainage pipe.		LF/AQ	30		$14.00	$420.00

Item No.	Road Number & Item Description	C or R[1]	Unit of Measure & M of M [2]	Quantity	Road Standard (W, D, S) [3]	Unit Allowance	Estimated Allowance
	FR 1826-A (cont.) M.P. 0.25	**R**			**D**		
203(01)	Remove existing pipe at MP 0.25 and dispose off of government property		EA/AQ	1		$250.00	$250.00
204(20)	Structure Excavation/ Excavate for new culvert bed		LS/LSQ	1		$150.00	$150.00
602(74)	Furnish and install 15" x 30' HDPE dual walled drainage pipe.		LF/AQ	30		$14.00	$420.00
	M.P. 0.31						
	Protect existing pipe at MP 0.50		LS/LSQ	1			$-
	M.P. 0.39						
204(20)	Structure Excavation/ Excavate for new culvert bed		EA/DQ	1		$150.00	$150.00
602(74)	Furnish and install 18" x 30' HDPE dual walled drainage pipe. Skew pipe left hand forward.		LF/AQ	30		$17.50	$525.00
	M.P. 0.46 - 0.48						
308(22)	Minor aggregate course. Furnish, haul & place 24 CY (31 CY loose) pit run road surfacing material. Material shall be Forest Service approved and compacted using Method A, see notes for size and gradation. MP 0.46 - MP 0.48 (100'L x 13'W x 6"D)		CY/DQ	24		$28.50	$684.00
	M.P. 0.56 - 0.58						
204(20)	Structure Excavation/ Excavate for new culvert bed at MP 0.57		EA/DQ	1		$150.00	$150.00

Item No.	Road Number & Item Description	C or R[1]	Unit of Measure & M of M [2]	Quantity	Road Standard (W, D, S) [3]	Unit Allowance	Estimated Allowance
	FR 1826-A (cont.)	**R**			**D**		
	M.P. 0.56-0.58 (cont.)						
602(74)	Furnish & install 15" x 36' HDPE Polyethylene dual walled drainage pipe.		LF/AQ	36		$14.00	$504.00
204(04)	Excavate 60 CY local borrow from left. Place onto travel way over pipe. Backfill shall be placed in 6" lifts and compacted using Method A, see notes.		CY/DQ	60		$5.00	$300.00
322(22)	Minor aggregate course. Furnish, haul & place 24 CY (31 CY loose) pit run road surfacing material. Material shall be FS approved and compacted using Method A, see notes for size and gradation. MP 0.56 - MP 0.58		CY/DQ	24		$28.50	$684.00
	M.P. 0.65 - 0.68						
204(20)	Structure Excavation/ Excavate for new culvert bed at MP 0.66		EA DQ	1		$150.00	$150.00
602(74)	Furnish & install 15" x 24' HDPE dual walled drainage pipe.		LF/AQ	24		$14.00	$336.00
204(04)	Excavate 30 CY local borrow from left. Place onto travel way over pipe. Backfill shall be placed in 6" lifts and compacted using Method A, see notes.		CY/DQ	30		$5.00	$150.00

Item No.	Road Number & Item Description	C or R[1]	Unit of Measure & M of M [2]	Quantity	Road Standard (W, D, S) [3]	Unit Allowance	Estimated Allowance
	FR 1826-A (cont.)	**R**			**D**		
	M.P. 0.65 - 0.68 (cont.)						
207(01)	Furnish & place 8 oz. woven Geotextile fabric under road surfacing material as permeable separator. (100'L x 15'W)		SY/DQ	167		$3.00	$501.00
322(22)	Minor aggregate course. Furnish, haul & place 24 CY (31 CY loose) pit run road surfacing material. Material shall be Forest Service approved and compacted using Method A, see notes for size and gradation. MP 0.65 - MP 0.67 (100'L x 13'W x 6"D)		CY/DQ	24		$28.50	$684.00
						FR 1826-A segment =	**$12,566.00**
	FR 1826-C	**R**			**D**		
	M.P. 0.00-0.26						
249(02)	Composite Road Construction Work includes shaping road to crown or outslope and to restore existing ditches to allow for drainage.		Mile/DQ	0.26		$4,200.00	$1,092.00
	M.P. 0.26						
204(04)	Excavate 40 CY local borrow from 50' left of MP 0.26, left and right sides of T turn. Place onto travel way to build up turn around		CY/DQ	40		$5.00	$200.00
						FR 1826-C segment =	**$1,292.00**

Item No.	Road Number & Item Description	C or R[1]	Unit of Measure & M of M [2]	Quantity	Road Standard (W, D, S) [3]	Unit Allowance	Estimated Allowance
	FR 1827	**R**			**W**		
	M.P. 0.00 - 0.97						
249(02)	Composite Road Construction Work includes shaping road to crown/restore ditches to allow for drainage.		Mile/DQ	0.97		$4,000.00	$3,880.00
	M.P. 0.00 - 0.01						
308(01)	Minor Crushed Aggregate Courses. Work includes furnishing, hauling and placing 30 C.Y. of crushed aggregate surfacing onto entrance. (39 CY loose material)		CY/DQ	30		$30.00	$900.00
	M.P. 0.02						
204(27)	Remove berm and place onto travel way.		EA/DQ	1		$75.00	$75.00
	M.P. 0.03 - 0.05						
157(02)	Soil Erosion control, 200' silt fence. Work includes furnishing and installing as directed by the Forest Service.		FT/DQ	200		$3.00	$600.00
213(01)	Furnish and place Geogrid, as mechanical stabilizer, under 3/4" washed stone, see notes. (100'L x 13'W)		SY/DQ	145		$7.00	$1,015.00
308(03)	Minor Crushed Aggregate Course. Furnish, haul & place 48 CY (62 CY loose) of washed 3/4" stone, over Geogrid. (100'L x 13'W x 12"D)		CY/DQ	48		$30.00	$1,440.00

Item No.	Road Number & Item Description	C or R[1]	Unit of Measure & M of M [2]	Quantity	Road Standard (W, D, S) [3]	Unit Allowance	Estimated Allowance
	FR 1827 (cont.)	**R**			**D**		
	M.P. 0.03 - 0.05 (cont.)						
207(01)	Furnish & place 8 oz. woven Geotextile fabric, as permeable separator, over 3/4" washed stone. (100'L x 15'W)		SY/DQ	167		$3.00	$501.00
322(22)	Minor aggregate course. Haul and place 24 CY (31 CY loose) pit run road surfacing material, over geotextile. Material shall be Forest Service approved and compacted using Method A, see notes for size and gradation. MP 0.56 - MP 0.58		CY DQ	24		$28.50	$684.00
	M.P. 0.86-0.88						
207(01)	Furnish & place 8 oz. woven Geotextile fabric under road surfacing material as permeable separator. (100'L x 15'W)		SY/DQ	167		$3.00	$501.00

Item No.	Road Number & Item Description	C or R[1]	Unit of Measure & M of M [2]	Quantity	Road Standard (W, D, S) [3]	Unit Allowance	Estimated Allowance
322(22)	Minor aggregate course. Furnish, haul & place 24 CY (31 CY loose) pit run road surfacing material. Material shall be Forest Service approved and compacted using Method A, see notes for size and gradation. (100'L x 13'W x 6"D)		CY/DQ	24		$28.50	$684.00
						FR 1827 segment =	**$10,280.00**
						Total Specified Roadwork Appraisal = $39,452.00	

[1]C = Construction
[1]R = Reconstruction
[2]Method of Measure
[3]W = Winter
[3]D = Dry Summer
[3]S = Summer

Prepared by: Alan Pekkala, Civil Engineering Technician

TOP CAT TIMBER SALE

SPECIFIED ROAD NOTES

NOTE: All finished roadbeds shall be 12' as shown in the typical details for crowned roads with no ditches, 1' ditches and out sloped roads.

NOTE: In the narrative compacted and loose volumes are noted with loose volumes in parenthesis.

NOTE: There are underground utility lines in unknown locations on this project. Call MISS DIG THREE full working days before any work begins. Phone 1-800-482-7171.

NOTE: There is **60 CY of crushed aggregate** surfacing (78 CY loose material) to be placed at the entrances of FR 1826 and FR 1827. **There is no government source available for this project.** Purchaser furnished material shall meet gradation requirements for the Michigan Department of State Highway Transportation-Designation 22A. Compact the aggregate by operating spreading and hauling equipment over the full width.

NOTE: There is **192 CY of pit run** road surfacing material required. This volume plus the normal compaction factor of 130% computes to a loose volume of 250 CY. **There is no government source available for this project.** Material shall be 100% smaller than 6" diameter and at least 50% larger than 3" diameter. **Material must be approved by the Forest Service.**

NOTE: There is **600 CY of local borrow/excavation** identified throughout this project. Road work designating local excavation on this sale shall be built to conserve and redistribute topsoil to help prevent erosion after excavation has occurred.

NOTE: There is **48 CY of washed ¾" stone** (62 CY loose) to be placed over Geogrid on FR 1827. **There is no government source available for this project.**

NOTE: There is **400' of silt fence** to be furnished and placed. See narrative description for locations and quantities. Place silt fence as directed by the Forest Service.

NOTE: There is **835 SY (500'L x 15'W) of Geotextile** to be furnished and placed as directed by the Forest Service as a permeable separator as noted on Schedule of Items. Geotextile Type II separation material must be equivalent to or greater than **US 205 woven 8 oz. fabric**.

TOP CAT TIMBER SALE

SPECIFIED ROAD NOTES (cont.)

NOTE: There is **145 SY (100'L x 13'W) of Geogrid** to be furnished and placed as directed by the Forest Service as a mechanical stabilizer, as noted on Schedule of Items. Geogrid mechanical stabilizer shall have a radial stiffness equivalent to or greater than 20,580 lb/ft, ASTM D6637-10. Geogrid mechanical stabilizer must be structurally equivalent to or greater than **Tensar TriAx TX160**.

NOTE: High density polyethylene drainage pipes shall be dual walled and have a smooth interior. **Minimum cover over HDPE culverts shall be 1.5 feet,** as shown on typical drawing.

NOTE: Winter standard typical roads shall be built to minimize soil disturbance and potential erosion, and allow for proper cross drainage.

NOTE: During pit run borrow and gravel hauling operations, "Trucks Hauling" signs shall be placed on Forest Highway 16 and haul route, refer to the Sale Area Map for cautionary sign placement. Hauling shall not commence signs have been put in place as directed by the Forest Service.

NOTE: During clear and grub operations all slash resulting from purchasers operation shall be treated as per CT 6.7#.

Standard Specifications for Construction of Roads & Bridges on Federal Highway Projects

Specification List

Project Name: **Top Cat Timber Sale**

Date Prepared: 09/30/2015

Page 1 of 2

Road Numbers: **FR 1826** **FR 1826-A**		**FR 1826**	**FR 1826-A**	
Road Name:	Termini…	Miles		
	Construction Reconstruction	0.12 0.93	--- 0.74	
Spec. No.	**Title**			**Latest Revised Edition**
101 thru 109	General Requirements	X	X	2003
157	Soil Erosion Control	X		2003
201	Clearing and Grubbing		X	2003
203	Removal of Structures and Obstructions	X	X	2003
204	Excavation and Embankment	X	X	2003
207	Earthwork Geotextiles	X	X	2003
308	Minor Crushed Aggregate	X		2003
322	Minor Aggregate Course	X	X	2003
602	Culverts and Drains	X	X	2003

Project Name: **Top Cat Timber Sale**

Date Prepared: 09/30/2015

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Road Numbers: **FR 1826-C** **FR 1827**		**FR 1826-C**	**FR 1827**	
Road Name:	Termini…	Miles		
	Construction Reconstruction	--- 0.26	--- 0.97	
Spec. No.	**Title**			**Latest Revised Edition**
101 thru 109	General Requirements	X	X	2003
157	Soil Erosion Control		X	2003
204	Excavation and Embankment	X	X	2003
207	Earthwork Geotextiles		X	2003
213	Subgrade Stabilization		X	2003
308	Minor Crushed Aggregate		X	2003
322	Minor Aggregate Course		X	2003

Note: The Forest Service, U.S. Department of Agriculture has adopted FP-03 for construction of National Forest System Roads.

TOP CAT TIMBER SALE

SUPPLEMENTAL SPECIFICATIONS

Section 101-109	General Requirements
Section 157	Soil Erosion Control
Section 201	Clearing and Grubbing
Section 203	Removal of Structures and Obstructions
Section 204	Excavation and Embankment
Section 207	Earthwork Geotextile
Section 208	Structural Backfill
Section 213	Subgrade Stabilization
Section 249	Composite Road Construction
Section 301	Untreated Aggregate Courses
Section 322	Minor Aggregate Course
Section 602	Culverts and Drains

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.

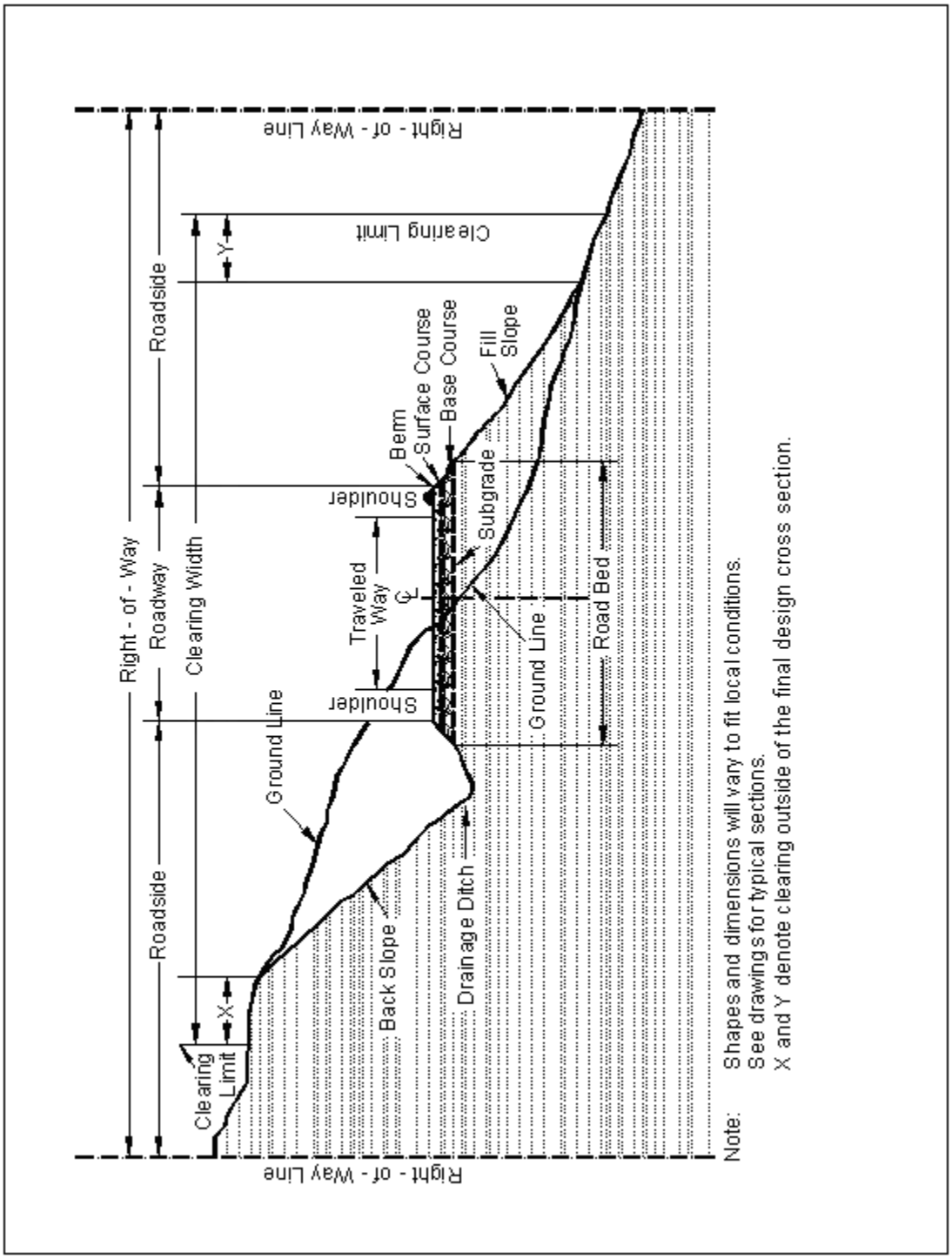
Road Order--An order affecting and controlling traffic on roads under Forest Service jurisdiction. Road Orders are issued by a designated Forest Officer under the authorities of 36 CFR, part 260.

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_nat_us_11_06_2007

101.04 Definitions.

Delete the following definitions:

Contract Modification

Day

Notice to Proceed

Solicitation

102 - Bid, Award, and Execution of Contract

102.00_nat_us_02_16_2005

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.

104.03_nat_us_02_22_2005

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.

104.07_nat_us_02_17_2005

Add Subsection.

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.

There is no Government-provided material source for pit run gravel or 22-A crushed gravel for this project.

Unclassified sand backfill material is available for use as (backfill and surfacing material) as needed for the project from Bob Lake Pit, T49N, R37W, Sections 9 & 10.

There is no charge for material taken from this pit for use on this project.

105.02_nat_us_02_17_2005

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_01_17_2013

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 - Legal Relations and Responsibility To the Public

107.08_nat_us_05_11_2004

107.08 Sanitation, Health, and Safety.

Add the following:

Perform all operations in a prudent, conscientious, safe and professional manner. Ensure that all personnel involved in handling and packaging the hazardous waste are trained for the level of expertise required for the proper performance of the task and, in particular, in the areas of chemical incompatibility, general first aid procedures, and spills. Provide handling and personal protective equipment appropriate to ensure safe handling of the hazardous waste according to 29 CFR 1910.120). Notify the Forest Service of all hazardous material that may be brought onto the National Forest.

107 - Legal Relations and Responsibility to the Public

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

108.00_nat_us_02_16_2005

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.

109.03_nat_us_02_17_2005

SUPPLEMENTAL SPECIFICATION

Section 157. - SOIL EROSION CONTROL

157.03 General

(a) Add 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.

157.16

Delete **(a), (b), & (c).**
Replace with:

- **(a)** 50 percent of the contract quantity at the unit bid price will be paid upon installation.
- **(b)** Payment of the remaining contract quantity at the unit bid price will be paid at completion and acceptance of the contract.

SUPPLEMENTAL SPECIFICATION

Section 201-CLEARING AND GRUBBING

201.01 Delete entire subsection and replace with the following:

This work shall consist of clearing, grubbing, trimming and disposing of or treatment of timber, construction slash, and debris. This work shall also include preservation of vegetation and objects DESIGNATED to remain from injury or defacement.

201.02 Delete Tree wound dressing material reference.

201.03 Delete the last sentence.

201.04 Clearing.

Delete **(a), (b), (c), (d)**

Replace with the following:

(a) Trees may be felled perpendicular and away from the road centerline to facilitate slash treatment operations whenever ground conditions, tree lean and shape of clearing permit. Controlled felling shall be used to prevent damage to trees outside of the clearing limits. Controlled felling shall be used that will ensure the direction of fall when necessary to prevent damage to property, structures, trees DESIGNATED to remain, or traffic.

(b) Fire-dangerous dead trees or unstable live trees, DESIGNATED by the Engineer within 100 feet slope distance of the centerline of roads shall be cut of not more than 12 inches above the uphill ground line and treated in accordance with Subsections 201.04 (a).

(c) When Branch Trimming is used as a pay item, the removal of limbs which hang over the roadway shall be limited to those within 20 feet vertical clearance above and to the edge of the existing clearing on each side of the road shoulder. Branches removed shall be scattered outside of the existing clearing unless otherwise directed. Branches shall not be bunched during scattering operations. Limbing shall be done by means of pruning saws, power saws, nippers, bow saws, or cross-cuts. Limbs shall be pruned as close as possible to the tree trunks. Disposal shall include removal of debris from the roadway ditches, to provide a roadside strip that will be asthetically pleasing.

(d) Felling and Bucking. Felling shall be done to minimize damage to merchantable timber and damage to remaining trees outside of clearing limits. Felling shall be done with saws or shears unless shown otherwise in the SUPPLEMENTAL SPECIFICATIONS. Felling may be accomplished by pushing over with Construction or Logging equipment.

201.05 Grubbing.

Delete **(a), (b), (c), (d)**

Replace with the following:

(a) Undisturbed stumps outside the roadway or in embankment areas, provided they do not extend more than 12 inches above the original ground (measured from the uphill side) nor closer than 2 feet to the finished subgrade or 1 foot to any slope surface or as otherwise

SHOW ON THE DRAWINGS and they do not interfere with the placement or compaction of embankments.

(b) Grubbing of pits, channel changes, rock sections, and ditches, below the depth of the proposed excavation.

(c) All roots over 3 inches in diameter within the roadbed area shall be grubbed to a minimum depth of 6 inches below subgrade. Roots over 3 inches in diameter protruding from the excavated slope shall be cut flush with the excavated slope surface.

201.06 Disposal.

Delete the first sentence and substitute the following:

All merchantable timber within the clearing limits on either private or Government land remains the property of the landowners.

Add the following:

Utilization and Removal of Timber

Trees that equal or exceed the diameters and minimum lengths listed in the SUPPLEMENTAL SPECIFICATIONS and contain one minimum piece shall be removed or disposed of by one of the following methods as shown in the SCHEDULE OF ITEMS.

(a) Logs meeting utilization standards shall be limbed and decked at locations SHOWN ON THE DRAWINGS or at locations approved by the Engineer. Decking shall be done in such a manner that logs are piled parallel one to the other, can reasonably be removed by standard log loading equipment, will not damage standing trees, and will not roll. Decks shall be free of brush and soil.

(b) Disposal as Unmerchantable Timber. Timber on this project that is not considered merchantable shall be disposed of in accordance with Subsection 201.06 for the treatment methods SHOWN ON THE DRAWINGS and in the SCHEDULE OF ITEMS.

(c) Slash Treatment. Treatment of construction slash larger than 3 inches in diameter and 3 feet in length shall be accomplished by one or more of the following methods as shown in the SCHEDULE OF ITEMS:

(1) Scattering

(2) Stump Dumps

(a) All Methods. No construction slash shall be deposited in lakes, meadows, streams, or streambeds. Construction slash that interferes with drainage structures shall be removed immediately. Trees adjacent

to the clearing limits damaged beyond recovery shall be felled and disposed of in accordance with Subsection 201.06 or treated as construction slash.

(b) Specific Methods.

(1) Scattering. Unless specified otherwise, the contractor shall meet the following requirements. Construction slash shall be scattered outside the clearing limits without damaging trees outside the cleared area. Stumps shall be severed from all trees, and set in an upright position with their root masses resting on the ground. Logs shall be placed away from trees, positioned so that they will not roll, not placed on top of one another or left leaning on other trees. Construction slash shall be limbed to reduce slash concentrations.

(2) Stump Dumps. Stumps, roots, rocks, topsoil and other grubbing debris shall be concentrated in stump dump areas. Stump dump areas shall be located by the Engineer, be a maximum of 300 feet apart along the road centerline, and generally be located in natural depressions or tucked away behind denser vegetation or ground rises. Stump dumps will vary in size depending on each site, but shall not be closer than 5 feet outside of the clearing limits. Stump dump material shall be matted down as much as possible and shall not obstruct natural drainages.

In areas of light clearing where trees are widely separated, the stumps may be individually scattered in an upright position in lieu of the specified dumps, with approval of the project engineer.

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.

203.02_nat_us_02_18_2005

203.02 Material.

Add the following:

Geotextile	714

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_24_2005

203.05 Disposing of Material.

Add the following:

(e): Scattering. Scatter pieces of wood less than 3 inches in diameter and 3 feet in length within the clearing limits. Do not place construction slash in lakes, meadows, streams, or streambeds. Immediately remove construction slash that interferes with drainage structures.

203.05_nat_us_02_18_2005

203.05 Disposing of Material.

(b) Burn.

Delete the last sentence and add the following:

Deposit construction slash so that burning does not damage standing trees. Dispose of unburned material as directed by the CO.

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_nat_us_02_24_2005

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) **Compaction A.** 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	"	"	"
		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	Yes, when requested	Before using in work
		Gradation	—	AASHTO T 27	"	"	"	"
		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	"	"	"
		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.

204.05 Conserved Topsoil

Delete the entire paragraph.

204.06_nat_us_03_02_2005

204.06 Roadway Excavation

(a) General.

Add the following:

Retrieve material deposited outside of the clearing limits as directed by the CO. Place unsuitable material in designated areas.

204.06_nat_us_03_02_2005

204.06 Roadway Excavation.

Add the following:

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.

204.06_nat_us_03_02_2005

204.06 Roadway Excavation

(b) Rock Cuts.

Add the following:

When blasting rock, use blasting methods according to Subsection 205.08

204.09_nat_us_03_02_2005

204.09 Preparing Foundation for Embankment Construction.

Delete subsection (a) and replace it with the following:

(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.

204.10_nat_us_03_02_2005

204.10 Embankment Construction.

Add the following:

Obtain written approval before beginning construction of embankments over 6 feet high at subgrade centerline.

(a) General.

Delete the third paragraph and add the following:

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.

204.11_nat_us_04_11_2005

204.11 Compaction.

Delete the first paragraph and replace it with the following:

For compaction according to method (a), (b), or (c), use AASHTO T 27 to determine the amount of material retained on a Number. 4 sieve. For compaction methods (d) or (e) no sieve test is required.

Add the following compaction methods:

(d) 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 layer~~s~~. 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.

(e) 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.

204.13_nat_us_03_02_2005

204.13 Sloping, Shaping, and Finishing.

Delete section (d) and add the following:

(d) Finishing. For surfaced roads, remove all material larger than 6 inches from the top 6 inches of the roadbed. For all roads, 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 for both surfaced and unsurfaced roads 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 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 visible displacement ceases.

(3) Method C. For roads designated as Construction Tolerance Class K, L, or M, finish the roadbed by spreading the excavation. Eliminate rock berms.

Add Table 204-2—Construction Tolerances:

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.

204.13_nat_us_03_02_2005

204.13 Sloping, Shaping, and Finishing.

(a) Sloping.

Add the following:

Slope rounding is not required on tolerance class D though M roads.

204.14_nat_us_03_02_2005

204.14 Disposal of Unsuitable or Excess Material.

Delete the text of the first paragraph and substitute the following:

Dispose of unsuitable or excess material at designated sites or legally off of the project.

204.15_nat_us_02_07_2007

204.15 Acceptance

Table 204-1 Sampling and Testing Requirements.

Add the following note to the table:

(3) When compaction methods (d) or (e) are used AASHTO M 145, T 99, T 180, and T 310 are not required for earth embankment test methods.

SUPPLEMENTAL SPECIFICATION

Section 208. –STRUCTURE EXCAVATION AND BACKFILL FOR SELECTED MAJOR STRUCTURES

Construction Requirements

208.04 General.

Delete the following: Excavate trenches or foundation pits to a width and length that allows room for work.

And replace with the following:
Excavate trenches for culverts at least as wide as one diameter plus one diameter or span of the structure on each side or 12 feet, whichever is less, with a minimum of two feet on each side.

208.10 Backfill

Add after the second sentence:

On each side of the pipe there shall be an area of compacted material at least as wide as one diameter or span of the structure, with a minimum of two feet or a maximum of twelve feet.

Measurement

208.13 Delete (a), Replace with:

(a) Material excavated outside vertical planes located one pipe diameter or span or a maximum of 12 feet outside and parallel to the limits of the footings or foundations.

249 - Composite Road Construction

Description

249.01 This work consists of clearing and grubbing, excavation and embankment, and removal of all construction slash including all trees designated for removal. Excavation and embankment includes on site borrow excavation; drainage excavation; placing all excavated material; and shaping the roadway; including approaches, turnarounds, ditches and drainage dips. Construct the roadway in conformance with the dimensions "shown on the plans" or as staked on the ground.

Construction Requirements

249.02 Clearing & Disposal

Protect construction stakes and construction control markers. Remove or treat all trees, snags, downed timber, brush, and stumps within the clearing limits according to the following specifications.

(a) Merchantable Timber. Treat according to the Utilization Standards of the

Timber Sale Contract.

(b) Unmerchantable Timber. Treat according to Subsection 249.02 Method A.

(c) Large Construction Slash. Treat construction slash larger than 3 inches in diameter and longer than 3 feet by one or more of the following methods.

(1) Method A. Construction slash shall be scattered outside the clearing limits without damaging trees outside the clearing area. Logs shall be placed away from trees, positioned so that they will not roll, not placed on top of one another or left leaning on other trees. Scattered stumps shall be placed in an upright position

(2) Method B. Stumps, roots, rocks, topsoil and other grubbing debris shall be concentrated in stump dump areas. Stump dump areas shall be located by the Engineer, be a maximum of 300 feet apart along the road centerline, and generally be located in natural depressions or tucked away behind denser vegetation or ground rises. Stump dumps will vary in size depending on each site, but shall not be closer than 10 feet outside of the clearing limits. Stump dump material shall be matted down as much as possible and shall not obstruct natural drainages.

(d) Small Construction Slash. Construction slash less than 3 inches in diameter and less than 3 feet in length may be incorporated into embankments so long as the material is distributed so that it does not result in concentrations or matting.

Immediately remove slash deposited in stream courses.

249.03 Pioneering.

Do not undercut the final back slope during pioneer operations. Deposite material inside the roadway limits. Do not restrict drainages.

249.04 Grubbing.

Grub within the specified limits. Stumps outside the grubbing limits remain if cut no higher than 1 foot or one-third of the stump diameter, whichever is greater, above the original ground, measured on the uphill side, unless otherwise designated. Grub all stumps from the Roadway, or stumps that have less than 1 foot of cover, in the Fill slopes, providing they do not interfere with the placement or compaction of embankments.

249.05 Excavation and Embankment.

Construct the roadway to conform to the typical sections shown on the plans. Protect backslopes from being undercut. Embankment shall be placed in layers no more than 12 inches thick.

Locate and use borrow material, and remove and treat unsuitable excess material, as designated.

Place rocks that are too large to be incorporated in the embankment outside the traveled way on the downhill side such that they will not roll, obstruct drainage, or hinder roadbed use and maintenance.

Shape and finish the roadbed to the condition ordinarily accomplished by a crawler tractor with dozer blade to provide drainage of surface water. Do not permit individual rocks to protrude more than 4 inches above the subgrade of the roadbed. A motor grader finish is not required.

Observe a width tolerance of (+) 18 inches max. for the roadbed.

Where shown on the drawings or designated on the ground, offtake ditches shall be constructed to drain water away from the roadbed.

249.06 Erosion Control.

Perform erosin control measures, where shown on the drawings, or staked on the ground.

Measurement

249.07 Method.

Measure the section 249 items listed in the schedule of items according to subsection 109.02

Payment

249.08 Basis.

The accepted quantities will be paid at the contract price per unit of measurement for Section 249 pay items listed in the Bid Schedule. Payment will be full compensation for the work prescribed in this section. See Subsection 109.05

301 - Untreated Aggregate Courses

301.00_nat_us_03_03_2005

301 Title Change.

Change the title to: **Section 301 Aggregate Courses**

301.01_nat_us_03_03_2005

301.01 Work.

Add the following:

Work includes producing aggregate by pit-run, grid rolling, screening, or crushing methods, or placing Government-furnished aggregate. Work may include additive mineral filler, or binder.

301.02_nat_us_05_16_2005

301.02 Material.

Add the following:

Bentonite	725.30
Calcium Chloride Flake	725.02
Lignon Sulfonate	725.20
Magnesium Chloride Brine or Calcium Chloride Liquid	725.02

301.03_nat_us_02_28_2013

301.03 General.

Add the following:

Written approval of the roadbed is required before placing aggregate.

For pit run or grid-rolled material, furnish material smaller than the maximum size. No gradation other than maximum size will be required for pit-run or 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.

Provide additives or binder, if required, at the proportions specified.

Develop and use Government furnished sources according to Section 105.

If the aggregate is produced and stockpiled before placement, handle and stockpiled according to Section 320. Establish stockpile sites at locations approved. Clear and grub stockpile sites according to Section 201.

301.04_nat_us_03_03_2005

301.04 Mixing and Spreading.

Delete the first sentence of the first paragraph and add the following:

Ensure that aggregate and any required additives, water, mineral filler, and binder are mixed by the specified method except, if crushed aggregate products are being produced and mineral filler, binder, or additives are required, uniformly blend following crushing. Control additive proportions to 0.5 percent dry weight.

(a) Stationary Plant Method. Mix the aggregate with other required materials in an approved mixer. Add water during the mixing operation in the amount necessary to provide the moisture content for compacting to the specified density. After mixing, transport the aggregate to the jobsite while it contains the proper moisture content, and place it on the roadbed or base course using an aggregate spreader.

(b) Travel Plant Method. After placing the aggregate for each layer with an aggregate spreader or windrow-sizing device, uniformly mix it with other required materials using a traveling mixing plant. During mixing, add water to provide the necessary moisture content for compacting.

(c) Road Mix Method. After placing the aggregate for each layer, mix it with other required materials at the required moisture content until the mixture is uniform throughout. Mix aggregate, water, and all other materials until a uniform distribution is obtained.

Spread the aggregate in a uniform layer, with no segregation of size, and to a loose depth that will provide the required compacted thickness.

When placing aggregate over geotextile, place aggregate in a single lift to the full depth specified.

Route and distribute hauling and leveling equipment over the width and length of each layer.

301.05_nat_us_05_17_2005

301.05 Compacting

Delete and replace with the following:

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. Compact to a density of at least 96 percent of the maximum density, as determined by the Modified Marshall Hammer Compaction Method (available upon request from USDA Forest Service, Regional Materials Engineering Center, P.O. Box 7669, Missoula, MT 59807).

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. Compact to a density of at least 100 percent of the maximum density as determined by the Modified Marshall Hammer Compaction Method (available upon request from USDA Forest Service, Regional Materials Engineering Center, P.O. Box 7669, Missoula, MT 59807).

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.

301.05_nat_us_10_14_2011

301.05 Compacting

Delete and replace with the following:

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. Operate 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.

301.06_nat_us_03_03_2005

301.06 Surface Tolerance.

Add the following:

Thickness and Width requirements:

The maximum variation from the compacted specified thickness is ½ inch. The compacted thickness is not consistently above or below the specified thickness and the average thickness of 4 random measurements for any ½ mile of road segment is within + ¼ inch of the specified thickness.

The maximum variation from the specified width will not exceed +12 inches at any point. The compacted width is not consistently above the specified width and the average of any four random measurements along any ½ mile of road segment is within +4 inches of the specified width.

301.08_nat_us_03_03_2005

Table 301-1: Add the following:

Table 301-1—Acceptance 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 Courses L, M, N, O, P, Q, R	Measured and tested conformance (Subsection 106.04)	Plastic Limit	-	AASHTO T 90	1 per each 1,000 T	From the windrow or roadbed after processing	Yes	4 Hours

Table 301-1—Acceptance 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 Width	Measured and tested conformance (Subsection 106.04)	Width	-	-	4 per each 0.5 mi	Roadbed after processing	-	4 Hours
Aggregate Thickness	Measured and tested conformance (Subsection 106.04)	Thickness	-	-	4 per each 0.5 mi	Roadbed after processing	-	4 Hours
Additive	Measured and tested conformance (Subsection 106.04)	Amount of Additive	-		1 per each 1,000 T	From the windrow or roadbed after processing	No	4 Hours

301.08_nat_us_10_14_2011

Table 301-1 Field Density Requirements.

Table 301-1: Delete laboratory and field density requirements for base, subbase, and surfacing and replace with the following:

Material or Product	Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
Base and Subbase	Measured and tested conformance (Subsection 106.04)	Moisture Density	---					
		Method C	---	AASHTO T 99	1 per type and source of material	Source of material	Yes	Before using in work
			---		"	"	"	"
		Method D	---	AASHTO T 180	"	"	"	"
			---		"	"	"	"
		Compaction	---					
		Method C, D	---	AASHTO T 310 or other approved procedures	1 per 500 t	In-place	---	Before placing the next layer
Surfacing	Measured and tested conformance (Subsection 106.04)	Moisture Density						
			---		"	"	"	Before using in work
		Method D	---	AASHTO T 180	"	"	"	"
			---		"	"	"	"
		Compaction						
		Method C, D	---	AASHTO T 310 or other approved procedures	1 per 500 t	In-place	---	Before placing the next layer

301.08_nat_us_03_30_2005

301.08(b) Plasticity Index.

Add the following to the first sentence:

"and under 703.05(c)(1)".

301.09_nat_us_07_07_2005

301.09 Measurement.

Replace the second paragraph with the following:

Measure aggregate by cubic yard compacted in place when payment is by contract quantities.

301.10_nat_us_03_03_2005

301.10 Payment

Delete the following:

adjusted according to Subsection 106.05

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. Compact to a density of at least 96 percent of the maximum density, as determined by the Modified Marshall Hammer Compaction Method (available upon request from USDA Forest Service, Regional Materials Engineering Center, P.O. Box 7669, Missoula, MT 59807).

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. Compact to a density of at least 100 percent of the maximum density as determined by the Modified Marshall Hammer Compaction Method (available upon request from USDA Forest Service, Regional Materials Engineering Center, P.O. Box 7669, Missoula, MT 59807).

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

Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time
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 E	—	R-1 Marshall	"	"	"	"
	Moisture-density Method F	—	AASHTO T 180(1)	"	"	"	"
	Moisture-density Method G	—	R-1 Marshall	"	"	"	"
	In-place density & moisture content	—	AASHTO T 310 or other approved procedures	3 per day	In-place	—	Before placing next layer

Table 322-2
Sampling and Testing Requirements

Type of Acceptance (Subsection)	Characteristic	Category	Test Methods Specifications	Sampling Frequency	Point of Sampling	Split Sample	Reporting Time	Material or Product
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	Subbase, Base, and Surface

Material or Product
Screened Aggregate

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

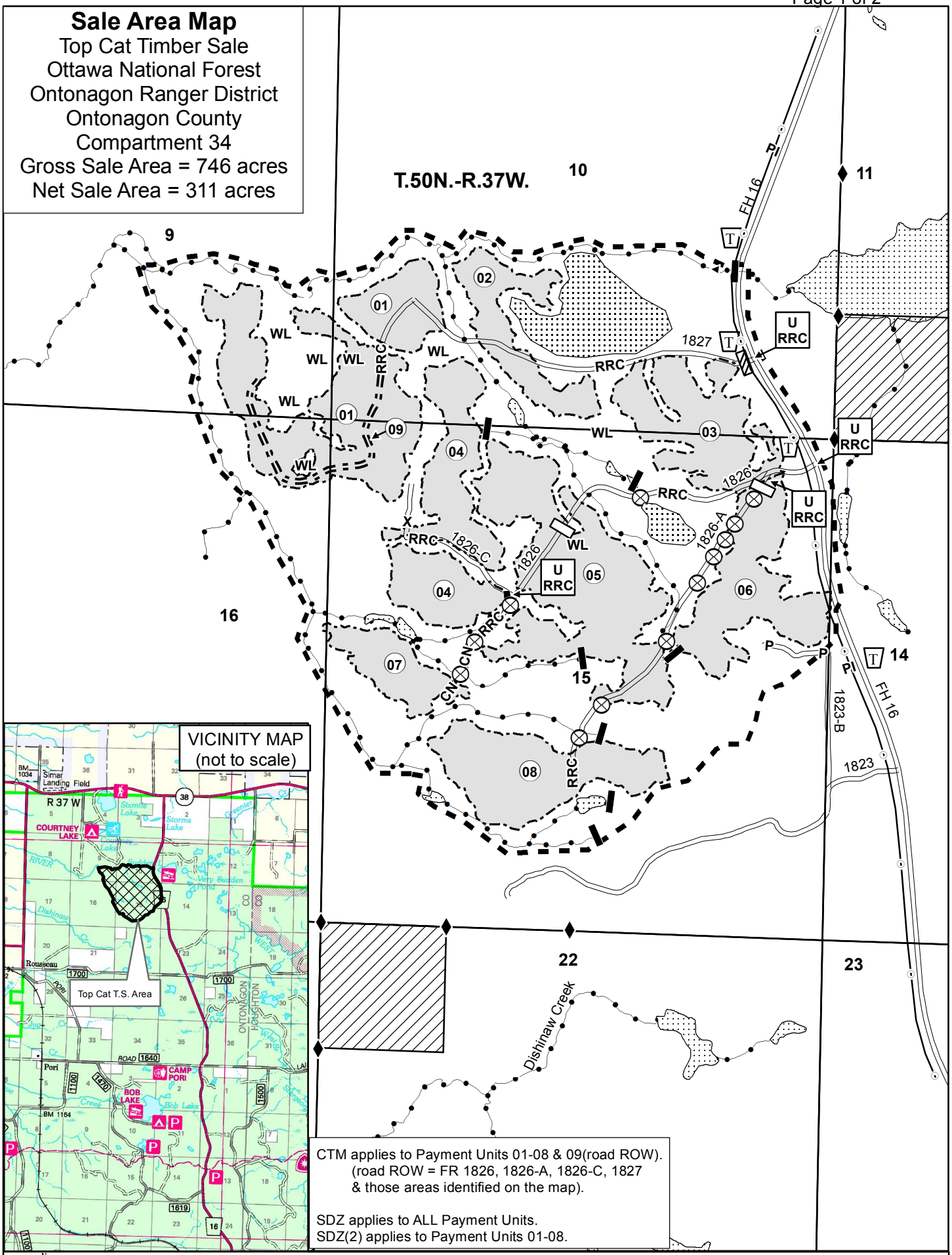
602.06 Laying Plastic Pipe.

Delete the second paragraph and substitute the following:

Provide soil-tight bell and spigot joints for plastic pipe culverts.

Sale Area Map

Top Cat Timber Sale
Ottawa National Forest
Ontonagon Ranger District
Ontonagon County
Compartment 34
Gross Sale Area = 746 acres
Net Sale Area = 311 acres



J.Pelkola
10/19/2015

LEGEND

	Sale Area Boundary, BT1.1
	Payment Unit Boundary, BT1.1
1	Payment Unit Number, BT1.1
CTM	Cut Tree Marked Prior to Advertisement, BT2.35, CT2.355#, CT6.412
1826	Existing Transportation System Road, BT5.12, BT6.22
1826-C X X	Existing Transportation System Road, Hauling Prohibited, CT5.12#
1823-B P P	Existing Transportation System Road, Use Prohibited, CT5.12#
1826 CN CN	Specified Road Construction (New), AT7, BT5.2, BT5.23, BT6.22, BT6.222, BT6.361
1826 RRC RRC	Specified Road Reconstruction, AT7, BT5.2, BT5.23, BT6.22, BT6.222, BT6.361
1708 U U	Existing Transportation System Road, Unsuitable for hauling prior to completion of agreed reconstruction, BT5.12, BT5.23, CT5.12#
⊗	Specified Road Construction/Reconstruction, AT7, BT5.2, BT5.23, BT6.22, BT6.222, BT6.361 (Culvert installation)
1826	Purchaser Install Berm on System Road, CT5.31#, T-8620
1827	Purchaser Remove & Install Berm on System Road, CT5.31#, T-8620
WL	Wetlands Protection, BT6.62, CT6.62#
	Streamcourse Protection, BT6.5 (block represents upper stream limit; arrow indicates flow direction)
SDZ	Slash Disposal, CT6.7#
SDZ(2)	Slash Disposal Zone, CT6.7#
PI	Protect Improvement Not Owned by USFS, BT6.221 (Buried communication line running along west side of Forest Highway 16)
	Other Ownership, CT6.7#
◆	Protection of Land Survey Monuments (Monumented Corner), BT6.23
T	Traffic Control Device, BT6.33 (Safety)