

U.S. DEPARTMENT OF AGRICULTURE FOREST SERVICE TIMBER SALE CONTRACT (Applicable to Sales to be Measured before Felling)		Name of Purchaser 	
National Forest Hiawatha	Ranger District Sault Ste Marie	Region Eastern	Contract Number
Sale Name Terra Cotta		Award Date 	Termination Date 06/30/2024

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

(Title)

(Name)

By: _____ (Purchaser) ^{2/}

(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/}

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: _____

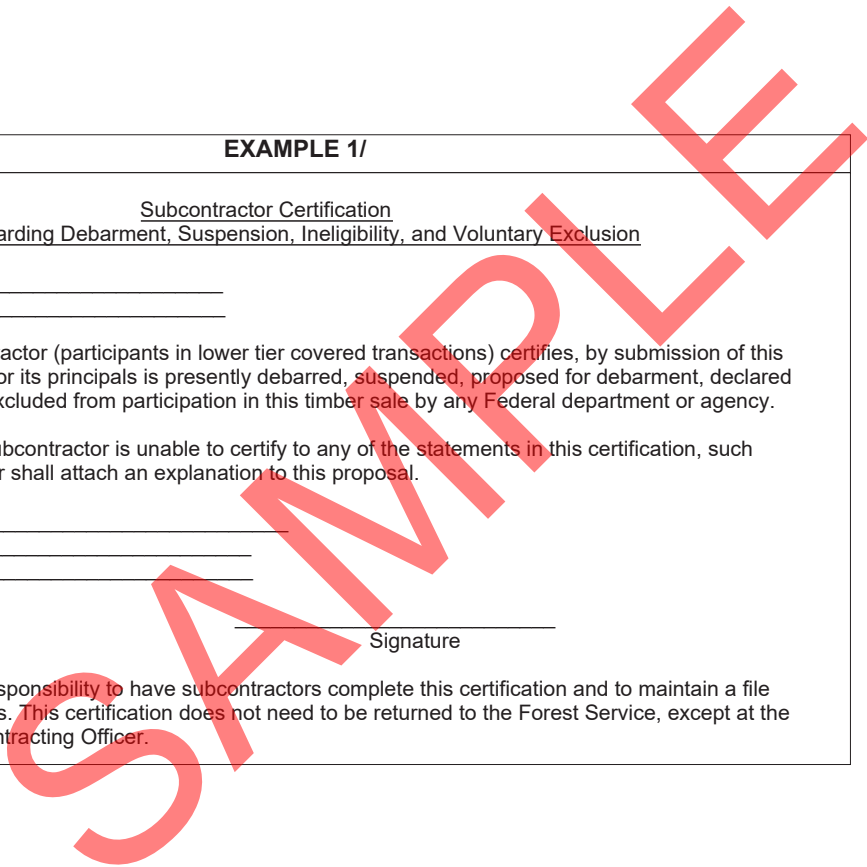
The prospective subcontractor (participants in lower tier covered transactions) certifies, by submission of this proposal, that neither it nor its principals is presently debarred, ~~suspended~~, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this timber sale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



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 433 acres more or less is located in:

T45N R5W Sec. 2, 3 & T46N R6W Sec. 34, 35

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 Hardwood	Sawtimber	2.00	CCF	11.0	1	8	9.6	50
Red Pine	Sawtimber	10,317.00	CCF	9.0	1	8	7.6	50
Eastern White Pine	Sawtimber	17.00	CCF	9.0	1	8	7.6	50
Aspen	Pulpwood	7.00	CCF	5.0	1	8	4.0	70
Mixed Conifer	Pulpwood	26.00	CCF	5.0	1	8	4.0	70
Mixed Hardwood	Pulpwood	292.00	CCF	5.0	1	8	4.0	70
Pine	Pulpwood	1,305.00	CCF	5.0	1	8	4.0	70
Timber Subject to Agreement under CT2.11#								
Mixed Softwood	Pulpwood	unestimated	CCF	4.0	1	8	3.0	70
Mixed Hardwood	Pulpwood	unestimated	CCF	4.0	1	8	3.0	70
Total Quantity		11,966.00	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)	_____	335.1
Incompletely Measured Payment Units (BT2.36)	_____	_____

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

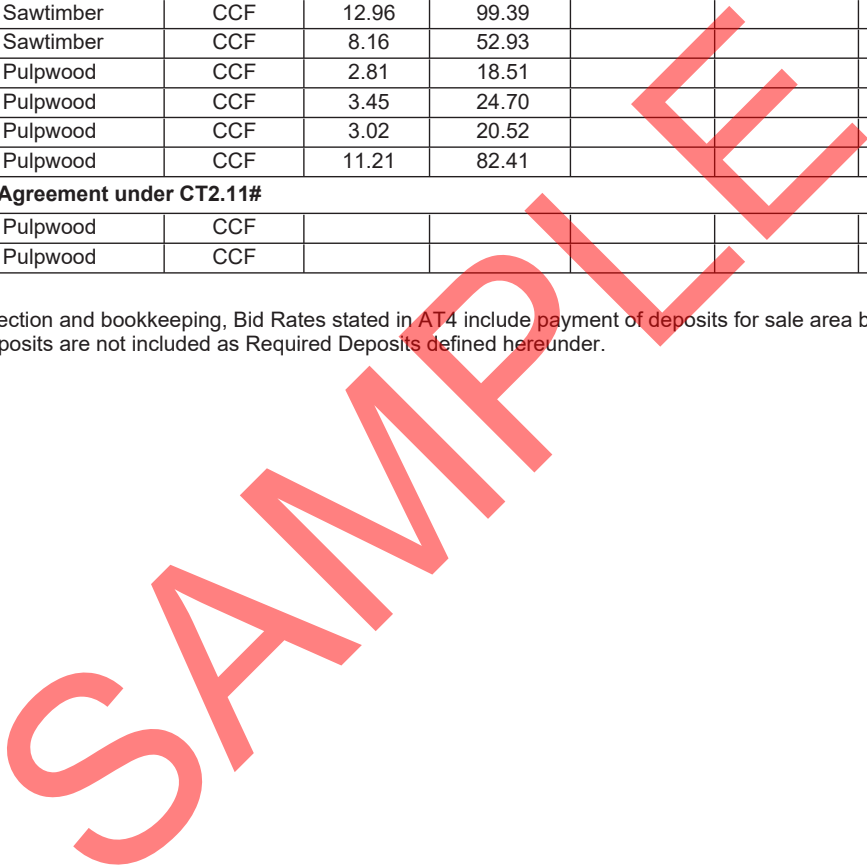
AT4a - For Species and Products to be Paid for at Rates Escalated under BT3.2

Not Applicable

AT4b- For Species and Products to be Paid for at Flat Rates

Species	Product	Unit of Measure	Rates per Unit of Measure				Required Deposits Slash Disposal \$
			Base \$	Advertised \$	Bid Premium \$	Bid (Flat) \$	
Mixed Hardwood	Sawtimber	CCF	10.02	88.27			.00
Red Pine	Sawtimber	CCF	12.96	99.39			.00
Eastern White Pine	Sawtimber	CCF	8.16	52.93			.00
Aspen	Pulpwood	CCF	2.81	18.51			.00
Mixed Conifer	Pulpwood	CCF	3.45	24.70			.00
Mixed Hardwood	Pulpwood	CCF	3.02	20.52			.00
Pine	Pulpwood	CCF	11.21	82.41			.00
Timber Subject to Agreement under CT2.11#							
Mixed Softwood	Pulpwood	CCF					.00
Mixed Hardwood	Pulpwood	CCF					.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.



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 \$
01	47.5			Mixed Hardwood Sawtimber 0.00 CCF		.00
				Red Pine Sawtimber 937.00 CCF		
				Eastern White Pine Sawtimber 2.00 CCF		
				Aspen Pulpwood 0.00 CCF		
				Mixed Conifer Pulpwood 1.00 CCF		
				Mixed Hardwood Pulpwood 34.00 CCF		
				Pine Pulpwood 113.00 CCF		
				Total PU Quantity And Value	1,087.00 CCF	
02	39.6			Red Pine Sawtimber 2,409.00 CCF		.00
				Mixed Conifer Pulpwood 7.00 CCF		
				Mixed Hardwood Pulpwood 61.00 CCF		
				Pine Pulpwood 292.00 CCF		
		Total PU Quantity And Value	2,769.00 CCF			
03	60.5			Mixed Hardwood Sawtimber 0.00 CCF		.00
				Red Pine Sawtimber 1,510.00 CCF		
				Eastern White Pine Sawtimber 6.00 CCF		
				Aspen Pulpwood 2.00 CCF		
				Mixed Conifer Pulpwood 3.00 CCF		
				Mixed Hardwood Pulpwood 31.00 CCF		
				Pine Pulpwood 197.00 CCF		
		Total PU Quantity And Value	1,749.00 CCF			
04	37.9			Red Pine Sawtimber 2,306.00 CCF		.00
				Mixed Conifer Pulpwood 6.00 CCF		
				Mixed Hardwood Pulpwood 58.00 CCF		
				Pine Pulpwood 279.00 CCF		
		Total PU Quantity And Value	2,649.00 CCF			
05	48.8			Mixed Hardwood Sawtimber 0.00 CCF		.00
				Red Pine Sawtimber 1,355.00 CCF		
				Eastern White Pine Sawtimber 4.00 CCF		
				Aspen Pulpwood 1.00 CCF		
				Mixed Conifer Pulpwood 5.00 CCF		
				Mixed Hardwood Pulpwood 8.00 CCF		
				Pine Pulpwood 195.00 CCF		
		Total PU Quantity And Value	1,568.00 CCF			
06	45.4			Mixed Hardwood Sawtimber 2.00 CCF		.00
				Red Pine Sawtimber 567.00 CCF		
				Eastern White Pine Sawtimber 1.00 CCF		
				Aspen Pulpwood 3.00 CCF		
				Mixed Conifer Pulpwood 1.00 CCF		
				Mixed Hardwood Pulpwood 70.00 CCF		
				Pine Pulpwood 67.00 CCF		
		Total PU Quantity And Value	711.00 CCF			
07	21.4			Mixed Hardwood Sawtimber 0.00 CCF		.00
				Red Pine Sawtimber 342.00 CCF		
				Eastern White Pine Sawtimber 0.00 CCF		
				Aspen Pulpwood 1.00 CCF		
				Mixed Conifer Pulpwood 1.00 CCF		
				Mixed Hardwood Pulpwood 20.00 CCF		
				Pine Pulpwood 40.00 CCF		
		Total PU Quantity And Value	404.00 CCF			

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 \$
08	33			Mixed Hardwood Sawtimber 0.00 CCF		.00
				Red Pine Sawtimber 877.00 CCF		
				Eastern White Pine Sawtimber 4.00 CCF		
				Aspen Pulpwood 0.00 CCF		
				Mixed Conifer Pulpwood 2.00 CCF		
				Mixed Hardwood Pulpwood 8.00 CCF		
				Pine Pulpwood 120.00 CCF		
					Total PU Quantity And Value	
50	1			Mixed Hardwood Sawtimber 0.00 CCF		.00
				Red Pine Sawtimber 14.00 CCF		
				Aspen Pulpwood 0.00 CCF		
				Mixed Hardwood Pulpwood 2.00 CCF		
				Pine Pulpwood 2.00 CCF		
					Total PU Quantity And Value	

SAMPLE

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#.

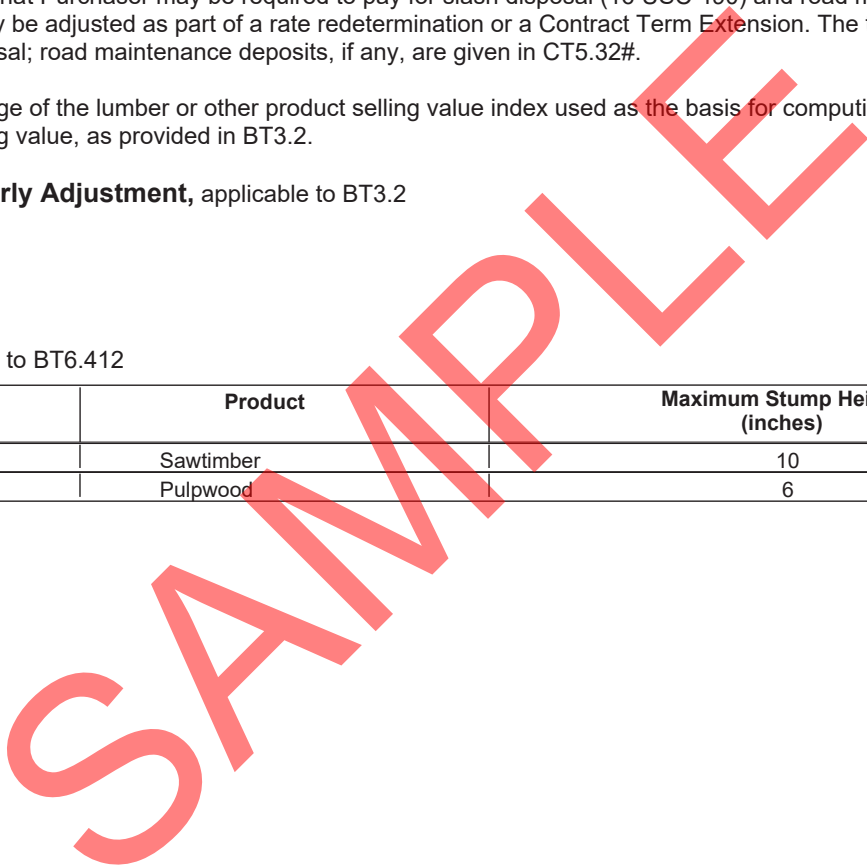
Base Index is the specified average of the lumber or other product selling value index used as the basis for computing adjustment in rates for variance in product selling value, as provided in BT3.2.

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	10
All	Pulpwood	6



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/}	
FR3016	FR3016 (R) (segment 0 to .02)	Single Lane - 5 mph	.02 / .03	5	11/04/2020	FS	FS	FS AC
FR3451	FR3451 (R) (segment 0 to .02)	Single Lane - 5 mph	.02 / .03	6	11/04/2020	FS	FS	FS AC
FR3459	FR3459 (R) (segment 0 to .1)	Single Lane - 5 mph	.1 / .16	7	11/04/2020	FS	FS	FS AC
FR3564	FR3564 (R) (segment 0 to .1)	Single Lane - 5 mph	.1 / .16	8	11/04/2020	FS	FS	FS AC
FR3565	FR3565 (R) (segment 0 to .02)	Single Lane - 5 mph	.02 / .03	9	11/04/2020	FS	FS	FS AC
FR3712	FR3712 (R) (segment 0 to .1)	Single Lane - 5 mph	.1 / .16	10	11/04/2020	FS	FS	FS AC
FR3712A	FR3712 Spur A (R) (segment 0 to .51)	Single Lane - 5 mph	.51 / .82	11	11/04/2020	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 December 01, inclusive

AT10 - Purchaser Responsibility to Furnish Crews and Equipment for:

Initial Fire Suppression, applicable to BT7.3

Within 5 road miles

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

Within 10 road miles

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

Maximum Amount: \$ \$1,300

AT12 - Termination Date, applicable to BT8.2

June 30, 2024

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

First Period: May 15 to March 31, inclusive

Second Period: _____ to _____, inclusive

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

	<u>Periodic Payment Determination Date</u>	<u>Amount</u>
Initial Payment:	_____	_____
Additional Payment:	_____	_____

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

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

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
BT8.64	DEBARMENT AND SUSPENSION CERTIFICATION

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.)

CT2.11#	TIMBER SUBJECT TO AGREEMENT (06/1972)
CT2.302#	BOUNDARY TREES (06/2009)
CT2.355#	INDIVIDUAL TREES, CUT TREE MARKING (06/2009)
CT2.356#	INDIVIDUAL TREES, LEAVE 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)
CT5.213#	DEPOSIT FOR RECONSTRUCTION ENGINEERING SERVICES (04/2020)
CT5.31#	ROAD MAINTENANCE REQUIREMENTS (07/2001)
CT5.33#	SNOW REMOVAL (06/2009)
CT6.314#	OPERATING REQUIREMENTS (06/2009)
CT6.412	STUMP MARKS (06/2009)
CT6.42#	SKIDDING AND YARDING REQUIREMENTS (06/2009)
CT6.7#	SLASH DISPOSAL MEASURES (06/2009)
CT7.2	FIRE PRECAUTIONS (06/2009)
CT8.212	MARKET-RELATED CONTRACT TERM ADDITION (11/2008)
CT8.64	DEBARMENT AND SUSPENSION CERTIFICATION (03/2018)

CT2.11# - TIMBER SUBJECT TO AGREEMENT (06/1972)

In addition, there is within Sale Area an unestimated quantity of:

Species	Product
Mixed Softwood	Pulpwood
Mixed Hardwood	Pulpwood

that shall be Included Timber upon written agreement.

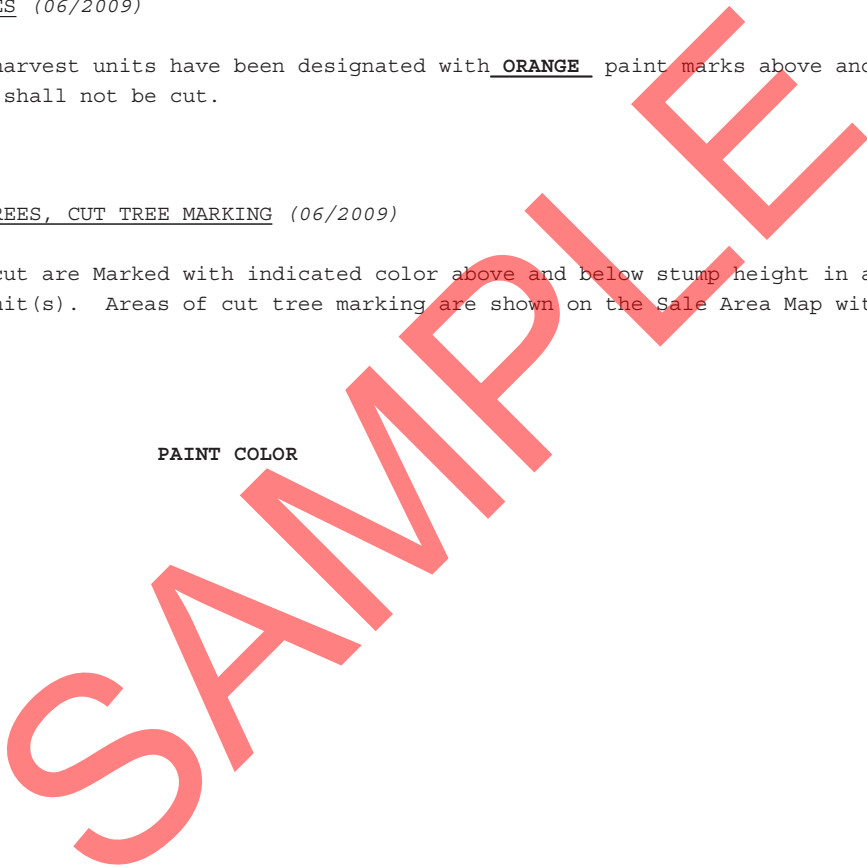
CT2.302# - BOUNDARY TREES (06/2009)

Boundary trees for all harvest units have been designated with ORANGE 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 (CTM)

Paint Color Table

Payment Unit(s)	Paint Color
1, 3, 5, 6, 7 & 8	BLUE
50	YELLOW

- Exterior boundaries for Payment Units are designated with three vertical spots facing into the unit, a vertical line on each side of the bole facing the direction of the next boundary tree and a stump mark with ORANGE paint.
- Where Payment Unit boundaries are coincidental with the road, only the corners where the boundary meets the road are painted.
- Payment Unit 50 (Road Right of Way) boundary is the extent of YELLOW paint.

SAMPLE

CT2.356# - INDIVIDUAL TREES, LEAVE TREE MARKING (06/2009)

Individual trees which are NOT 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 leave tree marking are shown on the Sale Area Map with the symbol "LTM."

Payment Unit	Paint Color
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SAMPLE

CT2.356#, Individual Trees, Leave Tree Marking (LTM)

Paint Color Table

Payment Unit(s)	Paint Color
2 & 4	PINK

- Exterior boundaries for Payment Units are designated with three vertical spots facing into the unit, a vertical line on each side of the bole facing the direction of the next boundary tree and a stump mark with ORANGE paint.
- Where Payment Unit boundaries are coincidental with the road, only the corners where the boundary meets the road are painted.

SAMPLE

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 downpayment. For lump sum timber sales, the downpayment may be applied to payment for release of the single payment unit.

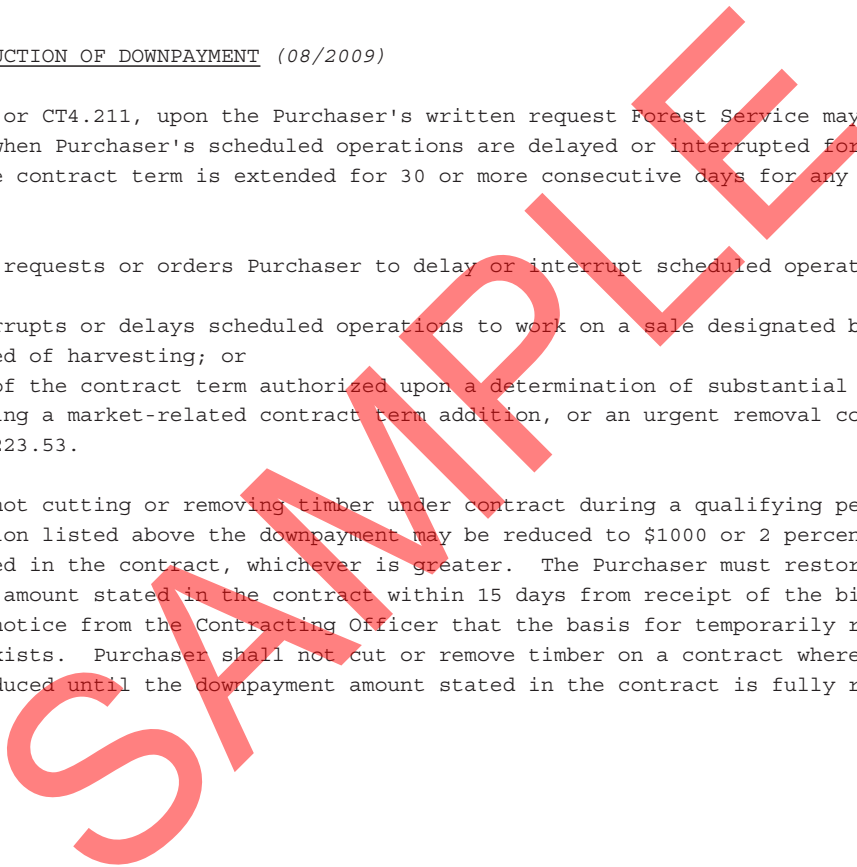
If Forest Service makes a determination that this contract should not have been included under increased downpayment requirements (36 CFR 223.49(e)), the downpayment shall be revised and applied in accordance with 36 CFR 223.49(f).

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.

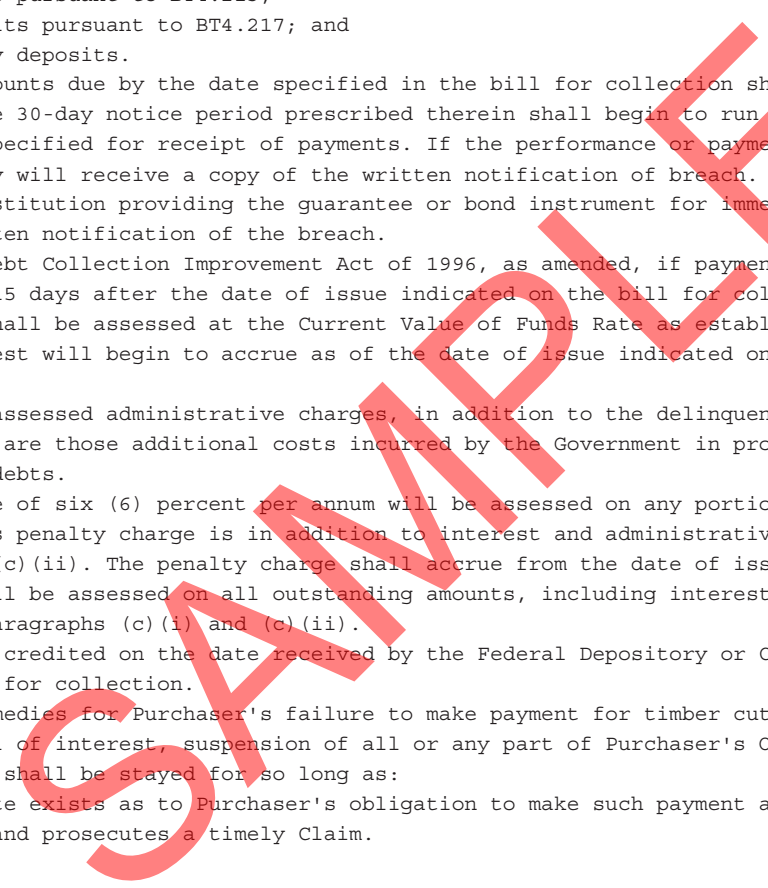
(ii) Debtors will be assessed administrative charges, in addition to the delinquent amount due. Administrative charges are those additional costs incurred by the Government in processing, handling, and collecting delinquent debts.

(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.

SAMPLE

CT5.12#, Use of Roads by Purchaser

Restricted Road Use Table

Road Number	Road Name	Termini		Map Legend	Description of Restrictions
		From	To		
3459	FR3459	FR3712	M-123	R	When operations occur during the winter season, snowplowing will require banks to be sloped at the ends of plowed sections and at crossroads. Warning signs will be required where snowplowing begins and ends. Type of signs and locations will be agreed upon with the Forest Service Representative as part of the Traffic Control Plan (BT6.33).
3712	FR3712	FR3459	SW corner of PU8		

SAMPLE

CT5.213# - DEPOSIT FOR RECONSTRUCTION ENGINEERING SERVICES (04/2020)

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

The total amount to be deposited by Purchaser for reconstruction related engineering services to be completed by Forest Service personnel or by public works contract is \$1,770.00. Purchaser shall make this deposit at the end of the first full Normal Operating Season or 12 months from contract award, whichever occurs first. If payment falls due on a date other than a normal billing date, the payment date shall be extended to coincide with the next Timber Sale Account billing date. In the event a different deposit schedule is agreed to, such deposit shall be due within 15 days after the date of issue indicated on the initial bill for collection, pursuant to BT4.4.

The amount of the required deposit will be shown as an associated charge on Purchaser's Timber Sale Account. Forest Service shall retain any unexpended deposit for reconstruction related engineering services.

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

Road or Facility No.	Termini		Engineering Services Completion Date
	From	To	

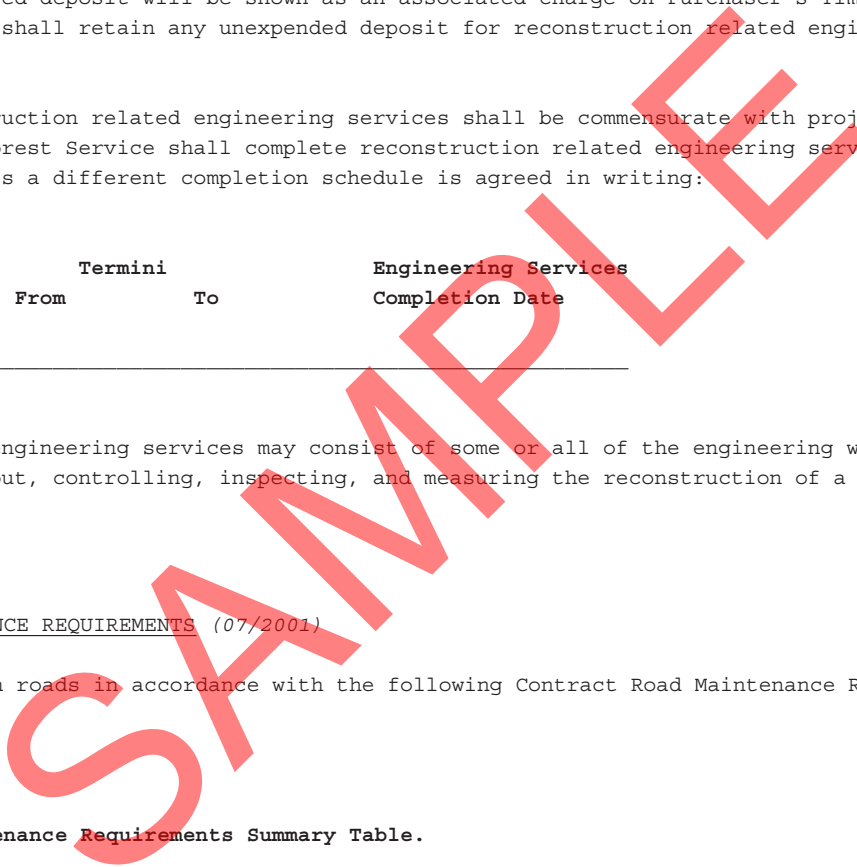
N/A

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

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.



CT5.31#, Road Maintenance Requirements

Sections 1, 2 and 4 of the Road Maintenance Requirements are attached at the back of contract.

SECTION 3. ROAD MAINTENANCE REQUIREMENTS SUMMARY TABLE

Contract Road Maintenance Requirements Summary

Road	Termini		Miles	Applicable Pre-Haul Road Maintenance Specification
	From	To		T-8360
3016	3451	M-123	0.1	P
3451	3016	3564	1.0	P
3459	3712	PU4	0.4	P
3564	3451	M-123	1.0	P
3565	3712	PU5	0.6	P
3712	3565	3459	0.4	P
3712A	3712	PU4	0.4	P

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

Road	Termini		Miles	Applicable During-Haul Road Maintenance Specification
	From	To		T-8360
3016	3451	M-123	0.1	P
3451	3016	3564	1.0	P
3459	3712	PU4	0.4	P
3564	3451	M-123	1.0	P
3565	3712	PU5	0.6	P
3712	3565	3459	0.4	P
3712A	3712	PU4	0.4	P

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

Road	Termini		Miles	Applicable Post-Haul Road Maintenance Specification
	From	To		T-8360
3016	3451	M-123	0.1	P
3451	3016	3564	1.0	P
3459	3712	PU4	0.4	P
3564	3451	M-123	1.0	P
3565	3712	PU5	0.6	P
3712	3565	3459	0.4	P
3712A	3712	PU4	0.4	P

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

CT5.31#, Road Maintenance Requirements

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.

SAMPLE

CT5.31#, Road Maintenance Requirements

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 Activity. 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.

CT5.31#, Road Maintenance Requirements

SECTION 2. ROAD MAINTENANCE DEFINITIONS (CONTINUED)

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.

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.

SAMPLE

CT5.31#, Road Maintenance Requirements

SECTION 4. ROAD MAINTENANCE SPECIFICATIONS

INCLUDED SPECIFICATIONS

<u>Specification No.</u>	<u>Specification Title</u>
T-8360	Composite High Clearance Road Maintenance

SAMPLE

CT5.31#, Road Maintenance Requirements

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.

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.

3.3 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.

CT5.31#, Road Maintenance Requirements

Contract Road Maintenance Requirements Summary

T-8360 Composite High Clearance Road Maintenance (continued)

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 previously, using prior existing methodology.

SAMPLE

CT5.33# - SNOW REMOVAL (06/2009)

Snow removal shall be done in a manner that will preserve and protect roads, provide for safe and efficient transport of timber, and prevent erosion damage to streams and adjacent lands. In performing snow removal, Purchaser shall adhere to the following performance standards, unless otherwise agreed:

1. 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 ONE -inch depth compacted snow mat will be maintained on the roadbed during blading.
2. Snow shall be removed from the entire road width, including turnouts.
3. 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.
4. Openings will be created in snow berms as needed for proper drainage. Remove snow, ice, and debris from culverts and other drainage structures as needed to ensure efficient flow of water.
5. Tracked or clefted vehicles will not be used for snow removal without prior written approval of Forest Service Representative.

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

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

Restricted operations/activities:

Equipment operations may only occur when soils are capable of supporting equipment without incurring detrimental compaction, puddling, or rutting.

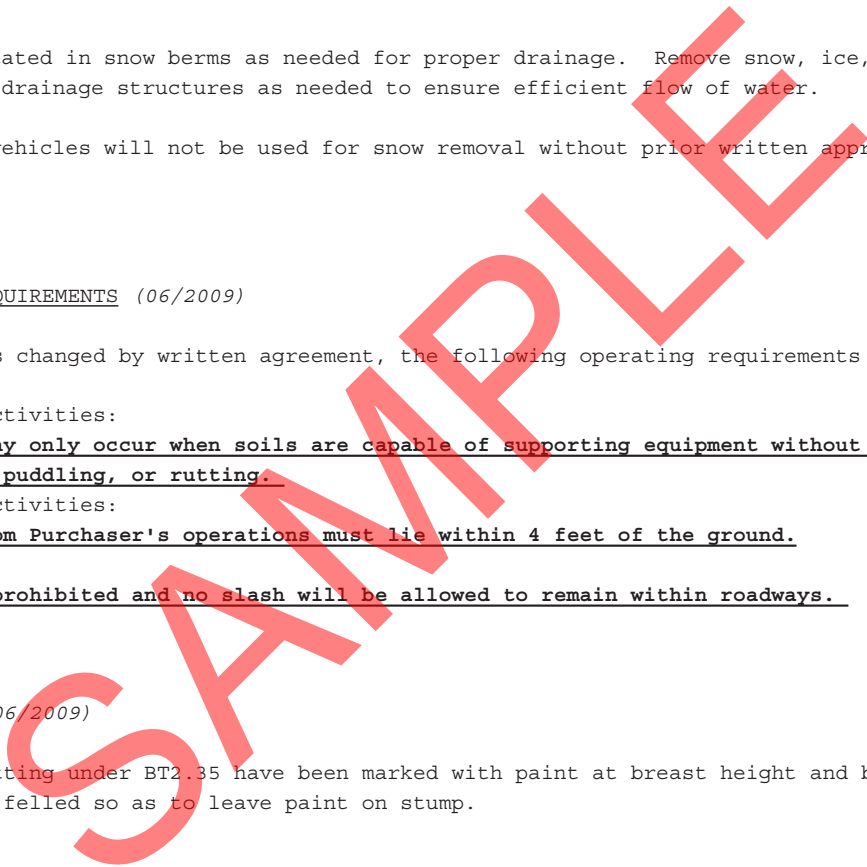
Prohibited operations/activities:

All slash resulting from Purchaser's operations must lie within 4 feet of the ground.

Windrowing of slash is prohibited and no slash will be allowed to remain within roadways.

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.



CT6.42# - SKIDDING AND YARDING REQUIREMENTS (06/2009)

As used in this provision, skidding equipment includes rubber-tire and track-mounted skidders, forwarders, fell bunchers, processors and any other mechanized equipment that is used off of landings and roads.

Within Payment Unit(s)

1, 3, 5, 6, 7, and 8,

unless agreed upon in writing, the overall width of the felling and skidding equipment, including blade, shall not exceed 9.5 feet.

Within portions of Payment Unit(s)

N/A, as shown on Sale Area Map with symbol "SYR," N/A.

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:

FR3459 & FR3712 - All logging slash for a distance of 25 feet from the cleared road edge shall be compacted to lie within 1 foot of the ground.

SAMPLE

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:

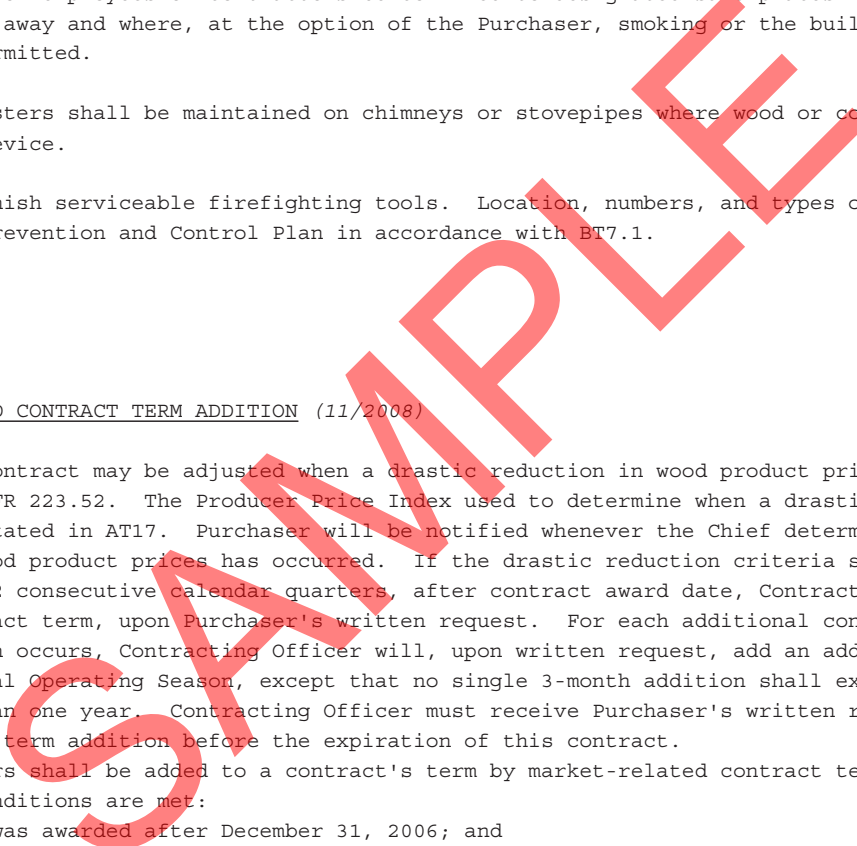
(i) The sale was awarded after December 31, 2006; and

(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.



CT8.64 - DEBARMENT AND SUSPENSION CERTIFICATION (03/2018)

Pursuant to 2 CFR 180 and 2 CFR 417, Purchaser shall certify and obtain certifications from its Subcontractors regarding debarment, suspension, ineligibility, and voluntary exclusion, including additional Subcontractors obtained after award of this contract. 'Subcontractors' are participants in lower tier covered transactions.

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

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

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

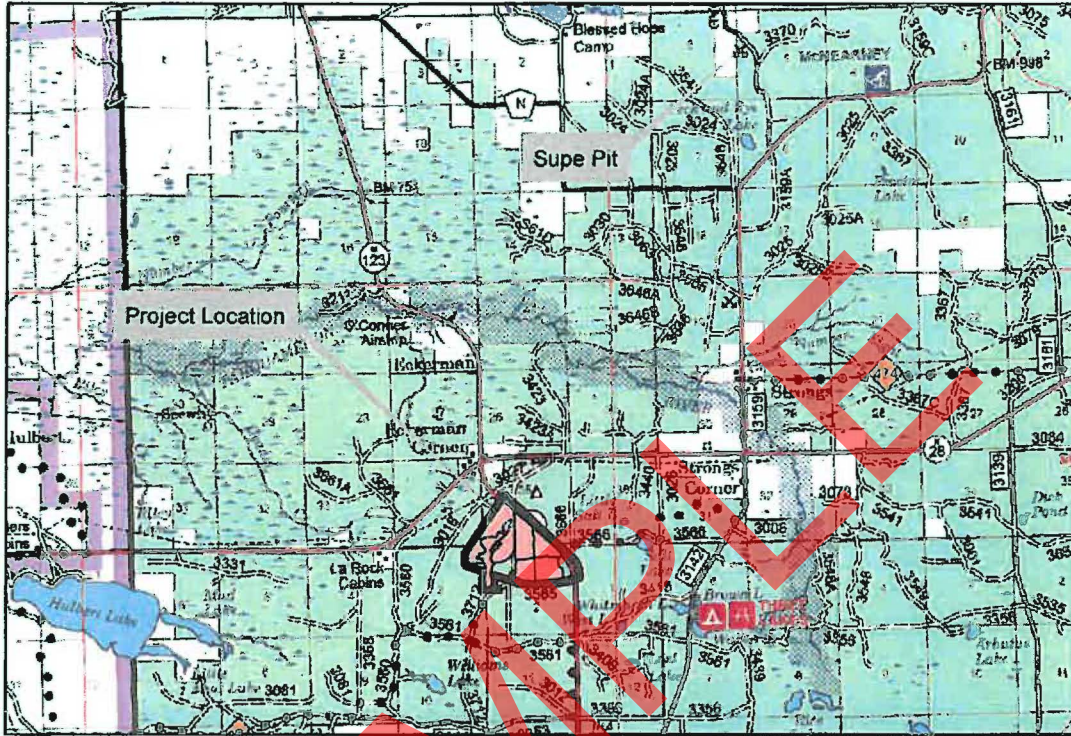
Contracting Officer shall provide a copy of Forms AD-1047, Certification Regarding Debarment, Suspension and Other Responsibility Matters-Primary Covered Transactions, and AD-1048, Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions to the Purchaser.

Purchaser shall complete form AD-1047 and provide to the Contracting Officer upon request.

Purchaser shall require each Subcontractor to complete form AD-1048 and provide to the Contracting Officer upon request.

SAMPLE

HIAWATHA NATIONAL FOREST
SPECIFIED ROAD DRAWINGS
Terra Cotta Timber Sale
SAULT STE. MARIE & ST. IGNACE DISTRICTS



LOCATION MAP

1 inch equals 2 miles

INDEX OF SHEETS

- 1..... Cover Sheet
- 2..... Planview (Not Official Sale Area Map)
- 3..... Estimated Quantities by Road
- 4..... Engineer's Estimate
- 5 - 11..... Schedule of Items
- 12..... Construction Notes
- 13 - 15..... Typicals & Details
- 16 - 45..... Specifications

Road Number	Reconstruction/Construction	Length (mi)
3016	Reconstruction	.02
3451	Reconstruction	.02
3459	Reconstruction	.10
3564	Reconstruction	.10
3565	Reconstruction	.02
3712	Reconstruction	.10
3712A	Reconstruction	.51

Plans, Specifications, and Estimates Reviewed and Certified as to Content and Correctness

DESIGNED:

Kevin Poett 11-3-20
 Civil Engineering Technician date

REVIEWED:

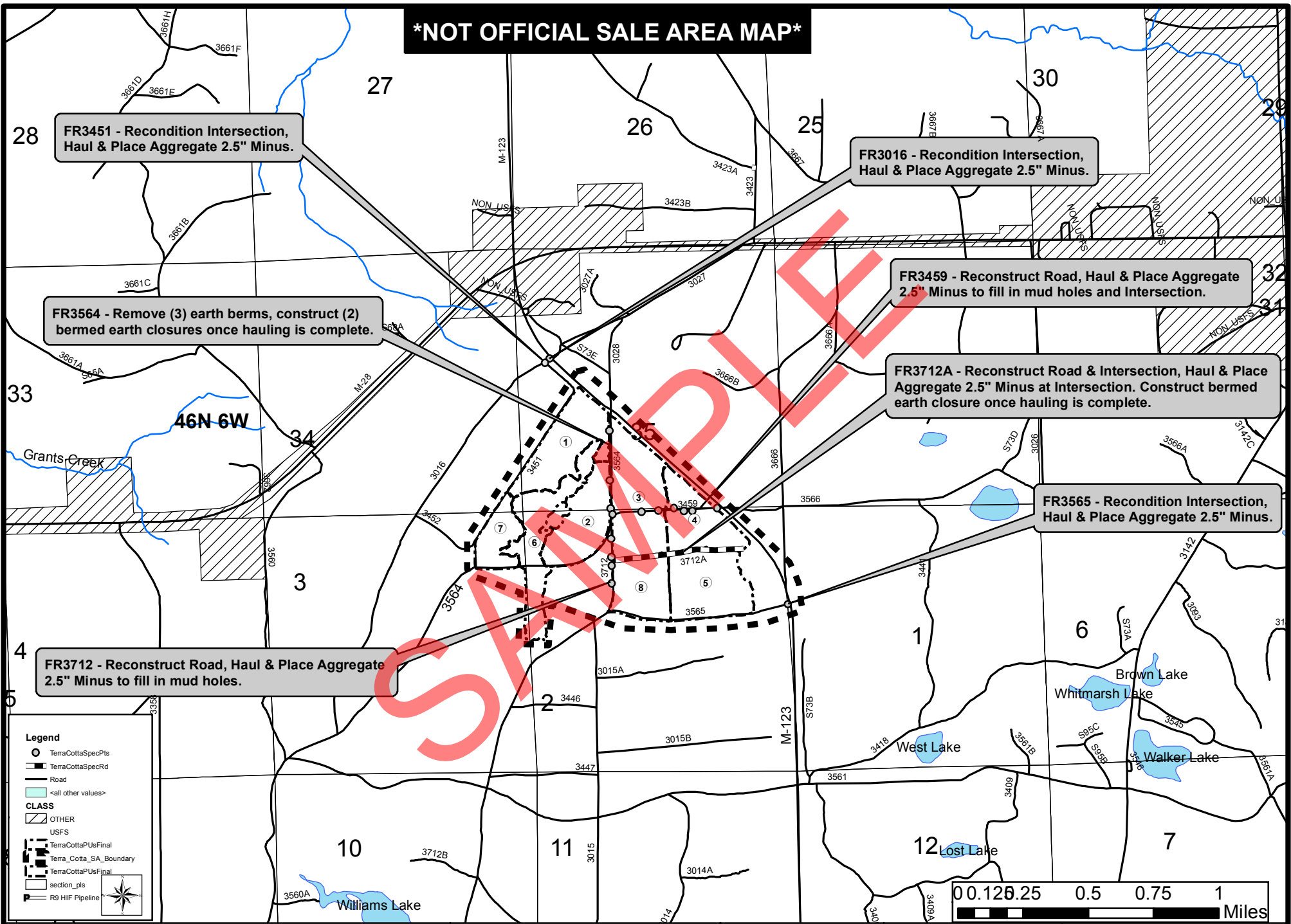
John M. Meyer 11/4/20
 Title: *Fastzone Engineer* date

APPROVED:

Gregory A. Gordon 11/17/2020
 Forest Engineer date

Robert West 11/18/2020
 District Ranger date

NOT OFFICIAL SALE AREA MAP



FR3451 - Recondition Intersection, Haul & Place Aggregate 2.5" Minus.

FR3016 - Recondition Intersection, Haul & Place Aggregate 2.5" Minus.

FR3564 - Remove (3) earth berms, construct (2) bermed earth closures once hauling is complete.

FR3459 - Reconstruct Road, Haul & Place Aggregate 2.5" Minus to fill in mud holes and Intersection.

FR3712A - Reconstruct Road & Intersection, Haul & Place Aggregate 2.5" Minus at Intersection. Construct bermed earth closure once hauling is complete.

FR3565 - Recondition Intersection, Haul & Place Aggregate 2.5" Minus.

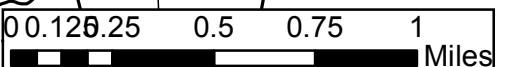
FR3712 - Reconstruct Road, Haul & Place Aggregate 2.5" Minus to fill in mud holes.

Legend

- TerraCottaSpecPts
- ▬ TerraCottaSpecRd
- ▬ Road
- ▬ <all other values>

CLASS

- ▨ OTHER
- ▨ USFS
- ▬ TerraCottaPusFinal
- ▬ Terra_Cotta_SA_Boundary
- ▬ TerraCottaPusFinal
- ▬ section_pls
- ▬ R9 HIF Pipeline



Hiawatha National Forest
Terra Cotta Timber Sale
HI-650

Estimated Quantity by Road

Date: 10/28/2020

Page 1 of 1

Item No.	Description	Unit/ Method of Measure	FR 3016	FR 3451	FR 3459	FR 3564	FR 3565	FR 3712	FR 3712A	Total Estimated Quantity
203 (01)	Remove Earth Berm (Each)	Each				3				3
204 (01)	Excavation & Embankment (CY)	CY	30	30	150		30	70		310
204 (27)	Bermed Earth Closure (Each)	Each				2			1	3
212 (01)	Linear Grading (Mile)	Mile							0.51	0.51
212 (02)	Linear Grading Intersection (LS)	LS							1	1
301 (11)	Aggregate 2.5" Minus Breaker Run (CY)	CY	30	30	150		30	70	40	350

SAMPLE

Hiawatha National Forest
Terra Cotta Timber Sale HI-650
Engineers Estimate

Date: 10/28/2020

Page 1 of 1

Item No.	Description	Unit Price	FR 3016	FR 3451	FR 3459	FR 3564	FR 3565	FR 3712	FR 3712A	Total Cost
203 (01)	Remove Earth Berm (Each)	\$100.00				\$300.00				\$300.00
204 (01)	Excavation & Embankment (CY)	\$2.00	\$60.00	\$60.00	\$300.00		\$60.00	\$140.00		\$620.00
204 (27)	Bermed Earth Closure (Each)	\$150.00				\$300.00			\$150.00	\$450.00
212 (01)	Linear Grading (Mile)	\$3,500.00							\$1,785.00	\$1,785.00
212 (02)	Linear Grading Intersection (LS)	\$200.00							\$200.00	\$200.00
301 (11)	Aggregate 2.5" Minus Breaker Run (CY)	\$17.50	\$525.00	\$525.00	\$2,625.00		\$525.00	\$1,225.00	\$700.00	\$6,125.00
		Road Totals	\$585.00	\$585.00	\$2,925.00	\$600.00	\$585.00	\$1,365.00	\$2,835.00	\$9,480.00
CT 5.213#	Engineering Costs, Dres (LS)									\$1,770.00
GRAND TOTAL										\$11,250.00

SAMPLE

Hiawatha National Forest
Terra Cotta Timber Sale HI-650
Schedule of Items

FR3016 Recondition Intersection

Date: 10/28/2020 Page 1 of 1

BEGIN STATION	END STATION	Description of Work	204 (01) Excavation & Embankment (CY)	301 (11) Agg 2.5" Minus (CY)	COMMENTS
0+00	0+50	Recondition Intersection with M-123, Haul and Place 30CY of Aggregate 2.5" Minus from Sup Pit	30	30	Recondition Intersection, Haul and Place 30cy of Aggregate 2.5" Minus from Sup Pit to harden intersection and approach. Shape according to ' Typical Cross-section with Crown ', ' Typical Intersection ', and ' Typical Approach Grade ' details. Compaction Method-A.
		Total Quantity	30	30	
		Unit Price	\$2.00	\$17.50	GRAND TOTAL
		Total	\$60.00	\$525.00	\$585.00

SAMPLE

Hiawatha National Forest
Terra Cotta Timber Sale HI-650
Schedule of Items

FR3451 Recondition Intersection

Date: 10/28/2020 Page 1 of 1

BEGIN STATION	END STATION	Description of Work	204 (01) Excavation & Embankment (CY)	301 (11) Agg 2.5" Minus (CY)	COMMENTS
0+00	0+50	Recondition Intersection with FR3016, Haul and Place 30CY of Aggregate 2.5" Minus from Sup Pit	30	30	Recondition Intersection, Haul and Place 30cy of Aggregate 2.5" Minus from Sup Pit to harden intersection and approach. Shape according to ' Typical Cross-section with Crown ', ' Typical Intersection ', and ' Typical Approach Grade ' details. Compaction Method-A.
		Total Quantity	30	30	
		Unit Price	\$2.00	\$17.50	GRAND TOTAL
		Total	\$60.00	\$525.00	\$585.00

SAMPLE

Hiawatha National Forest
Terra Cotta Timber Sale HI-650
Schedule of Items

FR3459 Road Reconstruction

Date: 10/28/2020 Page 1 of 1

BEGIN STATION	END STATION	Description of Work	204 (01) Excavation & Embankment (CY)	301 (11) Agg 2.5" Breaker Run (CY)	COMMENTS
0+00	0+50	Recondition Intersection with M-123, Haul and Place 30CY of Aggregate 2.5" Minus from Sup Pit	30	30	Recondition Intersection, Haul and Place 30cy of Aggregate 2.5" Minus from Sup Pit to harden intersection and approach. Shape according to ' Typical Cross-section with Crown ', ' Typical Intersection ', and ' Typical Approach Grade ' details. Compaction Method-A.
6+05		Haul and Place 20cy of Aggregate 2.5" minus breaker run from Sup Pit.	20	20	Haul and Place 20CY Aggregate 2.5" minus breaker run from Sup Pit to fill in mud hole to existing roadbed grade. Compaction Method A.
7+75		Haul and Place 10cy of Aggregate 2.5" minus breaker run from Sup Pit.	10	10	Haul and Place 10CY Aggregate 2.5" minus breaker run from Sup Pit to fill in mud hole to existing roadbed grade. Compaction Method A.
9+75		Haul and Place 30cy of Aggregate 2.5" minus breaker run from Sup Pit.	30	30	Haul and Place 30CY Aggregate Pit Run from Sup Pit to fill in mud hole to existing roadbed grade. Compaction Method A.
12+95		Haul and Place 10cy of Aggregate 2.5" minus breaker run from Sup Pit.	10	10	Haul and Place 10CY Aggregate 2.5" minus breaker run from Sup Pit to fill in mud hole to existing roadbed grade. Compaction Method A.
16+45		Haul and Place 20cy of Aggregate 2.5" minus breaker run from Sup Pit.	20	20	Haul and Place 20CY Aggregate 2.5" minus breaker run from Sup Pit to fill in mud hole to existing roadbed grade. Compaction Method A.
22+20		Haul and Place 30cy of Aggregate 2.5" minus breaker run from Sup Pit.	30	30	Haul and Place 30CY Aggregate Pit Run from Sup Pit to fill in mud hole to existing roadbed grade around curve. Compaction Method A.
Total Quantity			150	150	
Unit Price			\$2.00	\$17.50	GRAND TOTAL
Total			\$300.00	\$2,625.00	\$2,925.00

Hiawatha National Forest
Terra Cotta Timber Sale HI-650

Schedule of Items

FR3564 Remove / Construct Earth Berms

Date: 10/28/2020 Page 1 of 1

BEGIN STATION	END STATION	Description of Work	203 (01) Remove Earth Berm (Each)	204 (27) Construct Earth Berm (Each)	COMMENTS
4+35		Remove Earth Berm at Station 4+35 to open up FR3564.	1		Remove Earth Berm at Station 4+35 to open up FR3564.
14+45		Remove Earth Berm at Station 14+45 to open up FR3564.	1		Remove Earth Berm at Station 14+45 to open up FR3564.
20+05		Remove Earth Berm at Station 20+05 to open up FR3564.	1		Remove Earth Berm at Station 20+05 to open up FR3564.
0+50		Construct Bermed Earth Closure once hauling is complete at Station 0+50.		1	Once hauling is complete construct Bermed Earth Closure at Station 0+50, according to 'Typical Bermed Earth Closure' detail. Engineer will stake / flag location of Bermed Earth Closure.
21+30		Construct Bermed Earth Closure once hauling is complete at Station 21+30.		1	Once hauling is complete construct Bermed Earth Closure at Station 21+30, according to 'Typical Bermed Earth Closure' detail. Engineer will stake / flag location of Bermed Earth Closure.
Total Quantity			3	2	
Unit Price			\$100.00	\$150.00	GRAND TOTAL
Total			\$300.00	\$300.00	\$600.00

Hiawatha National Forest
Terra Cotta Timber Sale HI-650
Schedule of Items

FR3565 Recondition Intersection

Date: 10/28/2020 Page 1 of 1

BEGIN STATION	END STATION	Description of Work	204 (01) Excavation & Embankment (CY)	301 (11) Agg 2.5" Minus (CY)	COMMENTS
0+00	0+50	Recondition Intersection with M-123, Haul and Place 30CY of Aggregate 2.5" Minus from Sup Pit	30	30	Recondition Intersection, Haul and Place 30cy of Aggregate 2.5" Minus from Sup Pit to harden intersection and approach. Shape according to ' Typical Cross-section with Crown ', ' Typical Intersection ', and ' Typical Approach Grade ' details. Compaction Method-A.
		Total Quantity	30	30	
		Unit Price	\$2.00	\$17.50	GRAND TOTAL
		Total	\$60.00	\$525.00	\$585.00

SAMPLE

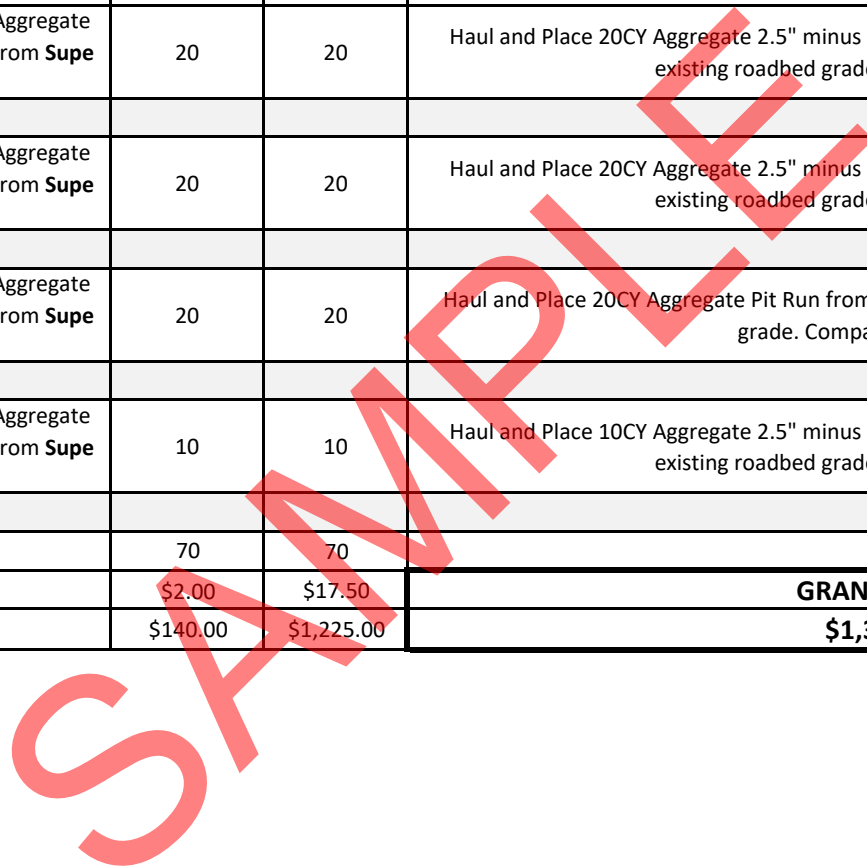
Hiawatha National Forest
Terra Cotta Timber Sale HI-650

Schedule of Items

FR3712 Road Reconstruction

Date: 10/28/2020 Page 1 of 1

BEGIN STATION	END STATION	Description of Work	204 (01) Excavation & Embankment (CY)	301 (11) Agg 2.5" Breaker Run (CY)	COMMENTS
4+45		Haul and Place 20cy of Aggregate 2.5" minus breaker run from Supr Pit .	20	20	Haul and Place 20CY Aggregate 2.5" minus breaker run from Supr Pit to fill in mud hole to existing roadbed grade. Compaction Method A.
8+10		Haul and Place 20cy of Aggregate 2.5" minus breaker run from Supr Pit .	20	20	Haul and Place 20CY Aggregate 2.5" minus breaker run from Supr Pit to fill in mud hole to existing roadbed grade. Compaction Method A.
9+85		Haul and Place 20cy of Aggregate 2.5" minus breaker run from Supr Pit .	20	20	Haul and Place 20CY Aggregate Pit Run from Supr Pit to fill in mud hole to existing roadbed grade. Compaction Method A.
13+50		Haul and Place 10cy of Aggregate 2.5" minus breaker run from Supr Pit .	10	10	Haul and Place 10CY Aggregate 2.5" minus breaker run from Supr Pit to fill in mud hole to existing roadbed grade. Compaction Method A.
Total Quantity			70	70	
Unit Price			\$2.00	\$17.50	GRAND TOTAL
Total			\$140.00	\$1,225.00	\$1,365.00



Hiawatha National Forest
Terra Cotta Timber Sale HI-650

Schedule of Items

FR3712A Road Reconstruction

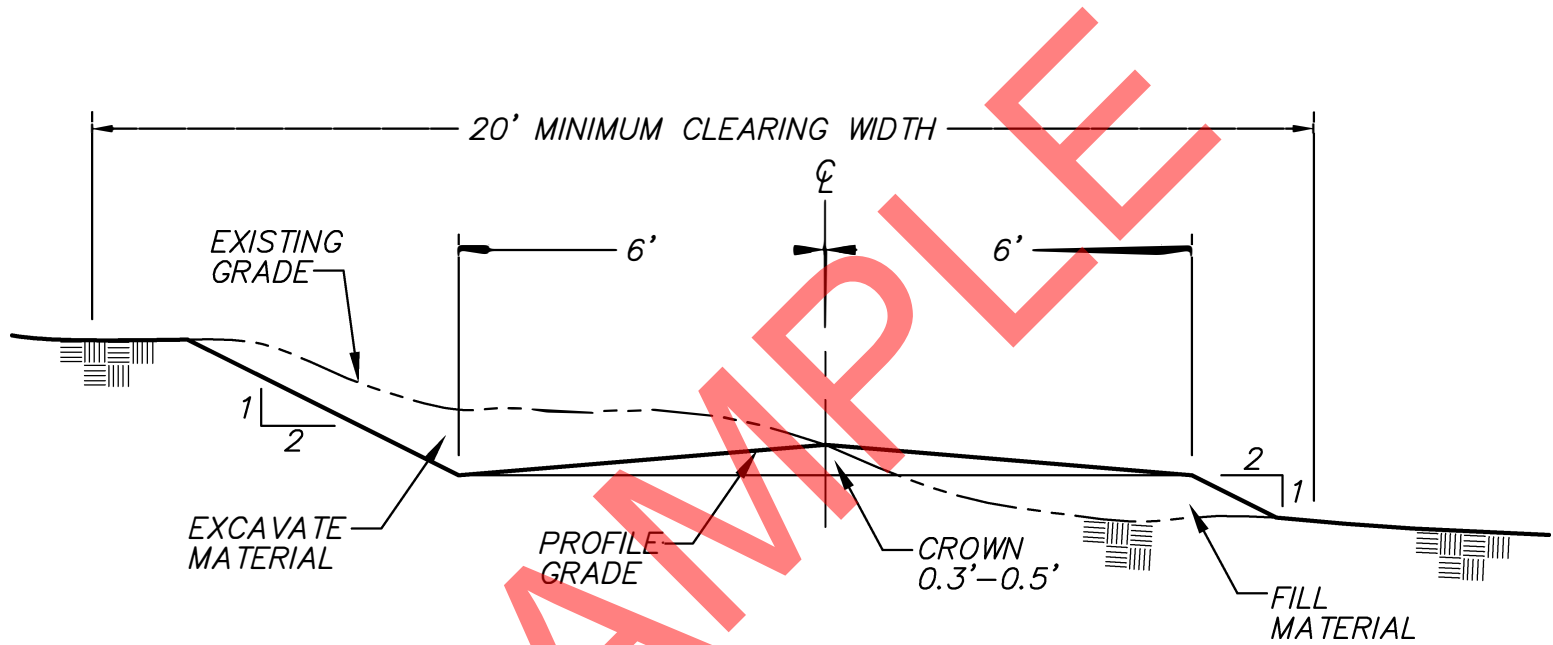
Date: 10/28/2020 Page 1 of 1

BEGIN STATION	END STATION	Description of Work	204(27) Construct Earth Berm (Each)	212(01) Linear Grading (Mile)	212(02) Linear Grading Intersection (LS)	301 (11) Agg 2.5" Breaker Run (CY)	COMMENTS
0+00	27+00	Linear Grading, road reconstruction.		0.51			Reconstruct road according to ' Typical Cross-section with Crown ' detail. Linear Grading includes clearing and grubbing, shaping and grading, and brushing. Place slash and stumps out of clearing width and also according to provision CT6.7 of timber sale contract. Place stumps in an upright position.
0+00	1+00	Reconstruct 50' radii Intersection with FR3712, smooth and shape intersection.			1		Reconstruct intersection according to ' Typical Cross-section with Crown ', ' Typical Intersection ', and ' Typical Approach Grade ' details. Linear Grading includes clearing and grubbing, shaping and grading, and brushing. Place slash and stumps out of clearing width and also according to provision CT6.7 of timber sale contract. Place stumps in an upright position.
0+00	0+50	Haul and Place 40cy of Aggregate 2.5" minus breaker run from Supe Pit .				40	Haul and place 40cy of Aggregate 2.5" minus breaker run at 4" to 6" depth for surfacing, from Supe Pit . Compaction Method - A.
0+50		Construct Bermed Earth Closure once hauling is complete at Station 0+50.	1				Once hauling is complete construct Bermed Earth Closure at Station 0+50, according to ' Typical Bermed Earth Closure ' detail. Engineer will stake / flag location of Bermed Earth Closure.
Total Quantity			1	0.51	1	40	
Unit Price			\$150.00	\$3,500.00	\$200.00	\$17.50	GRAND TOTAL
Total			\$150.00	\$1,785.00	\$200.00	\$700.00	\$2,835.00

TERRA COTTA TIMBER SALE

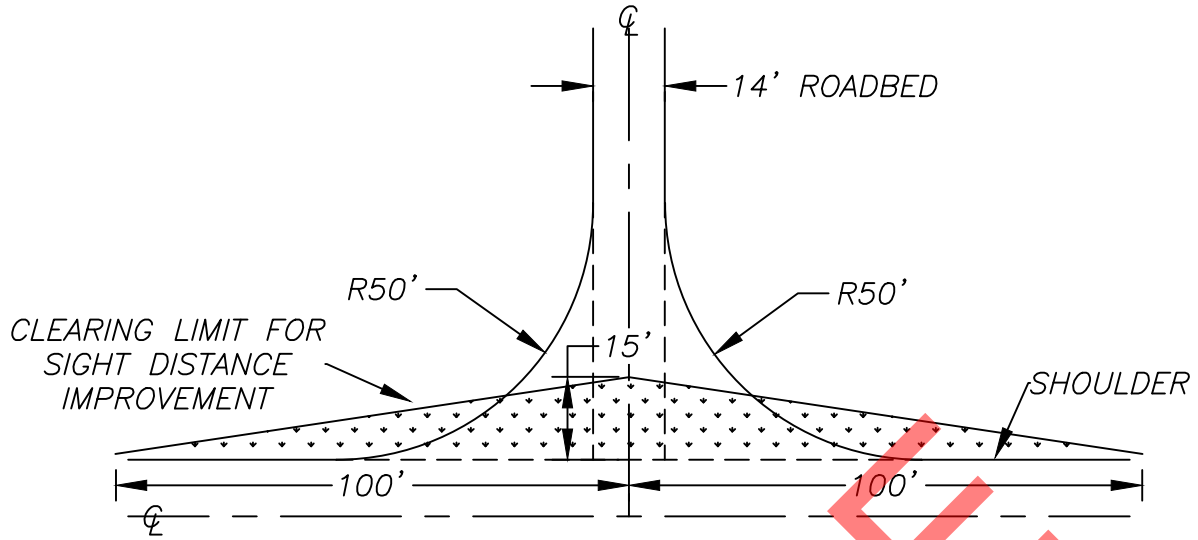
CONSTRUCTION NOTES

- NOTE #1:** **Construction Staking:** Construction staking and clearing limit flagging will be set by the Forest Service. Construction stakes shall be maintained by the contractor throughout the life of the project.
- NOTE #2:** There may be underground utility lines in unknown locations on this project. **CALL MISS DIG** three (3) full working days before any work begins. Phone: 1-800-482-7171 or 811.
- NOTE #3:** During clear and grub operations, **all slash** resulting from purchaser's operations shall be treated as per provision **CT6.7#** of the timber sale contract.
- NOTE #4:** Shape the roadbed to conform to the typical detail as noted in the narrative description.
- NOTE #5:** Additional outlet or lead out ditches may be required at road segments for proper drainage needs. Locations for placement shall be determined by the Forest Service and are included in appraised allowance for clearing and shaping.
- NOTE #6:** Construction Tolerances:
- | | |
|---------------|----------|
| Roadbed width | +1.0' |
| Alignment | 2.0' |
| Slopes | +/-1/2:1 |
- NOTE #7:** There are 350 CY of Aggregate 2.5" Minus Breaker Run placement required. **The Supe Pit, located in T46N, R5W, S5, shall be the government source for this project.** If contractor requests (using form 2400-16) and Forest Service agrees, the contractor would be allowed to use this source of material. The contractor would be required to pay the Forest Service a fee of \$7.00 per cubic yard to cover the cost of processing the material; this fee is included in item 301 (11). Compact the aggregate by operating spreading and hauling equipment over the full width.
- NOTE #8:** Above volumes are shown as loose volume hauled, and are calculated at 125% above compacted volume.
- NOTE #9:** Follow State of Michigan Best Management Practices (BMPs) according to the MDEQ Sustainable Soil and Water Quality Practices on Forest Lands for construction of roads, culverts, and logging truck turnarounds.



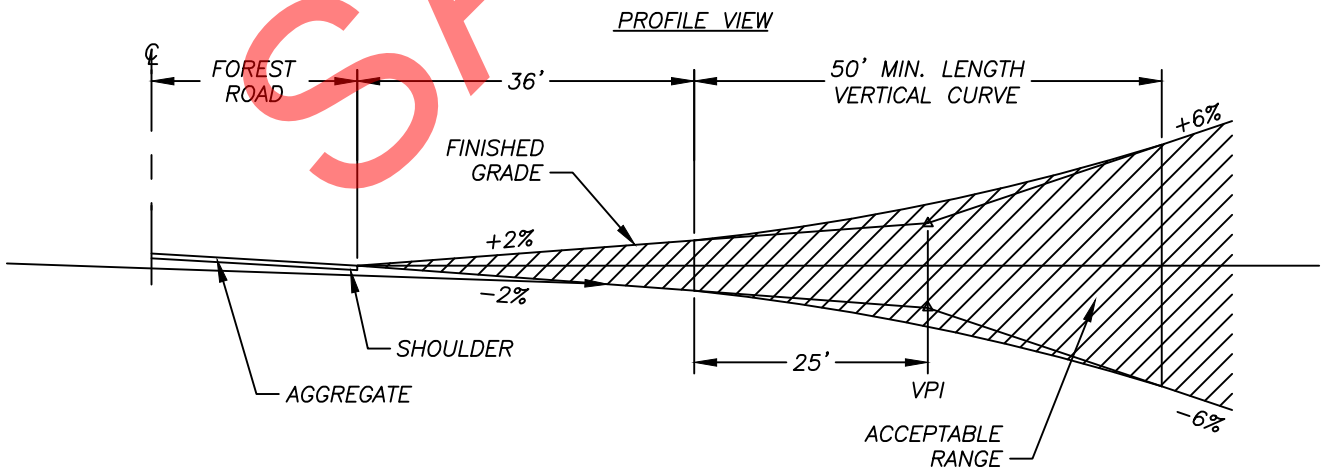
TYPICAL CROSS-SECTION WITH CROWN

NOT TO SCALE

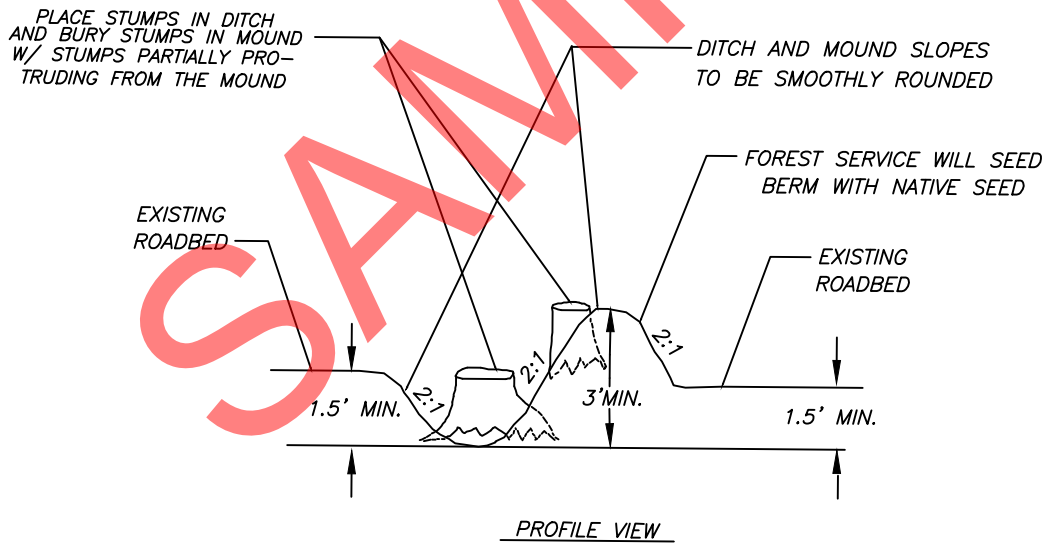
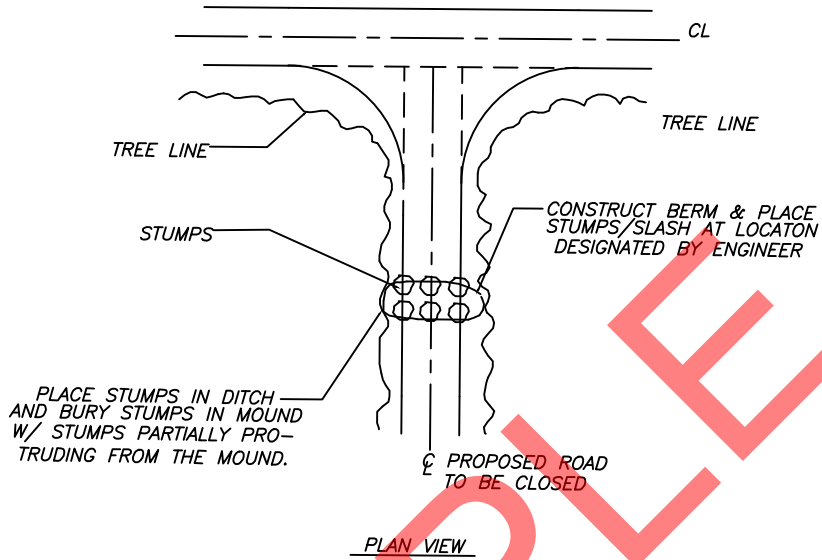


TYPICAL INTERSECTION

CONSTRUCT ALL INTERSECTIONS TO THIS TYPICAL.



TYPICAL FOREST ROAD APPROACH GRADE



TYPICAL BERMED EARTH ROAD CLOSURE DETAILS
 SEE SHEDULE OF ITEMS FOR LOCATIONS.

HIAWATHA NATIONAL FOREST
SPECIFICATIONS FOR TIMBER SALE ROADWORK

Terra Cotta Timber Sale

Index of included specifications:

Sections 101-109	General Requirements
Section 201	Clearing and Grubbing
Section 203	Removal of Structures and Obstructions
Section 204	Excavation and Embankment
Section 212	Linear Grading
Section 301	Untreated Aggregate Courses

Section 101. – TERMS, FORMAT, AND DEFINITIONS

101.01 Meaning of Terms. These specifications are generally written in the imperative mood. In sentences using the imperative mood, the subject, "*the Contractor*," is implied. Also implied in this language are "*shall*," "*shall be*," or similar words and phrases. In material specifications, the subject may also be the supplier, fabricator, or manufacturer supplying material, products, or equipment for use on the project.

Wherever "*directed*," "*required*," "*prescribed*," or other similar words are used, the "*direction*," "*requirement*," or "*order*" of the Contracting Officer is intended. Similarly, wherever "*approved*," "*acceptable*," "*suitable*," "*satisfactory*," or similar words are used, the words mean "*approved by*," "*acceptable to*," or "*satisfactory to*" the Contracting Officer.

The word "*will*" generally pertains to decisions or actions of the Contracting Officer.

101.02 Specifications Format. These specifications are divided into 10 Divisions.

Division 100 consists of general contract requirements for which no direct payment is made. The requirements contained in Division 100 are applicable to all contracts.

Division 150 consists of project contract requirements that are applicable to all contracts. Work under Division 150 is paid for directly or indirectly according to Subsection 109.05 and the Section ordering the work. When there is no pay item in the bid schedule, no direct payment is made.

Divisions 200 through 600 consist of construction contract requirements for specific items of work. Work under these Divisions is paid for directly or indirectly according to Subsection 109.05 and the Section ordering the work. When there is no pay item in the bid schedule, no direct payment is made.

Division 700 contains the material requirements for Divisions 150 through 600. No direct payment is made in Division 700. Payment for material is included as part of the work required in Divisions 150 through 600.

The first three digits of the pay item number in the Bid Schedule identify the Section under which the work is performed.

(d) Slope notation (vertical : horizontal). For slopes flatter than 1V:1H, express the slope as the ratio of one unit vertical to a number of units horizontal. For slopes steeper than 1V:1H, express the slope as the ratio of a number of units vertical to one unit horizontal.

101.04 Definitions. The following definitions apply to this contract:

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.

Award — The written acceptance of a bid by the CO.

Backfill — Material used to replace or the act of replacing material removed during construction. Material placed or the act of placing material adjacent to structures.

Base — The layer or layers of material placed on a subbase or subgrade to support a surface course.

Bid — A written offer by a bidder to perform work at a quoted price.

Bidder — Any individual or legal entity submitting a bid.

Bid Guarantee — A form of security assuring that the bidder will not withdraw a bid within the period specified for acceptance and will execute a written contract and furnish required bonds.

Bid Schedule — The Schedule of Items.

Change--“Change” means “change order” as used in the Federal Acquisition Regulations, or “design change” as used in the Timber Sale Contract.

Clear Zone — The portion of the roadside, including the shoulder, available for the safe use by an errant vehicle in which the driver may regain control of the vehicle. Recommended distances for the clear zone are in the AASHTO Roadside Design Guide.

Commercial Certification — See Subsection 106.03.

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”.

Construction Limits — The limits on each side of the project that establish the area disturbed by construction operations and beyond which no disturbance is permitted. Typically the construction limits are the same as the clearing limits, except when additional clearing is required.

Contract — The written agreement between the Government and the Contractor setting forth the obligations of the parties for the performance of and payment for the prescribed work.

Contracting Officer (CO) — An official of the Government with the authority to enter into, administer, and terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the CO acting within the limits of their authority as delegated by the CO.

Material — Any substances specified or necessary to satisfactorily complete the contract work.

Maximum Particle Size — The smallest sieve opening through which all particles in the material will pass.

Measurement — The process of identifying the dimensions, quantity, or capacity of an item. See Section 109 for measurement methods, terms, and definitions.

Neat Line--A line defining the proposed or specified limits of an excavation or structure.

Pavement Structure — The combination of subbase, base, paving geotextiles, and surface courses placed on a subgrade to support and distribute the traffic load to the roadbed.

Pay Item — A specific item of work for which a unit and price is provided in the contract.

Payment Bond — The security executed by the Contractor and surety or sureties and furnished to the Government to ensure payments as required by law to all persons supplying labor or material according to the contract.

Performance Bond — The security executed by the Contractor and surety or sureties furnished to the Government to guarantee completion of the contract work.

Pioneer Road--Temporary construction access built along the route of the project.

Plans — The contract plans furnished by the Government showing the location, type, dimensions, and details of the work.

Production Certification — See Subsection 106.03.

Professional Engineer — Engineers who hold valid State licenses permitting them to offer engineering services directly to the public, who are experienced in the work for which they are responsible, who take legal responsibility for their engineering designs, and who are bound by a code of ethics to protect the public health.

Profile Grade — The trace of a vertical plane intersecting a particular surface of the proposed road construction located as shown on the plans, usually along the longitudinal centerline of the roadbed. Profile grade means either elevation or gradient of the trace according to the context.

Project — The specific section of the highway or other property on which construction is to be performed under the contract.

Protected Streamcourse--A drainage shown on the plans or timber sale area map that requires designated mitigation measures.

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.

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

Roadbed — The graded portion of a highway prepared as a foundation for the pavement structure and shoulders.

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.

Roadside — All area within the right-of-way excluding the traveled way and shoulders.

Roadway — In general, the portion of a highway, including shoulders, for vehicular use. A divided highway has two or more roadways. In construction specifications, the portion of a highway within the construction limits.

Roadway Prism — The volume defined by the area between the original terrain cross-section and the final design cross-section multiplied by the horizontal distance along the centerline of the roadway.

Roller Pass — One trip of a roller in one direction over any one spot.

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.

Shoulder — The portion of the roadway contiguous to the traveled way for accommodation of stopped vehicles, for emergency use, and for lateral support of the pavement structure.

Sieve — See AASHTO M 92.

Special Contract Requirements — Additions and revisions to the standard specifications applicable to an individual project.

Specifications — The written requirements for performing work.

Standard Forms — Numbered forms issued by the General Services Administration for use as contract documents.

Standard Plans — Detailed plans approved for repetitive use and included as part of the plans.

Standard Specifications — The Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects approved for general application and repetitive use.

Station — (1) A measure of distance used for highways and railroads. A station is equal to 100 feet. (2) A precise location along a survey line.

Structures — Bridges, culverts, catch basins, drop inlets, retaining walls, cribbing, manholes, endwalls, buildings, sewers, service pipes, underdrains, foundation drains, and other constructed features that may be encountered in the work.

Subbase — The layer or layers of material placed on a subgrade to support a base.

Subcontract — The written agreement between the Contractor and an individual or legal entity prescribing the performance of a specific portion of the work.

Subcontractor — An individual or legal entity with which the Contractor sublets part of the work. This includes all subcontractors in any tier.

Subgrade — The top surface of a roadbed upon which the pavement structure, shoulders, and curbs are constructed.

Substantial Completion — The point at which the project is complete such that it can be safely and effectively used by the public without further delays, disruption, or other impediments. For conventional bridge and highway work, the point at which all bridge deck, parapet, pavement structure, shoulder, drainage, sidewalk, permanent signing and markings, traffic barrier, safety appurtenance, utility, and lighting work is complete.

Substructure — All of the bridge below the bearings of simple and continuous spans, skewbacks of arches, and tops of footings of rigid frames including backwalls, wingwalls, and wing protection railings.

Suitable Material — Rock or earth material that will provide stable foundations, embankments, or roadbeds, and is reasonably free of organic matter, roots, muck, sod, or other detrimental material. Suitable material may require drying or adding water, root picking, and other methods of manipulation before use. Suitable material includes the classifications of materials for which the project was designed.

Superintendent — The Contractor's authorized representative in responsible charge of the work.

Superstructure — The entire bridge except the substructure.

Surety — An individual or corporation legally liable for the debt, default, or failure of a Contractor to satisfy a contract obligation.

Surface Course — The top layer or layers of a pavement structure designed to accommodate the traffic load and resist skidding, traffic abrasion, and weathering.

Target Value (TV) — A number established as a center for operating a given process. Once established, adjustments should be made in the process as necessary to maintain a central tendency about the target value. Test results obtained from a well-controlled process should cluster closely around the established target value and the mean of the test results should be equal to or nearly equal to the established target value.

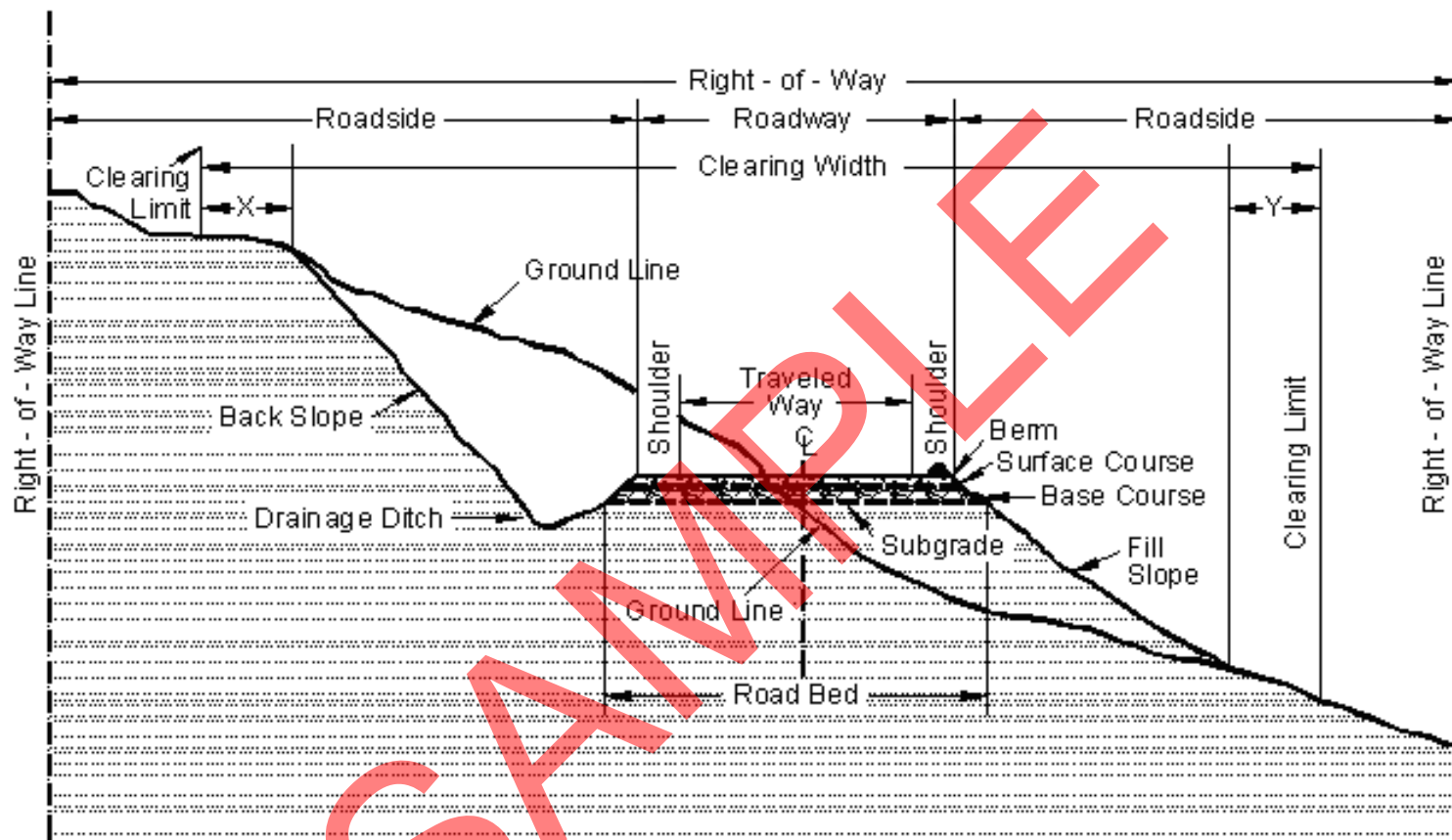
Traveled Way — The portion of the roadway designated for the movement of vehicles, including curve widening, exclusive of shoulders.

Unsuitable Material — Material not capable of creating stable foundations, embankments, or roadbeds. Unsuitable material includes muck, sod, or soils with high organic contents.

Utilization Standards--The minimum size and percent soundness of trees described in the specifications to determine merchantable timber.

Work — The furnishing of all labor, material, equipment, and other incidentals necessary to successfully complete the project according to the contract.

Figure 101-1—Illustration of road structure terms.



Note: Shapes and dimensions will vary to fit local conditions.
 See drawings for typical sections.
 X and Y denote clearing outside of the final design cross section.

Section 103. — SCOPE OF WORK

103.01 Intent of Contract. The intent of the contract is to provide for the construction and completion of the work described. The precise details of performing the work are not stipulated except as considered essential for the successful completion of the work. Furnish all labor, material, equipment, tools, transportation, and supplies necessary to complete the work according to the contract.

Section 104. — CONTROL OF WORK

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.

Section 105. — CONTROL OF MATERIAL

105.01 Source of Supply and Quality Requirements

Select sources and provide acceptable material. Notify the CO of all proposed sources before delivery to the project to expedite material inspection and testing. Do not incorporate material requiring submittal into the work until approved.

Material may be approved at the source of supply before delivery to the project. Approval does not constitute acceptance. If an approved source does not continue to supply acceptable material during the life of the project, further use of that source may be denied.

105.02 Material Sources.

(a) Government-provided sources. The Government will acquire the permits and rights to remove material from provided sources identified in the contract and to use such property for a plant site and stockpiles. Test reports and available historical performance data verifying the presence of acceptable material are available upon request. 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.

Do not perform work within a Government-provided source until a plan of operation for the development of the source is accepted. Perform all work necessary to produce acceptable material including site development, preparation, erosion control, and restoration.

The quality of material in provided sources is acceptable in general, but may contain layers or pockets of unacceptable material. It is not feasible to ascertain from samples the quality of material for an entire deposit, and variations may be expected. Determine the quantity and type of equipment and work necessary to select and produce acceptable material.

Strip and stockpile the overburden. After operations are complete, move all waste back into the source. Neatly trim and flatten the side slopes to the extent practicable. Spread the stockpiled overburden uniformly over the sides and bottom of the mined area. Shape the mined area to blend into the surrounding natural terrain.

(b) Contractor-located sources. The Contractor is responsible for located sources, including established commercial sources. Use sources that fulfill the contract quantity and quality requirements. Determine the quantity and types of equipment and work necessary to select and produce acceptable material. Secure all permits and clearances for use of the source and provide copies of the documents.

Provide laboratory test reports and available historical performance data indicating that acceptable material is available from the source. Do not use material from a source that is unacceptable to the Government. Dispose of unacceptable material and locate another source at no cost to the Government.

105.03 Material Source Management. Notify the CO 14 days before starting pit operations. Develop and operate within a material source according to the accepted plan of operation or written agreement for developing the source.

Before developing a material source, measure the sediment content of bodies of water adjacent to the work area that will receive drainage from the work area. Control all erosion so the sediment levels in the bodies of water within the drainage area of the work area do not increase. Control erosion so that sediment does not leave the work area.

105.04 Storing and Handling Material. Store and handle material to preserve its quality and fitness for the work. Stored material approved before storage may again be inspected before use in the work. Locate stored material to facilitate prompt inspection.

Use only approved portions of the right-of-way for storing material and placing plants and equipment. Provide all additional space needed. Do not use private property for storage without written permission of the owner or lessee. Furnish copies of all agreements. Restore all Government-provided storage sites to their original condition.

The Contractor is responsible for the security of all stored material. If the Contractor elects to obtain material from (Material Source Number or name) the following applies:

(a)

Complete any pit or quarry development specified for a designated source, even when material is not obtained from the source.

All material (e.g., soil, gravel, sand, borrow, aggregate, etc.) transported onto National Forest System land or incorporated into the work will be weed-free. The Contracting Officer may request written documentation of methods used to determine the weed-free status of any and all materials furnished by the contractor. Contractor-provided expertise and methods to establish weed-free status must be appropriate for the weeds of concern in the local area. The following applies to this contract:

A Forest Service weed specialist will inspect proposed sources to determine weed-free status. Provide the Contracting Officer written notification of proposed material sources 14 days prior to use. Written approval of the specific source will be provided to the contractor. If weed species are present in the proposed source, appropriate mitigation measures may allow conditional use of the source as required by the (a) Government-provided sources. Add the following:

Government-provided sources for this project are identified as follows:

(1) Government-provided mandatory sources.

Obtain material for use as (borrow/riprap/boulders/etc.) and in the production of aggregates under Sections (301/401/411/etc.) from (Material Source Number or name).

105.05 Use of Material Found in the Work. Material, such as stone, gravel, or sand, found in the excavation may be used for another pay item when acceptable. When there is an applicable excavation item in the bid schedule, such material will be paid both as excavation and as the other pay item for which it is used. Replace material so used and needed for embankment or backfill with acceptable material at no cost to the Government. Excavate or remove material only from within the grading limits, as indicated by the slope and grade lines.

The right to use and process material found in the work does not include the use and processing of material for nongovernment contract work except for the disposal of waste material. 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.

Section 106. — ACCEPTANCE OF WORK

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.

106.02 Visual Inspection. Acceptance is based on visual inspection of the work for compliance with the contract and prevailing industry standards.

106.03 Certification. For material manufactured off-site, use a manufacturer with an ISO 9000 certification or an effective testing and inspection system. Require the manufacturer to clearly mark the material or packaging with a unique product identification or specification standard to which it is produced.

Other than references in or to the FAR or Federal Law, when these Standard Specifications reference certifications; certificates; or certified documents, equipment, or individuals, these references are not certifications under Section 4301 of Public Law 104-106, National Defense Authorization Act for Fiscal Year 1996. These references refer to documentation of non-regulatory, peripheral contract requirements that are required to be validated by an individual or organization having unique knowledge or qualifications to perform such validation.

Material accepted by certification may be sampled and tested at any time. If found not in conformance with the contract, the material will be rejected whether in place or not.

One of the following certifications may be required:

(a) Production certification. Material requiring a production certification is identified in the Acceptance Subsection of each Section. Require the manufacturer to furnish a production certification for each shipment of material. Include the following with each production certification:

- (1) Date and place of manufacture;
- (2) Lot number or other means of cross-referencing to the manufacturer's inspection and testing system; and
- (3) Substantiating evidence that the material conforms to the contract quality requirements including all of the following:

- (a) Test results on material from the same lot and documentation of the inspection and testing system;
- (b) A statement from the manufacturer that the material complies with all contract requirements; and
- (c) Manufacturer's signature or other means of demonstrating accountability for the certification.

(b) Commercial certification. When a certification is required, but not a production certification, furnish one commercial certification for all similar material from the same manufacturer.

A commercial certification is a manufacturer's or Contractor's representation that the material complies with all contract requirements. The representation may be labels, catalog data, stamped specification standards, or supplier's certifications indicating the material is produced to a commercial standard or specification.

106.04 Measured or Tested Conformance. Provide all necessary production and processing of the work and control performance of the work so that all of the work complies with the contract requirements.

Results from inspection or testing shall have values within the specified tolerances or specification limits. When no tolerance values are identified in the contract, the work will be accepted based on customary manufacturing and construction tolerances.

Section 107. — LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

107.01 Laws to be Observed.

Comply with all applicable laws, ordinances, safety codes, regulations, orders, and decrees. Protect and indemnify the Government and its representatives against any claim or liability arising from or based on the alleged violation of the same.

Comply with all permits and agreements obtained by the Government for performing the work that is included in the contract. Obtain all additional permits or agreements and modifications to Government-obtained permits or agreements that are required by the Contractor's methods of operation. Furnish copies of all permits and agreements.

107.02 Protection and Restoration of Property and Landscape.

Preserve public and private property, and protect monuments established for the purpose of perpetuating horizontal, vertical, cadastral, or boundary control. When necessary to destroy a monument, reestablish the monument according to applicable state statute or by the direction of the agency or individual who established the monument.

Do not disturb the area beyond the construction limits. Replace trees, shrubs, or vegetated areas damaged by construction operations as directed and at no cost to the Government. Remove any damaged limbs of existing trees by an approved arborist.

Do not excavate, remove, damage, alter, or deface any archeological or paleontological remains or specimens. Control the actions of employees and subcontractors on the project to ensure that protected sites are not disturbed or damaged. Should any of these items be encountered, suspend operations at the discovery site, notify the CO, and continue operations in other areas. The CO will inform the Contractor when operations may resume at the discovery site.

When utilities are to be relocated or adjusted, the Government will notify all utility owners affected by the relocations or adjustments. The relocations or adjustments will be performed by others or will be included in the contract work.

Before beginning work in an area, the Contractor shall have all utility owners locate their utilities. Protect utilities from construction operations. Cooperate with utility owners to expedite the relocation or adjustment of their utilities to minimize interruption of service and duplication of work.

If utility services are interrupted as a result of damage by the construction, immediately notify the utility owner, the CO, and other proper authorities. Cooperate with them until service is restored. Do not work around fire hydrants until provisions for continued service are made and approved by the local fire authority.

If utility adjustment work, not included in the contract, is required, compensation for the work will be provided under applicable clauses of the contract. Satisfactorily repair damage due to the fault or negligence of the Contractor at no cost to the Government.

Repair of damage to underground utilities that were not shown on the plans or identified before construction, and not caused by the fault or negligence of the Contractor, will be paid for by the Government.

107.04 Railroad Protection. The Government will obtain the necessary permits and agreements from the railroad for specified contract work for relocating railroads or for work at railroad crossings. Make arrangements for all other work that, due to the method of operation, may also impact the railroad. Furnish copies of all permits and agreements.

Conduct the work covered by the railroad permit or agreement in a manner satisfactory to the railroad. Do not interfere with railroad operations. If the construction damages railroad property, reimburse the railroad for all damages, or at the railroad's option, repair the damage at no cost to the Government.

Do not cross railroad tracks, with vehicles or equipment, except at existing and open public grade crossings or railroad approved temporary grade crossings. If there is a need for a temporary grade crossing, make the necessary arrangements with the railroad for its construction, protection, and removal. Reimburse the railroad for all temporary grade crossing work or, at the railroad's option, perform the work.

The requirements of the railroad are as follows:

(a) Indemnify and hold harmless the railroad according to Subsection 107.05. Carry insurance meeting the following minimums:

(1) Worker's compensation insurance. Minimum required by law.

(2) Bodily injury liability insurance. \$2,000,000 each occurrence.

(3) Property damage liability insurance. \$2,000,000 aggregate coverage.

(4) Railroad protective public liability and property damage liability insurance. \$2,000,000 each occurrence. \$6,000,000 aggregate coverage.

(b) Notify the railroad in writing not less than 1 week before beginning construction within the railroad right-of-way. Secure permission from the railroad before performing work within the railroad right-of-way. Confer with the railroad concerning clearance requirements, operations, and safety regulations.

(c) Reimburse the railroad for all flaggers and watchers provided by the railroad because of the work. The railroad generally requires 2 watchers or flaggers during construction operations that interfere with the railroad's tracks or traffic, that violate the railroad's operating clearances, or that involve a reasonable probability of accidental hazard to railroad traffic.

Flaggers are also furnished whenever, in the railroad's opinion, such protection is needed. Notify the railroad 36 hours in advance of required protective services.

(d) Railroad employees are paid the prevailing railroad hourly rate for regularly assigned 8-hour days for the work classification and overtime according to labor agreements and schedules in effect when the work is performed.

(e) Wage rates are subject to change by law or agreement between the railroad and employees and may be retroactive. If the wage rates change, reimburse the railroad based on the new rates.

(f) Reimburse the railroad monthly for the cost of all services performed by the railroad. Furnish satisfactory evidence that the railroad has received full reimbursement before final acceptance.

(g) Do not store any material, supplies, or equipment closer than 15 feet from the centerline of any railroad track.

(h) Upon completion of the work, remove all equipment and surplus material, and leave the railroad right-of-way in a neat condition satisfactory to the railroad.

107.06 Contractor's Responsibility for Work. Assume responsibility for all work until final acceptance. This includes periods of suspended work. Protect the work against injury, loss, or damage from all causes whether arising from the execution or nonexecution of the work.

Maintain public traffic according to Section 156. Rebuild, repair, restore, and make good all losses, injuries, or damages to any portion of the work. This includes losses, injuries, or damages caused by vandalism, theft, accommodation of public traffic, and weather that occurs during the contract.

The Government will only be responsible for losses, injuries, and damages to work put in place that was caused by declared enemies and terrorists of the Government and cataclysmic natural phenomenon such as tornadoes, earthquakes, major floods, and other officially declared natural disasters. The Government will only be responsible for costs attributable to repairing or replacing damaged work. The Government will not be responsible for delay costs, impact costs, or extended overhead costs.

107.07 Furnishing Right-of-Way. The Government will obtain all right-of-way.

107.10 Environmental Protection. 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.

Do not operate mechanized equipment or discharge or otherwise place any material within the wetted perimeter of any waters of the U.S. within the scope of the Clean Water Act (33 USC § 1251 et seq.). This includes wetlands unless authorized by a permit issued by the U.S. Army Corps of Engineers according to 33 USC § 1344, and, if required, by any State agency having jurisdiction over the discharge of material into the waters of the U.S. In the event of an unauthorized discharge:

- (a) Immediately prevent further contamination;
- (b) Immediately notify appropriate authorities; and
- (c) Mitigate damages as required.

Comply with the terms and conditions of any permits that are issued for the performance of work within the wetted perimeter of the waters of the U.S.

Separate work areas, including material sources, by the use of a dike or other suitable barrier that prevents sediment, petroleum products, chemicals, or other liquid or solid material from entering the waters of the U.S. Use care in constructing and removing the barriers to avoid any discharge of material into, or the siltation of, the water. Remove and properly dispose of the sediment or other material collected by the barrier.

Repair leaks on equipment immediately. Do not use equipment that is leaking. Keep a supply of acceptable absorbent materials at the job site in the event of spills. Acceptable absorbent materials are those that are manufactured specifically for the containment and clean up of hazardous materials.

107.11 Protection of Forests, Parks, and Public Lands. Comply with all regulations of the State fire marshal, conservation commission, Forest Service, National Park Service, Bureau of Land Management, Fish & Wildlife Service, Bureau of Indian Affairs, or other authority having jurisdiction governing the protection of land including or adjacent to the project. Add appropriate fire plan and equipment language.

Section 109. — MEASUREMENT AND PAYMENT

109.01 Measurement of Work. Take and record measurements and perform calculations to determine pay quantities for invoicing for work performed. Take or convert all measurements of work according to United States customary measure.

Unless otherwise specified, measure when the work is in place, complete, and accepted. Measure the actual work performed, except do not measure work outside the design limits or other adjusted or specified limits (staked limits). Measure structures to the lines shown on the plans or to approved lines adjusted to fit field conditions.

Take measurements as described in Subsection 109.02 unless otherwise modified by the Measurement Subsection of the Section controlling the work being performed.

Remeasure quantities if it has been determined that any portion of the work is acceptable but has not been completed to the lines, grades, and dimensions shown on the plans or established by the CO.

Submit measurement notes to the CO within 24 hours of completing the work. For on-going work, submit measurement notes weekly. When work is not complete, identify the measurement as being an interim measurement. Submit the final measurement when the installation is completed. Measurement notes form the basis of the Government's receiving report (see Subsection 109.08(d)). For lump sum items, submit documentation to support invoiced progress payment on a monthly basis.

Use an acceptable format for measurement records. As a minimum, include the following information in all records of measurement:

- (a) Project name and number;
- (b) Contract item number;
- (c) Date the work was performed;
- (d) Location of the work;
- (e) Measured quantity;
- (f) Calculations made to arrive at the quantity;
- (g) Supporting sketch and details as needed to clearly define the work performed and the quantity measured;
- (h) Names of persons measuring the work;
- (i) Identification as to whether the measurement is interim or final; and
- (j) Signed certification statement by the persons taking the measurements, performing the calculations, and submitting them for payment that the measurement and calculations are correct to the best of their knowledge and that the quantity being measured is subject to direct payment for the identified item under the contract.

109.02 Measurement Terms and Definitions. Unless otherwise specified, the following terms are defined as follows:

(a) Acre. 43,560 square feet. Make longitudinal and transverse measurements for area computations horizontally unless specified on the ground surface. Do not make deductions from the area computation for individual fixtures having an area of 500 square feet or less.

(b) Contract quantity. The quantity to be paid is the quantity shown in the bid schedule. The contract quantity will be adjusted for authorized changes that affect the quantity or for errors made in computing this quantity. If there is evidence that a quantity specified as a contract quantity is incorrect, submit calculations, drawings, or other evidence indicating why the quantity is in error and request, in writing, that the quantity be adjusted. Contract quantities will be adjusted only when there are errors in the original design of 15% or more.

(c) Cubic yard.

(1) Cubic yard in place. Measure solid volumes by a method approved by the CO or by the average end area method as follows:

(a) Take cross-sections of the original ground and use with design or staked templates or take other comparable measurements to determine the end areas. Do not measure work outside of the established lines or slopes.

(b) If any portion of the work is acceptable but is not completed to the established lines and slopes, retake cross-sections or comparable measurements of that portion of the work. Deduct any quantity outside the designated or staked limits. Use these measurements to calculate new end areas.

(c) Compute the quantity using the average end areas multiplied by the horizontal distance along a centerline or reference line between the end areas. Deduct any quantity outside the designed or staked limits.

(2) Cubic yard in the hauling vehicle. Measure the cubic yard volume in the hauling vehicle using three-dimensional measurements at the point of delivery. Use vehicles bearing a legible identification mark with the body shaped so the actual contents may be readily and accurately determined. Before use, mutually agree in writing on the volume of material to be hauled by each vehicle. Vehicles carrying less than the agreed volume may be rejected or accepted at the reduced volume.

Level selected loads. If leveling reveals the vehicle was hauling less than the approved volume, reduce the quantity of all material received since the last leveled load by the same ratio as the current leveled load volume is to the agreed volume. Payment will not be made for material in excess of the agreed volume.

Material measured in the hauling vehicle may be weighed and converted to cubic yards for payment purposes if the conversion factors are mutually agreed to in writing.

(3) Cubic yard in the structure. Measure according to the lines of the structure as shown on the plans except as altered by the CO to fit field conditions. Make no deduction for the volume occupied by reinforcing steel, anchors, weep holes, piling, or pipes less than 8 inches in diameter.

(4) Cubic yard by metering. Use an approved metering system.

(d) Each. One entire unit. The quantity is the actual number of units completed and accepted.

(e) Gallon. The quantity may be measured by any of the following methods:

(1) Measured volume container.

(2) Metered volume. Use an approved metering system.

(3) Commercially-packaged volumes.

When asphalt material is measured by the gallon, measure the volume at 60 °F or correct the volume to 60 °F using recognized standard correction factors.

(f) Hour. Measure the actual number of hours ordered by the CO and performed by the Contractor.

(g) Linear foot. As applicable, measure the work along its length from end-to-end; parallel to the base or foundation; along the top; along the front face; or along the invert. Do not measure overlaps.

(h) Lump sum. Do not measure directly. The bid amount is complete payment for all work described in the contract and necessary to complete the work for that item. The quantity is designated as "All." Estimated quantities of lump sum work shown in the contract are approximate.

(i) M-gallon. 1,000 gallons. Measure according to (e) above.

(j) Mile. 5,280 linear feet. Measure horizontally along the centerline of each roadway, approach road, or ramp.

(k) Pound. Measure according to Subsection 109.03. If sacked or packaged material is furnished, the net weight as packed by the manufacturer may be used.

(l) Square foot. Measure on a plane parallel to the surface being measured.

(m) Square yard. 9 square feet. Longitudinal and transverse measurements for area computations will be made horizontally. No deductions from the area computation will be made for individual fixtures having area of 9 square feet or less.

(n) Station. 100 linear feet. Measure horizontally along centerline or reference line of each roadway, approach road, or ramp.

(o) Ton. 2,000 pounds avoirdupois. Measure according to Subsection 109.03.

(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.

No adjustment in a contract unit price will be made for variations in quantity due to differences in the specific gravity or moisture content.

Use net-certified scale masses, or masses based on certified volumes in the case of rail shipments as a basis of measurement subject to correction when asphalt material is lost from the car or the distributor, wasted, or otherwise not incorporated in the work. When asphalt material is shipped by truck or transport, net-certified masses, subject to correction for loss or foaming, may be used for computing quantities.

When emulsified asphalt is converted from volume to mass, use a factor of 240 gallons per ton regardless of temperature.

When asphalt binder for asphalt concrete pavement is stored in tanks devoted exclusively to the project, base quantities on invoices. When asphalt binder for asphalt concrete pavement is not stored in tanks devoted exclusively to the project, or when the validity of the quantity requested for payment is in question, base quantities on the asphalt content determined by testing.

109.03 Weighing Procedures and Devices. Batch masses may be acceptable for determination of pay quantities when an approved automatic weighing, cycling, and monitoring system is included as part of the batching equipment.

When a weighing device is determined to indicate less than true mass, no additional payment will be made for material previously weighed and recorded. When a weighing device is determined to indicate more than true mass, all material received after the last previously correct weighing accuracy test will be reduced by the percentage of error in excess of 0.5 percent.

When material is proportioned or measured and paid for by mass, provide one of the following:

(a) Commercial weighing system. Use permanently-installed and certified commercial scales.

(b) Invoices. If bulk material is shipped by truck or rail and is not passed through a mixing plant, furnish a supplier's invoice with net mass or volume converted to mass. Periodic check weighing may be required.

(c) Project weighing system. Furnish, erect, and maintain acceptable automatic digital scales. Provide scales that record mass at least to the nearest 100 pounds.. Maintain the scale accuracy to within 0.5 percent of the correct mass throughout the range of use.

Do not use spring balances.

Install and maintain platform scales with the platform level with rigid bulkheads at each end. Make the platform of sufficient length to permit simultaneous weighing of all axle loads of the hauling vehicle. Coupled vehicles may be weighed separately or together according to Section 2.20 paragraph UR 3.3 of *NIST Handbook 44*.

Install and maintain belt-conveyor scales according to Section 2.21 of *NIST Handbook 44*.

Before production on the project, after relocation, and at least once per year, have the weighing portion of the system checked and certified by the State Bureau of Weights and Measures or a private scale service certified by the Bureau of Weights and Measures. Seal the system to prevent tampering or other adjustment after certification.

Attach an automatic printer to the scale that is programmed or otherwise equipped to prevent manual override of all mass information. For weighed pay quantities, program the printer to provide the following information for each weighing:

- (1) Project number;
- (2) Item number and description;
- (3) Date;
- (4) Time;
- (5) Ticket number;
- (6) Haul unit number;
- (7) Net mass in load at least to the nearest 100 pounds;
- (8) Subtotal net mass for each haul unit since the beginning of the shift; and
- (9) Accumulated total net mass for all haul units since the beginning of the shift.

If a printer malfunctions or breaks down, the Contractor may manually weigh and record masses for up to 48 hours provided the method of weighing meets all other contract requirements.

Furnish competent scale operators to operate the system.

When platform scales are used, randomly weigh the empty haul units at least twice per shift.

Use an approved format for the mass records. Furnish the original record(s) and a written certification as to the accuracy of the masses at the end of each shift.

109.04 Receiving Procedures. When the method of measurement requires weighing or volume measurement in the hauling vehicle, furnish a person to direct the spreading and distribution of material and to record the location and placement of the material on the project. During the placement, maintain a record of each delivery and document it in an acceptable manner. Include the following information as applicable:

- (a) Project identification;
- (b) Contract pay item number and description;
- (c) Location where placed;
- (d) Date;
- (e) Load number;
- (f) Truck identification;
- (g) Time of arrival;
- (h) Mass or volume; and
- (i) Spread person's signature.

Use an approved format for the delivery record(s). Furnish the original record(s) and a written certification of the delivery of the material at the end of each shift.

109.05 Scope of Payment. Payment for all contract work is provided, either directly or indirectly, under the pay items shown in the bid schedule.

(a) Direct payment. Payment is provided directly under a pay item shown in the bid schedule when one of the following applies:

(1) The work is measured in the Measurement Subsection of the Section ordering the work, and the bid schedule contains a pay item for the work from the Section ordering the work.

(2) The Measurement Subsection, of the Section ordering the work, references another Section for measuring the work and the bid schedule contains a pay item for the work from the referenced Section.

(b) Indirect payment. Work for which direct payment is not provided is a subsidiary obligation of the Contractor. Payment for such work is indirectly included under other pay items shown in the bid schedule. This includes instances when the Section ordering the work references another Section for performing the work and the work is not referenced in the Measurement Subsection of the Section ordering the work.

Compensation provided by the pay items included in the contract bid schedule is full payment for performing all contract work in a complete and acceptable manner. All risk, loss, damage, or expense arising out of the nature or prosecution of the work is included in the compensation provided by the contract pay items.

Work measured and paid for under one pay item will not be paid for under any other pay item.

The quantities shown in the bid schedule are approximate unless designated as a contract quantity. Limit pay quantities to the quantities staked, ordered, or otherwise authorized before performing the work. Payment will be made for the actual quantities of work performed and accepted or material furnished according to the contract. No payment will be made for work performed in excess of that staked, ordered, or otherwise authorized.

SAMPLE

Section 201. — CLEARING AND GRUBBING

Description

201.01 This work consists of clearing and grubbing within the clearing limits and other designated areas.

Construction Requirements

201.03 General. Construct erosion control measures according to Section 157. Perform work within designated limits. Do not damage vegetation designated to remain. If vegetation designated to remain is damaged or destroyed, contact the appropriate Forest Service personell according to the Timber Sale contract. Where possible, preserve all vegetation adjacent to bodies of water.

201.04 Clearing. When marked in advance, remove dead trees over 6 inches in diameter measured at 12 inches above the ground that lean toward the road and are tall enough to reach the roadbed. Within the clearing limits, clear trees, brush, downed timber, and other vegetation as follows:

(a) Cut all trees so they fall within the clearing limits.

(b) For timber sales, stump heights will meet the requirements of the Timber Sale contract.

(c) Trim tree branches that extend over the road surface and shoulders to attain a clear height of 14 feet. If required, remove other branches to present a balanced appearance. Trim tree limbs as near flush with the trunk as practicable.

(d) Remove brush from log decks. Deck logs so that logs are piled parallel to one another; can be removed by standard log loading equipment; will not damage standing trees; will not interfere with drainage, and will not roll. Keep logs in log decks free of brush and soil.

201.05 Grubbing. Grub deep enough to remove stumps, roots, buried logs, moss, turf, or other vegetative debris as follows:

(a) Grub all embankment areas. Undisturbed stumps may be left in place if they protrude less than 6 inches above the original ground and will be covered with more than 4 feet of embankment.

(b) Grub pits, channel changes, and ditches only to the depth necessary for the excavation.

(c) Backfill stump holes and other grubbing holes with backfill material to the level of the surrounding ground according to Subsection 209A.06. Compact backfill according to Subsection 209A.07.

201.06 Disposal. Dispose of merchantable timber designated for removal according to the provisions of the Timber Sale contract. Dispose of clearing and grubbing debris according to Subsection 203.05.

201.07 Acceptance. Clearing and grubbing will be evaluated under Subsection 106.02.

Measurement

201.08 Measure the Section 201 items listed in the bid schedule according to Subsection 109.02 and the following as applicable.

Do not make deductions from the area computation unless excluded areas are identified in the contract.

Do not measure clearing and grubbing of borrow or material sources.

Payment

201.09 The accepted quantities will be paid at the contract price per unit of measurement for the Section 201 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Section 203. — REMOVAL OF STRUCTURES AND OBSTRUCTIONS

Description

203.01 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.

Construction Requirements

203.04 Removing Material. Do not permit debris to enter waterways, travel lanes open to public traffic, or areas designated not to be disturbed.

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.

Except in excavation areas, backfill and compact cavities left by structure removal with backfill material to the level of the finished ground. Compact backfill with spreading and hauling equipment.

203.05 Disposing of Material. Dispose of debris and unsuitable and excess material as follows:

(a) **Remove from project.** Recycle or dispose of material legally off the project.

(b) **Bury.** Bury debris in trenches or pits in approved areas within the right-of-way. Do not bury debris inside the roadway prism limits, beneath drainage ditches, or in any areas subject to free-flowing water.

(c) **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. Place slash and debris outside of the clearing limits not to exceed 3 feet from the ground. Distribute stumps outside the clearing limits in an upright position.

(d) **Removal to designated locations.** Remove construction slash to designated locations.

(e) **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.

203.06 Acceptance. Removal of structures and obstructions will be evaluated under Subsection 106.02.

Measurement

203.07 Measure the Section 203 items listed in the bid schedule according to Subsection 109.02.

Payment

203.08 The accepted quantities will be paid at the contract price per unit of measurement for the Section 203 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

204. - Excavation and Embankment

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:

704.03 Backfill material.

Furnish a well-graded, compactable material free of excess moisture, much, frozen lumps, roots, sod or other deleterious material. Maximum particle size for all structures and pipes other than plastic is 3 inches. Maximum particle size for plastic pipes is 1 ½ inches.

704.06 Unclassified borrow. Furnish granular material free of excess moisture, muck, frozen lumps, roots, sod, or other deleterious material. Maximum particle size is 24 inches.

Construction Requirements

204.04 Preparation for Roadway Excavation and Embankment Construction. Clear the area of vegetation and obstructions according to Sections 201 and 203.

204.06 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) Earth cuts. Scarify earth cuts to 6 inches below subgrade within the roadbed limits. Compact the scarified material according to Subsection 204.11.

204.07 Subexcavation. Excavate material to the limits designated by the CO. 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 with spreading and hauling equipment (Compaction Method A).

204.08 Borrow Excavation. Use all suitable roadway excavation in embankment construction. Do not use borrow excavation when it results in excess roadway excavation.

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) 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.

(c) 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.

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.

204.11 Compaction. Compact the embankment using the following methods as specified:

(a) Compaction A. 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) 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.

(c) 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 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.

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 overburden. 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 204-2
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.

Section 212. — LINEAR GRADING

Description

212.01 This work consists of clearing and grubbing, excavation and embankment, and erosion control to construct roadways and associated features.

Construction Requirements

212.02 Clearing & Disposal. Protect construction stakes and construction control markers. Remove or treat all trees, snags, downed timber, brush, and stumps within the clearing limits.

Immediately remove slash deposited in stream courses.

Fell all dead trees that are outside the clearing limits and that lean toward the road and are tall enough to reach the roadbed.

Merchantable Timber

Treat according to the Timber Sale contract.

Unmerchantable Timber and Large Construction Slash

Treat according to method from Section 203.

203.05 Disposing of Material. Dispose of debris and unsuitable and excess material as follows:

(a) Remove from project. Recycle or dispose of material legally off the project.

(b) Bury. Bury debris in trenches or pits in approved areas within the right-of-way. Do not bury debris inside the roadway prism limits, beneath drainage ditches, or in any areas subject to free-flowing water.

(c) 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. Place slash and debris outside of the clearing limits not to exceed 3 feet from the ground. Distribute stumps outside the clearing limits in an upright position.

(e) Removal to designated locations. Remove construction slash to designated locations.

(f) 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.

212.03 Pioneering. Do not undercut the final back slope during pioneering operations. Deposit material inside the roadbed limits. Do not restrict drainage.

212.04 Grubbing. Within the clearing limits remove stumps with less than 6 inches of cover.

212.05 Excavation & Embankment. Construct the roadway to the required template. Protect backslopes from being undercut. Embankment may be placed by side casting and end dumping.

Locate and use borrow material, and remove and treat unsuitable or excess material.

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

Leave slopes that are to be seeded in a roughened condition.

Use a crawler tractor with a dozer blade to shape and finish the roadbed. Provide for drainage of surface water, unless otherwise designated. Do not permit individual rocks in the roadbed to protrude more than 2 inches above the subgrade. A motor grader finish is not required.

Do not encroach on stream channels, wetlands, or extend beyond right-of-way or easement limits. Do not make alignment or profile grade adjustments that adversely affect drainage. Construct the roadbed within the following grading tolerances:

(a) Alignment (centerline). Alignment may be shifted a maximum of 1.0 feet left or right of the planned centerline. Curve radii may be reduced by up to 50 percent. Do not construct curves with radii less than 100 feet. Compound curves are permitted. Traveled way tolerance is (+) 1 foot unless otherwise designated.

(b) Profile grade. Profile grade may be shifted a maximum of 1 foot up or down from the plan elevation provided the new grade tangent does not vary more than 5 percent from the plan grade tangent. Connect revised forward and back grade tangents with a uniform vertical curve consistent with the design.

212.06 Drainage. Install culverts and other drainage structures according to Section 602 and Section 209.

212.07 Erosion Control. Install erosion control measures and seeding according to the drawings and Section 625.

212.08 Acceptance. Linear grading will be evaluated under Subsections 106.02 and 106.04.

Clearing and slash and timber treatment will be evaluated under Sections 201 and 203.

Measurement

212.09 Measure the Section 212 items listed in the bid schedule according to Subsection 109.02 and the following.

Do not measure changes in the clearing and grubbing quantity caused by alignment adjustments under Subsection 212.04.

Payment

212.10 The accepted quantities, measured as provided in Subsection 109.02 and above, will be paid at the contract price per unit of measurement for the Section 212 pay item listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

Section 301. — AGGREGATE COURSES

Description

301.01 This work consists of constructing one or more courses of aggregate on a prepared surface. 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.

Material

301.02 Conform to the following Subsections:

703.05 Subbase, Base, and Surface Course Aggregate.

(a) General. Furnish hard, durable particles or fragments of crushed stone, crushed slag, or crushed gravel. Do not use material that breaks up when alternately frozen and thawed or wetted and dried. Material must be free from organic matter and lumps or balls of clay.

Material size and type shall be designated by the Forest Service in the Timber Sale contract or Specifications.

Construction Requirements

301.03 General. Prepare the surface on which the aggregate course is placed according to Section 204 or 303 as applicable. Written approval of the roadbed is required before placing aggregate.

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

Develop and use Government furnished sources according to Section 105.

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. Spread and shape the mixture on the prepared surface in a uniform layer.

Do not place the mixture in a layer exceeding 6 inches in compacted thickness. When more than one layer is necessary, compact each layer according to Subsection 301.05 before placing the next layer. Route hauling equipment uniformly over the full width of the surface to minimize rutting or uneven compaction.

301.05 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. Blade the surface of each layer during the compaction operations to remove irregularities and produce a smooth, even surface.

301.07 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 301.06.

301.08 Acceptance. Construction of untreated aggregate courses will be evaluated under Subsections 106.02 and 106.04. Preparation of the surface on which the aggregate course is placed will be evaluated under Section 204 or 303 as applicable.

Measurement

301.09 Measure the Section 301 items listed in the bid schedule according to Subsection 109.02 and the following as applicable.

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

Measure square yard width horizontally to include the top of aggregate width including designed widenings. Measure the square yard length horizontally along the centerline of the roadway.

Payment

301.10 The accepted quantities will be paid at the contract price per unit of measurement adjusted according to Subsection 106.05 for the Section 301 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.

SAMPLE